

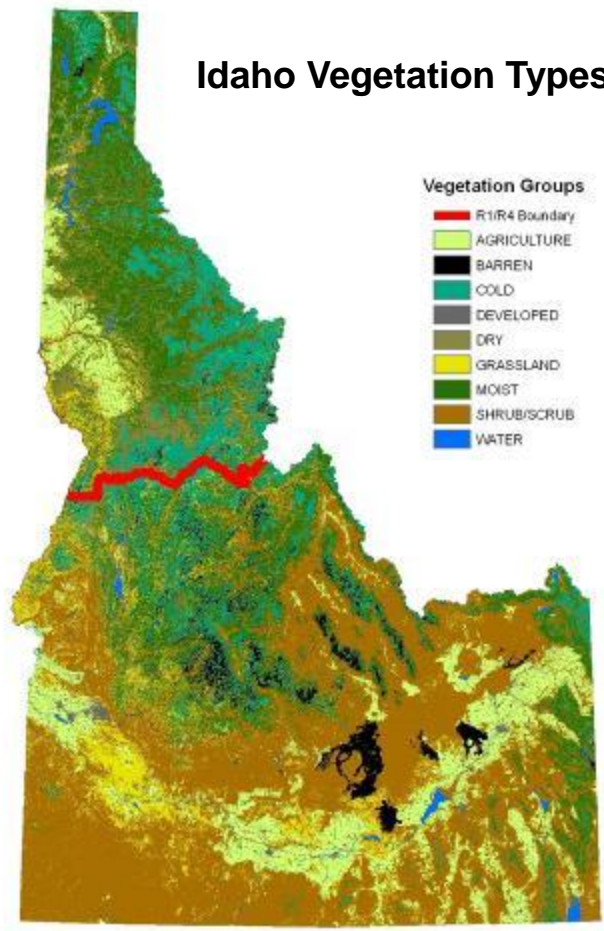


Forest Health Highlights

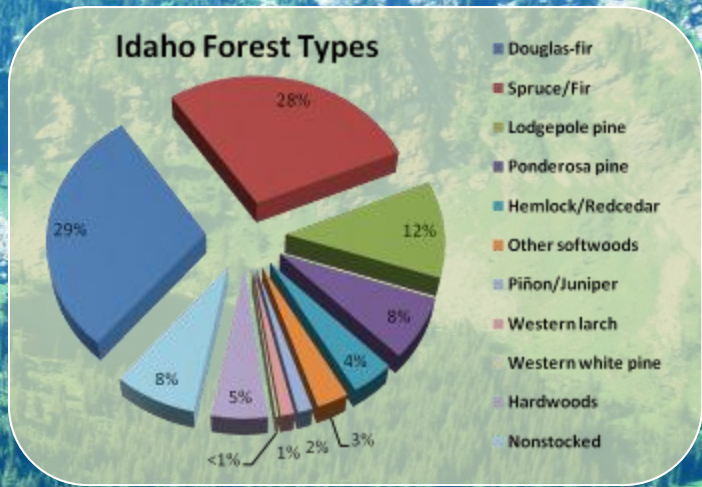
Idaho's Forest Resources

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 11,000 feet in the Sawtooth Range of southern 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



Idaho Forest Types



A Diverse State

The Salmon River Valley generally divides the moister mixed conifer forests of the Panhandle region from the drier forests of southern Idaho. Much of southern Idaho is rangeland with scattered juniper-dominated forests typical of the Great Basin. The highest mountain peaks also occur in southern Idaho. Most of the commercial forest land is found in the north, and Douglas-fir, grand fir, western larch and western redcedar are valuable timber species.

