

## HUMBOLDT COUNTY FIRE SAFE COUNCIL

# HOME RISK ASSESSMENT:

## ASSESS YOUR HOME'S ABILITY TO SURVIVE WILDFIRE<sup>1</sup>

Your home's potential for ignition – its chance of catching on fire – is determined by two primary factors:

- (1) the presence of combustible materials within 100 feet of your home, and
- (2) the ability of your home to resist air-borne embers.

This assessment will reveal your home's vulnerabilities to wildfire, helping you prepare to better protect your home.

Remember that if you don't have adequate defensible space around your home, the specific characteristics of your home may not matter!

For each item below, circle the number across from the description that best describes your home and property, or describe the actual situation and estimate a score. When you're done, you can total your scores and find out how your home rates. Low scores are excellent and indicate a low likelihood that your home would ignite under typical wildfire exposures.

This assessment focuses first on the specific characteristics of your home, then it follows with an assessment of the conditions surrounding your home. However, it's important to remember that if you don't have adequate defensible space around your home, the specific characteristics of your home may not matter! **The scoring used in this guide assumes that you have 100 feet of defensible space.** While assessing your home and parcel, envision what it would take for your house to survive *without* firefighters present – a common situation during extreme wildfires. This is the premise of the first section of this assessment, which rates whether or not your home could survive on its own.

The second section of this assessment addresses firefighters' ability to protect your home. Low potential for ignition makes firefighters' work easier.

### Additional information on protecting your home from wildfire can be found by using the following links:

Builders Wildfire Mitigation Guide	<a href="http://firecenter.berkeley.edu/bwmg/">firecenter.berkeley.edu/bwmg/</a>
California Fire Safe Council	<a href="http://cafiresafecouncil.org/">cafiresafecouncil.org/</a>
California Native Plant Society –Native Plants and Fire Safety	<a href="http://cnps.org/cnps/conservation/resources.php">cnps.org/cnps/conservation/resources.php</a>
Center for Fire Research and Outreach at UC Berkeley	<a href="http://firecenter.berkeley.edu">firecenter.berkeley.edu</a> .
Extension Wildfire Information Network	<a href="http://extension.org/surviving_wildfire">extension.org/surviving_wildfire</a>
Fire, Fuel, and Smoke Science Program	<a href="http://firelab.org/">firelab.org/</a>
Firewise Communities	<a href="http://Firewise.org">Firewise.org</a>
Home Landscaping for Fire	<a href="http://firecenter.berkeley.edu/docs/CE_homelandscaping.pdf">firecenter.berkeley.edu/docs/CE_homelandscaping.pdf</a>
Homeowner's Wildfire Mitigation Guide	<a href="http://ucanr.edu/sites/Wildfire/">ucanr.edu/sites/Wildfire/</a>
Home Survival in Wildfire-Prone Areas: Building Materials and Design Considerations	<a href="http://anrcatalog.ucdavis.edu/pdf/8393.pdf">anrcatalog.ucdavis.edu/pdf/8393.pdf</a>
Insurance Institute for Business & Home Safety - Wildfire Ready for Wildfire (Being Ready, Getting Set, Go! Evacuation Guide)	<a href="http://disastersafety.org/wildfire/">disastersafety.org/wildfire/</a> <a href="http://readyforwildfire.org/">readyforwildfire.org/</a>

<sup>1</sup> Adapted from the Mendocino County Fire Safe Council's Wildfire Risk Assessment with editorial changes made by Stephen Quarles (UC Cooperative Extension Emeritus and IBHS Senior Scientist) and Yana Valachovic (UC Cooperative Extension), March 2012. The Mendocino Home Risk Assessment was originally created with the assistance of Jack Cohen, a research scientist with the U.S. Forest Service whose work on how homes ignite in wildfires is central to the national Firewise program and is the subject of the DVD called "Wildfire! Preventing Home Ignitions," available free from Firewise (see [www.firewise.org](http://www.firewise.org)).

