

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION**

FIREBREAK

(feet)

CODE 394

TEMPORARY FIREBREAKS

Temporary firebreaks are installed as part of a wildfire control effort or in preparation of a prescribed burn. Temporary firebreaks are composed of bare soil, soil bare of an organic surface layer or grass/rangeland mowed to very close the ground. After use they are restored or allowed to naturally revegetate with little to no further operation and maintenance other than what is needed to prevent soil erosion and the prevention of noxious and invasive plants.

PERMANENT FIREBREAKS

Permanent firebreaks meet the criteria for temporary firebreaks but have an operation and maintenance requirement that allow them to meet the prescribed function for the intended life span.

OPEN AREA FIREBREAKS

Open area firebreaks (rangeland, pastureland, cropland etc.) will have an exposed mineral soil surface and will be a minimum of 5 feet in width. The maximum width will be 5 times the height of the uncut vegetation along the windward side of the fire break or the width of the implement/blade used to install the firebreak, whichever is greatest. Widths should not need to exceed 30 feet.

FORESTED AREA FIREBREAKS

In forested areas, the minimum width of a fire break will be 16 feet. Widths can be as wide as 5 times the height of the herbaceous and shrubby vegetation. Widths should be double when slopes exceed 20%.

Woody debris removed from the fuel break

should be moved/placed one tree height down wind from the anticipated fire advance direction. This will reduce the chance of fires of jumping the fire break and potentially placing firefighters at risk during suppression activities.

Where opportunities exist to plant fire-retarding vegetation, plant an adapted species of grasses or other vegetation which produces low volumes of above ground biomass. Mowing or grazing can be used to avoid a build up of ground litter.

LOCATION AND ORIENTATION

Locate firebreak where natural barriers increase the effectiveness of fire break. Barriers such as stream, lakes, ponds, wetlands, rock cliffs, road fields, skid trails, landings railroads, utility right of ways, cultivated land all serve as natural barriers for fire. Some placements on the landscape are more advantageous than others for establishing fire breaks. Locations at the bottom or tops of slope that reduce fire intensity are much better than those placed directly on slopes. When placed on slopes firebreaks should be set on the contour of the slope.

FORESTED AREA FUELBREAKS

Fuel Break Widths and Distance from Structures

Figure 1 indicates the minimum width of a fuel break for various slopes.

When a fuel break is placed adjacent to a structure the fuel break needs to be a

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

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minimum of 66 feet from the structure being protected.

This distance includes the area defined as “fuel free”, “no fire zone” or “fire break” in a defensible space zone system. See

appropriate standard or fact sheet for widths and specifications.

The minimum width for a fuel break is 66 feet.

Minimum Width for Fuel Break

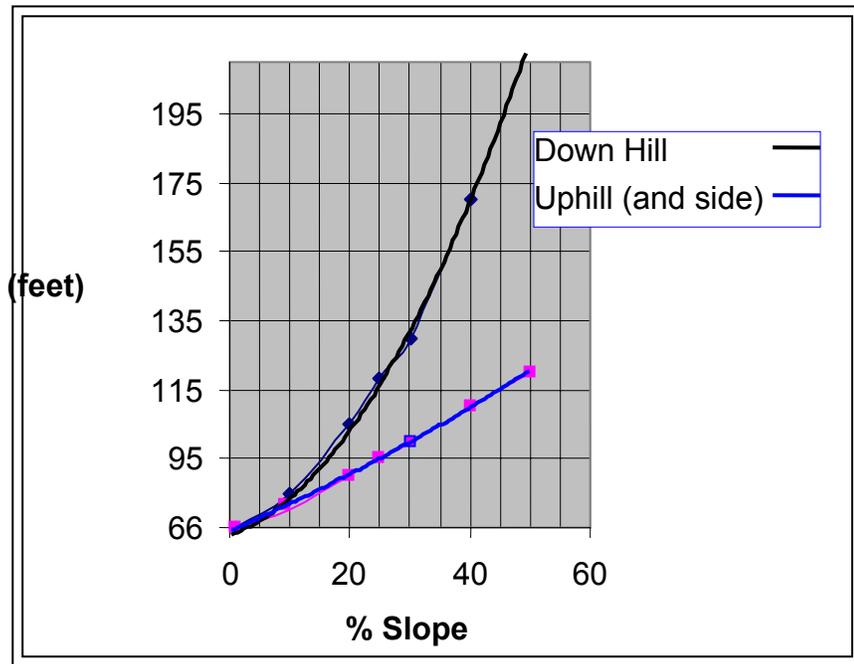


fig 1. Width of Fuel Reduction zone (source Colorado State Forest Service)

Fuel breaks Locations.

Attempt to locate fuel breaks near ridge crests and valley bottoms. If winds are predictable, fuel breaks should be located perpendicular to the wind. Locate fuel breaks in conjunction with natural fire breaks and fuel breaks such as water bodies, roads, utility corridors, wet meadows and changes in vegetative cover whenever possible

Fuel breaks are designed to be areas were fire can be controlled, thus the area must accessible to wild land firefighters and equipment.

