

# Montana Forest Health Highlights 2007



## The Forest Resource

The forests of Montana's "Big Sky" country are a reflection of the states' inland geographic position and its topography. West of

the Continental Divide warm and moist Pacific air masses create more diverse forests. East of the Divide, a colder and drier climate favors relatively sparser, more homogenous forests.

The following graph presents a breakdown of forest cover, or forest type, on all land ownerships using the latest annualized FIA surveys from 2003 to 2006. The survey reflected about 25.2\* million acres of forestland, with about 18.3 million acres publicly owned and almost 6.9 million acres privately owned. The predominant forest types are Douglas-fir (30 %), lodgepole pine (17 %), ponderosa pine (12 %) and fir/spruce/hemlock (19 %). Detailed information on Montana's forest vegetation is available from the [Interior West FIA](#).

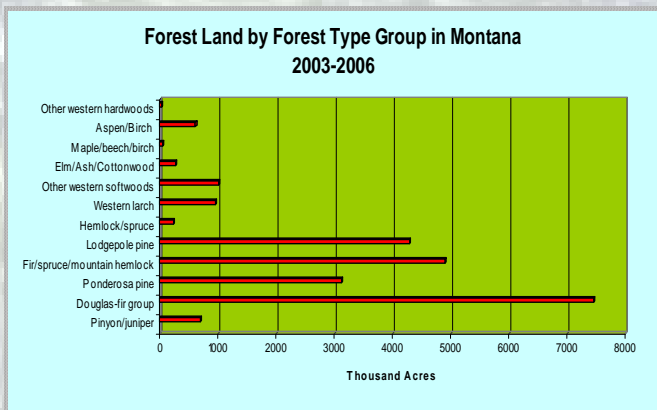
\* acres of forest type slightly decreased from the 2006 forest health highlight report because FIA based annual reports on 10% forest cover rather than 5% forest cover used in prior years.

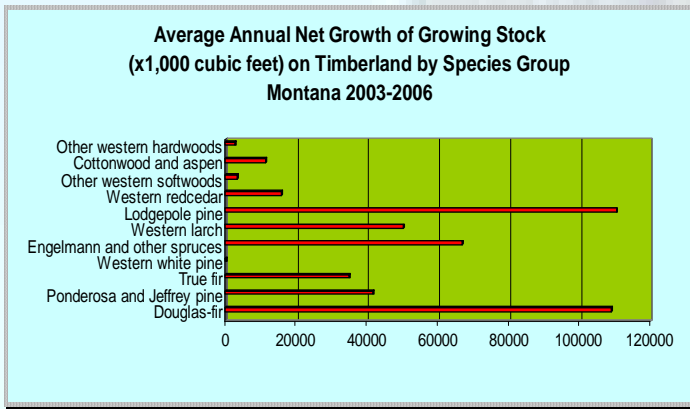
Forests add significant value to Montana's economy. It is estimated that forest products (lumber, pulp, biomass, etc.) contributes over \$970 million annually to the economy. Recreational use of forests also has large effect on the state's economy. Over 10.4 million non-residents visited the state in 2006. Many of them came to enjoy the natural resources associated with our forests. Outfitter services and campgrounds provided direct income of \$106 million from these visitors and, overall, hunting, fishing, and wildlife viewing contributed more than \$680 million.

## Components of Change

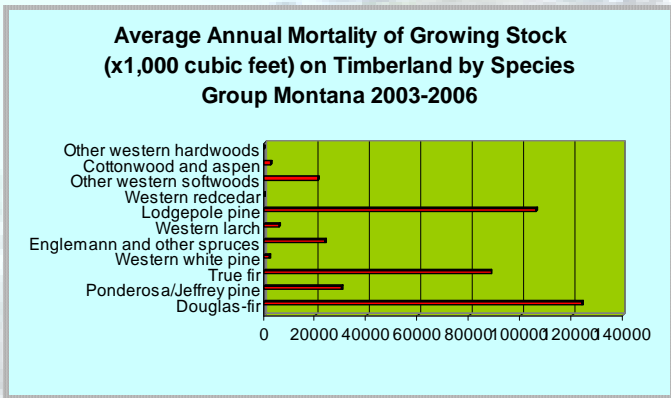
Natural forces and human activities are responsible for changes in Montana's forests. Growth and mortality reflect the changes brought about by insects and disease, fire and harvesting. As in 2006, wildland fire was a major change component in the state during 2007 with just under 800,000 acres burned. This was approximately 200,000 acres less than 2006, but greater than the 103,000 acres burned in 2005.

