

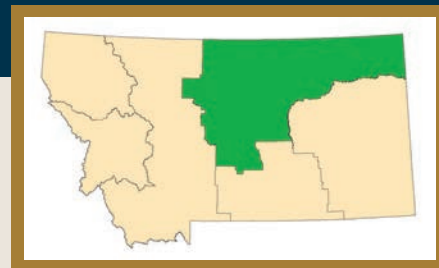
FOREST LANDOWNER

Northeastern Montana GUIDE



With island mountain ranges like Big Snowies and Highwood Mountains to the south, Great Plains shortgrass prairie in the north, and numerous rivers and streams, such as the Missouri and its tributaries, the Northeastern Region's natural beauty is renowned. The diversity of ecosystems throughout this region supports excellent habitat for wildlife residents, cultural sites, and numerous recreational opportunities.

This region sustains some of the highest populations of waterfowl in the state while also providing habitat for sage grouse, a diversity of fish species, and iconic bighorn sheep and elk herds.



The treasures of this region exist in a patchwork of public and private lands. This unique landscape sustains family rangelands that support local economies and play an essential role in landscape connectivity and conservation. The Rocky Boy's, Fort Belknap, and Fort Peck reservations reside as sovereign nations within the Northeastern Region, stewarding this renowned landscape as they have since time immemorial. We hope you will find the information in this guide useful as you continue to steward your land for your values and goals.



Photo by Bureau of Land Management

DOING YOUR PART - Protecting Your Home, Your Habitat

When landowners take personal responsibility for applying and maintaining wildfire risk reduction practices on their property, they greatly increase the chances of their homes surviving a wildfire. Studies show that as many as 80% of the homes lost to wildland fire could have been saved by owners that followed a few simple fire-safe practices.

- Create and maintain an area 5 feet away from a home that is free of anything that will burn, such as wood piles, dried leaves, and lawn furniture.
- Regularly clean the roof and gutters.
- Remove branches overhanging or touching the roof of a home to a distance of at least 10 feet.
- Prune tree branches 10 feet high to prevent them from acting as ladder fuels in a perimeter 5 to 30 feet around your home.
- Maintain a minimum of 18 feet between trees/clumps of trees in the area 5 to 30 feet from your home.

To learn more about how to address wildland fire issues connect with fire prevention resources by visiting: mtfireinfo.org

Fire resistant construction materials offer homes the best chance to survive a wildland fire.

- The roof is the most vulnerable part of a home. Roofs made of composite shingles, metal or tile, are fire ignition resistant.
- Embers can easily enter a home through vents. All vent openings should be covered with a 1/8-inch corrosive-resistant metal mesh.
- Open windows and gaps under garage doors allow embers to readily enter a home. Ensure all windows and doors can securely close.



Photo by Brontë Wittpen, The Missoulian

DOING YOUR PART - Understanding Fire in the Forest

Fire has been a key ecological process in Montana's forests and grasslands for thousands of years. The forest types of the Northeastern Region are primarily Great Plains ponderosa pine woodland and savanna, with Rocky Mountain foothill woodland and steppe transitions occupying the west-central area of the Northeastern Region. Ponderosa pine in this region historically burned about every 15 years. Frequent and low-severity fires burned at the forest floor to maintain an open forest structure and space for favorable seedbeds, with adult ponderosa pine able to withstand the heat due to their thick, insulating bark. Ponderosa pine forests are often accompanied by Rocky Mountain juniper that merges into grasslands in the Northeastern Region. These plains grasslands were historically burned at intervals ranging from 3 to 20 years. Close to a century of fire suppression in this region has altered forest structure and composition and has disrupted plant diversity and community dynamics in these grasslands.

Fire suppression may have decreased the frequency of fires in ponderosa pine and woodland savannas, but it has increased the severity of fires when they do occur. Without frequent and low-severity fires these forests have increased in density. This overcrowding has led to a decline in forest health and increase in outbreaks of insects and diseases, allowing dead fuels to accumulate. Lack of historic fire regimes on bordering grasslands has led to a decrease in diversity of native grass prairie species, increase in invasive grasses, and conifer encroachment.



