

Teton Area Wildfire Protection Coalition Rapid Assessment Compared to Household Survey Responses

The Teton Area Wildfire Protection Coalition (TAWPC) conducted parcel-level rapid wildfire risk assessments (RAs) in 2020 and administered a household survey in 2021. All the data from the 725 rapid assessments and 258 household surveys in the study area were compiled into a dataset (740 records) containing three types of data: properties for which we have both rapid assessments and household surveys (243 records), properties for which we have only a rapid assessment (482 records), and properties for which we have only a household survey (15 records).

The results presented in this document focus on the entire study area, which comprises five communities. In the study area there are 243 paired RA and household survey data, which are the foundation for the results presented below.

Section 1 compares (1) the professional's and household survey respondent's overall risk rating and (2) the professional's responses to the 13 risk attributes in the RA and the household survey respondent's self-assessment for all the risk attributes. These comparisons are presented as graphs, where the first bar shows the professional risk rating, and the second bar presents the homeowners' self-assessment.

Section 2 presents tables that compare the professional RA results for all RA data in the study area, the subset with the RA data for parcels that returned a household survey, and the results of self-assessed risk from the household survey. Most of this information is also presented in the graphs. Only the first column, for all RA data, is new.

Both sections are organized by overall risk rating and then the risk categories of access, background conditions, defensible space, and home ignition potential.

Summary of results

- The majority of survey respondents (59%) rated the parcel's overall risk as either low (13%) or moderate (46%). However, for the subset of RAs for which we have a household survey, professionals rated just 13% of the parcels in the low or moderate category. The distribution of response for the overall risk rating is statistically different between the subset of RAs for which we have a household survey and the survey self-assessments.
- There are also statistical differences between the subset of RAs for which we have a household survey and survey self-assessment for most (9 out of 13) risk attributes, in addition to the overall risk. Generally, self-assessments of the risk attributes are lower than the professional RA rating. For example, 33% of homeowners estimated their

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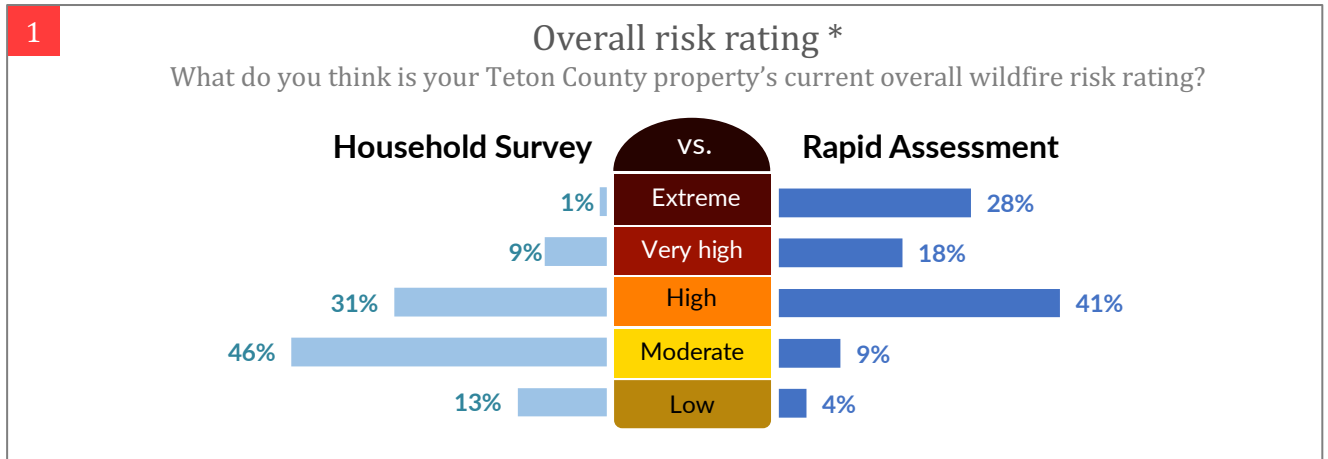
**All data received and processed as of July 23, 2021*

**Document prepared January 21, 2022*

parcel's defensible space to be more than 100 feet, the least risky category, while RA data places only 9% of parcels into that category.

