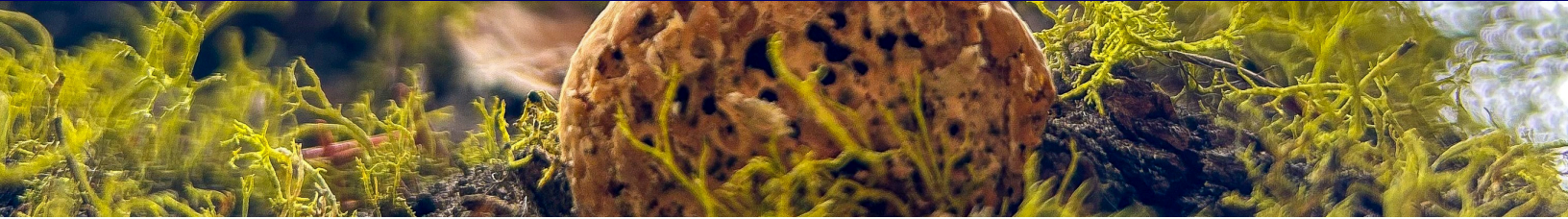




FOREST HEALTH HIGHLIGHTS 2025

FOREST PEST MANAGEMENT



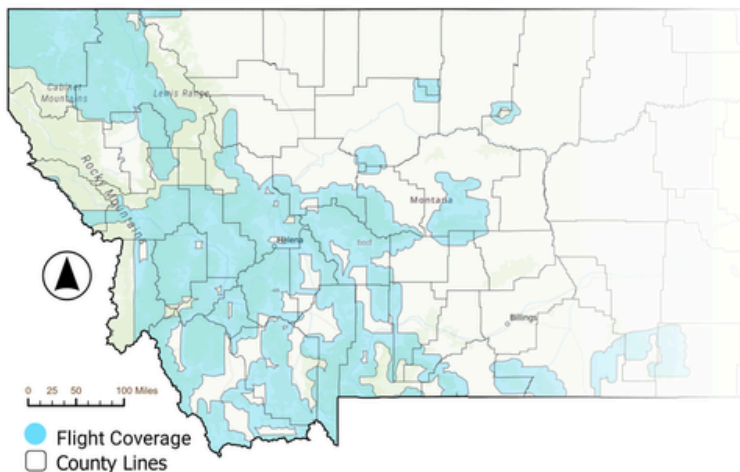
Introduction

Across Montana’s diverse landscapes, familiar patterns unfolded once again in 2025. Persistent drought precipitated attacks of bark beetles and woodborers on marginalized trees, including mature, sentinel trees that have long stood as icons of Montana forests. Intense windstorms and destructive floods dramatically changed landscapes. Winter desiccation damaged forests as wind and sun drew the last moisture from needles rooted in frozen, shallow soils. Whether human-caused, weather-driven, or borne of insects and disease, disturbances continue to shape stand structure, composition, and overall biodiversity of Montana forests.

But the absence of disturbance creates its own set of challenges. Undisturbed stands have become densely stocked, leaving individual trees competing for limited water, light, and nutrients. Conifers that established during wetter decades (such as grand fir) are now fading from decades of drought. Where natural fire intervals have been suppressed, Douglas-fir has encroached into historically open areas and now hosts western spruce budworm outbreaks.

The **Montana Forest Action Plan** determines forest health by the resilience of the forest to fire, windthrow, diseases, invasive species, drought, and impacts from changes to the climate. Forest health is a primary consideration when determining priority areas for focused attention under the plan. This conditions report provides a snapshot of 2025 forest health conditions, including pervasive insect and disease issues as well as abiotic disturbances.

