



## Mountain Pine Beetle Quick Reference

Flight Season							15th	To	15th			
Pitch Tubes (fresh)												
Blue Stain												
Tree Fading												
Preventative Control												
Control (Solar, start)												
Control (Mechanical)												
No Greenwood												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

**Flight Season:** ~July 15 through ~September 15; the time of year when beetles are emerging and seeking living green trees to attack. Beetle emergence is at its peak in mid-August. During this time, beetle pairs (male and female) will attempt to bore into bark through one hole, form an egg gallery, and lay approximately 75 eggs.

**Pitch Tubes:** Accumulations of sap; a trees' natural defense against beetle attacks. Large white to pinkish pitch tubes may indicate an unsuccessful attack. Beetles are often found drowned in these large accumulations. Smaller reddish to brown pitch tubes indicate a successful attack. Pitch tubes are fresh when they have a crystallized honey texture and there are no exit holes (1/8 inch symmetrical pitch free holes) present on the tree. Pitch tubes may persist on the trunk for a few years after the attack but are hard and crusty.

**Blue Stain:** A fungus beetles introduce into attacked trees, not usually detected until mid to late February on newly infested trees from previous flight season. This fungus will eventually kill the tree by disrupting the vascular system and causing the needles to fade from lack of nutrients and water.

**Tree Fading:** Turning of newly attacked trees from a darker green to yellowish green and eventually brown. Fading trees are a result of the previous flight seasons' beetle attacks and blue stain fungus. Fading is apparent approximately 8 to 10 months after a successful attack.

**Preventative Spraying:** A formulation of Sevin XLR (*Carbaryl*) or Astro and Dragnet (*permethrin*) (available to licensed applicators only) used to prevent beetle attacks on individual trees. Sprays are applied to living green trees in spring or early summer to deter attacking beetles and are effective through one flight season. *Always carefully*

*read and follow label precautions before applying insecticide for mountain pine beetle prevention and control.*

**Control (Solar):** Fell and limb infested trees and soak logs with water. This helps increase the humidity and temperature (creating a greenhouse effect) and also encourages the growth of fungus and bacteria detrimental to the beetle's survival. Cover the logs with 6mm thick *clear* plastic and seal the edges with a layer of soil, rocks, ect. Periodically repair tears with duct tape and ensure all edges remain sealed. The objective is to raise the under-bark temperature to ~110° and kill the beetles. This process requires good sun and a minimum of 2 months or more. Treatment should be started by June 1<sup>st</sup>.

**Control (Mechanical):** Mechanical treatment of infested trees (i.e. cutting, chipping, peeling, debarking, hauling to a "safe" site, or burning) can be done year round. Care should be taken while cutting during July through September to minimize beetle attraction to area by freshly cut wood. Removing large wood and slash from site will reduce this risk.

- **Debark:** Fell the infested trees and remove the bark with a "log-wizard" (chainsaw attachment) or a draw knife. Remove bark and on all trees and felled material >6 inches in diameter. This strips away the beetles' protective shelter and exposes them to the natural elements. Nothing else needs to be done to the wood or material once debarking is complete.
- **Chip:** Chip all material and scatter evenly throughout the area. You may also have the material chipped and hauled off site. Once the material is chipped nothing more needs to be done.
- **Burning:** Fell the infested tree, cut into firewood lengths, and burn before the beetles fly in July. One green log burned with two seasoned logs will give a good, clean burn. Open air burning should be done under suitable conditions. Complete and have approval of an open air burning permit from the local county health department and the local fire protection district.
- **Haul to a "safe" site:** Take infected wood to a site that is at least one mile from all susceptible trees (pine), including landscape varieties within the city limits.
- **Bury:** Be sure to cover the logs with at least 8 inches of soil.

**Note:** *do not stack freshly cut wood against living trees, beetles are often attracted to these piles and may attack and kill the standing live trees.*

**No Greenwood Cutting:** Cutting of live trees is not recommended during the period of June through September in areas with significant beetle outbreak. Cutting during this time may attract beetles to the area, especially if the slash and/or wood are to remain on site.

*For detailed information please refer to, "Fact Sheet 5.528, Mountain Pine Beetle ", "Preventive Spraying for Mountain Pine Beetle ", and "Solar Treatment of Mountain Pine Beetle Trees". These publications are available from the Colorado State Forest Service. For more information regarding forest management and treatment options for mountain pine beetle contact the Colorado State Forest Service Boulder District at 303-823-5774 or visit our website at <http://csfs.colostate.edu/>*