

Firewise Landscaping

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Wildfires (also known as forest or brush fires) are both naturally and accidentally occurring fires that can pose a significant threat to human health and property. Unlike the prescribed burns used by some natural resource managers to maintain forest and grassland habitats, wildfires are unplanned and uncontrolled fires that typically begin in rural areas and can spread into human developments. While some regions of the United States are more prone to wildfires than others, many areas throughout the country face a degree of risk at different times throughout the year.

Wildland Urban Interface

The U.S. Fire Administration defines the areas where human made structures and infrastructure are in or adjacent to areas prone to wildfire as the wildland urban interface (WUI) [1]. When wildfires occur, homes within the wildland urban interface have a greater risk of ignition if leaf litter and woody debris have accumulated in the landscape. Homeowners residing within the WUI can mitigate risk (Figure 1) by remembering to keep their landscapes:

1. **Lean** (small amounts of flammable vegetation)
2. **Clean** (no accumulation of dead vegetation or other flammable debris)
3. **Green** (keep plants healthy and green during the fire season)

Defensible Space

Although all vegetation should be considered fuel for a fire, a firewise landscape strategically incorporates plant types, quantities, spacing, and management to create and maintain more open areas near structures with the intention of influencing fire behavior [2]. By properly designing and maintaining the landscape 30 feet or more around a house, homeowners can help reduce natural fuel sources near a structure, break the continuity of plant material, and create a defensible

Figure 1: House with firewise landscaping and fire suppression system spared in wildfire

Photo credit: <https://napafirewise.org/learning-center/defensible-space/>



Figure 2: House surrounded by defensible space

Photo credit: The Perennial Post,
<https://sjcmastergardeners.wordpress.com/2014/05/05/planning-a-firewise-landscape-2/>



space in conjunction with other fire suppression efforts. [3] (Figure 2).

Zone Concept

A commonly used approach to firewise landscaping is visualizing widening concentric circles or zones around the house. Each zone's vegetation is designed and managed differently [2] (Figure 3). Zone 1 extends just beyond the house and serves to help slow fire from touching the structure. This zone should exclude conifers and include fire-resistant plants and noncombustible mulches such as decomposed granite, gravel, or rocks [4]. Zone 2 extends 10 feet or more from the house and serves to slow an incoming wildfire. Healthy and green lawns are great for this space, as are well-spaced deciduous trees, but conifers should again be avoided. Fresh garden compost or shredded bark are both acceptable mulches in this zone [4]. Zone 3 extends 30 feet or more from the house and serves dual purposes: to hinder the spread of an incoming fire and to provide room for firefighters to setup and protect the house. Planting options are greater in Zone 3, but larger conifers should be excluded and groups of plantings adequately spaced. Beyond 30 feet, mulches with less fire-proofing potential such as wood chips or bark nuggets can be included in the landscape; however, materials with the lowest fire-proofing potential such as wheat straw and pine needles should be kept well outside of Zone 3 [4]. If other flammable structures such as fences are present in the landscape, they should also be included in firewise landscaping considerations.

Plant Selection

While all plants should be considered flammable, plant species differ in flammability potential, and local environmental factors (e.g., temperature, wind, humidity) can further drive these differences. Junipers, for example, are a group that should not be planted in wildfire-prone areas due to their flammability. Some of the major plant characteristics to consider when designing a firewise landscape include: leaf moisture content, size and shape of leaves, plant compounds stored (e.g., resins, oils, waxes), dead

tissue retention, and branching patterns [3], [5]. In general, conifers tend to be more flammable than deciduous plants due to differences in several of the characteristics outlined above. For example, the needle-like leaves found on many evergreen species tend to have lower moisture levels than the wide, flat leaves commonly seen on deciduous plants. Evergreen plants also retain their foliage over the winter months while deciduous plants shed this potential source of fuel.

Plant Spacing

Proper plant spacing is a key component of firewise landscaping [5]. Plants can act as a fuel source for an incoming wildfire, and tightly packed trees and shrubs provide steppingstones that allow fire to easily move through a landscape. Ample space should be provided between individual plants or plant clusters to inhibit fire movement. These spacing requirements widen with increases in the slope of the landscape. Avoid creating continuous strips of plant material throughout the defensible space.

Plant Management

Regular management and maintenance of the plant material in the landscape can limit the potential for fire intrusion and spread [5]. All dead and decaying plant material on the ground, including leaf litter, should be collected and removed from the defensible space to limit the amount of available fuel. Gutters should also be cleaned periodically and all accumulated organic matter removed. Tree branches should be pruned to maintain a distance of at least 10 feet between other branches and ground cover, neighboring trees, chimneys, and roofs. Ensuring adequate vertical spacing is important for preventing fires from climbing into the canopy. Yards should be monitored periodically to maintain the defensible space.

Conclusion

While no landscape strategy can prevent fires or prevent a fire from contacting a structure, the firewise landscaping approach might be one component of a

client's overall fire mitigation strategy. Whether wildfires are commonplace or rare in your area, firewise landscaping, in conjunction with other fire suppression efforts, can be a sound approach to landscape management. Specific considerations are likely to vary by geographic region. Contact your local Bartlett Tree Experts Arborist Representative about strategies to implement firewise landscaping on your property.



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References

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