



# Living with Wildfire in Archuleta County, Colorado: 2015 Data Report

**James R. Meldrum, Hannah Brenkert-Smith, Pamela Wilson,  
Patricia A. Champ, Christopher M. Barth, and Angela Boag**

## Abstract

*Residents in the wildland-urban interface (WUI) can play an important role in reducing wildfire's negative effects by performing wildfire risk mitigation on their property. This report offers insight into the wildfire risk mitigation activities and related considerations, such as attitudes, experiences, and concern about wildfire, for people with homes in the Pagosa Fire Protection District of Archuleta County, Colorado. Data come from a social survey and parcel-level rapid wildfire risk assessments administered by FireWise of Southwest Colorado. 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 may 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 WUI communities.*

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

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Meldrum, James R.; Brenkert-Smith, Hannah; Wilson, Pamela; Champ, Patricia A.; Barth, Christopher M.; Boag, Angela. 2019. **Living with wildfire in Archeluta County, Colorado: 2015 data report**. Res. Note RMRS-RN-79. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 38 p.

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## INTRODUCTION

Residents in the wildland-urban interface (WUI) can play an important role in reducing wildfire's catastrophic effects by performing wildfire risk mitigation on their property. "Wildfire risk mitigation" refers to activities that reduce the chances 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 Pagosa Fire Protection District (FPD) of Archuleta 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 property assessments and a social survey administered by FireWise of Southwest Colorado<sup>1</sup> (FireWise) as part of its mission to encourage wildfire risk mitigation on private property. This report provides information specific to Archuleta County. Throughout the report, we present select statistically significant results. We emphasize that results may differ from the results of similar assessments and surveys in other communities, even if those communities are close to Archuleta County.

### HOW WERE THE WILDFIRE RISK AND SOCIAL DATA COLLECTED?

FireWise works to encourage residents of southwestern Colorado to mitigate wildfire risk on their property. As part of this effort, FireWise conducted wildfire risk assessments and household surveys for all properties with a residential structure of 800 square feet or larger in five targeted communities. Data collection procedures are very similar to those used in other Colorado counties (Meldrum et al. 2013, 2015, 2017).

#### Rapid Wildfire Risk Assessment

FireWise conducted the parcel-level rapid wildfire risk assessment in summer 2015. This rapid assessment is based on the Home Ignition Zone concept (Cohen 2000) and has been developed collaboratively by the Bureau of Land Management and West Region Wildfire Council (Montrose, Colorado) over a series of implementations. A wildfire specialist assessed parcels for 11 characteristics that affect wildfire risk. These characteristics relate to the structure's wildfire-survivability as well as response considerations, such as firefighter access and evacuation potential. Each parcel was assigned an overall wildfire risk rating based on these 11 characteristics. This rating reflects a property's risk relative to the overall level of risk within its community rather than an absolute risk rating. A copy of the rapid wildfire risk assessment tool is provided in Appendix A.

The wildfire specialist assessed properties primarily from public roadways and onsite, when permission was offered. When permission to enter was not granted, the roadside assessment was supplemented with information from the Archuleta County Assessor's Web site and publicly accessible aerial and satellite imagery. When a characteristic was not observable by any method, the wildfire specialist assigned the highest risk category for the characteristic. This default could bias the professional assessments

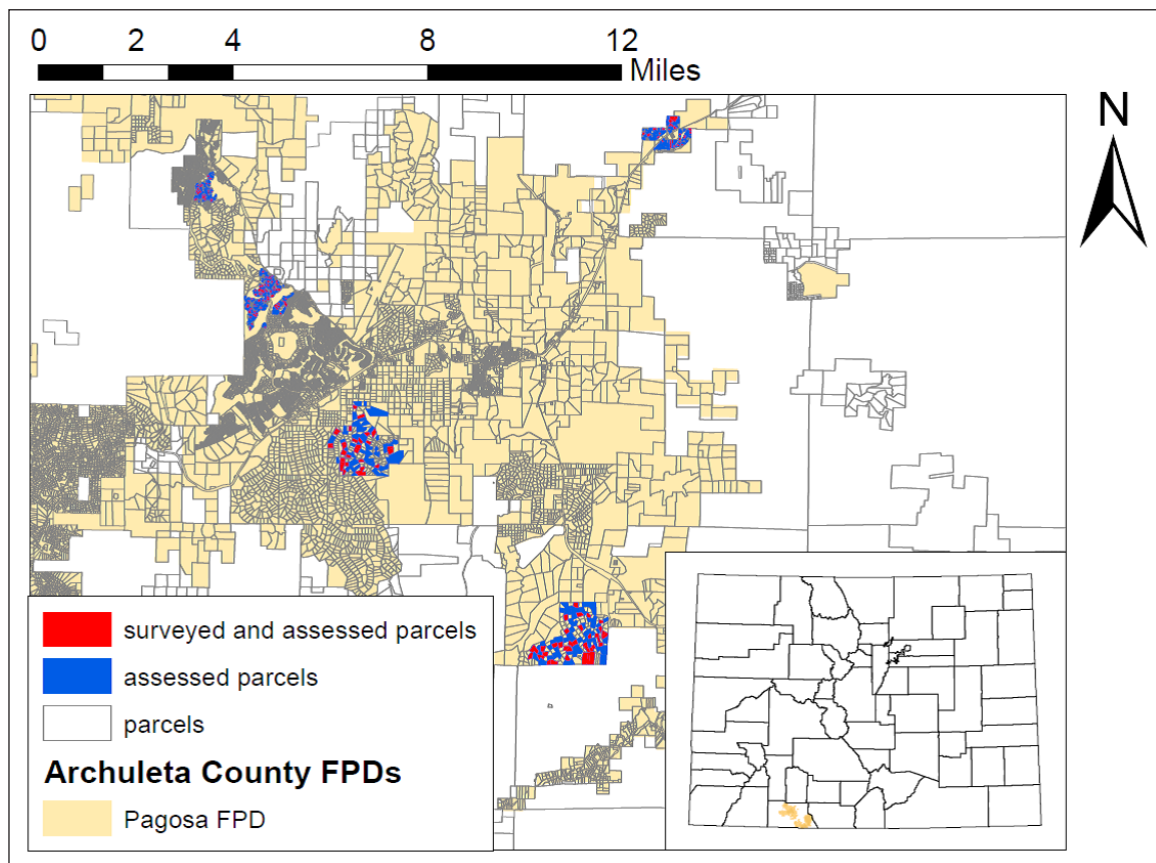
toward higher levels of risk in relevant categories. All assessments reflect the state of the property at the time of assessment. Wildfire risk assessments could be updated if a homeowner completes mitigation actions such as removing ladder fuels, removing lower branches on trees, or retrofitting the home, for example by installing a fire-resistant roof or deck.

## Resident Survey

FireWise also conducted a survey of all Archuleta County residents in the communities where properties had been assessed for wildfire risk. The survey contained seven sections designed to collect a variety of social information. It also asked residents to assess their property based on the 11 wildfire risk characteristics that the wildfire specialist assessed. A copy of the complete survey instrument can be found in Appendix B, along with descriptive statistics of responses for all questions.

## Study Location: Archuleta County, Colorado

Data were collected in Archuleta County, Colorado. Archuleta County covers 1,356 square miles of southwestern Colorado. It contains two Fire Protection Districts (FPDs): Pagosa FPD, which encompasses the town of Pagosa Springs and covers private and public lands in multiple bedroom communities, and Los Pinos FPD, which covers the town of Arboles and portions of the Southern Ute Indian Reservation. This report focuses on residential properties in Archuleta County for which survey data were returned to FireWise. Figure 1 shows the location of relevant properties.



**Figure 1**—Map of surveyed and expert-assessed parcels and Pagosa Fire Protection District (FPD) in Archuleta County. Inset shows location within Colorado.

## WHO RESPONDED TO THE SURVEY?

FireWise assessed 703 properties in Archuleta County. After removing undeliverable addresses, FireWise also mailed 694 letters inviting Archuleta County residents to participate in the social survey. Overall, 209 residents responded to the survey for a response rate of approximately 30 percent. This percentage may underestimate the true response rate, if additional letters were undeliverable but could not be tracked. Three percent of responding households (6) completed the survey online. Note that not all respondents answered all questions. Values in figures 2–21 may not precisely match values in Appendix B due to rounding and omission of “Not applicable” responses from calculation of percentages.

Most respondents own their residence (97 percent). Very few live in a mobile home (1 percent), and a majority indicate living there less than year-round (55 percent). Typical respondents have lived in their current residence for about 9 years (median move-in year is 2006) and expect to stay there for at least 5 more years. Fifteen 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 2001.

Respondents range from 38 to 89 years old, with a median age of 65 years. The majority (59 percent) report being retired versus about one-third (30 percent) employed full-time. Fewer females (30 percent) responded than males. Respondents have a high level of educational attainment and moderate annual income, with a reported 75 percent having completed at least a college education, one-third (30 percent) of respondents indicating they had earned an advanced degree, and 62 percent reporting a household income of \$75,000 or more.

