
Firewise Landscape

People living adjacent to undeveloped wildlands enjoy the solitude and closeness to nature. However, many of these settings are also wildfire-prone areas. Given our dry spring weather, fire departments and local governments encourage us to create and maintain wildfire defensible space. The two goals of wildfire defensible space are to reduce the vulnerability of your house and property to wildfire damage and make it safer for firefighters to defend your property should they be required to do so.

Our goal should be to develop landscapes with design and choice of plants that create wildfire defensible space and enhance outdoor living space on the property. Defensible space landscaping integrates traditional landscape functions with a design that reduces the threat from wildfire. It includes planting for fire safety, vegetation modification techniques, use of fire safety zones, and other principles. When done thoughtfully, defensible space landscaping can also conserve outdoor irrigation water usage.

Through proper plant selection, placement, and maintenance, we can diminish the possibility of ignition, lower fire intensity, and reduce how quickly a fire spreads, all of which increase a home's survivability. Firewise plant selection is primarily determined by a plant's ability to resist ignition thereby reducing wildfire threat. You should minimize use of coniferous evergreen shrubs and trees within 5 feet of a structure because these plants contain oils, resins, and waxes that burn with great intensity when preheated by an approaching fire. Use ornamental grasses sparingly here because they also can be highly flammable. Choose fire-resistant, low-growing plants with high moisture content, non-resinous, oily, or waxy stems and leaves.

Deciduous trees are generally more fire-resistant than evergreens because they have higher moisture content when in leaf, a lower fuel volume when dormant, and typically do not contain flammable oils. Placement and maintenance of trees and shrubs are as important as actual plant selection. When placing trees in a landscape, remember the tree's size at maturity. Keep tree limbs at least 15 feet from chimneys, power lines, and structures. Small specimen trees can be used near a structure if pruned properly and well irrigated.

Defensible space landscaping can also include hardscaping: driveways, walkways, patios, parking areas, areas with inorganic mulches, and fences constructed of nonflammable materials such as rock, brick, or concrete. These non-flammable materials reduce fuel loads and create fuel breaks. Fuel breaks are a vital component in every firewise design. Water features, irrigated lawns, pools, ponds, or streams can be fuel breaks. Boulders and rock-covered areas can also be fuel breaks. Remember, while bare soil is an effective fuel break, it is not recommended for defensible space because of the potential for soil erosion, weed susceptibility, and other concerns.

Homes located within chaparral vegetation or on south- or west-facing slopes pose greater risks and will require more extensive landscape planning for defensible space. Prevailing winds, seasonal weather, local fire history, and characteristics of native vegetation surrounding the site are additional important considerations. Slopes that go upward toward structures should have additional defensible space treatment as fire burns more aggressively when fuels are present on slopes.

The 5 feet closest to the structure is the most critical defensible space area. This is an area where highly flammable fuels are kept to a minimum and plants are kept green throughout the fire season. Use cacti, succulents, and non-woody perennials here. Rock mulches are also good choices close to structures. Patios, masonry, or rock planters are excellent fuel breaks and increase wildfire safety. You can also be creative with boulders, riprap, and dry streambeds.

Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding wildlands. Defensible space also provides room for firefighters to do their jobs. Your house is more likely to withstand a wildfire if grasses, brush, trees and other common forest fuels are managed to reduce a fire's intensity. Creating effective defensible space involves developing a series of management zones in which different treatment techniques are used (the distances and descriptions provided below vary according to local rules and conditions).

Immediate Zone is the area within 5 feet of any structure in which any flammable material is removed. The 5-foot distance is measured from the outside edge of the home's eaves, decks, garages, storage buildings, barns, or other structures. This is done through pruning, mowing, or completely removing flammable vegetation and other materials. Be sure to use proper pruning techniques when partially removing woody materials. If your home has non-flammable siding (not wood), then perennials and low growing shrubs can be grown in this zone. Under no circumstances should trees be planted in the Immediate Zone. Shrubs should be maintained regularly to remove dead wood and keep away from structures.