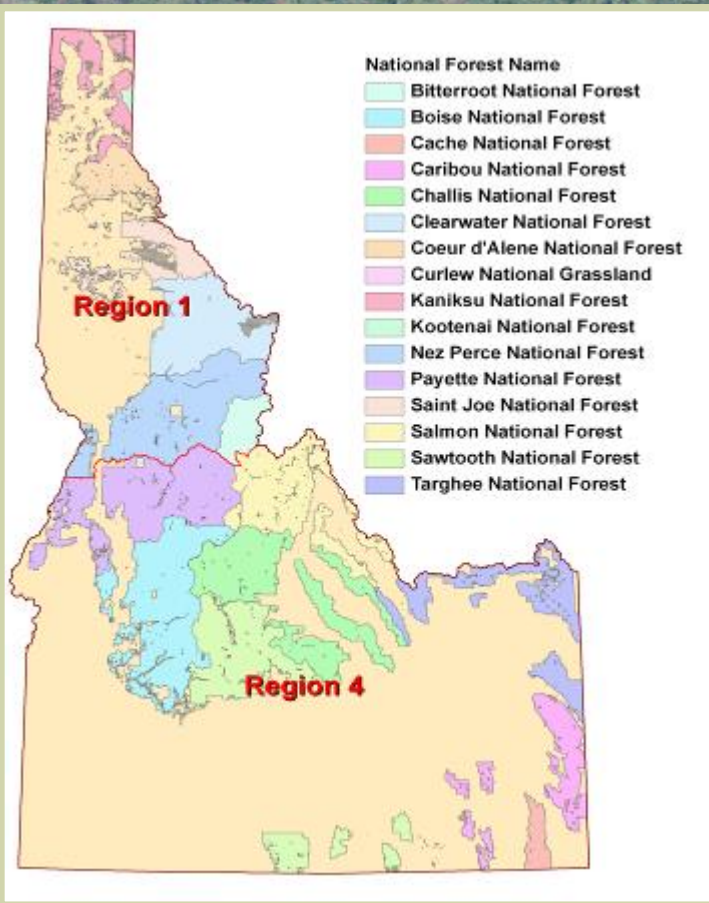
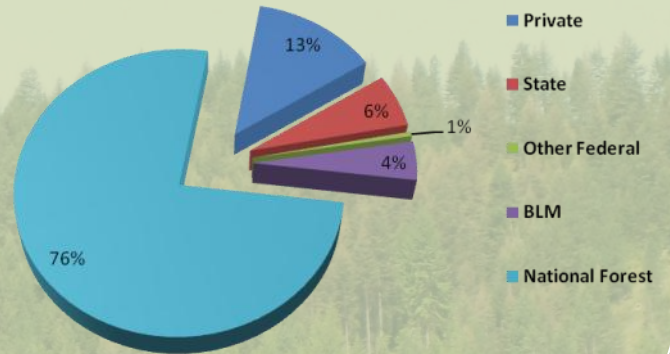
The Importance of Idaho's Forests

Idaho's forests are diverse. From piñon-juniper woodlands near the Nevada border to the alpine forests of the Sawtooth range, these forests are important for many reasons. Forests are home to wildlife, provide watersheds for drinking water, and protect streams that are habitat for many species of fish, including salmon and steelhead. 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.

Forest Land Ownership



Idaho's National Forests

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, Clearwater, Nez Perce and Bitterroot National Forests. The Intermountain Region (Region 4) is in southern Idaho and includes the Boise, Payette, Sawtooth, Salmon, Challis, Targhee and Caribou National Forests.

Idaho's Forest Industry

Idaho has a productive forest industry, with 2011 revenues of wood and paper products totaling approximately \$1.8 billion dollars. Approximately 10,300 people were directly employed in the forest products industry in 2011. 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 Idaho Forest Products Commission.](#)



Aerial Detection Survey Results

Bark Beetles

Mountain pine beetle caused mortality on over 707,000 acres in Idaho in 2012, approximately 75,000 fewer acres than in 2011. Most of the mortality was in lodgepole pine, but approximately 50,000 acres of ponderosa pine were killed in Idaho, an increase of approximately 24,000 acres compared to 2011. Throughout Idaho, lodgepole pine stands are of an age and size that make them very susceptible to attack. Douglas-fir beetle caused mortality on over 59,000 acres in 2012 compared to approximately 80,000 acres in 2011. Other bark beetle species such as the fir engraver, western pine beetle and pine engraver continue to cause mortality statewide at levels similar to last year.

