

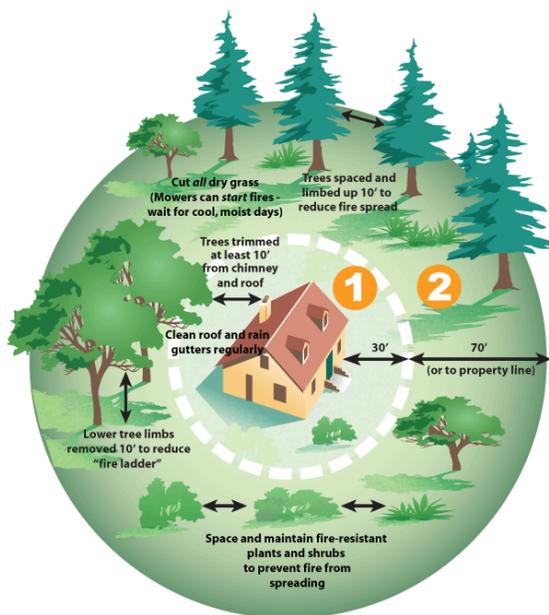
**UC MASTER GARDENER PROGRAM
OF SAN LUIS OBISPO COUNTY**



The UC Master Gardener Program is a public service and outreach program under the University of California Division of Agriculture and Natural Resources (UC ANR), administered locally by participating UC Cooperative Extension offices (UCCE). Our mission is to extend research based knowledge and information on home horticulture, pest management, and sustainable landscape practices to the residents of California.

FIRE SAFE LANDSCAPING
Marti Rutherford, SLO Master Gardener

Fire plays an important part in the biodiversity of our natural habitats by promoting seed release and germination while thinning dense stands of vegetation. Wildfires are often natural phenomena in California; it is not a question of if, but when will a fire occur. Drought can add to this risk by increasing the amount of fuel in the form of dead vegetation. As more people move to the wildland-urban interface, protecting our homes is crucial. Home gardeners can minimize fire risk and maintain a beautiful landscape with proper planning, plant selection and maintenance.



Create and Maintain Defensible Space

The location of your home on the property and building materials are important factors to consider. Additionally, creating and maintaining zones of defensible space around the home can improve your home’s chance of surviving a fire. The goals of the defensible space include: reduction of fire intensity near the home, conversion of tree top fires to low burning fires, and a safe area for firefighter activity. Defensible space can be divided into planting zones defined by the distance from the home and the different characteristics and maintenance requirements of the plants.

Graphic credit: CAL FIRE

Non-Combustible Zone: within three feet of dwelling

- Use plants and materials that are not easily ignited. Concrete, bricks, pavers and rock mulches are good choices in this zone.
- Use low growing, herbaceous, non-woody plants which stay well hydrated with little water. Plan on irrigating this zone.
- Do not use organic mulch within 3-5 feet of your home.

Home Defense Zone: within 30 feet of dwelling: Lean, Clean and Green

This zone provides space for firefighters to work and interrupts the fire's direct path to your home.

- Lean plants are low growing, have an open branching habit, contain little fuel, and are well spaced apart.
- Clean plants are well pruned with no dead or decaying material.
- Green plants are not easily combustible and well hydrated.
- Select plants which maintain moisture without high irrigation requirements. Plants native to our climate and soils are thus ideal but not the only possible choice. Native plants generally require less maintenance, use less water and need little fertilizer or pesticides.
- Avoid plants that do not tolerate moist growing conditions or regular irrigation. Bark mulch, 2-3 inches deep, can be used to conserve soil moisture.
- Green herbaceous plants, grasses and non-woody ornamentals are better choices than shrubs and trees.
- If planting trees or shrubs, choose deciduous rather than evergreen and avoid junipers, pines and palms.
- Allow adequate spacing of plants and use hardscape materials like rocks, boulders and paths to break up the continuity of the vegetation; thereby reducing the ability of fire to spread horizontally.
- Vegetable plants grouped or mixed in with landscape plants are an excellent choice in this zone due to their need for regular irrigation. Make sure both vegetables and landscape plants have similar water requirements.
- Keep this zone tidy. Keep tree branches 10 feet from chimneys and 6 feet from rooftops. All combustible material (cardboard, firewood, twigs, fallen needles and leaves) needs to be at least 30 feet away from home and cannot reside in this zone. Do not store flammable material under decks. Keep flammable vegetation 10 feet or more from propane tanks. Annual grasses should be kept mowed to less than 4 inches.

Reduced Fuel Zone: extends a minimum of 100 feet from a dwelling

This is a buffer zone which decreases fire intensity and can reduce a crown (treetop) fire to a ground fire.