The targeted population is not intended to be representative of Archuleta County as a whole. Further, differences between the survey data and the U.S. Census Bureau data for Archuleta County (for example, owner-occupation rates 72 percent in the census vs. 45 percent in the survey, median income of \$46,646 in the census vs. \$75,000–\$99,999 for survey participants) (U.S. Census Bureau 2016), paired with the methodology of mailing surveys to the mailing addresses noted in county assessor records, suggest that many survey respondents are property owners who own, but do not live in, the properties in question year-round.

## WHAT DO RESIDENTS THINK ABOUT WILDFIRE?

Residents’ notions of wildfire 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 data collected to 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. Responses were recorded on a scale from 1 (“strongly agree”) to 5 (“strongly disagree”); for concise display, figure 3 combines categories 1 (“strongly agree”) and 2 (“agree”) into “Agree” and categories 4 (“disagree”) and 5 (“strongly disagree”) into “Disagree,” with category 3 (“neutral”) not shown. Residents tend to think

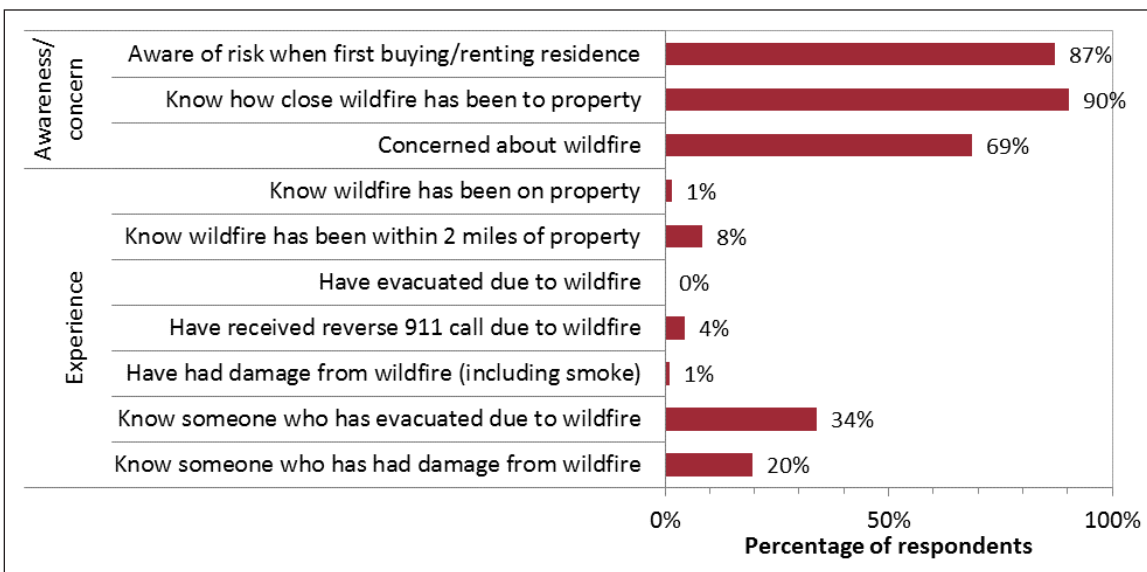


Figure 2—Respondent awareness, concern, and experience with wildfire.

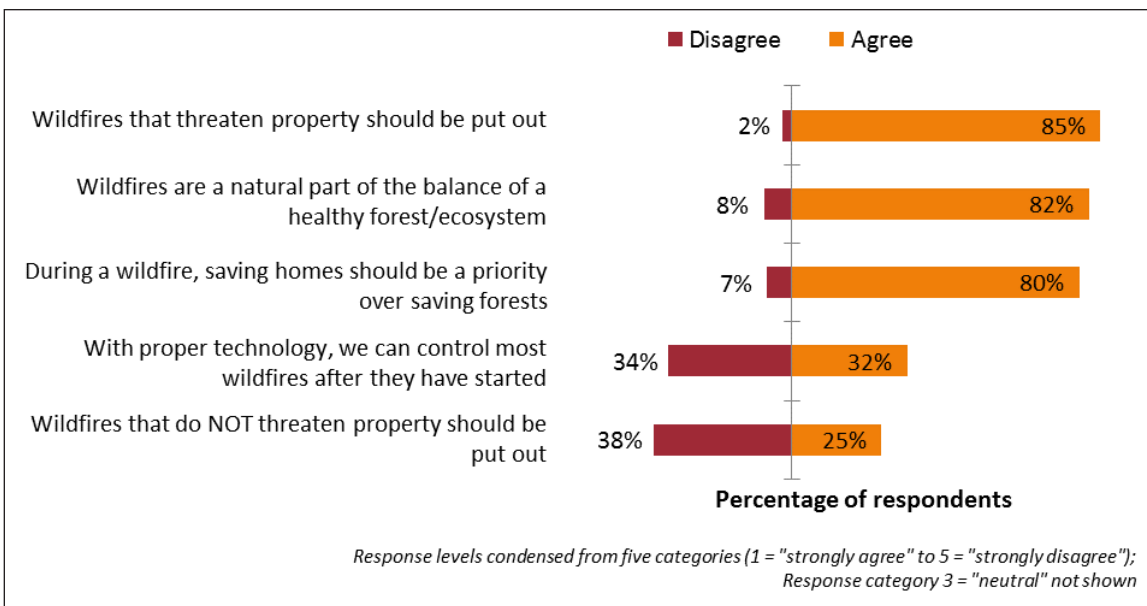


Figure 3—Respondent attitudes toward wildfire and wildfire suppression.

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 property. Figure 4 depicts information reported about homeowners insurance and wildfire. The majority of respondents are not aware of any effect of wildfire risk on their insurance.

### 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

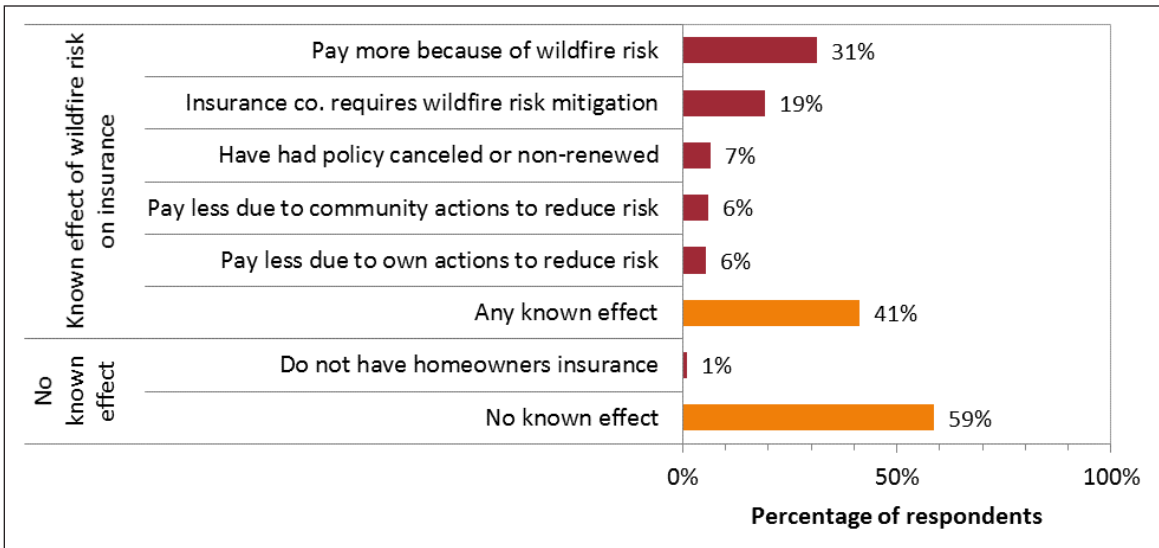


Figure 4—Respondent awareness of effect of wildfire risk on homeowners insurance. Red lines depict responses by households that have homeowners insurance. Orange lines reflect responses calculated from all respondents who answered this set of questions.

