

## **Aerial Detection Survey: 2015 Wyoming Highlights**

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### **Mountain Pine Beetle**

**Mountain pine beetle** activity has declined across much of Wyoming after impacting 3.47 million acres since the late 1990's. Outbreaks statewide were detected on 34,000 acres compared to 115,000 acres in 2014. Mountain pine beetle activity expanded onto about 10,000 acres that had not been previously mapped in this epidemic. 26,000 of the affected acres and most of the expansion onto new acres occurred in high elevation five needle pine forests primarily in western Wyoming (Figures 1 and 2). The epidemic has run out of suitable hosts in many areas across the state, but remains active in the southern Bridger-Teton and Shoshone National Forests, as well as the Wind River Reservation. Mountain pine beetle activity in the ponderosa pines in northeastern Wyoming's Black Hills is being monitored by aerial photo interpretation in cooperation with neighboring forestry agencies and industries in South Dakota. While the overall outbreak in the Black Hills is declining, northeastern Wyoming experienced tree mortality levels similar to 2014.

**South central Wyoming** including Medicine Bow National Forest and adjacent lands in Carbon, Albany, Converse, Natrona, Laramie and Platte counties- Mountain pine beetle activity in this area remains low with about 2,600 acres affected in 2015 compared to 2,500 acres in 2014. This is largely due to susceptible host depletion (Figure 3).

**Western Wyoming** including Shoshone, Wasatch-Cache and Bridger-Teton National Forests and adjacent lands in Lincoln, Sublette, Uinta, Fremont, Park and Teton counties- Mountain pine beetle activity declined from 104,000 acres in 2014 to 30,000 acres in 2015. 19,000 of the affected acres occurred in Fremont County primarily in five needle pines (Figure 4). Over 2,000 acres of lodgepole pine mortality was also noted. Much of this activity occurred in southern Fremont County west of Lander.

**North central Wyoming** including Bighorn National Forest and adjacent lands in Bighorn, Johnson, Sheridan and Washakie counties- Large areas of forest remain unaffected, yet susceptible, to mountain pine beetle in this area. In 2015, mountain pine beetle activity declined from 700 acres detected in 2014 to 70 acres.

**North east Wyoming** including Black Hills National Forest and adjacent lands in Crook and Weston counties – Aerial photo interpretation estimates about 1,200 acres of mountain pine beetle activity in scattered pockets primarily in Crook County in 2015. This is similar to 2014 levels when 900 acres were detected.