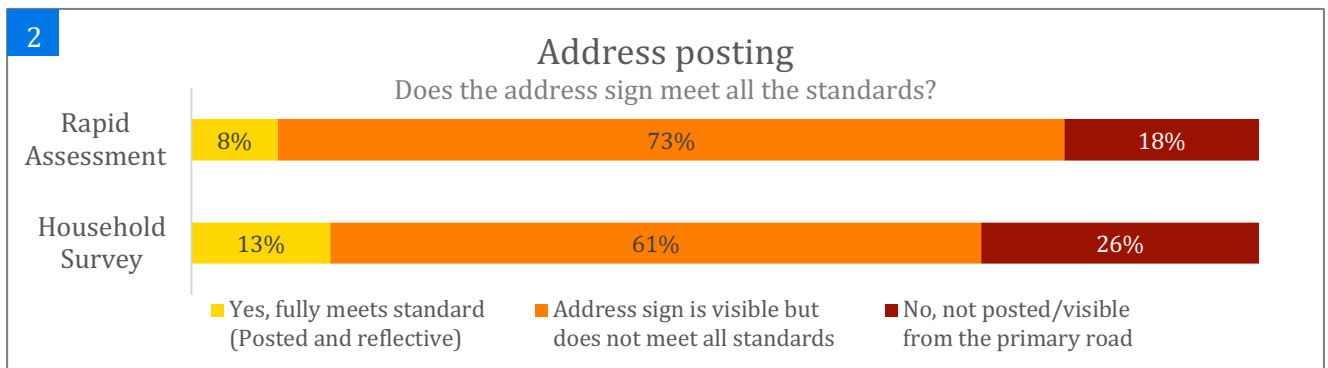
1. Comparison of paired WiRē Rapid Assessment vs. Household Survey

1.1. Overall risk rating

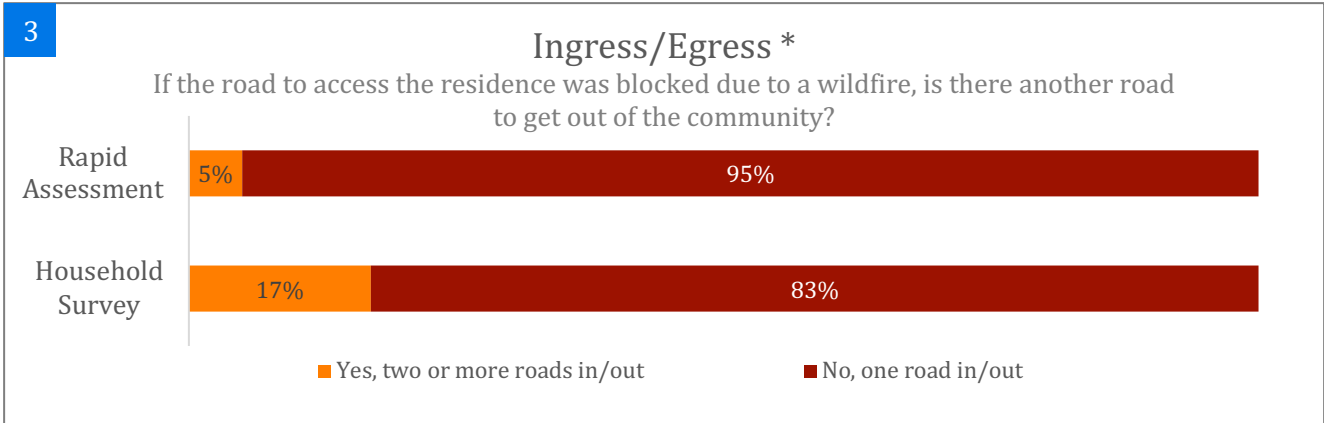


* *These two distributions are statistically different.* N=240.