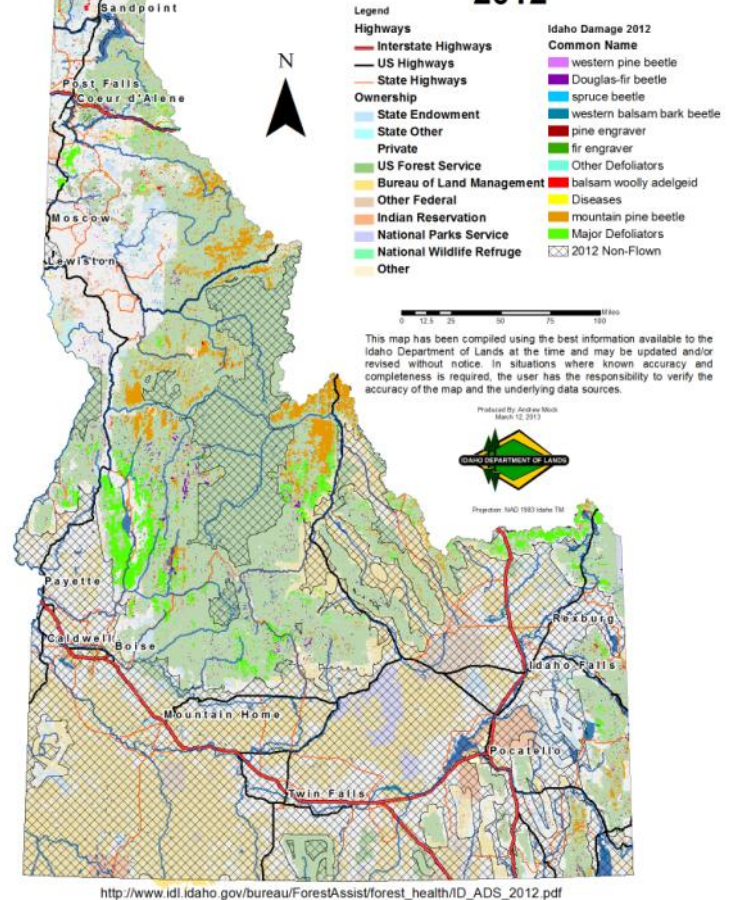
Defoliators

Western spruce budworm is a major defoliator of Douglas-fir and grand fir in Idaho. Affected acres decreased from approximately 1.8 million acres in 2011 to just over 717,000 acres in 2012. The infestation in the Coeur d'Alene and St. Joe National Forests in northern Idaho decreased sharply. Most of the defoliation is in southern Idaho. The Douglas-fir tussock moth outbreak in northern Idaho peaked in 2011, and the outbreak collapsed due to natural control agents in 2012. Over 32,000 acres of defoliation was observed in northern Idaho in 2012, with most of that in Benewah and Latah Counties. Larvae were difficult to find in late summer in defoliated areas.

Other Agents

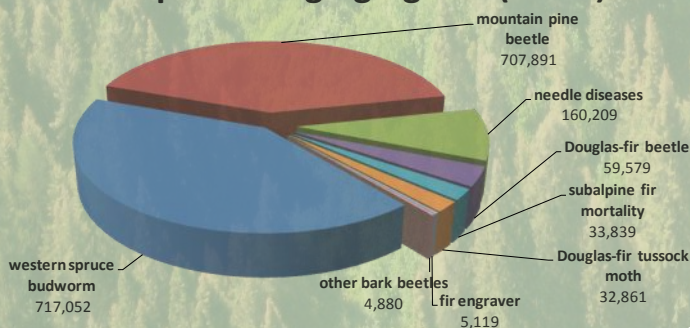
Aspen decline is a poorly understood complex of biotic and abiotic factors, which affected 887 acres of aspen in southern Idaho. Another cool, wet spring in 2012 contributed to a large amount of needle disease on western larch. Over 160,000 acres was affected statewide, though most damage was in Region 1. Mortality of subalpine fir, attributed to balsam woolly adelgid, western balsam bark beetle and possible root disease was detected on over 33,000 acres.