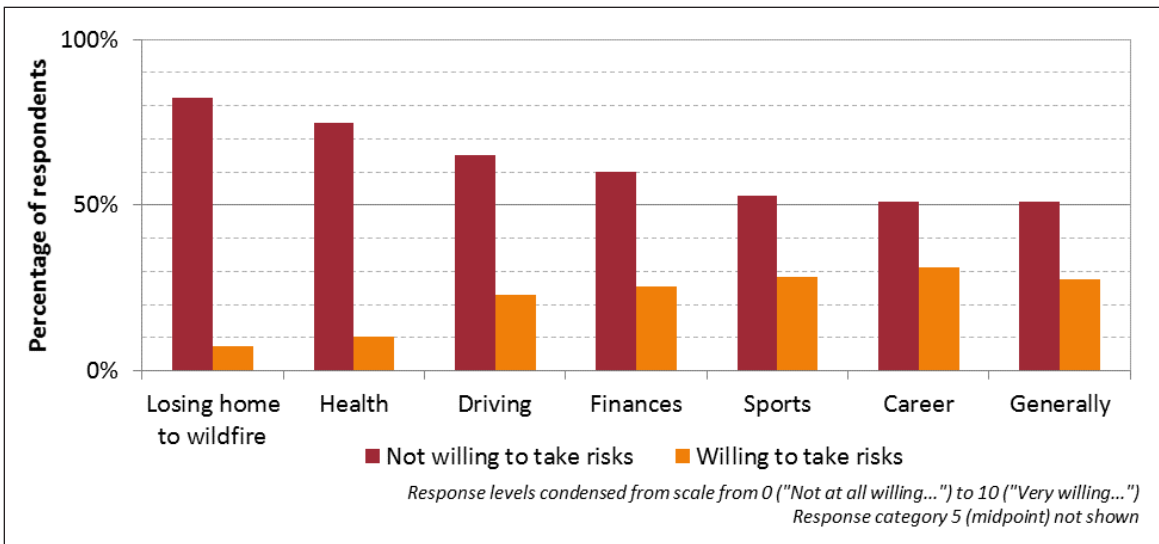


Figure 5—Respondent willingness to take different types of risks.

shows respondents’ willingness to take different types of risks. Responses were recorded on a scale from 0 (“not at all willing to take risks”) to 10 (“very willing to take risks”); for concise display, figure 5 combines categories 0 through 4 into “Not willing to take risks” and categories 6 through 10 into “Willing to take risks,” with category 5 not shown. Risk attitudes vary across different risk domains or types of risks. Figure 6 depicts sources from which respondents report receiving information about wildfire risks. FireWise is the only source of information noted by more than half of the respondents, and residents are generally more likely to receive information from local or regional sources than others. Figure 7 depicts respondents’ perceptions of wildfire risks on their property. Although residents generally think wildfire on their property is not a very likely event, they vary widely in their estimates of 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 expected outcomes if a wildfire does reach their property.

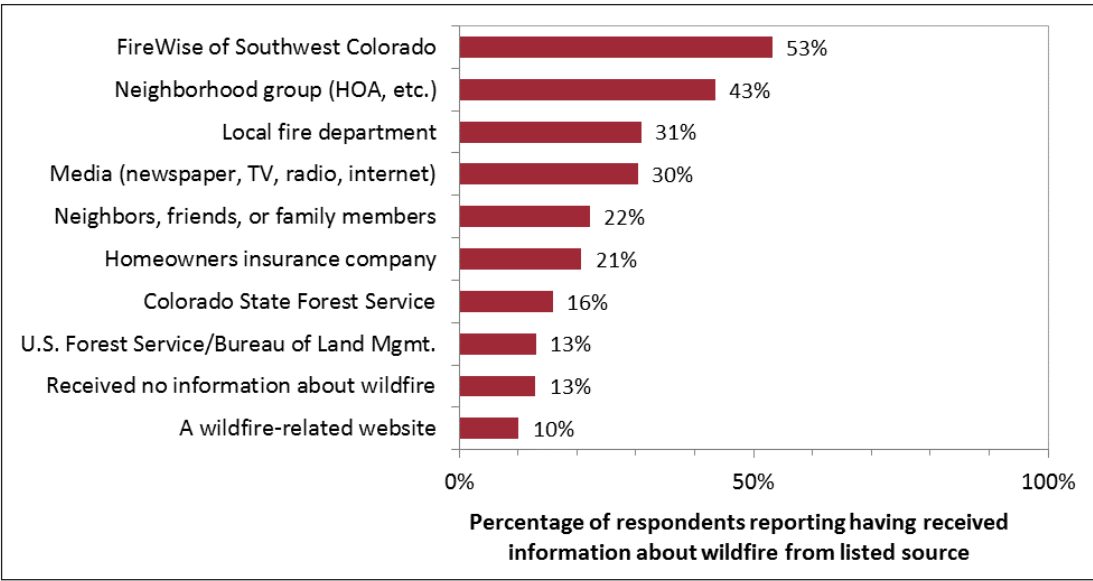


Figure 6—Respondent sources of information about wildfire risks. “HOA” indicates homeowners association.

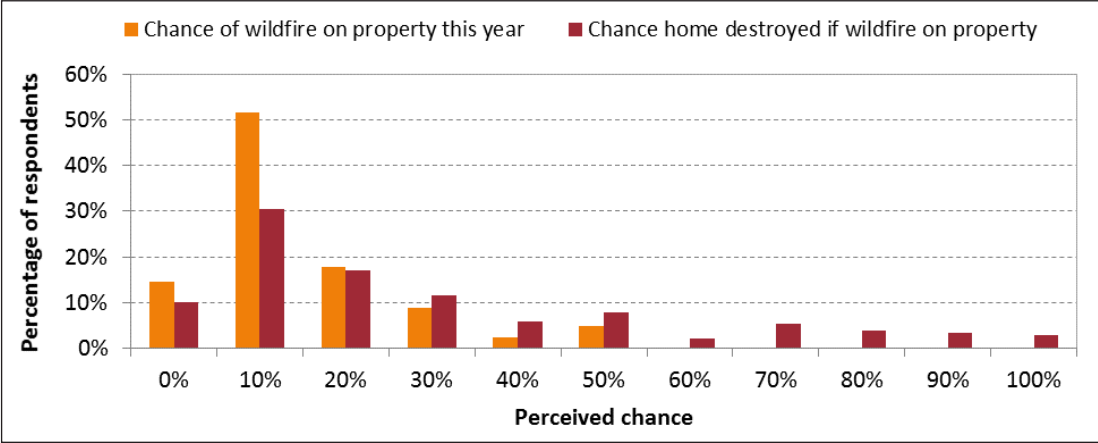


Figure 7—Respondent perceptions of wildfire risks.

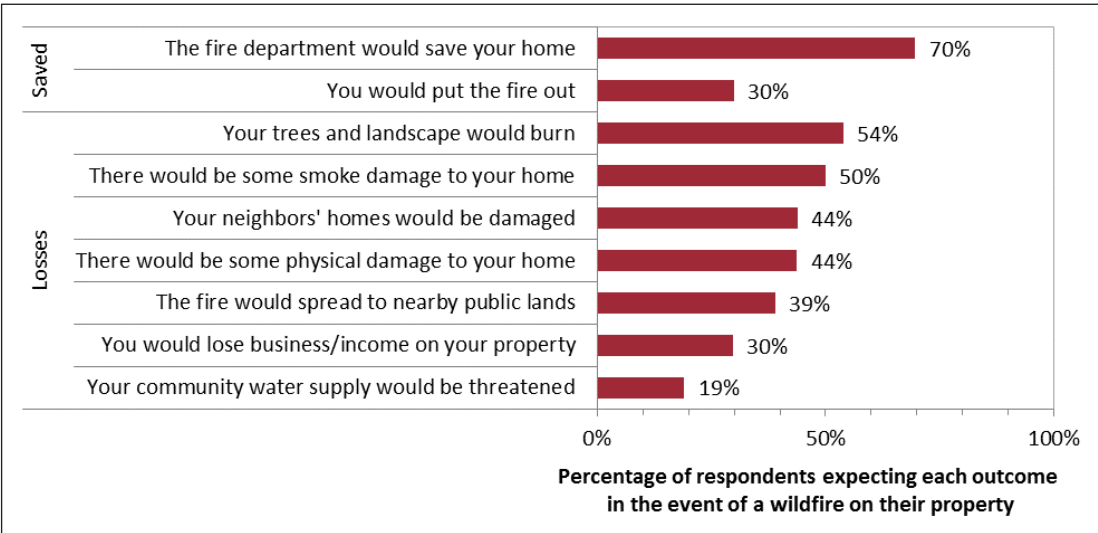


Figure 8—Respondents’ expectations of outcomes of a wildfire on their property.

## RAPID ASSESSMENT VERSUS SURVEY RESPONSES FOR PROPERTY HAZARDS

The charts in this section (figures 9–15) compare the results of the professional assessments against survey responses for the set of 11 property characteristics, as well as for the overall risk rating based on these characteristics. 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 (for example, ridges or 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 majority of properties are rated by the professional as having high-density vegetation nearby, whereas residents tend to see fuel density as moderate. Residents are more likely than the wildfire specialist to describe their property as having a gentle slope, and to report a larger distance to dangerous topography.

### 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 common in this area for exterior siding, porches and decks, or attached fences. Residents and the professional rate these factors similarly in most cases, except that the professional sees combustible siding as more common than residents do.

### Access Risk Factors

The risk of wildfire to a home is influenced by the ability for emergency responders to identify and safely reach 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; one-third have only one access road, and most driveways are narrower than 24 feet wide. Compared to the professional, respondents generally underestimate the width of their driveway.

### Defensible Space Risk Factors

Vegetation and other combustible materials 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 18 percent of properties having only 10 feet or less. A large majority (83 percent) of 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 wildfire specialist. Residents tend to rate themselves as having more defensible space than the professional does.