## PART 1: HELPING YOURSELF AND YOUR HOME

### BUILDING MATERIALS AND CONSTRUCTION

Your home can survive a wildfire without the fire department's intervention, but only if it is built and maintained to resist ignition from (1) air-borne embers entering your house and/or accumulating on or near it, (2) direct contact with flames from ember-ignited combustible material very close to the home, and (3) radiant heat from nearby flames.

The primary cause of home loss to wildfire are the embers that ignite materials adjacent to the home or directly ignite a vulnerable part of the house, such as a wood shake roof.

#### **1. ROOFTOP:** *The roof is the most vulnerable part of a house, so it is the top priority!*

At my house...	Score
I have a fire-resistant roof covering in good condition (composition shingles, ceramic tile, metal, slate, etc.)	0
I have an untreated wood shake roof	80
Other:	Estimated score:

#### **Recommended action if needed:**

- Replace wood shake roof with fire-rated roofing

#### **2. EDGE OF ROOF VULNERABILITIES**

**2.1 ROOF TRANSITIONS:** *Homes have a roof covering, and gaps can exist between the covering and the roof deck. These gaps can occur at the roof edge, at the ridge, or in valleys. (Rounded Spanish tiles that are not sealed are a common example of this).*

At my house...	Score
These gaps are sealed	0
There are gaps between roof deck and roof covering	20
Other:	Estimated score:

#### **Recommended action if needed:**

- Seal gaps between roof deck and roof covering

**2.2 COMPLEX ROOF OBSERVATIONS:** *The roof has protrusions, such as a chimney chase, dormers, roof offsets, etc.*

At my house...	Score
Roof is not complex or siding on protrusion consists of noncombustible materials (e.g., fiber cement, stucco or metal)	0
Siding on protrusion consists of combustible materials (e.g., wood or vinyl)	20
Other:	Estimated score:

#### **Recommended action if needed:**

- Look for accumulations of pine needles and dead leaves adjacent to these vertical components
- Replace siding on roof protrusions with noncombustible materials

**2.3 GUTTERS:** *A fire can begin in the gutters and enter the house, under the roof into the attic. Maintenance is critical.*

At my house...	Score
Rain gutters are cleaned regularly and free of dry needles or leaves	0
Metal angle flashing is present at roof edge	0

Rain gutters are full of pine needles and/or dead leaves	<b>10</b>
Vinyl or plastic rain gutter present	<b>10</b>
Other:	Estimated score:

**Recommended action if needed:**

- If not already present, add metal angle flashing at roof edge
- Clean gutters regularly to avoid buildups of dry leaves and pine needles

**3. VENTS:** Hot embers can penetrate vents that are damaged or have screen openings larger than 1/8”.

<i>At my house...</i>	<i>Score</i>
All vents are covered with metal mesh with openings of 1/8” or less	<b>0</b>
All vents are covered with metal mesh with openings of 1/4” or greater	<b>30</b>
Other:	Estimated score:

**Recommended action if needed:**

- Ensure openings in metal mesh are 1/8” or less; replace metal mesh if needed

**4. SIDING:** Embers can also penetrate through gaps in siding and at junctions between deck, walls, and fascia boards.

<i>At my house...</i>	<i>Score</i>
I have noncombustible (for example, stucco or fiber cement) siding	<b>0</b>
I have combustible (wood, vinyl, or other plastic) siding	<b>15</b>
Other:	Estimated score:

**Recommended action if needed:**

- Replace siding with noncombustible materials

**5. EAVES:** Embers can also penetrate open eaves

<i>At my house...</i>	<i>Score</i>
The eaves are boxed in	<b>0</b>
The eaves are open (you can see the roof rafters or trusses on part of your roof overhanging the exterior wall)	<b>10</b>
Other:	Estimated score:

**Recommended action if needed:**

- Box-in your eaves to reduce vulnerability of your eaves to embers

**6. WINDOWS:** Aside from the obvious vulnerability of an open window that can let in embers, radiant heat and/or direct flame contact can cause the glass in your window to break. Window screens will absorb radiant energy and can block entry of embers, providing some protection at your windows. Shutters will also provide protection from radiant heat and flames. Tempered glass, a requirement by code for all windows in a new home, provides substantially more protection from radiant heat than non-tempered (annealed) double-paned glass alone.

