

FOREST LANDOWNER GUIDE

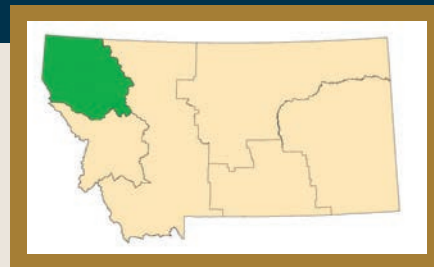
Northwestern Montana



With the rugged Cabinet Mountains in the west, the scenic Swan Valley and Continental Divide to the east, serving as gateway to Glacier National Park in the north, and with Flathead Lake at the center, the Northwestern Region is renowned for its diverse scenery, culture and history, year-round recreational opportunities and wildlife habitat.

Around 81 animal species of concern call these forests and watersheds home. Some of these iconic

species include the Canada lynx, grizzly bear, Clark's nutcracker, northern leopard frog, and bull trout.



Where many water loving tree species are restricted by lack of precipitation throughout Montana, they find their home here on both public and private lands. This region experiences moist air from the Pacific Coast and ample rainfall, leading to the Northwestern Region having the largest diversity of tree species found in the state. The Flathead Reservation resides as a sovereign nation within the Northwestern 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.



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 to protect against the blizzard of embers and firebrands associated with an approaching fire.

- Create and maintain a 5-foot non-combustible perimeter free of anything that could ignite a home, 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.

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.

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



Photo by Brontë Wittpen, The Missoulian

DOING YOUR PART - Understanding Fire in the Forest

Fire has been an important process in Northern Rocky Mountain forests for tens of thousands of years. The main forest type in this region is Rocky Mountain dry-mesic montane mixed conifer forest. This forest type is a combination of Douglas-fir, western larch, grand fir, ponderosa pine, and lodgepole pine. Historically, frequent surface fires burned within this system to maintain an open forest structure and supported a mix of fire-resilient tree species. The return interval - how frequently a fire would burn through - for fire in this system in this region was between 40 and 80 years. Stands that are more dominant of Douglas-fir accompanied by lodgepole have longer fire return intervals than stands composed primarily of Douglas-fir and western larch. While not fire-resistant, lodgepole pines are fire dependent. Some lodgepole pines have serotinous cones, which only open to extreme heat such as a stand-replacing fire, allowing them to act as post-fire colonizers.

The wetter system in this region is characterized by western red cedar, grand fir, and western hemlock. Due to the moist conditions of this forest type, forests historically burned 50-150 years and only by high-severity, high-intensity wildfires.

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.



Photo by Mike West, AFMO Tally Lake District, Flathead National Forest

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:

- **Confederated Salish and Kootenai Tribes' Tribal Division of Fire Management - <http://www.csktfire.org>**
- **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 resources:

- **Firesafe Flathead – Flathead area, (406) 751-2246 or visit: firesafeflathead.com**
- **Fire Adapted Kootenai – Lincoln County, MT visit: fireadaptedkootenai.org**
- **Montana Department of Natural Resources and Conservation – Kalispell, MT, (406) 751-2240 or visit: dnrc.mt.gov/serviceforestry**



Fire severity has increased due to land-use change, including over a century of fire suppression. Without frequent, 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. 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, severe fires has been associated with increases in warmer and drier weather trends. These fires not only threaten to replace these stands, but also an increasing number of homes, communities, and wildlife at risk.

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

DOING YOUR PART - Sustaining Working Forests and Addressing Invasive Weeds

The Northwestern Region has a strong forestry heritage, supporting livelihoods and local economies through sustainable timber harvesting. This region has several sawmills, both big and small, alongside wood products businesses that focus on a variety of specialty products such as framing lumber, plywood, log homes, furniture, and even biomass fuel.

Sustainable timber harvesting not only provides wood-products jobs, but also plays an important role in protecting habitat and connectivity for wildlife, providing access to recreation on public lands, and maintaining ecosystem services. Particularly, merchantable wood products play an essential role in cost-effective forest management to reduce hazardous fuels in Montana's forests. Conservation of working forested lands is critical to effective forest management and restoration.



Many forest landowners are actively and sustainably managing their forest to maintain or improve forest health and reduce wildfire risk. The management tools and decisions depend on the objectives of each forest landowner, but both mechanical treatments and prescribed fire are options. Thinning your forest is essential to maintaining a resilient and healthy forest. Opening up a forest reduces overcrowding and stress among trees, allowing remaining desired species grow and stay healthy. Healthier stands overall support higher quality and quantity of trees for generations to come. Selective thinning can also help to reduce the fuel load and fuel ladders in your forest, minimizing risk of catastrophic, stand replacement fires.

Forests that have been both mechanically thinned and burned are most resistant to high severity fire. When feasible, applying prescribed fire can improve nutrient cycling in the soil and wildlife habitat, while also reducing the amount of hazardous fuel in your forest. Fire experts work hard to make sure prescribed burns are successful and as safe as possible. 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 call:

- **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 Northwestern Region that you may see in your local forests.

Mountain Pine Beetle



Most tree species in Montana are attacked by at least one type of bark beetle. Adult bark beetles seek appropriate hosts, bore under the bark, and excavate distinctive egg galleries. Boring dust, a mixture of sawdust and frass, accumulates in bark crevices and serves as an indicator of successful attack. Some tree species also respond to attack by producing masses of pitch. Thinning stands to reduce competition and increase residual tree vigor can mitigate bark beetle impacts in a stand. Identifying and removing infested trees can also reduce the population of beetles, but it's imperative that infested logs and firewood are removed from the stand.

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.

Witches Broom on Douglas-fir from Dwarf Mistletoe Infection



Photo by Oscar Dooling, USDA Forest Service, Bugwood.org

Dwarf mistletoe is a parasitic plant that fulfills resource requires by feeding off host trees. There are different species of dwarf mistletoe in the region and identifiers of disease often include witches' brooms, swelling and cankers on stems, and dead tops on trees. Management to control includes killing infected trees to prevent spread.

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
- MSU Extension: Forestry, Agents of Change in Your Forest
- 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
- US Forest Service Fire Effects Information System
- Sustaining Working Forests and Addressing Invasive Weeds
- Montana Forest Action Plan
- Montana Weed Control Association
- Mitigating Forest Insects and Diseases
- Forest Pest Management Program, Montana DNRC