



## Natural Resources Conservation Service

### CONSERVATION PRACTICE STANDARD

## FUEL BREAK

### CODE 383

(ac)

#### DEFINITION

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

#### PURPOSE

Use this practice to accomplish one or more of the following purposes:

- Significantly reduce the spread of wildfire resulting from excessive biomass accumulations
- Facilitate the management of plant productivity and health with prescribed fire
- Facilitate the improvement of fish and wildlife habitat and/or livestock forage quality or quantity by facilitating prescribed fire

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where protection from wildfire or facilitation of prescribed fire is needed.

#### CRITERIA

##### General Criteria Applicable to All Purposes

Design fuel break strips or blocks to be sufficient width and length to contain the fire based on its expected behavior.

Locate fuel breaks to minimize risk of unwanted damage to resources and infrastructure from fire and heat.

Remove ladder fuels (live or dead vegetation and tree branches that can carry a fire burning in low-growing vegetation to taller vegetation) to maintain adequate vertical separation between surface fuels and the tree canopy. See NRCS Conservation Practice Standard (CPS) Tree/Shrub Pruning (Code 660).

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

Treat or remove slash to minimize fuel loadings and reduce the risk of wildfires, escape of prescribed fires, and incidence of harmful insects and disease. See NRCS Woody Residue Treatment (Code 384).

Manage the height, density, arrangement, and/or composition of grasses and forbs to minimize fine fuels in the fuel break.

Use natural features or anchor points such as streams, lakes, ponds, rock cliffs, constructed firebreaks, roads, field borders, skid trails, landings, drainage canals, railroads, utility rights-of-way, cultivated land, or other areas to augment fuel breaks for greater efficacy. See NRCS CPS Firebreak (Code 394).

## CONSIDERATIONS

Locate fuel breaks near ridge crests and valley bottoms, where fuels and topography provide the most effective reduction in fire intensity and/or infrastructure or egress protection. Avoid locating fuel breaks in midslope positions.

Reduce air quality impacts by limiting emissions of particulate matter, greenhouse gases, and ozone precursors.

Locate fuel breaks on the contour, where practicable, to minimize the risk of soil erosion.

Determine the expected wind directions and install fuel breaks to the windward (direction from which the wind is blowing) side of the area to be protected.

Prevent soil erosion by maintaining a cover of fire resistant vegetation, if possible.

Establish and maintain fire-resistant vegetation, when feasible, to further inhibit fire and prevent soil erosion.

Re-establish vegetation using a diverse native plant species mix that meets native wildlife and pollinator needs, when practical.

Treat and/or arrange slash produced in the establishment of a fuel break to reduce additional threats from wildfire or the potential escape of prescribed fires.

Graze livestock to manage fuels in areas not conducive to mechanical treatments. See NRCS CPS Prescribed Grazing (Code 528). Locate fencing, water, and minerals in areas to facilitate fuels management with livestock grazing.

Install fuel breaks in a manner that supports vehicle and equipment access, including fire suppression equipment.

Use decision support tools, such as unmanned aerial vehicles (UAVs), geographic information systems (GIS), and light detection and ranging (Lidar) mapping, to guide the planning and layout of fuel breaks.

## PLANS AND SPECIFICATIONS

Specifications derived from this conservation practice standard will be prepared for each site and recorded using approved implementation requirements in the conservation plan and the burn plan, or other acceptable documentation. Ensure that specific deliverables from the statement of work for each phase under design, installation, and checkout are documented.

## OPERATION AND MAINTENANCE

Mow or graze vegetative fuel breaks to avoid a buildup of excess litter.

Inspect all fuel breaks for woody materials, such as dead limbs or blown down trees, and remove or treat as necessary, especially before conducting a prescribed burn.

Monitor or manage surface and canopy fuels to maintain desired fire behavior.

## REFERENCES

Moriarty, K., L. Okeson, and M. Pellant. 2015. Fuel Breaks that Work. Great Basin Factsheet Series, Number 5. [https://www.sagegrouseinitiative.com/wp-content/uploads/2015/07/5\\_GBFS\\_Fuel-Breaks.pdf](https://www.sagegrouseinitiative.com/wp-content/uploads/2015/07/5_GBFS_Fuel-Breaks.pdf)

Shinneman, D.J., C.L. Aldridge, P.S. Coates, M.J. Germino, D.S. Pilliod, and N.M. Vaillant. 2018. A Conservation Paradox in the Great Basin—Altering Sagebrush Landscapes with Fuel Breaks to Reduce

Habitat Loss From Wildfire. U.S. Geological Survey Open-File Report 2018–1034.  
<https://pubs.usgs.gov/of/2018/1034/ofr20181034.pdf>

Syphard, A.D., J.E. Keeley, and T.J. Brennan. 2011. Comparing the Role of Fuel Breaks Across Southern California National Forests. *Forest Ecology and Management* 261, Issue 11: 2038-48.  
<https://doi.org/10.1016/j.foreco.2011.02.030>

Tasmania Fire Service. 2016. Fuel Break Guidelines: Guidelines for the Design of Fuel Breaks in the Urban-Rural Interface.  
[http://www.fire.tas.gov.au/userfiles/stuartp/image/FuelBreakCalculator/TFS\\_Fuelbreaks\\_Guidlines\\_v1\\_201610.pdf](http://www.fire.tas.gov.au/userfiles/stuartp/image/FuelBreakCalculator/TFS_Fuelbreaks_Guidlines_v1_201610.pdf)

USDA Forest Service. 1977. Fuel Breaks and Other Fuel Modification for Wildland Fire Control. Agricultural Handbook No.499. <https://www.fs.usda.gov/treearch/pubs/33461>

Weir, J.R. 2009. *Conducting Prescribed Fires: A Comprehensive Manual*. College Station, TX: Texas A&M University Press.