- Goal is to reduce the fuel load by pruning, thinning and proper spacing of shrubs and trees (table 1) to minimize the vertical and horizontal fire spread.
- Completely removing all vegetation is not a desirable option as this could allow winds to carry embers unimpeded to a home.
- Prune to reduce the chance of fire laddering, which is caused when shrubs beneath a tree transfer fire to the tree's lower branches resulting in a crown fire. Prune tree lower

branches up to 6 feet but maintain the ratio of 2/3 tree crown to 1/3 tree trunk. If shrubs are beneath the tree, lower branches should be pruned to 3 times the shrub height. However, do not remove more than 1/3 of tree crown; otherwise reduce height of shrub.

- Annual grasses and weeds should be mowed to height of no more than 4 inches. Grasses should be removed from the understory of shrubs and trees.
- When thinning vegetation, learn to identify and retain valuable native plants and choose specimens for their aesthetic or ecological value. An example would be oaks which can serve as ember catchers. Grouping shrubs and trees into widely separated islands can be attractive, decrease spread of fire, and serve as habitat for wildlife.

Table 1: Proper horizontal tree and shrub spacing

Slope	Space Between Tree Crowns	Space between Shrubs
<= 20%	10 feet	2 times the height of shrub
20 - 40%	20 feet	4 times the height of shrub
>= 40%	30 feet	6 times the height of shrub

Plant Choices

Although some plants are marked as fire resistant, ALL PLANTS BURN given the right conditions.

- Desirable Plant Characteristics for a Fire Safe Landscape:
 - High moisture content in leaves and stems
 - Little seasonal accumulation of dead vegetation and leaf litter
 - Low growing, open branching habit with fewer total branches
 - Slow growing with low maintenance requirement
 - Contain low levels of volatile oils, resins and waxes
 - Possess extensive deep rooting system for managing moisture (important after a fire) and ability to stay hydrated with less supplemental watering

Landscape Maintenance is the key to a fire safe environment

- Plant choice is not as critical as proper design and maintenance of landscape.
- Remove dead or dying vegetation. Rake and remove accumulated litter. Leaving a shallow layer of litter is acceptable and helps protect the soil.
- Dead palm tree fronds should be removed as they are very dangerous in a fire and can act as flaming arrows igniting other vegetation.
- Plants are usually pruned during dormant season, which for many native plants is in the summer. In spring, be mindful of the presence of wildlife and prune after young birds have fledged from their nests.

- Prune shrubs and trees to create appropriate space both vertically and horizontally; thin to reduce fuel load.
- Keep landscape appropriately watered.
- During fire season, mow before 10 am to reduce chance of fire from a rock strike.
- Maintenance is an ongoing task and thinning may need to be done every few years. Never remove more than 30% of plant at one time. Thinning cuts include cutting a branch back to its origin or by cutting to a lateral large enough to assume the terminal role. This will not promote a flush of new growth, which is what you do not want when fuel reduction is your goal. Conversely, cutting tips of branches will promote more growth and more fuel.

Native Grasses

Many of California native grasses are perennial. They may go dormant in the summer, but turn green again with fall rain. Perennial grasslands do not burn as intensely as those dominated by annual grasses. However, perennial grasses are often mixed with numerous annual grasses and, therefore, need to be mowed to decrease fire risk. Keeping grasses 4-6 inches high allows the perennial grass to grow and removes much of the fire hazard.

Mulch

Mulch has many advantages: it reduces soil moisture evaporation, inhibits weed germination, and cools the soil. Rock mulch is very fire safe, but can be less aesthetically pleasing, is difficult to weed, and it retains more heat than other options. Bark mulch is an acceptable choice, but choose a larger pieced variety. Large pieces will burn less than shredded gorilla hair variety which is not a fire safe choice. Do not use shredded rubber as it is very flammable. Interrupt bark placement with sections of non-flammable hardscapes such as paths, driveways and patios. Keep the bark to a thickness of two to three inches to reduce the risk of mulch fire. Thicker layers of bark can conceal smoldering embers before visible fire develops. If your environment is at a high risk for fire, avoiding mulch may be the best option.

References:

Halsey, Richard W. *Fire, Chaparral, and Survival in Southern California*. San Diego, CA: Sunbelt Publications, 2008.

"Native Plants and Fire Safety." *Fremontia: A Journal of the Native Plant Society* 38, no. 2-3 (2010): 1-59.

Quarles, Stephen and Ed Smith. PDF. *The Combustibility of Landscape Mulches*. University of Nevada Cooperative Extension. 2011 <https://www.unce.unr.edu/publications/files/nr/2011/sp1104.pdf>.

Ed Smith. *Living With Fire*. PDF. San Luis Obispo: FireSafe Council, 2008. http://www.fcslo.org/Document/Flyers/20090518_LivingwFire.pdf.

"Wildland Fire Safety Starts in the Home." Sustainable and Fire Safe Landscapes. Accessed May 06, 2016. <http://ucanr.edu/sites/SAFElandscapes/>.

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Availability	↔	on VMS > Documents/Presentations > INFORMATIONAL DOCUMENTS > FIRE SAFE LANDSCAPING
History	↔	Original: 5/10/16 Revised: month/year:

