

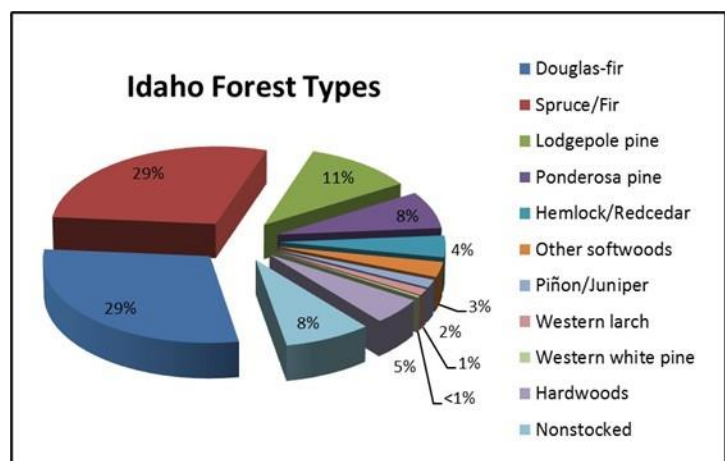
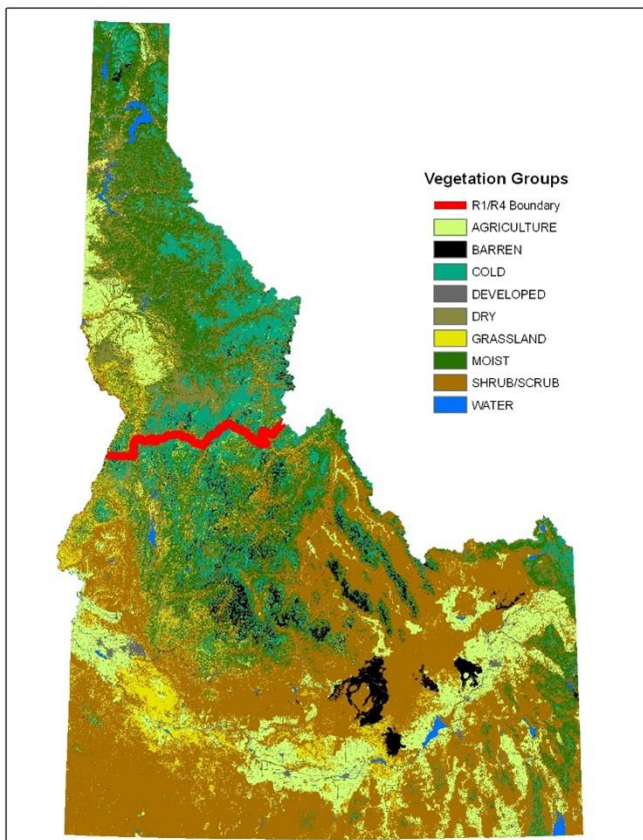
Idaho Forest Health Highlights 2024

Idaho's Forest Resources

Idaho has over 21 million acres of forest land, from the Canadian border in the north, to the Great Basin in the south. Elevations range from less than 1,000 feet along the Clearwater River valley to over 12,000 feet in the Lost River Range of southeastern Idaho. The mixed conifer forests in the Panhandle area can be moist forest types that include tree species found on the Pacific Coast such as western hemlock, Pacific yew, and western redcedar. Southern Idaho forests are generally drier, and ponderosa pine and Douglas-fir are most common. Lodgepole pine, Engelmann spruce, whitebark pine and subalpine fir occur at higher elevations throughout the state.

Idaho Vegetation Types

Douglas-fir and spruce/fir forest types make up the largest proportions of forests in Idaho, followed by lodgepole pine, ponderosa pine, hemlock/redcedar, other softwoods, pinyon/juniper, western larch, western white pine, and hardwoods.

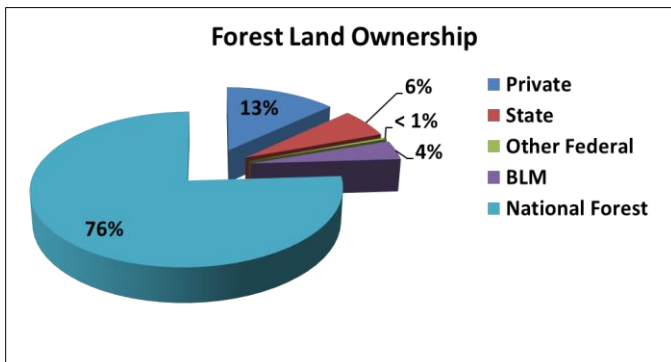
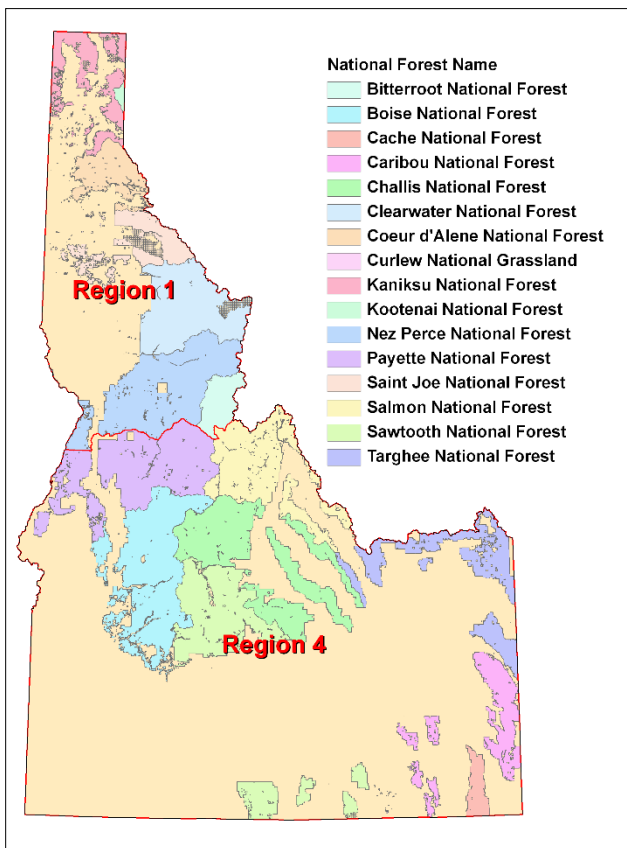


The Importance of Idaho's Forests

Idaho's forests are important for many reasons. Forests provide a home to wildlife, provide watersheds for drinking water, and protect streams that are habitat for many species of fish, including salmon, steelhead and bull trout. Forests are also important for recreation, and Idaho has over 4.5 million acres of wilderness. Idaho's forests are renewable and are an important resource for the forest products industry. Maintaining healthy forests is crucial to protect all the things that they provide.

Forest Ownership in Idaho

The majority of forest land in Idaho is owned by the federal government (> 16 million acres), and of this, most is administered by the U.S. Forest Service. The state of Idaho owns just under 1.3 million acres, and private landowners own an additional 2.8 million acres. The various owners often have different management objectives. Idaho's National Forests lie within two administrative regions. The Northern Region (Region 1) is located north of the Salmon River and is comprised of the Idaho Panhandle, Nez Perce-Clearwater and Bitterroot National Forests. The Intermountain Region (Region 4) is in southern Idaho and includes the Boise, Payette, Sawtooth, Salmon-Challis, and Caribou-Targhee National Forests.



Idaho's Forest Industry

Idaho has a very productive forest industry. The data for 2024 have not been updated yet, but in 2023, estimated revenues of wood and paper products totaled \$2.9 billion. An estimated 17,154 people were directly employed in the forest products industry and total harvest was estimated at 0.9 billion board feet of timber. An estimated 50% of this total came from private lands. State land provided 27% and federal lands provided 23% of the total. Most of Idaho's commercial forestland and larger production facilities are located north of the Salmon River. Forest products from Idaho's forests are sold throughout the world. [Link to University of Idaho Policy Analysis Group.](#)