Average annual net growth of all live trees on forested lands for the period from 2003 to 2006 was 454,992 thousand cubic feet per year. The graph below includes tree mortality which has averaged 404,066 thousand cubic feet per year.

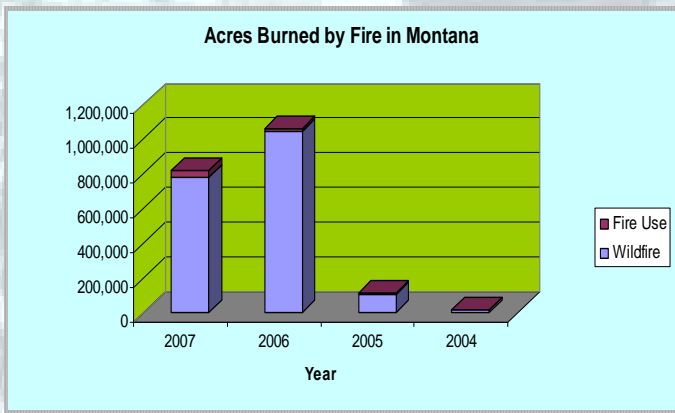




*Mountain pine beetle*-infested areas continued in many locations, though in some locations the intensity decreased as susceptible hosts were depleted. *Mountain pine beetle* caused the highest level of tree mortality, infesting over 751,000 acres of lodgepole, ponderosa, western white, and whitebark pines. This was a slight decrease from the 800,000 acres infested in 2006. The intensity and extent of *mountain pine beetle* continues in whitebark pine stands. About 114,000 acres were recorded as having been affected during the 2007 aerial detection survey in Montana.



*Douglas-fir beetle*-infested acres continue to decrease in western Montana. Populations remained high in a few locations but surveys showed that infested acres decreased from approximately 61,000 acres to about 22,000 acres in 2007. Grand fir mortality attributable to *fir engraver* continued decreasing. *Western balsam bark beetle*-killed subalpine fir acreage continues to drop with approximately 97,000 acres affected compared to 130,000 acres in 2006.



Many areas are moderately to heavily infested with *western spruce budworm*, the most prevalent defoliator in Montana. Acres affected decreased significantly in 2007 with approximately 450,000 acres infested compared to over a million acres in 2006. Other defoliators were more localized, with minimal acres of defoliation detected. One *gypsy moth* was caught this year in Glacier National Park and delimiting surveys will be conducted in 2008. Mortality and growth losses from *root disease* continue to be high throughout the state. *Root disease*-caused mortality is more common west of the Continental Divide, causing mortality on over one million acres. The non-native invasive *white pine blister rust* continues to be present throughout the range of five-needle pines in the state. Rust severity is highest in the northwestern part of the state where the disease continues to cause extensive mortality in western white pine and whitebark pine.

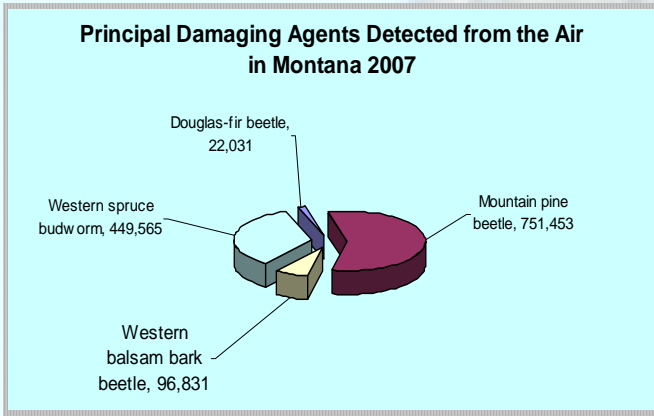
## Forest Health Issues

From 2005 to 2007, precipitation in most of Montana continued to increase following the severe drought conditions that existed from 1999 to 2004. However, warm weather conditions during the spring of 2007 led to an early snowmelt of mountain snowpacks followed by debilitating heat during the summer. Both aerial and ground-collected data showed a continued decrease in bark beetle infestations for several species.