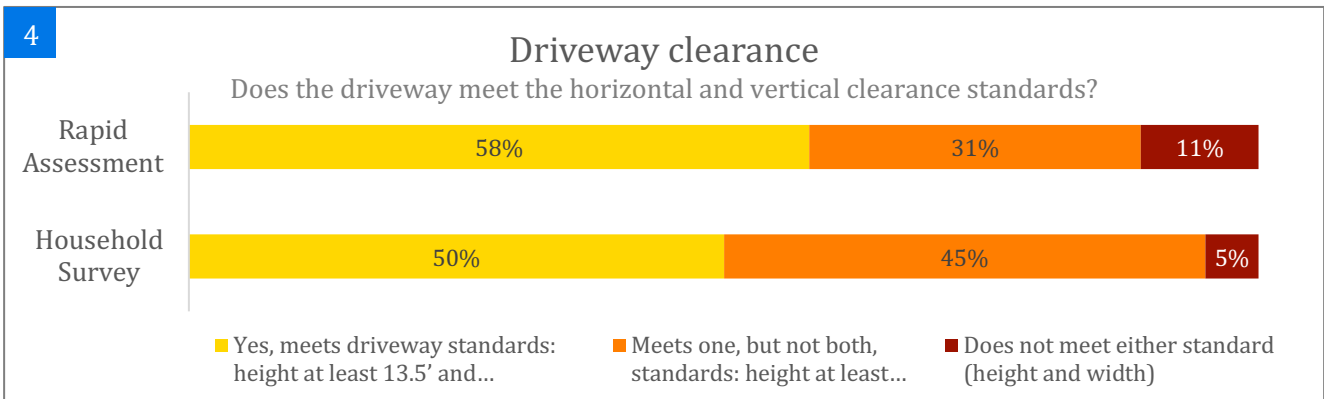
1.2. Access



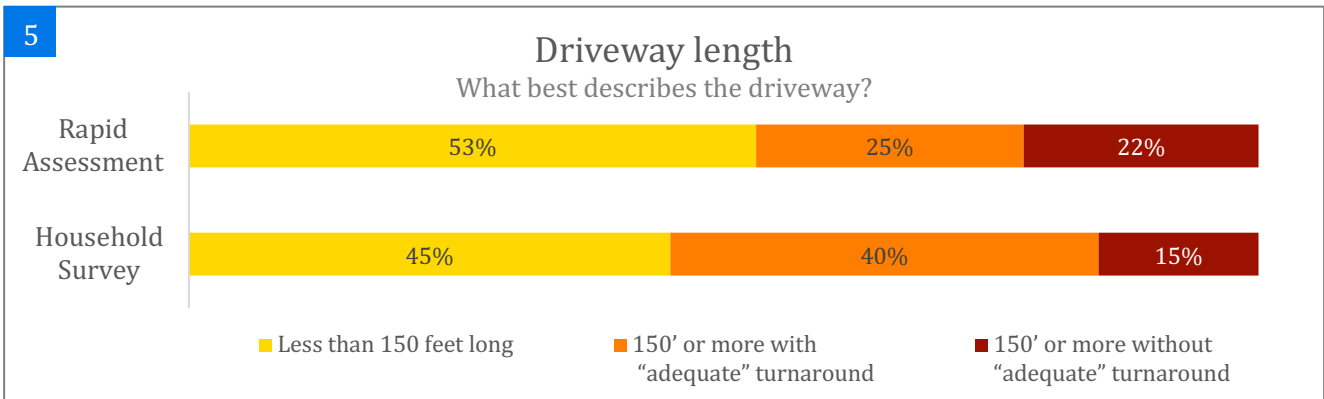
These two distributions are NOT statistically different. N=233.



** These two distributions are statistically different. N=238.*

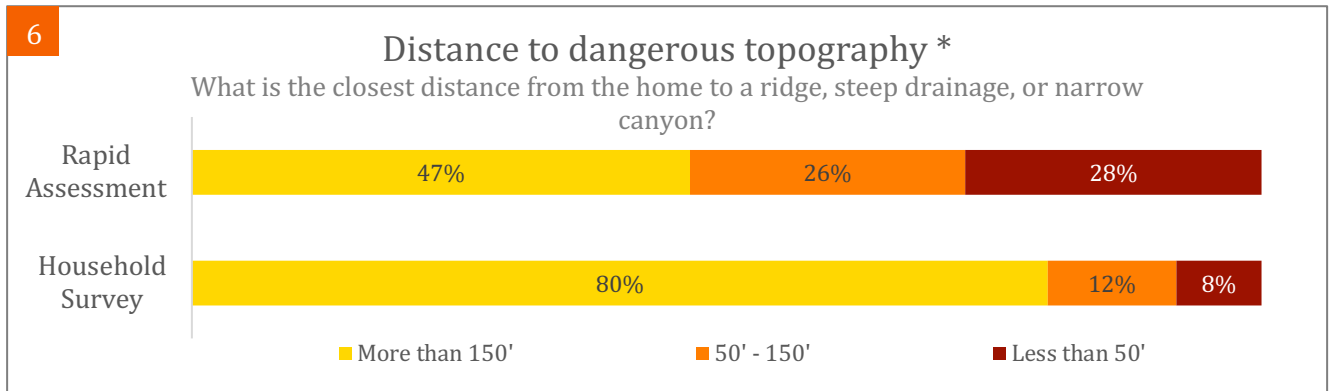


These two distributions are statistically different. N=219.

