

## **Aerial Detection Survey: 2014 Wyoming Highlights**

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### **Mountain Pine Beetle**

The mountain pine beetle epidemic continued to be active on about 113,000 acres in Wyoming in 2014 and expanded onto 48,000 previously unaffected acres (Figures 1 and 2). The epidemic has run out of suitable hosts in many areas across the state and is currently most active in the southern Bridger-Teton and Shoshone National Forests, as well as the Wind River Indian Reservation; impacting high elevation five needled and lodgepole pines. Activity also increased slightly in the ponderosa pines in northeastern Wyoming's Black Hills. Intensive aerial photo interpretation done in the Black Hills area revealed newly infested trees on about 900 acres of Crook and Weston counties near the South Dakota border. Since 1996, the total number of affected acres is over 3.46 million.

**South central Wyoming** Medicine Bow National Forest and adjacent lands in Carbon, Albany, Converse, Natrona, Laramie and Platte counties- This area has seen a decline of mountain pine beetle activity from 49,000 acres in 2012, to 4,800 in 2013, to 2,500 in 2014. This is largely due to susceptible host depletion (Figure 3).

**Western Wyoming** 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 122,000 acres in 2012, to 75,000 in 2013 and increased to 104,000 acres as the epidemic shifted south in 2014 to areas where susceptible lodgepole and 5-needle pines were more abundant.

**North central Wyoming** 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 2014, 700 acres of mountain pine beetle activity was detected.

**North east Wyoming** Black Hills National Forest and adjacent lands in Crook and Weston counties - Mountain pine beetle activity continues, and may be increasing locally. Aerial photograph interpretation detected about 900 acres of mountain pine beetle activity in this area.

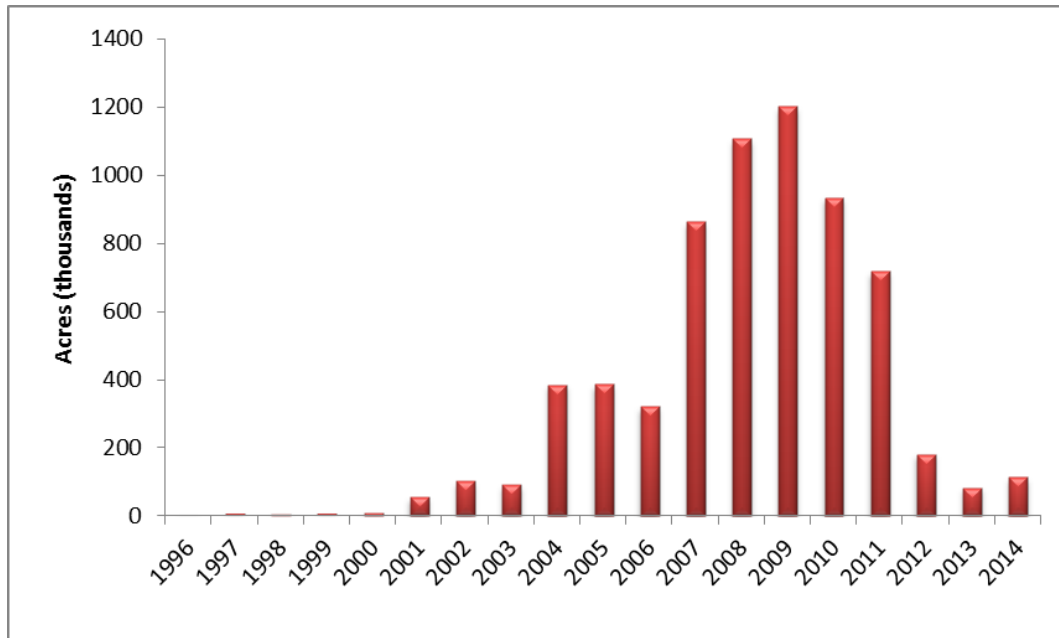


Figure 1. Annual acres of observed mountain pine beetle activity in Wyoming. Not all areas are surveyed every year.