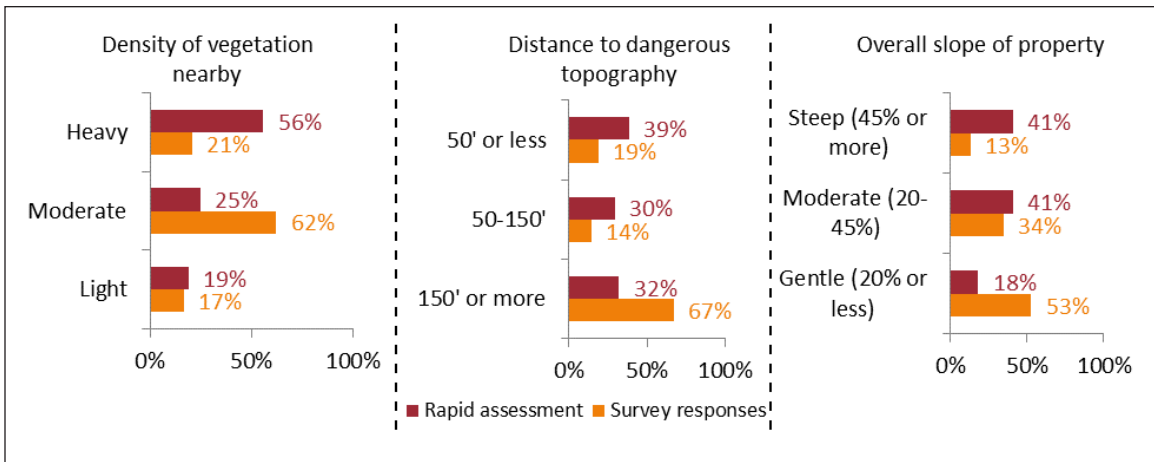


Figure 9—Professional assessment results and survey responses for background risk factors.

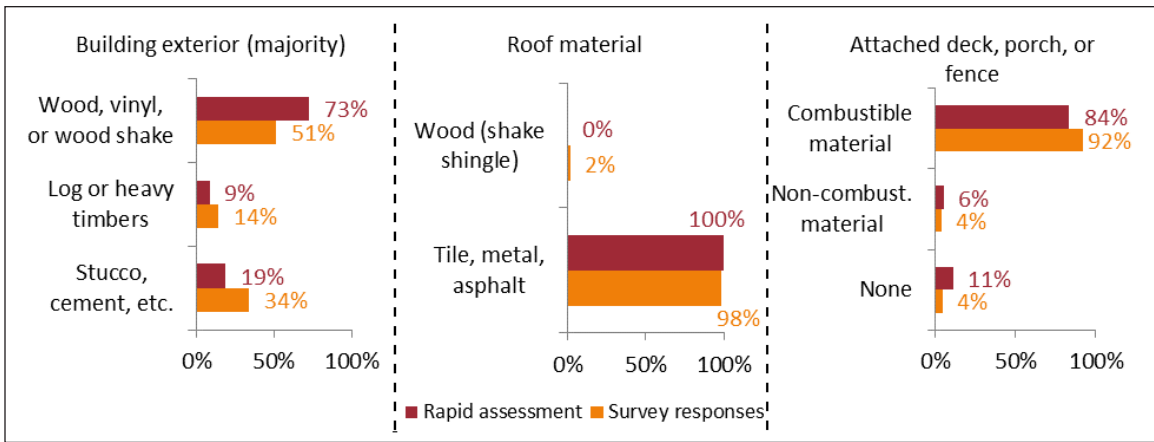


Figure 10—Professional assessment results and survey responses for structural risk factors.

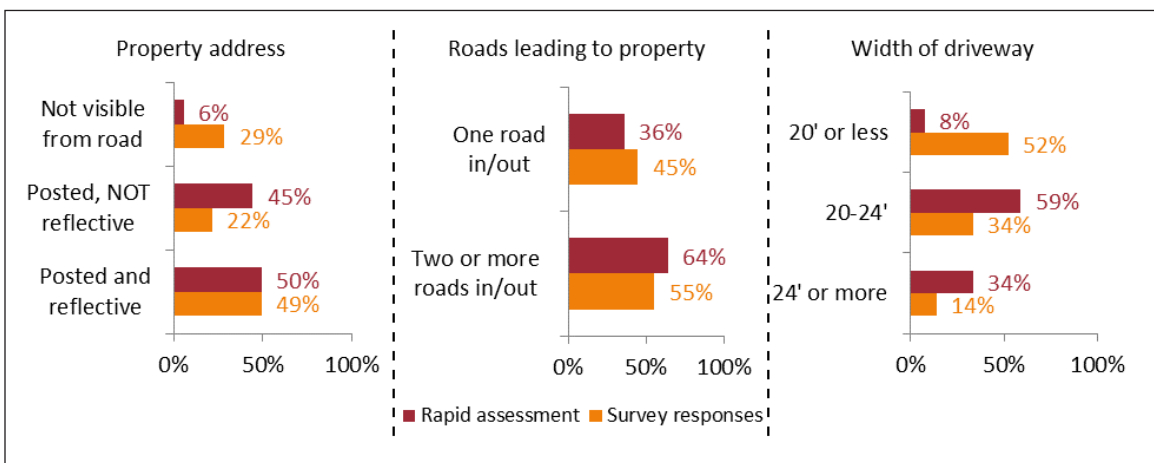


Figure 11—Professional assessment results and survey responses for access risk factors.

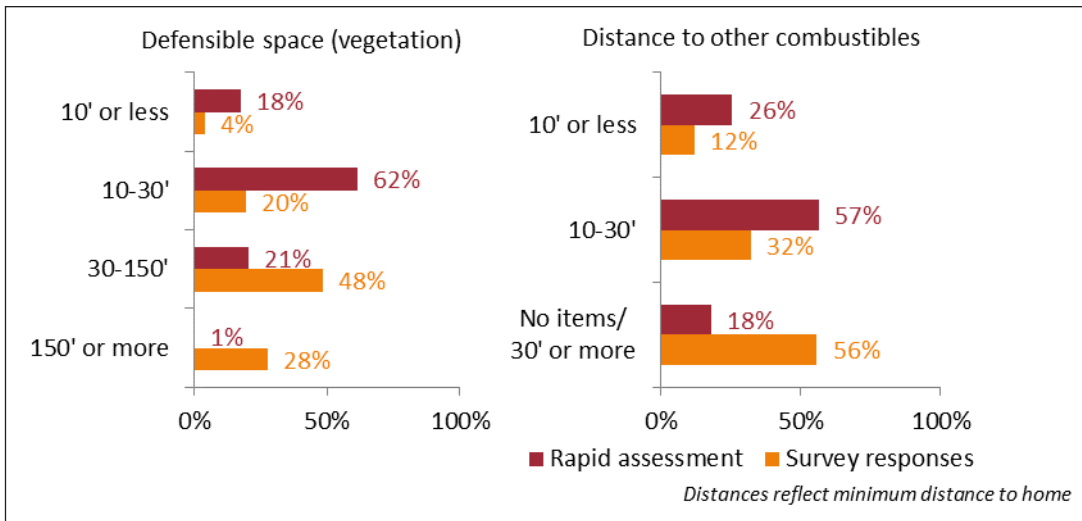


Figure 12—Professional assessment results and survey responses for defensible space risk factors.

### 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 property characteristics, 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 were 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 wildfire specialist’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. Specifically, more than half of the 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 their property and subsequent consequences when determining their home’s overall risk rating. Figure 15 also 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, but this time grouped by the professional’s overall risk rating. This grouping demonstrates that the professional’s overall risk rating is not strongly related to residents’ typical estimates of the probability of wildfire on their property or to the negative consequences if that occurs.

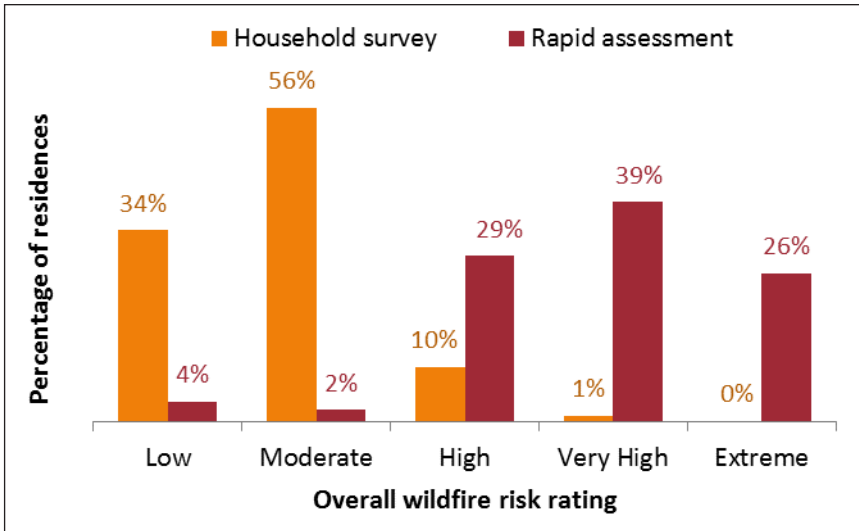


Figure 13—Comparison of overall risk ratings assigned by professional and respondents.