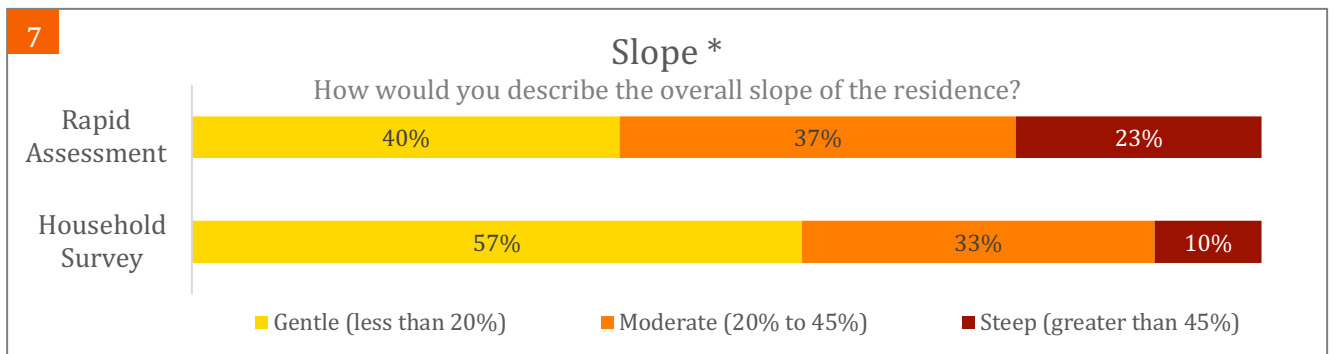


These two distributions are NOT statistically different. N=229.

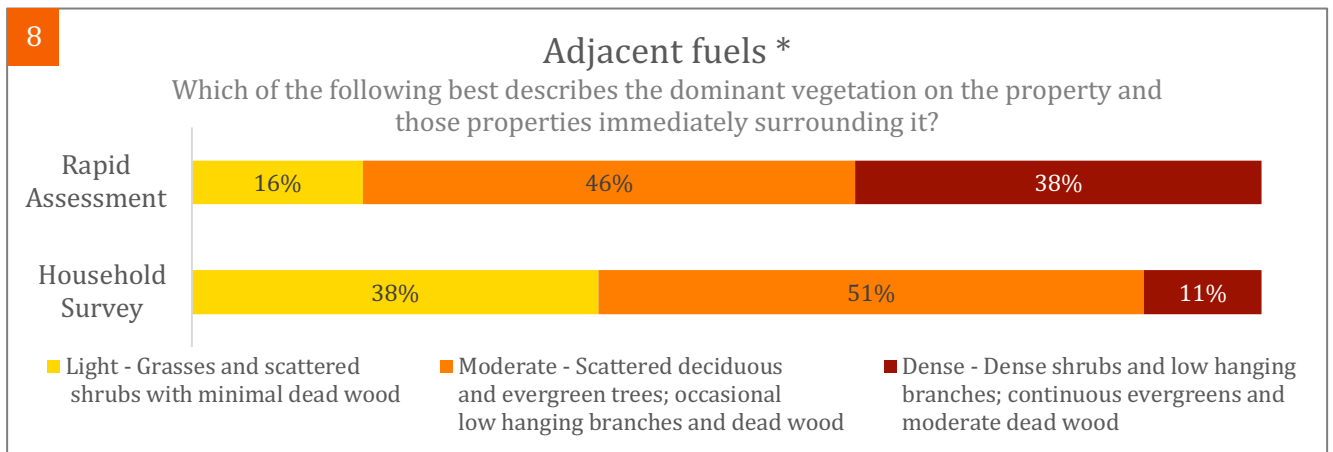
1.3. Background conditions



* **These two distributions are statistically different.** N=242.