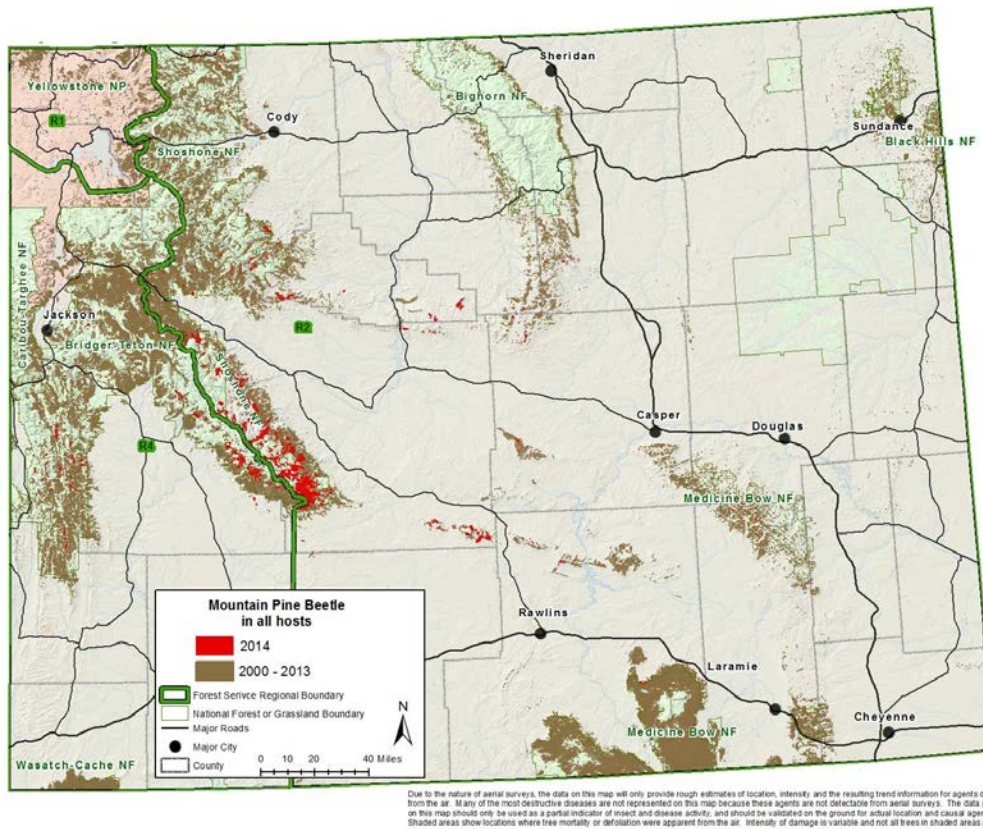


Figure 2. Mountain pine beetle activity in Wyoming 2000 – 2014. Activity in the Black Hills is not

depicted.



*Figure 3. Lodgepole pine stands in the aftermath of the mountain pine beetle outbreak. Most mature trees have been killed, younger trees and those regenerating post-management survive. Medicine Bow National Forest, 2014. Photo: Brian Howell*