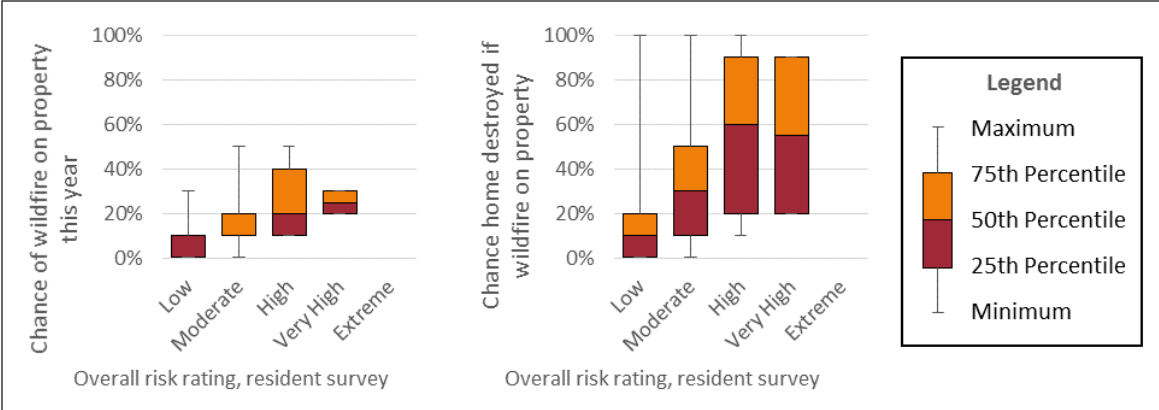


Figure 14—Respondent perceptions of wildfire risks grouped by self-assessed overall risk rating.

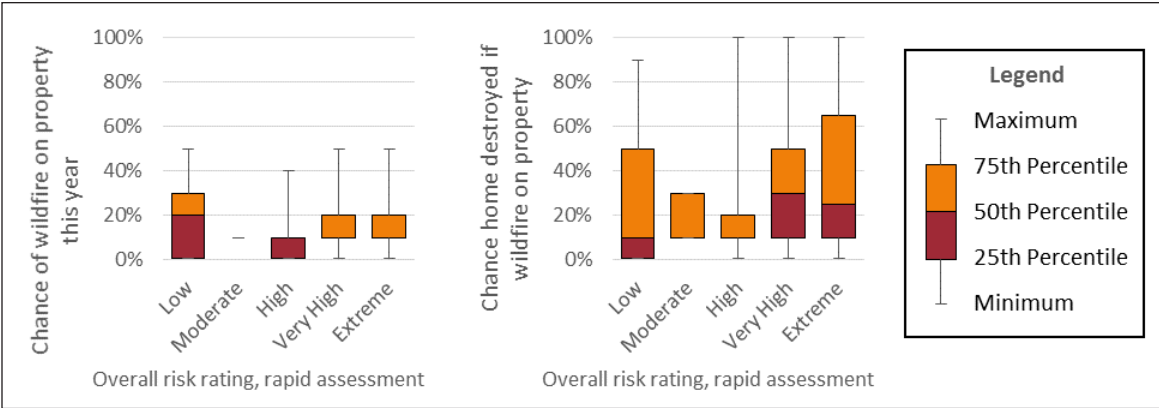


Figure 15—Respondent perceptions of wildfire risks grouped by professional's overall risk rating.

## 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. Figure 16 depicts the perceived vegetation density on respondents’ properties and that of their neighbors. Almost half the residents (47 percent) perceive a reduction in vegetation density over time for their own properties, but fewer perceive a reduction in density on neighboring properties.

Figure 17 shows reported interactions with neighbors and perceptions of neighbors’ actions related to wildfire risk mitigation. Nearly one-half of respondents (47 percent) report having interacted with their neighbors about wildfire risk, including 23 percent who have worked together to reduce wildfire risk on one or both of their properties. In contrast, about one-third (32 percent) report having at least one neighbor not taking action to reduce wildfire risk.

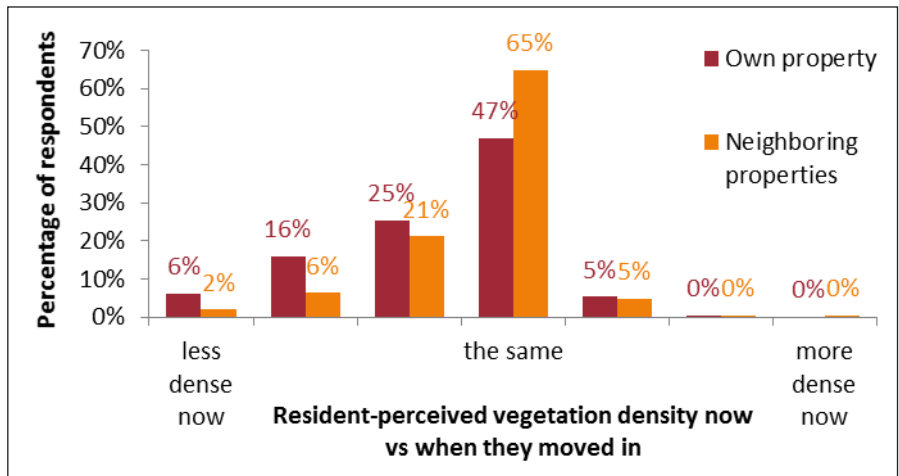


Figure 16—Perceived vegetation density on respondents’ properties and that of their neighbors.

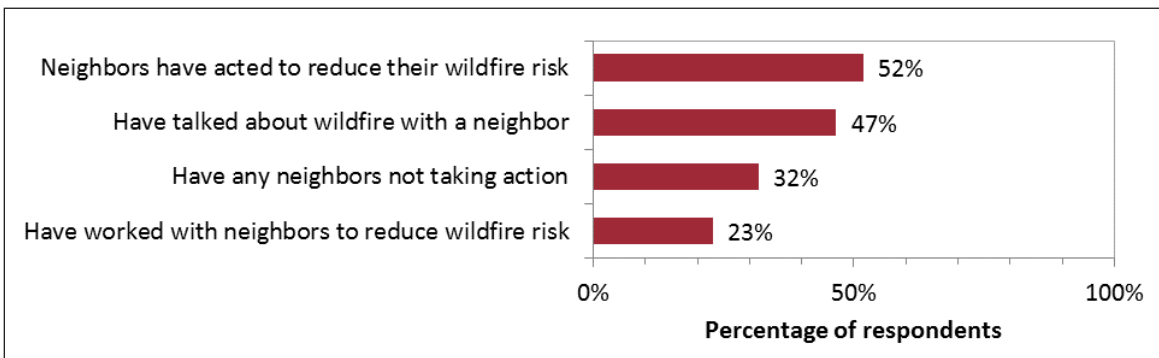


Figure 17—Respondent interactions with neighbors about wildfire risk.

Figures 18 and 19 depict respondents' agreement with possible reasons for not taking action to reduce wildfire risk on their property, and figures 20 and 21 depict survey results about incentives that would encourage residents to reduce their 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, restrictions by homeowners associations and the physical difficulty of doing the work were most often noted. Figure 20 shows that about one-half of respondents report that more specific information about what to do on their property to reduce wildfire risk, physical help, or financial assistance would encourage them to take action. Finally, figure 21 shows that a majority of respondents would take part in a cost-sharing incentive for removing vegetation to reduce their wildfire risk. About one-third (36 percent) would be willing to participate if the cost-share program paid \$1,000 out of \$2,000 per acre costs.

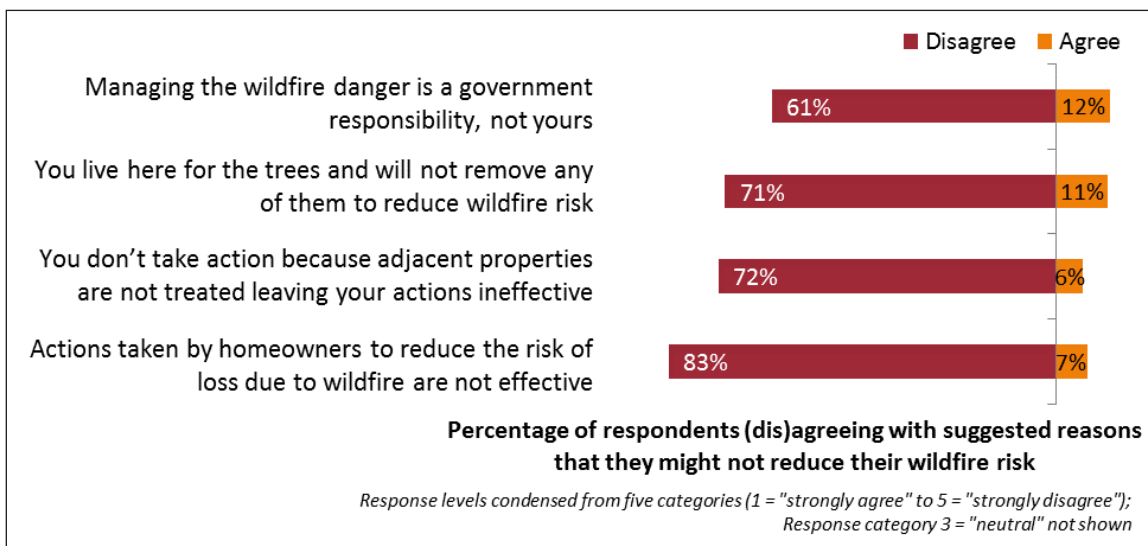


Figure 18—Respondent agreement with general reasons for not taking action to reduce wildfire risk.