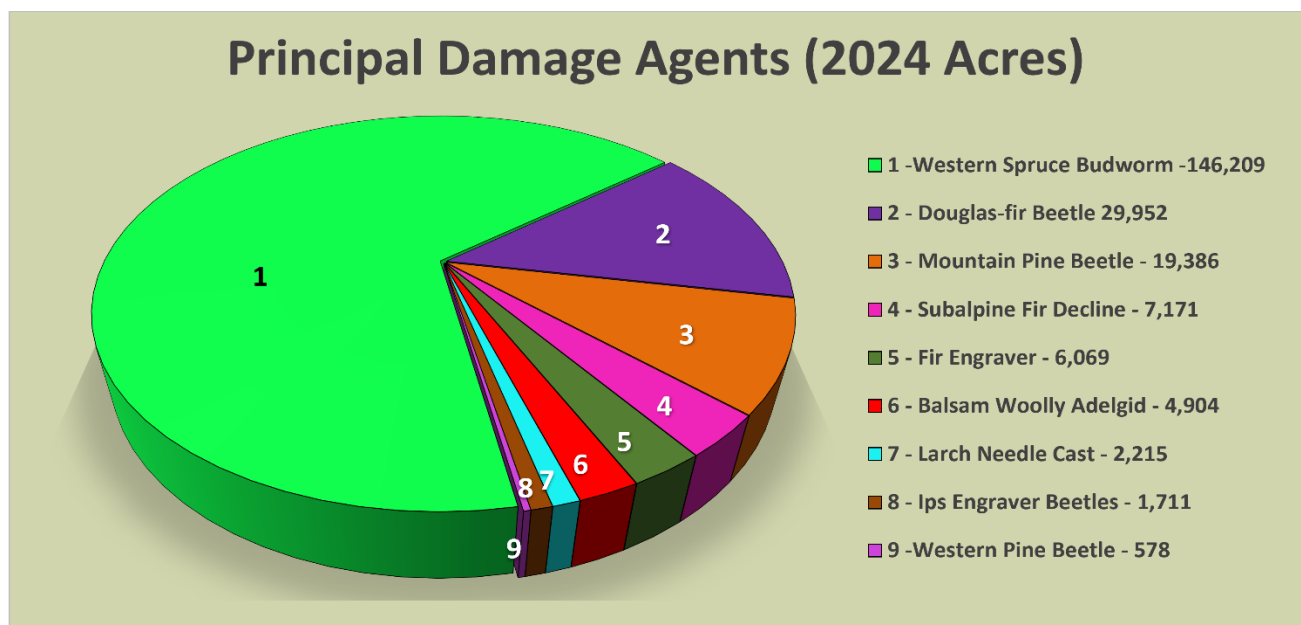
Aerial Detection Survey Results

Approximately 21.5 million acres were flown in Idaho aerial surveys in 2024, as compared to 27.6 million acres in 2023, 25.98 million acres in 2022, 18.74 million acres in 2021, and 10.24 million acres flown in 2020. Total acres flown in 2020 and 2021 were lower than usual due to Covid restrictions. For this reason, year to year comparisons of the number of acres affected by a given damage agent are flawed for 2020 and 2021.