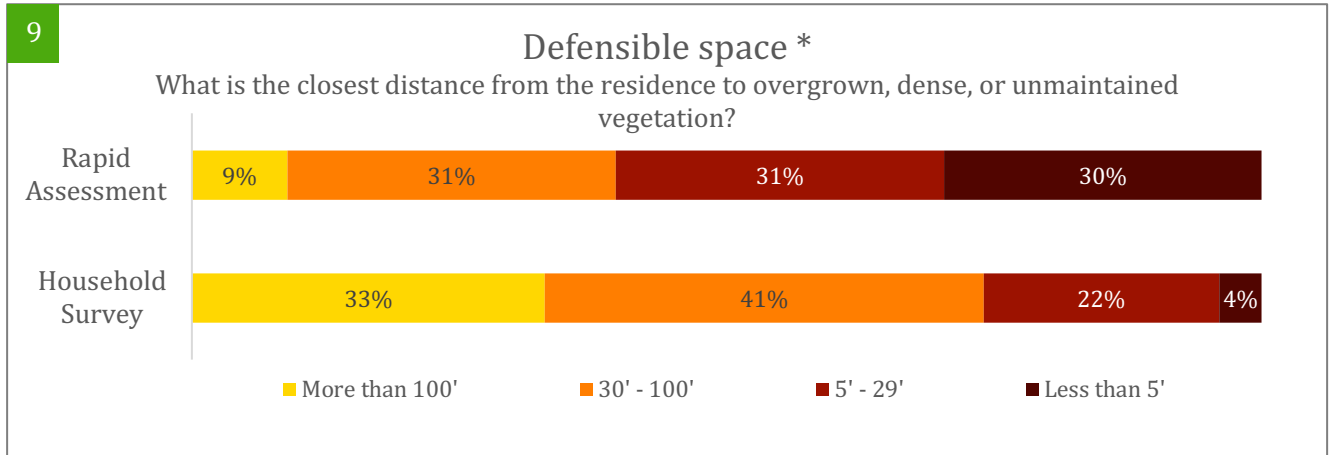


* **These two distributions are statistically different.** N=239.

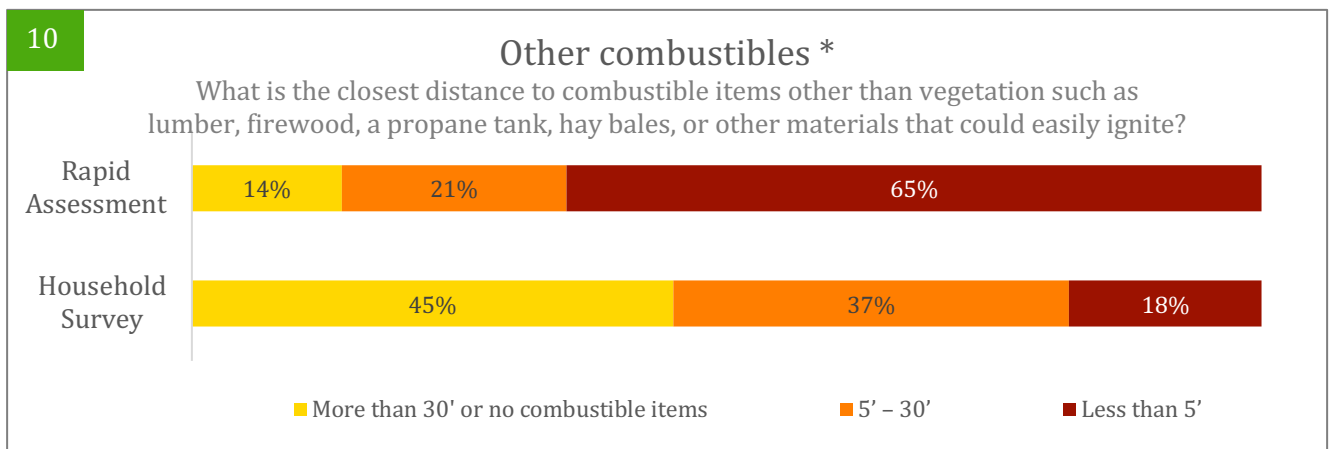


* **These two distributions are statistically different.** N=240.