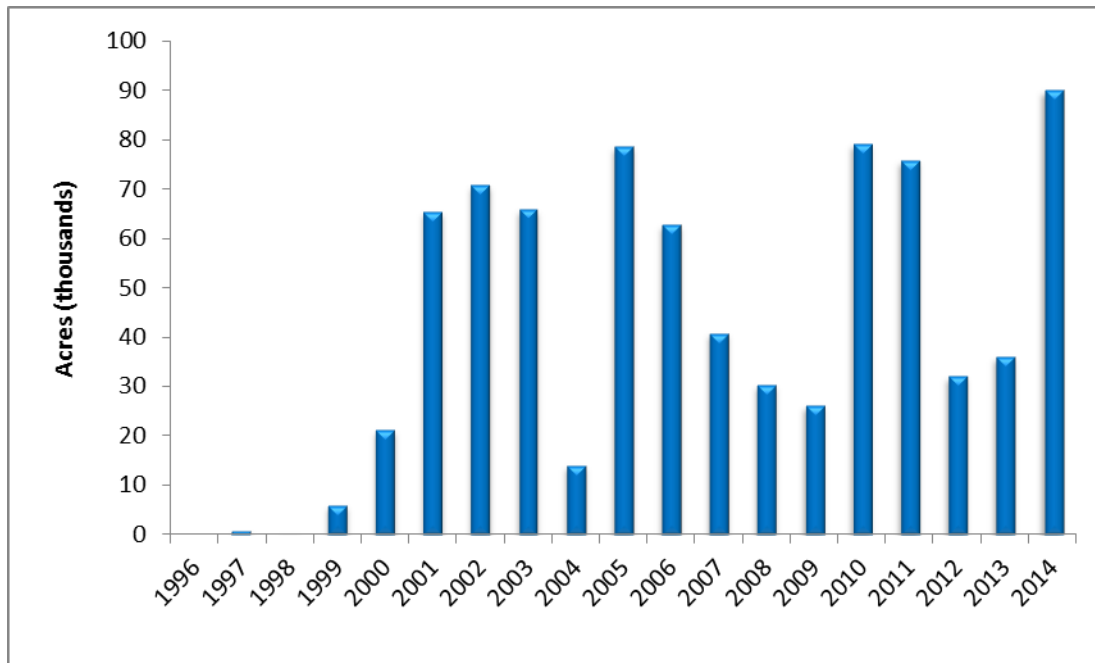
### **Spruce Beetle**

Spruce beetle was active on 90,000 acres across Wyoming, expanding onto 61,000 previously uninfested acres in 2014. (Figure 4). Since 1996, 638,000 acres have been affected by spruce beetle statewide, leaving many areas of large dead standing spruce in higher elevations (Figure 5).

**South central Wyoming** Medicine Bow National Forest and adjacent lands in Carbon, and Albany counties- Spruce beetle-killed trees were observed on 9,600 acres in 2014. A total of 120,000 acres in this area have been affected by spruce beetle since 1996.

**Western Wyoming** 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 81,000 acres and many areas have few surviving mature spruce (Figure 6 and 7). Spruce beetle activity is localized and increased in portions of the Wind River Range (Figure 5).

**North central Wyoming** Big Horn Mountains in Big Horn and Sheridan Counties- No spruce beetle caused tree mortality was noted.



*Figure 4. Annual acres of observed spruce beetle activity in Wyoming. Not all areas are surveyed every year.*



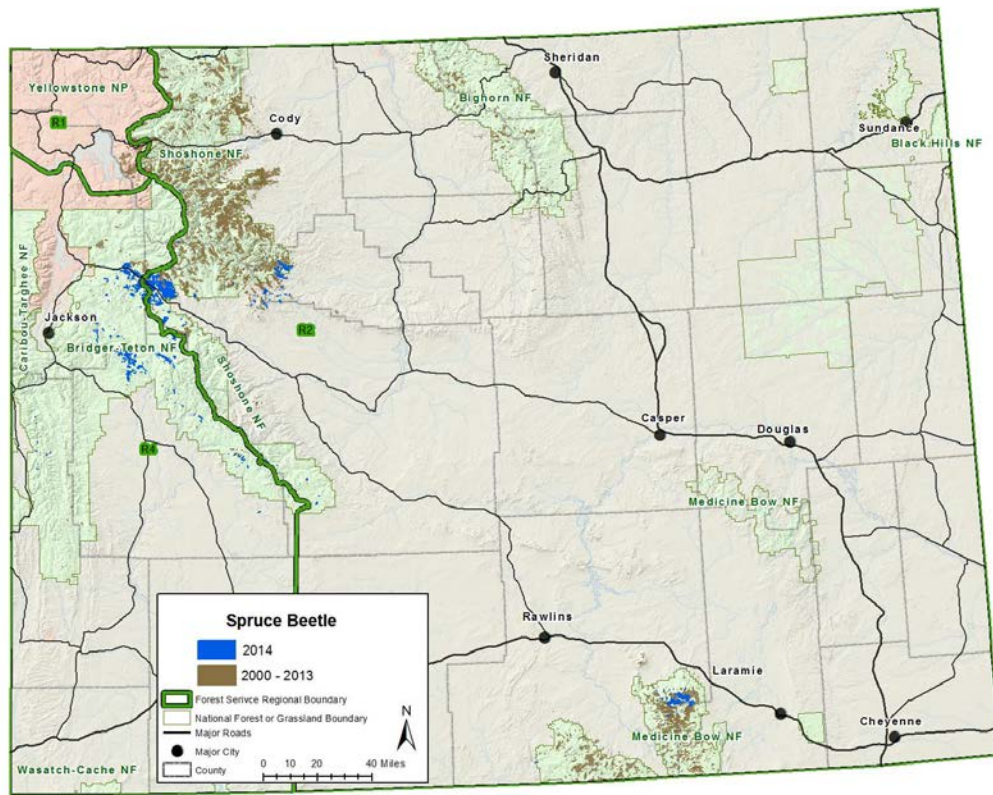


Figure 5. Spruce Beetle activity in Wyoming 2000 - 2014.



