



Wind River Lake showing extensive Engelmann spruce mortality caused by spruce bark beetle in 2013. (aerial survey photo by Alan Dymerski)

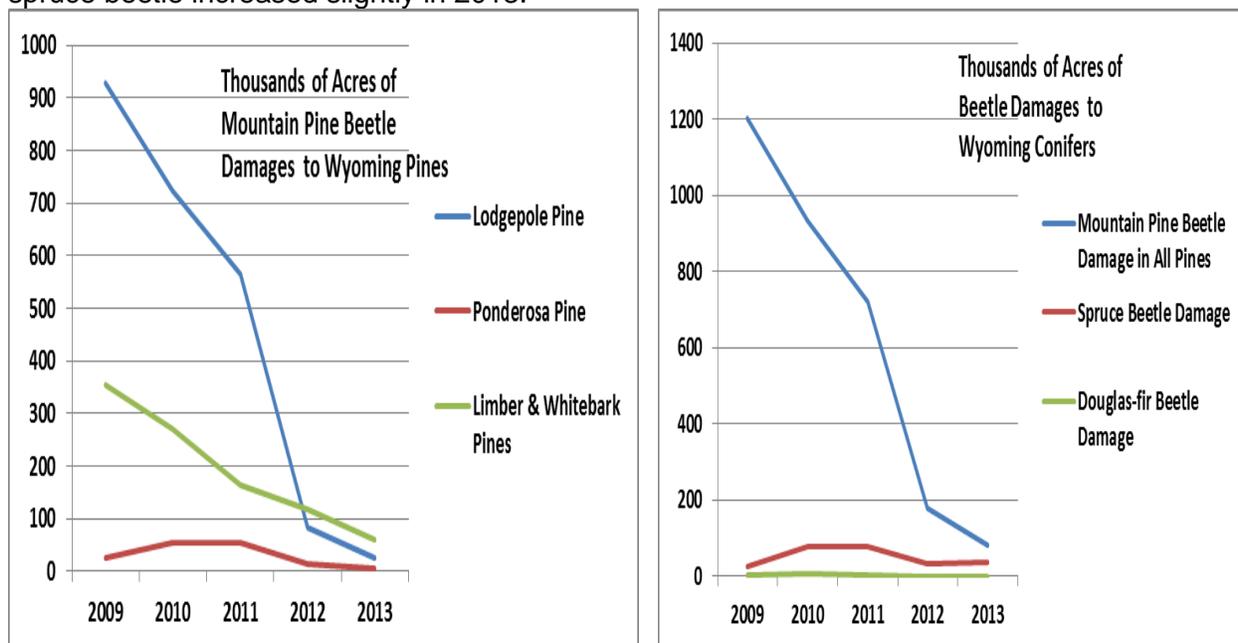
General Description

Wyoming spans over 62.6 million acres with roughly 17 percent of this land area classified as timberland and two percent classified as woodlands. Timberlands are composed of tree species traditionally used in the forest products industry. Woodlands consist of woody species not traditionally used by industry but are important for many ecological reasons. Lodgepole pine is the most abundant forest-cover type covering over 2.6 million acres; second is spruce-fir at 1.8 million acres; third is ponderosa pine at 1.1 million acres; Douglas-fir, Engelmann spruce, and juniper each comprise eight percent of the area; aspen, six percent; whitebark pine five percent; and limber pine four percent. There are roughly 24,000 non-industrial private forest landowners in Wyoming.

Agents of Change and Forest Health Issues/Concerns:

Mountain pine beetle tree-mortality decreased from 314,000 acres in 2012 to 82,000 acres in 2013. This brings the total number of affected acres to approximately 3.4 million statewide. Although additional acres of mountain pine beetle mortality have been observed every year since the mid-1990s, the intensity continues to decrease compared to previous years. The number of host trees suitable for attack is steadily decreasing every year. Throughout the mountain pine beetle epidemic; ponderosa pine, lodgepole pine, and limber pine forest cover types were gradually showing fewer acres affected every year due to smaller-sized age classes left behind from previous bark beetle attacks (Fig.1a).

Figure 1a & 1b. Charts showing decreasing bark beetle populations in Wyoming forests. Only spruce beetle increased slightly in 2013.



Douglas-fir beetle was detected on 400,000 acres during the early to mid-2000s but has remained at low levels since with only 1000 acres detected in 2013 (Fig. 1b). The largest area detected in 2013 was 620 acres in southern Sweetwater County in the Tepee and Little Mountain ranges north of the Colorado border.

GIS analysis from the 2013-2027 National Insect and Disease Risk Map reveals over 1.5 million acres “at risk of significant basal area loss associated with bark-beetle caused tree mortality over the next 15 years”. The “at-risk acres” are located in every forested part of the state. Forest stands are mostly mature to over-mature and are overly dense. Bark beetle-caused tree mortality significantly affected the Medicine Bow National Forest, Shoshone National Forest, Uinta-Wasatch-Cache National Forests, and Bridger-Teton National Forests in addition to surrounding state and private lands (Fig. 2). Roughly 63,000 acres of bark beetle mortality were observed in the Medicine Bow National Forest, particularly in the Snowy Range area. The Shoshone National Forest experienced a 69,000 acre increase in total bark beetle tree mortality in lodgepole pine and limber pine and also Engelmann spruce forests. Mountain pine beetle susceptible-hosts as small as five inches in diameter were attacked and subsequently killed statewide. The Bridger-Teton National Forests also showed increases in bark beetle mortality in lodgepole pine and limber pine forests amounting to 71,000 acres. An ongoing mountain pine beetle outbreak continues in the Black Hills National Forest in northeastern Wyoming.