Aerial Detection Survey (ADS)

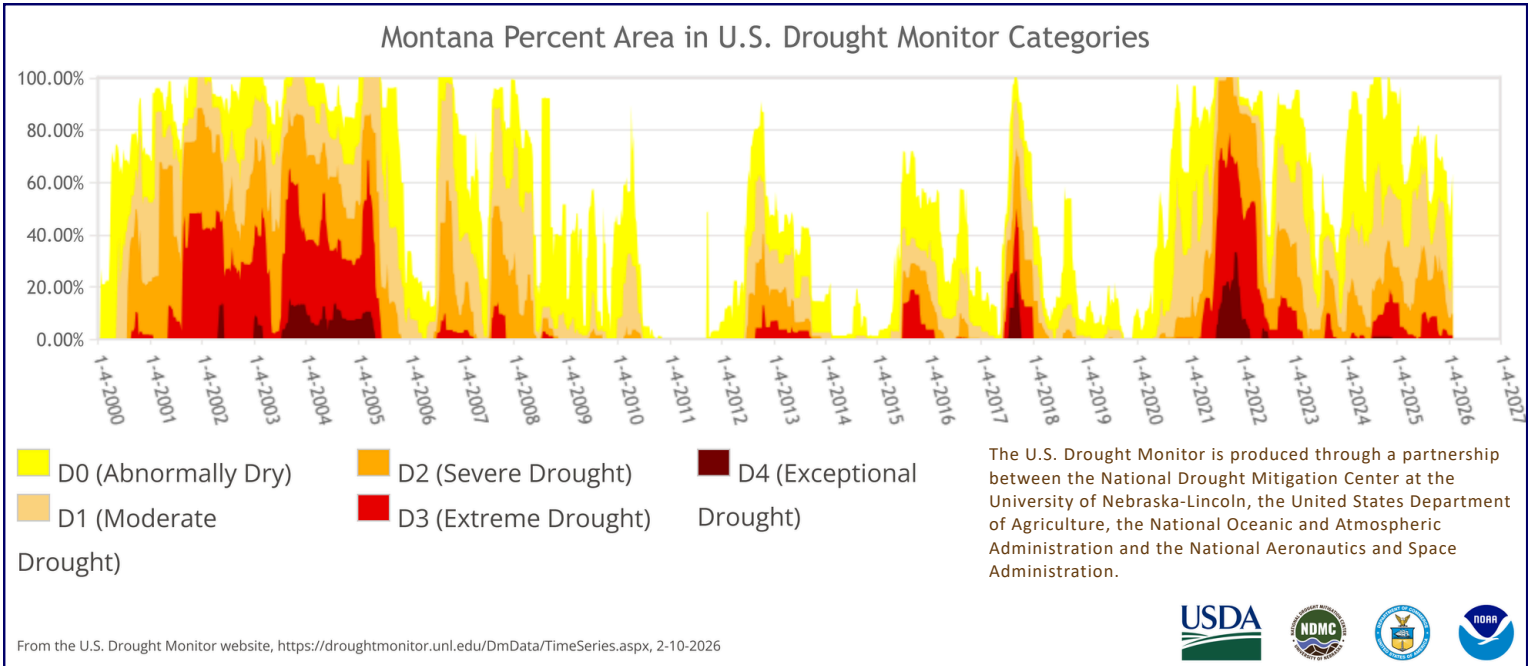


The USDA Forest Service annual Aerial Detection Survey (ADS) provides data on the location and severity of forest health issues across the state, including multiple ownerships. In 2025, 12.9 million forested acres were surveyed in Montana (compared to 13.3 million acres surveyed in 2024). Survey efforts focused on western Montana, but insects and diseases are present and significant statewide. Certain pathogens, such as root disease and dwarf mistletoe, are challenging to detect from fixed-wing aircraft used for ADS data collection and therefore not reported in the dataset. Data for this report are derived from ADS, ground-based observations, and the USDA Pest Event Recorder.

