



July 2024

Environmental Message

## Bark Beetles

Bark beetles have caused some of the largest number of tree deaths in the United States. The elm bark beetle and the fungus it carried from tree to tree caused over 40 million elm trees to die. There are many different species of bark beetles, each with unique characteristics. Some are specific to a single tree species, such as the elm bark beetle. Others such as the mountain pine beetle in western United States kill trees such as Ponderosa, Lodgepole, Whitebark, Limber, Bristlecone, Scotch, Piñon, and Five-needle white pine. In Southern California they are battling the Polyphagous Shot Hole Borer that attacks a wide variety of tree species.

The typical life cycle starts in late summer with adults laying eggs on a suitable host by boring into the phloem of the tree. Some species of bark beetle only lay eggs on dead trees. Others can sense trees under stress and lay their eggs there. Some carry a fungus with them and while laying eggs the fungus infects the tree which the beetles feed. Once the eggs hatch, the larvae then live in the tree, feeding on the living tissues below the bark, often leading to death of the tree if enough larvae are present. At the end of the larval stage, chambers are usually constructed for the pupae to overwinter until they are ready to emerge as an adult.

Bark beetles are very tiny, about 1/8" and a single beetle cannot kill a tree. Depending on the size of the tree it could be hundreds, if not thousands of beetles that will kill the tree. Once a mass infestation occurs, there is little that can be done to protect trees, especially in a forest setting. In a landscape setting the best defense is preventative insecticide applications, based on scouting and traps. The type of beetle will determine what treatment is warranted. Some trees attacked by bark beetles may be weakened to the point that alternative means of tree removal may be warranted.