Intermediate Zone is an area of fuel reduction. It is a transitional area between the Immediate Zone and the surrounding native plant community. Typically, Intermediate Zone defensible space should be 5-30 ft from the structure. This varies according to slope with the shorter distances being used for level ground and increasing with the steepness of the slope. Within this zone, the continuity and arrangement of vegetation is modified. Remove stressed, diseased, dead or dying trees and shrubs. Thin and prune the remaining larger trees and shrubs. Be sure to extend thinning along either side of your driveway all the way to your main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing home site safety and make it easier for fire fighters to access your property. The entire area of the intermediate zone should be flagged or otherwise delineated prior to start of fuel reduction treatments. Here, multiple decisions must be made based on knowledge of fire behavior, energy contained in the fuel, and the continuity/arrangement of the fuels. Most often, Intermediate Zone treatments will require some knowledge of proper pruning techniques and personal aesthetics.

This is a true blending of art and science. The following recommendations should be followed when creating the Intermediate Zone:

1. Clear vegetation from under large stationary propane tanks.
2. Create fuel breaks with driveways, walkways/paths, patios and decks.
3. Keep lawns and native grasses mowed to a height of 4 inches.
4. Remove ladder fuels (vegetation under trees) so a surface fire cannot reach the crowns. Prune trees up to 6-10 feet from the ground; for shorter trees do not exceed 1/3 of the over tree height.
5. Space trees to have a minimum of 18 feet between crowns with the distance increasing with the percentage of slope.
6. Tree placement should be planned to ensure the mature canopy is no closer than 10 feet to the edge of the structure.
7. Trees and shrubs in this zone should be limited to small clusters (islands) of a few each to break up the continuity of the vegetation across the landscape.

Extended Zone is 30-100 feet, out to 200 feet. The goal is not to eliminate fire but to interrupt the fire's path and keep flames smaller and on the ground.

1. Dispose of heavy accumulations of ground litter/debris.
2. Remove dead plant and tree material.
3. Remove small conifers growing between mature trees.
4. Remove vegetation adjacent to storage sheds or other outbuildings within this area.
5. Trees 30 - 60 feet from the home should have at least 12 feet between canopy tops (could depend on the slope of the land).
6. Trees 60-100 feet from the home should have at least 6 feet between the canopy tops (could depend on slope of the land).
7. While pruning generally is not necessary in this zone, it may be a good idea from the standpoint of personal safety to prune trees along trails and fire access roads. Or, if you prefer the aesthetics of a well-manicured landscape, you might prune the entire area. In any case, pruning helps reduce ladder fuels, thus enhancing wildfire safety. Mowing is not necessary in the Extended Zone.

Landscapes change over time. Trees and shrubs continue to grow, plants die or are damaged, new plants begin to grow, and plants drop their leaves and needles. Like other parts of your home, defensible space requires maintenance. Use the following checklist each year to determine if additional work or maintenance is necessary.

Defensible Space Annual Checklist

- Trees and shrubs are properly thinned and pruned within the defensible space. Slash from the thinning is disposed of.
- Roof and gutters are clear of debris.
- Branches overhanging the roof and chimney are removed.
- Chimney screens are in place and in good condition.
- Grass and weeds are mowed to a low height.
- An outdoor water supply is available, complete with a hose and nozzle that can reach all parts of the house.
- Fire extinguishers are checked and in working condition.
- The driveway is wide enough. The clearance of trees and branches is adequate for fire and emergency equipment. (Check with your local fire department.)
- Road signs and your name and house number are posted and easily visible.
- There is an easily accessible tool storage area with rakes, hoes, axes and shovels for use in case of fire.
- Attic, roof, eaves and foundation vents are screened and in good condition. Stilt foundations and decks are enclosed, screened or walled up.
- Trash and debris accumulations are removed from the defensible space.

Additional Resources:

[Yavapai County Firewise/Defensible Space Webpage](#)

See Firewise / Defensible Space

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