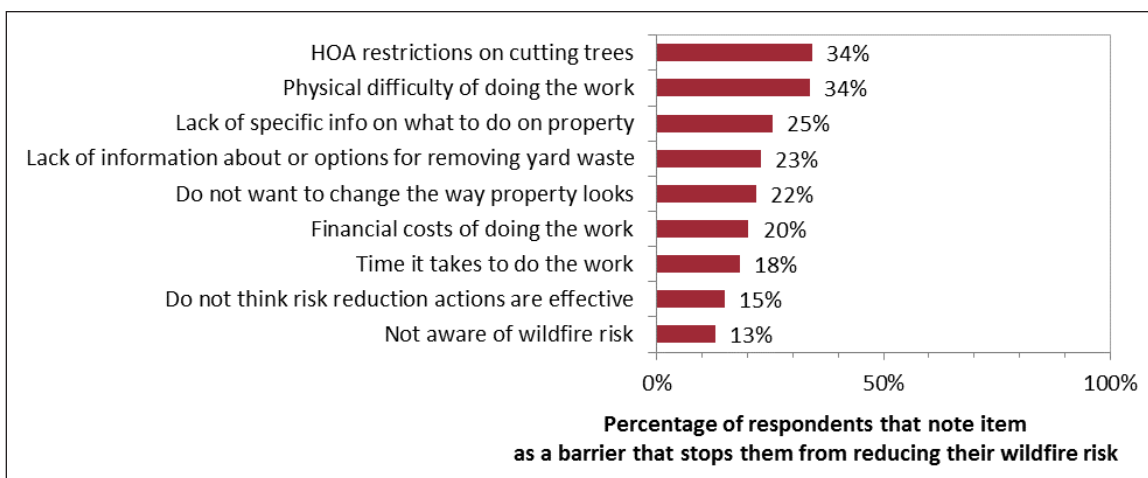


Figure 19—Specific barriers stopping respondents from taking action to reduce wildfire risk on their property. "HOA" indicates homeowners association.

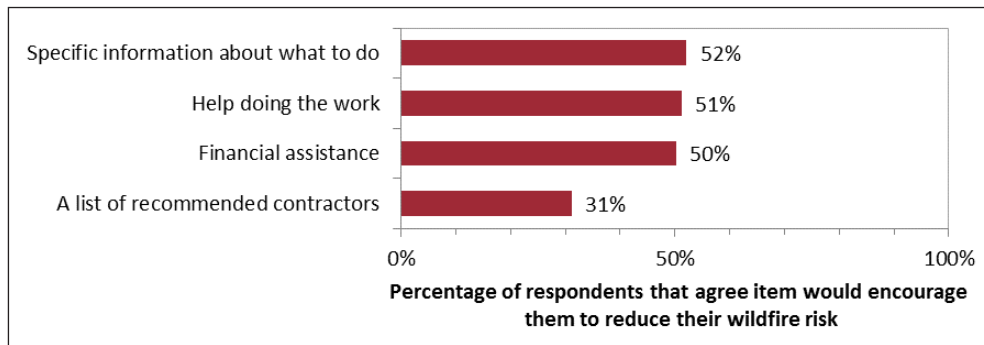


Figure 20—Items that would encourage respondents to take action to reduce wildfire risk on their property.

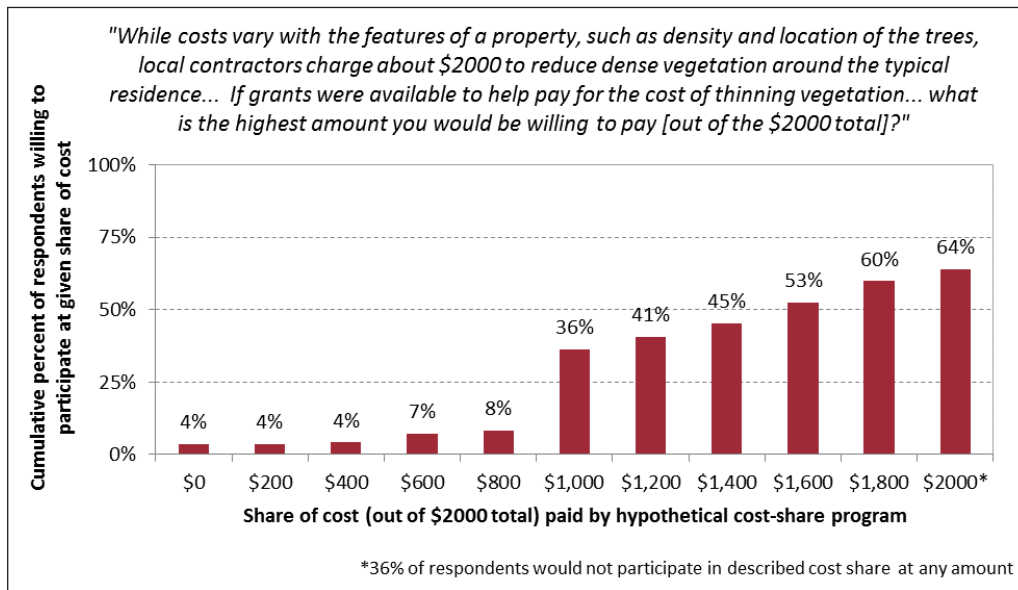


Figure 21—Respondents' willingness to participate in different levels of cost-sharing incentives for reducing the vegetation on their property.

Note

FireWise of Southwest Colorado is now known as Wildfire Adapted Partnership (WAP).

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## Appendix A: Professional Assessment Tool

### 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, etc.)	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: Resident Survey Instrument

# Living with Wildfire in Southwest Colorado *Archuleta County*



<http://www.southwestcoloradofires.org/>

**What is FireWise of Southwest Colorado?**

FireWise of Southwest Colorado strives to keep lives, homes, and property from being damaged by wildfire. They provide education, planning and mitigation support to spark wildfire preparedness in the hearts of their neighbors. FireWise has part-time coordinators in La Plata, Montezuma, and Archuleta Counties and more than 170 Neighborhood Ambassadors, who are the backbone of the organization. FireWise works closely with a variety of partners including the Colorado State Forest Service, Bureau of Land Management, U.S. Forest Service, local Offices of Emergency Management, and local Fire Protection Districts.

**Project Description and Disclosures**

This research study explores how residents and owners of property in Southwest Colorado 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.

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We request that you notify us of any use of this survey instrument (whether in part or in entirety) for applied, research, and/or publication purposes. Please contact us at [wildfireresearchcenter@gmail.com](mailto:wildfireresearchcenter@gmail.com)

(n=209) (203 paper, 6 online)

Key: Red ALL CAPS are variable names

n=number of observations

Blue numbers are percent responses

Note: Rounding to the nearest 1% may result in percentages totaling slightly greater or less than 100%.

Full dataset as of: May 2017

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Section 1: In this first section of the survey, we ask about your residence in Archuleta County, CO. If you own multiple homes in Southwest Colorado, please answer the following questions with respect to your residence within Archuleta County. Throughout the survey, we refer to this home as your *Archuleta County residence*.

