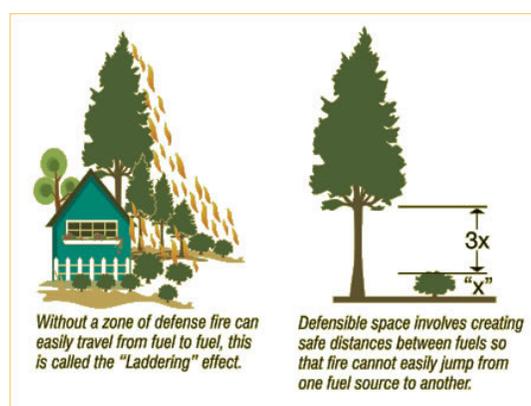
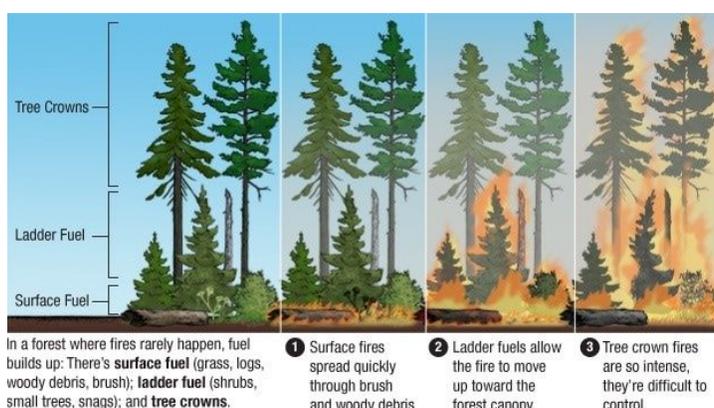


Thinning for Defensible Space: Tree Selection Considerations

Determine your goals

Before deciding which trees to cut, it's important to start with determining the goals for your property and setting objectives to accomplish your land management goals. **In the Defensible Space zone, the primary goal is to modify vegetation structure and composition to reduce fire intensity and severity near your house or on your forested property.** Landowners might also want to consider secondary goals like safety, tree and forest health (i.e. improve tree growth and resistance to drought, fire, insects and diseases), and/or aesthetics.

Figure 1 The continuity or connectivity of surface and ladder fuels with tree crowns can result in high fire intensity and severity. In the defensible space zone around your home, common fuel reduction objectives include reducing surface and ladder fuels AND breaking up the vertical and horizontal connectivity of surface, ladder, and tree crown fuels. (Images courtesy of the US Forest Service and Mountain Area Safety Taskforce)



Set your objectives

Objectives should be goal-oriented and based on how you change existing conditions towards the desired conditions representative of your goals. For example:

Goal	Common Potential Objectives
Defensible Space	<ul style="list-style-type: none"> • Reduce surface fuels (e.g. leaves, tall grasses, shrubs) and ladder fuels (e.g. large shrubs and small trees) • Break up the vertical and horizontal continuity of surface and ladder fuels with the overstory tree canopy
Safety	<ul style="list-style-type: none"> • Remove dead & dying trees within striking distance of structures, roads
Tree and Forest Health	<ul style="list-style-type: none"> • Retain healthy large and medium sized trees • Thin/remove less vigorous/healthy medium and large trees to reduce overall tree density • Maintain species diversity
Aesthetics	<ul style="list-style-type: none"> • Create strategic/desired vistas • Maintain visual screening from neighbors • Promote visual depth, diversity of textures, or fall colors • Maintain and highlight high value trees or landscape features
<p><i>In order to meet multiple goals, consider how your objectives might vary in priority on different places on your property.</i></p>	

Develop a “prescription” and guidelines to meet your objectives

A prescription is developed to describe the treatment, or a series of treatments, designed to modify existing forest structure and composition to one that meets the landowners goals and objectives. The prescription typically includes tree designation guidelines with a general order of priority to provide direction on how to select trees to retain or remove in order to meet the various landowner goals and objectives. For example:

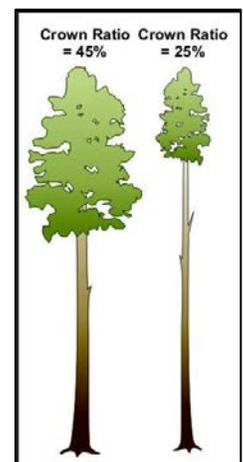
Prescription: In general, tree removal will focus on cutting ladder fuels (small trees and shrubs) less than 10 inches in diameter to reduce the vertical connectivity of surface and ladder fuels with larger tree crowns and increase crown spacing between retained trees. Trees between 10 to 16 inches in diameter may be removed to increase crown spacing and favor the retention and growth of larger desirable conifer trees or black oaks. Tree crowns should be spaced at a distance to reduce potential for fire spread and reduce competition between trees. **Guidelines and order of priority:** Apply the following prescription criteria with higher priority criteria taking precedence over the next higher criteria:

Suggestions:

1. Start with identifying the trees you want to keep and why. These serve as good “anchors” or foundations for deciding which trees to remove.
2. Use flagging to delineate which trees you want to keep so you can better visualize the end result *before* you cut.
3. Remove your trees in phases starting with the highest priority goals and easiest decisions so you can adjust your selection criteria if need be.

1. **Tree Size and Species:** Prefer to retain healthy, larger diameter conifers and black oaks. Priority removal should focus on cutting shrubs and medium to small trees that have connectivity with surface fuels.
2. **Tree Crown Characteristics:** Retain trees with full healthy tree crowns. This includes long “pointy” crowns with greater than 30% live crown ratio. Crowns should be full with green healthy foliage and have good form (i.e. straight without forks or crooks). Remove trees with poor crowns with less than 30% live crown ratio, thinning or discolored “chlorotic” foliage.
3. **Disease or Damage:** Remove trees that display signs of insects (e.g. pitch tubes or streaming, frass), disease (e.g. swelling cankers, mistletoe, etc.), dead tops, excessive limb dieback, or other damage (e.g. forked stems, crooks, broken tops).
4. **Tree Spacing:** Largest, healthiest, most desirable trees have priority for retention and tree spacing should be based off of these trees. Thin conifer trees of equal or lesser size to create crown separation around desirable leaf trees. Uniform or “even” spacing is not necessary; adequate spacing can be achieved by leaving clumps of the largest most desirable fire tolerant trees with a network of intermingled openings between individual trees and clumps of trees.
5. **Species:** Prefer to retain black oak, sugar pine, ponderosa pine, Douglas fir and incense cedar.

Figure 2 Live Crown Ratio



Laws and regulations

Effective January 2005, maintaining 100 feet of defensible space around your forested home is required by California Public Resources Code 4291. In addition, tree harvest and removal in California is regulated by the Z’Berg-Nejedly Forest Practice Act and the California Forest Practice Rules which are enforced by the California Department of Forestry and Fire Protection (CAL FIRE). Landowners may remove trees without a Timber Harvest Plan (THP) or exemption if the wood *is not* sold, bartered, exchanged or traded AND there is no conversion of land use from forest to other use (e.g. structure, agriculture, driveways, septic, etc.). If the wood is to be sold, bartered, exchange, or traded, OR if the landowner intends to remove trees for land uses other than the growing of commercial tree species, then a THP or exemption (e.g. Structure protection, Less than 3 acre conversion, or Forest fire prevention exemptions) will be required. Contact CAL FIRE or a Registered Professional Forester for assistance and information.

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