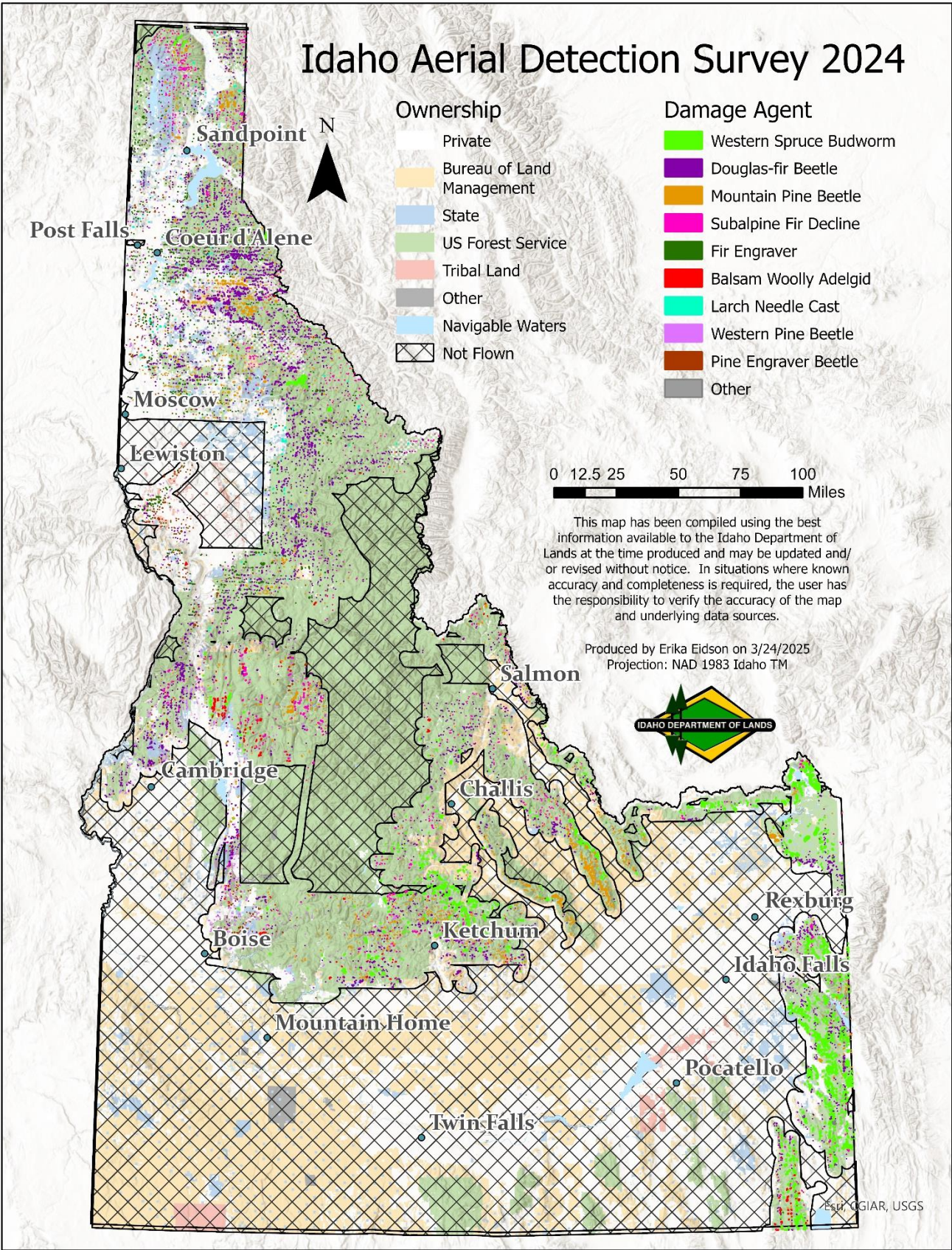
**Notes on Aerial Detection Surveys*

It is important to remember that trees attacked by bark beetles do not usually change color until the following year, so bark beetle mortality observed in 2024 often represents trees that were attacked in 2023.

Idaho's forests are also significantly impacted by diseases, but not all diseases are easily detected from the air. With the exception of foliar diseases, **most forest diseases are not well represented by aerial detection surveys**. Root diseases are very common in northern Idaho, affecting over 8 million acres, with most mortality occurring in Douglas-fir, grand fir, and subalpine fir in northern Idaho. Dwarf mistletoes infect over 2.5 million acres of forest statewide. These parasitic plants are especially damaging on western larch, Douglas-fir, lodgepole pine and ponderosa pine. White pine blister rust is widespread throughout the range of western white, whitebark, and limber pines, affecting millions of trees, though it would be difficult to estimate affected acres. These diseases are generally not recorded in aerial surveys.



Idaho Aerial Detection Survey 2024



Bark Beetles

In 2024, Douglas-fir beetle caused mortality on about 30,000 acres. This is a slight decrease compared to last year. In recent years, Douglas-fir beetle outbreaks were prevalent in southern Idaho near areas that had been defoliated by Douglas-fir tussock moth in 2018-2019 (Boise, Valley and Gem Counties) and along the eastern Idaho border with Wyoming near areas affected by western spruce budworm. Douglas-fir beetle activity now appears to have decreased overall in southern Idaho, although the 2024 survey covered less area than the 2023 survey. In northern Idaho, an increase in Douglas-fir beetle activity was observed in 2024. This was expected due to the January 2021 windstorms that created an excess of blowdown for Douglas-fir beetle to exploit. Douglas-fir beetle outbreaks usually last around three years after a disturbance event, and so far activity appears to be consistent with that expectation.

