
DEPARTMENT OF FORESTRY AND FIRE PROTECTION

COAST-CASCADE REGION

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FIRE SAFE PROJECT SPECIFICATIONS



Why is fire safety an issue?

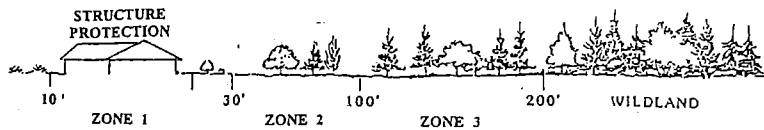
The north coast of California is blessed with a temperate climate, characterized by cool, rainy winters and warm, dry summers. The native vegetation is adapted to this climate. Prior to non-indigenous settlement, fires typically occurred every 10 to 15 years in our part of the

state. This fire regime tended to produce low intensity ground fires that burned shrubs before they matured and died, eliminated low-growing branches, increased the spacing between trees, and favored the growth of oaks and native grasses in forest openings. The unprecedented growth of California's human population has disrupted this burning pattern, causing less frequent but much more intense fires. Now our woodlands tend to develop a dense mixture of young tree seedlings and saplings and tall dry shrubs inter-mixed with the overstory trees. Douglas-fir, shrubs and non-native grasses dominate forest openings. This arrangement of fuels usually allows ground fires to spread to the mid- and upper canopies, resulting in very large, hot fires that are difficult and dangerous to control. Communities have been constructed in many locations where homes and their residents will be in harm's way during a large fire.

What's involved in a Fire Safe project? While most residential areas are not suitable for conducting prescribed burns, it is possible to mechanically remove fuels, reproducing vegetation patterns similar to those existing under a natural fire regime. Thinning and pruning vegetation in strategic locations around homes, neighborhoods, and roads can greatly reduce the risk that fires will spread to buildings when they occur, as well as insuring that residents can leave the area and fire-fighters and equipment can get in during emergencies. Remember that fires are a natural part of the California environment, and that preventing fire occurrence is not a realistic goal of a Fire Safe project! What Fire Safe work can accomplish is to keep fires on the ground when they do occur, thus reducing the chances that homes will burn, and help keep roads open so residents can evacuate and fire-fighters can gain access. Fuels in residential areas include materials ranging from dry grass, downed branches, logs, dead trees and dry shrubs to stacks of fire wood, as well as fences, decks, siding and roofs made of wood. In an intense fire, green fuels can also burn, especially plants with volatile oils such as coyote brush, ceanothus, manzanita, tanoak, bays, pines, junipers, eucalyptus, acacia, brooms and pampus grass. The key to improving fire safety is providing horizontal and vertical separation between these fuels. There are several components of a Fire Safe project and different standards that apply to work conducted around individual homes, along roads, or in strategic locations such as ridge tops.

**KEEP THE FIRE ON THE GROUND
... WITH LOW HEAT AND LOW FLAMES.**

BY PLANNING A "ZONE DEFENSE"

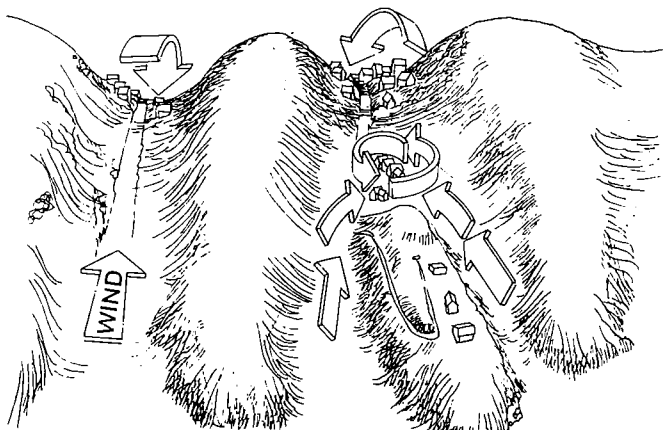


Fire Safe clearances around homes: The area around the house should provide a transition between the native vegetation and the home, with the shortest and most fire-resistant plants closest to the house, and taller and more flammable

