

Living With Fire

The Living With Fire Wildfire Threat Reduction Evaluation: Key to improving the odds of house survival

EVALUATION CHECKLIST (SEE BELOW FOR EXPLANATION ON EACH CHECKLIST ITEM)

Determine your recommended defensible space distance:

1. Steepness of slope (choose one that best describes your property)
2. Vegetation type (choose one that best describes the wildland plants growing on or near your property)
3. Your recommended defensible space distance is found at the intersection

| | Flat (0 to 20%) | Moderate (21% to 40%) | Steep (+40%) |
|--------|-----------------|-----------------------|--------------|
| Grass | 30 feet | 100 feet | 100 feet |
| Shrubs | 100 feet | 200 feet | 200 feet |
| Trees | 30 feet | 100 feet | 200 feet |

| Built Zone | | Yes | No |
|------------------------------|--|--------------------------|--------------------------|
| 1. | Does the house have a metal, composition, or tile roof with capped ends? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | Are the rain gutters and roof free of leaves, needles, and branches? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | Are all vents openings screened? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | Are the approved spark arrestors on chimneys? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Does the house have non-combustible siding material? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | Are the eaves "boxed in" and the decks enclosed? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. | Are the windows made of at least double-glazed or tempered glass? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. | Are the decks, porches, and other similar areas free of easily combustible material? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. | Is all firewood at least 30' from the house? | <input type="checkbox"/> | <input type="checkbox"/> |
| Defensible Space Zone | | Yes | No |
| 1. | Is dead vegetation cleared within the recommended defensible space area? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | Is there separation between shrubs? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | Are ladder fuels removed? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | Is there a lean, clean, and green area extending at least 30' from the house? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Is there a noncombustible area within 3' of the house? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | Is there separation between trees? | <input type="checkbox"/> | <input type="checkbox"/> |
| Access Zone | | Yes | No |
| 1. | Is the home address visible from the street? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | Is the home address made of fire resistant materials? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | Are street signs present at every intersection leading to the house? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | Are street signs made of fire resistant materials? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Is flammable vegetation within 10' of the driveway cleared and are overhanging obstructions under 15' removed? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | If a long driveway is present, does it have a suitable turnaround area? | <input type="checkbox"/> | <input type="checkbox"/> |

CHECKLIST EXPLANATIONS

Built Zone *(deals with how the house is constructed and maintained)*

1. **Flying embers landing on combustible roof materials is a major reason homes are destroyed by wildfire.** Replace wood shake or shingle roofs with fire resistant types such as metal, composition, or tile roof with capped ends.
2. **Routinely remove pine needles, leaves, and litter from roofs and gutters** to minimize ignition sites for airborne firebrands.
3. **All vent openings should be covered with ¼” or smaller non-corrosive wire mesh.** Do not use fiberglass or plastic mesh because they can melt or burn. These screens will prevent flying embers from entering crawl spaces, attics, dryer vents, etc. and igniting the structure.
4. **A spark arresting screen with no greater than ½” mesh is recommended on all chimneys.** This helps prevent sparks, embers, or flames from a chimney fire from spreading to the wild land.
5. **Wood siding materials are combustible and are not good choices for fire prone areas.** Stucco, brick, and cement board are better choices.
6. **Because decks and eaves can trap heat, flames, and embers,** the undersides should be enclosed with fire-resistant materials. By covering the underside of the eaves with a soffit, or “boxing in” the eave, the heat is better able to escape. At the very least, enclose the underside of decks with a 1/8” wire mesh.
7. **Single-paned and large windows are vulnerable to breaking when exposed to heat.** This allows burning embers and heat to enter the house, which may lead to internal ignition. In fire hazard areas, install double-glazed or tempered glass, aluminum frames and sashes are preferred.
8. **Houses are often destroyed by flames that ignite combustible materials under or adjacent to decks, stairways and overhangs.** To avoid this threat, do not store combustible materials under or on decks and stairs. Keep areas under and adjacent to these structures free of pine needles, leaves, or other debris and install a thin layer of gravel, rock, aggregate, or other type of hard surface.
9. **Firewood, lumber, or other large woody material should not be stacked within 30’ of any structure on the property.** This material can act as a fuel source to spread fire to the structure. In addition, green firewood should be covered with 4-6mm CLEAR plastic sheeting to prevent breeding of bark beetles.

