



WILDFIRE HAZARD AND FUELS TREATMENT

From Forestland Steward, Winter 2007 newsletter, courtesy of California Forest Stewardship Program

From The Curious Gardener, Summer 2007

Fire is a difficult issue to deal with. There are no easy answers and the problem is not going to go away.

Fire is an integral part of most California landscapes. Many of our native plants, including trees, are adapted to burn periodically; they *need* fire to be healthy, reproduce, and survive. Fire suppression activities over the last 100–150 years have largely taken fire out of the system, causing far-reaching changes in habitats and forest health.

Many of the forest plant communities are not adapted to today's exceedingly hot fires. During these fires many mature trees succumb from top kill while others have their roots killed due to decades of accumulated debris burning down into the root zones.

At the same time, growing numbers of people moving into forested areas (the wildland urban interface) increase the risk of fires, place more lives and property in danger, and complicate efforts to restore fire to the ecosystem. Learning how to live with wildfire is a big challenge. It requires accepting the fact that wildfire *will* happen and finding ways to minimize the damage.

Defensible space and other protective measures for the home

Defensible space is an area around a house or other structure that has been modified to reduce wildfire threat. This is usually done by clearing and separating highly flammable material so there are no paths for fire to travel to the home. California law requires 100' of defensible space around homes and structures.

In addition to creating defensible space, there are numerous other ways to increase the safety of your home including using less- flammable building materials, taking precautions with outdoor equipment, creating easy access for firefighters, etc. (see the Homeowner's Checklist at [http:// www.fire.ca.gov/ education_100foot.php](http://www.fire.ca.gov/education_100foot.php)).

Protective Measures for the Forest

The first step in creating a safer forest is to survey the forest for fire risk. Look for ladder fuels and appraise surface and aerial fuels. With this information you can decide what fuels modification projects, if any, are appropriate.

Ladder fuels are those combustible materials (both live and dead) that provide a path for a surface fire to climb up into the crowns of shrubs or trees. Standing dead trees with many limbs near the ground are an example of ladder fuels. Pruning and thinning can remove ladder fuels.

Surface fuels are those on the surface of the ground. They include everything from grasses to logs and stumps. Aerial fuels are fuels that are not in contact with the ground. These include limbs, foliage, and branches, as well as any dead material caught up in the branches of other plants. Needles draped over the branches of shrubs are a good example of an aerial fuel.

When assessing your fire risk look at the location, arrangement, and amount of surface, ladder, and aerial fuels. Different fuels burn at different rates. Pine needles are "flashy" fuels that ignite easily and burn quickly. Other fuels, such as logs, are very difficult to ignite but can smolder for weeks or even months.

There are some trade-offs. For example, you'll want some large woody debris and snags in order to maintain good wildlife habitat. But such dead material also provides fuel for fires so it is important not to have too much.

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Resistance to Fire

Trees differ in their ability to withstand fire. Resistance comes from a combination of attributes, of which thick bark is the most important. Thick bark protects a tree better than thin bark, as it shields the living cambium from excessive heat. Root depth is also important. A tree with many shallow roots is vulnerable to its roots being charred by hot fires.

The density of the canopy, flammability of foliage, and the branching habits of individual trees can greatly influence how a fire spreads and whether or not it will reach the crowns. Forests with dense canopies tend to trap heat, causing vegetation to become drier. Burning decades of duff accumulation can result in fatal root damage and greatly reduce the natural “seed bank.”

Fuels Reduction

Fuel modification projects are designed to reduce the risk of fire by removing and separating fuels. In a fire break or fuelbreak, all vegetation is removed down to bare soil leaving nothing left to burn. Fuelbreaks used to control low-intensity fires (hand lines) are generally a minimum of three feet wide; much wider lines are needed to hold large fires. Often these are strategically placed along ridges. Roads can function as effective fuelbreaks.

Shaded fuelbreaks are strips of land in which vegetation has been modified rather than removed. The purpose is to reduce the amount of combustible material so that when a fire hits the shaded fuelbreak it will decrease in intensity, cool down, and drop from the canopy to the ground. Typically trees are spaced so their crowns no longer touch. Lower branches are pruned. Shrubs and dead and down material are removed to reduce surface fuels. Shaded fuelbreaks are most often placed strategically along roads and around structures.

Thinning is conducted in young stands with small-diameter trees (pre-commercial thinning), or in stands with larger trees (commercial thinning). In both cases the purpose is to reduce the number of trees, leaving a healthier, more vigorous stand in which trees have much less competition for sunlight, water, and nutrients. Combustible material is removed and the effect can be similar to that of a shaded fuelbreak.

Pruning, removing the lower (live and dead) limbs of a tree, reduces ladder fuels. This is frequently done alongside roads, thus increasing the effectiveness of the road as an existing fuelbreak.

Vegetation management, whether it be pruning, pre-commercial thinning, commercial harvest, etc. generates waste material (slash) that is a potential fuel for fire and must be treated in some manner to reduce fuel loading or its ignition or heat potential.

Regulations

If you sell, barter, or trade the logs you create in your fuels management project you are subject to the Forest Practice Rules. In most cases you will need to hire a Registered Professional Forester. The Forest Practice Rules include a special prescription for “Fuelbreak/ Defensible Space” as part of a Timber Harvest Plan.

There is an exemption that allows a landowner to remove and sell trees within 150 feet of a legally permitted structure when the goal is fuel hazard reduction. An exemption notice must be filed with and accepted by the California Department of Forestry & Fire Protection (CAL FIRE).

Working with Others

Wildfire generally occurs on a larger scale than a single property so it is useful to work with your neighbors to analyze and find ways to reduce the fire risk to the community. Find your local Firesafe Council at www.firesafecouncil.org/.

Placer County Fire Alliance <http://placerefirealliance.org>

Firesafe Council of Nevada County www.firesafecouncilnevco.com OR (530) 272-1122

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