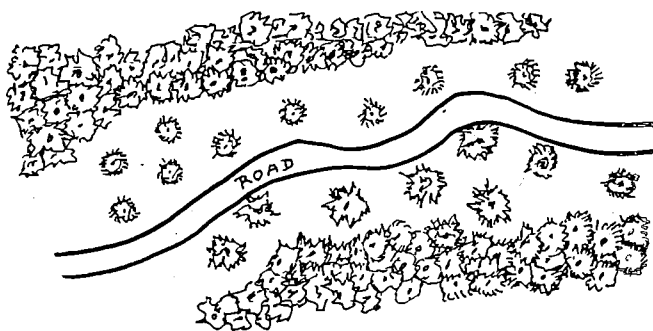
vegetation located at a safe distance (See the "Fire Safe Landscaping" Tree Note for recommended species to use in landscaping.) This "greenbelt" area can also be attractive, letting in sunlight and opening up views, and include landscape features such as patios, walkways, flowerbeds, lawns, ponds, or rock gardens. Ideally, this area can accommodate both fire safety and aesthetic beauty!

Planted and native trees and shrubs should be separated both horizontally and vertically. Trees and shrubs should be separated by at least two times the height of the shrubs (for example, if shrubs are five feet tall, they should be no less than ten feet away from trees or other shrubs). Clusters of shrubs should not occupy areas greater than 18 feet in diameter. The recommended spacing for trees varies from 10 to 30 feet, increasing on the steepness of the slope. Tree limbs within eight to ten feet of the ground, or overhanging the roof, chimney, or driveway should be removed (please see the Pruning Guidelines for recommendation on pruning techniques). Dead or dying branches, shrubs or trees, prunings, and downed branches or logs should be removed from this area. Lawns or wild grasses should be kept cut.

This area is referred to as "defensible space". Landowners are legally responsible for maintaining a safe clearance within 30 feet of their homes and outbuildings, as well as combustible fuels like decks, fences and gas tanks; work within 30 feet of the home is not eligible for cost-share funding! All distances listed above should be increased if fuels are tall; composed of highly combustible species such as coyote brush, ceanothus, manzanita, tanoak, bays, pines, junipers, eucalyptus, acacia, brooms and pampus grass; or located on steep slopes or in the direction from which fire is most likely to spread.



Houses located on the edge of windy ridges or in the saddle between knolls are particularly vulnerable and require increased clearances of as much as 200 feet, especially on the downhill side. (Bear in mind when working on steep ground that the roots of shrubs and trees also play an important role in slope stability.)



Fire Safe clearance along roads: Roads are true firebreaks, areas where fuel is absent. Fire Safe clearance along key roads provide evacuation routes for residents to escape during fires, and fire-fighting equipment to gain access. These zones may also form areas where fires burn less vigorously and can be controlled.

Work should be prioritized along the main access roads; ideally all residences will have two escape routes, in the event one is closed during a fire. Again, the key point is to separate trees and shrubs both horizontally and vertically. Trees and clusters of shrubs should be separated by at least two times the height of the shrubs (for example, if shrubs are five feet tall, they should be at least ten feet apart). The recommended spacing for trees varies from 10 to 30 feet, depending on the steepness of the slope. Tree limbs within eight to ten feet of the ground, or overhanging the road should be removed (please see the Pruning Guidelines for recommendations on pruning techniques). Work should be implemented a minimum of 25 to 30 feet on each side of the road. All distances listed above should be increased if fuels are tall; composed of highly combustible species, such as coyote brush, ceanothus, manzanita, tanoak, bays, pines, junipers, eucalyptus, acacia, brooms and pampus grass; or located on steep slopes or in the direction from which fire is most likely to come. Chipping, piling and burning, or otherwise treating slash in the shaded fuelbreak will increase fire safety.