Mountain pine beetle caused damage on over 19,000 acres in 2024, and on over 24,000 acres in 2023. This reflects a large increase from the 6,000 recorded acres in 2022. In southern Idaho, mountain pine beetle outbreaks were recorded in the Lemhi Range and Lost River Range (northwest of Idaho Falls), in an area just south of Island Park Reservoir, and on the Payette National Forest east of McCall. In northern Idaho, most of the activity was recorded southeast of Bonners Ferry and south of Kellogg. However, ground checks in the Kellogg area revealed that white pine blister rust was responsible for at least some of the mortality attributed to mountain pine beetle in aerial surveys. Fir engraver, western pine beetle, and Ips engraver beetle activity was low in 2024, perhaps due to less severe drought conditions the past two years as compared to the 2021 season.

Defoliators

Western spruce budworm is a major defoliator of Douglas-fir and true firs in Idaho. In recent years, the vast majority of statewide western spruce budworm activity has taken place in southern Idaho. The last time more than a few thousand acres of western spruce budworm activity was recorded in northern Idaho was in 2015. Roughly 134,000 acres of statewide western spruce budworm defoliation were recorded in 2023, and 146,000 acres in 2024. While the majority of the damage occurred in southern Idaho, about 11,000 acres of damage were mapped in the Idaho Panhandle in 2023, both in the Cabinet Mountains and the Selkirk Mountains. In 2024, about 8,000 acres of western spruce budworm activity were mapped in northern Idaho. Although activity in the northern panhandle decreased in 2024, a new outbreak area was recorded northeast of Dworshak Reservoir. The past two years represent a significant increase in western spruce budworm activity in northern Idaho. Western spruce budworm outbreaks can be long lasting and negatively impact tree regeneration due to the insect feeding in the cones as well as on the foliage.

Minimal Douglas-fir tussock moth defoliation was officially recorded in aerial surveys in 2024, but about 970 acres of activity were reported, mapped, and confirmed in the Deep Creek range south of Pocatello, an area that was not covered in aerial surveys. Defoliation was also observed (but not mapped) on the ground at Craters of the Moon National Monument, where severe defoliation by Douglas-fir tussock moth was previously observed in the 2017-2019 outbreak. Trapping indicates populations may still be active in the Hitt Mountains west of Cambridge, but no defoliation was observed and this area was not flown in 2024. No Douglas-fir tussock moth activity was reported in northern Idaho in 2024.

Other Agents

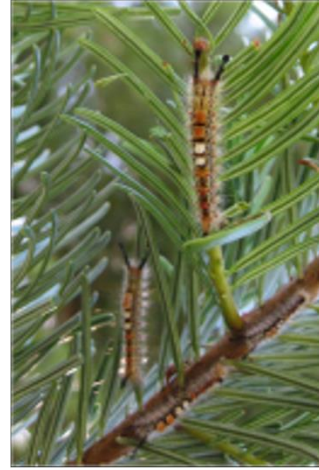
Woodboring insects caused damage in many drought-stressed trees in 2023 and 2024. Woodboring beetles do not typically kill healthy trees outright; the lasting effects of drought stress may have predisposed many trees to infestation and mortality. The majority of the damage was caused by metallic woodborers (beetles in the Buprestid family). Their preferred hosts were typically stressed Douglas-fir and larch. These damages were not recorded in the aerial survey, but damages were seen in many site visits on the ground. Topkill in larch was also observed on the ground, potentially caused by *Cydia laricana* (woodboring moth) or *Scolytus laricis*.

Balsam woolly adelgid, an invasive sucking insect, continues to be a major mortality agent of true fir, especially in southern Idaho. Balsam woolly adelgid may also be a factor in damage areas recorded as subalpine fir decline, but it is hard to confirm since it is an inconspicuous pest with fluctuating population levels.

Approximately 2,200 acres were affected by larch needle cast in 2024, mostly in northern Idaho. This is a major decrease from the previous two years. Occasionally, favorable conditions for the pathogen in the spring result in widespread larch needle cast. Damage due to larch needle cast can appear very dramatic but is rarely a serious concern.

