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LIVING WITH WILDFIRE IN THE SQUILCHUCK DRAINAGE—CHELAN COUNTY, WASHINGTON: 2020 DATA REPORT

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EXECUTIVE SUMMARY

Research on the social dimensions of wildfire provides opportunities to understand how communities and the people who reside in those communities interact with the threat of wildfire. Overall, three findings from this project were particularly noteworthy.

First, household survey results indicate that residents in the Squilchuck Drainage, Chelan County, Washington have high expectations of response services in the event of a wildfire. Most respondents thought that local agencies and Federal responders would make good decisions during a wildfire. In addition to this confidence in performance, respondents largely believed that local firefighters would have sufficient resources to protect threatened homes and that firefighters should not put their lives at risk to protect homes.

Second, the survey data indicated Chelan County Fire District 1 (CCFD1) was the most frequently reported source of wildfire risk information and was characterized as a source of useful information. This finding may reflect recent strides by CCFD1 to engage with high-risk communities and the effort invested by the new community wildfire liaison. Such investments appear timely, as while most respondents indicated that they had taken action to reduce vegetation on their property, most respondents also indicated that they need specific information on what needs to be done to further reduce wildfire risk.

Finally, the project in the Squilchuck Drainage was an opportunity to examine how heterogeneous communities inhabit a contiguous biophysical location. This study highlighted the importance of considering the scale at which we collect social data. Examining the Squilchuck Drainage as a whole yields results that differ from examining the individual community areas within the drainage. For example, there was notable variation on a number of measures across community areas, including:

- Key measures of social connection (i.e., whether respondents report talking with neighbors about wildfire risk, helping neighbors mitigate, or participating in community wildfire activities).
- Emergency preparedness and experience (i.e., having evacuated, having an evacuation plan, rates at which respondents have signed up for the reverse 911 service, and expectations that the local fire department could save their home).
- Respondents' engagement with or awareness of the role that wildfire risk plays in their insurance policy provider.
- Reported barriers to mitigation.
- Acceptance of mitigation practices on public lands.

These findings highlight the fact that even in relatively small geographic spaces, the social variation could have important implications for how a wildfire mitigation program attends to the varying social conditions within the communities that they serve.

What Is WiRē?

The Wildfire Research Center (WiRē[1] Center) works with wildfire practitioners seeking to create communities that are adapted to wildfire using an evidenced-based approach. Historically, immediate threats and wildfire suppression have garnered much attention and resources. While these efforts remain critical, getting in front of the problem by promoting pathways to fire adaptation is of paramount importance. Fire adaptation is about living with wildfire. It's about creating safe and resilient communities that reduce wildfire risk on properties before a fire and supporting effective response when fires threaten a community. It is also about allowing fire on the landscape when it is safe to do so.

Over the last decade, a team of researchers and practitioners, the WiRē Team, has developed and successfully implemented a systematic data collection and integration approach (the WiRē approach) that informs local wildfire risk education efforts and allows for monitoring of community adaptation over time.

The mission of the WiRē Center is to work in partnership with wildfire risk mitigation programs to implement the WiRē approach and support community efforts to tailor their wildfire risk education programs to the local context and allocate scarce resources more effectively. Specifically, the WiRē Center provides hands-on, personalized expertise and support to wildfire practitioners, community organizations, and other local leaders living and working in the wildland-urban interface (WUI) to collect and analyze locally relevant wildfire risk and social science data to enhance the effectiveness of local wildfire risk mitigation efforts.

Individual WiRē Team members maintain a connection with the WiRē Center by participating on the Center's Advisory Committee or as a member of the Board of Directors. In this capacity, the WiRē Team provides technical and strategic guidance to the WiRē Center, ensuring the WiRē approach is implemented with exceptional quality and scientific integrity.

The WiRē Approach

Currently, the core of the WiRē approach includes two central data collection efforts:

1. A parcel-level WiRē Rapid Wildfire Risk Assessment (hereafter, WiRē RA) based on attributes related to building materials, vegetation near the home, background fuels, and topography, as well as fire department access to the parcel. The WiRē RA is an indicator of the relative wildfire risk of a private land parcel within a community rather than an absolute measure of risk.

2. Social surveys of the residents of the assessed parcels are conducted to investigate homeowners' notions of wildfire risk, risk mitigation behaviors, and barriers and incentives to mitigate wildfire risk on private land parcels.

The WiRē approach aims to empower the voice of wildfire practitioner partners with comprehensive data and analyses that reflect the entire community, not just the vocal few. Wildfire practitioner partners participate in the data collection process and share the results with their communities. Experience has demonstrated that sharing the results from the systematic data collection with the community provides a common platform for constructive discussion about adapting to wildfire. Therefore, the WiRē Center summarizes local data to facilitate collaborative processes and provides wildfire practitioner partners with the tools to act on research results and expand the WiRē approach into new communities.

[1] Pronounced Wy-REE

At a broader scale, the WiRē Center manages, compiles, and analyzes data collected across communities to provide insights across space and time with respect to wildfire risk on private land and the characteristics, knowledge, and experience of the people who live on those parcels. These data are an important contribution to the state of knowledge regarding private land and wildfire risk. In collaboration with the WiRē Team, the WiRē Center will advance understandings of effective pathways to community wildfire adaptation.

WiRē Partner: Chelan Fire Protection District 1

Located in North Central Washington, Chelan County Fire District 1 (CCFD1) serves approximately 45,000 of the 75,000 Chelan County residents, including residents of the City of Wenatchee. The City of Wenatchee sits on the Columbia River and along the edge of the Chelan County boundary to Douglas County. The area has engaged in notable activities in response to the threat of wildfire in recent years. The landscape has a dominant shrub-steppe environment that presents significant mitigation challenges, with more tangible opportunities on private properties than on public lands that surround the communities. The City of Wenatchee initiated the Community Planning Assistance for Wildfire (CPAW)[2] process in 2016 and Chelan County implemented the CPAW process in 2017. This iterative process provided mapping products to support improved insights into and tools for wildfire mitigation and response activities. As part of the CPAW process, portions of the city adopted the 2015 International Wildland-Urban Interface Code.[3]

CCFD1 is staffed with 41 career firefighters. In addition, one staff member is dedicated to wildland fire prevention. Along with three chiefs and three administrative staff, CCFD1 receives support from 34 volunteer firefighters and 17 additional support volunteers. The fact that the CCFD1 is staffed primarily by career firefighters is notable in an area where most fire districts are primarily or completely staffed by volunteers. A Community Wildfire Liaison position is a relatively new addition to CCFD1 and represents the department's stated goal "to work side by side with homeowners, communities, businesses, agencies and organizations to increase our community wildfire resilience, and improve future wildfire outcomes." The position was created in response to the Sleepy Hollow fire in 2015.

A significant challenge related to wildfire in the area relates to fire response capacity within the local responding organizations. For the broader Chelan County area, there are typically less than 20 career firefighters on duty at any one time. Accordingly, CCFD1 describes this level of response capacity as being insufficient for both wildland fire or structural fire response. This constraint was notable in the Sleepy Hollow fire (2015) during which firefighters were initially deployed in brush rigs but quickly faced a fire that was transitioning into the interface with home ignitions. Responders shuffled responsibilities in order to send firefighters back to the stations to retrieve structural firefighting trucks to address the changing nature of the fire (wildland fire transforming into interface fire). CCFD1 characterized the typical response to wildfire as expecting that "if the fire is not controlled fast, we are looking at the next ridge" rather than expecting we can do anything where the fire is already burning.

[2] https://headwaterseconomics.org/wildfire/solutions/cpaw-communities/

[3] https://www.codepublishing.com/WA/Chelan/#!/Chelan15/Chelan1506.html#15.06

PROJECT AREA

What Does the Community Look Like?

Reflecting many interface areas in and around Chelan County, the Squilchuck Drainage is characterized by mixed ownership that includes large private tracts, WUI communities, and public land tracts of various sizes. The elevation of the drainage runs from around 650 feet to over 3,500 feet, where the county boundary meets the local Mission Ridge Ski and Board Resort. Fuel types change along the elevation gradient. For more details, including local fire history, please see the 2015 Squilchuck Valley Area Community Wildfire Protection Plan.[4]

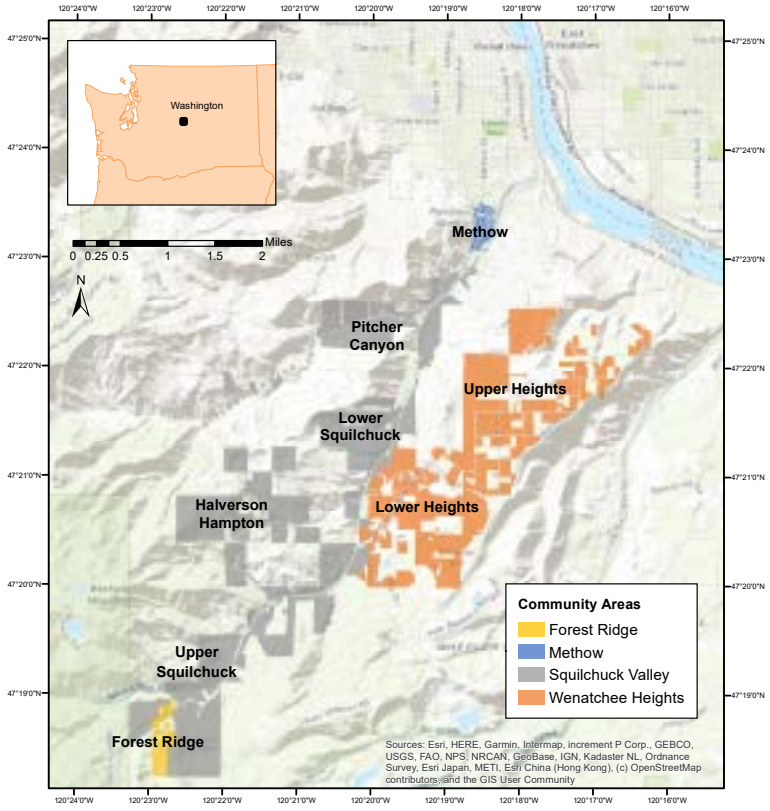


Figure 1— Map of community areas studied in the Squilchuck Drainage, Chelan County, Washington, United States.

The Squilchuck Drainage is an area that varies biophysically and socially. For the purpose of administering wildfire risk mitigation programs, CCFD1 parses the Squilchuck Drainage into four community areas: Methow, Wenatchee Heights, Squilchuck Valley, and Forest Ridge, moving from the edge of Wenatchee up the drainage.

Methow is a traditional, formal suburban community that rests near the City of Wenatchee. This area is characterized by relatively new, densely situated housing.

[4] https://cascadiacd.org/files/documents/Squilchuck_Valley_Area_CWPP_Amendment_No._1_5.2015.pdf

Wenatchee Heights includes the Upper Heights and Lower Heights communities. Local residents simply refer to the area as "the Heights." The homes in the Wenatchee Heights area vary greatly in age and are located on large lots with mixed use, including agriculture. Common areas are generally large and unmaintained. Hydrants are sparsely located throughout the area.

Squilchuck Valley includes the communities of Upper Squilchuck, Pitcher Canyon, Halverson and Hampton Canyons, and Lower Squilchuck. Residents might describe that they "live up the Valley." The communities that comprise this area vary and include large residential parcels and working properties, primarily orchardists. Some communities, like Pitcher Canyon, have hydrants throughout. All through the area, long driveways and limited turnarounds affect emergency response opportunities and some areas, such as Halverson and Hampton Canyons, are marked by older homes and steep roads with long driveways.

The Squilchuck Valley and Wenatchee Heights areas include hybrid communities that reflect both a rural lifestyle and working landscape communities without either culture dominating. Generational orchardists in the communities of Halverson and Hampton Canyons and Lower Squilchuck are intermixed with rural lifestyle properties.

The most formalized community area, Forest Ridge, is perched at the top of the drainage. This area is adjacent to and nearly surrounded by the Okanogan-Wenatchee National Forest with one way in and out. The homes are large and the forest is dense. The residents of this high amenity/high resource community area are organized. The area has an official Home Owners Association, the Forest Ridge Wildfire Coalition, and was recognized as a Firewise USA community in 2010.

METHODS

What Did We Do?

CCFD1 sent community outreach letters explaining to residents that a data collection effort was being launched to the four community areas in the Squilchuck Drainage between 15 June and 11 August 2018. They sent the letters in batches to coincide as closely as possible with the timing of CCFD1 conducting the parcel-level risk assessments. The letters described the risk assessments and alerted residents that CCFD1 would mail them a household survey.

Rapid wildfire risk assessments

CCFD1 used a census approach to conduct a "sidewalk survey," which is a rapid wildfire risk assessment of each residential parcel with a structure in the four community areas of the Squilchuck Drainage. The sidewalk survey is a quick street-side assessment of the conditions on a parcel between 22 June and 16 July 2018. CCFD1 completed 731 sidewalk surveys.[5]

WiRē used the data from the sidewalk surveys to populate the WiRē RA. See Appendix I for the WiRē RA codebook and Appendix II for a detailed memo on the transformation of the CCFD1 sidewalk survey data to the WiRē RA data. The WiRē RA comprises data for each parcel based on a set of 11 attributes that includes vegetation near the home, background fuels, topography, and fire department access to the parcel. The WiRē

[5] As a part of a broader organizational mandate to assess the entire WUI served by CCFD1, approximately 1,700 additional parcels were assessed 15 August through late fall, including undeveloped lots. Results of those sidewalk surveys are not reported here.

RA serves as an indicator of the relative risk of private land parcels within the Squilchuck Drainage rather than an absolute measure of risk. The overall risk scores are based on the weighted sum of the 11 attributes. The weights reflect the attributes' relative contribution to overall wildfire risk (see table 9 in Appendix II for details of attribute weighting). The overall risk scores range from 35 to 1,000 points. The scores are parsed into risk categories: low (35 to 225 points), moderate (226 to 365 points), high (366 to 500 points), very high (501 to 665 points), and extreme (666 to 1,000) points.

Household survey

CCFD1 administered the household survey in waves to coincide as closely as possible with the timing of the sidewalk surveys. In total, there were up to three mailings per household: the first survey packet, a postcard reminder, and a second survey packet. The first survey packets were sent to residents on 9 July 2018. A postcard reminder was sent to all households approximately 2 weeks after the initial survey packet. A second survey packet was mailed approximately 1 month after the first to those who had yet to respond. The final wave of second survey packets was sent on 7 October 2018.

In total, 291 completed household surveys were returned, for a 48 percent response rate overall. Response rates varied from a high of 71 percent in Forest Ridge to a low of 33 percent in Methow.

Community Areas	Total records	Total completed	Response rate
Methow	155	51	33%
Wenatchee Heights	181	77	43%
Squilchuck Valley	201	115	57%
Forest Ridge	68	48	71%
Overall	**650**	**291**	**48%**

Figure 2—Response rate, by community.

The household survey, along with overall response frequency for each survey item, can be found in Appendix III. Since the Squilchuck Drainage varies both biophysically and socially, we also include individual codebooks for each of the four community areas (see Appendices IV–VII). Analysis of variance (ANOVA) is used to assess whether the mean responses to survey questions differ among the community areas in the Squilchuck Drainage. In other words, we test the hypothesis that the mean responses of the different community areas are the same (variables are normally distributed within the community areas and that the variance in each community is about the same). In this report, we highlight responses that are found to differ (i.e., the hypothesis of equality is rejected) among the community areas.

RESULTS

Community Risk: Results of the Parcel-Level WiRē Risk Assessment

As stated above, the WiRē RA serves as an indicator of the relative risk of wildfire on a private land parcel within a community rather than an absolute measure of risk. In order to measure the relative risk of wildfire in the Squilchuck Drainage, risk is compared within the entire Squilchuck Drainage rather than within four community areas. Overall, Squilchuck Drainage is considered to be at high risk of wildfire. The mean WiRē RA scores within the community areas range from a low of 347 in Methow to a high of 601 in Forest Ridge. Likewise, the distributions of the risk categories (i.e., low, moderate, high, very high, extreme) also vary for the four areas in the Squilchuck Drainage. Methow has the highest percentage (9.70%) of parcels in the low category while Forest Ridge has the highest percentage (26.47%) of parcels in the extreme category. See figure

3 for the distribution of scores by community, in which the box shows interquartile range (25–75%); bars show full range excluding outliers (dots); bar depicts median and X depicts average.

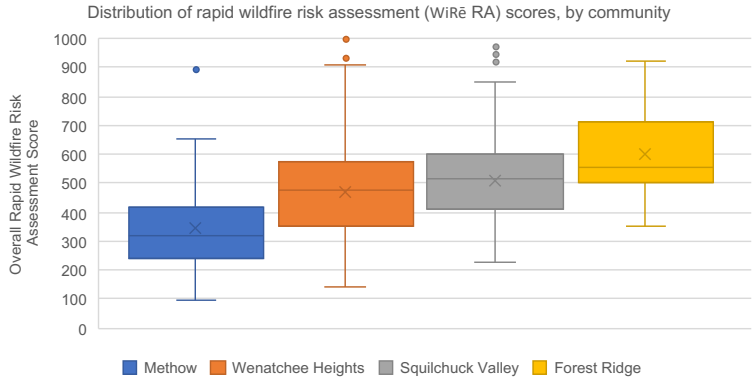


Figure 3—Distribution of Rapid Wildfire Risk Assessment (WiRē RA) scores, by community in Squilchuck Drainage, Chelan County, Washington, United States. Boxes show interquartile range (25-75%); bars show full range excluding outliers (dots); bars inside boxes depict median and X depicts average. Higher scores indicate increased risk of wildfire.

The attributes that comprise the parcel-level WiRē RA are described below, along with a brief description of the role each attribute plays in a parcel's wildfire risk.

Posted, visible, and reflective address numbering helps emergency responders find a home when seconds count. A metal sign, with 3-inch tall blue reflective lettering, is the most visible and durable sign during all conditions, including nighttime and heavy smoke. Properties are evaluated for addressing condition based on local recommendations as having the gold standard (posted, visible from the road, and blue reflective), posted and visible from the road, or not posted/not visible from the road. Parcel addressing condition varies by community area (fig. 4). In Methow, for example, most properties are addressed, though only a small portion (2%) of those address numbers are reflective. Likewise, over half of Wenatchee Heights and Forest Ridge properties have address numbers that lack reflectivity. More notable, however, is the fact that nearly a quarter of Wentachee Heights and Squilchuck Valley residents do not have visible addressing (23% in each community).

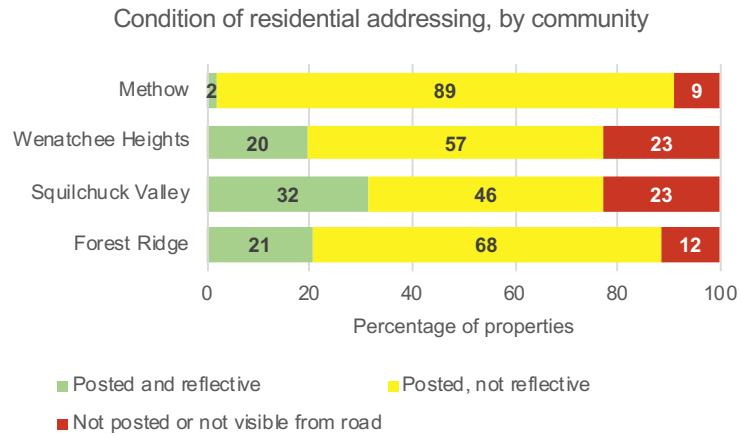


Figure 4—Condition of residential addressing, by community in Squilchuck Drainage, Chelan County, Washington, United States. Categories are: posted and reflective (address is posted, is visible from the road, and is blue reflective), posted and visible from the road, or not posted/not visible from the road.

The ability to evacuate during a wildfire, as well as the ability for emergency responders to safely get to a property, is critical. During a wildfire, evacuation routes could be blocked by fire, limiting a resident's ability to move to a safe area. Access to and from a property is determined by the available road system. Properties are evaluated based on having one or two (or more) roads in/out. Situated closest to town, most residents in Methow (69%) have two or more roads by which they can evacuate. In contrast, all of Forest Ridge residents are reliant on a single road for egress, as are most Squilchuck Valley (63%) and Wenatchee Heights (55%) residents. See figure 5.

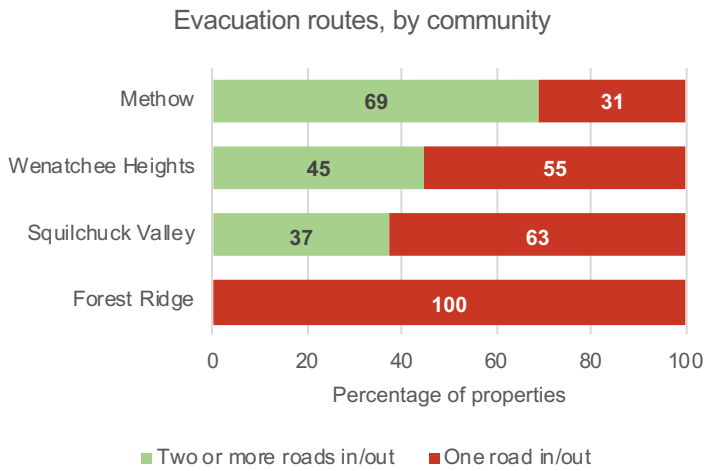


Figure 5—Evacuation routes, by community in Squilchuck Drainage, Chelan County, Washington, United States. Graph depicts the percentage of properties having one or more roads into and out of a given property.

Driveway width affects first responders' ability to safely access homes in an emergency or to conduct structure protection activities during a wildfire. Properties are evaluated based on whether the driveway is 14 feet or wider or less than 14 feet wide. Most of the driveways in the study area meet the width standard; however, nearly a third of Squilchuck Valley (32%) and Forest Ridge (31%) driveways are narrower than the 14-foot standard that supports safe response.

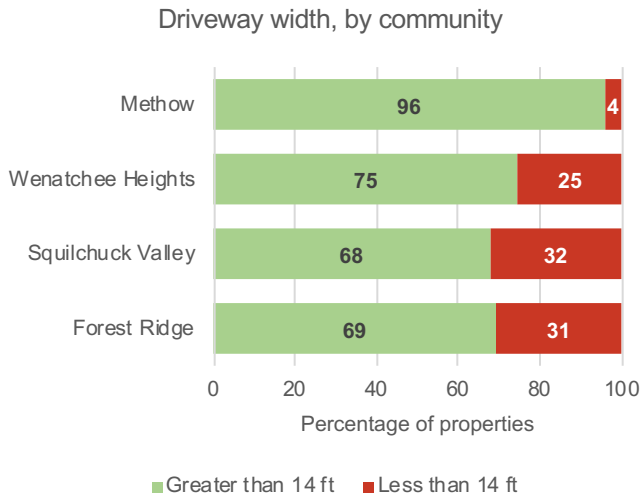


Figure 6—Driveway width, by community in Squilchuck Drainage, Chelan County, Washington, United States. A 14-foot (ft) driveway width supports safe response.

First responders need to be able to leave a property quickly should conditions deteriorate. Driveway length and the ability to turn around influence their willingness to bring fire trucks down a driveway. Driveways are evaluated to establish if they are less than 150 feet, longer than 150 feet with a turnaround, or longer than 150 feet without a turnaround. While over half of all properties had driveways less than 150 feet, there is notable variation in the portions that are longer than 150 feet. For example, among Wenatchee Heights properties, nearly half (49%) have driveways that are longer than 150 feet and over a quarter (26%) lack adequate room for turning a vehicle around. Squilchuck Valley properties have a similar pattern, with 40 percent of driveways with driveways longer than 150 feet and a fifth (21%) lacking adequate turnaround. See figure 7.

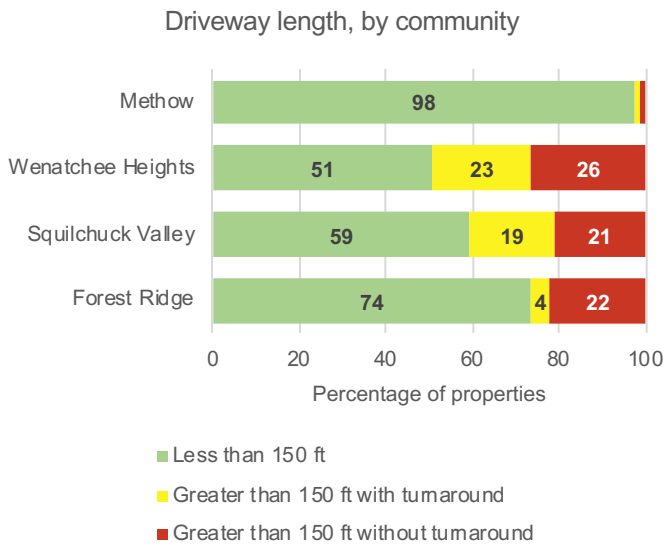


Figure 7—Driveway length, by community in Squilchuck Drainage, Chelan County, Washington, United States. Ft = feet.

