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Bark Beetles – The Silent Killer Among Us

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There's a quiet killer in our midst, and its ability to attack gets stronger every day the drought continues. The victims are our trees, which are weak and stressed from too many years without enough water. They've become defenseless against the deadly attack of diseases and insects. Insects like the bark beetle.

Bark beetles are a natural and common pest in our local forests. Under normal circumstances, when water is more regular and plentiful, healthy trees produce enough resinous pitch to drown and flush out invading beetles. But our drought-stressed trees can't produce enough of this defensive pitch, and they become a cozy nest for the deadly beetles.

When adult beetles attack, they bore through the outer bark of a weakened tree and lay their eggs in the moist inner bark. The beetles and their larvae then feed on the tree's living tissue, eventually cutting off the tree's ability to transport nutrients. Some beetles may also carry fungi that will further damage the tree's defense system.

California has about 20 invasive species of bark beetles. Most of these are native to the state. The most common species are the mountain pine beetle, fir engraver beetle, western pine beetle, the Jeffrey pine beetle and the pine engraver beetle. As you can tell by their names many beetle types actually prefer to attack specific tree species. For example, the Mediterranean pine engraver and Mountain pine beetles attack pines. The fir engraver beetle has a taste for the white and red fir trees living at higher elevations. Oak bark beetles attack oaks and certain other broadleaf trees. The most common species infesting our local pines are the engraver beetles, the red turpentine beetle, and the western pine beetle.

The location of damage on the tree can help identify the beetle species. On large pines, engraver beetles usually attack trees near the top. The red turpentine beetles attack the lower portion of the trunk near the root collar and exposed roots.

Bark beetle adults are cylindrical, hard-bodied insects about the size of a grain of rice. Most species are dark red, brown, or black. The head is partly or completely hidden by the top of the body. Bark beetles have strong jaws for chewing. The larvae are typically off-white, robust, grub-like, and may have a dark brown head. Most bark beetle species produce two or more generations a year.

When the larvae mature they bore their way out of the tree, creating a buckshot pattern of holes in the bark. These adults may then re-infest the same tree but most likely will attack susceptible trees nearby. By the time the needles and foliage of a dying tree begin to change color, the beetles are likely already gone.

Attacking beetles release pheromones that attract other beetles. This can create a mass attack on a tree. Many attacks spill over into adjacent trees causing an entire stand of trees to die.

Prevention is the most effective method of managing bark beetles. Avoid causing injuries to tree roots and trunks, and try not to compact the surrounding soil during construction activities. Also, during this extended drought, deeply irrigate trees twice a month at the drip line (not near the trunk). To be beneficial, the water needs to seep down at least a foot below the surface.

Reducing competition for water, soil nutrients and sunlight among trees through thinning is the best way to protect a stand of trees from the effects of drought. The conundrum, however, is that thinning is best done during non-drought years and in the late summer and fall.

Once trees have been attacked, little can be done to control the carnage. Insecticides won't work because the beetles live beneath the protective bark. Seriously-infested trees, or trees that are dead or dying, cannot be saved and should be immediately removed. All infested wood should be burned or chipped on site. An eco-friendly alternative is to tightly seal small piles of the cut wood inside UV resistant, thick (10 mil), clear plastic sheets. Establish the piles in a sunny location and the heat will kill the beetles in a couple of months. And never pile infested material adjacent to a live tree or shrub.

A neighbor who chooses not to remove beetle-infested trees can increase the chance that susceptible trees on adjacent property will be attacked. Obviously, these situations can become complicated. Tree removal options are not equally available to all landowners. Economics of the treatment may be a factor, especially for large properties. Site conditions, such as steep slopes may also make tree removal difficult.

For more information about your options contact a local registered professional forester or certified arborist.

Join UCCE Master Gardener and retired meteorologist Steve Savage to learn about gardening in our unique environment at this Saturday's free Master Gardener class: Gardening in the Foothills. Topics of discussion include: plant hardiness zones; effects of light, heat, and terrain

on plants; frost protection; and how to make your own weather forecast for your garden. Class is from 9:00 a.m. to noon in the Bethell-Delfino Agriculture Building, 311 Fair Lane, Placerville.

Master Gardeners are available to answer home gardening questions Tuesday through Friday, 9 a.m. to noon, by calling (530) 621-5512. Walk-ins are welcome at the office, located at 311 Fair Lane in Placerville. For more information about our public education classes and activities, go to our Master Gardener website at http://cecentralsierra.ucanr.org/Master_Gardeners/ and you can also find us on Facebook.