Idaho Aerial Detection Survey 2012



[Link to larger map](#)

Principal Damaging Agents (Acres)



Principal Damaging Diseases /Declines

Damage Agent	Acres
Root Disease	Est. > 8,000,000
Dwarf Mistletoe	Est. > 2,500,000
Needle Disease	> 160,000
Subalpine fir Mortality	> 33,000
Aspen Decline	887

Notes on Aerial Detection Surveys

A total of 26.4 million acres were surveyed in Idaho in 2012, compared to 24.2 million acres in 2011. It is important to remember that trees attacked by bark beetles do not usually change color until the following year, so mortality observed in 2012 actually represents trees that were attacked in 2011.

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. Root diseases are less common in the drier forests of southern Idaho. Dwarf mistletoes infect over 2.5 million acres of forest statewide. These parasites are common on many conifer species, but are probably most damaging on western larch, Douglas-fir, lodgepole pine and ponderosa pine. White pine blister rust is widespread throughout the range of western white pine, whitebark and limber pines, and infects millions of trees, though an acreage estimate would be difficult to determine.

Key Forest Insect Issues in Idaho



Mountain pine beetle continues to kill susceptible lodgepole, whitebark, and limber pines across the state. Many stands are of a susceptible size, age and density that are favorable for bark beetle attack. Overall the acreage of pines killed has decreased over the last several years. In 2012, the acreage of lodgepole pine killed was 663,869 acres compared to 711,319 acres in 2011. In some areas, the decrease is due to host depletion. Two areas where mountain pine beetle is causing mortality in ponderosa pine are in the upper Salmon River valley near Gibbonsville, and in the Craig Mountains east of Grangeville. The acreage of impacted ponderosa pine increased to over 50,000 acres in 2012, up from 26,776 acres in 2011. The Gibbonsville area was also heavily impacted by the Mustang Complex fire in 2012. [Link to USFS publication:](#)

The Douglas-fir tussock moth outbreak in northern Idaho collapsed in 2012, but defoliation was still observed on approximately 33,000 acres. This is a substantial decrease from 2011 when over 100,000 acres was defoliated. Defoliation in the Nez Perce NF decreased to approximately 3,800 acres in 2012, compared to more than 39,000 acres in 2012. Tussock moth outbreaks occur approximately every 10 years and collapse due to natural control agents such as a viral disease, parasites, and predators. Some mortality was observed in a few heavily defoliated stands, but overall, many trees recovered. Twelve landowners participated in a limited suppression program (612 acres) which took place in June. Further defoliation is not expected in 2013 in northern Idaho. [Link to USFS brochure.](#)



Western spruce budworm infested acres further decreased in 2012 to approximately 717,000 acres, compared to over 1.8 million acres in 2011. This follows a steep decline in infested acres in 2011. Repeated defoliation can increase susceptibility to bark beetles. [Link to USFS publication:](#)

Gypsy moth survey. Over 4,000 pheromone traps were deployed in Idaho in 2012. No gypsy moths were caught in Idaho in 2011 or 2012. In 2010, one male moth was captured in Meridian, in the southwestern part of the state. [Link to IDL 2012 Gypsy Moth Report](#)

Key Forest Disease Issues in Idaho



Root diseases north of the Salmon River kill millions of trees every year. Douglas-fir and grand fir are particularly susceptible. Root diseases are more prevalent than aerial detection survey data indicate, and are very common in northern Idaho. 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 more tolerant, especially after the trees reach 20-25 years of age. *Photo (R) by J. Schwandt USFS.* [Link to additional information:](#)



White pine blister rust is an introduced disease that kills 5-needled pines (western white, whitebark and limber) throughout western 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. Western white pine is fast growing, drought tolerant, and is not highly susceptible to root diseases. *Photos by J. Schwandt* [Link to USFS publication:](#)