Thinning Specifications

For Black, White and Lutz Spruce

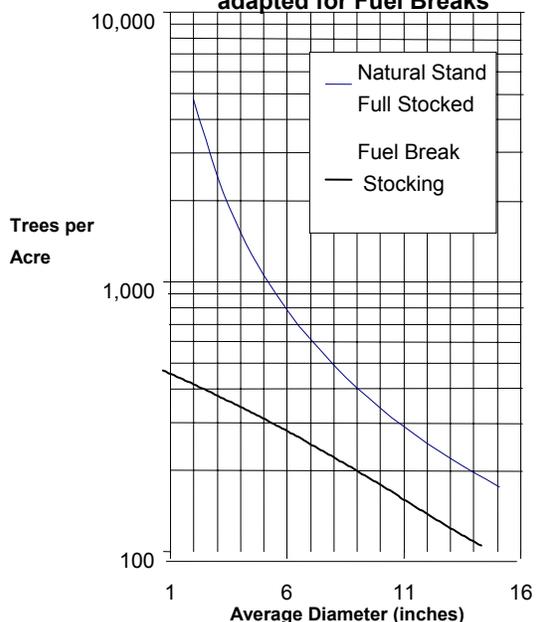
A fuel break provides for a reduced amount of both aerial and ground fuels. Opening a forest to sunlight increases the amount of ground fuels thus negating the effects of the removal of above ground fuels. Maintaining a moderate amount of shade will reduce understory vegetation. Figure 2 and table 1 gives approximate stocking and spacing for fuel breaks in white spruce forests. Use similar spacing for large black spruce trees on more productive sites.

Table 1.

Average Tree Diameter (inches dbh)	Average Spacing at 0 to 5% slope (ft.)	Average Spacing at 6 to 15% slope (ft.)	Average Spacing Greater than 15% slope (ft.)
3	10	13	15
4-5	11	14	17
6	12	15	18
7-8	13	16	20
9	14	17	21
10	15	20	24
11	15	20	24
12	18	24	28
13	20	24	28
14	20	24	30
15	20	24	30
16	20	24	30

Fig 2.

White and Lutz Spruce Stocking Guide adapted for Fuel Breaks



Broadleafed Forests Such as Birch, Aspen and Cottonwood

Crown fires almost never occur in hardwood forest and for that reason it is best to maintain a high level of stocking to reduce understory vegetation. Maintaining a continuous crown cover will greatly reduced the amount of understory vegetation and reduces the rate of spread of a ground fire. Maintain the forest at or above the Quality Line as shown on the AK NRCS White Birch Stocking Guide or in the upper 1/3 of the acceptable stocking level of the Aspen and Cottonwood forest types.

Low Productivity Black Spruce and White Spruce Forests

In stands with dense small diameter trees, less than 20 feet in height (typical of marginal black

spruce forests), individual stems will may not survive thinning. In these areas leave groups of trees. The diameter of the groups should be equal to the average height of the trees within the group. Distance between groups should be approximately half the diameter of the groups.

Tree Pruning and Tall Shrub Removal

Ladder fuels allow a ground fire to climb up into the canopy of trees where it will greatly increase in intensity and speed. Removing these ladder fuels is essential in managing a fuel break and reducing the fire threat and increase the effectiveness of fires suppression activities.

Trees will be pruned to at least 2 times the height of the average shrub, grass or forbs found on site and will be a minimum of 6 feet in height. Pruning need not exceed 12 feet in height. In small diameter, dense black spruce forests only prune limbs on the outside of the groups of trees.

For example: The landowner wants to maintain the Wild Woods Rose, *Rosa woodsii* found in the under story. These plants are know to grow to an average height of 3 feet though not a species of high fire risk; in an drought condition these plants may carry a fire from the surface into the tree canopy. In this example the trees will need to be pruned to a height of 6 feet.

Taller shrubs like rusty menziesia, *Menziesia ferruginea* or silverberry, *Elaeagns commutata* grow to a height of 6 feet, these shrubs should be removed from fuel break unless the over story (limbs found in the canopy) are or are pruned to a height of 12 feet high, if the overstory trees meet the percent live canopy listed below.

See Tree/Shrub Pruning Standard and Specification (660) concerning proper pruning of trees. If you remove too many live limbs while pruning will result in the reduction of tree growth and potential death of the tree. Maintain a minimum of 25 to 30 percent of the entire tree in live growing limbs. These limbs will supply shade and reduce excess ground cover from developing.

Slash, Large Woody Debris and Other Ground Fuels

No large woody debris will be left within the fuel break where it will have the potential to dry. Where material is not removed from the forest, all woody material will be in contact with the ground every 4 feet or less and will not be suspended above the ground by more than 6 inches. Material treated in this manner will absorb moisture from the soil quickly and will decrease its value for maintaining a ground fire. Where ground fuels are expected to remain a substantial ground fire hazard for more than a few years a fire break will be designed and installed according to the fire break standard.

Operation and Maintenance

Areas where thinning has allowed ground fuels to rapidly develop will be treated to remove this potential threat.

Provisions will be made to allow regeneration (natural or planted) to re-occupy space made available as a result of tree loss.

Mow, brush or graze vegetative fire breaks and fuel breaks to avoid a build-up of excess litter, control weeds and reduce fine ground fuels.

Inspect all fire and fuel breaks for woody materials such as dead limbs or blown down trees and remove them or treat them according to the slash and large woody debris section of this standard.

Inspect fuel breaks according to a planned schedule.

Fire breaks that are planned with a fuel break will be maintained as described in the fire break standard and specification.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan.

DESIGN AND DOCUMENTATION

Locations of firebreaks will be noted on a conservation planning map. Design widths and lengths will be documented. Species within the firebreak or ground condition will be referenced in the design.