Click or scan
for **ADS Data**

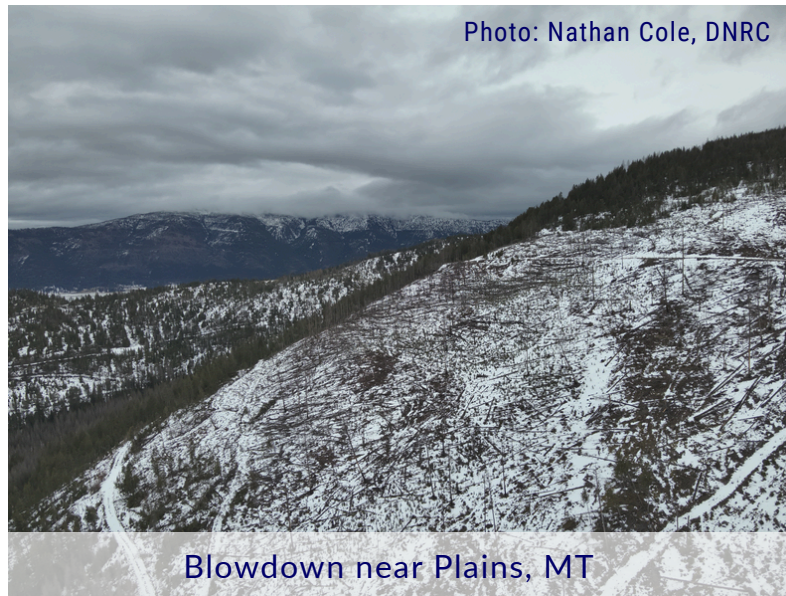


Abiotic Damages



Drought Impacts

Trees growing on shallow soils, south-facing slopes, or sites at low elevations are generally more susceptible to drought impacts. Prolonged drought strains the uptake and movement of water in a tree and eventually causes slow growth, thin crowns, and mortality. Furthermore, drought-stressed trees are more vulnerable to insects and diseases. Prolonged drought strains trees' ability to capture and move water, especially on shallow soils, south-facing slopes and lower elevation sites. Drought stress slows growth, causes crowns to thin, and increases mortality in trees already weakened by age or competition due to overstocking. Drought stress hinders trees' ability to defend themselves against insects and disease.



Blowdown

Wind events reshape stands by opening canopies, creating gaps, and adding coarse woody debris to the forest floor. Bark beetles can infest newly downed trees, develop in the viable phloem, and thrive without intact tree defenses. Blowdown is common habitat for bark beetle populations to build into outbreak levels. Major wind events in December 2025 blew down large trees across the country, with gusts in Montana reaching over 90 mph. Landscape-level damage was reported in the following counties: Flathead, Lake, Lincoln, Mineral, Missoula, Sanders, Ravalli, and Wheatland. However, this list is not exhaustive as efforts to map damage are ongoing.



Douglas-fir beetle galleries



Western pine beetle galleries



Wood borer galleries

Bark Beetles & Woodborers

Douglas-fir beetle, *Dendroctonus pseudotsugae*, was detected on only 465 acres in 2025, representing a significant decline from 2024. Current damage was characterized by small pockets of mortality and individual tree death.

Mountain pine beetle, *Dendroctonus ponderosae*, remained at endemic levels throughout the host range.

Western pine beetle, *Dendroctonus brevicomis*, damaged ponderosa pine throughout western Montana with specific activity noted around Flathead Lake and in Kalispell, Pablo, Plains, Missoula, Blue Mountain Recreation Area, Bitterroot Valley, and Greenough. Underlying stress due to drought, overstocking, and age likely predisposed trees to attack.

Similarly, wood borers attack mature trees that are compromised by drought and intense heat. Dispersed, occasionally clustered damage to mature ponderosa pine, Douglas-fir, and western larch was noted from ground observations throughout western Montana.

Pine engraver beetles, *Ips pini*, are typically associated with pine slash generated from thinning treatments and storm damage. Pine engravers can also attack trees stressed by drought. Negligible damage was noted from ground surveys and ADS in 2025.