Fire moves uphill faster than it does downhill or on flat ground. Homes situated closer to steep slopes are at greater risk from fast-moving flames and more intense fire behavior. Properties are evaluated by looking at the distance of the residence from steep topography. The categories are: distance is greater than 100 feet; between 51 and 100 feet; or less than 50 feet from a slope of 30 degrees or more. Not surprisingly, in a landscape like the Squilchuck Drainage, there is significant variation in topography across communities along this shared biophysical feature. While in Methow, only 30 percent of the properties are within 50 feet of a steep slope, and in Forest Ridge, nearly all (99%) of properties are within 50 feet of a steep slope. See figure 8.

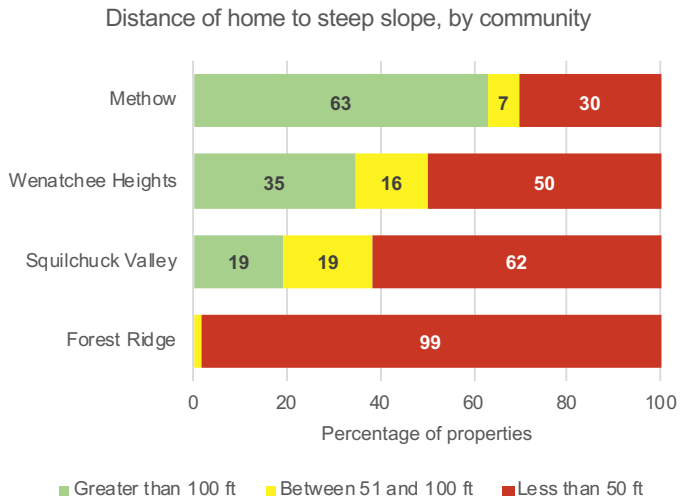


Figure 8—Distance of home to steep slope, by community in Squilchuck Drainage, Chelan County, Washington, United States. Ft = feet.

The vegetation around a home affects a home's survivability during a wildfire. More flammable and abundant vegetation near the home increases the likelihood that heat and flames will weaken the building materials and allow a fire to enter the home. These adjacent fuels are evaluated as light, moderate, or dense vegetation within 100 feet of the home. Like with topography, the vegetation within the study communities varies significantly. In some cases, this vegetation is on the individual property itself while on smaller properties the dense vegetation may be on a neighboring property. In this case, most Forest Ridge (88%), Squilchuck Valley (82%), and Wenatchee Heights (70%) homes have dense vegetation within 100 feet (fig. 9).

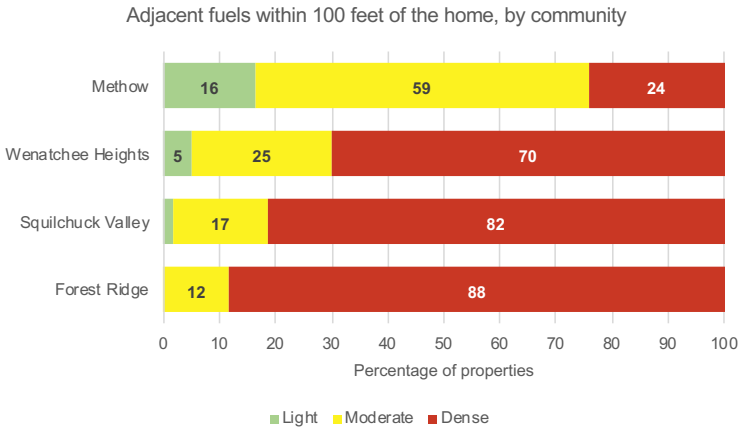


Figure 9—Adjacent fuels within 100 feet of the home, by community in Squilchuck Drainage, Chelan County, Washington, United States. Adjacent fuels are evaluated as light, moderate, or dense vegetation.

Defensible space is an area around a structure that has been maintained and designed to reduce fire danger. Assessing the density of fuels and debris around the home helps characterize defensible space and is evaluated as:

Light: light or moderate vegetation within 100 feet; and light debris within 30 feet.

Moderate: dense vegetation between 31 and 100 feet; and/or moderate debris within 30 feet.

Heavy: dense vegetation between 6 and 30 feet; and light to moderate debris.

Severe: dense vegetation within 5 feet; or heavy dry vegetation.

The density of vegetation around homes varies substantially across the community areas (fig. 10). Over half of the Squilchuck Valley (57%) and Wenatchee Heights (52%) properties have heavy or severe vegetation/debris around the home. In Forest Ridge, slightly fewer (43%) have heavy or severe vegetation/debris, but all the rest (57%) have at least moderate fuels. Only in Methow do the majority (63%) of properties have a light density of fuels around the home, though nearly a quarter of the properties (23%) have heavy or severe fuels around the home.

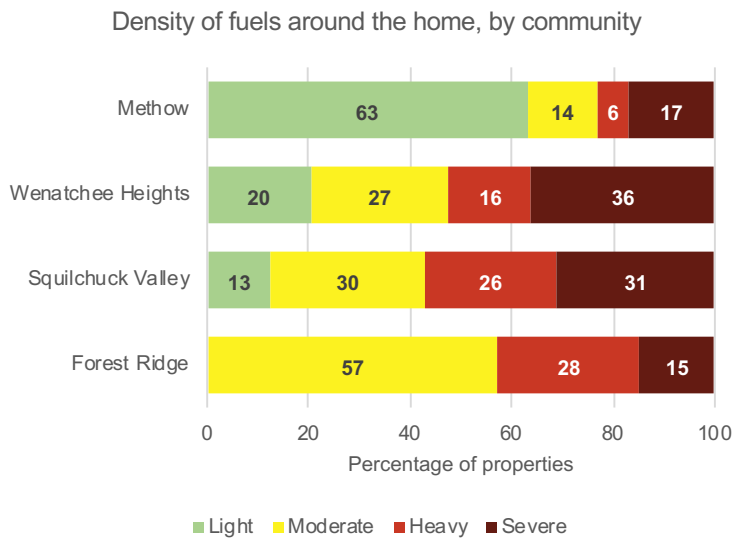


Figure 10—Density of fuels around the home, by community in Squilchuck Drainage, Chelan County, Washington, United States. Density of fuel is evaluated as density of vegetation.

In addition to vegetation, other combustible materials within 30 feet of the home affect the quality of defensible space. Properties are evaluated based on whether they have no combustibles, a single combustible item, or multiple combustible items within 30 feet of the home. While there is some variation on this attribute, it is clear that the majority of properties have multiple combustible items within 30 feet of the home (fig. 11).

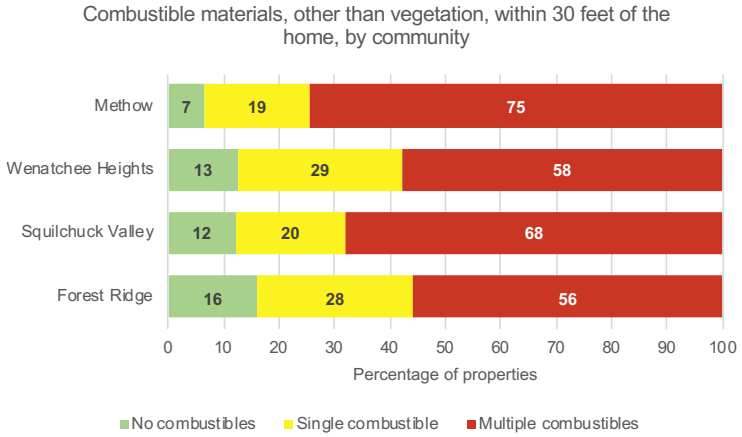


Figure 11—Combustible materials, other than vegetation, within 30 feet of the home, by community in Squilchuck Drainage, Chelan County, Washington, United States.

The final three attributes turn attention to the primary structure on the parcel, the residence. Roofing materials play a significant role in the ignitability of a home during a wildfire, particularly from embers launched in front of the fire. The roofing material is evaluated based on whether the roof is made of combustible (shake shingle) or non-combustible materials. Nearly all the properties in the entire study area have noncombustible roofs (fig. 12). The exception rests in Forest Ridge, where a quarter (25%) of the homes have combustible roofs.

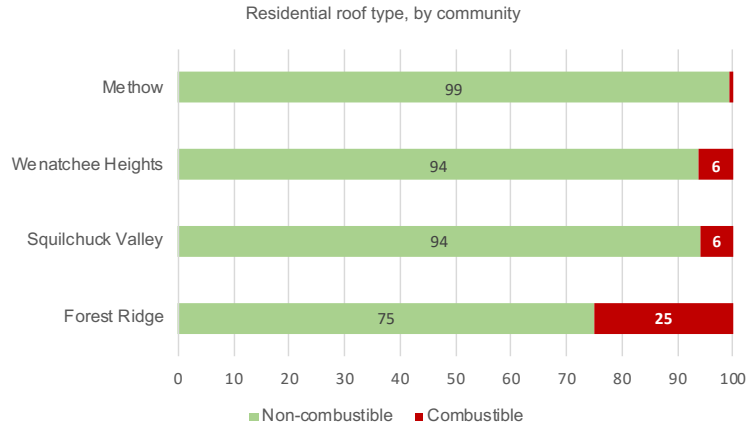


Figure 12—Residential roof type, by community in Squilchuck Drainage, Chelan County, Washington, United States. Roofing material is evaluated based on whether the roof is made of combustible or non-combustible materials.

The building materials and design of a structure's exterior walls also play a role in the ignitability of a home during a wildfire event. With prolonged exposure to convective and radiant heat, even the most fire-resistant materials can fail. Similar to roofing material, siding is categorized as combustible (wood or vinyl siding, log, or heavy timbers) or noncombustible (metal, cement, brick, or stone). In contrast, however, the majority of properties in all communities have combustible siding (fig. 13).

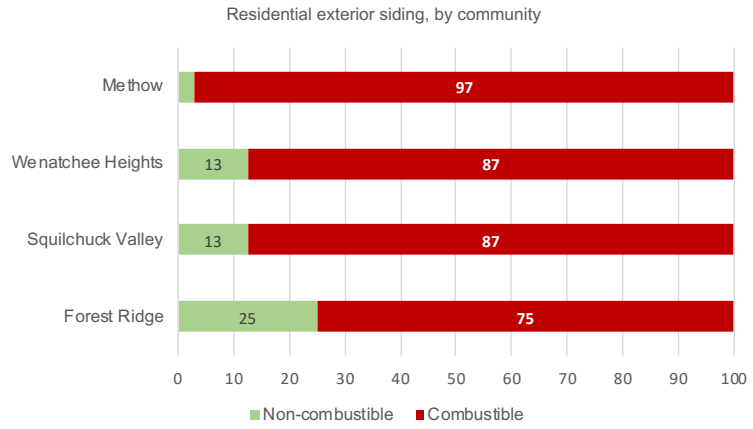


Figure 13—Residential exterior siding type, by community in Squilchuck Drainage, Chelan County, Washington, United States. Siding is categorized as combustible (wood or vinyl siding, log, or heavy timbers) or non-combustible (metal, cement, brick, or stone).

And finally, building materials used for the construction of attachments to the structure (e.g., decks, fences) present a significant ignition vulnerability due to the expansive surfaces that are exposed to wind-driven embers, as well as convective and radiant heat. Properties are evaluated based on whether they have no combustible attachments, a single combustible attachment, or multiple combustible attachments. Most properties in all communities have at least one combustible attachment (fig. 14).

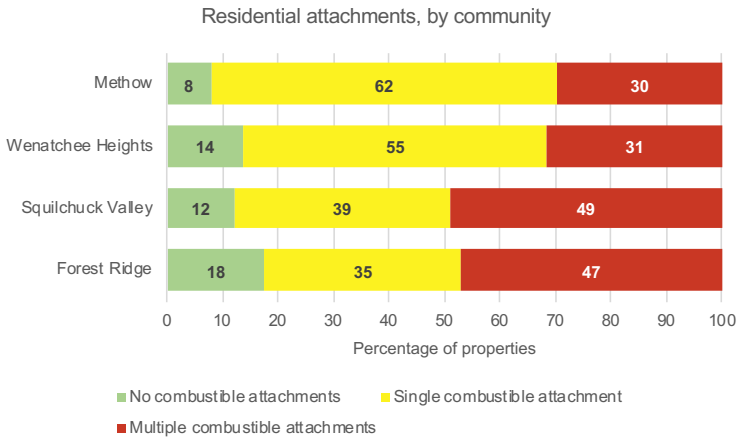


Figure 14—Residential attachments (e.g. decks, fences, balconies), by community in Squilchuck Drainage, Chelan County, Washington, United States. Properties are evaluated based on whether they have no combustible attachments, a single combustible attachment, or multiple combustible attachments.

Self-assessment

Household survey respondents were asked to consider the conditions of their own properties. Regarding non-vegetative combustibles within 30 feet of their home, the majority of survey respondents in every community reported that one or more combustible items within 30 feet of their home (fig. 15).

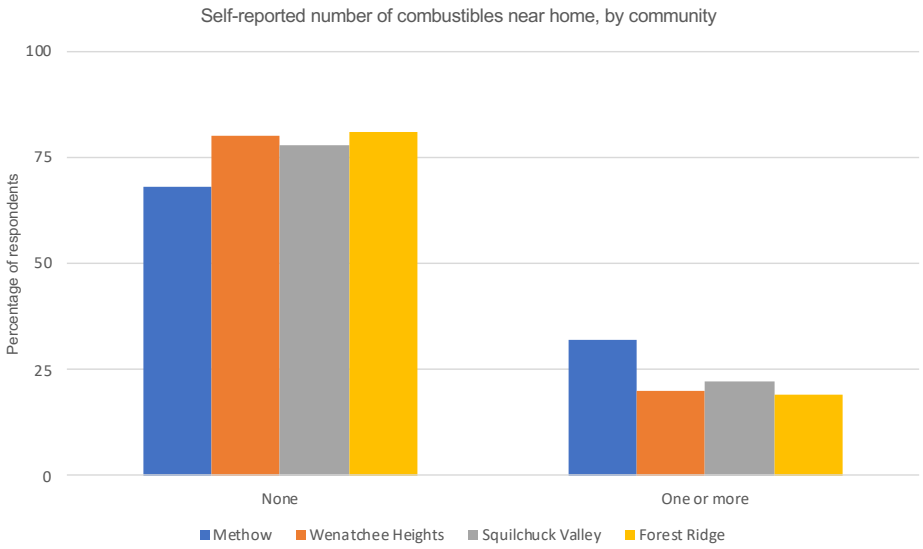


Figure 15—Self-reported number of non-vegetation combustibles within 30 feet of home, by community in Squilchuck Drainage, Chelan County, Washington, United States.

Survey respondents were also asked to describe the conditions of their homes. Most respondents (95%) reported that their homes currently have roofs constructed of noncombustible materials such as asbestos shingles, tiles, or metal. In Forest Ridge, however, nearly 17 percent reported having a combustible roof. There was more variation in the type of exterior building materials across the communities. Overall, 67 percent of respondents reported having combustible siding, ranging from a low of 38 percent in Forest Ridge to a high of 81 percent in Methow (fig. 16).

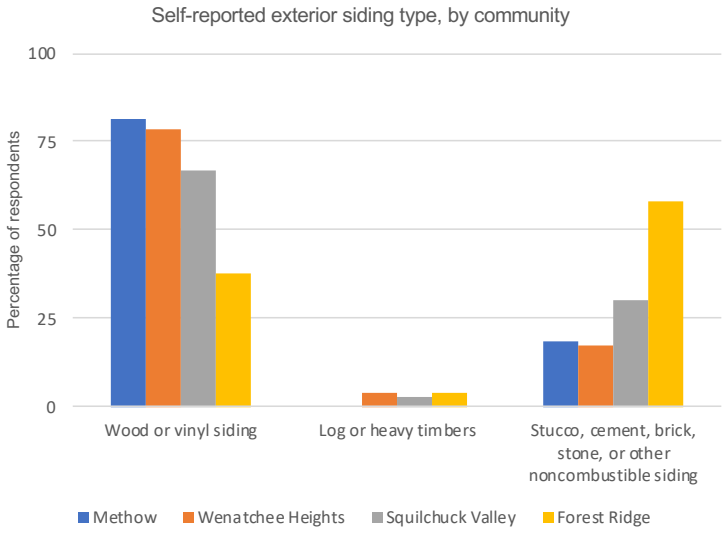


Figure 16—Self-reported residential exterior siding type of residence, by community in Squilchuck Drainage, Chelan County, Washington, United States.

Seventy-three percent of respondents reported that they had at least one attachment such as a fence, balcony, or deck. Among those with such attachments, most decks and balconies (81%) and a third of the fences (33%) were reported to be made of wood. The majority of respondents in all study communities reported having attachments to their homes(fig. 17).

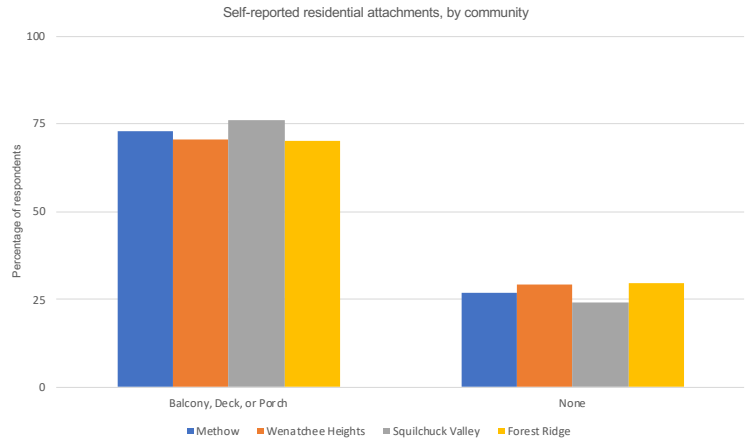


Figure 17—Self-reported residential attachments (e.g. decks, fences, balconies), by community in Squilchuck Drainage, Chelan County, Washington, United States.

And finally, respondents were asked about opportunities for evacuation or egress. Overall, only 40 percent of respondents indicated that if the road they use to access their residence was blocked there was another road available to evacuate. This varied by community, with 54 percent of Methow having alternative options while only 15 percent of Forest Ridge respondents reported having more than one road for evacuation (fig. 18).

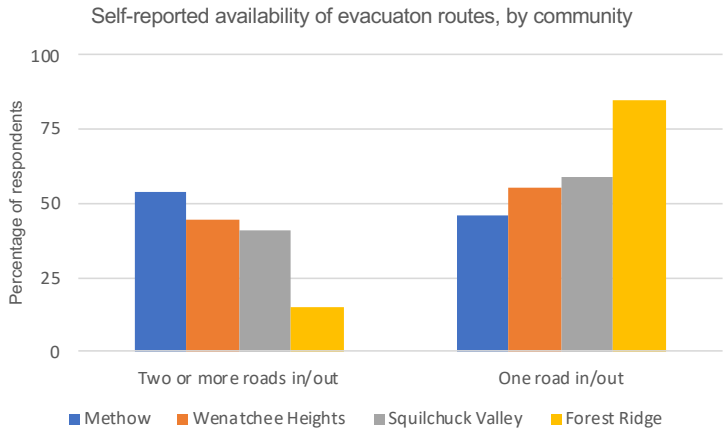


Figure 18—Self-reported availability of evacuation routes, by community in Squilchuck Drainage, Chelan County, Washington, United States. Graph depicts the percentage of properties having one or more roads into and out of a given property.

Social Dimensions of Squilchuck Drainage

Overall, there are no measurable differences across community areas with respect to homeownership; the vast majority of respondents own their property. Among community areas, there are no measurable differences in educational level, employment status, gender, or whether respondents characterize themselves as risk-takers.

Respondents vary by age across the four areas, with Methow having younger residents than the other community areas. The year in which respondents moved into their home and the age of their structure varies across the areas. Residents were newer in Methow and Forest Ridge, compared to Squilchuck Valley and Wenatchee Heights. Likewise, homes were newer on average in Methow and Forest Ridge compared to the other two areas. The oldest homes on average were located in Squilchuck Valley. In addition to living in older homes, the respondents in Wenatchee Heights and Squilchuck Valley have been living in the area longer than respondents in Forest Ridge and Methow.

FROM WHERE MIGHT NOTIONS OF WILDFIRE COME?

Communication About Wildfire

Preferred Modes of Communication

In an increasingly complex world, there are many possible pathways to share information about wildfire risk. Respondents were asked to mark any of the five potential communication modes they preferred. Across the community areas, preferences were similar for four of the five modes of communication (fig. 19). Respondents are most likely to prefer receiving information about wildfire via mailed newsletters (66%). In contrast, only 13 percent of respondents prefer social media (e.g., Facebook and Twitter). Other relatively low ranking modes of communication include community meetings and in-person interactions (both 23%). There is notable variation among the community areas related to preferences for receiving wildfire information via emails. Only 28 percent of Wenatchee Heights respondents indicated a preference for email compared to 63 percent of Forest Ridge respondents.

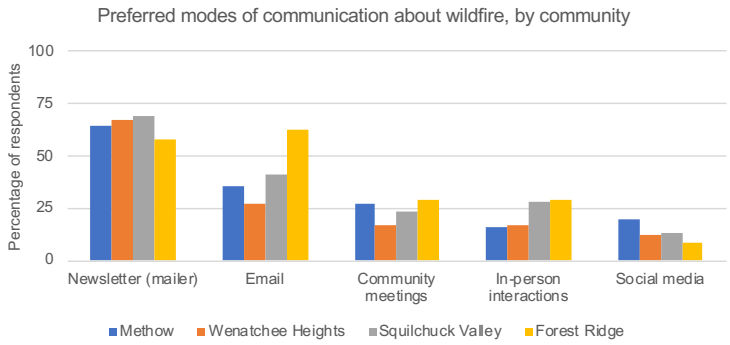


Figure 19—Preferred modes of communication about wildfire, by community in Squilchuck Drainage, Chelan County, Washington, United States.

Sources of Information and Reported Usefulness

Despite the contiguous nature of the Squilchuck Drainage, there are notable differences among the areas regarding where respondents get information related to wildfire risk and the perceived usefulness of information from those sources. There are also notable differences in the use of informal mechanisms for obtaining wildfire risk information (fig. 20).

First, respondents in Forest Ridge are the most likely to have spoken with a neighbor about wildfire risk, while those in Methow are the least likely. It is not entirely surprising to see the high level of neighbor-to-neighbor engagement in Forest Ridge given the social infrastructure of the community, which includes a formal Home Owners Association and participation in the Firewise Communities/USA® Recognition Program. This program requires community participation in order to achieve and maintain the program designation.

Across all community areas, 62 percent of all survey respondents indicated that they had talked with a neighbor about wildfire risk. This activity varies by community areas with a high of 85 percent of Forest Ridge respondents and a low of 45 percent of Methow respondents reporting they had spoken with a neighbor about wildfire risk.

Overall, only 43 percent of respondents reported that they have neighbors who are not taking action to address sources of wildfire risk on their properties. Among those who reported that they have neighbors who are not taking action, the majority (78%) report that those conditions increase their own risk.

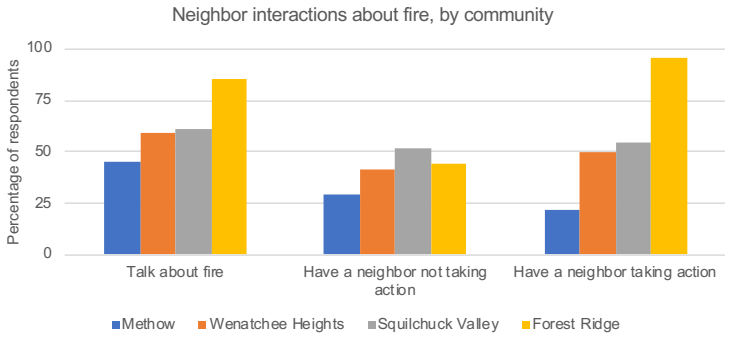


Figure 20—Neighbor interactions about fire, by community in Squilchuck Drainage, Chelan County, Washington, United States.

There are measurable differences across community areas in reporting on neighbors' wildfire risk reduction efforts. Notably, nearly all Forest Ridge respondents (96%) report that their neighbors have taken action to reduce wildfire risk, while Squilchuck Valley and Wenatchee Heights respondents report about half

(54%, 50%, respectively) and only 22 percent of Methow respondents reported that their neighbors have taken action. Also notable is that 55 percent of Methow respondents reported that they didn't know if their neighbors had taken action to reduce risk compared to about a third in Squilchuck Valley and Wenatchee Heights (38%, 34%, respectively) and 4 percent in Forest Ridge.

In turning toward formal sources of wildfire risk information, approximately a quarter to a third of respondents indicate using information from local and state sources (figs. 21a and 21b). Forest Ridge respondents were more likely to report using information from all formal sources other than the media than other communities. Forest Ridge respondents were also more likely than respondents from the other community areas to report that information from the Washington State Department of Natural Resources was Very or Extremely Useful.

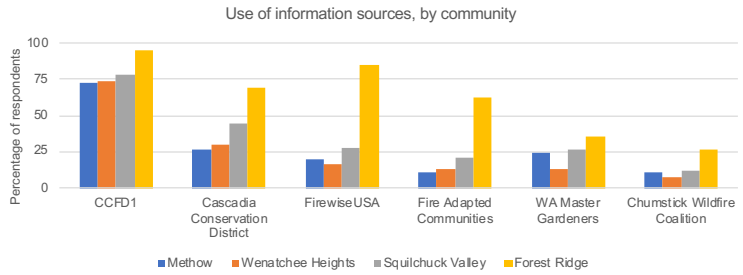


Figure 21a—Use of information sources, by community in Squilchuck Drainage, Chelan County, Washington, United States (1 of 2 figures).