<i>At my house...</i>	<i>Score</i>
All the windows and glass doors have double-paned glass	<b>0</b>
The windows have single-paned glass	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Replace windows with tempered, double-paned glass
- Install screens or shutters for added protection

**7. DECK AND PORCH:** Embers often land on or under the deck or porch, igniting combustible vegetation and other items stored on or under the deck.

<i>At my house...</i>	<i>Score</i>
The deck or porch is free of leaves and needles, wood planter boxes, combustible decorations and doormats, lawn furniture with cushions, etc.	<b>0</b>
I have combustible items on my deck/porch all summer and am unlikely to be able to remove them if an evacuation occurs	<b>20</b>
My deck overhangs a steep slope	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Keep deck/porch free of large accumulations of combustible materials (including areas under deck)

**8. FIRE HAZARDS NEAR THE HOUSE:** *In a wildfire, burning materials will produce embers that can catch buildings on fire. Anything combustible that is attached to the house—fences, decks, boardwalks, outbuildings, etc.—should be considered part of the house and given the same consideration as the house.*

<i>At my house...</i>	<i>Score</i>
All firewood, lumber, fuel tanks, chemicals, equipment, wood fences, sheds, and other combustible materials are at least 30 feet from my home	<b>0</b>
There is a wooden fence attached to my house	<b>5</b>
There are old sheds, barns and other buildings within 30’ of my home	<b>20</b>
Firewood, lumber, tanks or other combustibles are adjacent to or under or on my deck or next to my house	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Maintain defensible space around outbuildings, fuel storage containers, woodsheds, etc.

**COMBUSTIBLE VEGETATION AND OTHER ITEMS NEAR THE HOME**

Homes are frequently ignited by small surface fires in grass, weeds, and brush that are able to reach the house, or from embers that ignite vegetation adjacent to the house. Removing dead grass, weeds, brush, tree branches, and other combustible items near the house is crucial. **A fire-safe landscape does not mean you need to cut down mature trees, remove all plants, and create a moonscape!** It means reducing the amount of combustible items near your home so that fire will not spread to your home, an attached fence, or a nearby outbuilding. The key concepts are:

1. Keep clumps of plants, bushes, and other items horizontally separated from each other so if one clump is on fire, its heat and flames won't catch the next one on fire. For example, canopies of major trees should be separated by 20 feet or more. Canopies of shrubs should be separated by 10 feet or more. Keep your vegetation in separate islands, surrounded by less combustible areas or hardscape.
2. Keep fire from burning into tree and shrub canopies by preventing fire from spreading vertically. This can be done by (A) pruning lower branches and (B) removing most combustible vegetation beneath the trees or shrub. Dead vegetation must be removed from shrubs (half-dead junipers are especially combustible).

**1. WITHIN 5 FEET OF THE HOUSE:**

<i>Within 5 feet of my house...</i>	<i>Score</i>
Everything that is combustible is cleared, raked and away from this zone	<b>0</b>
Un-mowed dead grass, other dead vegetation, and combustible mulch materials surround my house	<b>40</b>
Other:	Estimated score:

**Recommended action if needed:**

- Clear dead vegetation and other combustible materials away from your house

**2. WITHIN 30 FEET OF THE HOUSE:**

<i>Within 30 feet of my house...</i>	<i>Score</i>
I have removed dead vegetation from this zone. The canopies of trees are well-spaced (e.g., 20 feet separating outside branches) and branches are pruned up to 8 feet. Dead grass has been mowed.	<b>0</b>
The dead grass is not mowed and dead shrubs are connected vertically and horizontally to other shrub and tree canopies.	<b>30</b>
Other:	Estimated score:

**Recommended action if needed:**

- Remove dead vegetation within 30 feet of your house.

**3. WITHIN 30-100 FEET FROM THE HOUSE:**

<i>Within 30-100 feet of my house...</i>	<i>Score</i>
Trees have at least 15 feet between canopies and branches pruned up to 8 feet. Dead branches and dead shrubs have been removed. Shrubs have 10 feet between canopies.	<b>0</b>
There are continuous shrubs and trees in this zone.	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Prune trees and shrubs up to 8 feet. Remove dead plant material, and separate shrub and tree canopies.