#### OWNRENT (n=209)

1.1 Do you own or rent your Archuleta County residence? *(Circle one number)*

97% 0 Own

3% 1 Rent

#### HOMETYPE (n=208)

1.2 How would you describe your Archuleta County residence? *(Circle one number)*

0% 0 Mobile home or trailer

99% 1 Single-family home

1% 2 Multi-family dwelling (e.g., townhouse, condo, apartment)

#### MONTHS (n=206)

1.3 How many months do you live at your Archuleta County residence? *(Fill in the blank)*

MEAN = 7 months; 12 months = 45%

#### FULLTIME (n=201)

1.4 In what year did you move to your Archuleta County residence? *(Fill in the blank)*

MEDIAN = 2006

#### YRBUILD (n=202)

1.5 In what year was your Archuleta County residence originally built? *(Fill in the blank)*

MEDIAN = 2001

#### MOVE1 (n=203)

1.6 Do you expect to move away and/or sell your Archuleta County residence in the next five years? *(Circle one number)*

85% 0 No

15% 1 Yes

**RISKAWAR (n=209)**

1.7 How aware of wildfire risk were you when you bought or decided to rent your Archuleta County residence? *(Circle one number)*

- 12% 0 Not aware
- 42% 1 Somewhat aware
- 45% 2 Very aware
- 0.5% 3 Don't remember

**RISKRATE2 (n=208)**

1.8 How would you rate your Archuleta County residence's wildfire risk? *(Circle one number)*

- 33% 0 Low Risk
- 54% 1 Moderate Risk
- 12% 2 High Risk
- 1% 3 Very High Risk
- 0.5% 4 Extreme Risk

**CONCERNED (n=207)**

1.9 Are you concerned about wildfire affecting your Archuleta County residence? *(Circle one number)*

- 31% 0 No
- 69% 1 Yes

**RISKREDUCE (n=207)**

1.10 Have you done anything to reduce the risk of wildfire to your Archuleta County residence? *(Circle one number)*

- 23% 0 No
- 77% 1 Yes

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

### FIRE (n=203)

2.1 What is the closest distance (as a crow flies) a wildfire has come your Archuleta County residence? *(Circle one number)*

- |     |   |   |
|-----|---|---|
| 1%  | 0 | There has been a wildfire on your property      |
| 7%  | 1 | Less than 2 miles away but not on your property |
| 27% | 2 | 2 to 10 miles away                              |
| 55% | 3 | More than 10 miles away                         |
| 10% | 4 | Not sure  |

### DAMAGE (n=206)

2.2 Has your Archuleta County residence ever been damaged by a wildfire or smoke from a wildfire? *(Circle one number)*

- |     |   |   |
|-----|---|---|
| 99% | 0 | No  |
| 1%  | 1 | Yes, your Archuleta County residence suffered only smoke damage     |
| 0%  | 2 | Yes, your Archuleta County residence suffered fire and smoke damage |

### EVACPLAN (n=204)

2.3 Do you currently have an evacuation plan for your household in the event a wildfire threatens your Archuleta County residence? *(Circle all that apply)*

1 = circled; 0 = not circled; % reported is % circled

- |     |   |   |           |
|-----|---|---|-----------|
| 30% | 0 | No  | EVACPLAN1 |
| 53% | 1 | Yes, for people in my household             | EVACPLAN2 |
| 25% | 2 | Yes, for pets in my home and on my property | EVACPLAN3 |
| 1%  | 3 | Yes, for livestock on my property           | EVACPLAN4 |

**REV911OPTIN (n=203)**

2.4 Have you opted into the reverse 911 system in Archuleta County? *(Circle one number)*

68% 0 No

32% 1 Yes → Have you ever received a call through the system to evacuate or prepare to evacuate your Archuleta County residence due to wildfire? *(Circle one number)*

**REVERSECALL (n=64)**

86% 0 No

14% 1 Yes

**EVACUATED (n=207)**

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

100% 0 No

0% 1 Yes

**PREVRISK (n=207)**

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

76% 0 No

24% 1 Yes

**KNOWEVAC (n=207)**

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)*

66% 0 No

34% 1 Yes

**KNOWDAM (n=205)**

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

80% 0 No

20% 1 Yes

**INSURE9 (n=206)**

2.9 Do you have insurance for your Archuleta County residence? *(Circle one number)*

1% 0 No

99% 1 Yes → Does wildfire risk affect your homeowners insurance for your Archuleta County residence in the following ways? *(Circle one number for each item)*

	No	Yes	Don't Know
Because of wildfire risk, you pay more for homeowners insurance than you otherwise would. <b>INSURE4 (n=198)</b>	25%	31%	43%
An insurance company has canceled or refused to renew your policy because of wildfire risk. <b>INSURE3 (n=200)</b>	90%	7%	4%
Your homeowners insurance company requires wildfire risk mitigation as a condition of your policy. <b>INSURE5 (n=199)</b>	51%	19%	30%
Because of actions you have taken to reduce wildfire risk, you pay less for homeowners insurance than you otherwise would. <b>INSURE10 (n=198)</b>	50%	6%	44%
Because of actions your community has taken to reduce wildfire risk, you pay less for homeowners insurance than you otherwise would. <b>INSURE11 (n=200)</b>	36%	6%	59%

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

**ROOFTYPE (n=208)**

3.1 What type of roof does your Archuleta County residence have? *(Circle one number)*

- 2% 0 Wood (shake shingles)
- 98% 1 Tile, metal, or asphalt shingles

**SIDETYPE (n=208)**

3.2 What type of exterior siding covers the **majority** of your Archuleta County residence? *(Circle one number)*

- 34% 0 Stucco, cement, brick, stone, or other noncombustible siding
- 14% 1 Log or heavy timbers
- 51% 2 Wood or vinyl siding

**BALCONY (n=209)**

3.3 Does your Archuleta County residence have a balcony, deck, porch, or fence attached to the structure? *(Circle one number)*

- 4% 0 No
- 96% 1 Yes → **BALCONY2 (n=198)** Is **any** part of the balcony, deck, porch, or fence made of wood? *(Circle one number)*
  - 3% 0 No
  - 97% 1 Yes

**DRIVEWAY (n=208)**

3.4 How wide is your driveway at the **narrowest** point? *(Circle one number)*

- 52% 0 Less than 20 feet (one car wide)
- 34% 1 20 – 24 feet (two cars wide)
- 14% 2 More than 24 feet (more than two cars wide)



**HOMENUM (n=208)**

3.5 Is your house number posted at the end of your driveway? (*Circle one number*)

27% 0 No

73% 1 Yes → **REFLECT (n=140)** Is the posted number reflective? (*Circle one number*)

31% 0 No

69% 1 Yes

**CLOSEVEG (n=209)**

3.6 What is the **closest** distance from your home to overgrown, dense, or unmaintained vegetation? (*Circle one number*)

4% 0 Less than 10 feet

20% 1 10 – 30 feet

48% 2 31 – 150 feet

28% 3 More than 150 feet

**COMBUST (n=208)**

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*)

12% 0 Less than 10 feet

32% 1 10 – 30 feet

56% 2 More than 30 feet

**RIDGE (n=208)**

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

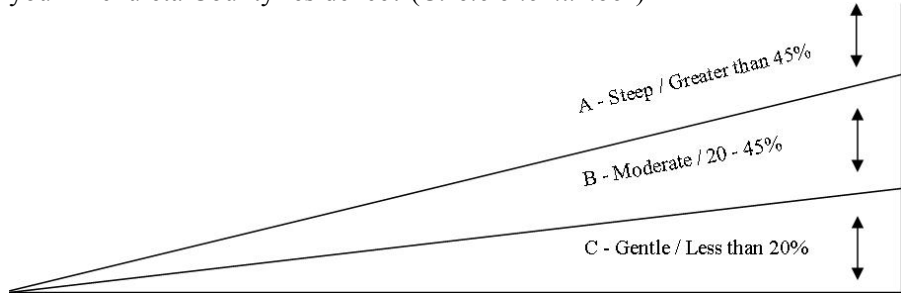
19% 0 Less than 50 feet

14% 1 50 – 150 feet

67% 2 More than 150 feet

**SLOPE (n=209)**

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



- 13% 0 A - Steep / Greater than 45%
- 34% 1 B - Moderate / 20 – 45%
- 53% 2 C - Gentle / Less than 20%

**ROADS (n=208)**

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

- 45% 0 No
- 55% 1 Yes

**DOMVEG (n=207)**

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

- 17% 0 Grasses
- 62% 1 Light brush and/or isolated trees (e.g., grass with some pinion-juniper, isolated oak, and/or isolated conifers)
- 21% 2 Dense brush and/or dense trees (e.g., continuous pinion-juniper, ponderosa pine, dense oak, and/or dense mixed conifers)

**RISKRATE (n=207)**

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 Archuleta County residence's wildfire risk? *(Circle one number)*

- 33% 0 Low Risk
- 56% 1 Moderate Risk
- 10% 2 High Risk
- 1% 3 Very High Risk
- 0% 4 Extreme Risk

**CHANCES1 (n=207)**

3.13 What do you think is the chance that a wildfire will start on or spread to your property in the next 12 months? *(Circle one number)*

	0	10	20	30	40	50	60	70	80	90	100
No Chance	14%	52%	18%	9%	2%	5%	0%	0%	0%	0%	0%
For Sure											0%

**CHANCES2 (n=207)**

3.14 If a wildfire starts on or spreads to your property in the next 12 months, 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	10%	30%	17%	12%	6%	8%	2%	5%	4%	3%	3%
For Sure											3%

Section 4: Please think about the properties across the street, next to, or bordering your Archuleta County residence (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=208)**

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

- 53% 0 No
- 47% 1 Yes

**NACTION (n=208)**

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

- 23% 0 No →Skip to Question 4.5
- 52% 1 Yes
- 25% 2 Don't know →Skip to Question 4.5

**WHENACT (n=108)**

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)*

- 5% 0 You have not taken any action
- 14% 1 They took action before you did
- 22% 2 They took action after you did
- 39% 3 You took action around the same time
- 20% 4 Don't know