1.4. Defensible space

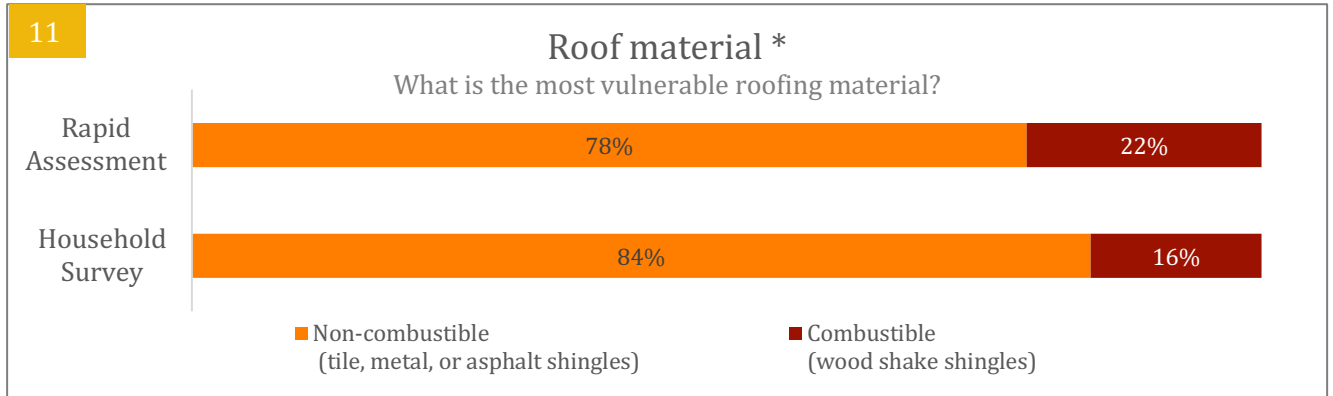


* ***These two distributions are statistically different.*** N=240.

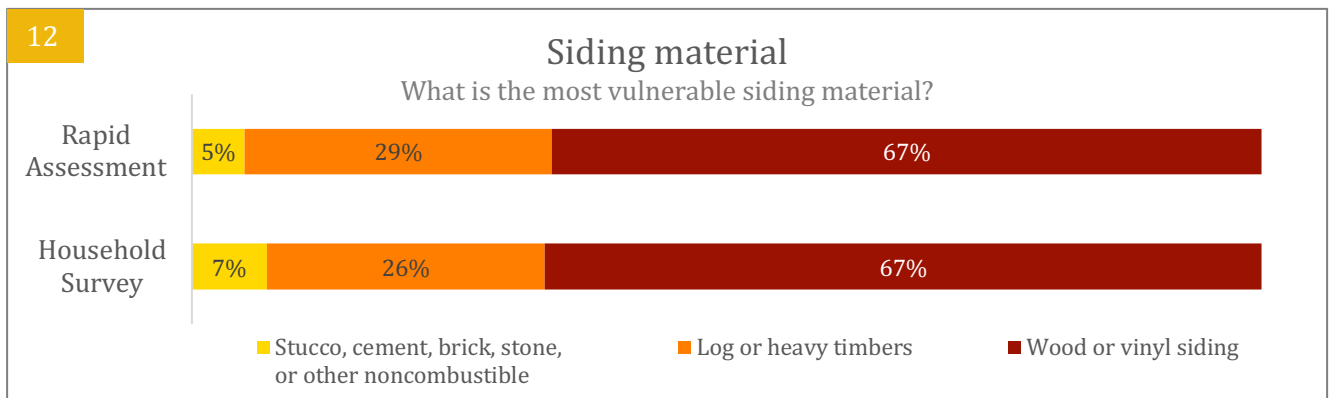


* ***These two distributions are statistically different.*** N=240.