**TOPOGRAPHY/TERRAIN NEAR MY HOME**

*Fire burns more intensely uphill than downhill. All else being the same, a steeper slope will burn more intensely. Narrow canyons and gullies can channel the wind, resulting in higher intensity burning and ember generation.*

**1. MY HOME'S LOCATION RELATIVE TO SLOPES COVERED WITH COMBUSTIBLE VEGETATION (IF APPLICABLE):**

<i>My house is...</i>	<i>Score</i>
Set back more than 30 ft. from a steep (>40% ) upslope	<b>0</b>
Set back less than 30 ft. from a steep (>40% ) upslope	<b>10</b>
Other:	Estimated score:

**Recommended action if needed:**

- If you are located on or near a steep slope, vegetation management (outlined above) is even more critical.

**TOTAL POINTS FOR MY HOME:** \_\_\_\_\_

**INTERPRETING YOUR HOME'S WILDFIRE RISK SCORE**

*These are estimates; a low score does not guarantee that your home will be safe.*

- Up to 35 points = Low Risk
- 35 to 60 points = Moderate Risk
- 65 to 95 points = High Risk
- 100 points or more = Extreme Risk

Concerned about your score? See where your risk points are highest. Start with your home itself, and work outward. Proper vent screens are perhaps your cheapest and easiest to accomplish. Although more costly, the most crucial step is to improve your roof to meet fire resistant standards. Maintenance and separation of vegetation from the home is essential. Every action you take will increase your safety from wildfire!

## PART 2: HELPING FIREFIGHTERS HELP YOU

During a wildfire, vehicles will be leaving, and fire engines will be attempting to enter areas on the same road(s).

- Will you be able to evacuate safely if necessary?
- Will fire engines be able to get to your home?
- Do you have room for fire engines to park and set up a save zone for them to work from? Fire engines may be 28’ long, 10’ wide, and 15’ tall.

If this assessment results in a score of 20 or greater, understand that your conditions would probably prevent fire engines from getting to your home. Work to improve these conditions. If you face these situations, contact your Fire Safe Council, CALFIRE and your local fire department for advice on what you should do before and during a fire to improve your safety<sup>2</sup>.

Scores in this section are given to help you understand (1) your ability to evacuate safely and (2) what firefighters need. They do not relate directly to how your home will survive a wildfire unattended and should not be interpreted in the same way as your home score.

### 1. NUMBER OF ACCESS ROUTES TO MY HOME:

Where I live...	Score
There are two or more roads in and out of my area	0
I live on a long dead-end road	15
Other:	Estimated score:

**Recommended action if needed:**

- Create a family evacuation plan including a safe location to shelter in place, if necessary.

### 2. WIDTH OF ROADS TO MY HOME:

Where I live...	Score
The roads are all two lanes -- 18 or more feet wide	0
The roads are between 10 and 18 feet wide	10
Some roads are less than 10 feet wide	20
Other:	Estimated score:

**Recommended action if needed:**

- Consult with your local fire department and/or CAL FIRE staff to discuss what you can do to improve access to your home if your road is 10 feet wide or less.

### 3. EXISTENCE OF TURNOUTS FOR PASSING ON SINGLE-LANE ROADS (IF APPLICABLE):

Where I live...	Score
Turnouts are located every 400 feet and they are at least 10’ wide x 80’ long	0
There are some turnouts, but not to the standard above	10

<sup>2</sup> Some of Humboldt County’s remote rural fire departments have adapted to respond to residences located on long, narrow, dead-end, dirt roads and will make every efforts to respond to isolated locations. You can help them by having clear signs that identify roads and addresses; and marking water sources.

The road has long, narrow sections with no turnouts	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Consult with your local fire department and/or CAL FIRE staff to discuss what you can do to improve conditions for your safe evacuation and their safe access to your home.

**4. RADIUS OF TURNS AND CURVES ON ROADS AND DRIVEWAY TO MY HOME:**

<i>Where I live...</i>	<i>Score</i>
All turns and curves have at least a 50' radius (gentle curves)	<b>0</b>
Some turns and curves are too tight for a fire engine to make at all	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Consult with your local fire department and/or CAL FIRE staff if access to your home is an issue.