[Link to IDL Insect and Disease page with ADS map](#)

Key Forest Insect Issues in Idaho



Bark beetles continue to kill susceptible trees in Idaho. Increases in bark beetle activity are often associated with drought and disturbance events. In 2021, Idaho experienced several strong wind events that resulted in green trees being blown down. These green down trees are easily exploited by some aggressive species of bark beetles and can boost bark beetle populations. Additionally, recent outbreaks of the Douglas-fir tussock moth defoliated many Douglas-fir and grand fir trees in southern Idaho, leaving stressed trees that are more attractive to bark beetles. [Link to IDL bark beetle publication](#)

The Douglas-fir tussock moth (DFTM) is a defoliating insect that periodically infests Douglas-fir and true firs in Idaho. Outbreaks occur approximately once per decade, usually lasting 1-4 years before natural controls bring the populations down to undetectable levels. Idaho outbreaks have mostly collapsed, with the exception of a few small, isolated areas in southern Idaho. There was limited Douglas-fir tussock moth defoliation in 2024. [Link to IDL fact sheet](#); [Link to IDL Insect and Disease page with Douglas-fir tussock moth reports](#)



Spongy moth, formerly known as gypsy moth, is an invasive defoliator that is already established in the eastern U.S, but not in the West. Idaho monitors for new introductions of this insect every year in order to prevent its establishment. Over 2,000 pheromone traps were deployed in Idaho in 2024, and one spongy moth was captured in Sandpoint. Follow up monitoring will take place in this area in 2025. [Link to IDL Insect and Disease page with spongy moth reports](#)



Western spruce budworm is a major defoliator of Douglas-fir and true firs in Idaho, and outbreaks can be short-lived or chronic. About 146,000 acres of western spruce budworm activity occurred in Idaho in 2024. Most activity was recorded in southern Idaho, but about 8,000 acres of defoliation developed in northern Idaho. [Link to IDL fact sheet](#)

Key Forest Disease Issues in Idaho



Root diseases kill millions of trees every year. Douglas-fir and grand fir are particularly susceptible. Root diseases are very common in northern Idaho, though they occur statewide. Root diseases can be managed through silviculture by encouraging tolerant species. While all conifer species are susceptible to root diseases (especially at a young age), pines, western larch and western redcedar are generally more tolerant, especially after the trees reach 20-25 years of age. Although they are a major mortality agent, root diseases are not typically tracked in aerial detection surveys. [Link to IDL fact sheet](#)



White pine blister rust is an introduced disease that kills 5-needled pines (western white, whitebark, limber, and others) throughout North America. Western white pine (WWP) was the dominant tree species in much of northern Idaho. Due to rust, fire suppression, and past management practices, western white pine is now a minor component of many of these same forests. Idaho's forest type that was dominated by western white pine is now reduced to 5% of its historic levels. The Idaho Department of Lands aggressively plants rust resistant WWP in stands where it was historically present. WWP is fast growing, drought tolerant, and is not highly susceptible to root diseases. *Photo (R) by J. Schwandt*
[Link to USFS publication](#)