Defensible Space Zone *(includes the management of wildland and ornamental landscape vegetation surrounding the house)*

Calculate Recommended Defensible Space distance based upon vegetation type (grass, shrub, tree) and % slope (0-20%=gentle, 21-41%=moderate, +40%=steep)

1. **The recommended defensible space distance for shrub vegetation on gentle slopes is 100’.** For grass vegetation and a gentle slope the distance is 30’; for shrub vegetation and a moderate to steep slope the distance is 200’. Remove all dead and dying vegetation within the defensible space zone. Dead vegetation includes standing dead and dying trees, recently fallen trees (downed trees that are embedded into the soil can be left in place; however, their exposed branches should be removed), dead shrubs, dried grass, etc...
2. If you would like to keep some flammable brush near your house (ex.: manzanita, sagebrush, bitterbrush, rabbitbrush), then thin it. **Thinning should occur within the recommended defensible space distance.** It is recommended that a space between shrubs be two times the height of the shrub. For example, if you have a shrub 3’ high, then the space before the next shrub should be 6’ across. Root systems and the duff layer should be left intact for erosion control and soil stabilization. **This does not apply to short, green, well-maintained groundcovers, which do not need to be thinned.**
3. **Vegetation that can carry a fire burning in low-growing plants to taller plants is called ladder fuels.** To prevent a ground fire from moving into the canopy, limbs should be removed from green trees to a height of at least 2’ from the ground for trees 18’ or taller. **If there is vegetation growing under the tree, remove the lower branches to a height that is 3 times the height of the lower vegetation** to prevent ladder fuels. No more than 1/3 of the live green limbs should be removed from any tree. Taking more than this amount can weaken the tree and make it susceptible to bark beetle attack. Late fall to winter is the best time to prune to prevent bark beetle attack
4. **This area is usually the residential landscape.** Tips for this area include: **Remove most or all flammable wildland plants, select less flammable plants** (shorter is better than taller, herbaceous is better than woody, deciduous is better than evergreen, poor choices are juniper, arborvitae, pine, scotch

broom, and ornamental grasses, good choices include lawn, ground covers, short deciduous shrubs, flowers, succulents, bulbs, and deciduous trees), emphasize the use of hard surfaces and mulches, clear flammable vegetation for **at least 10' around propane tanks**, remove tree limbs that are touching the house, near power lines, and **within 15' of the chimney**, and create a noncombustible area within 3' of the house using hard surfaces, irrigated herbaceous plants, and rock mulches.

5. **Maintain the defensible space area on a regular basis.**
6. **Dense tree stands pose a significant wildfire threat.** On flat to gently sloping terrain, thin the trees within the Defensible Space Zone to provide an average separation between canopies of at least 10'. For homes on steeper slopes, the separation distance should be greater. Thinning trees can also improve forest health and make the trees more drought resistant.

Access Zone (*refers to the area that allows firefighters to arrive at a house in a timely manner*)

- 1-2. The **street address to your property should be displayed so that the numbers can be easily read from the street, both day and night.** This assists firefighters in locating your property during all types of emergencies including medical aid calls. Address numbers should be 4" tall and of a highly contrasting color with the background. They should be made of fire resistant materials as well. Houses that do not have correct addresses posted are in violation of county codes.
- 3-4. **Street signs should be at every intersection leading up to the house,** have characters at least 4" tall, be made of reflective material, and be noncombustible.
5. **Driveways with large amounts of flammable material next to them are a deterrent to firefighters.** Make driveways less threatening to firefighters by clearing flammable vegetation.
6. If the driveway is long, be sure there is enough room for firefighting equipment to turn around. Without a turnaround area, firefighters may be reluctant to place engines near the home.

Summary

If you answered YES to all of the checklist items, you can feel confident that you have done a good job of building defensible space around your home. While the creation of defensible space does not guarantee protection, it can greatly increase the probability of structural survival in the event of a wildfire.

Any NO answers on the checklist can serve as a guideline for defensible space improvements around your home in order to increase the probability of structural survival during a wildfire.

Questions? Call University of Nevada Cooperative Extension at 887-2252 or the Carson City Fire Department at 887-2220

Source: Adapted from a Waterfall Fire Project defensible space evaluation checklist, developed by JoAnne Skelly, Carson City/Storey County Extension Educator, Meri McEneny and Lesley Bensinger, Waterfall Fire Education Project Assistants.



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