**WORKN (n=108)**

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)*

- 56% 0 No
- 12% 1 Yes, on your property
- 8% 2 Yes, on your neighbors' properties
- 23% 3 Yes, on both your property and your neighbors' properties

**SLACKER (n=208)**

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)*

- 42% 0 No
- 32% 1 Yes
- 26% 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... <b>VEG1 (n=209)</b>	13%	24%	34%	20%	9%
Currently, the vegetation on your property is... <b>VEG2 (n=209)</b>	22%	44%	31%	2%	1%
When you first moved in, the vegetation on <b>most</b> of the neighboring properties was... <b>VEG3 (n=208)</b>	8%	24%	39%	23%	6%
Currently, the vegetation on <b>most</b> of the neighboring properties is... <b>VEG4 (n=209)</b>	10%	34%	43%	8%	5%

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=207) 1 = circled; 0 = not circled; % reported is % circled

- 31% 1 Local fire department SOURCE1
- 53% 2 FireWise of Southwest Colorado (ambassador, website, county coordinator, etc.) SOURCEw
- 43% 3 Neighborhood group (homeowners group, neighborhood watch, etc.) SOURCE2
- 22% 4 Neighbors, friends, or family members SOURCE3
- 30% 5 Media (newspaper, TV, radio, internet) SOURCE4
- 16% 6 Colorado State Forest Service SOURCE6
- 13% 7 US Bureau of Land Management or US Forest Service SOURCE7
- 10% 8 A wildfire related website SOURCEWEB
- 21% 9 Your homeowners insurance company SOURCEINSURE
- 7% 10 Other →Please describe: \_\_\_\_\_ SOURCE9/9B
- 13% 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=202)	36%	17%	16%	11%	18%	1%
The fire department would save your home. LACT2 (n=204)	5%	7%	19%	26%	44%	0%
There would be some smoke damage to your home. LACT3 (n=202)	8%	16%	26%	20%	29%	1%
There would be some physical damage to your home. LACT4 (n=203)	10%	22%	24%	19%	25%	1%
You would suffer financial losses due to the loss of business/income on your property. LACT6 (n=200)	37%	12%	13%	10%	16%	13%
Your trees and landscape would burn. LACT7 (n=203)	5%	17%	24%	16%	37%	0%

	Your neighbors' homes would be damaged or destroyed. <b>LACT9 (n=201)</b>	11%	22%	22%	22%	21%	1%	
	Your community water supply would be threatened. <b>LACT10 (n=201)</b>	39%	21%	18%	7%	11%	3%	
	The fire would spread to nearby public lands. <b>LACT11 (n=201)</b>	21%	16%	21%	10%	28%	3%	
5.3	How much do you agree or disagree with the following statements about wildfire? (Circle one number for each statement)							
		<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>		
	With proper technology, we can control most wildfires after they have started. <b>STATE2 (n=206)</b>	3%	29%	34%	31%	3%		
	Wildfires that threaten property should be put out. <b>STATE4 (n=206)</b>	37%	49%	12%	1%	1%		
	Wildfires that do NOT threaten property should be put out. <b>STATE18 (n=205)</b>	9%	16%	37%	28%	10%		
	During a wildfire, saving homes should be a priority over saving forests. <b>STATE5 (n=205)</b>	36%	44%	14%	6%	1%		
	Wildfires are a natural part of the balance of a healthy forest/ecosystem. <b>STATE6 (n=208)</b>	39%	43%	10%	5%	3%		
	You live here for the trees and will not remove any of them to reduce wildfire risk. <b>STATE11 (n=207)</b>	3%	8%	18%	49%	22%		
	Managing the wildfire risk is primarily a government responsibility. <b>STATE13 (n=205)</b>	4%	8%	27%	44%	17%		
	Actions taken by homeowners to reduce the risk of loss due to wildfire are not effective. <b>STATE14 (n=207)</b>	3%	4%	10%	56%	28%		
	You don't take action because adjacent properties are not treated leaving your actions ineffective. <b>STATE17 (n=206)</b>	1%	4%	22%	46%	27%		
Codebook and Responses - Archuleta2015								15

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 <b>FACTOR1 (n=202)</b>	80%	20%
Time it takes to do the work <b>FACTOR2 (n=201)</b>	82%	18%
Physical difficulty of doing the work <b>FACTOR3 (n=204)</b>	66%	34%
Lack of specific information on how to reduce wildfire risk on your property <b>FACTOR4 (n=204)</b>	75%	25%
Lack of effectiveness of risk reduction actions <b>FACTOR5 (n=199)</b>	85%	15%
Do not want to change the way your property looks <b>FACTOR6 (n=201)</b>	78%	22%
Lack of information about or options for removal of slash or other materials from thinning trees and other vegetation. <b>FACTOR7 (n=200)</b>	77%	23%
Lack of awareness of wildfire risk <b>FACTOR8 (n=200)</b>	87%	13%
Restrictions by homeowners' association on cutting trees <b>FACTOR9 (n=198)</b>	66%	34%

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

*(n=209) 1 = circled; 0 = not circled; % reported is % circled*

50%	1	Financial assistance <b>INCENTV1</b>
52%	2	Specific information about what needs to be done <b>INCENTV2</b>
51%	3	Help doing the work (thinning trees and vegetation and/or removal of debris) <b>INCENTV3</b>
31%	4	A list of recommended contractors that could be hired to do the work <b>INCENTV4</b>
8%	5	Other (what? <b>INCENTV5</b> )



**PARTICIPATE (n=200)**

6.3 While costs vary with the features of a property, such as density and location of the trees, local contractors charge about \$2000 to reduce dense vegetation around the typical residence in Archuleta County. If grants were available to help pay for the cost of thinning vegetation near your Archuleta County residence, would you participate in the program? *(Circle one number)*

36% 0 No → Skip to Question 6.4

64% 1 Yes → Assuming that the \$2000 estimate is accurate for your Archuleta County residence, what is the **highest** amount that you would be willing to pay to have a contractor remove vegetation near your home? *(Circle one number)*

**AMTUPAY (n=123)**

	<u>Amount you pay</u> / <u>Amount grant pays</u>
6%	\$2000 / \$0
0%	\$1800 / \$200
1%	\$1600 / \$400
5%	\$1400 / \$600
2%	\$1200 / \$800
44%	\$1000 / \$1000
7%	\$800 / \$1200
7%	\$600 / \$1400
11%	\$400 / \$1600
11%	\$200 / \$1800
7%	\$0 / \$2000

**AWAREDEDUCT (n=209)**

6.4 Are you aware that, since 2009, the Colorado Department of Revenue has offered up to \$2500 tax deduction for certain wildfire mitigation costs? *(Circle one number)*

89% 0 No

11% 1 Yes → Have you ever claimed this tax deduction? *(Circle one number)*

**CLAIMDEDUCT (n=25)**

76% 0 No

24% 1 Yes

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

**RISKTAKE1 (n=208)**

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)*

Not at all willing to take risks											Very willing to take risks
	5%	10%	12%	13%	11%	22%	7%	10%	6%	2%	2%

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 <b>RISKTAKE2 (n=206)</b>	16%	11%	15%	14%	10%	12%	3%	8%	6%	3%	3%	
Financial Matters <b>RISKTAKE3 (n=206)</b>	5%	8%	12%	21%	14%	15%	8%	10%	3%	3%	1%	
Sports or Leisure <b>RISKTAKE4 (n=205)</b>	7%	4%	13%	12%	17%	19%	9%	10%	3%	5%	1%	
Career Decisions <b>RISKTAKE5 (n=198)</b>	7%	5%	13%	15%	11%	18%	10%	10%	5%	6%	2%	
Health Choices <b>RISKTAKE6 (n=206)</b>	13%	17%	25%	12%	8%	15%	3%	1%	3%	2%	1%	
Losing your home to wildfire <b>RISKTAKE7 (n=204)</b>	20%	17%	23%	15%	7%	10%	1%	2%	2%	1%	1%	

**AGE (n=198)**

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

65 years old (MEDIAN)

**GENDER (n=199)**

7.4 Are you? (*Circle one number*)

70% 0 Male

30% 1 Female

**EDUC (n=204)**

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

0.5% 0 Less than high school

5% 1 High school graduate

15% 2 Some college or technical school

4% 3 Technical or trade school

33% 4 College graduate

12% 5 Some graduate work

30% 6 Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

**EMPLOY (n=206)**

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

30% 0 Employed full time (including self-employed)

7% 1 Employed part time (including self-employed)

4% 2 Unemployed or do not work outside of the home

59% 3 Retired

**INCOME (n=175)**

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

2%	0	Less than \$15,000	17%	5	\$75,000 - \$99,999
4%	1	\$15,000 - \$24,999	13%	6	\$100,000 - \$149,999
4%	2	\$25,000 - \$34,999	14%	7	\$150,000 - \$199,999
7%	3	\$35,000 - \$49,999	18%	8	More than \$200,000
21%	4	\$50,000 - \$74,999			

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



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