**5. VERTICAL CLEARANCE ABOVE ROADS AND DRIVEWAYS:**

<i>Where I live...</i>	<i>Score</i>
There is at least 15 vertical feet of clearance	<b>0</b>
There is 13-15 feet of clearance	<b>10</b>
There is less than 13 feet of clearance	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Ensure that you trim roadside vegetation back so that there is at least 15 vertical feet of clearance.

**6. BRIDGES ON ROADS OR DRIVEWAYS:** *A fire engine full of water can weigh 30,000+ pounds.*

*If a bridge collapses, firefighters could be killed and evacuation routes cut off. If you are not sure about your bridge's strength, consult a structural engineer.*

<i>Where I live...</i>	<i>Score</i>
All bridges can hold 40,000 pounds and have signs posted that declare weight ratings	<b>0</b>
One or more bridges cannot hold that much weight	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Contact your local fire department and/or CAL FIRE staff about bridge weight limits on route to your home.

**7. ROOM FOR FIRE ENGINES TO MANEUVER:**

<i>Where I live...</i>	<i>Score</i>
There's a circular driveway or large open area (40' x 40') near my home	<b>0</b>
There's a place to turn around that's at least 40' long and 15' wide	<b>5</b>
It would be difficult for fire engines to turn around near my home	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Consult with your local fire department and/or CAL FIRE staff if access to your home is an issue.

**8. ROAD AND STREET SIGNS:** *In a large wildfire, firefighters from other counties may arrive. They will not know our neighborhoods. If they are given your address number, will they be able to find you?*

<i>Where I live...</i>	<b>Score</b>
Signs are present at all road intersections; have reflective letters at least 3" tall, and are clearly visible in the dark in headlights	<b>0</b>
Signs are hard to read or are missing from some intersections	<b>15</b>
There are no road or street signs in my area	<b>20</b>
Other:	Estimated score:

**Recommended action if needed:**

- Make sure that the road leading to your home is clearly marked.

**9. MY HOUSE NUMBER SIGN:**

<i>Where I live...</i>	<b>Score</b>
My house number is posted at the road, with reflective numbers at least 3" tall on a contrasting background, visible from 100' away in both directions	<b>0</b>
My sign is present but doesn't meet the above requirements	<b>10</b>
The address for my house is not posted on the road	<b>15</b>
Other:	Estimated score:

**Recommended action if needed:**

- Make sure that your home address is clearly marked.

**10. WATER SUPPLY:** *Most wildland fire engines carry only 500 gallons of water. Having water that fire engines – or you— can find and tap into is critical in rural areas. Tanks or hydrants must have a discharge with a **male National Hose pipe thread fitting either 1½" or 2½" in diameter.** Your Fire Safe Council has detailed information on this subject.*

<i>Where I live...</i>	<b>Score</b>
A pressurized fire department hydrant is within 1,000' of my house	<b>0</b>
There is a fire department fitting on a standpipe (small hydrant) or a water tank with an appropriate pipe thread that can provide at least 500 gallons of water – and a blue reflector dot is posted at the driveway's entrance and a sign pointing firefighters to where that fitting and water supply are located	<b>0</b>
A pond, pool, or stream is near to the home, where a fire engine could safely park within 10 feet of the water's surface and pump from it	<b>0</b>
No water supply exists for firefighting	<b>15</b>
Other:	Estimated score:

**Recommended action if needed:**

- Install and clearly mark firefighting water sources and inform firefighters of location and availability.

**TOTAL POINTS FOR MY HELPING FIREFIGHTERS:** \_\_\_\_\_

*The higher your points, the more risky and complicated it will be for firefighters to defend your house from wildfire.*



**Home Risk Assessment for:** \_\_\_\_\_

**Summary of Landowner Goals:**

**General**

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**Road Access/Escape**

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**Water Resources**

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**Structures**

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**Fire Hazard Priorities**

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**Other**

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**ADDITIONAL NOTES:**