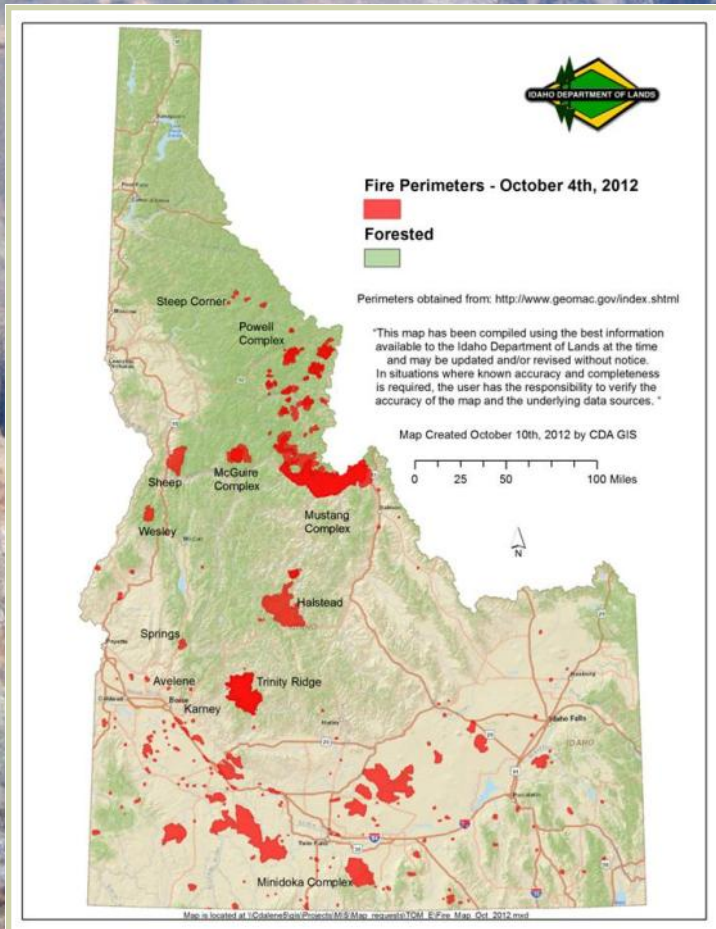


Dwarf mistletoes infect many species of conifers in Idaho. Most damage is on western larch, Douglas-fir, ponderosa and lodgepole pines. These parasitic plants reduce growth and over time can kill trees. Dwarf mistletoes can be managed through silviculture by removing heavily infected trees and by converting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



Foliar Diseases can infect many species of conifers in Idaho, but is most noticeable on western larch and lodgepole pine. While the appearance can be dramatic, the effect on the trees is usually minor. Cool, wet spring weather during needle development are favorable for disease development. Over 160,000 acres of western larch were affected in Idaho in 2012. [Link to IDL Forester Forum:](#)

2012 Fire Season



Fire Activity in Idaho, 2012

The total acreage burned in Idaho in 2012 was over 1,700,000 acres, compared to 384,103 acres in 2011. While many of these acres were rangeland in southern Idaho, several large fires occurred in forested areas. The Mustang Complex, Halstead and Trinity Ridge fires burned in USFS Region 4, and the Powell Complex, McGuire Complex and Sheep fires occurred north of the Salmon River in Region 1. Cool, wet spring weather in northern Idaho limited the number of fires north of the Clearwater River. Fire activity on lands within the Idaho Department of Lands Protection Area (IDL, Clearwater-Potlatch Timber Protective Association, and Southern Idaho Timber Protective Association) was below historic levels. In 2012, most of the fire activity was on federal ownerships. [IDL Fire Bureau 2012 Report](#)

Timber Salvage on Endowment Lands

While many of the fire impacted acres were on range land or federal forests, the Sheep fire and the Springs fire burned substantial amounts of valuable Endowment timber. The fires also destroyed over 200 acres of one-year-old tree plantations, a substantial financial investment. Because access was available and salvage could be accomplished economically, IDL was able to salvage damaged timber at both of these sites. To date, over 6 million board feet worth over \$500,000 has been salvaged. An additional estimated 1.9 million board feet remains to be hauled when access roads are dry.

View of damage from the Sheep Fire near Riggins, November 2012

For More Information:

Forest Health Protection

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Coeur d'Alene, ID 83814
(208) 765-7342

AND

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1249 S. Vinnell Way, Suite 200
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(208) 373-4227

Interior West Forest Inventory & Analysis

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Idaho Department of Lands

3284 W. Industrial Loop
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