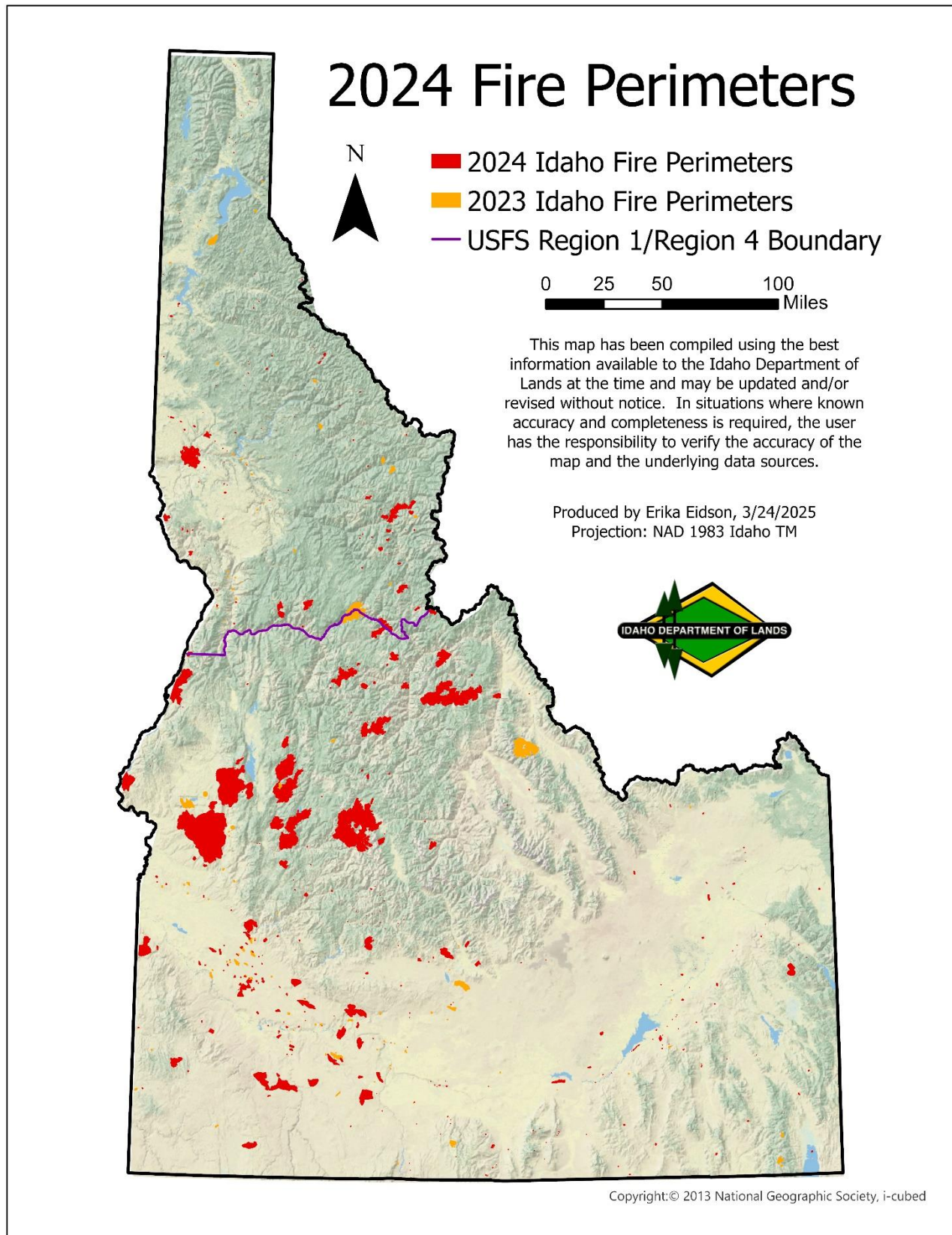


Dwarf mistletoes infect many species of conifers in Idaho. Most damage is on western larch, Douglas-fir, ponderosa and lodgepole pines. These parasitic plants reduce growth and over time can kill trees. Dwarf mistletoes are fairly host specific and can be managed through silviculture by removing heavily infected trees and by converting stands to nonhosts. [Link to IDL fact sheet](#)



Foliar Diseases can infect many species of conifers in Idaho, but damage is most noticeable on western larch and lodgepole pine. While the appearance can be dramatic, the effect on trees is usually minor. Cool, wet spring weather during needle development is favorable for disease development. The number of acres affected by foliar diseases can vary widely from year to year. [Link to IDL fact sheet \(firs-larch\)](#) [Link to IDL fact sheet \(pines\)](#)