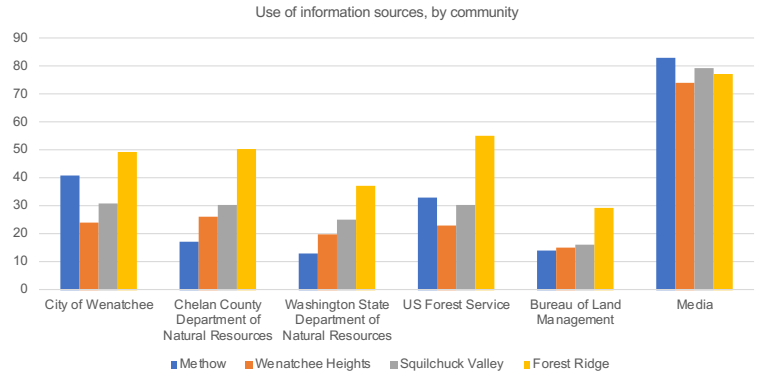


Figure 21b—Use of information sources, by community in Squilchuck Drainage, Chelan County, Washington, United States (2 of 2 figures).

Media, including newspapers, TV, radio, and internet, is a highly used (78%) source of information about wildfire across the community areas; only the CCFD1 was as highly used (79%). Critically, however, respondents who indicated that they had received information from media did not necessarily think it was useful, with 28 percent considering it very or extremely useful.

Other potential sources of information include Federal agencies such as the USDA Forest Service [USFS] and Bureau of Land Management [BLM]). These agencies participate in the broader land and wildland fire management but may not engage residents directly. There is evidence of that arrangement, with only 31 percent of all respondents indicating they had received information from the USFS and 18 percent indicating they had received information from the BLM. In the case of Forest Ridge, a significantly higher portion of respondents compared to the other community areas indicated that they had received information from the USFS. This is likely due to the fact that the USFS manages forested land directly adjacent to this community.

Wildfire Experience

Overall, respondents indicate little experience with evacuations due to wildfire. There are, however, measurable differences in having experienced an evacuation due to wildfire. Very few Methow (4%) or Wenatchee Heights (7%) respondents have ever evacuated their current residence due to wildfire, while nearly 65 percent of Forest Ridge and nearly 19 percent of Squilchuck Valley residents have.

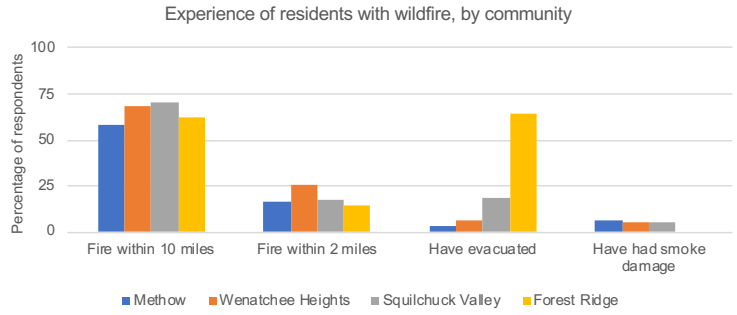


Figure 22—Experience of residents with wildfire, by community in Squilchuck Drainage, Chelan County, Washington, United States.

The low level of direct evacuation experiences in Methow and Squilchuck Valley does not mean that survey respondents have not had wildfire experience. In fact, most respondents have had a wildfire experience wherein the fire came within 10 miles of their current residence (fig. 22). This reporting is not surprising given ongoing wildfire activity in the area.

Further, some respondents report smoke damage, though it constitutes a relatively rare experience (4%). Rarer is direct damage to a residence, with only 1 percent reporting this occurrence. And finally, none of the survey respondents in the community areas reported having a wildfire destroy their residence.

Notions of Hazard and Response

While it is often an anecdote that WUI residents may simply be unaware of wildfire risk in their area, the survey data indicate that most residents (86%) report they were "somewhat" (34%) or "very" (52%) aware of wildfire risk when they bought or first rented their current residence. Just over 10 percent in each community area report that they were not aware of wildfire risk when they moved into their current residence.

Insights into residents' beliefs about wildfire can help shed light on their orientation to the risks they face and their actions. Respondents were asked to indicate the extent to which they agreed with a series of wildfire statements. Reported here is the portion of respondents who indicated they "agree" or "strongly agree" with the following statements.

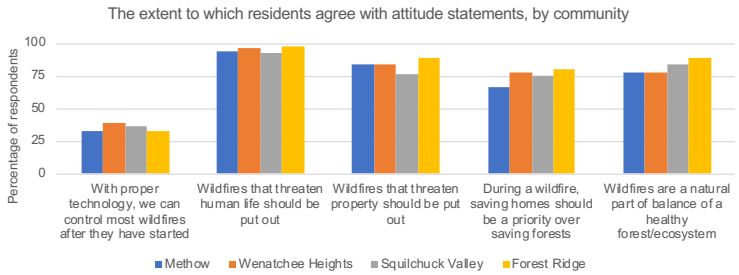


Figure 23a—The extent to which residents agree with attitude statements, by community in Squilchuck Drainage, Chelan County, Washington, United States (1 of 2 figures).

While results are relatively consistent across communities, there are two notable exceptions. First, we see that the percent agreeing with the statement "Wildfire that threaten property should be put out" ranges from 77 percent of Squilchuck Valley residents at the low end to 89 percent of Forest Ridge residents at the high end (fig. 23a). More notably, perhaps, agreement with the statement "Your property is at risk of wildfire" ranges from 30 percent in Methow to 71 percent in Forest Ridge (fig. 23b).

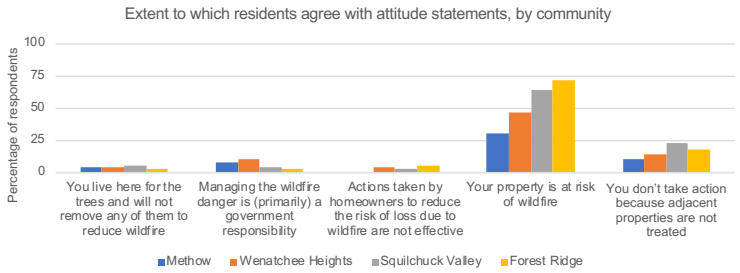


Figure 23b—The extent to which residents agree with attitude statements, by community in Squilchuck Drainage, Chelan County, Washington, United States (2 of 2 figures).

Respondents were asked to evaluate the chances that there will be a wildfire on their property this year and, given a wildfire on their property, the chances that the fire would destroy or severely damage their residence. Less than 10 percent of any community reported a greater than 50 percent chance that a wildfire would occur on their property. A fifth (20%) of residents in Squilchuck Valley and over a third (37%) of Forest Ridge thought there was a greater than 50 percent chance of losing their home if a wildfire was on their property (fig. 24).

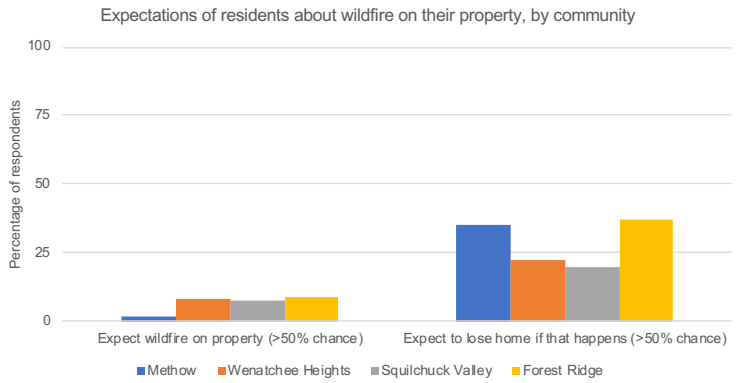


Figure 24—Expectations of residents about wildfire on their property, by community in Squilchuck Drainage, Chelan County, Washington, United States.

In order to gain insight into how residents think wildfire might arrive at their property, respondents were asked a series of questions about how a fire might cross landownership boundaries. In every community, respondents thought it most likely wildfire would spread to their property from public or large undeveloped private lands than from their neighborhood. While there are trends, there aren't any significant differences among the community areas.

The survey asked two batteries of questions about what residents think might happen in the event of a wildfire (fig. 25a). While there is a great deal of variation across the questions, with 54 percent of respondents thinking that it was "Very" or "Extremely" likely that the fire department would save their home and only 11 percent thinking that their home would be destroyed, responses to the questions are relatively consistent across the communities. Fewer than 50 percent of respondents believe that their trees or landscape would burn in the event of a wildfire (fig. 25b). Further, respondents indicate a low likelihood that they would suffer loss to

business income, that their neighbors' homes would be destroyed, or that their community water supply would be threatened.

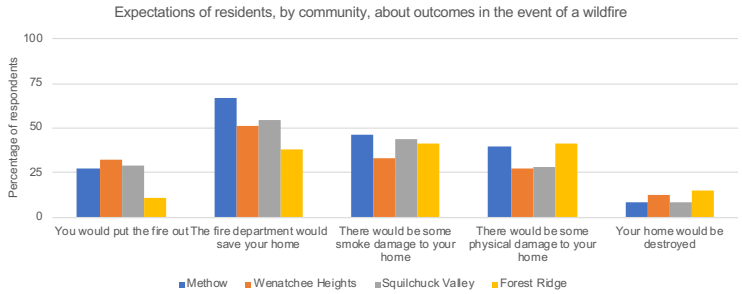


Figure 25a—Expectations of residents, by community, about outcomes in event of a wildfire in Squilchuck Drainage, Chelan County, Washington, United States (1 of 3 figures).

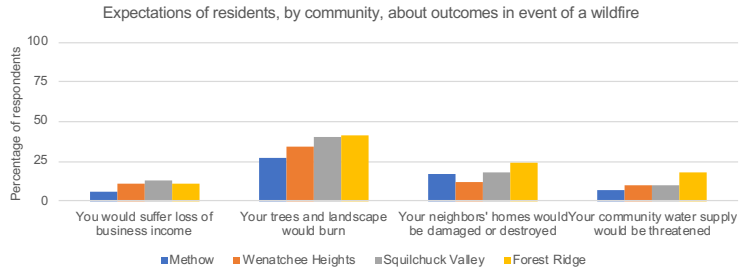


Figure 25b—Expectations of residents, by community, about outcomes in event of a wildfire in Squilchuck Drainage, Chelan County, Washington, United States (2 of 3 figures).

Relatedly, respondents were asked about their understanding of the resources available to respond to wildfires and what they think will happen in the event of a wildfire (fig. 25c). Overall, there were high levels of trust that local agencies and Federal responders will make good decisions during the wildfire and that local firefighters will have sufficient resources to protect homes. Over half of the respondents believe that local firefighters will have sufficient resources to keep a wildfire from spreading. And while, overall, 73 percent of respondents think local firefighters will have sufficient resources to protect threatened homes, there are measurable differences across the community areas. Eighty-eight percent of Methow respondents indicated that they thought that such resources would be sufficient while only 66 percent of Wenatchee Heights and 70 percent of Squilchuck Valley and Forest Ridge respondents thought the same. Notably, 91 percent of respondents across all the community areas do NOT think that firefighters should put their lives at risk to protect the respondents' homes.

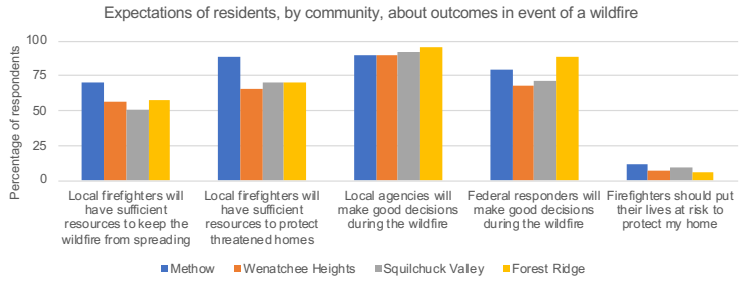


Figure 25c—Expectations of residents, by community, about outcomes in event of a wildfire in Squilchuck Drainage, Chelan County, Washington, United States (3 of 3 figures).

WHAT ARE THEY DOING ABOUT WILDFIRE?

Wildfire Preparedness

Being prepared for a wildfire event constitutes an important set of steps that will allow a resident to safely evacuate their residence and ensure that responders have access to their community and structure. A critical component of these efforts entails the development of an evacuation plan.

Overall, 76 percent of respondents report that they have some kind of evacuation plan (fig. 26). Most commonly (63%), respondents report having an evacuation plan for the people in their household. Forty-five percent report a plan for their pets and 6 percent for their livestock. There is a measurable difference across the community areas in evacuation planning. Of note, a high portion of Forest Ridge respondents (81%) but less than half (48%) of Methow respondents report having an evacuation plan.

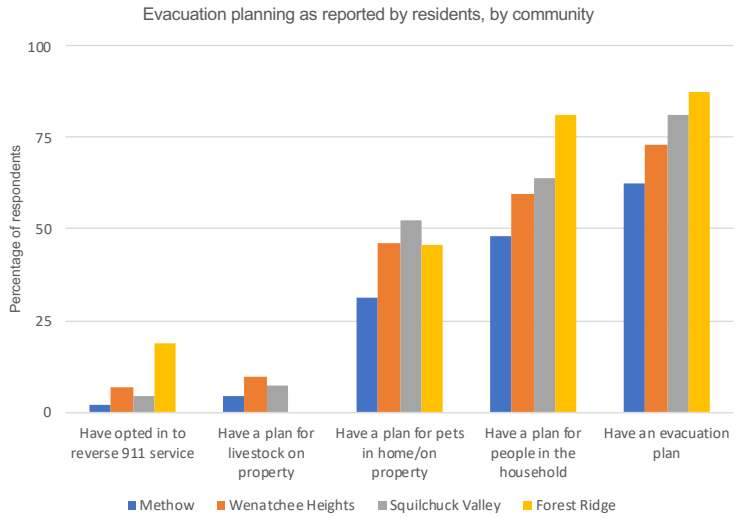


Figure 26—Evacuation planning as reported by residents, by community in Squilchuck Drainage, Chelan County, Washington, United States.

When asked about experience with the insurance industry, most respondents report little engagement with their insurance company about wildfire (fig. 27). Overall, 22 percent report having received information from their insurance company about wildfire. Seven percent of respondents from all the community areas report that they had a cancellation or refusal to renew a policy. Of note, Forest Ridge respondents were much more likely to report this kind of experience (17%). There are notable differences across community areas in respondents reporting that they pay a higher premium due to wildfire risk. Thirty-eight percent of Forest Ridge respondents report this experience compared to lower percentages of respondents in Squilchuck Valley (13%) and Wenatchee Heights (10%), with only 4 percent of Methow respondents having reported their insurance company canceling or refusing to renew a policy.

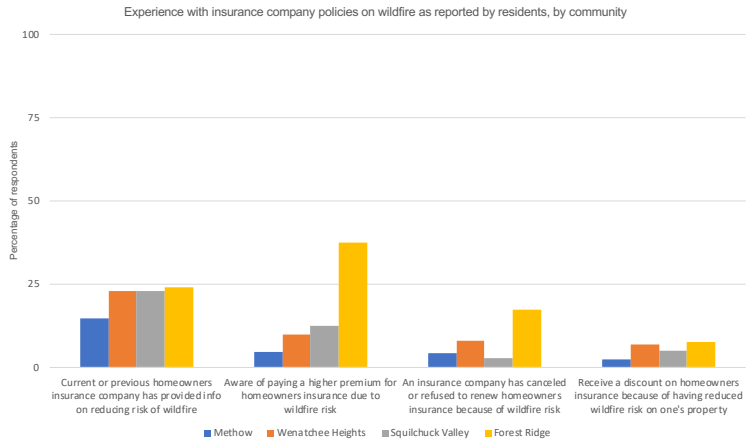


Figure 27—Experience with insurance company policies on wildfire as reported by residents, by community of Squilchuck Drainage, Chelan County, Washington, United States.

Mitigation

Risk reduction activities on private land are a cornerstone of wildfire risk management in the WUI. Respondents were asked to report whether they had undertaken any of six basic activities that directly or indirectly reduce their risk (fig. 28). Most respondents (89% overall) report having reduced vegetation on their property while fewer respondents report having made their residence more fire resistant (57%). There are significant differences across communities for both of these activities, with Forest Ridge reporting the highest levels of activities and Methow reporting the lowest levels of activities.

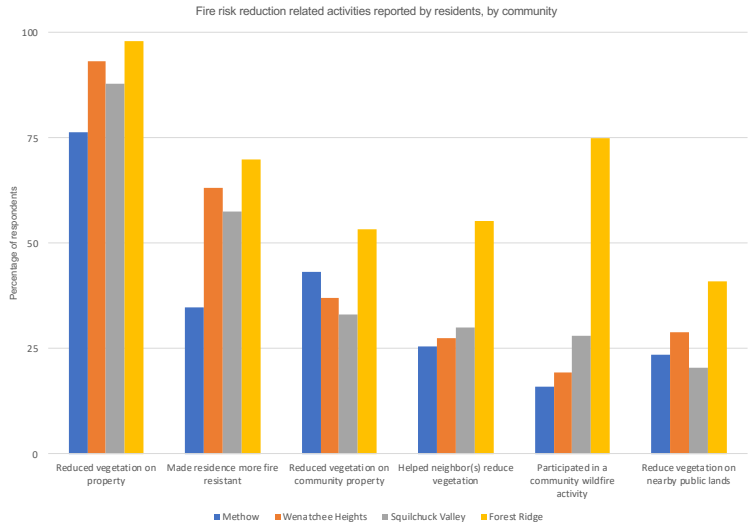


Figure 28—Fire risk reduction related activities reported by residents, by community in Squilchuck Drainage, Chelan County, Washington, United States.

When asked about community activities, a third of respondents report helping neighbors reduce vegetation on their properties and nearly 40 percent report having helped to reduce vegetation on community property. Just over a quarter (26%) report having helped with similar activities on public lands. When asked about participation in a more general community wildfire activity, only 32 percent report participation, but there is significant variation across community areas. It is not surprising that Forest Ridge, which is a Firewise USA® community, has the highest portion of respondents (75%) reporting this kind of participation.

Survey respondents were asked about the acceptability of various approaches to reducing wildfire risk on public lands (fig. 29). Overall, respondents indicate high levels of acceptability for all four approaches described, indicating a broad social license to implement these activities. Notable, however, is the measurably lower acceptability of "removing trees and reducing other vegetation" among Methow respondents. Methow respondents consistently reported the lowest acceptance for each approach.

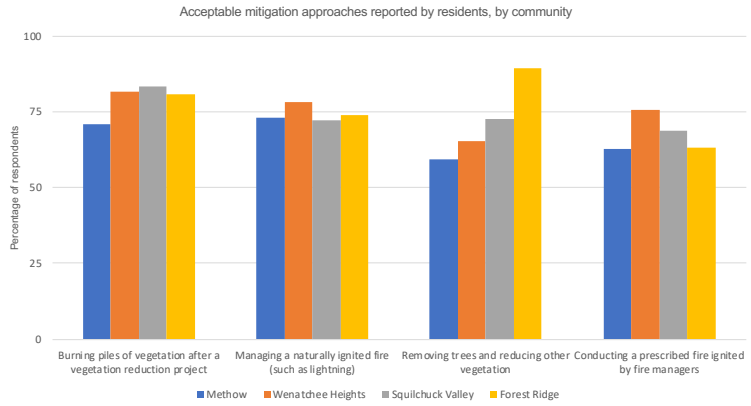


Figure 29—Acceptable mitigation approaches reported by residents, by community in Squilchuck Drainage, Chelan County, Washington, United States.

Barriers and Incentives

Taking action to reduce risk may be influenced by a number of potential barriers and may be supported through incentives. Respondents were asked about barriers to mitigation (fig. 30). The top three barriers are the physical difficulty of doing the work (42%), the financial expense/cost (36%), and the time required to do the work (35%). Across all three of these barriers, more respondents in Squilchuck Valley reported these as barriers than in the other community areas.

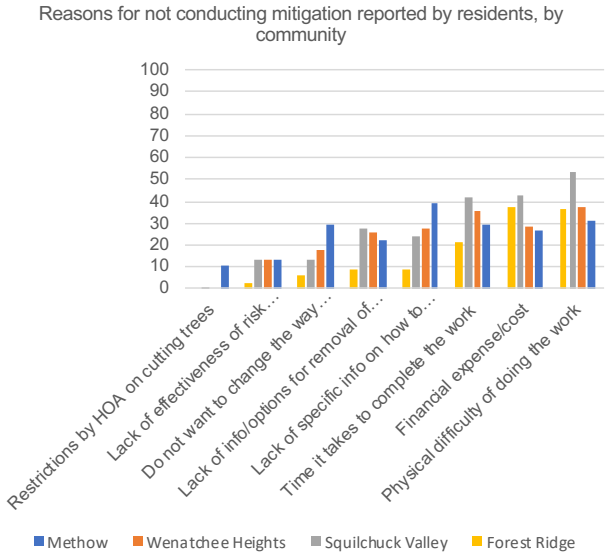


Figure 30—Reasons for not conducting mitigation reported by residents, by community in Squilchuck Drainage, Chelan County, Washington, United States.

When asked about possible incentives to undertake activities to reduce wildfire risk, there is a slightly different story (fig. 31). First, the provision of specific information about what needs to be done is the incentive

most frequently selected (72%), with no measurable differences across community areas. In contrast, across community areas 66 percent report provision of help to do the work, with a high of 78 percent in Forest Ridge and a low of 52 percent in Methow. A similar pattern emerges in relation to provision of financial assistance as an incentive. Overall, 60 percent of respondents report that such support would encourage them to undertake activities to reduce wildfire risk, with a high of 76 percent in Forest Ridge and a low of 49 percent in Methow.

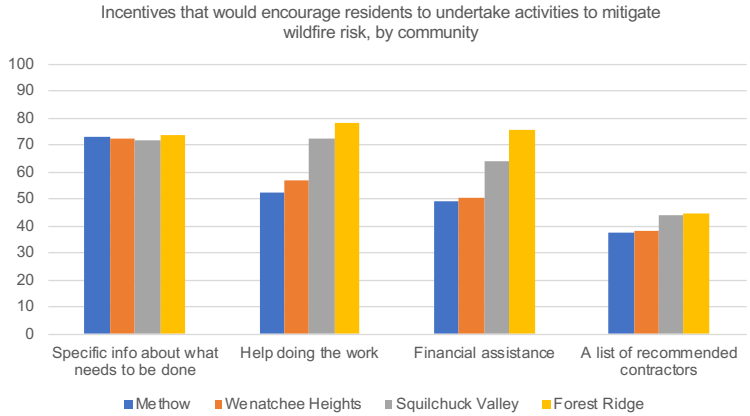


Figure 31—Incentives that would encourage residents to undertake activities to mitigate wildfire risk as reported by residents, by community in Squilchuck Drainage, Chelan County, Washington, United States.

CONCLUSION

The Squilchuck Drainage is a relatively small geographic space that contains notable social and biophysical variation. Forest Ridge is notable for being an active and connected community. The investment of engaged residents in Forest Ridge has created numerous opportunities for all of its residents to learn about and take action to reduce the risk of wildfire. This high-capacity community still faces high risk levels, however, and will likely require ongoing support as it seeks to adapt to wildfire. Methow is a notably different community. Its relatively dense layout makes the conditions of the homes and the extent of their defensible space of particular importance, as it is at increased risk of house-to-house transmission. While Methow has not taken the formal steps toward fire adaptation taken by Forest Ridge, nearly half of Methow respondents indicated that they had talked with a neighbor about wildfire, indicating the potential to harness informal social interactions to help spur increased activity.

The WiRē RA highlights many opportunities for increased wildfire mitigation activities in all communities, including actions that are relatively easy. For example, changing the extent to which properties comply with addressing recommendations constitutes a low-cost, low-effort step to improve the capacity of local responders. Education efforts that promote this activity may establish initial contact with new residents who may subsequently seek wildfire risk information. Likewise, the WiRē RA documented a high rate of combustible materials within 30 feet of homes. Most of the items documented, woodpiles, outdoor furniture, compost bins, and yard waste piles, are mobile; management of these items constitute a low-cost, low-effort action that can change wildfire risk on properties.

The WiRē RA also documented a high portion of properties with combustible attachments (e.g. decks, balconies, fences). Whether a property has one or multiple combustible attachments, techniques to reduce ignition are particularly important in communities in which most properties have a combustible attachment. Screening under porches, keeping leaf and pine litter clear, and installing flashing where decks meet homes are all low-cost actions that help reduce ignition potential. Further, novel techniques, such as installing short

lengths of metal fencing between a structure a combustible fence, can reduce transmission of fire to the structure.

The Squilchuck Drainage is noteworthy for its limited alternative routes for evacuation, which become less available as one travels up the drainage toward Forest Ridge. While the development of alternative opportunities for egress likely falls in the realm of public planning processes, identification of limited egress opportunities may highlight the importance of engaging residents in preparedness planning so that they are more prepared to evacuate when they are called to do so. Expansion of Ready, Set, Go! activities and enrollment into the reverse 911 service in the communities with limited egress may be particularly useful.