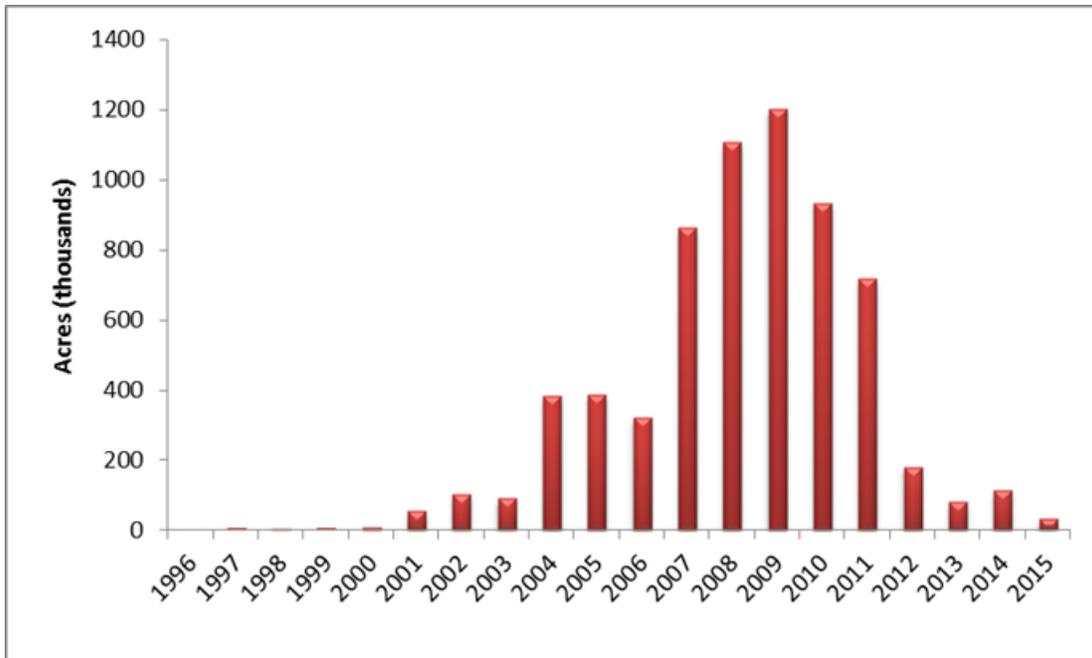
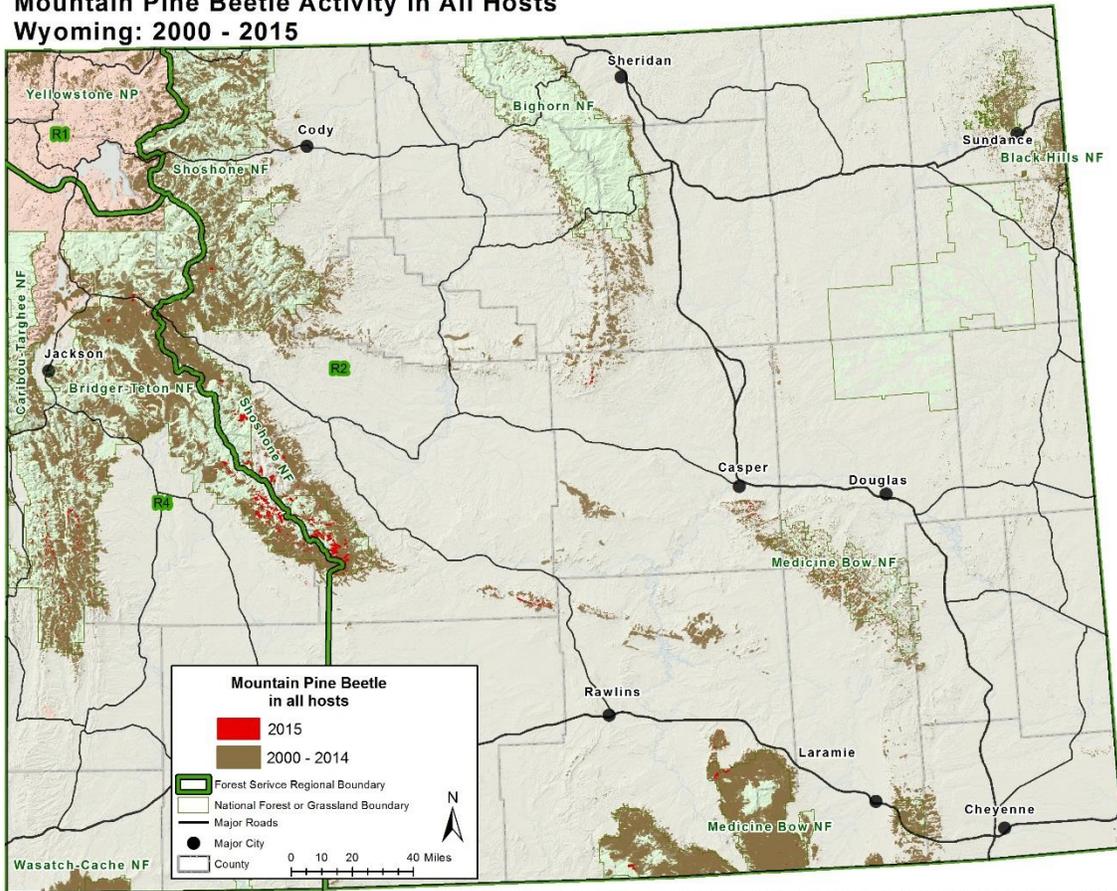


Figure 1. Annual acres of observed mountain pine beetle activity in Wyoming. Not all areas are surveyed every year.

**Mountain Pine Beetle Activity in All Hosts  
Wyoming: 2000 - 2015**



Due to the nature of aerial surveys, the data on this map will only provide rough estimates of location, intensity and the resulting trend information for agents detectable from the air. Many of the most destructive diseases are not represented on this map because these agents are not detectable from aerial surveys. The data presented on this map should only be used as a partial indicator of insect and disease activity, and should be validated on the ground for actual location and causal agent. Shaded areas show locations where tree mortality or defoliation were apparent from the air. Intensity of damage is variable and not all trees in shaded areas are dead or defoliated.