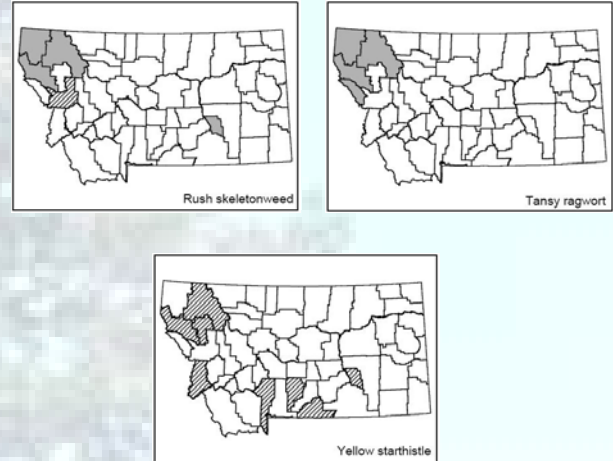
Survey details are contained in the annual insect and disease conditions report available at [Forest Health Protection](#) or [Current Insect & Disease Conditions](#). The following chart provides data on the main insect and disease agents causing damage to Montana's forests based on observations from the air in 2007. These numbers are underestimates for the year because of limited aerial observations in some parts of the state

due to smoke from summer fires. Comparisons with other year's data should not be done directly because of this limitation.

Montana is initiating an early detection and rapid response plan along its border with Idaho and Wyoming to slow or stop the entry of noxious weeds into the state. Two of the Category 3 species, rush skeletonweed and yellow star thistle, are present in Idaho and known to have significant impacts on forests and rangelands.



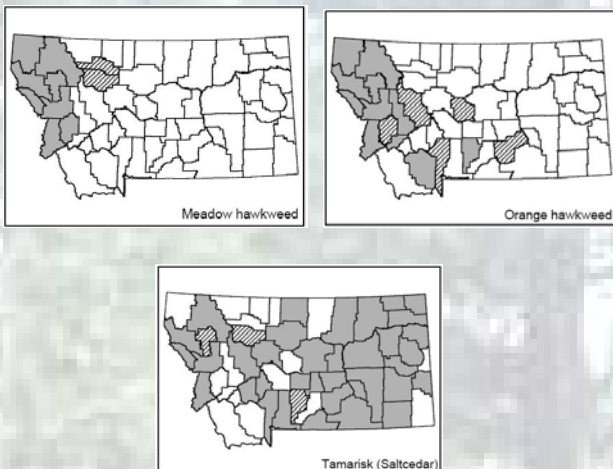
**Non-native invasive plants** continue to be major issues in the forests and rangelands of Montana. Over 8.2 million acres of Montana are infested by 27 species of noxious weeds, many of these acres being forest or rangeland. Noxious weeds are classified into 3 categories in Montana: Category 1 are wide-spread noxious weeds, Category 2 are established new invaders, and Category 3 are non-established new invaders. There are eight category 2 plants, several of which affect wildlands.



Legend:  Currently Reported     Historically Present, Not Currently Reported     Not Reported

(From The 2005 Montana Weed Management Plan, Celestine A. Duncan, compiler  
<http://agr.state.mt.us/weedpest/pdf/2005weedPlan.pdf>)

**Select Category 2 Noxious Weeds Affecting Wildlands**



Legend:  Currently Reported     Historically Present, Not Currently Reported     Not Reported

(From The 2005 Montana Weed Management Plan, Celestine A. Duncan, compiler  
<http://agr.state.mt.us/weedpest/pdf/2005weedPlan.pdf>)

**For More Information:**

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