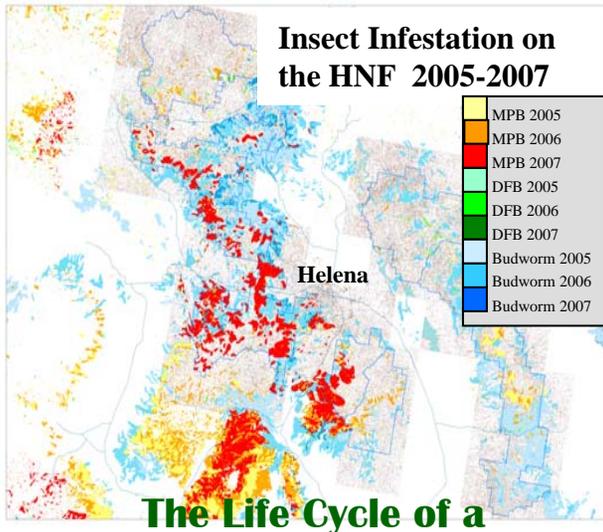
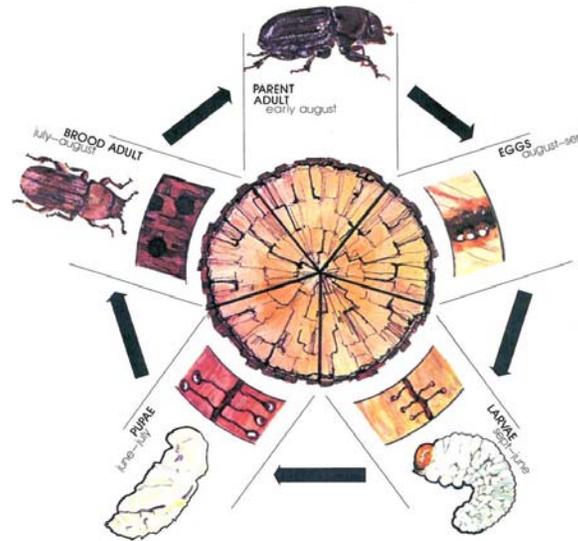


Mountain Pine Beetle In Our Area!!

The Helena National Forest is currently in a mountain pine beetle epidemic. Given the right conditions this native insect can cause widespread mortality in mature pine trees, particularly those in dense stands. In our area the lodgepole pine, ponderosa pine, limber pine and whitebark pine are the trees being affected. It is estimated the mountain pine beetle has affected up to 350,000 acres or 36% of the Helena National Forest.



Mountain Pine Beetle



The beetle passes through the egg, larvae, pupae and adult stages during a life cycle. All stages are spent under the bark except during the brief period when the adults fly to find a new host tree. Adult emergence is partially related to temperature and usually begins in mid-July. An adult beetle is no bigger than a grain of rice. Usually the beetle completes its life cycle in one year.

*** Characteristic tunnels or galleries of mountain pine beetle made by the adults and larvae. The underbark area looks like this in late spring.**

*** Adult beetles are tiny, comparable to the tip of a pencil.**



Evidence of Mountain Pine Beetle Attack

- * Popcorn-shaped masses of sap, called "pitch tubes", on the trunk where the beetle begins its tunneling process.
- * Saw dust in bark crevices and on the ground immediately adjacent to the tree base.
- * Foliage or needles turning yellowish to reddish throughout the entire tree. This usually occurs eight to ten months after a successful Mountain Pine Beetle attack, when the tree emerges from winter dormancy.
- * Presence of live beetle including eggs, larvae, pupae or adults, as well as their galleries under the bark. This is the most certain indicator of infestation. A hatchet for



removal of bark is needed to check trees for current infestation.



How Did We Get Here?

Several factors have contributed to creating the homogenous, susceptible forests we have today. The combination of these factors has resulted in the current mountain pine beetle epidemic.



Fire Suppression: Suppressing fires reduced natural fires which would have created more of a mosaic of age classes, species and density in our forests.



Weather & Climate: Much of the last century was dominated by cool, moist weather conditions which were conducive to growing dense stands of trees. Following this moist period, the last few decades have been warm and dry, resulting in tree stress and conditions conducive to beetle survival, thereby increasing the chances and duration of epidemics.



Harvest Practices: Around the turn of the century harvest practices resulted in large areas being cut to build the railroad and mining industries or fuel the growth of the 20th Century; these areas are even-aged and mature today.



Small extent of harvest in recent decades: The extent of recent harvests has had limited success in breaking up the homogeneity of the landscape. Since the existence of the Helena

National Forest, only about 6% of its 976,000 acres has ever been harvested.

Mountain Pine Beetle Management Options!

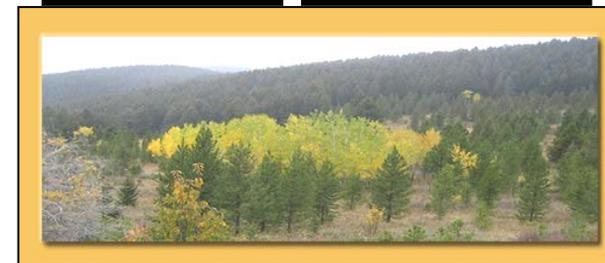
- **Sanitation-** Removal of currently infested trees can reduce the localized beetle population. Trees that are currently infested are generally those that have numerous pitch tubes but still appear green.
- **Thinning-** Creating a resilient stand is the best long-term way to reduce susceptibility and mortality; a spacing of 20-40 feet between trees is best. This also depends on how big the trees are—the bigger the trees, the wider the spacing needs to be!
- **Pheromones-** Pheromones are plastic capsules containing a chemical called Verbenone. These capsules are stapled onto trees either on a grid basis for large areas (30/acre) or on individual trees (2-4 per tree). They need to be applied yearly around late May to early June. Verbenone is 50-90% effective and costs around \$8-9 per capsule.
- **Carbaryl-** Carbaryl is a chemical that can be used to protect individual trees from infestation. The ENTIRE trunk must be soaked with the appropriate mix of chemical to where the tree is only 5 inches in diameter. This method can be 100% effective and may last for 2 seasons.

(For information about purchasing Carbaryl or Verbenone call 406-495-3755)

It is important to remember that large-scale ecological disturbances are beyond our capability to control; however, management opportunities do exist that can be effective at influencing outcomes in localized areas.

Verbenone capsule

Carbaryl



HELENA NATIONAL FOREST RESPONSE



Removal of hazard beetle killed trees along road sides, trails, power lines, landlines, administrative sites, and recreation sites Forest-wide and green tree protection in recreation sites with chemicals.



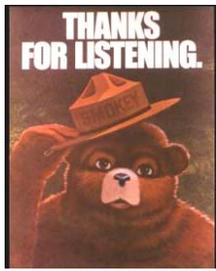
A program has been created that involves the cutting of beetle infested trees for firewood on National Forest Lands adjacent to private land.



A continued effort to expand public outreach, education and involvement!



Eight geographic areas around the Forest have been chosen to develop treatment proposals for small and large-scale projects in order to respond to the mountain pine beetle epidemic.



For more information feel free to contact:

**Helena National Forest Bug Info Line
(406-495-3755)**

<http://www.fs.fed.us/r1-r4/spf/fhp/index.html>

http://www.fs.fed.us/r1/helena/resources/insects_diseases/index.shtml