*Figure 2. Mountain pine beetle activity in Wyoming 2000 – 2015. Activity in the Black Hills is not depicted.*



*Figure 3. Lodgepole pine stands in the aftermath of the mountain pine beetle epidemic on the Medicine Bow National Forest. Younger trees in older cutover areas survived and the older stands had high levels of mortality. 2015. Photo: Brian Howell.*



*Figure 4. Shoshone (Blue Ridge) whitebark mortality 2015. Photo: Kendra Schotzko.*

## Spruce Beetle

Spruce beetle activity declined from 90,000 acres in 2014 to 68,000 acres in 2015 across Wyoming (Figure 5). New spruce mortality from spruce beetle expanded on 44,000 previously uninfested acres. Since 1996, 682,000 acres have been affected by spruce beetle statewide, leaving many areas of large dead standing spruce in higher elevations (Figures 6 and 8).

**South central Wyoming** including Medicine Bow National Forest and adjacent lands in Carbon, and Albany counties- Spruce beetle-killed trees were observed on about 900 acres in 2015. This occurred in areas where spruce beetle activity has been previously detected. A total of 120,000 acres in this area have been affected by spruce beetle since 1996.

**Western Wyoming** including the Absaroka Mountains in and adjacent to the Shoshone and Bridger-Teton National Forests in Lincoln, Sublette, Uinta, Fremont, Hot Springs, Park and Teton counties - spruce beetles continued to kill spruce on approximately 67,000 acres and many areas have few surviving mature spruce (Figures 7 and 8). Spruce beetle activity is localized and increased in portions of the Wind River Range.

**North central Wyoming** including the Big Horn Mountains in Big Horn and Sheridan Counties- Approximately 70 acres of spruce beetle-caused tree mortality was observed.

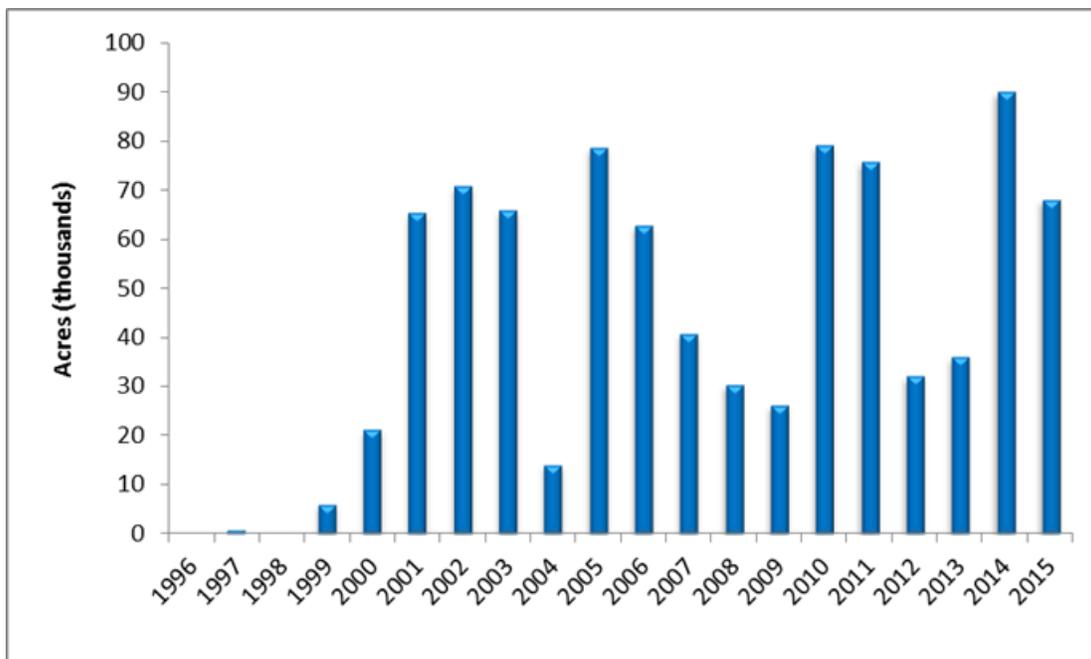


Figure 5. Annual acres of observed spruce beetle activity in Wyoming. Not all areas are surveyed

every year.

