

# Green Firebreaks

## A DOI Nature-Based Solutions Roadmap Fact Sheet



**Green firebreaks** are strips of fire-resistant vegetation planted strategically to stop or slow the spread of wildfires, especially near infrastructure.<sup>1</sup> The use of fire-resistant vegetation is in contrast to standard firebreaks, where all organic material is removed, leaving only mineral soil, to prevent fire spread.<sup>2</sup> Green firebreaks are also called fuelbreaks, greenstrips, and greenbelts.<sup>3-4</sup>

### TECHNICAL APPROACH

- Determine where the green firebreak will be located and what kind of vegetation will be used.<sup>5</sup> It is generally best to establish firebreaks along topographic contours to minimize erosion.<sup>6</sup> Firebreaks should be oriented perpendicular to the prevailing wind direction during the fire season. The optimal width for a green firebreak depends on the topography, slope, wind conditions, typical temperature, and vegetation flammability.<sup>7</sup>
- Clear existing vegetation and replant with selected native, fire-resistant vegetation. Multilayered firebreaks, which incorporate multiple species of vegetation, have been shown to be more effective than single-layer firebreaks.<sup>7</sup> Vegetation should be spaced out to reduce the likelihood that fire can spread through the firebreak.<sup>5</sup>

### BENEFITS

#### Climate Threat Reduction

- Reduced wildfire risk
- Improved air quality

#### Social and Economic

- Property and infrastructure protection
- Reduced or avoided costs
- Firefighter safety

#### Ecological

- Enhanced biodiversity
- Reduced erosion



Clearing existing vegetation is the first step in creating a green firebreak. Photo credit: [BLM Idaho](#).

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## SITE SUITABILITY FACTORS

- ✓ Wildland-urban interface
- ✓ Soil composition
- ✓ Perpendicular to prevailing winds during fire season
- ✓ Adjacent to roads or railways
- ✓ Areas with continuous flammable vegetation
- ✓ Native species have low flammability

## EXAMPLE PROJECT

The Paradigm Project, a collaboration between the Bureau of Land Management, other federal and state agencies, local ranchers, and non-governmental organizations, aims to reduce the number of destructive wildfires occurring in southwestern Idaho. More than half of the 290,000-acre focal area has burned since 1980.<sup>8</sup> Low-maintenance green firebreaks are a primary technique. Low-flammability vegetation is planted to outcompete invasive cheatgrass, which has low moisture content and is highly flammable.<sup>9</sup> In fall 2023, firefighters were able to contain a series of small wildfires without damage, in part due to the firebreaks.<sup>8</sup>



Green firebreak created by BLM in Idaho. Photo credit: [BLM Idaho](#).

## REFERENCES

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## CITATION

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## KEY RESOURCES

Title and Link	Site Suitability	Design and Construction	Monitoring Guidance	Example Projects
<a href="#">Firebreaks for Prescribed Burning (Oklahoma State University Extension)</a>	✓	✓	–	–
<a href="#">Texas Prescribed Burn Handbook: Firebreaks (Texas AgriLife Extension)</a>	–	✓	✓	–

## LEARN MORE

Visit the DOI Nature-Based Solutions Roadmap for more information on green firebreaks, other nature-based solutions, and principles and considerations broadly relevant for nature-based solutions projects. The green firebreaks summary includes additional details on each section included in this fact sheet, plus information on operations and maintenance, common barriers, and more resources and example projects.

### Explore the Roadmap



Full Roadmap Document



Green Firebreaks Section

[www.nicholasinstitute.duke.edu/roadmap](http://www.nicholasinstitute.duke.edu/roadmap)