Defoliators

Defoliation from western spruce budworm (WSBW), *Choristoneura freemani*, was mapped on 678,570 acres. Notable outbreaks occurred in the Big Belt Mountains near Canyon Ferry Lake, Elk Horn Mountains south of Helena and near Boulder, Bridger Range near Belgrade, and west of the Ruby Valley. Mid-elevation, montane forests across much of southwest Montana were impacted by substantial western spruce budworm defoliation. Recurring defoliation has been recorded in many of these areas. Douglas-fir tussock moth, *Orygia pseudotsugata*, remained at endemic levels with no outbreaks noted.



WSBW webbing, feeding damage



BPLS

Black Pineleaf Scale

Ongoing surveys of state trust lands confirmed black pineleaf scale (BPLS), *Nuculaspis californica*, present near Eureka and Lake Koocanusa (Lincoln County) along with Frenchtown and Missoula (Missoula County). Aerial Detection Survey recorded scale insects, likely BPLS, on 1,347 acres.

Invasive Species

Emerald Ash Borer

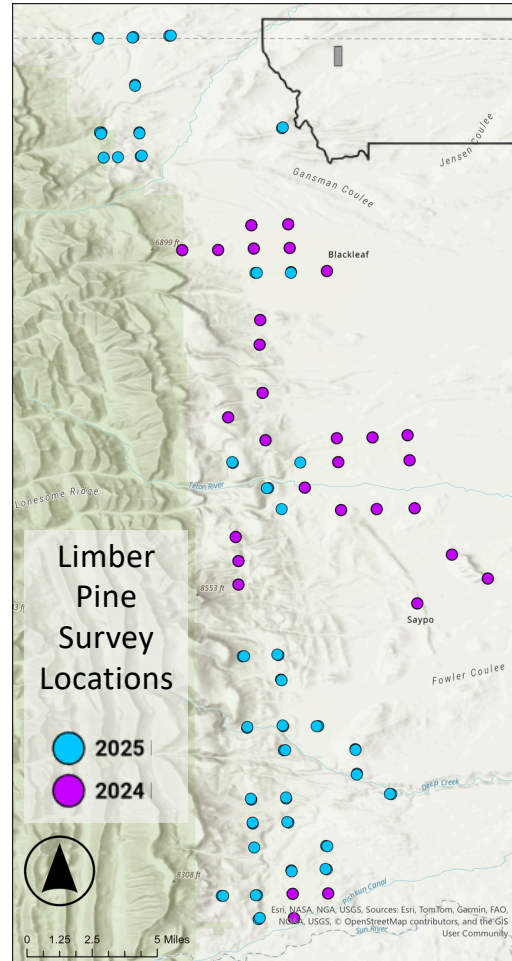
Cooperative state agencies updated the “State of Montana Emerald Ash Borer Readiness and Response Plan” in 2025. To date, emerald ash borer, *Agrilus planipennis*, has not been detected in Montana. This invasive woodboring beetle poses a major threat to native green ash draws in eastern Montana and to community ash plantings throughout the state.

Spongy Moth

A total of 819 baited traps were set by cooperative agencies throughout Montana in 2025. Two male spongy moths, *Lymantria dispar*, were trapped at campground near Hungry Horse Reservoir in 2025. Delimitation surveys will be implemented in the area for 2026 by the Montana Department of Agriculture. Potential introductions are also being monitored in the vicinities of Kalispell and Butte.

White Pine Blister Rust

White pine blister rust (WPBR), *Cronartium ribicola*, is an invasive fungus that infects limber, whitebark, and western white pines. An interagency team of DNRC, USFS, and The Nature Conservancy established long-term monitoring plots along the Rocky Mountain Front in 2017-2018 to assess limber pine health. A full 10-year remeasurement is planned for 2027-2028 but a subset of plots were revisited in 2024-2025 to capture any rapidly changing conditions. White pine blister rust was recorded in every plot. Of the 928 limber pine trees initially measured, 47% had died and 32% were declining. Only 21% were considered healthy. These efforts align with the goal stated in the Montana Forest Action Plan: to model forest health conditions over time, specifically for at-risk species such as limber pine.



Sporulating WPBR and insect boring dust

Visit the [Forest Pest Management Program](#) website for more information and resources.

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