

# CYPRESS BARK BEETLES

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Figure 1. Close-up of a cypress bark beetle

Cypress bark beetles (*Phloeosinus cristatus* (LeConte)) are native insects that occur throughout Arizona. They are common in the Verde Valley, Prescott, Payson, and Kingman areas. Under natural conditions, most bark beetles act as natural thinning agents that remove dying, overcrowded, and unhealthy trees. Cypress bark beetles seldom cause mortality in healthy, vigorous trees. However, when host trees are drought stressed, bark beetle populations increase allowing the beetles to colonize seemingly healthy trees.

Cypress bark beetles are found in Arizona cypress (*Cupressus arizonica*), Leyland cypress (*Cupressocyparis leylandii*), eastern red cedar (*Juniperus virginiana*), and other native Juniper trees (*Juniperus* spp.). In wildlands, cypress bark beetles mate and oviposit in the limbs and trunks of weakened, broken, dying, or felled trees and are common in juniper firewood. Cypress bark beetles rarely kill native juniper trees.

Cypress bark beetle mortality in planted Arizona and Leyland cypress is common due to misconceptions about the water requirements of these tree species. Natural stands of Arizona cypress are often found in riparian areas or where precipitation is higher than adjacent areas.

Property owners often assume that because these trees are native they can survive without supplemental irrigation. Lack of irrigation induces water stress within the plant, which predisposes planted trees to colonization by cypress bark beetles.

Adult cypress bark beetles are small, reddish brown to black, often shiny, and about 2-3 mm long (Figure 1). In weakened or stressed trees, adult beetles colonize the bole (trunk) and larger branches of the tree where they mate and lay eggs. Here, significant damage to the tree is caused by a 25-75 mm long, linear gallery (tunnel) with closely spaced niches at either side where eggs are laid.

After the eggs hatch, the larvae (grubs) create new galleries which radiate outward from the central gallery (Figure 2). As they consume the inner bark (phloem), cambium, and outer sapwood, the tree is girdled cutting off the flow of nutrients to the lower portion of the tree. Beetle colonization often causes top-kill and branch mortality, but can lead to tree mortality. Trees are colonized in the spring and summer. One generation per year is common, although more generations are possible during extended drought periods.

Newly emerged adults fly to a new host tree where they bore into small twigs a few inches from the branch tips. This kills the branch tip causing it to fade in color. The dead branch tip remains hanging on the tree (called "flagging") for a short period before breaking off. Upon close inspection of the branch tips, a hollow area can be seen where the beetle mined the twig (Figure 3). When beetle populations are high, hundreds of branch tips may accumulate on the ground.

## AT A GLANCE

- Cypress bark beetles are native insects that can damage or kill Arizona cypress trees.
- Deep, infrequent irrigation during drought periods increases tree vigor preventing mortality.
- Insecticides are not recommended for control of cypress bark beetles.

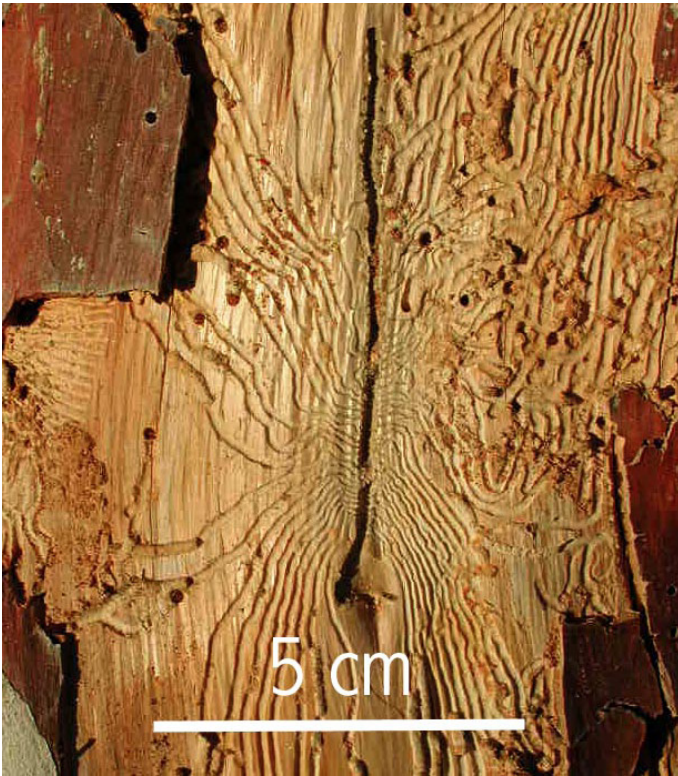


Figure 2. Cypress bark beetle gallery in Arizona cypress trunk.

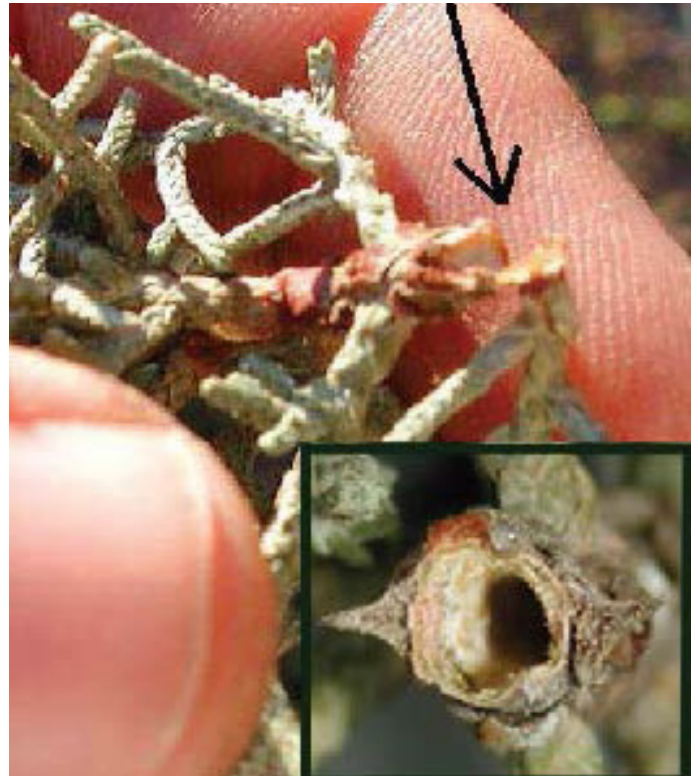


Figure 3. Arizona cypress twig mined by a cypress bark beetle.

Cultural practices can significantly reduce potential beetle colonization. Dead and dying material should be pruned out of individual trees during winter. Cut, dead, or down material should be promptly removed from the area. Maintaining tree health and vigor will reduce the risk of beetle colonization. This is accomplished in residential landscapes by slow, deep, infrequent irrigation of susceptible trees species during extended drought periods (April-June or longer) using a drip irrigation system or a soaker hose placed at the drip line of the tree. Supplemental fertilization is not generally recommended. New trees should be planted in the fall if cypress bark beetles have recently been active in the area.

Control is not practical once the bole of the tree is colonized. Some pesticides are labeled for prevention of bark beetles, but they are *not* recommended for use against cypress bark beetles. Healthy, vigorous trees can tolerate high levels of twig colonization and beetles will usually be unsuccessful in entering the trunk and limbs due to the tree's innate ability to exude pitch.



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