APPENDIX I. WIRē RAPID ASSESSMENT

WiRē Assessment: Summary of the physical conditions of the parcels using the WiRē Rapid Assessment (RA)

		Attribute category	WiRē Attribute Score	Percent of Households (N=652)
General/address	ADDRESS VISIBILITY (ra_wgt_address)*	Posted, blue reflective, visible from road	0	19.33%
		Posted and visible from the road	5	62.42%
		Not posted or not visible from the road	10	18.25%
Access	INGRESS/EGRESS (ra_wgt_roads)	Two or more roads in/out	0	43.71%
		One road in/out	50	56.29%
	DRIVEWAY LENGTH (ra_wgt_drivewaylen)	Less than 150 ft	0	67.94%
		Greater than 150' with turnaround	10	14.26%
		Greater than 150' without turnaround	20	17.79%
	DRIVEWAY CLEARANCE (ra_wgt_drivewayclr)	Greater than 14'	0	76.99%
		Less than 14'	20	23.01%
Structure	ROOF (ra_wgt_roof)	Non-combustible	0	93.40%
		Combustible	300	6.60%
	SIDING (ra_wgt_siding)	Non-combustible	0	11.50%
		Combustible	100	88.50%
	COMBUSTIBLE ATTACHMENTS (ra_wgt_deck)	None - no combustible attachments	0	12.12%
		Single combustible attachment (e.g., deck)	20	49.23%
		Multiple combustible attachments	50	38.65%
Defensible Space	COMBUSTIBLE MATERIALS WITHIN 30FT (ra_wgt_combustibles)	No combustible materials w/in 30'	0	11.35%
		Single combustible item w/in 30' (e.g., propane	20	23.31%
		Multiple combustible items w/in 30'	50	65.34%
	ADJACENT FUELS (ra_wgt_adjfuels)	Light vegetation within 100'	35	6.29%
		Moderate vegetation within 100'	65	29.45%
		Heavy vegetation within 100'	100	64.26%
	DEFENSIBLE SPACE (ra_wgt_dspace)	Light	0	26.38%
		Moderate	45	28.07%
		Heavy	100	18.25%
		Severe	150	27.30%
Topography	TOPOGRAPHY SETBACK ra_wgt_slope	Greater than 100'	0	32.98%
		Between 51' and 100'	90	13.04%
		Less than 50'	150	53.99%
Overall risk score	ADJECTIVE RISK RATING (ra_wgt_rating)	Low	35 - 225	4.45%
		Moderate	226 - 365	25.77%
		High	366 - 500	26.23%
		Very High	501 - 665	36.04%
		Extreme	666 - 1000	7.52%

APPENDIX II. WIRē RISK ASSESSMENT SIDEWALK SURVEY MEMORANDUM

The Wildfire Research Center
WiRē

Memorandum

Date:	September 23, 2019
To:	Chief Brian Brett and Jon Riley, CCFD1
From:	Carolyn Wagner and Chris Barth, WiRē
CC:	James Meldrum, Patty Champ, Hannah Brenkert-Smith, Colleen Donovan; WiRē
Subject:	Rapid Wildfire Risk Assessment Data Scoring

In this memorandum, we provide a summary of our final scoring approach for the Rapid Wildfire Risk Assessment (RA)/Sidewalk Survey. We include a description of the final mapping of the RA scoring originally developed for Chelan County Fire District 1 (CCFD1) to the final community-specific WiRē scoring. The purpose of this memorandum is to document the scoring approach and provide CCFD1 with a comprehensive explanation of the steps and decisions.

1 Overall Risk Rating

In 2018, CCFD1 assessed parcels for attributes that affect a home's vulnerability and wildfire risk. The WiRē Team worked with CCFD1 to assign each RA attribute a weighted score. These attributes relate to the structure's wildfire-vulnerability as well as response considerations, such as firefighter access and evacuation potential. The weights are based on the WiRē Approach and modified to reflect CCFD1's specific goals.

The overall rating from the RA is a categorized result of the weighted sum of the attribute scores (the risk score). The risk rating categories, or "bins", are a relative measure of risk within a community and are determined using professional judgement of the WiRē Team and incorporating community-specific goals of CCFD1. The final risk ratings are presented in Table 1.

Table 1. Overall Rating

	Minimum	Maximum
Low	35	225
Moderate	226	365
High	366	500
Very High	501	665
Extreme	666	1000

In Figure 1, we present a histogram of the risk scores. This histogram provides insights on the distribution of risk scores within the CCFD1 community. We used this histogram to help determine the risk rating categories in Table 1. Figure 2 provides the distribution of households that fall into each risk category, and Figure 3 provides the histogram of risk scores by parsed community.

Figure 1. Histogram of risk scores with adjective risk categories

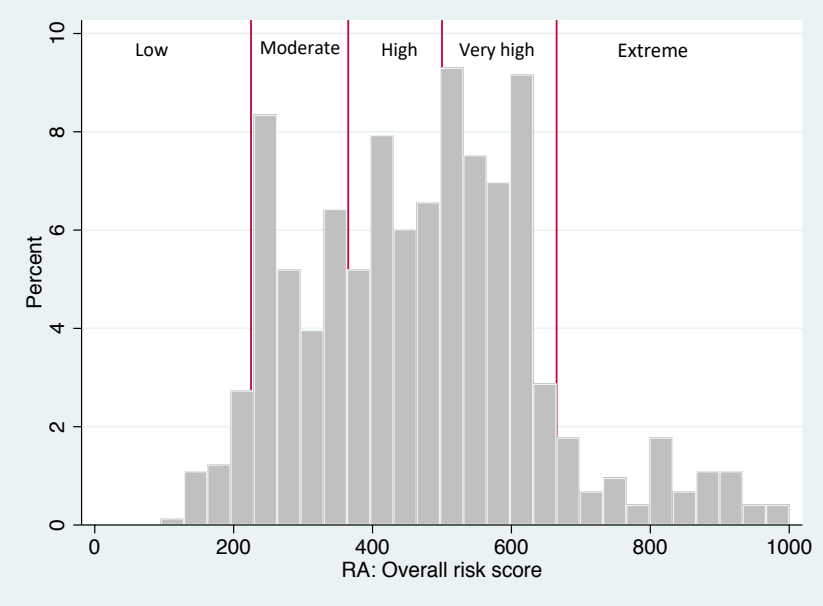


Figure 2. Percentage of households within each adjective risk category

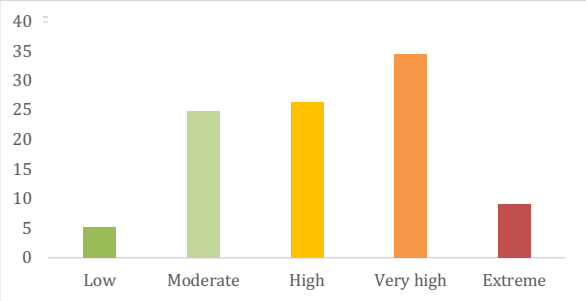


Figure 3. Histogram of risk scores by parsed community

2 Distribution of scoring weights across risk elements

In Table 2 we present the RA attributes, the percentage of the risk rating for which each attribute is comprised, and the assigned score for each observed condition. The risk score is a 1,000-point scale, thus the sum of the maximum score across all risk elements is 1,000.

Table 2. Rapid Wildfire Risk Assessment

Attribute	Percentage of risk rating	Observed condition	Score
Slope/distance to dangerous topography	15%	Greater than 100'	0
		Between 51' and 100'	90
		Less than 50'	150
Adjacent fuels	10%	Light vegetation within 100'	35
		Moderate vegetation within 100'	65
		Dense vegetation within 100'	100
Defensible Space	15%	Light	0
		Moderate	45
		Heavy	100
		Severe	150
Other combustibles	5%	No combustible materials within 30'	0
		Single combustible item within 30'	20
		Multiple combustible items within 30'	50
Roofing material	30%	Non-Combustible	0
		Combustible	300
Building exterior	10%	Non-Combustible	0
		Combustible	100
Combustible attachments	5%	No combustible attachments	0
		Single combustible attachment (e.g., deck, fence, awning)	20
		Multiple combustible attachments	50
Address visibility	1%	Posted, blue reflective, and visible from the road	0
		Posted and visible from the road	5
		Not posted or not visible from the road	10
Ingress/Egress	5%	Two or more roads in/out	0
		One road in/out	50
Driveway clearance	2%	Greater than 14'	0
		Less than 14'	20
Driveway length	2%	Less than 150'	0
		Greater than 150' with turnaround	10
		Greater than 150' without turnaround	20

3 Summary of weight-development process

CCFD1 originally developed their own scores for each risk element. Through the course of the WiRē process, the WiRē Team worked with CCFD1 to refine these scores and the associated weights of each risk element to be consistent with the WiRē Approach and incorporate CCFD1-specific priorities. Specifically, we used the observed conditions provided in the RA dataset and applied the weights and scores summarized in Table 2. This process is comprised of two steps:

1) We mapped the attribute information provided in the CCFD1 RA dataset into the risk attributes typically included in the WiRē Approach.
2) We assigned adjusted risk scores to each attribute category that reflect CCFD1-specific priorities.

In the remainder of this memorandum, we describe each of these steps in details.

3.1 Assigning WiRē Scores

We used the categorical information contained with the RA dataset and assigned WiRē scores. The attributes fell into three categories: attributes mapped with consistent categories, attributes mapped into relative categories (e.g., low, medium, high), and attributes mapped using professional judgment. The remainder of this section describes each.

3.1.1 Attributes mapped with consistent categories.

Three of the attribute variables map directly from the original CCFD1 categories to the typical WiRē categories. We present the mapping in Table 3.

Table 3. Mapping summary of attributes with consistent categories

Attribute	Categories	Original CCFD1 points	Typical WiRē points	Final CCFD1 points
Ingress/Egress	Two or more roads in/out	0	0	0
	One road in/out	50	10	50
Driveway length	Less than 150’	0	0	0
	Greater than 150’ w/ turnaround	10	3	10
	Greater than 150’ w/o turnaround	50	5	20
Roofing material	Non-combustible	0	0	0
	Combustible	200	200	300

3.1.2 Attributes mapped using relative risk.

Five attributes had different risk categories but could be mapped using relative risk. We present this mapping in Table 4.

Table 4. Summary of attribute mapping using relative risk

Attribute	Original CCFD1		WiRē		Final CCFD1
	Category	***Points***	***Category***	***Points***	***Points***
Address visibility	Posted, blue reflective and visible from road	0	Posted and reflective	0	0
	Posted and visible from road	10	Posted, not reflective	5	5
	Posted, not visible from road	20	Not posted or not visible from road	15	10
	Not posted	30			
Driveway clearance	Greater than 14’	0	More than 26’	0	0
			Between 20 and 26’	3	
	Less than 14’	30	Less than 20’	5	20
Building exterior	Non-combustible	0	Stucco, cement, brick, stone, or other non-combustible siding	0	0
			Log or heavy timbers	20	
	Combustible	50	Wood or vinyl siding	60	100
Other combustibles (e.g., lumber, firewood, propane tank)	None, no combustibles within 30’	0	None, more than 30’ from residence	0	0
	Single combustible item	20	Between 10 and 30’ from residence	10	20
	Multiple combustible items	50	Less than 10’ from residence	30	50
Combustible attachments	None, no combustible attachments	0	No combustible attachments	0	0
	Single deck, fence, or other combustible structure	20	Non-combustible attachment	20	20
	Multiple deck, fence, or other combustible attachments	50	Combustible attachment(s)	50	50

3.1.3 Attributes mapped using professional judgement

Two of the attributes, slope/topography and vegetation, do not map directly or with an obvious relationship. Thus, we applied professional judgement and subject matter expertise to map the attribute scores based on the information provided (i.e., the categorical variables).

Topography/slope

We mapped the categorical slope information contained in the CCFD1 variable to the WiRē scoring by summing the two WiRē scores and assigning the combined WiRē score to the relative risk category in the CCFD1 data. We summarize the mapping in Tables 5 and 6.

Table 5. WiRē slope attributes and scores

Attribute	Description	Categories	Points
Slope	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 the residence?	Gentle, < 20%	0
		Moderate, between 20% and 40%	20
		Steep, > 45%	40
Distance to dangerous topography	What is the closest distance from the residence to a ridge, steep drainage, or narrow canyon?	More than 150'	0
		Between 50 and 100'	30
		Less than 50'	75

Table 6. Summary of Slope mapping

Attribute	Original CCFD1 Description	Category	Original CCFD1 points	Assigned WiRē points	Final CCFD1 category	Final CCFD1 points
Slope	The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your CCFD1 County residence from the closest steep slope (30 degrees or greater)?	Flat (> 100')	0	0	Greater than 100'	0
		76 to 100'	50	70	Between 51' and 100'	90
		51 to 75'	50	70		90
		26 to 50'	75	115	Less than 50'	150
		0 to 25'	100	115		150

Vegetation

WiRē has two attributes/variables that characterize risk associated with a property's vegetation: adjacent fuels (3 risk levels/categories) and defensible space (4 risk levels/categories). CCFD1 has 3 vegetation variables (5 levels each) and one debris variable (4 levels). We mapped these as follows:

Table 7. Summary of Adjacent Fuels mapping

Original attribute description	Original CCFD1		WiRē		Final CCFD1
	Category	***Points***	***Category***	***Points***	***Points***
Which is the best description of the vegetation within 100' of your CCFD1 County residence?	None - Irrigated lawn (no other vegetation)	0	Light	25	35
	Light - Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	15			
	Moderate - flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	30	Moderate	50	65
	Heavy - Clusters of trees, shrubs, and/or natural grasses	45	Dense	75	100
	Severe - Continuous dense trees, shrubs, and/or natural grasses	60			

Defensible space is mapped using a mix of vegetation variables (vegetation within 100ft, 30ft, 5ft) and the dry vegetation variable. The final categories are summarized as follows:

- Default = 0
- if a record has heavy-severe vegetation within 100ft, *or* moderate debris w/in 30ft, it gets bumped to a WiRē score of 50 and final score of 75.
- if a record has heavy-severe vegetation within 30ft, *and* light or moderate debris w/in 30ft, it gets bumped to a WiRē score of 75 and final score of 100.
- if a record has heavy-severe vegetation within 5ft, *or* heavy debris w/in 30ft[1], it gets bumped to a WiRē score of 100 and final score of 150.

[1] Following the general WiRē rule for dealing with missing data, records with missing data are assigned the highest score in the category. There are a high percentage of records missing the information for dry vegetation, "What category best describes the amount of dry vegetative material (debris) around your home?". Specifically, there are 119 records (16%) recorded as "Unknown – not observed", and an additional 10 (1.4%) that are blank. Since we assign these records the riskiest score, these records are assigned the HEAVY category for dry vegetation, which bumps them into the riskiest category for defensible space with a score of 150.

In Table 8, we present a summary of the mapping for each original attribute description and observed condition. The conditions that drive the score moving into a more severe category are in bold.

Table 8: Summary of Defensible Space mapping

Original attribute description	*Category (observed condition)*	*Final Category*	*WiRē Points*	*Final Points*
Vegetation description within 5’	None, light, moderate	Light: Light or moderate vegetation **within 100’**, and light debris within 30’	0	0
Vegetation description b/w 6 and 30’	None, light, moderate			
Vegetation description b/w 31 and 100’	None, light, moderate			
Amount of dry vegetation or fine debris within 30’	None, light			
Vegetation description within 5’	None, light, moderate	Moderate: dense vegetation **between 31 and 100’**; and/or moderate debris	30	45
Vegetation description b/w 6 and 30’	None, light, moderate			
Vegetation description b/w 31 and 100’	**Heavy or severe**			
Amount of dry vegetation or fine debris within 30’	None, light, moderate			
Vegetation description within 5’	None, light, moderate	Heavy: dense vegetation **between 6 and 30’**; and light to moderate debris	75	100
Vegetation description b/w 6 and 30’	**Heavy or severe**			
Vegetation description b/w 31 and 100’	None, light, moderate, heavy, severe			
Amount of dry vegetation or fine debris within 30’	None, light, moderate			
Vegetation description within 5’	**Heavy or severe** (or light/moderate if dry vegetation is heavy)	Severe: dense vegetation **within 5’**; or **heavy dry vegetation**	100	150
Vegetation description b/w 6 and 30’	None, light, moderate, heavy, severe			
Vegetation description b/w 31 and 100’	None, light, moderate, heavy, severe			
Amount of dry vegetation or fine debris within 30’	**Heavy** (or light/moderate if vegetation description within 5’ is heavy or severe)			

4 Assigning Community-Specific Attribute Weights

Once we assigned the typical WiRē scores to the CCFD1 attributes, we adjusted those scores to reflect CCFD1-specific priorities. For example, one of CCFD1's top priorities is to ensure safe evacuation. To reflect this goal in our RA scoring, we increase the weight of the community access attribute from WiRē's typical 1.5% to 5%. We summarize the final CCFD1 weights in Figure 4 and Table 9.

Figure 4. Comparison of attribute weights

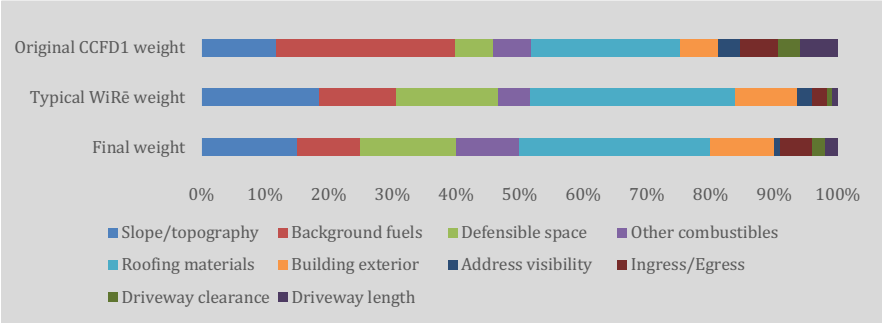


Table 9. Comparison of attribute weights

	Original CCFD1 weight	Typical WiRē weight	**Final weight**
Slope/topography	11%	17%	**15%**
Background fuels[a]	27%	11%	**10%**
Defensible space[a]	6%	15%	**15%**
Other combustibles	6%	5%	**10%**
Roofing materials	22%	30%	**30%**
Building exterior	6%	9%	**10%**
Address visibility	3%	2%	**1%**
Ingress/Egress	6%	2%	**5%**
Driveway clearance	3%	1%	**2%**
Driveway length	6%	1%	**2%**
Slope/topography[b]	11%	17%	**15%**

a) We mapped the vegetation attributes using a combination of the three vegetation description variables and the debris present variable. The mapping is described in Section 2.3.2.
b) The typical WiRē attribute score weights are 6.0% for slope and 11.3% for distance to dangerous topography. The mapping is described in Section 2.3.1.

5 Comparison of final risks to original

Lastly, we provide a summary of the original risk score distribution and adjective ratings for comparison. The original risk ratings were comprised of 4 categories: Low, Moderate, High, and Extreme. Following the typical WiRē approach, we grouped the risk ratings in 5 categories: Low, Moderate, High, Very High, and Extreme. In Table 10, we present the comparison of the distribution of the original risk rating to the final.

Table 10. Original CCFD1 risk ratings and distribution

Original CCFD1 risk categories	Original CCFD1 scores	Percent (total N = 731)
Low	0 - 225	11.4%
Moderate	226 - 450	64.2%
High	451 - 675	22.6%
Extreme	676 - 900	1.92%

In Figures 5 and 6, we present a comparison of the original scores and distribution of risk rating.

Figure 5. Histogram of risk scores with adjective risk categories

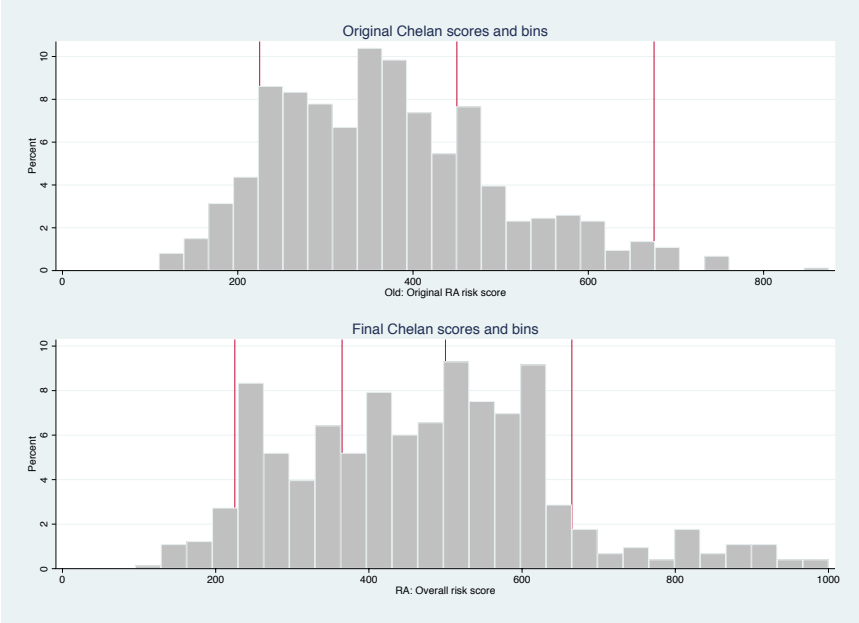
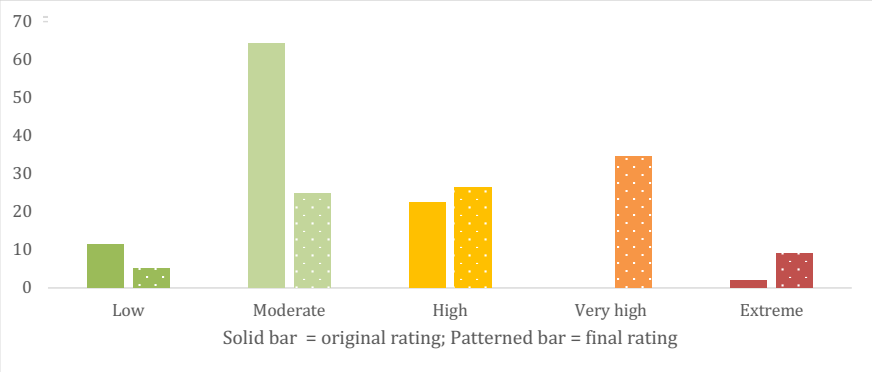


Figure 6. Comparison of original risk rating to final risk rating



Lastly, we summarize the distribution of original risk scores by community (Figure 7) compared to the final risk scores by community (Figure 8).

Figure 7. Original scores by Community

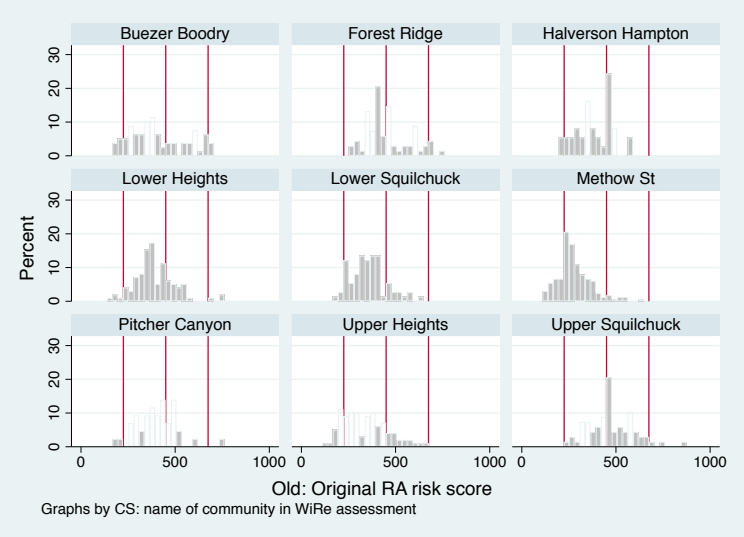
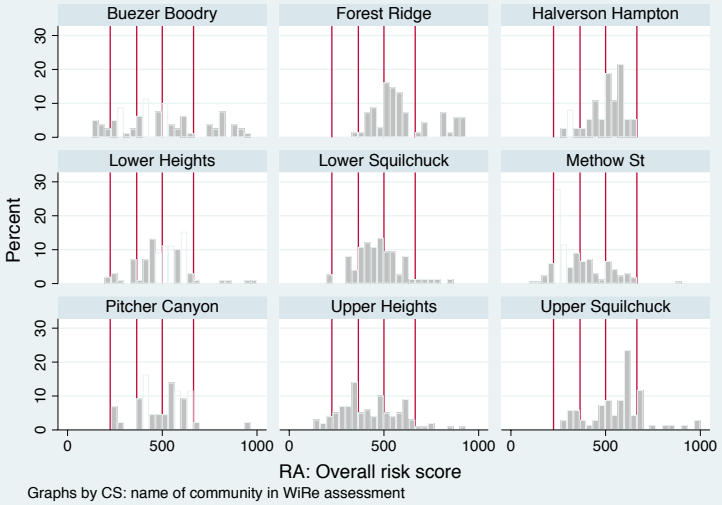


Figure 8. Final scores by community



APPENDIX III. LIVING WITH WILDFIRE IN CHELAN COUNTY IN 2018: ALL COMMUNITIES COMBINED CODEBOOK

Living with Wildfire in Chelan County in 2018

Codebook: All Communities Combined

Prepared by The Wildfire Research Center for:
Chelan County Fire District 1
136 S. Chelan Ave., Wenatchee, WA 98801
www.chelancountyfire.com

Entered survey responses: 295
n = number of observations
Blue numbers are percent responses (might not total to 100% due to rounding)
Red ALL CAPS are variable names

Section 1: In this first section of the survey, we ask about your residence in Chelan County. Please answer the following questions with respect to your Chelan County residence located in the greater Squilchuck area. We refer to this home as your ***Chelan County residence***.