The more fuel in the forest, the easier fire can climb ladder fuels from the ground up into the canopy and become catastrophic, crown fires. Increased frequency of large, high-severity fires has been associated with increases in warmer and drier weather trends. These fires not only threaten to replace these stands, but also put an increasing number of homes, communities, and livelihoods at risk.

Management should include thinning to reduce fuels, restoring an open forest structure, and, where feasible, returning fire to the landscape.

Management of these forested areas span across varied ownership, including tribal, federal, private, and state lands. It is important to gain understanding of the cultural considerations to fire and fuels management. Tribal Historic fire use in Montana was a common practice amongst First Nations peoples.



Tribal resource professionals are providing leadership and guidance to reintroduce fire, working across jurisdictions while integrating cultural and ecological knowledge. This type of information will allow land managers across all ownerships to implement strategies that benefit landscapes at a larger scale.

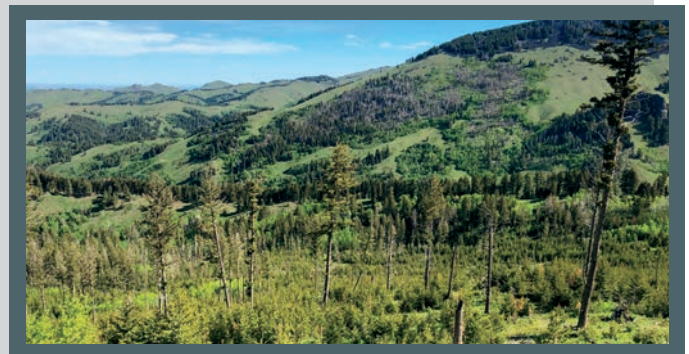
Land management agencies are an invaluable resource for combining traditional and modern approaches while adjusting to a changing climate.

To learn more about specific First Nations natural resource departments visit:

- **Montana Governor's Office of Indian Affairs Tribal Nations - <https://tribalnations.mt.gov>**

To learn more about how to address wildland forest fire issues as a landowner please connect with the following resource:

- **Montana Department of Natural Resources and Conservation – Lewistown, MT, (406) 538-7789 or visit: dnrc.mt.gov/serviceforestry**



DOING YOUR PART - Sustaining Working Forests and Combating Invasive Weeds

Forests on working lands in the Northeastern Region have a long history in Montana of being grazed by livestock. While some landowners graze livestock for income, others also use this system as a management tool. Actively and sustainably managed grazing can be beneficial for forests through reducing weeds, decreasing combustible vegetation leading to fire hazard reduction, and opening the shrub canopy to provide more favorable vegetation for livestock and wildlife.

Conservation of working forested lands is critical to effective forest management and restoration. These working lands support local economies while also contributing to protecting open space and wildlife habitat, providing access to recreation on public lands, and maintaining ecosystem services for the region. Particularly, these lands play an essential role in reducing wildfire risk to Montana's forests and communities.



Photo by Berkshire Hathaway

Many family grazed forestland owners are actively and sustainably managing their forest to meet their land management goals. Management tools and decisions depend on the objectives of each forest landowner, but both thinning and prescribed burns are options. When applied correctly, thinning reduces overcrowding among stressed trees and increases availability of nutrients. This allows remaining trees to grow healthy while also complementing grass and forb production on the forest floor and mitigating wildfire risk through reducing hazardous fuels.

Forests that have been both mechanically thinned and burned are most resistant to high-severity fire. When feasible, applying periodic prescribed burns can have numerous benefits for grazed forestland. In the past, reoccurring fire played an essential role in nutrient cycling and stimulating plant growth. Carefully planned and applied prescribed fire can be used to increase grass and forb production for livestock, reduce the spread of insects and diseases, decrease hazardous fuels, and reduce conifer encroachment onto rangelands. If interest in bringing prescribed fire to your land, reaching out to your service forester is a good place to learn more.

Invasive species rapidly spread with complete disregard for property boundaries. Working with your neighboring landowners is crucial for successful containment and control.

