Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

FUEL BREAK

CODE 383

(ac)

DEFINITION

A strip or block of land on which the vegetation, debris and detritus have been reduced and/or modified to control or diminish the risk of the spread of fire crossing the strip or block of land.

PURPOSE

This practice is used to accomplish one or more of the following purposes–

- Control and reduce the risk of the spread of fire by treating, removing or modifying vegetation, debris and detritus

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all land where protection from wildfire is needed.

CRITERIA

General Criteria Applicable to All Purposes

Fuel breaks strips or blocks will be of sufficient width and length to meet the intended purpose(s).

Fuel breaks shall be located to minimize risk to the resources and structures being protected.

Thin the overstory stand sufficiently to reduce the tree canopy and the potential of a crown fire.

Maintain vertical separation between fuel layers to remove “ladder” fuels, i.e., lowest layers of flammable vegetation do not connect to upper layers so that a fire cannot “step up” to higher canopies.

Treat or remove slash sufficiently and at a time to minimize fuel loadings to acceptable fire risk levels and reduce incidence of harmful insects and disease. Comply with Woody Residue Treatment (384).

Break the continuity of fine fuels by managing the amount and location of brush, grasses and forbs.

Comply with applicable local laws and regulations, including the CAL FIRE Forest Practice Rules (FPR) and Board of Forestry special exemptions for fuel breaks.

CONSIDERATIONS

The basic function of a fuel-break is to impose some obstacle to the spread and as a means of access to the fire.

Attempt to locate fuel breaks near ridge crests and valley bottoms. If winds are predictable, fuel breaks can be located perpendicular to the wind and on the windward side of the area to be protected.

A fuel break is a wide strip of land where most trees and shrubs have been removed. It may have a grass understory to provide soil cover. These are intended to divide large areas of woody fuels into blocks, which allows control of the fire. The trees and shrubs may not survive a wildfire.

Fuel breaks are designed to change the behavior of a wildfire by reducing the quantity, density, and configuration of potential fuels that the fire encounters when it enters the fuel break. The effectiveness of fuel breaks is dependent upon proper location, installation, and maintenance and adequate defense by fire suppression forces.

The wider the fuel break, the easier and safer to control the fire. Generally fuel breaks should be 2 ½ times the height of the tallest vegetation present or a minimum of 200 feet. Terrain and related budget constraints limit the width of most fuel breaks.

Fuel breaks on the landscape are constructed in a sequence; initial fuel breaks are on the ridges separating the major drainages and the next are ones on the ridges within the major sub drainages to break areas into smaller units

Fuel breaks are constructed for a number of purposes:

1. To act as a barrier to control the spread of a fire to a particular area or property.
2. To contain the spread of a fire from a fire source.
3. To breakup large fuel areas. Where fire may spread rapidly or be difficult to control, a system of firebreaks is sometimes established to aid in confining the fire to a relatively small area.
4. Reduce a crown fire to a fire burning on the ground.

While applicable to most land uses, fuel-break planning should be combined with other woodland/forest land management objectives and utilized with activities such as forest land improvement, tree planting and access roads.

The practical consideration of economic feasibility and available infrastructure (mills and roads) is essential.

The additional considerations for forestlands include: landscape location, understory vegetation, hardwoods, horizontal and vertical separation, pruning, surface fuels, slash treatment, and wildlife.

Design and layout should include enhancement of multiple uses.

Prescribed Grazing (528) may be used as a management tool to reduce understory fine fuels.

Woody residue produced in the establishment of a fuel break that is not removed from the site be treated or arranged to enhance wildlife habitat.

Establish fire-resistant vegetation to further decrease the risk of the spread of fire.

Select plant species that will enhance the needs of desired wildlife in the area.

Consider beneficial and other effects of installation of the fuel break on cultural resources and threatened and endangered species, natural areas, and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan, burn plan, or other acceptable documentation.

Specifications for applying fuel breaks will also include:

For trees and shrubs:

1. Species to be favored.
2. Spacing after thinning or weeding.
3. Methods of removal.
4. Best season for cutting or treating chemically.
5. Disposing of slash.
6. Wildlife habitat.
7. Special treatments, if needed, to forestall the spread of disease, fungi, or insects.

For understory vegetation control:

1. Dates of growth periods for effective treatment.
2. Acceptable alternative materials, equipment, and methods.
3. Types of areas, patterns of vegetation, and kinds and amounts that should be favored (left).

For biological treatment methods:

1. Kind of biological agent or grazing animal to be used.
2. Timing, duration, and intensity of grazing or browsing.
3. Desired degree of grazing or browsing used for effective control of target species.
4. Maximum allowable degree of use on desirable non-target species.
5. Special precautions or requirements when using insects or plants as control agents.

For maintenance infrastructure:

1. Type of access and erosion control.
2. Management practices needed to follow management treatment.
3. Desired shade canopy.

OPERATION AND MAINTENANCE

A maintenance plan will be prepared which shall list various items that are to be inspected and follow-up work to be conducted.

Treat or graze vegetative fuel breaks to avoid a build-up of excess litter and to control noxious and invasive plants.

The more open the overstory following fuel break construction, the more maintenance will be required. Unshaded openings that are created will encourage establishment and growth of understory vegetation.

Fuel breaks should be inspected annually and downed woody material >2 inches in diameter be disposed of or treated.

Repair erosion control measures as necessary to ensure proper function.

Access by vehicles or people will be controlled to prevent damage to the fuel break.

Maintain the functionality of the original design throughout the life of the practice.

Maintenance of the fuel break must be conducted at least every three to five years, to the following specifications:

1. Treat (mow, spray, browse) or graze vegetative fuel breaks to avoid a build-up of excess litter and

to control unwanted vegetation.

2. Remove lower tree and/or shrub branches that have died and stumps that pose a fire hazard.
3. Properly dispose of slash created by maintenance.
4. Inspect all fuel breaks for woody materials such as dead limbs or blown down trees and remove them as necessary to maintain the desired level of fire spread risk.

REFERENCES

None.