### Spruce Beetle Activity in Wyoming: 2000 - 2015

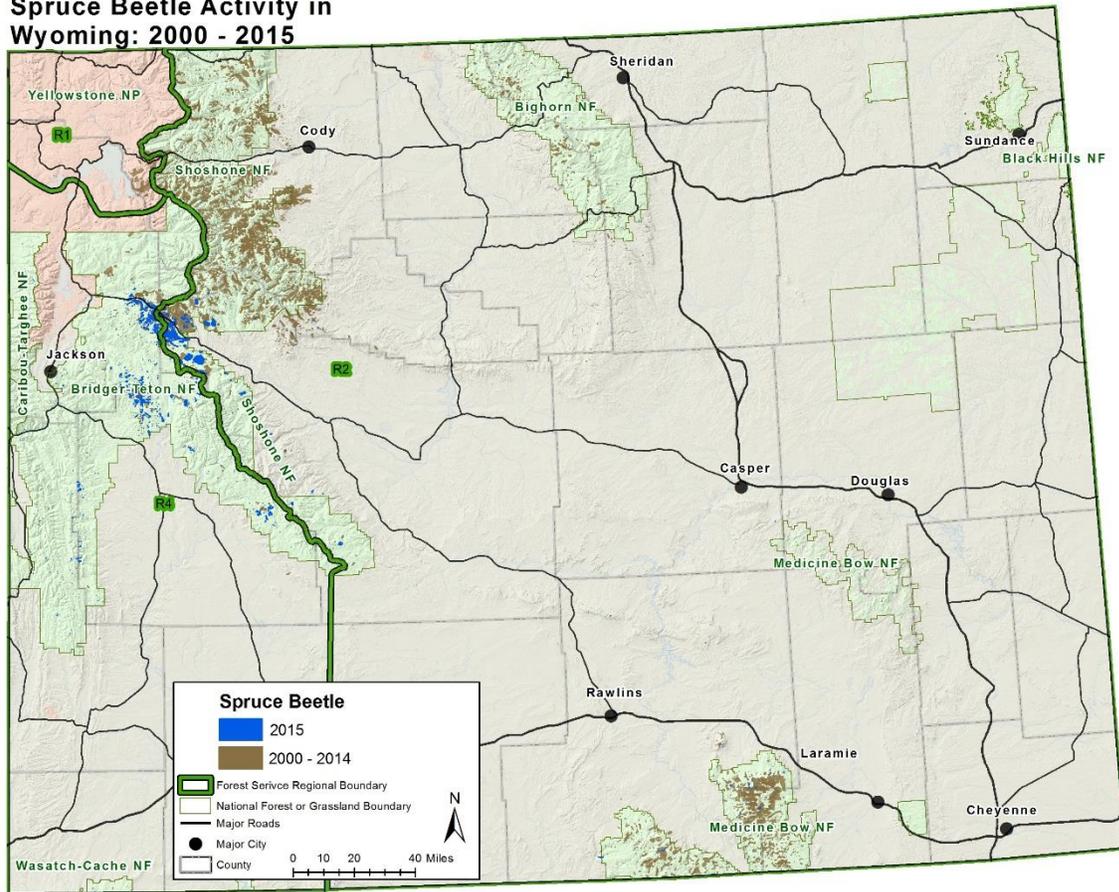


Figure 6. Spruce Beetle activity in Wyoming 2000 - 2015.



Figure 7. Shoshone (Falls Campground) spruce beetle 2015. Green trees protected from attack by insecticide treatment. Photo: Kendra Schotzko



*Figure 8. Spruce Beetle caused mortality near Towgatee Pass, Shoshone NF 2015. Photo: Al Dymerski.*

### **Douglas-fir Beetle**

Past tree mortality from Douglas-fir beetle has been detected on over 430,000 acres, primarily during the early and mid-2000's. But, it has remained at low levels for several years with 3,700 acres detected in 2014 and only 500 acres affected in 2015. The majority of this year's activity was detected on and near the Bridger-Teton National Forest in western Wyoming.

### **Western spruce budworm**

Defoliation of Douglas-fir and some spruce by western spruce budworm has been most notable in the Clarks Fork area on the Shoshone National Forest (Figure 9). 11,000 acres were mapped in this area of Park County.



*Figure 9. Shoshone (Clarks Fork) budworm, 2015. Photo: Kendra Schotzko.*