Figure 6. Spruce Beetle caused mortality on Two Ocean Mountain, Shoshone NF 2014. Photo: Al Dymerski.



*Figure 7. Spruce Beetle caused mortality near Towgate Pass, Shoshone NF 2014. 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 only 3,700 acres affected in 2014 (Figure 8). The majority of this year's activity was detected Hot Springs County (2500 acres).



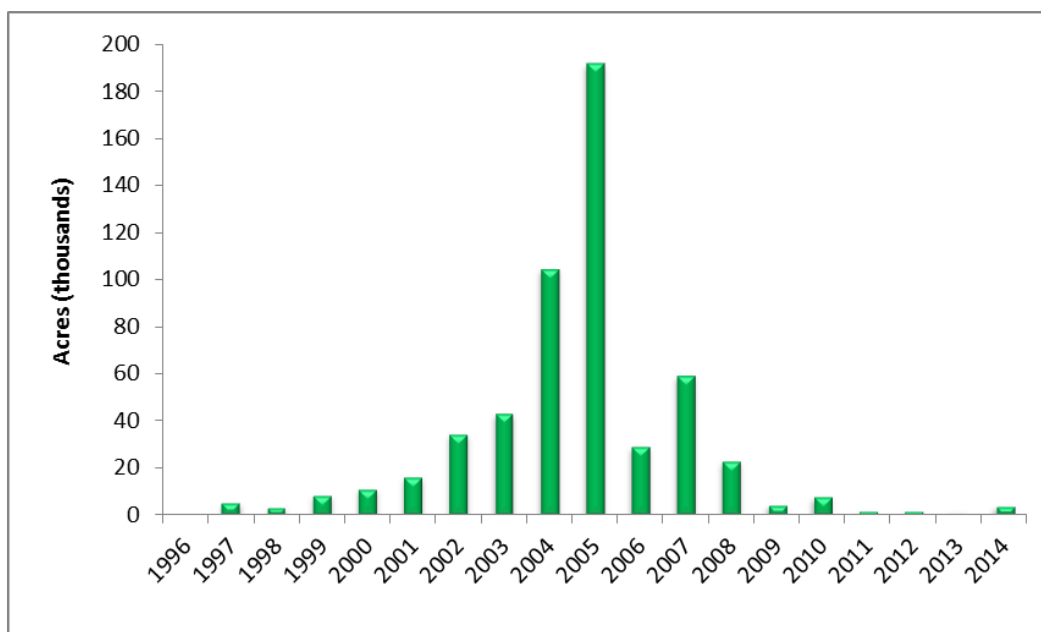


Figure 8. Annual acres of observed Douglas-fir beetle activity in Wyoming. Not all areas are surveyed every year.

| Organism             | Acres Affected 1996-2014 | New Acres in 2014 | Areas of Expansion  |
|----------------------|--------------------------|-------------------|---|
| Mountain Pine Beetle | 3,460,000                | 48,000            | Southern Bridger-Teton and Shoshone National Forests as well as the Wind River Indian Reservation on high elevation 5-needle and lodgepole pines. |
| Spruce Beetle        | 638,000                  | 61,000            | Bridger-Teton and Shoshone National Forests   |
| Douglas-fir Beetle   | 432,000                  | 3,700             | Hot Springs County  |

## **Balsam Woolly Adelgid**

The non-native invasive pest, balsam wooly adelgid, was detected for the first time by aerial surveys in small pockets in Wyoming near the Idaho border in Park and Teton counties. This insect causes growth deformities, growth loss and eventual mortality in subalpine fir and other true fir species. While this pest has been in western North America for decades, balsam wooly adelgid was first detected in northern Idaho in 1983. Since then, its range has expanded south and east and it has caused extensive mortality in subalpine fir.