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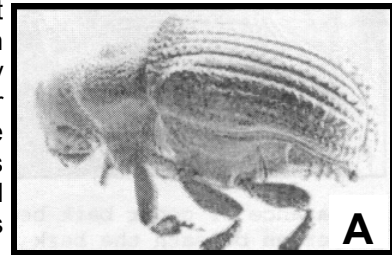
EXTENSION SERVICE

Cedar and Redwood Bark Beetles in Southwest Oregon

Several species of bark beetles in the genus *Phloeosinus* (pronounced “flea-o-sign-us”) are native to Southwestern Oregon. The various species may infest native incense-cedar, western redcedar, giant sequoia, redwood, juniper and similar non-native trees. They are rarely aggressive in their attack and may be found working under the bark of trunks, tops, and limbs of weakened, dying or felled trees or broken branches. These tree species are susceptible to few other insect species. The insects are generally present in moderate numbers that pose no significant threat to healthy trees. However, trees that experience recurring drought stress or other forms of stress (such as changes in water table, soil compaction from construction or livestock, intense vegetative competition, etc.) may become weakened and susceptible to high levels of infestation. Under prolonged stress conditions, bark beetle populations may build to the point where the insects are able to overwhelm otherwise healthy trees.

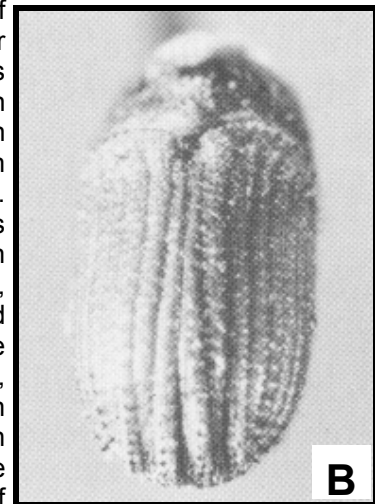
Adult western cedar bark beetles, *Phloeosinus punctatus* LeConte, are shiny, reddish brown to black, with rows of teeth on their elytra (wing covers). They range from 2 to 3 mm in length and are common in incense-cedar, western redcedar, and in the fallen branches of giant sequoia. The redwood bark beetle, *Phloeosinus sequoiae* Hopkins is slightly larger (3.2 to 4.2 mm in length) and attacks weakened, felled or fire damaged redwood. (Examples of *Phloeosinus* beetles appear in Figures A and B.) One to one-and-one-half generations of the beetles may be produced per year. Trees are generally attacked in spring and summer, but fall adult emergence is possible.

Newly emergent adults feed on twigs of healthy host trees prior to mating. The weakened twigs often break and small segments of foliage drop,



After mating, adult beetles bore under the bark of host species creating a short (about 25 mm) longitudinal tunnel. Eggs are deposited along both sides of the tunnel, and the larvae mine laterally forming a distinct pattern (Figure C).

An outbreak of western cedar bark beetles was noted in incense-cedar in Douglas County in the spring of 2003. Impacted trees were located in Flournoy Valley, Lookingglass, and Winston. All were on droughty sites, often in association with scrub oak, at the edges of unmanaged pastures, and/or in areas with significant vegetative competition. Adult feeding was detected in April. Both adult beetles and



larvae were present underneath the bark of infested trees, and those displaying visible symptoms had larval mining to varying degrees. Very small trees (less than 3 feet) were rarely impacted, and trees over 12 inches in diameter (at breast height) generally showed signs only of adult foliage feeding.

Symptoms of Attack

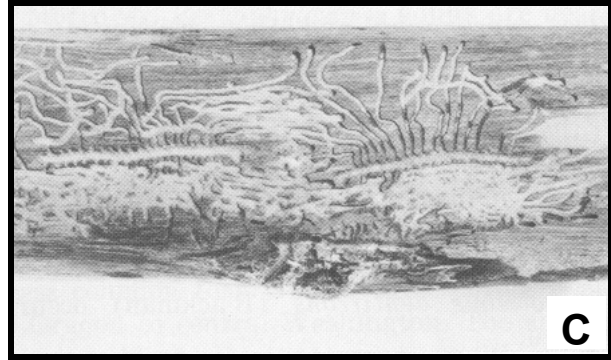
1. Crown yellows and eventually turns reddish brown.
2. Small holes (approximately 1mm) will be present in bark of affected trees. The holes may be most readily noted on smooth bark. They may be obscured by pitch or boring dust.
3. Very fine boring dust may be present in bark cracks or around base of trunk.
4. Larval galleries will be present under bark.
5. Larvae, pupae, or adults may be present under bark.
6. Numerous exit holes in a reddened tree indicate the adults have emerged.
7. Small segments of foliage (approximately 6 inches) dropping from large host trees indicate adults are present.

Cultural Management Options

1. Keep trees healthy by reducing vegetative competition and avoiding soil compaction, root disturbance, chemical exposure or animal (livestock) damage. Supplemental infrequent deep watering may be appropriate for ornamental trees.
2. Watch for and promptly remove and destroy (burn, chip or bury) infested trees to limit insect population growth.

Chemical Management Options

1. Chemical treatment of large numbers of forest trees to prevent or control *Phloeosinus* outbreaks is infeasible.
2. Ornamental trees may be treated with carbaryl (common name Sevin) as a preventative mechanism. Treatment is recommended only if an untreated beetle population is known to exist nearby (within ¼ mile) or the trees to be protected have been subject to significant stress over the past year. Green stems and branches larger than 1 inch in



diameter should be sprayed at the first sign of adult beetle emergence to prevent infestation. Spring and late summer are likely to be the times at which adults appear, but exact timing depends upon weather and population dynamics. Spraying at times when adults are not present will be of little or no value. Follow the pesticide product label closely, using its directions for control of bark beetles or boring insects.

3. Treatment of beetle populations already established beneath a host tree's bark is infeasible. No injected or otherwise systemic insecticide is known to be effective in this application.

This fact sheet was developed by John Punches, Associate Professor and Extension Forester, Oregon State University Extension Service. It draws upon information in USDA Forest Service Miscellaneous Publication No. 1339, Western Forest Insects, and upon the Colorado State Forest Service fact sheet Western Cedar Bark Beetles.

Oregon State University
Douglas County Extension Office
1134 SE Douglas Avenue
PO Box 1165
Roseburg OR 97470
Phone: 541-672-4461
Fax: 541-672-4453

Web: extension.oregonstate.edu/douglas