When choosing a response, please fill in the circle completely. Correct: ● Incorrect: ◌ ◌ ◌ ◌

OCCTYPE (n=294)

1.1. Do you own or rent your Chelan County residence? (*Fill in one circle*)

94% Own and occupy

2% Own and rent out short term

3% Own and rent out long term

0% Rent

MONTHS (n=290)

1.2. How many months per year do you live at your Chelan County residence? (*Fill in the blank*)

AVERAGE = 11 months; 12 months = 90%

FULLTIME (n=292)

1.3. In what year did you move to your Chelan County residence? (*Fill in the blank*)

AVERAGE = 2001

YRBUILD (n=283)

1.4. In what year was your Chelan County residence originally built? (*Fill in the blank*)

AVERAGE = 1988

RISKAWAR (n=294)

1.5. How aware of wildfire risk were you when you bought or decided to rent your Chelan County residence? (*Fill in one circle*)

53% Very aware

34% Somewhat aware

12% Not aware

2% Don't remember

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

FIRE (n=290)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Chelan County property? (*Fill in one circle*)

- 2% There has been a wildfire on my property
- 17% Less than 2 miles away but not on my property
- 47% 2 to 10 miles away
- 22% More than 10 miles away
- 11% Not sure

DAMAGE (n=290)

2.2. Has your Chelan County residence ever had smoke or fire damage from a wildfire? (*Fill in one circle*)

- 95% No
- 3% Yes, my Chelan County residence has had smoke damage
- 1% Yes, my Chelan County residence has had fire and smoke damage

DAMAGE4 (n=4)

→ Was your Chelan County residence destroyed by a fire? (*Fill in one circle*)

- 100% No
- 0% Yes

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Chelan County residence? (*Fill in all that apply*)

23%	No	EVACPLAN1 (n=287)
63%	Yes, for the people in my household	EVACPLAN2 (n=287)
45%	Yes, for the pets in my household and on my property	EVACPLAN3 (n=287)
6%	Yes, for livestock on my property	EVACPLAN4 (n=287)

NEWREVERSE (n=289)

2.4. Have you signed up for the new reverse 911 service that calls residents to evacuate or prepare to evacuate in the event of a wildfire? (*Fill in one circle*)

93% No

7% Yes

EVACUATED (n=292)

2.5. Have you ever evacuated from your Chelan County residence due to a wildfire or threat of a wildfire? (*Fill in one circle*)

80% No

20% Yes

2.6. Please tell us about your experiences with your homeowners insurance for your Chelan County residence. (*Fill in one circle per row*)

		No	Yes
INSURE2 (n=285)	Has your current or a previous homeowners insurance company ever provided information on reducing the risk of wildfire?	78%	22%
INSURE3 (n=292)	Did an insurance company ever cancel or refuse to renew your homeowners insurance because of the risk of wildfire?	93%	7%
INSURE4 (n=269)	Do you pay a higher premium for your homeowners insurance due to wildfire risk?	86%	14%
INSURE10 (n=276)	Do you receive a discount on your homeowners insurance premium because you have reduced wildfire risk on your property?	95%	5%

Section 3: In this section, we ask about the characteristics of your Chelan County residence and the area near your Chelan County residence.

ROOFTYPE (n=289)

3.1. What type of roof does your Chelan County residence have? (*Fill in one circle*)

- 4% Wood (shake shingles)
- 96% Tile, metal, or asphalt shingles

SIDETYPE (n=286)

3.2. What type of exterior siding covers the majority of your Chelan County residence? (*Fill in one circle*)

- 29% Stucco, cement, brick, stone, or other noncombustible siding
- 3% Log or heavy timbers
- 68% Wood or vinyl siding

BALCONY (n=285)

3.3. Does your Chelan County residence have a fence, balcony, deck, or other attachment (ex. pergola) that is combustible? (*Fill in one circle*)

- 27% No
- 73% Yes

→ Are any made of wood? (*Fill in one circle*)

		No	Yes	Not applicable
MADEWOOD1 (n=204)	My fence	17%	33%	50%
MADEWOOD2 (n=206)	My balcony/deck	8%	81%	11%
MADEWOOD3 (n=203)	Other attachment (ex. pergola)	11%	19%	70%

ROADS (n=286)

3.4. If the road you use to access your Chelan County residence was blocked due to a wildfire, is there another road you could use to get to safety? (*Fill in one circle*)

- 59% No
- 41% Yes

DRIVEWAY14 (n=286)

3.5. Is your driveway at least 14 feet wide (wide enough for a full-size fire engine)? (*Fill in one circle*)

19% No, my driveway is less than 14 feet wide

81% Yes, my driveway is at least 14 feet wide

DRIVEWAYCLR (n=289)

3.6. Does your driveway have at least 14 feet of vertical clearance to allow access for first responders? (*Fill in one circle*)

6% No, my driveway has less than 14 feet of clearance

94% Yes, my driveway has at least 14 feet of clearance

DRIVEWAYLEN (n=286)

3.7. How long is your driveway? (*Fill in one circle*)

56% 150 feet long or less

44% Longer than 150 feet

TURNARND (n=124)

→ Does your driveway have a turnaround? (*Fill in one circle*)

23% No

77% Yes

HOMENUM (n=291)

3.8. Is your house number posted? (*Fill in one circle*)

7% No

93% Yes

HOMENUMVIS (n=257)

→ Is the number visible from the road? (*Fill in one circle*)

12% No

88% Yes

BLUEREFLECT (n=215)

→ Is the number blue reflective? (*Fill in one circle*)

56% No

44% Yes

3.9. Which is the best description of the vegetation around your Chelan County residence? (*Fill in one circle per row*)

		Irrigated lawn (no other vegetation)	Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	Individual trees, shrubs, and/or sparse natural grasses	Clusters of trees, shrubs, and/or natural grasses	Continuous dense trees, shrubs, and/or natural grasses
VEGDESCRIP1 (n=257)	Within 5 feet of home	33%	33%	20%	9%	5%
VEGDESCRIP2 (n=259)	5-30 feet of home	17%	11%	36%	24%	12%
VEGDESCRIP3 (n=245)	31-100 feet of home (may extend to neighbors' property)	7%	1%	28%	33%	31%

DRYVEG (n=288)

3.10. Which best describes the amount of dry vegetation, or fine debris, within 30 feet of your Chelan County residence? (*Fill in one circle*)

- 51% No dry vegetation or dead debris within 30 feet of my home
- 25% Some pine needle and leaf debris
- 19% Moderate debris, including twigs and branches
- 5% Abundant debris and/or mixed heavy fuels (logs or branches)

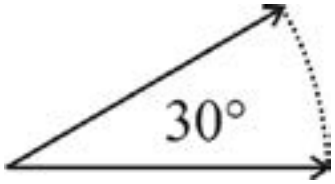
COMBUST1-7 (n=290)

3.11. Are any of the following combustible items within 30 feet of your Chelan County residence (not including items in your garage)? (*Fill in all that apply*)

- 46% Propane tank, gas can, or other flammable liquid container
- 27% Wood pile (firewood or lumber)
- 24% Wood or plastic outdoor furniture/playset
- 6% Compost bin or yard waste
- 25% Small outbuilding
- 5% Other (feed storage, chicken coop, etc.)
- 23% None - No combustible materials within 30 feet of my home

CLOSESLOPE (n=290)

3.12. The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your Chelan County residence from the closest steep slope (30 degrees or greater)? (*Fill in one circle*)



- 37% 25 feet or less
- 23% 26 to 50 feet
- 10% 51 to 75 feet
- 8% 76 to 100 feet
- 22% Greater than 100 feet

RISKRATE (n=294)

3.13. Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Chelan County residence's current overall wildfire risk rating? (*Fill in one circle*)

- 33% Low Risk
- 49% Moderate Risk
- 17% High Risk
- 2% Extreme Risk

Section 4: The questions in this section focus on your wildfire risk reduction activities within your community and your perceptions of wildfire risk.

TALKFIRE (n=292)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

- 39% No
- 61% Yes

SLACKER (n=281)

4.2. Do you have any neighbors who are not taking action to address sources of wildfire risk on their properties (ex. dense vegetation)? (*Fill in one circle*)

57% No

43% Yes

SLACKCOND (n=116)

→ Do the conditions on those properties increase the risk of fire spreading to your Chelan County residence? *(Fill in one circle)*

22% No

78% Yes

NACTION (n=291)

4.3. Have any of your neighbors done anything to reduce the risk of wildfire on their property? (*Fill in one circle*)

12% No

54% Yes

34% Don't know

4.4. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
ACTIVITIES1 (n=289)	Reduced vegetation on my Chelan County property (ex. cleared or pruned weeds, brush, and trees; used fire resistant landscaping)	12%	88%
ACTIVITIES2 (n=268)	Made my Chelan County residence more fire resistant (ex. replaced roofing, siding, added hardscaping)	44%	56%
ACTIVITIES3 (n=285)	Helped neighbor(s) reduce vegetation on their properties	68%	32%
ACTIVITIES4 (n=282)	Helped reduce vegetation on community property	61%	39%
ACTIVITIES5 (n=283)	Helped reduce vegetation on nearby public lands	73%	27%
ACTIVITIES6 (n=283)	Participated in a community wildfire activity (ex. attended a meeting, participated in a chipper day, etc.)	69%	31%

4.5. In the event of a wildfire, how likely would the wildfire spread as follows? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
	FROM nearby public/large undeveloped land TO:					
FIRESPREAD1 (n=280)	-> My neighborhood	19%	31%	30%	14%	5%
FIRESPREAD2 (n=278)	-> My Chelan County property	17%	23%	36%	17%	7%
	FROM my neighborhood TO:					
FIRESPREAD3 (n=277)	-> Nearby public/large undeveloped land	18%	29%	26%	21%	6%
FIRESPREAD4 (n=275)	-> My Chelan County property	15%	22%	32%	23%	9%
	FROM my Chelan County property TO:					
FIRESPREAD5 (n=276)	-> My neighborhood	11%	21%	30%	26%	11%
FIRESPREAD6 (n=280)	-> Nearby public/large undeveloped land	14%	22%	27%	24%	12%

CHANCES1 (n=280)

4.6. What do you think is the chance that a wildfire will be on your property this year? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
10%	15%	22%	18%	6%	21%	3%	2%	0%	0%	1%

CHANCES2 (n=279)

4.7. If there is a wildfire on your property this year, what do you think is the chance that it will destroy or severely damage your Chelan County residence? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
6%	14%	15%	14%	8%	18%	4%	7%	8%	4%	4%

4.8. If there is a wildfire on your Chelan County property, how likely do you think it is that the following would occur? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
LACT1 (n=282)	I would put the fire out.	11%	16%	25%	27%	19%	2%
LACT2 (n=280)	The fire department would save my home.	16%	38%	28%	13%	5%	1%
LACT3 (n=281)	My home would have smoke damage.	11%	30%	32%	18%	8%	2%
LACT4 (n=282)	My home would have some physical damage.	8%	24%	34%	24%	9%	1%
LACT5 (n=281)	My home would be destroyed.	3%	8%	27%	35%	25%	2%
LACT6 (n=282)	I would lose money due to the loss of business or income on my property.	6%	5%	10%	9%	21%	49%
LACT7 (n=282)	My trees and landscape would burn.	9%	27%	27%	24%	10%	2%
LACT9 (n=282)	My neighbors' homes would be damaged or destroyed.	5%	12%	35%	27%	15%	5%
LACT10 (n=277)	My community water supply would be threatened.	4%	6%	16%	17%	37%	20%

Section 5: In this section, we ask where you get information about wildfire and your thoughts about wildfire.

5.1. The following sources provide information about wildfire risk, how useful has this information been if you have received it? (*Fill in one circle per row*)

		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Have *NOT* received information from this source
SOURCEUSE1 (n=280)	Chelan County Fire District 1	18%	31%	21%	8%	2%	21%
SOURCEUSE2 (n=279)	Community group (ex., homeowners association)	6%	13%	9%	7%	5%	59%
SOURCEUSE3 (n=281)	Neighbors, friends, or family	6%	16%	18%	14%	5%	41%
SOURCEUSE4 (n=282)	Media (newspaper, TV, radio, internet)	3%	20%	28%	21%	5%	22%
SOURCEUSE_CCFD1_1 (n=279)	City of Wenatchee	2%	5%	13%	8%	6%	66%
SOURCEUSE5 (n=276)	Firewise USA	9%	12%	4%	6%	3%	67%
SOURCEUSE8 (n=272)	Fire Adapted Communities and/or Learning Network	5%	6%	4%	5%	4%	76%
SOURCEUSE_CCFD1_2 (n=276)	Cascadia Conservation District	5%	11%	8%	14%	4%	58%
SOURCEUSE_CCFD1_3 (n=275)	Washington State University Master Gardeners program	1%	3%	7%	7%	5%	76%
SOURCEUSE_CCFD1_4 (n=274)	Chelan County Department of Natural Resources	3%	8%	7%	10%	3%	70%
SOURCEUSE_CCFD1_5 (n=273)	Chumstick Wildfire Coalition	1%	2%	3%	4%	4%	87%
SOURCEUSE_CCFD1_6 (n=276)	Chelan/Douglas Land Trust	1%	4%	7%	7%	5%	77%
SOURCEUSESTATE (n=276)	Washington State Department of Natural Resources	3%	4%	8%	6%	4%	76%
SOURCEUSE14 (n=275)	U.S. Forest Service	3%	8%	10%	7%	3%	69%
SOURCEUSE15 (n=275)	Bureau of Land Management	1%	3%	4%	6%	3%	83%
SOURCEUSE9 (n=108)	Other (Please specify):	12%	3%	6%	1%	2%	76%

5.2. How would you prefer Chelan County Fire District 1 communicate with you about wildfire risk reduction? (*Fill in all that apply*)

41%	Email	COMMUNICATE1 (n=295)
66%	Newsletter (mailer)	COMMUNICATE2 (n=295)
23%	Community meetings	COMMUNICATE3 (n=295)
23%	In-person interactions	COMMUNICATE4 (n=295)
13%	Social media (Facebook, Twitter)	COMMUNICATE5 (n=295)

5.3. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=284)	Removing trees and reducing other vegetation	45%	26%	19%	7%	4%
ACCEPT2 (n=280)	Burning piles of vegetation after a vegetation reduction project	44%	37%	11%	4%	4%
ACCEPT3 (n=279)	Conducting a prescribed fire ignited by fire managers	38%	31%	19%	5%	8%
ACCEPT4 (n=276)	Managing a naturally ignited fire (such as lightning)	42%	32%	16%	5%	5%

5.4. If a wildfire threatens your community this year, do you think the following will happen? (*Fill in one circle per row*)

		No	Yes
THNKHAPPN1 (n=276)	Local firefighters will have sufficient resources to keep the wildfire from spreading	42%	58%
THNKHAPPN2 (n=277)	Local firefighters will have sufficient resources to protect threatened homes	27%	73%
THNKHAPPN3 (n=280)	Local agencies will make good decisions during the wildfire	8%	92%
THNKHAPPN4 (n=267)	Federal responders will make good decisions during the wildfire	25%	75%
THNKHAPPN5 (n=280)	Firefighters should put their lives at risk to protect my home	91%	9%

5.5. How much do you agree or disagree with the following statements about wildfire? (*Fill in one circle per row*)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
STATE2 (n=279)	With proper technology, we can control most wildfires.	4%	33%	33%	24%	7%
STATE3 (n=283)	We should put out wildfires that threaten human life.	59%	36%	4%	1%	1%
STATE4 (n=279)	We should put out wildfires that threaten property.	28%	55%	15%	1%	1%
STATE5 (n=281)	During a wildfire, saving homes should be a priority over saving forests.	28%	46%	19%	5%	1%
STATE6 (n=282)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	35%	46%	13%	5%	0%
STATE11 (n=281)	I live here for the trees and will not remove any of them to reduce wildfire risk.	1%	4%	17%	47%	31%
STATE13 (n=281)	Managing the wildfire danger is a government responsibility, not mine.	1%	5%	13%	51%	30%
STATE14 (n=284)	Homeowners' actions to reduce wildfire are not effective.	1%	2%	11%	55%	31%
STATE15 (n=283)	My property is at risk of wildfire.	15%	39%	23%	17%	5%
STATE17 (n=283)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	4%	13%	31%	41%	11%

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

6.1. Do any of the following prevent you from taking action to reduce the wildfire risk on your Chelan County property? (*Fill in one circle per row*)

		No	Yes
FACTOR1 (n=283)	Financial expense/ cost	65%	35%
FACTOR2 (n=281)	Time it takes to do the work	65%	35%
FACTOR3 (n=282)	Physical difficulty of doing the work	57%	43%
FACTOR4 (n=283)	Lack of specific information on how to reduce wildfire risk on my property	75%	25%
FACTOR5 (n=272)	Lack of effectiveness of risk reduction actions	89%	11%
FACTOR6 (n=278)	Do not want to change the way my property looks	84%	16%
FACTOR7 (n=276)	Lack of information about or options for removal of materials from thinning trees and other vegetation	76%	24%
FACTOR9 (n=278)	Restrictions by homeowners' association on cutting trees	97%	3%

6.2. Would any of the following items encourage you to reduce the wildfire risk on your property? (*Fill in one circle per row*)

		No	Yes
INCENTV 1 (n=279)	Financial assistance	40%	60%
INCENTV 2 (n=283)	Specific information about what needs to be done on my property	27%	73%
INCENTV 3 (n=284)	Help doing the work (ex. thinning trees and vegetation and/or removal of debris)	34%	66%
INCENTV 4 (n=282)	A list of recommended contractors that could be hired to do the work	58%	42%

Section 7: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAKE1 (n=284)

7.1. Do you view yourself as someone who is not at all willing to take risks or very willing to take risks? (*Fill in one circle*)

Not at all willing to take risks										Very willing to take risks
0	1	2	3	4	5	6	7	8	9	10
2%	3%	8%	10%	6%	27%	13%	11%	12%	3%	5%

AGE (n=277)

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

AVERAGE = 59 years old

GENDER (n=273)

7.3. Are you? (*Fill in one circle*)

61% Male

39% Female

EDUC (n=279)

7.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

1% Less than high school

9% High school graduate

25% Some college or technical school

8% Technical or trade school

30% College graduate

3% Some graduate work

24% Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=275)

7.5. Which of the following best describes your current employment situation? (*Fill in one circle*)

- 45% Employed full time (including self-employed)
- 9% Employed part time (including self-employed)
- 4% Unemployed or do not work outside of the home
- 43% Retired

INCOME (n=260)

7.6. Which of the following categories describes your annual household income? (*Fill in one circle*)

- 2% Less than $15,000
- 5% $15,000 - $24,999
- 7% $25,000 – $34,999
- 14% $35,000 - $49,999
- 18% $50,000 - $74,999
- 12% $75,000 - $99,999
- 18% $100,000 - $149,999
- 12% $150,000 - $199,999
- 13% More than $200,000

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

APPENDIX IV. LIVING WITH WILDFIRE IN CHELAN COUNTY IN 2018: METHOW CODEBOOK

Living with Wildfire in Chelan County in 2018

Codebook: Methow

Prepared by The Wildfire Research Center for:
Chelan County Fire District 1
136 S. Chelan Ave., Wenatchee, WA 98801
www.chelancountyfire.com

Entered survey responses: 51
n = number of observations
Blue numbers are percent responses (might not total to 100% due to rounding)
Red ALL CAPS are variable names

Please note: We encourage use of this survey instrument for applied, research, and/or publication purposes but request to be notified before any such use at: wildfireresearchcenter@gmail.com

Section 1: In this first section of the survey, we ask about your residence in Chelan County. Please answer the following questions with respect to your Chelan County residence located in the greater Squilchuck area. We refer to this home as your ***Chelan County residence***.

When choosing a response, please fill in the circle completely. Correct: ● Incorrect: ⊘ ◎ ◔ ●

OCCTYPE (n=51)

1.1. Do you own or rent your Chelan County residence? (*Fill in one circle*)

- 94% Own and occupy
- 2% Own and rent out short term
- 4% Own and rent out long term
- 0% Rent

MONTHS (n=51)

1.2. How many months per year do you live at your Chelan County residence? (*Fill in the blank*)

AVERAGE = 12 months; 12 months = 94%

FULLTIME (n=51)

1.3. In what year did you move to your Chelan County residence? (*Fill in the blank*)

AVERAGE = 2008

YRBUILD (n=48)

1.4. In what year was your Chelan County residence originally built? (*Fill in the blank*)

AVERAGE = 2000

RISKAWAR (n=51)

1.5. How aware of wildfire risk were you when you bought or decided to rent your Chelan County residence? (*Fill in one circle*)

- 41% Very aware
- 45% Somewhat aware
- 12% Not aware
- 2% Don't remember

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

FIRE (n=48)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Chelan County property? (*Fill in one circle*)

- 0% There has been a wildfire on my property
- 17% Less than 2 miles away but not on my property
- 42% 2 to 10 miles away
- 25% More than 10 miles away
- 17% Not sure

DAMAGE (n=48)

2.2. Has your Chelan County residence ever had smoke or fire damage from a wildfire? (*Fill in one circle*)

- 94% No
- 4% Yes, my Chelan County residence has had smoke damage
- 2% Yes, my Chelan County residence has had fire and smoke damage

DAMAGE4 (n=1)

→ Was your Chelan County residence destroyed by a fire? (*Fill in one circle*)

- 100% No
- 0% Yes

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Chelan County residence? (*Fill in all that apply*)

38%	No	EVACPLAN1 (n=48)
48%	Yes, for the people in my household	EVACPLAN2 (n=48)
31%	Yes, for the pets in my household and on my property	EVACPLAN3 (n=48)
4%	Yes, for livestock on my property	EVACPLAN4 (n=48)

NEWREVERSE (n=50)

2.4. Have you signed up for the new reverse 911 service that calls residents to evacuate or prepare to evacuate in the event of a wildfire? (*Fill in one circle*)

98% No

2% Yes

EVACUATED (n=50)

2.5. Have you ever evacuated from your Chelan County residence due to a wildfire or threat of a wildfire? (*Fill in one circle*)

96% No

4% Yes

2.6. Please tell us about your experiences with your homeowners insurance for your Chelan County residence. (*Fill in one circle per row*)

		No	Yes
INSURE2 (n=48)	Has your current or a previous homeowners insurance company ever provided information on reducing the risk of wildfire?	85%	15%
INSURE3 (n=50)	Did an insurance company ever cancel or refuse to renew your homeowners insurance because of the risk of wildfire?	96%	4%
INSURE4 (n=45)	Do you pay a higher premium for your homeowners insurance due to wildfire risk?	96%	4%
INSURE10 (n=48)	Do you receive a discount on your homeowners insurance premium because you have reduced wildfire risk on your property?	98%	2%

Section 3: In this section, we ask about the characteristics of your Chelan County residence and the area near your Chelan County residence.

