



## Mountain Pine Beetle (*Dendroctonus ponderosae*) Infestation

### **Importance:** **Infections causing widespread tree mortality**

The mountain pine beetle is a native insect to pine forests of western North America at elevations from sea level to 11,000 feet and is a member of a group of insects known as bark beetles. Their entire life cycle is spent beneath the bark of host trees, except when adults emerge from brood trees and fly in search of new host trees. Outbreaks often develop in dense stands of large diameter, older lodgepole pine (*Pinus contorta*) and dense stands of mid-sized ponderosa pine (*Pinus ponderosa*). Widespread outbreaks develop over several years and can result in millions of dead trees. Mountain pine beetles kill their host trees in a single generation by girdling the phloem (the living tissue that carries organic nutrients to all parts of the plant where needed). Signs of mountain pine beetle attack include “pitch tubes” which are made when female beetles bore into the tree’s trunk. Also, the beetles introduce a “blue-stain” fungus that spreads and clogs the water and nutrient conducting tissues and hastens tree death. Needles on successfully infested trees begin changing color several months to a year after attack (USDA Forest Service 2009).

### **2011 Status**

In 2010 the Heli-tack crew from the US Forest Service (USFS) removed about 100 infected lodgepole pine trees. In 2011 members of the Montana Conservation Corps (MCC) continued to remove trees in the seige area of Big Hole National Battlefield (BIHO). Approximately 500 trees have been removed in the past three years, most of them around 70 years old. As of 2011, it has been estimated that the BIHO forest has a 75-95% mortality rate.

### **Park Concerns**

Park managers are concerned with infestations of bark beetles that are occurring in BIHO and throughout much of Montana because these infestations are causing the most widespread tree mortality in recorded history.

### **Contact Information**

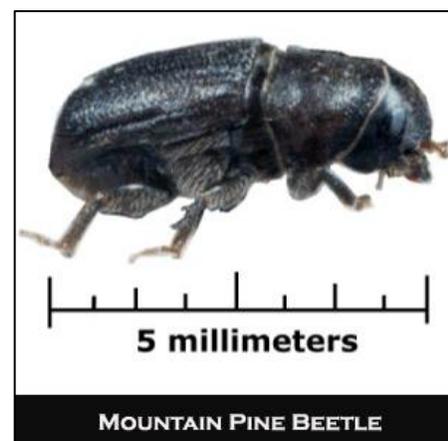
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### **Future Implications**

Evidence suggests that warming temperatures have intensified outbreaks of mountain pine beetle by enabling the beetles to survive the winter even at higher elevations. Earlier snowmelt and warmer temperatures also stress many trees species making them more vulnerable to attack by beetles and more vulnerable to wildfire (UCBN 2011).



Lodgepole pine tree infected with mountain pine beetle at Big Hole National Battlefield (BIHO). Pitch tubes along the trunk of the tree are evidence of beetle boring.



Mountain pine beetle found at Big Hole National Battlefield (BIHO). The beetles are tiny, roughly 1/8 inch long, or about the size of a match-head