The work described will produce an area often described as a “shaded fuelbreak” where fuels have been reduced, but enough trees and shrubs are retained to provide shade. This reduces re-growth of vegetation, making long-term maintenance easier.

Clearance in other strategic locations: Other areas where installing Fire Safe clearances is advisable include the following.

- Near propane and other types of fuel tanks (at least 10 feet of clearance)
- Hydrants, holding tanks, ponds, or other sources of water needed for fire-fighting
- Under power lines (at least 10 feet of clearance under electrical lines)
- Designated safety zones or structures such as local schools or community centers where residents may go to seek shelter during a fire
- Along ridge lines

Slash disposal: There are several methods for dealing with the prunings and downed logs and branches generated by your Fire Safe work. The easiest and least expensive method is to leave the material in place. Branches and logs should be placed as close as possible to the ground and branches should be lopped down to form piles less than 30 inches high. (Lopped slash piles of this size generally pack down and decompose rapidly; generally height is reduced by at least half within the first year.) Along steep slopes, this material should be oriented along slope contours to help control soil erosion. Place slash so that paths and roads through the area are left open.

Brush piles also provide excellent habitat for a number of species, including snakes, salamanders, rodents, and ground-nesting birds. Fuel loads will be reduced further if any useable firewood is salvaged from the project site.

Fire safety is enhanced if slash is treated by chipping or burning. Chipping is labor intensive and requires road access for equipment, but has the advantage of generating chips that make attractive and long-lasting mulch. This can be used to help control re-growth in the treated area, spread to create walkways, or piled and composted.

Slash to be burned should be piled in a safe location away from power lines, over-hanging trees or other burnable fuels; roads and landings generally work well for this purpose. Note that burn piles should not be placed on or near archeological or historical sites. You will need to obtain a burn permit from your local CDF station, and in some areas your local Air Quality Control Board. You can only burn on times and dates authorized by both agencies. Slash will need to dry out thoroughly before burning; tarping the piles on rainy days will help speed up this process. Try to start your burns early on damp, windless days.

Maintenance: Defensible spaces around homes and in shaded fuelbreaks should be inspected and maintained regularly. Note that retaining the shade canopy in your shaded fuelbreak is a key component in reducing maintenance needs, as most flammable plants need direct sun to sprout and grow vigorously. While new growth should be pruned or removed as needed to maintain safe clearances, try to accomplish this while retaining an overstory that provides filtered shade. Maintenance near homes and key access roads should be conducted on an on-going basis. Larger or more remote shaded fuelbreaks should be inspected annually and maintained as needed.

Most maintenance work can be done manually, using brush cutters, chainsaws, loppers, and/or mowers as conditions permit. On larger sites that are fairly level, mechanical equipment, including tractors with mowing attachments, mechanical brush cutters, feller-bunchers, or masticators may be used. Other options include the use of grazing animals, prescribed fire, or chemicals. Applying herbicide directly to cut stumps of trees and shrubs will reduce or eliminate stump sprouting of species such as tanoaks and native shrubs, and is an environmentally safe and cost effective method to control unwanted regrowth. Remember, installation and maintenance of Fire Safe zones around your house and access roads are some of the most important steps you can take to insure the safety of your home and family in the event of a serious fire in your neighborhood.

Perform work safely: On a hot, dry day, one spark thrown by a truck back-firing or a brush-cutter blade hitting a rock can start a major wildfire. Here are some tips to keep FireSafe while working on your project: Work in the early morning or early evening hours, when temperatures are lower and the air has more moisture.

- Suspend work during Red Flag conditions.
- Keep a shovel and water or a fire extinguisher at hand when working in dry fuels.
- Any gas-powered machinery, including chain saws, brush cutters, and tractors, should be equipped with spark arresters.
- Be prepared to douse or stamp out a spark when using cutting blades in rocky areas.
- Stay at least 10 feet away from electrical lines.