2024 Fire Season



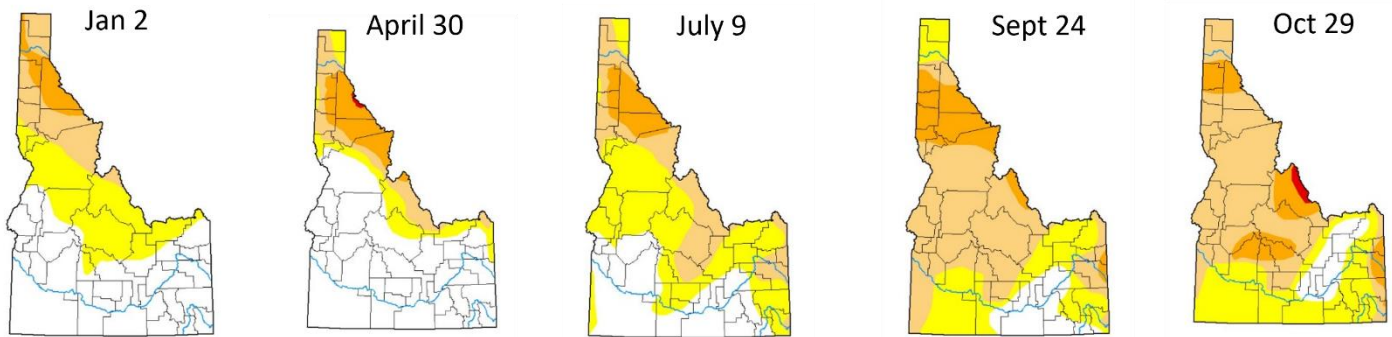
Fire Activity in Idaho, 2024

The total acreage burned in Idaho in 2024 was approximately 996,762 acres.

[Link to 2024 Fire Statistics](#)

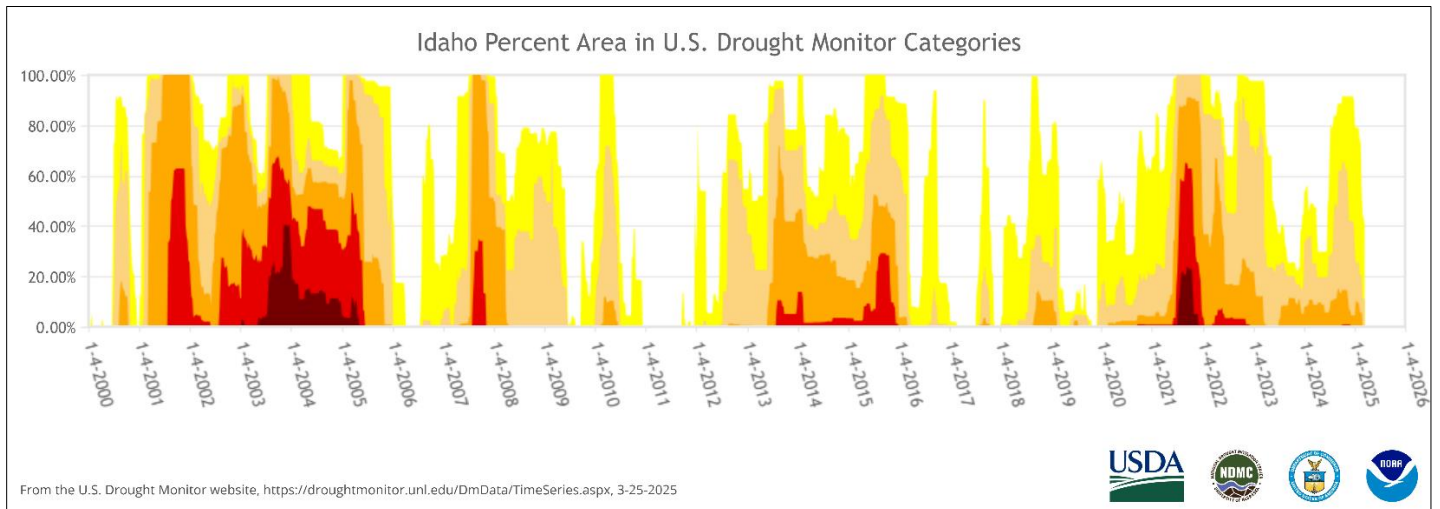
Drought in Idaho

It is normal for Idaho to have summer droughts, where little precipitation falls from July into September. Snow is usually abundant in the winter months and spring rains occur during the growing season. Conditions have improved from the severe drought in 2021, but northern Idaho still experienced moderate to severe drought for most of 2024. Certain bark beetle species such as pine engraver (*Ips pini*), western pine beetle (*Dendroctonus brevicomis*) and fir engraver (*Scolytus ventralis*) tend to cause more problems for land managers during droughts. Trees weakened by drought are also not capable of recovery from defoliation by defoliators such as Douglas-fir tussock moth and western spruce budworm. [Link to NOAA Drought Monitor](#)



2024 Idaho Drought

Intensity:



For More Information

Idaho Department of Lands

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Coeur d'Alene, ID 83815
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Forest Health Protection

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Interior West Forest Inventory and Analysis

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