ROOFTYPE (n=48)

3.1. What type of roof does your Chelan County residence have? (*Fill in one circle*)

- 4% Wood (shake shingles)
- 96% Tile, metal, or asphalt shingles

SIDETYPE (n=48)

3.2. What type of exterior siding covers the majority of your Chelan County residence? (*Fill in one circle*)

- 19% Stucco, cement, brick, stone, or other noncombustible siding
- 0% Log or heavy timbers
- 81% Wood or vinyl siding

BALCONY (n=48)

3.3. Does your Chelan County residence have a fence, balcony, deck, or other attachment (ex. pergola) that is combustible? (*Fill in one circle*)

- 27% No
- 73% Yes

→ Are any made of wood? (*Fill in one circle*)

		No	Yes	Not applicable
MADEWOOD1 (n=35)	My fence	9%	77%	14%
MADEWOOD2 (n=34)	My balcony/deck	15%	56%	29%
MADEWOOD3 (n=34)	Other attachment (ex. pergola)	12%	9%	79%

ROADS (n=50)

3.4. If the road you use to access your Chelan County residence was blocked due to a wildfire, is there another road you could use to get to safety? (*Fill in one circle*)

- 46% No
- 54% Yes

DRIVEWAY14 (n=50)

3.5. Is your driveway at least 14 feet wide (wide enough for a full-size fire engine)? (*Fill in one circle*)

10% No, my driveway is less than 14 feet wide

90% Yes, my driveway is at least 14 feet wide

DRIVEWAYCLR (n=50)

3.6. Does your driveway have at least 14 feet of vertical clearance to allow access for first responders? (*Fill in one circle*)

4% No, my driveway has less than 14 feet of clearance

96% Yes, my driveway has at least 14 feet of clearance

DRIVEWAYLEN (n=49)

3.7. How long is your driveway? (*Fill in one circle*)

84% 150 feet long or less

16% Longer than 150 feet

TURNARND (n=8)

→ Does your driveway have a turnaround? (*Fill in one circle*)

12% No

88% Yes

HOMENUM (n=51)

3.8. Is your house number posted? (*Fill in one circle*)

4% No

96% Yes

HOMENUMVIS (n=45)

→ Is the number visible from the road? (*Fill in one circle*)

9% No

91% Yes

BLUEREFLECT (n=41)

→ Is the number blue reflective? (*Fill in one circle*)

88% No

12% Yes

3.9. Which is the best description of the vegetation around your Chelan County residence? (*Fill in one circle per row*)

		Irrigated lawn (no other vegetation)	Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	Individual trees, shrubs, and/or sparse natural grasses	Clusters of trees, shrubs, and/or natural grasses	Continuous dense trees, shrubs, and/or natural grasses
VEGDESCRIP1 (n=49)	Within 5 feet of home	31%	31%	20%	12%	6%
VEGDESCRIP2 (n=40)	5-30 feet of home	35%	5%	18%	22%	20%
VEGDESCRIP3 (n=34)	31-100 feet of home (may extend to neighbors' property)	21%	3%	26%	15%	35%

DRYVEG (n=51)

3.10. Which best describes the amount of dry vegetation, or fine debris, within 30 feet of your Chelan County residence? (*Fill in one circle*)

- 69% No dry vegetation or dead debris within 30 feet of my home
- 18% Some pine needle and leaf debris
- 12% Moderate debris, including twigs and branches
- 2% Abundant debris and/or mixed heavy fuels (logs or branches)

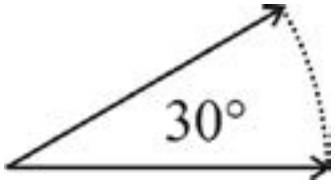
COMBUST1-7 (n=50)

3.11. Are any of the following combustible items within 30 feet of your Chelan County residence (not including items in your garage)? (*Fill in all that apply*)

- 42% Propane tank, gas can, or other flammable liquid container
- 28% Wood pile (firewood or lumber)
- 26% Wood or plastic outdoor furniture/playset
- 14% Compost bin or yard waste
- 26% Small outbuilding
- 0% Other (feed storage, chicken coop, etc.)
- 32% None - No combustible materials within 30 feet of my home

CLOSESLOPE (n=51)

3.12. The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your Chelan County residence from the closest steep slope (30 degrees or greater)? (*Fill in one circle*)



29% 25 feet or less
22% 26 to 50 feet
6% 51 to 75 feet
10% 76 to 100 feet
33% Greater than 100 feet

RISKRATE (n=51)

3.13. Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Chelan County residence's current overall wildfire risk rating? (*Fill in one circle*)

47% Low Risk
41% Moderate Risk
10% High Risk
2% Extreme Risk

Section 4: The questions in this section focus on your wildfire risk reduction activities within your community and your perceptions of wildfire risk.

TALKFIRE (n=51)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

55% No
45% Yes

SLACKER (n=51)

4.2. Do you have any neighbors who are not taking action to address sources of wildfire risk on their properties (ex. dense vegetation)? (*Fill in one circle*)

71% No

29% Yes

SLACKCOND (n=13)

→ Do the conditions on those properties increase the risk of fire spreading to your Chelan County residence? *(Fill in one circle)*

15% No

85% Yes

NACTION (n=51)

4.3. Have any of your neighbors done anything to reduce the risk of wildfire on their property? (*Fill in one circle*)

24% No

22% Yes

55% Don't know

4.4. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
ACTIVITIES1 (n=51)	Reduced vegetation on my Chelan County property (ex. cleared or pruned weeds, brush, and trees; used fire resistant landscaping)	24%	76%
ACTIVITIES2 (n=49)	Made my Chelan County residence more fire resistant (ex. replaced roofing, siding, added hardscaping)	65%	35%
ACTIVITIES3 (n=51)	Helped neighbor(s) reduce vegetation on their properties	75%	25%
ACTIVITIES4 (n=51)	Helped reduce vegetation on community property	57%	43%
ACTIVITIES5 (n=51)	Helped reduce vegetation on nearby public lands	76%	24%
ACTIVITIES6 (n=50)	Participated in a community wildfire activity (ex. attended a meeting, participated in a chipper day, etc.)	84%	16%

4.5. In the event of a wildfire, how likely would the wildfire spread as follows? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
	FROM nearby public/large undeveloped land TO:					
FIRESPREAD1 (n=51)	-> My neighborhood	12%	31%	33%	20%	4%
FIRESPREAD2 (n=48)	-> My Chelan County property	4%	25%	42%	23%	6%
	FROM my neighborhood TO:					
FIRESPREAD3 (n=50)	-> Nearby public/large undeveloped land	4%	34%	22%	36%	4%
FIRESPREAD4 (n=49)	-> My Chelan County property	6%	18%	31%	35%	10%
	FROM my Chelan County property TO:					
FIRESPREAD5 (n=50)	-> My neighborhood	6%	24%	32%	24%	14%
FIRESPREAD6 (n=49)	-> Nearby public/large undeveloped land	6%	22%	27%	31%	14%

CHANCES1 (n=48)

4.6. What do you think is the chance that a wildfire will be on your property this year? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
21%	27%	23%	10%	4%	12%	0%	2%	0%	0%	0%

CHANCES2 (n=48)

4.7. If there is a wildfire on your property this year, what do you think is the chance that it will destroy or severely damage your Chelan County residence? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
8%	17%	17%	12%	2%	8%	2%	12%	6%	2%	12%

4.8. If there is a wildfire on your Chelan County property, how likely do you think it is that the following would occur? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
LACT1 (n=48)	I would put the fire out.	17%	10%	23%	27%	19%	4%
LACT2 (n=48)	The fire department would save my home.	21%	46%	19%	12%	0%	2%
LACT3 (n=48)	My home would have smoke damage.	15%	31%	29%	15%	8%	2%
LACT4 (n=48)	My home would have some physical damage.	6%	33%	29%	23%	6%	2%
LACT5 (n=48)	My home would be destroyed.	0%	8%	23%	46%	21%	2%
LACT6 (n=48)	I would lose money due to the loss of business or income on my property.	2%	4%	6%	2%	29%	56%
LACT7 (n=48)	My trees and landscape would burn.	2%	25%	19%	29%	19%	6%
LACT9 (n=48)	My neighbors' homes would be damaged or destroyed.	2%	15%	21%	40%	21%	2%
LACT10 (n=47)	My community water supply would be threatened.	0%	6%	9%	9%	53%	23%

Section 5: In this section, we ask where you get information about wildfire and your thoughts about wildfire.

5.1. The following sources provide information about wildfire risk, how useful has this information been if you have received it? (*Fill in one circle per row*)

		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Have *NOT* received information from this source
SOURCEUSE1 (n=47)	Chelan County Fire District 1	11%	28%	19%	15%	0%	28%
SOURCEUSE2 (n=47)	Community group (ex., homeowners association)	0%	11%	13%	11%	9%	57%
SOURCEUSE3 (n=47)	Neighbors, friends, or family	0%	13%	26%	11%	4%	47%
SOURCEUSE4 (n=47)	Media (newspaper, TV, radio, internet)	2%	15%	38%	26%	2%	17%
SOURCEUSE_CCFD1_1 (n=46)	City of Wenatchee	2%	9%	13%	13%	4%	59%
SOURCEUSE5 (n=46)	Firewise USA	2%	4%	7%	4%	2%	80%
SOURCEUSE8 (n=46)	Fire Adapted Communities and/or Learning Network	0%	2%	4%	2%	2%	89%
SOURCEUSE_CCFD1_2 (n=46)	Cascadia Conservation District	0%	9%	9%	4%	4%	74%
SOURCEUSE_CCFD1_3 (n=46)	Washington State University Master Gardeners program	0%	4%	7%	11%	2%	76%
SOURCEUSE_CCFD1_4 (n=46)	Chelan County Department of Natural Resources	0%	4%	4%	7%	2%	83%
SOURCEUSE_CCFD1_5 (n=46)	Chumstick Wildfire Coalition	0%	2%	2%	4%	2%	89%
SOURCEUSE_CCFD1_6 (n=46)	Chelan/Douglas Land Trust	0%	2%	7%	11%	2%	78%
SOURCEUSESTATE (n=46)	Washington State Department of Natural Resources	0%	2%	4%	2%	4%	87%
SOURCEUSE14 (n=46)	U.S. Forest Service	0%	2%	13%	7%	4%	74%
SOURCEUSE15 (n=46)	Bureau of Land Management	0%	2%	4%	4%	4%	85%
SOURCEUSE9 (n=16)	Other (Please specify):	12%	12%	0%	0%	6%	69%

5.2. How would you prefer Chelan County Fire District 1 communicate with you about wildfire risk reduction? (*Fill in all that apply*)

35%	Email	COMMUNICATE1 (n=51)
65%	Newsletter (mailer)	COMMUNICATE2 (n=51)
27%	Community meetings	COMMUNICATE3 (n=51)
16%	In-person interactions	COMMUNICATE4 (n=51)
20%	Social media (Facebook, Twitter)	COMMUNICATE5 (n=51)

5.3. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=49)	Removing trees and reducing other vegetation	45%	14%	22%	14%	4%
ACCEPT2 (n=48)	Burning piles of vegetation after a vegetation reduction project	50%	21%	10%	8%	10%
ACCEPT3 (n=48)	Conducting a prescribed fire ignited by fire managers	44%	19%	21%	8%	8%
ACCEPT4 (n=48)	Managing a naturally ignited fire (such as lightning)	44%	29%	8%	15%	4%

5.4. If a wildfire threatens your community this year, do you think the following will happen? (*Fill in one circle per row*)

		No	Yes
THNKHAPPN1 (n=51)	Local firefighters will have sufficient resources to keep the wildfire from spreading	29%	71%
THNKHAPPN2 (n=51)	Local firefighters will have sufficient resources to protect threatened homes	12%	88%
THNKHAPPN3 (n=51)	Local agencies will make good decisions during the wildfire	10%	90%
THNKHAPPN4 (n=50)	Federal responders will make good decisions during the wildfire	20%	80%
THNKHAPPN5 (n=50)	Firefighters should put their lives at risk to protect my home	88%	12%

5.5. How much do you agree or disagree with the following statements about wildfire? (*Fill in one circle per row*)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
STATE2 (n=48)	With proper technology, we can control most wildfires.	8%	25%	46%	17%	4%
STATE3 (n=50)	We should put out wildfires that threaten human life.	64%	30%	4%	2%	0%
STATE4 (n=49)	We should put out wildfires that threaten property.	29%	55%	16%	0%	0%
STATE5 (n=50)	During a wildfire, saving homes should be a priority over saving forests.	20%	46%	24%	8%	2%
STATE6 (n=50)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	46%	32%	20%	2%	0%
STATE11 (n=49)	I live here for the trees and will not remove any of them to reduce wildfire risk.	0%	4%	20%	39%	37%
STATE13 (n=50)	Managing the wildfire danger is a government responsibility, not mine.	0%	8%	18%	44%	30%
STATE14 (n=51)	Homeowners' actions to reduce wildfire are not effective.	0%	0%	14%	51%	35%
STATE15 (n=50)	My property is at risk of wildfire.	8%	22%	30%	34%	6%
STATE17 (n=50)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	2%	8%	26%	46%	18%

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

6.1. Do any of the following prevent you from taking action to reduce the wildfire risk on your Chelan County property? (*Fill in one circle per row*)

		No	Yes
FACTOR1 (n=48)	Financial expense/ cost	73%	27%
FACTOR2 (n=48)	Time it takes to do the work	71%	29%
FACTOR3 (n=48)	Physical difficulty of doing the work	69%	31%
FACTOR4 (n=49)	Lack of specific information on how to reduce wildfire risk on my property	61%	39%
FACTOR5 (n=46)	Lack of effectiveness of risk reduction actions	87%	13%
FACTOR6 (n=45)	Do not want to change the way my property looks	71%	29%
FACTOR7 (n=45)	Lack of information about or options for removal of materials from thinning trees and other vegetation	78%	22%
FACTOR9 (n=46)	Restrictions by homeowners' association on cutting trees	89%	11%

6.2. Would any of the following items encourage you to reduce the wildfire risk on your property? (*Fill in one circle per row*)

		No	Yes
INCENTV 1 (n=47)	Financial assistance	51%	49%
INCENTV 2 (n=48)	Specific information about what needs to be done on my property	27%	73%
INCENTV 3 (n=48)	Help doing the work (ex. thinning trees and vegetation and/or removal of debris)	48%	52%
INCENTV 4 (n=48)	A list of recommended contractors that could be hired to do the work	62%	38%

Section 7: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAKE1 (n=48)

7.1. Do you view yourself as someone who is not at all willing to take risks or very willing to take risks? (*Fill in one circle*)

Not at all willing to take risks										Very willing to take risks
0	1	2	3	4	5	6	7	8	9	10
0%	4%	17%	8%	8%	31%	8%	8%	6%	4%	4%

AGE (n=46)

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

AVERAGE = 54 years old

GENDER (n=47)

7.3. Are you? (*Fill in one circle*)

57% Male

43% Female

EDUC (n=48)

7.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

0% Less than high school

6% High school graduate

31% Some college or technical school

8% Technical or trade school

33% College graduate

4% Some graduate work

17% Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=49)

7.5. Which of the following best describes your current employment situation? (*Fill in one circle*)

- 59% Employed full time (including self-employed)
- 8% Employed part time (including self-employed)
- 6% Unemployed or do not work outside of the home
- 27% Retired

INCOME (n=48)

7.6. Which of the following categories describes your annual household income? (*Fill in one circle*)

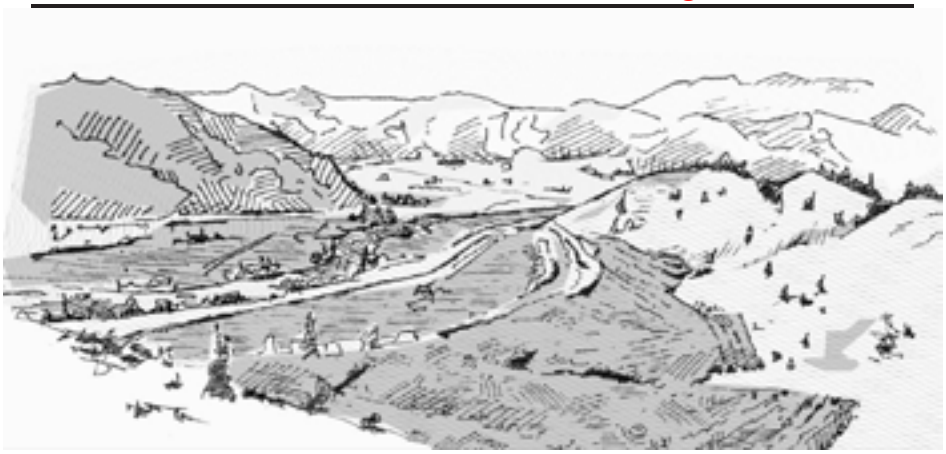
- 0% Less than $15,000
- 2% $15,000 - $24,999
- 15% $25,000 – $34,999
- 15% $35,000 - $49,999
- 23% $50,000 - $74,999
- 19% $75,000 - $99,999
- 15% $100,000 - $149,999
- 6% $150,000 - $199,999
- 6% More than $200,000

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

APPENDIX V. LIVING WITH WILDFIRE IN CHELAN COUNTY IN 2018: WENATCHEE HEIGHTS CODEBOOK

Living with Wildfire in Chelan County in 2018

Codebook: Wenatchee Heights



Prepared by The Wildfire Research Center for:
Chelan County Fire District 1
136 S. Chelan Ave., Wenatchee, WA 98801
www.chelancountyfire.com

Entered survey responses: 76
n = number of observations
Blue numbers are percent responses (might not total to 100% due to rounding)
Red ALL CAPS are variable names

Please note: We encourage use of this survey instrument for applied, research, and/or publication purposes but request to be notified before any such use at: wildfireresearchcenter@gmail.com

Section 1: In this first section of the survey, we ask about your residence in Chelan County. Please answer the following questions with respect to your Chelan County residence located in the greater Squilchuck area. We refer to this home as your ***Chelan County residence***.

When choosing a response, please fill in the circle completely. Correct: ● Incorrect: ⊘ ◎ ◔ ●

OCCTYPE (n=76)

1.1. Do you own or rent your Chelan County residence? (*Fill in one circle*)

- 96% Own and occupy
- 3% Own and rent out short term
- 1% Own and rent out long term
- 0% Rent

MONTHS (n=75)

1.2. How many months per year do you live at your Chelan County residence? (*Fill in the blank*)

AVERAGE = 11 months; 12 months = 93%

FULLTIME (n=76)

1.3. In what year did you move to your Chelan County residence? (*Fill in the blank*)

AVERAGE = 1998

YRBUILD (n=75)

1.4. In what year was your Chelan County residence originally built? (*Fill in the blank*)

AVERAGE = 1985

RISKAWAR (n=76)

1.5. How aware of wildfire risk were you when you bought or decided to rent your Chelan County residence? (*Fill in one circle*)

- 51% Very aware
- 34% Somewhat aware
- 12% Not aware
- 3% Don't remember

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

FIRE (n=75)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Chelan County property? (*Fill in one circle*)

- 3% There has been a wildfire on my property
- 23% Less than 2 miles away but not on my property
- 43% 2 to 10 miles away
- 25% More than 10 miles away
- 7% Not sure

DAMAGE (n=75)

2.2. Has your Chelan County residence ever had smoke or fire damage from a wildfire? (*Fill in one circle*)

- 95% No
- 5% Yes, my Chelan County residence has had smoke damage
- 0% Yes, my Chelan County residence has had fire and smoke damage

DAMAGE4 (n=0)

→ Was your Chelan County residence destroyed by a fire? (*Fill in one circle*)

- NaN% No
- NaN% Yes

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Chelan County residence? (*Fill in all that apply*)

27%	No	EVACPLAN1 (n=74)
59%	Yes, for the people in my household	EVACPLAN2 (n=74)
46%	Yes, for the pets in my household and on my property	EVACPLAN3 (n=74)
9%	Yes, for livestock on my property	EVACPLAN4 (n=74)

NEWREVERSE (n=74)

2.4. Have you signed up for the new reverse 911 service that calls residents to evacuate or prepare to evacuate in the event of a wildfire? (*Fill in one circle*)

93% No

7% Yes

EVACUATED (n=75)

2.5. Have you ever evacuated from your Chelan County residence due to a wildfire or threat of a wildfire? (*Fill in one circle*)

93% No

7% Yes

2.6. Please tell us about your experiences with your homeowners insurance for your Chelan County residence. (*Fill in one circle per row*)

		No	Yes
INSURE2 (n=74)	Has your current or a previous homeowners insurance company ever provided information on reducing the risk of wildfire?	77%	23%
INSURE3 (n=75)	Did an insurance company ever cancel or refuse to renew your homeowners insurance because of the risk of wildfire?	92%	8%
INSURE4 (n=73)	Do you pay a higher premium for your homeowners insurance due to wildfire risk?	90%	10%
INSURE10 (n=75)	Do you receive a discount on your homeowners insurance premium because you have reduced wildfire risk on your property?	93%	7%

Section 3: In this section, we ask about the characteristics of your Chelan County residence and the area near your Chelan County residence.

ROOFTYPE (n=76)

3.1. What type of roof does your Chelan County residence have? (*Fill in one circle*)

- 3% Wood (shake shingles)
- 97% Tile, metal, or asphalt shingles

SIDETYPE (n=74)

3.2. What type of exterior siding covers the majority of your Chelan County residence? (*Fill in one circle*)

- 18% Stucco, cement, brick, stone, or other noncombustible siding
- 4% Log or heavy timbers
- 78% Wood or vinyl siding

BALCONY (n=75)

3.3. Does your Chelan County residence have a fence, balcony, deck, or other attachment (ex. pergola) that is combustible? (*Fill in one circle*)

- 29% No
- 71% Yes

→ Are any made of wood? (*Fill in one circle*)

		No	Yes	Not applicable
MADEWOOD1 (n=52)	My fence	17%	23%	60%
MADEWOOD2 (n=53)	My balcony/deck	8%	83%	9%
MADEWOOD3 (n=52)	Other attachment (ex. pergola)	8%	15%	77%

ROADS (n=74)

3.4. If the road you use to access your Chelan County residence was blocked due to a wildfire, is there another road you could use to get to safety? (*Fill in one circle*)

- 55% No
- 45% Yes

DRIVEWAY14 (n=76)

3.5. Is your driveway at least 14 feet wide (wide enough for a full-size fire engine)? (*Fill in one circle*)

16% No, my driveway is less than 14 feet wide

84% Yes, my driveway is at least 14 feet wide

DRIVEWAYCLR (n=76)

3.6. Does your driveway have at least 14 feet of vertical clearance to allow access for first responders? (*Fill in one circle*)

4% No, my driveway has less than 14 feet of clearance

96% Yes, my driveway has at least 14 feet of clearance

DRIVEWAYLEN (n=74)

3.7. How long is your driveway? (*Fill in one circle*)

34% 150 feet long or less

66% Longer than 150 feet

TURNARND (n=48)

→ Does your driveway have a turnaround? (*Fill in one circle*)

21% No

79% Yes

HOMENUM (n=76)

3.8. Is your house number posted? (*Fill in one circle*)

9% No

91% Yes

HOMENUMVIS (n=65)

→ Is the number visible from the road? (*Fill in one circle*)

18% No

82% Yes

BLUEREFLECT (n=51)

→ Is the number blue reflective? (*Fill in one circle*)

53% No

47% Yes

3.9. Which is the best description of the vegetation around your Chelan County residence? (*Fill in one circle per row*)

		Irrigated lawn (no other vegetation)	Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	Individual trees, shrubs, and/or sparse natural grasses	Clusters of trees, shrubs, and/or natural grasses	Continuous dense trees, shrubs, and/or natural grasses
VEGDESCRIP1 (n=64)	Within 5 feet of home	45%	25%	17%	6%	6%
VEGDESCRIP2 (n=70)	5-30 feet of home	19%	19%	40%	14%	9%
VEGDESCRIP3 (n=68)	31-100 feet of home (may extend to neighbors' property)	4%	0%	40%	28%	28%

DRYVEG (n=73)

3.10. Which best describes the amount of dry vegetation, or fine debris, within 30 feet of your Chelan County residence? (*Fill in one circle*)

53% No dry vegetation or dead debris within 30 feet of my home

26% Some pine needle and leaf debris

16% Moderate debris, including twigs and branches

4% Abundant debris and/or mixed heavy fuels (logs or branches)

COMBUST1-7 (n=76)

3.11. Are any of the following combustible items within 30 feet of your Chelan County residence (not including items in your garage)? (*Fill in all that apply*)

49% Propane tank, gas can, or other flammable liquid container

30% Wood pile (firewood or lumber)

26% Wood or plastic outdoor furniture/playset

3% Compost bin or yard waste

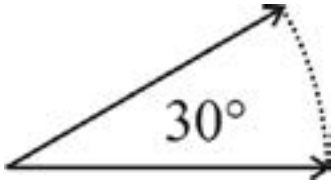
30% Small outbuilding

11% Other (feed storage, chicken coop, etc.)

20% None - No combustible materials within 30 feet of my home

CLOSESLOPE (n=74)

3.12. The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your Chelan County residence from the closest steep slope (30 degrees or greater)? (*Fill in one circle*)



34% 25 feet or less
23% 26 to 50 feet
9% 51 to 75 feet
7% 76 to 100 feet
27% Greater than 100 feet

RISKRATE (n=76)

3.13. Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Chelan County residence's current overall wildfire risk rating? (*Fill in one circle*)

34% Low Risk
49% Moderate Risk
16% High Risk
1% Extreme Risk

Section 4: The questions in this section focus on your wildfire risk reduction activities within your community and your perceptions of wildfire risk.