2013 Bark Beetle Activity in Wyoming

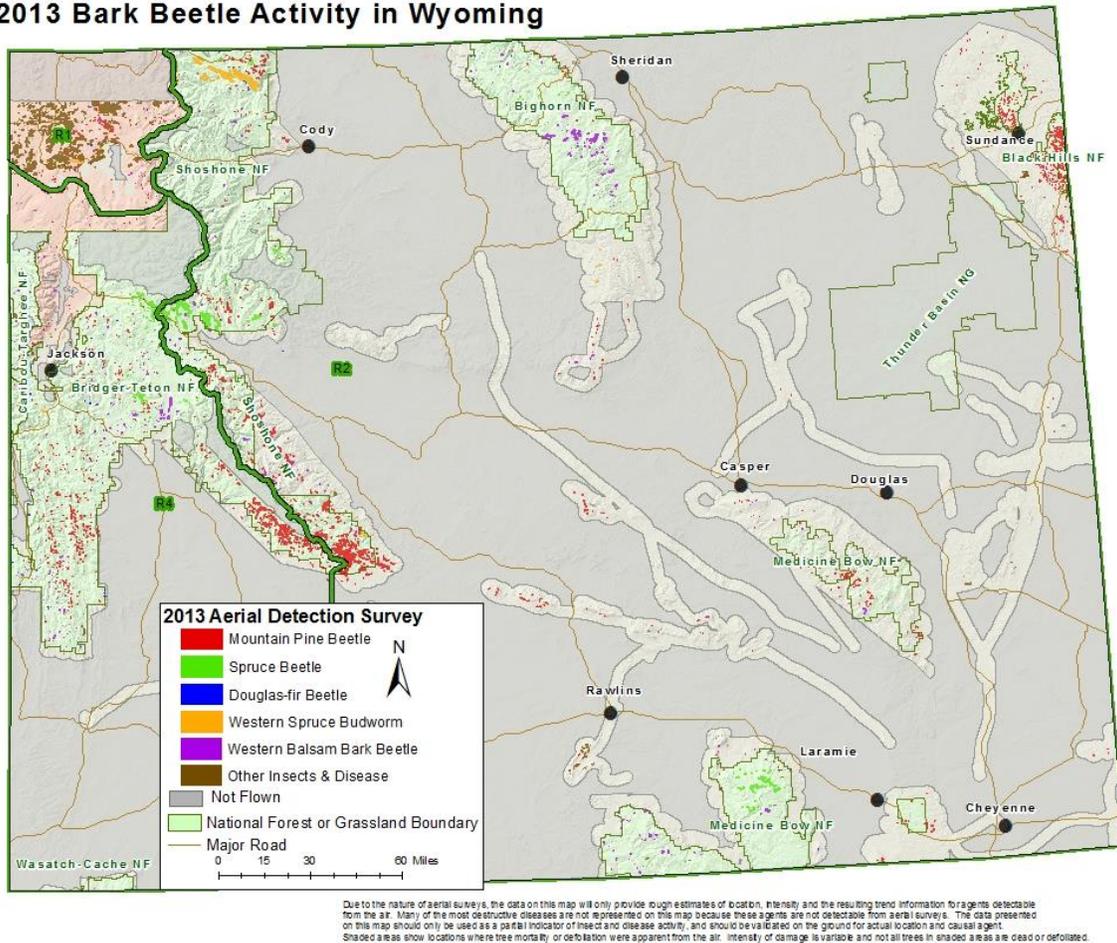


Figure 2. Map showing bark beetle outbreaks in Wyoming during 2013.

Limber pine stands statewide were killed by white pine blister rust and mountain pine beetle particularly in the southern Bighorn Mountain range in northern Natrona County. Whitebark pine and limber pine on the Shoshone National Forest and Bridger-Teton National Forests were killed by an expanding mountain pine beetle epidemic as well as the spread of white pine blister rust. Douglas-fir beetle and spruce beetle outbreaks continued to increase in forest stands with sufficient susceptible trees of Douglas-fir and Engelmann spruce.

A recent Evaluation Monitoring project conducted in Wyoming on limber pine stands after mountain pine beetle outbreaks indicated the following preliminary results:

1. Evidence of bark beetle activity increased in all study areas and was the leading cause of mortality. Incidence of bark beetle-caused mortality in limber pine ranged from 0-63% of trees killed per plot. Beetle activity has slowed since 2010; most mortality occurred between 2006 and 2010.
2. White pine blister rust disease (WPBR) was observed in all study areas and was the 2nd most common cause of mortality and the leading cause of decline. The incidence of WPBR in living limber pines remained the same or was slightly higher in most plots despite the loss of many infected trees to MPB.

Invasive Species

No invasive species of national interest including European gypsy moth or Emerald ash borer (EAB) were detected in Wyoming during 2013. However in Northern Colorado, EAB outbreaks were found in Boulder County. Wyoming State Forestry Division created an EAB Emergency Response Plan designed to stop any spread of EAB into Wyoming.

For further information on Forest Health:



Wyoming State Forestry Division

5500 Bishop Boulevard

Cheyenne, WY 82002

<http://wsfd.wy.gov>

Les Koch

Forest Health Program Leader

307-777-5495



USDA Forest Service – Rocky Mountain Region

740 Simms St. Golden, CO 80401

<http://www.fs.usda.gov/main/r2/forest-grasslandhealth/insects-diseases>

jerilynharris@fs.fed.us

Forest Health Monitor Coordinator

303-275-5155