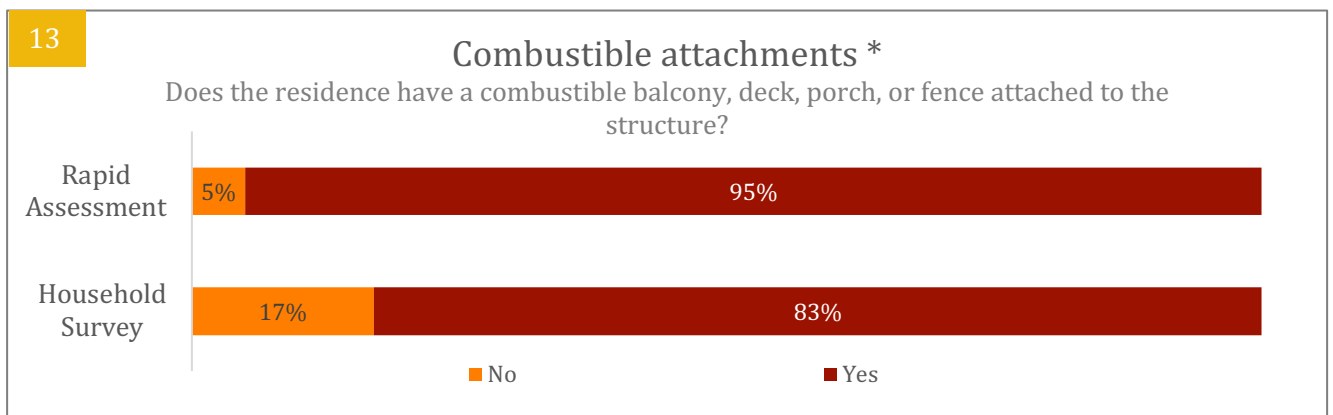
1.5. Home ignition potential



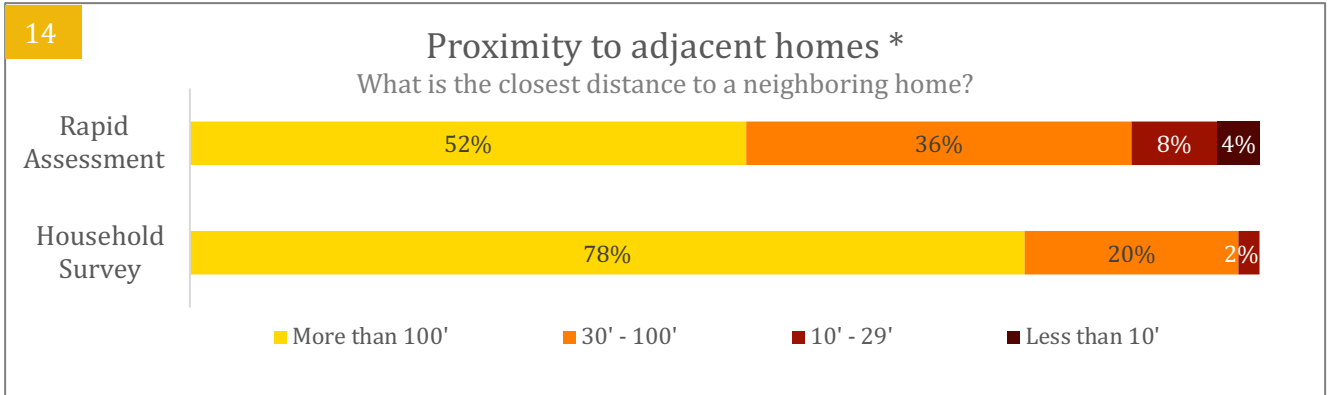
* **These two distributions are statistically different.** N=239.



These two distributions are NOT statistically different. N=242.



* **These two distributions are statistically different.** N=242.



* *These two distributions are statistically different.* N=241.

2. Comparison of all Rapid Assessments vs. paired Rapid Assessment and Household Survey

2.1. Overall risk rating

Overall risk rating:			
RA: Based on the sum of the 13 attribute scores. Homeowner's self-assessment response to: What do you think is your Teton County property's current overall wildfire risk rating?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=240)	Self-assessment from household surveys (N=240)
	<i>These two columns are statistically different</i>		
Low	3%	4%	13%
Moderate	8%	9%	46%
High	38%	41%	31%
Very high	17%	18%	9%
Extreme	34%	28%	1%

2.2. Access

Risk attribute: Address Posting			
Does the address sign meet all the standards?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=233)	Self-assessment from household surveys (N=233)
	<i>These two columns are NOT statistically different</i>		
Yes, fully meets standard (Posted and reflective)	7%	8%	13%
Address sign is visible but does not meet all standards	68%	73%	61%
No, not posted/visible from the primary road	24%	18%	26%

Risk attribute: Ingress/Egress			
If the road to access the residence was blocked due to a wildfire, is there another road to get out of the community?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=238)	Self-assessment from household surveys (N=238)
	<i>These two columns are statistically different</i>		
Yes, two or more roads in/out	8%	5%	17%
No, one road in/out	92%	95%	83%

Risk attribute: Driveway clearance			
Does the driveway meet the horizontal and vertical clearance standards?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=219)	Self-assessment from household surveys (N=219)
	<i>These two columns are NOT statistically different</i>		
Yes, meets driveway standards: height at least 13.5' and width at least 20'	56%	58%	50%
Meets one, but not both, standards: height at least 13.5' or width at least 20'	28%	31%	45%
Does not meet either standard (height and width)	16%	11%	5%