The Montana Weed Control Association (MWCA) is a great organization to learn more about preventing spread and addressing invasive weeds. MWCA is committed to working across Montana to increase awareness, provide education, and support channels that encourage collaboration across neighbor and county lines to address invasive weeds. While they do not provide weed identification or make treatment recommendations, on their website you can find your local county weed district and education on integrated weed management. Their educational resources focus on creating a long-term plan that integrates a variety of control treatments and takes into consideration local ecological conditions of the land. Some of the approaches being used and combined are:

- Application of herbicides
- Biocontrol using insects, fungus, or sheep and goats
- Mowing and cultivation
- Hand-pulling/digging
- Revegetation after eradicating weeds to keep other weeds from becoming established
- Prevention - through education and awareness working to prevent weed establishment in the first place!

An Insect Used for Spotted Knapweed Biological Control



Photo by Melissa Maggio, Montana Biological Weed Control

For educational resources on addressing invasive weeds contact:

- **Montana Weed Control Association at (406) 925-0708 or visit: mtweed.org**

For treatment recommendations to control weeds on your land contact your local weed district:

- **To find your local weed district visit: mtweed.org/weed-district/ and navigate to your county**

DOING YOUR PART - Mitigating Forest Insects and Diseases

Forest insects and diseases naturally occur in forest ecosystems. These organisms only become pests when they interfere with management objectives such as timber production, wildlife habitat, recreation, or aesthetics. Although not always a cause for concern, the following are some insect and disease issues common to the Northeastern Region that you may see in your local forests.

Red-brown Boring Dust, Evidence Douglas-fir Beetle Attack



Photo by David McComb, USDA Forest Service, Bugwood.org

Douglas-fir beetle attacks mature, fire-scorched, diseased, or otherwise compromised Douglas-fir. As beetles bore into the tree, distinctive reddish-brown dust accumulates in bark crevices and indicates a successful attack. Bark beetles kill trees by feeding on the inner bark and introducing a blue-stain fungi. Pheromone capsules, known as "MCH", can be placed on the main stem of trees to repel Douglas-fir beetle. Trees can also be protected by thinning stands to reduce competition and promote individual tree vigor.

Western Spruce Budworm



Photo by Natural Resources Canada

Western spruce budworm feeds on the needles of Douglas-fir, true firs, spruce, and larch. Crowns of affected trees will appear thinned, scorched and sometimes draped in silk webbing. Healthy, mature trees can usually withstand repeat years of moderate defoliation, but most understory trees don't have adequate nutrient reserves to sustain damage. Western spruce budworm outbreaks can be mitigated by promoting non-host tree species, thinning stands to increase residual tree vigor, or creating single storied canopies to interrupt caterpillar dispersal.

White Mycelium Under the Bark is a Sign of Armillaria Root Disease



Photo by Cathy Stewart, USDA Forest Service, Bugwood.org

Root diseases are fungi that spread underground from root to root and gradually kill patches of trees. The underground nature of these diseases makes them difficult to detect and their impact is often underestimated. Root diseases are considered a disease of the site and persist in forest stands for decades. Douglas-fir, grand fir, and subalpine fir are generally the most susceptible tree species. Oftentimes, the only practical management is to regenerate the stand with less susceptible tree species such as pine or larch.

To learn more about how to address insect and disease issues please connect with the following resources:

- **Montana DNRC Forest Pest Management Program - visit: dnrc.mt.gov/forestpests**
- **Contact your local service forester - visit: dnrc.mt.gov/serviceforestry**



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Content Resources

Introduction

- Montana Natural Heritage Program, Map Viewer
- Montana FWP, Region 6

Protecting Your Home, Your Habitat

- MT Fire Info
- Montana DNRC Fire Prevention and Preparedness

Understanding Fire in the Forest

- Montana Natural Heritage Program, Ecological Systems

Sustaining Working Forests and Addressing Invasive Weeds

- Montana Weed Control Association
- Montana Forest Action Plan
- MSU Extension Forestry

Mitigating Forest Insects and Diseases

- Forest Pest Management Program, Montana DNRC