TALKFIRE (n=76)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

41% No
59% Yes

SLACKER (n=73)

4.2. Do you have any neighbors who are not taking action to address sources of wildfire risk on their properties (ex. dense vegetation)? (*Fill in one circle*)

59% No

41% Yes

SLACKCOND (n=30)

→ Do the conditions on those properties increase the risk of fire spreading to your Chelan County residence? *(Fill in one circle)*

27% No

73% Yes

NACTION (n=76)

4.3. Have any of your neighbors done anything to reduce the risk of wildfire on their property? (*Fill in one circle*)

16% No

50% Yes

34% Don't know

4.4. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
ACTIVITIES1 (n=75)	Reduced vegetation on my Chelan County property (ex. cleared or pruned weeds, brush, and trees; used fire resistant landscaping)	7%	93%
ACTIVITIES2 (n=68)	Made my Chelan County residence more fire resistant (ex. replaced roofing, siding, added hardscaping)	37%	63%
ACTIVITIES3 (n=73)	Helped neighbor(s) reduce vegetation on their properties	73%	27%
ACTIVITIES4 (n=73)	Helped reduce vegetation on community property	63%	37%
ACTIVITIES5 (n=73)	Helped reduce vegetation on nearby public lands	71%	29%
ACTIVITIES6 (n=72)	Participated in a community wildfire activity (ex. attended a meeting, participated in a chipper day, etc.)	81%	19%

4.5. In the event of a wildfire, how likely would the wildfire spread as follows? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
	FROM nearby public/large undeveloped land TO:					
FIRESPREAD1 (n=71)	-> My neighborhood	13%	28%	30%	15%	14%
FIRESPREAD2 (n=75)	-> My Chelan County property	16%	20%	36%	15%	13%
	FROM my neighborhood TO:					
FIRESPREAD3 (n=72)	-> Nearby public/large undeveloped land	17%	25%	22%	25%	11%
FIRESPREAD4 (n=73)	-> My Chelan County property	11%	23%	27%	21%	18%
	FROM my Chelan County property TO:					
FIRESPREAD5 (n=72)	-> My neighborhood	6%	25%	29%	22%	18%
FIRESPREAD6 (n=75)	-> Nearby public/large undeveloped land	11%	20%	31%	20%	19%

CHANCES1 (n=73)

4.6. What do you think is the chance that a wildfire will be on your property this year? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
14%	15%	26%	18%	8%	11%	4%	3%	0%	0%	1%

CHANCES2 (n=72)

4.7. If there is a wildfire on your property this year, what do you think is the chance that it will destroy or severely damage your Chelan County residence? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
10%	22%	11%	12%	11%	11%	3%	8%	4%	4%	3%

4.8. If there is a wildfire on your Chelan County property, how likely do you think it is that the following would occur? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
LACT1 (n=74)	I would put the fire out.	14%	19%	26%	26%	15%	1%
LACT2 (n=72)	The fire department would save my home.	15%	36%	25%	12%	8%	3%
LACT3 (n=73)	My home would have smoke damage.	8%	25%	19%	30%	14%	4%
LACT4 (n=74)	My home would have some physical damage.	8%	19%	26%	30%	15%	3%
LACT5 (n=73)	My home would be destroyed.	4%	8%	19%	29%	37%	3%
LACT6 (n=73)	I would lose money due to the loss of business or income on my property.	7%	4%	12%	10%	26%	41%
LACT7 (n=74)	My trees and landscape would burn.	7%	27%	27%	24%	11%	4%
LACT9 (n=74)	My neighbors' homes would be damaged or destroyed.	1%	11%	36%	31%	15%	5%
LACT10 (n=73)	My community water supply would be threatened.	5%	4%	18%	11%	48%	14%

Section 5: In this section, we ask where you get information about wildfire and your thoughts about wildfire.

5.1. The following sources provide information about wildfire risk, how useful has this information been if you have received it? (*Fill in one circle per row*)

		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Have *NOT* received information from this source
SOURCEUSE1 (n=73)	Chelan County Fire District 1	11%	25%	25%	10%	4%	26%
SOURCEUSE2 (n=72)	Community group (ex., homeowners association)	0%	7%	6%	3%	3%	82%
SOURCEUSE3 (n=72)	Neighbors, friends, or family	0%	10%	15%	14%	6%	56%
SOURCEUSE4 (n=73)	Media (newspaper, TV, radio, internet)	1%	21%	26%	18%	8%	26%
SOURCEUSE_CCFD1_1 (n=72)	City of Wenatchee	0%	6%	10%	4%	4%	76%
SOURCEUSE5 (n=72)	Firewise USA	3%	6%	3%	0%	6%	83%
SOURCEUSE8 (n=70)	Fire Adapted Communities and/or Learning Network	0%	0%	6%	0%	7%	87%
SOURCEUSE_CCFD1_2 (n=71)	Cascadia Conservation District	1%	3%	10%	10%	6%	70%
SOURCEUSE_CCFD1_3 (n=72)	Washington State University Master Gardeners program	0%	1%	3%	3%	6%	88%
SOURCEUSE_CCFD1_4 (n=72)	Chelan County Department of Natural Resources	1%	6%	7%	7%	6%	74%
SOURCEUSE_CCFD1_5 (n=71)	Chumstick Wildfire Coalition	0%	0%	1%	1%	4%	93%
SOURCEUSE_CCFD1_6 (n=71)	Chelan/Douglas Land Trust	0%	3%	3%	3%	4%	87%
SOURCEUSESTATE (n=71)	Washington State Department of Natural Resources	0%	3%	6%	6%	6%	80%
SOURCEUSE14 (n=71)	U.S. Forest Service	0%	6%	8%	6%	3%	77%
SOURCEUSE15 (n=71)	Bureau of Land Management	0%	3%	1%	7%	4%	85%
SOURCEUSE9 (n=22)	Other (Please specify):	5%	0%	9%	0%	5%	82%

5.2. How would you prefer Chelan County Fire District 1 communicate with you about wildfire risk reduction? (*Fill in all that apply*)

28%	Email	COMMUNICATE1 (n=76)
67%	Newsletter (mailer)	COMMUNICATE2 (n=76)
17%	Community meetings	COMMUNICATE3 (n=76)
17%	In-person interactions	COMMUNICATE4 (n=76)
12%	Social media (Facebook, Twitter)	COMMUNICATE5 (n=76)

5.3. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=72)	Removing trees and reducing other vegetation	33%	32%	22%	4%	8%
ACCEPT2 (n=70)	Burning piles of vegetation after a vegetation reduction project	34%	47%	11%	4%	3%
ACCEPT3 (n=70)	Conducting a prescribed fire ignited by fire managers	30%	46%	14%	3%	7%
ACCEPT4 (n=68)	Managing a naturally ignited fire (such as lightning)	38%	40%	16%	3%	3%

5.4. If a wildfire threatens your community this year, do you think the following will happen? (*Fill in one circle per row*)

		No	Yes
THNKHAPPN1 (n=66)	Local firefighters will have sufficient resources to keep the wildfire from spreading	44%	56%
THNKHAPPN2 (n=67)	Local firefighters will have sufficient resources to protect threatened homes	34%	66%
THNKHAPPN3 (n=68)	Local agencies will make good decisions during the wildfire	10%	90%
THNKHAPPN4 (n=62)	Federal responders will make good decisions during the wildfire	32%	68%
THNKHAPPN5 (n=68)	Firefighters should put their lives at risk to protect my home	93%	7%

5.5. How much do you agree or disagree with the following statements about wildfire? (*Fill in one circle per row*)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
STATE2 (n=72)	With proper technology, we can control most wildfires.	4%	35%	31%	26%	4%
STATE3 (n=71)	We should put out wildfires that threaten human life.	59%	37%	3%	0%	1%
STATE4 (n=70)	We should put out wildfires that threaten property.	34%	50%	11%	3%	1%
STATE5 (n=71)	During a wildfire, saving homes should be a priority over saving forests.	31%	46%	13%	10%	0%
STATE6 (n=72)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	28%	50%	17%	6%	0%
STATE11 (n=72)	I live here for the trees and will not remove any of them to reduce wildfire risk.	3%	1%	18%	53%	25%
STATE13 (n=70)	Managing the wildfire danger is a government responsibility, not mine.	4%	6%	9%	57%	24%
STATE14 (n=72)	Homeowners' actions to reduce wildfire are not effective.	1%	3%	8%	64%	24%
STATE15 (n=72)	My property is at risk of wildfire.	8%	38%	29%	19%	6%
STATE17 (n=72)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	1%	12%	35%	40%	11%

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

6.1. Do any of the following prevent you from taking action to reduce the wildfire risk on your Chelan County property? (*Fill in one circle per row*)

		No	Yes
FACTOR1 (n=73)	Financial expense/ cost	71%	29%
FACTOR2 (n=71)	Time it takes to do the work	65%	35%
FACTOR3 (n=73)	Physical difficulty of doing the work	63%	37%
FACTOR4 (n=72)	Lack of specific information on how to reduce wildfire risk on my property	72%	28%
FACTOR5 (n=69)	Lack of effectiveness of risk reduction actions	87%	13%
FACTOR6 (n=72)	Do not want to change the way my property looks	82%	18%
FACTOR7 (n=70)	Lack of information about or options for removal of materials from thinning trees and other vegetation	74%	26%
FACTOR9 (n=70)	Restrictions by homeowners' association on cutting trees	100%	0%

6.2. Would any of the following items encourage you to reduce the wildfire risk on your property? (*Fill in one circle per row*)

		No	Yes
INCENTV 1 (n=71)	Financial assistance	49%	51%
INCENTV 2 (n=73)	Specific information about what needs to be done on my property	27%	73%
INCENTV 3 (n=74)	Help doing the work (ex. thinning trees and vegetation and/or removal of debris)	43%	57%
INCENTV 4 (n=73)	A list of recommended contractors that could be hired to do the work	62%	38%

Section 7: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAKE1 (n=74)

7.1. Do you view yourself as someone who is not at all willing to take risks or very willing to take risks? (*Fill in one circle*)

Not at all willing to take risks										Very willing to take risks
0	1	2	3	4	5	6	7	8	9	10
4%	4%	4%	12%	8%	18%	18%	8%	18%	1%	5%

AGE (n=72)

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

AVERAGE = 60 years old

GENDER (n=72)

7.3. Are you? (*Fill in one circle*)

62% Male

38% Female

EDUC (n=71)

7.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

1% Less than high school

14% High school graduate

20% Some college or technical school

7% Technical or trade school

35% College graduate

3% Some graduate work

20% Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=70)

7.5. Which of the following best describes your current employment situation? (*Fill in one circle*)

- 46% Employed full time (including self-employed)
- 10% Employed part time (including self-employed)
- 3% Unemployed or do not work outside of the home
- 41% Retired

INCOME (n=65)

7.6. Which of the following categories describes your annual household income? (*Fill in one circle*)

- 2% Less than $15,000
- 3% $15,000 - $24,999
- 5% $25,000 – $34,999
- 15% $35,000 - $49,999
- 23% $50,000 - $74,999
- 15% $75,000 - $99,999
- 14% $100,000 - $149,999
- 11% $150,000 - $199,999
- 12% More than $200,000

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

APPENDIX VI. LIVING WITH WILDFIRE IN CHELAN COUNTY IN 2018: SQUILCHUCK VALLEY CODEBOOK

Living with Wildfire in Chelan County in 2018

Codebook: Squilchuck Valley

Prepared by The Wildfire Research Center for:
Chelan County Fire District 1
136 S. Chelan Ave., Wenatchee, WA 98801
www.chelancountyfire.com

Entered survey responses: 113
n = number of observations
Blue numbers are percent responses (might not total to 100% due to rounding)
Red ALL CAPS are variable names

Please note: We encourage use of this survey instrument for applied, research, and/or publication purposes but request to be notified before any such use at: wildfireresearchcenter@gmail.com

Section 1: In this first section of the survey, we ask about your residence in Chelan County. Please answer the following questions with respect to your Chelan County residence located in the greater Squilchuck area. We refer to this home as your ***Chelan County residence***.

When choosing a response, please fill in the circle completely. Correct: ● Incorrect: ⊘ ◎ ◔ ●

OCCTYPE (n=112)

1.1. Do you own or rent your Chelan County residence? (*Fill in one circle*)

- 92% Own and occupy
- 2% Own and rent out short term
- 5% Own and rent out long term
- 1% Rent

MONTHS (n=111)

1.2. How many months per year do you live at your Chelan County residence? (*Fill in the blank*)

AVERAGE = 11 months; 12 months = 91%

FULLTIME (n=111)

1.3. In what year did you move to your Chelan County residence? (*Fill in the blank*)

AVERAGE = 1998

YRBUILD (n=106)

1.4. In what year was your Chelan County residence originally built? (*Fill in the blank*)

AVERAGE = 1980

RISKAWAR (n=112)

1.5. How aware of wildfire risk were you when you bought or decided to rent your Chelan County residence? (*Fill in one circle*)

- 54% Very aware
- 31% Somewhat aware
- 12% Not aware
- 3% Don't remember

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

FIRE (n=112)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Chelan County property? (*Fill in one circle*)

- 4% There has been a wildfire on my property
- 14% Less than 2 miles away but not on my property
- 53% 2 to 10 miles away
- 20% More than 10 miles away
- 10% Not sure

DAMAGE (n=112)

2.2. Has your Chelan County residence ever had smoke or fire damage from a wildfire? (*Fill in one circle*)

- 95% No
- 4% Yes, my Chelan County residence has had smoke damage
- 2% Yes, my Chelan County residence has had fire and smoke damage

DAMAGE4 (n=2)

→ Was your Chelan County residence destroyed by a fire? (*Fill in one circle*)

- 100% No
- 0% Yes

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Chelan County residence? (*Fill in all that apply*)

19%	No	EVACPLAN1 (n=111)
64%	Yes, for the people in my household	EVACPLAN2 (n=111)
52%	Yes, for the pets in my household and on my property	EVACPLAN3 (n=111)
7%	Yes, for livestock on my property	EVACPLAN4 (n=111)

NEWREVERSE (n=110)

2.4. Have you signed up for the new reverse 911 service that calls residents to evacuate or prepare to evacuate in the event of a wildfire? (*Fill in one circle*)

95% No

5% Yes

EVACUATED (n=112)

2.5. Have you ever evacuated from your Chelan County residence due to a wildfire or threat of a wildfire? (*Fill in one circle*)

81% No

19% Yes

2.6. Please tell us about your experiences with your homeowners insurance for your Chelan County residence. (*Fill in one circle per row*)

		No	Yes
INSURE2 (n=110)	Has your current or a previous homeowners insurance company ever provided information on reducing the risk of wildfire?	77%	23%
INSURE3 (n=113)	Did an insurance company ever cancel or refuse to renew your homeowners insurance because of the risk of wildfire?	97%	3%
INSURE4 (n=104)	Do you pay a higher premium for your homeowners insurance due to wildfire risk?	88%	12%
INSURE10 (n=105)	Do you receive a discount on your homeowners insurance premium because you have reduced wildfire risk on your property?	95%	5%

Section 3: In this section, we ask about the characteristics of your Chelan County residence and the area near your Chelan County residence.

ROOFTYPE (n=110)

3.1. What type of roof does your Chelan County residence have? (*Fill in one circle*)

1% Wood (shake shingles)

99% Tile, metal, or asphalt shingles

SIDETYPE (n=109)

3.2. What type of exterior siding covers the majority of your Chelan County residence? (*Fill in one circle*)

30% Stucco, cement, brick, stone, or other noncombustible siding

3% Log or heavy timbers

67% Wood or vinyl siding

BALCONY (n=108)

3.3. Does your Chelan County residence have a fence, balcony, deck, or other attachment (ex. pergola) that is combustible? (*Fill in one circle*)

24% No

76% Yes

→ Are any made of wood? (*Fill in one circle*)

		No	Yes	Not applicable
MADEWOOD1 (n=80)	My fence	19%	28%	54%
MADEWOOD2 (n=82)	My balcony/deck	4%	89%	7%
MADEWOOD3 (n=80)	Other attachment (ex. pergola)	10%	26%	64%

ROADS (n=108)

3.4. If the road you use to access your Chelan County residence was blocked due to a wildfire, is there another road you could use to get to safety? (*Fill in one circle*)

59% No

41% Yes

DRIVEWAY14 (n=107)

3.5. Is your driveway at least 14 feet wide (wide enough for a full-size fire engine)? (*Fill in one circle*)

21% No, my driveway is less than 14 feet wide

79% Yes, my driveway is at least 14 feet wide

DRIVEWAYCLR (n=109)

3.6. Does your driveway have at least 14 feet of vertical clearance to allow access for first responders? (*Fill in one circle*)

7% No, my driveway has less than 14 feet of clearance

93% Yes, my driveway has at least 14 feet of clearance

DRIVEWAYLEN (n=109)

3.7. How long is your driveway? (*Fill in one circle*)

51% 150 feet long or less

49% Longer than 150 feet

TURNARND (n=52)

→ Does your driveway have a turnaround? (*Fill in one circle*)

21% No

79% Yes

HOMENUM (n=110)

3.8. Is your house number posted? (*Fill in one circle*)

7% No

93% Yes

HOMENUMVIS (n=96)

→ Is the number visible from the road? (*Fill in one circle*)

14% No

86% Yes

BLUEREFLECT (n=77)

→ Is the number blue reflective? (*Fill in one circle*)

40% No

60% Yes

3.9. Which is the best description of the vegetation around your Chelan County residence? (*Fill in one circle per row*)

		Irrigated lawn (no other vegetation)	Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	Individual trees, shrubs, and/or sparse natural grasses	Clusters of trees, shrubs, and/or natural grasses	Continuous dense trees, shrubs, and/or natural grasses
VEGDESCRIP1 (n=101)	Within 5 feet of home	29%	36%	20%	13%	3%
VEGDESCRIP2 (n=99)	5-30 feet of home	10%	10%	37%	29%	13%
VEGDESCRIP3 (n=97)	31-100 feet of home (may extend to neighbors' property)	6%	1%	24%	36%	33%

DRYVEG (n=111)

3.10. Which best describes the amount of dry vegetation, or fine debris, within 30 feet of your Chelan County residence? (*Fill in one circle*)

- 47% No dry vegetation or dead debris within 30 feet of my home
- 24% Some pine needle and leaf debris
- 23% Moderate debris, including twigs and branches
- 6% Abundant debris and/or mixed heavy fuels (logs or branches)

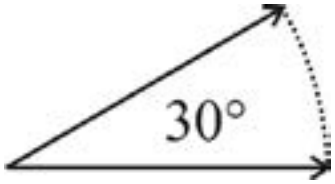
COMBUST1-7 (n=110)

3.11. Are any of the following combustible items within 30 feet of your Chelan County residence (not including items in your garage)? (*Fill in all that apply*)

- 43% Propane tank, gas can, or other flammable liquid container
- 25% Wood pile (firewood or lumber)
- 24% Wood or plastic outdoor furniture/playset
- 3% Compost bin or yard waste
- 24% Small outbuilding
- 3% Other (feed storage, chicken coop, etc.)
- 22% None - No combustible materials within 30 feet of my home

CLOSESLOPE (n=110)

3.12. The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your Chelan County residence from the closest steep slope (30 degrees or greater)? (*Fill in one circle*)



- 44% 25 feet or less
- 23% 26 to 50 feet
- 13% 51 to 75 feet
- 6% 76 to 100 feet
- 15% Greater than 100 feet

RISKRATE (n=112)

3.13. Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Chelan County residence's current overall wildfire risk rating? (*Fill in one circle*)

- 30% Low Risk
- 52% Moderate Risk
- 16% High Risk
- 2% Extreme Risk

Section 4: The questions in this section focus on your wildfire risk reduction activities within your community and your perceptions of wildfire risk.

TALKFIRE (n=110)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

- 39% No
- 61% Yes

SLACKER (n=103)

4.2. Do you have any neighbors who are not taking action to address sources of wildfire risk on their properties (ex. dense vegetation)? (*Fill in one circle*)

49% No

51% Yes

SLACKCOND (n=51)

→ Do the conditions on those properties increase the risk of fire spreading to your Chelan County residence? *(Fill in one circle)*

24% No

76% Yes

NACTION (n=109)

4.3. Have any of your neighbors done anything to reduce the risk of wildfire on their property? (*Fill in one circle*)

8% No

54% Yes

38% Don't know

4.4. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
ACTIVITIES1 (n=108)	Reduced vegetation on my Chelan County property (ex. cleared or pruned weeds, brush, and trees; used fire resistant landscaping)	12%	88%
ACTIVITIES2 (n=101)	Made my Chelan County residence more fire resistant (ex. replaced roofing, siding, added hardscaping)	43%	57%
ACTIVITIES3 (n=107)	Helped neighbor(s) reduce vegetation on their properties	70%	30%
ACTIVITIES4 (n=106)	Helped reduce vegetation on community property	67%	33%
ACTIVITIES5 (n=108)	Helped reduce vegetation on nearby public lands	80%	20%
ACTIVITIES6 (n=107)	Participated in a community wildfire activity (ex. attended a meeting, participated in a chipper day, etc.)	72%	28%

4.5. In the event of a wildfire, how likely would the wildfire spread as follows? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
	FROM nearby public/large undeveloped land TO:					
FIRESPREAD1 (n=105)	-> My neighborhood	25%	29%	30%	14%	3%
FIRESPREAD2 (n=104)	-> My Chelan County property	22%	19%	35%	18%	6%
	FROM my neighborhood TO:					
FIRESPREAD3 (n=103)	-> Nearby public/large undeveloped land	23%	26%	28%	17%	6%
FIRESPREAD4 (n=103)	-> My Chelan County property	21%	21%	30%	22%	5%
	FROM my Chelan County property TO:					
FIRESPREAD5 (n=103)	-> My neighborhood	17%	17%	28%	32%	7%
FIRESPREAD6 (n=105)	-> Nearby public/large undeveloped land	18%	22%	27%	23%	10%

CHANCES1 (n=106)

4.6. What do you think is the chance that a wildfire will be on your property this year? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
8%	15%	20%	18%	6%	26%	3%	3%	0%	1%	1%

CHANCES2 (n=106)

4.7. If there is a wildfire on your property this year, what do you think is the chance that it will destroy or severely damage your Chelan County residence? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
6%	10%	19%	13%	8%	24%	4%	4%	8%	3%	1%

4.8. If there is a wildfire on your Chelan County property, how likely do you think it is that the following would occur? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
LACT1 (n=107)	I would put the fire out.	7%	21%	25%	27%	17%	2%
LACT2 (n=106)	The fire department would save my home.	17%	38%	25%	14%	7%	0%
LACT3 (n=107)	My home would have smoke damage.	11%	33%	36%	14%	5%	1%
LACT4 (n=107)	My home would have some physical damage.	9%	19%	40%	26%	6%	0%
LACT5 (n=107)	My home would be destroyed.	3%	6%	30%	36%	24%	1%
LACT6 (n=108)	I would lose money due to the loss of business or income on my property.	8%	5%	12%	11%	15%	49%
LACT7 (n=107)	My trees and landscape would burn.	14%	26%	27%	25%	7%	1%
LACT9 (n=107)	My neighbors' homes would be damaged or destroyed.	7%	11%	35%	26%	16%	6%
LACT10 (n=106)	My community water supply would be threatened.	5%	5%	13%	20%	30%	27%

Section 5: In this section, we ask where you get information about wildfire and your thoughts about wildfire.

