



Hazardous Fuels Reduction

What is hazardous fuels reduction?

Hazardous Fuels Reduction may be appropriate if:

- ✓ There are combustible materials and highly flammable vegetation within 30 feet of any structure.
- ✓ There are large tracts of land with dense wildland fuels adjacent to structures or communities
- ✓ Fire intensity and severity will be great enough to kill most vegetation on the site and leave large areas of bare ground.
- ✓ Fire behavior during a wildfire is expected to prevent suppression forces from engaging in suppression activities.

Hazardous Fuels Reduction types:

- ✓ Prescribed Burning
- ✓ Grass/Brush Mowing
- ✓ Targeted Grazing
- ✓ Brush Mastication
- ✓ Forest Thinning
- ✓ Pruning
- ✓ Vegetation Conversion



BEFORE

Most of Nevada's Ecosystems are fire dependent, so it's not a matter of if it will burn, but when.



AFTER

Any strategy that reduces the amount of flammable material in a fire-prone ecosystem.

Benefits of Hazardous Fuels Reduction

Human Life/Safety and Property

Hazardous fuels reduction is aimed at decreasing risks to human life and damage to property. Implementation of these projects reduces fuels that feed wildfires, resulting in less extreme fire behavior and intensity. Fire behavior reductions include reduced rates of spread and shorter flame lengths. Reductions in fire intensity means that the fire would remain for less time at any location and would impart less heat to adjacent structures or fuels. These reductions result in fires that can be suppressed more easily, thereby avoiding loss of safety, life or property.

Ecosystem Function

It is important to consider ecosystem function and dynamics when implementing fuels reduction projects. Conserving soil and water resources should be foundational criteria for a project, so that environmental quality can be preserved while decreasing fire risk. Residual vegetation protection and establishment are often treatment components.

Fuel Reduction Strategies

There are not enough fire suppression resources to protect every home from a fire front, so a multi-pronged approach is used to protect individual structures and the community during a wildfire. Every home should have a properly treated defensible space, and communities that are adjacent to lands with large fuels accumulations should implement a fuelbreak.

Implementation Guidelines

Guidelines for hazardous fuels reduction have been developed for Nevada by the Living With Fire program (www.livingwithfire.info). It is generally recommended that all combustible materials within the 30-foot defensible space of any structure be removed or replaced with non-combustible materials. For an additional distance of 100 to 300 feet away from the structure, trees and shrubs should be thinned to a spacing of 2.5 times their height.

Hazardous Fuels Reduction

Hazardous Fuels Reduction in Nevada

IMPORTANT TERMS

FIRE SEVERITY – the physical effect of fire on organic matter loss below and above the soil (eg. roots, duff, plants, etc.).

FIRE INTENSITY – the energy output from a fire.

DEFENSIBLE SPACE - the area within 30 feet of any structure that is managed for reduced fire threat and access of fire suppression resources.

FUELBREAK – a natural or human-made area where material capable of allowing fire to spread does not exist or has been cleared, treated, or modified to reduce fire rates of spread and intensity.

COMMUNITY WILDFIRE PROTECTION PLAN (CWPP) – a plan developed by a community in an area at-risk from wildland fire. The CWPP is a collaborative product that identifies and prioritizes areas for hazardous fuels reduction, recommends implementation methods as well as recommends measures for reducing structural ignitability throughout the at-risk community.

Nevada is located in the Great Basin, which contains fire dependent ecosystems. These ecosystems require low severity fire to reduce fuels loads, decrease plant competition, and cycle nutrients. Each ecosystem (e.g. Sierra Nevada pine forests, aspen woodlands, pinyon-juniper woodlands, sagebrush steppe, etc.) experience fire differently because their fuels loads create different fire intensities and severities. All of these systems have experienced dramatic increases in fuel accumulations due to over 100 years of fire suppression, and introductions of invasive species like cheatgrass.

These changes result in more frequent fires with greater severity and intensity. High intensity/severity fires kill fire adapted vegetation and damage soil, which create negative impacts to the environment. Additionally, these types of wildfires often cannot be stopped using common fire suppression resources and tactics while maintaining firefighter safety. Human deaths and destroyed homes and businesses have resulted from these fires. These types of losses can be significantly reduced by implementing fuels reduction prior to wildfire occurrence.

Efficacy of Hazardous Fuels Reduction

Ecological Restoration Institute - NAU 2013

High intensity crown fire

Fuel treatment area

Residential area

Fuel treatments adjacent to the town of Alpine, Arizona effectively lowered the intensity of the crown fire burning above and protected residential structures below during the 2011 Wallow Fire. Photo courtesy of the U.S. Forest Service



The wildfires with the highest cost of suppression occur under the most extreme weather. Fortunately, most fires don't occur under these conditions, and hazardous fuels reduction can significantly increase the chances of suppressing the fire, while decreasing the cost to do so. Fire size, risk to human life, as well as damage to property and the environment are also decreased. As shown above, treatments that are implemented in the wildland-

-urban interface (WUI) can result in bringing a crown fire back to the ground prior to engaging the community. Unfortunately, only focusing on WUI areas will still result in large tracts of land being impacted by catastrophic wildfires. Homes tend to have higher values where fuels reduction has occurred and less where lands and vegetation have been impacted by wildfire. Grants are sometimes available to plan and implement fuels reduction.

For more information contact your regional Fire Protection Officer

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**CONSERVATION &
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