Risk attribute: Driveway length			
What best describes the driveway?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=229)	Self-assessment from household surveys (N=229)
	<i>These two columns are NOT statistically different</i>		
Less than 150 feet long	53%	53%	45%
150' or more with "adequate" turnaround	22%	25%	40%
150' or more without "adequate" turnaround	25%	22%	15%

2.3. Background conditions

Risk attribute: Distance to dangerous topography			
What is the closest distance from the home to a ridge, steep drainage, or narrow canyon?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=242)	Self-assessment from household surveys (N=242)
	<i>These two columns are statistically different</i>		
More than 150'	44%	47%	80%
50' - 150'	27%	26%	12%
Less than 50'	28%	28%	8%

Risk attribute: 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?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=239)	Self-assessment from household surveys (N=239)
	<i>These two columns are statistically different</i>		
Gentle (less than 20%)	37%	40%	57%
Moderate (20% to 45%)	37%	37%	33%
Steep (greater than 45%)	26%	23%	10%

Risk attribute: Adjacent Fuels			
Which of the following best describes the dominant vegetation on the property and those properties immediately surrounding it?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=240)	Self-assessment from household surveys (N=240)
	<i>These two columns are statistically different</i>		
Light - Grasses and scattered shrubs with minimal dead wood	15%	16%	38%
Moderate - Scattered deciduous and evergreen trees; occasional low hanging branches and dead wood	42%	46%	51%
Dense - Dense shrubs and low hanging branches; continuous evergreens and moderate dead wood	43%	38%	11%

2.4. Defensible space

Risk attribute: Defensible Space			
What is the closest distance from the residence to overgrown, dense, or unmaintained vegetation?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=240)	Self-assessment from household surveys (N=240)
	<i>These two columns are statistically different</i>		
More than 100'	9%	9%	33%
30' - 100'	25%	31%	41%
5' - 29'	33%	31%	22%
Less than 5'	33%	30%	4%

Risk attribute: Other combustibles			
What is the closest distance to combustible items other than vegetation such as lumber, firewood, a propane tank, hay bales, or other materials that could easily ignite?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=240)	Self-assessment from household surveys (N=240)
	<i>These two columns are statistically different</i>		
More than 30' or no combustible items	11%	14%	45%
5' – 30'	20%	21%	37%
Less than 5'	69%	65%	18%

2.5. Home ignition potential

Risk attribute: Roof			
What is the most vulnerable roofing material?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=239)	Self-assessment from household surveys (N=239)
	<i>These two columns are statistically different</i>		
Non-combustible (tile, metal, or asphalt shingles)	71%	78%	84%
Combustible (wood shake shingles)	29%	22%	16%

Risk attribute: Siding			
What is the most vulnerable siding material?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=242)	Self-assessment from household surveys (N=242)
	<i>These two columns are NOT statistically different</i>		
Stucco, cement, brick, stone, or other noncombustible	4%	5%	7%
Log or heavy timbers	30%	29%	26%
Wood or vinyl siding	66%	67%	67%

Risk attribute: Combustible Attachments (e.g., Balcony, Decking, Fencing)			
Does the residence have a combustible balcony, deck, porch, or fence attached to the structure?			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=242)	Self-assessment from household surveys (N=242)
	<i>These two columns are statistically different</i>		
No	4%	5%	17%
Yes	96%	95%	83%

Risk attribute: Proximity to adjacent homes			
What is the closest distance to a neighboring home? (Note: Distance to a neighboring home was calculated in GIS for records with unobserved data).			
Response categories	All RAs in study area (N=725)	Subset of RAs for parcels that returned a household survey (N=241)	Self-assessment from household surveys (N=241)
	<i>These two columns are statistically different</i>		
More than 100'	50%	52%	78%
30' – 100'	34%	36%	20%
10' – 29'	10%	8%	2%
Less than 10'	6%	4%	0%

A note on statistical interpretation

For comparison of A) all RAs to B) the subset of RAs for parcels that returned the household survey, we include results from a Wilcoxon rank sum test, which tests the hypothesis that the attribute distributions for all RA data are the same as that of the subset of RA data. For comparison of B) the subset of RAs for parcels that returned a household survey to C) the self-assessment from household surveys, we include results from a Wilcoxon matched-paired signed-rank test, which tests the hypothesis that the matched pairs follow the same distributions for both datasets. For both tests, a p-value less than 0.05 suggests that the compared distributions are different. Results are described in italics in each table.