5.1. The following sources provide information about wildfire risk, how useful has this information been if you have received it? (*Fill in one circle per row*)

		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Have *NOT* received information from this source
SOURCEUSE1 (n=106)	Chelan County Fire District 1	19%	33%	20%	6%	1%	22%
SOURCEUSE2 (n=105)	Community group (ex., homeowners association)	0%	8%	10%	8%	7%	68%
SOURCEUSE3 (n=108)	Neighbors, friends, or family	6%	13%	17%	18%	5%	42%
SOURCEUSE4 (n=107)	Media (newspaper, TV, radio, internet)	5%	18%	28%	23%	6%	21%
SOURCEUSE_CCFD1_1 (n=107)	City of Wenatchee	2%	1%	15%	6%	7%	69%
SOURCEUSE5 (n=104)	Firewise USA	6%	12%	3%	7%	1%	72%
SOURCEUSE8 (n=103)	Fire Adapted Communities and/or Learning Network	3%	6%	4%	4%	5%	79%
SOURCEUSE_CCFD1_2 (n=107)	Cascadia Conservation District	6%	13%	6%	18%	3%	55%
SOURCEUSE_CCFD1_3 (n=105)	Washington State University Master Gardeners program	4%	3%	9%	7%	5%	73%
SOURCEUSE_CCFD1_4 (n=103)	Chelan County Department of Natural Resources	3%	6%	8%	12%	2%	70%
SOURCEUSE_CCFD1_5 (n=103)	Chumstick Wildfire Coalition	1%	2%	2%	2%	5%	88%
SOURCEUSE_CCFD1_6 (n=107)	Chelan/Douglas Land Trust	1%	4%	9%	7%	5%	74%
SOURCEUSESTATE (n=106)	Washington State Department of Natural Resources	4%	3%	8%	8%	3%	75%
SOURCEUSE14 (n=105)	U.S. Forest Service	4%	7%	8%	9%	2%	71%
SOURCEUSE15 (n=105)	Bureau of Land Management	2%	2%	4%	6%	2%	85%
SOURCEUSE9 (n=49)	Other (Please specify):	14%	0%	6%	0%	0%	80%

5.2. How would you prefer Chelan County Fire District 1 communicate with you about wildfire risk reduction? (*Fill in all that apply*)

42%	Email	COMMUNICATE1 (n=113)
69%	Newsletter (mailer)	COMMUNICATE2 (n=113)
23%	Community meetings	COMMUNICATE3 (n=113)
28%	In-person interactions	COMMUNICATE4 (n=113)
13%	Social media (Facebook, Twitter)	COMMUNICATE5 (n=113)

5.3. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=109)	Removing trees and reducing other vegetation	46%	27%	17%	8%	3%
ACCEPT2 (n=108)	Burning piles of vegetation after a vegetation reduction project	47%	36%	11%	3%	3%
ACCEPT3 (n=108)	Conducting a prescribed fire ignited by fire managers	42%	27%	19%	5%	8%
ACCEPT4 (n=107)	Managing a naturally ignited fire (such as lightning)	45%	27%	18%	3%	7%

5.4. If a wildfire threatens your community this year, do you think the following will happen? (*Fill in one circle per row*)

		No	Yes
THNKHAPPN1 (n=107)	Local firefighters will have sufficient resources to keep the wildfire from spreading	49%	51%
THNKHAPPN2 (n=108)	Local firefighters will have sufficient resources to protect threatened homes	30%	70%
THNKHAPPN3 (n=108)	Local agencies will make good decisions during the wildfire	7%	93%
THNKHAPPN4 (n=104)	Federal responders will make good decisions during the wildfire	29%	71%
THNKHAPPN5 (n=109)	Firefighters should put their lives at risk to protect my home	91%	9%

5.5. How much do you agree or disagree with the following statements about wildfire? (*Fill in one circle per row*)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
STATE2 (n=107)	With proper technology, we can control most wildfires.	3%	34%	26%	28%	9%
STATE3 (n=110)	We should put out wildfires that threaten human life.	54%	39%	5%	1%	1%
STATE4 (n=108)	We should put out wildfires that threaten property.	22%	55%	19%	2%	2%
STATE5 (n=108)	During a wildfire, saving homes should be a priority over saving forests.	29%	46%	20%	3%	2%
STATE6 (n=108)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	36%	48%	9%	6%	1%
STATE11 (n=108)	I live here for the trees and will not remove any of them to reduce wildfire risk.	1%	4%	19%	44%	32%
STATE13 (n=109)	Managing the wildfire danger is a government responsibility, not mine.	0%	4%	14%	48%	35%
STATE14 (n=109)	Homeowners' actions to reduce wildfire are not effective.	1%	2%	11%	51%	35%
STATE15 (n=109)	My property is at risk of wildfire.	20%	43%	21%	11%	5%
STATE17 (n=109)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	6%	17%	28%	39%	9%

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

6.1. Do any of the following prevent you from taking action to reduce the wildfire risk on your Chelan County property? (*Fill in one circle per row*)

		No	Yes
FACTOR1 (n=109)	Financial expense/ cost	57%	43%
FACTOR2 (n=109)	Time it takes to do the work	58%	42%
FACTOR3 (n=107)	Physical difficulty of doing the work	47%	53%
FACTOR4 (n=108)	Lack of specific information on how to reduce wildfire risk on my property	76%	24%
FACTOR5 (n=105)	Lack of effectiveness of risk reduction actions	87%	13%
FACTOR6 (n=108)	Do not want to change the way my property looks	87%	13%
FACTOR7 (n=109)	Lack of information about or options for removal of materials from thinning trees and other vegetation	72%	28%
FACTOR9 (n=109)	Restrictions by homeowners' association on cutting trees	99%	1%

6.2. Would any of the following items encourage you to reduce the wildfire risk on your property? (*Fill in one circle per row*)

		No	Yes
INCENTV 1 (n=109)	Financial assistance	36%	64%
INCENTV 2 (n=109)	Specific information about what needs to be done on my property	28%	72%
INCENTV 3 (n=109)	Help doing the work (ex. thinning trees and vegetation and/or removal of debris)	28%	72%
INCENTV 4 (n=109)	A list of recommended contractors that could be hired to do the work	56%	44%

Section 7: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAKE1 (n=109)

7.1. Do you view yourself as someone who is not at all willing to take risks or very willing to take risks? (*Fill in one circle*)

Not at all willing to take risks										Very willing to take risks
0	1	2	3	4	5	6	7	8	9	10
3%	3%	3%	10%	6%	30%	11%	14%	12%	2%	7%

AGE (n=107)

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

AVERAGE = 62 years old

GENDER (n=104)

7.3. Are you? (*Fill in one circle*)

62% Male

38% Female

EDUC (n=109)

7.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

2% Less than high school

8% High school graduate

27% Some college or technical school

9% Technical or trade school

23% College graduate

2% Some graduate work

29% Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=106)

7.5. Which of the following best describes your current employment situation? (*Fill in one circle*)

- 38% Employed full time (including self-employed)
- 9% Employed part time (including self-employed)
- 2% Unemployed or do not work outside of the home
- 51% Retired

INCOME (n=100)

7.6. Which of the following categories describes your annual household income? (*Fill in one circle*)

- 4% Less than $15,000
- 7% $15,000 - $24,999
- 6% $25,000 – $34,999
- 14% $35,000 - $49,999
- 14% $50,000 - $74,999
- 9% $75,000 - $99,999
- 22% $100,000 - $149,999
- 11% $150,000 - $199,999
- 13% More than $200,000

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

APPENDIX VII. LIVING WITH WILDFIRE IN CHELAN COUNTY IN 2018: FOREST RIDGE CODEBOOK

Living with Wildfire in Chelan County in 2018

Codebook: Forest Ridge

Prepared by The Wildfire Research Center for:
Chelan County Fire District 1
136 S. Chelan Ave., Wenatchee, WA 98801
www.chelancountyfire.com

Entered survey responses: 48
n = number of observations
Blue numbers are percent responses (might not total to 100% due to rounding)
Red ALL CAPS are variable names

Please note: We encourage use of this survey instrument for applied, research, and/or publication purposes but request to be notified before any such use at: wildfireresearchcenter@gmail.com

Section 1: In this first section of the survey, we ask about your residence in Chelan County. Please answer the following questions with respect to your Chelan County residence located in the greater Squilchuck area. We refer to this home as your ***Chelan County residence***.

When choosing a response, please fill in the circle completely. Correct: ● Incorrect: ⊘ ◎ ◔ ◕

OCCTYPE (n=48)

1.1. Do you own or rent your Chelan County residence? (*Fill in one circle*)

- 96% Own and occupy
- 4% Own and rent out short term
- 0% Own and rent out long term
- 0% Rent

MONTHS (n=46)

1.2. How many months per year do you live at your Chelan County residence? (*Fill in the blank*)

AVERAGE = 10 months; 12 months = 78%

FULLTIME (n=47)

1.3. In what year did you move to your Chelan County residence? (*Fill in the blank*)

AVERAGE = 2006

YRBUILD (n=47)

1.4. In what year was your Chelan County residence originally built? (*Fill in the blank*)

AVERAGE = 2001

RISKAWAR (n=48)

1.5. How aware of wildfire risk were you when you bought or decided to rent your Chelan County residence? (*Fill in one circle*)

- 60% Very aware
- 27% Somewhat aware
- 12% Not aware
- 0% Don't remember

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

FIRE (n=48)

2.1. What is the closest distance (as a crow flies) a wildfire has come to your Chelan County property? (*Fill in one circle*)

- 0% There has been a wildfire on my property
- 15% Less than 2 miles away but not on my property
- 48% 2 to 10 miles away
- 19% More than 10 miles away
- 19% Not sure

DAMAGE (n=48)

2.2. Has your Chelan County residence ever had smoke or fire damage from a wildfire? (*Fill in one circle*)

- 100% No
- 0% Yes, my Chelan County residence has had smoke damage
- 0% Yes, my Chelan County residence has had fire and smoke damage

DAMAGE4 (n=0)

→ Was your Chelan County residence destroyed by a fire? (*Fill in one circle*)

- NaN% No
- NaN% Yes

2.3. Do you currently have an evacuation plan in the event a wildfire threatens your Chelan County residence? (*Fill in all that apply*)

12%	No	EVACPLAN1 (n=48)
81%	Yes, for the people in my household	EVACPLAN2 (n=48)
46%	Yes, for the pets in my household and on my property	EVACPLAN3 (n=48)
0%	Yes, for livestock on my property	EVACPLAN4 (n=48)

NEWREVERSE (n=48)

2.4. Have you signed up for the new reverse 911 service that calls residents to evacuate or prepare to evacuate in the event of a wildfire? (*Fill in one circle*)

81% No

19% Yes

EVACUATED (n=48)

2.5. Have you ever evacuated from your Chelan County residence due to a wildfire or threat of a wildfire? (*Fill in one circle*)

35% No

65% Yes

2.6. Please tell us about your experiences with your homeowners insurance for your Chelan County residence. (*Fill in one circle per row*)

		No	Yes
INSURE2 (n=46)	Has your current or a previous homeowners insurance company ever provided information on reducing the risk of wildfire?	76%	24%
INSURE3 (n=47)	Did an insurance company ever cancel or refuse to renew your homeowners insurance because of the risk of wildfire?	83%	17%
INSURE4 (n=40)	Do you pay a higher premium for your homeowners insurance due to wildfire risk?	62%	38%
INSURE10 (n=41)	Do you receive a discount on your homeowners insurance premium because you have reduced wildfire risk on your property?	93%	7%

Section 3: In this section, we ask about the characteristics of your Chelan County residence and the area near your Chelan County residence.

ROOFTYPE (n=48)

3.1. What type of roof does your Chelan County residence have? (*Fill in one circle*)

17% Wood (shake shingles)

83% Tile, metal, or asphalt shingles

SIDETYPE (n=48)

3.2. What type of exterior siding covers the majority of your Chelan County residence? (*Fill in one circle*)

58% Stucco, cement, brick, stone, or other noncombustible siding

4% Log or heavy timbers

38% Wood or vinyl siding

BALCONY (n=47)

3.3. Does your Chelan County residence have a fence, balcony, deck, or other attachment (ex. pergola) that is combustible? (*Fill in one circle*)

30% No

70% Yes

→ Are any made of wood? (*Fill in one circle*)

		No	Yes	Not applicable
MADEWOOD1 (n=33)	My fence	21%	15%	64%
MADEWOOD2 (n=33)	My balcony/deck	12%	85%	3%
MADEWOOD3 (n=33)	Other attachment (ex. pergola)	15%	9%	76%

ROADS (n=47)

3.4. If the road you use to access your Chelan County residence was blocked due to a wildfire, is there another road you could use to get to safety? (*Fill in one circle*)

85% No

15% Yes

DRIVEWAY14 (n=46)

3.5. Is your driveway at least 14 feet wide (wide enough for a full-size fire engine)? (*Fill in one circle*)

- 26% No, my driveway is less than 14 feet wide
- 74% Yes, my driveway is at least 14 feet wide

DRIVEWAYCLR (n=47)

3.6. Does your driveway have at least 14 feet of vertical clearance to allow access for first responders? (*Fill in one circle*)

- 4% No, my driveway has less than 14 feet of clearance
- 96% Yes, my driveway has at least 14 feet of clearance

DRIVEWAYLEN (n=47)

3.7. How long is your driveway? (*Fill in one circle*)

- 72% 150 feet long or less
- 28% Longer than 150 feet

TURNARND (n=13)

→ Does your driveway have a turnaround? (*Fill in one circle*)

- 46% No
- 54% Yes

HOMENUM (n=47)

3.8. Is your house number posted? (*Fill in one circle*)

- 6% No
- 94% Yes

HOMENUMVIS (n=44)

→ Is the number visible from the road? (*Fill in one circle*)

- 7% No
- 93% Yes

BLUEREFLECT (n=39)

Is the number blue reflective? (*Fill in one circle*)

- 59% No
- 41% Yes

3.9. Which is the best description of the vegetation around your Chelan County residence? (*Fill in one circle per row*)

		Irrigated lawn (no other vegetation)	Flowers, ground covers, and/or individual shrubs (no trees or natural grasses)	Individual trees, shrubs, and/or sparse natural grasses	Clusters of trees, shrubs, and/or natural grasses	Continuous dense trees, shrubs, and/or natural grasses
VEGDESCRIP1 (n=38)	Within 5 feet of home	26%	47%	24%	0%	3%
VEGDESCRIP2 (n=44)	5-30 feet of home	18%	7%	41%	30%	5%
VEGDESCRIP3 (n=42)	31-100 feet of home (may extend to neighbors' property)	2%	0%	21%	48%	29%

DRYVEG (n=46)

3.10. Which best describes the amount of dry vegetation, or fine debris, within 30 feet of your Chelan County residence? (*Fill in one circle*)

- 37% No dry vegetation or dead debris within 30 feet of my home
- 39% Some pine needle and leaf debris
- 20% Moderate debris, including twigs and branches
- 4% Abundant debris and/or mixed heavy fuels (logs or branches)

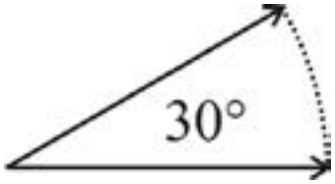
COMBUST1-7 (n=47)

3.11. Are any of the following combustible items within 30 feet of your Chelan County residence (not including items in your garage)? (*Fill in all that apply*)

- 57% Propane tank, gas can, or other flammable liquid container
- 26% Wood pile (firewood or lumber)
- 23% Wood or plastic outdoor furniture/playset
- 6% Compost bin or yard waste
- 13% Small outbuilding
- 6% Other (feed storage, chicken coop, etc.)
- 19% None - No combustible materials within 30 feet of my home

CLOSESLOPE (n=48)

3.12. The "slope" of a property refers to the steepness of the land. A slope greater than 30 degrees is considered steep. How far is your Chelan County residence from the closest steep slope (30 degrees or greater)? (*Fill in one circle*)



- 31% 25 feet or less
- 27% 26 to 50 feet
- 10% 51 to 75 feet
- 12% 76 to 100 feet
- 19% Greater than 100 feet

RISKRATE (n=48)

3.13. Homes are assessed for overall wildfire risk based on the items asked about in questions 3.1 – 3.12 above. What do you think is your Chelan County residence's current overall wildfire risk rating? (*Fill in one circle*)

- 21% Low Risk
- 50% Moderate Risk
- 27% High Risk
- 2% Extreme Risk

Section 4: The questions in this section focus on your wildfire risk reduction activities within your community and your perceptions of wildfire risk.

TALKFIRE (n=48)

4.1. Have you ever talked about wildfire issues with a neighbor? (*Fill in one circle*)

- 15% No
- 85% Yes

SLACKER (n=47)

4.2. Do you have any neighbors who are not taking action to address sources of wildfire risk on their properties (ex. dense vegetation)? (*Fill in one circle*)

55% No

45% Yes

SLACKCOND (n=20)

→ Do the conditions on those properties increase the risk of fire spreading to your Chelan County residence? *(Fill in one circle)*

15% No

85% Yes

NACTION (n=48)

4.3. Have any of your neighbors done anything to reduce the risk of wildfire on their property? (*Fill in one circle*)

0% No

96% Yes

4% Don't know

4.4. Have you done any of the following wildfire-related activities? (*Fill in one circle per row*)

		No	Yes
ACTIVITIES1 (n=48)	Reduced vegetation on my Chelan County property (ex. cleared or pruned weeds, brush, and trees; used fire resistant landscaping)	2%	98%
ACTIVITIES2 (n=43)	Made my Chelan County residence more fire resistant (ex. replaced roofing, siding, added hardscaping)	30%	70%
ACTIVITIES3 (n=47)	Helped neighbor(s) reduce vegetation on their properties	45%	55%
ACTIVITIES4 (n=45)	Helped reduce vegetation on community property	47%	53%
ACTIVITIES5 (n=44)	Helped reduce vegetation on nearby public lands	59%	41%
ACTIVITIES6 (n=48)	Participated in a community wildfire activity (ex. attended a meeting, participated in a chipper day, etc.)	25%	75%

4.5. In the event of a wildfire, how likely would the wildfire spread as follows? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely
	FROM nearby public/large undeveloped land TO:					
FIRESPREAD1 (n=46)	-> My neighborhood	26%	39%	30%	4%	0%
FIRESPREAD2 (n=44)	-> My Chelan County property	18%	30%	39%	11%	2%
	FROM my neighborhood TO:					
FIRESPREAD3 (n=45)	-> Nearby public/large undeveloped land	22%	36%	36%	7%	0%
FIRESPREAD4 (n=43)	-> My Chelan County property	16%	21%	49%	12%	2%
	FROM my Chelan County property TO:					
FIRESPREAD5 (n=44)	-> My neighborhood	14%	20%	34%	23%	9%
FIRESPREAD6 (n=44)	-> Nearby public/large undeveloped land	18%	25%	23%	30%	5%

CHANCES1 (n=46)

4.6. What do you think is the chance that a wildfire will be on your property this year? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
0%	7%	15%	30%	7%	33%	7%	2%	0%	0%	0%

CHANCES2 (n=46)

4.7. If there is a wildfire on your property this year, what do you think is the chance that it will destroy or severely damage your Chelan County residence? (*Fill in one circle*)

No chance										For sure
0	1	2	3	4	5	6	7	8	9	10
0%	4%	7%	20%	11%	22%	7%	7%	15%	7%	2%

4.8. If there is a wildfire on your Chelan County property, how likely do you think it is that the following would occur? (*Fill in one circle per row*)

		Extremely likely	Very likely	Moderately likely	Slightly likely	Not at all likely	Not applicable
LACT1 (n=46)	I would put the fire out.	2%	9%	24%	30%	33%	2%
LACT2 (n=47)	The fire department would save my home.	9%	30%	47%	13%	2%	0%
LACT3 (n=46)	My home would have smoke damage.	11%	30%	41%	11%	7%	0%
LACT4 (n=46)	My home would have some physical damage.	9%	33%	39%	13%	7%	0%
LACT5 (n=46)	My home would be destroyed.	4%	11%	39%	33%	11%	2%
LACT6 (n=46)	I would lose money due to the loss of business or income on my property.	2%	9%	4%	13%	17%	54%
LACT7 (n=46)	My trees and landscape would burn.	11%	30%	33%	20%	7%	0%
LACT9 (n=46)	My neighbors' homes would be damaged or destroyed.	11%	13%	52%	15%	4%	4%
LACT10 (n=44)	My community water supply would be threatened.	5%	14%	27%	25%	20%	9%

Section 5: In this section, we ask where you get information about wildfire and your thoughts about wildfire.

5.1. The following sources provide information about wildfire risk, how useful has this information been if you have received it? (*Fill in one circle per row*)

		Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	Have *NOT* received information from this source
SOURCEUSE1 (n=47)	Chelan County Fire District 1	30%	43%	17%	4%	2%	4%
SOURCEUSE2 (n=48)	Community group (ex., homeowners association)	33%	40%	10%	10%	0%	6%
SOURCEUSE3 (n=47)	Neighbors, friends, or family	23%	36%	17%	11%	4%	9%
SOURCEUSE4 (n=48)	Media (newspaper, TV, radio, internet)	4%	23%	25%	21%	4%	23%
SOURCEUSE_CCFD1_1 (n=47)	City of Wenatchee	2%	11%	15%	15%	6%	51%
SOURCEUSE5 (n=47)	Firewise USA	32%	30%	6%	15%	2%	15%
SOURCEUSE8 (n=46)	Fire Adapted Communities and/or Learning Network	24%	17%	4%	15%	2%	37%
SOURCEUSE_CCFD1_2 (n=45)	Cascadia Conservation District	11%	22%	13%	20%	2%	31%
SOURCEUSE_CCFD1_3 (n=45)	Washington State University Master Gardeners program	0%	7%	11%	11%	7%	64%
SOURCEUSE_CCFD1_4 (n=46)	Chelan County Department of Natural Resources	7%	20%	7%	15%	2%	50%
SOURCEUSE_CCFD1_5 (n=46)	Chumstick Wildfire Coalition	2%	4%	7%	11%	2%	74%
SOURCEUSE_CCFD1_6 (n=45)	Chelan/Douglas Land Trust	2%	9%	4%	9%	7%	69%
SOURCEUSESTATE (n=46)	Washington State Department of Natural Resources	7%	9%	11%	9%	2%	63%
SOURCEUSE14 (n=46)	U.S. Forest Service	7%	20%	15%	9%	4%	46%
SOURCEUSE15 (n=46)	Bureau of Land Management	2%	7%	9%	7%	4%	72%
SOURCEUSE9 (n=18)	Other (Please specify):	17%	6%	6%	6%	0%	67%

5.2. How would you prefer Chelan County Fire District 1 communicate with you about wildfire risk reduction? (*Fill in all that apply*)

62%	Email	COMMUNICATE1 (n=48)
58%	Newsletter (mailer)	COMMUNICATE2 (n=48)
29%	Community meetings	COMMUNICATE3 (n=48)
29%	In-person interactions	COMMUNICATE4 (n=48)
8%	Social media (Facebook, Twitter)	COMMUNICATE5 (n=48)

5.3. How acceptable to you are the following approaches to reducing wildfire risk on nearby public lands? (*Fill in one circle per row*)

		Extremely acceptable	Very acceptable	Moderately acceptable	Slightly acceptable	Not at all acceptable
ACCEPT1 (n=47)	Removing trees and reducing other vegetation	62%	28%	11%	0%	0%
ACCEPT2 (n=47)	Burning piles of vegetation after a vegetation reduction project	45%	36%	11%	4%	4%
ACCEPT3 (n=46)	Conducting a prescribed fire ignited by fire managers	37%	26%	24%	7%	7%
ACCEPT4 (n=46)	Managing a naturally ignited fire (such as lightning)	43%	30%	20%	2%	4%

5.4. If a wildfire threatens your community this year, do you think the following will happen? (*Fill in one circle per row*)

		No	Yes
THNKHAPPN1 (n=45)	Local firefighters will have sufficient resources to keep the wildfire from spreading	42%	58%
THNKHAPPN2 (n=44)	Local firefighters will have sufficient resources to protect threatened homes	30%	70%
THNKHAPPN3 (n=46)	Local agencies will make good decisions during the wildfire	4%	96%
THNKHAPPN4 (n=44)	Federal responders will make good decisions during the wildfire	11%	89%
THNKHAPPN5 (n=46)	Firefighters should put their lives at risk to protect my home	93%	7%

5.5. How much do you agree or disagree with the following statements about wildfire? (*Fill in one circle per row*)

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
STATE2 (n=45)	With proper technology, we can control most wildfires.	0%	33%	38%	20%	9%
STATE3 (n=45)	We should put out wildfires that threaten human life.	60%	38%	2%	0%	0%
STATE4 (n=45)	We should put out wildfires that threaten property.	24%	64%	11%	0%	0%
STATE5 (n=45)	During a wildfire, saving homes should be a priority over saving forests.	29%	51%	16%	2%	2%
STATE6 (n=45)	Wildfires are a natural part of the balance of a healthy forest/ecosystem.	38%	51%	9%	2%	0%
STATE11 (n=45)	I live here for the trees and will not remove any of them to reduce wildfire risk.	0%	2%	7%	56%	36%
STATE13 (n=45)	Managing the wildfire danger is a government responsibility, not mine.	2%	0%	11%	56%	31%
STATE14 (n=45)	Homeowners' actions to reduce wildfire are not effective.	2%	2%	7%	53%	36%
STATE15 (n=45)	My property is at risk of wildfire.	20%	51%	16%	11%	2%
STATE17 (n=45)	My effort to reduce wildfire risk on my property is ineffective because of the heavy vegetation on my neighbors' properties.	4%	13%	33%	42%	7%

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

6.1. Do any of the following prevent you from taking action to reduce the wildfire risk on your Chelan County property? (*Fill in one circle per row*)

		No	Yes
FACTOR1 (n=46)	Financial expense/ cost	63%	37%
FACTOR2 (n=46)	Time it takes to do the work	78%	22%
FACTOR3 (n=47)	Physical difficulty of doing the work	64%	36%
FACTOR4 (n=47)	Lack of specific information on how to reduce wildfire risk on my property	91%	9%
FACTOR5 (n=45)	Lack of effectiveness of risk reduction actions	98%	2%
FACTOR6 (n=46)	Do not want to change the way my property looks	93%	7%
FACTOR7 (n=45)	Lack of information about or options for removal of materials from thinning trees and other vegetation	91%	9%
FACTOR9 (n=46)	Restrictions by homeowners' association on cutting trees	100%	0%

6.2. Would any of the following items encourage you to reduce the wildfire risk on your property? (*Fill in one circle per row*)

		No	Yes
INCENTV 1 (n=45)	Financial assistance	24%	76%
INCENTV 2 (n=46)	Specific information about what needs to be done on my property	26%	74%
INCENTV 3 (n=46)	Help doing the work (ex. thinning trees and vegetation and/or removal of debris)	22%	78%
INCENTV 4 (n=45)	A list of recommended contractors that could be hired to do the work	56%	44%

Section 7: In this section, we ask about personal and household characteristics. Your name will never be connected to your answers in any way.

RISKTAKE1 (n=46)

7.1. Do you view yourself as someone who is not at all willing to take risks or very willing to take risks? (*Fill in one circle*)

Not at all willing to take risks										Very willing to take risks
0	1	2	3	4	5	6	7	8	9	10
2%	2%	11%	9%	4%	26%	17%	9%	11%	7%	2%

AGE (n=45)

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

AVERAGE = 59 years old

GENDER (n=43)

7.3. Are you? (*Fill in one circle*)

63% Male

37% Female

EDUC (n=44)

7.4. What is the highest grade or year of school you completed? (*Fill in one circle*)

0% Less than high school

9% High school graduate

20% Some college or technical school

5% Technical or trade school

34% College graduate

5% Some graduate work

27% Advanced Degree (M.D., M.A., M.S., Ph.D., etc.)

EMPLOY (n=43)

7.5. Which of the following best describes your current employment situation? (*Fill in one circle*)

- 42% Employed full time (including self-employed)
- 7% Employed part time (including self-employed)
- 7% Unemployed or do not work outside of the home
- 44% Retired

INCOME (n=40)

7.6. Which of the following categories describes your annual household income? (*Fill in one circle*)

- 0% Less than $15,000
- 0% $15,000 - $24,999
- 2% $25,000 – $34,999
- 10% $35,000 - $49,999
- 15% $50,000 - $74,999
- 5% $75,000 - $99,999
- 18% $100,000 - $149,999
- 22% $150,000 - $199,999
- 28% More than $200,000

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

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