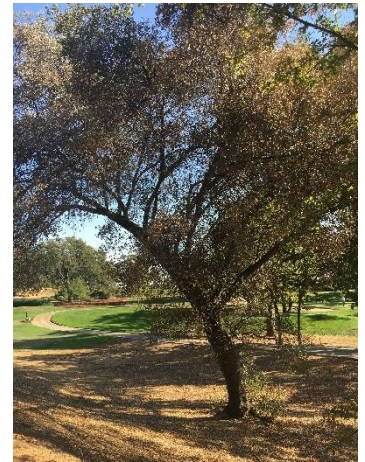


Foamy Bark Canker - A New Disease found on Oaks in the Foothills

By Scott Oneto, Farm Advisor, University of California Cooperative Extension

Some recent finds in El Dorado and Calaveras County have landowners concerned over their oaks. There is no question that the ongoing drought has played a significant role in the mortality of pines throughout the state. Now the oaks are showing a similar demise. A new canker disease, termed foamy bark canker, has been found in multiple locations throughout the region. The disease was first identified in Europe around 2005 and was later identified in Southern California in 2012. Since its discovery in Southern California, declining coast live oak (*Quercus agrifolia*) trees have been found throughout urban landscapes across Los Angeles, Orange, Riverside, Santa Barbara, Ventura and Monterey counties. Over the past year, the disease was found further north in Marin and Napa counties. This summer the fungus was isolated from interior live oaks (*Quercus wislizeni*) off Hwy 49 in El Dorado County and more recently from interior live oaks at a golf course in Calaveras County.



Interior live oak with foamy bark canker. Photo by Scott Oneto, UC Regents.

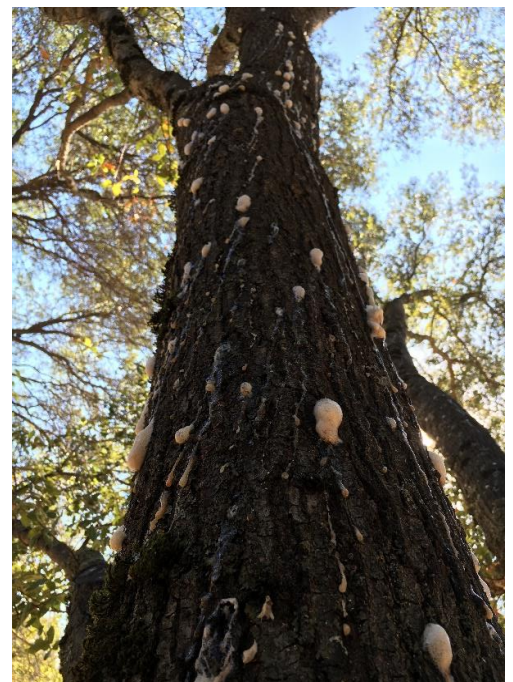
The disease is spread by the western oak bark beetle (*Pseudopityophthorus pubipennis*). Native to California, the small beetle (about 2 mm long) is reported throughout California from the coast to the western slope of the Sierra Nevada and Cascade Range. It is common on various oaks, including coast live oak, interior live oak, California black, and Oregon white oak, but has also been reported on tanoak, chestnut and California buckeye. The beetles colonize trees or parts of trees that are severely stressed, weakened, dying, or dead. Beetles may also colonize freshly cut firewood. Adults burrow through the bark to the sapwood and excavate shallow tunnels called galleries that are perpendicular to the wood grain. Eggs are laid in niches along the tunnels. Once the eggs hatch, the developing larvae then feed on the woody plant tissue until they pupate and emerge as adults. Depending on the location there may be two or more generations per year. The foamy bark canker disease is spread by fungal spores hitchhiking on the beetle and deposited into the trees vascular system where it rapidly grows and girdles the tree.



Western Oak Bark Beetle. Photo by Jack Kelly Clark, UC Regents.

Symptoms of the disease include oozing from the trunk and branches. Upon close examination, small entry holes (the size of pencil lead) can be observed where the beetle burrowed into the tree. Peeling back of the outer bark reveals necrosis surrounding the entry hole, and multiple entry holes may be observed on each tree. At the initial face of attack, a reddish sap may ooze from the entry hole, followed by a prolific foamy liquid, which may run as far as 2 feet down the trunk.

Landscape professionals and homeowners should note that symptoms may be confused with those caused by fusarium dieback/polyphagous shot hole borer (PSHB). However, the size of the entry hole associated with foamy canker is smaller than that made by the PSHB.



Oozing on main trunk of interior live oak. Photo by Scott Oneto, UC Regents.

Currently, no control methods are in place to control the fungus or the beetle. When the infection is at an advanced stage, the oak tree dies. However, there are preventive measures that can protect at-risk trees. First, because the beetle is attracted to drought-stressed trees, most often in urban or landscape settings, it is advised to irrigate trees in years affected by drought. The amount of water depends on the size of the tree and the composition and drainage capacity of the soil.

Native California oaks have evolved in a Mediterranean-type climate where there is little rainfall between late spring and early autumn. As such, they generally do not require irrigation during this dry summer period and, in fact, may be adversely affected by supplemental watering since warm-moist conditions can favor harmful diseases. Oaks should be watered only within the root protection zone, defined as the area just inside the drip line (the outermost edge of the tree's foliage). It is critical that the trunks remain dry. If the winter season is unusually dry, supplemental irrigation in the early Spring and again in the Fall can complement natural rainfall. Depending on the severity of the drought, it may be advisable to water drought stressed trees once a month during the summer. Water deeply, to 1 to 2 feet, in the outer two-thirds of the root zone, letting the soil dry completely between waterings.



Outer bark exposed to show the entry hole of the bark beetle. Photo by Scott Oneto, UC Regents.



Outer bark exposed to show the gallery pattern of western oak bark beetle. Photo by Scott Oneto, UC Regents.

Properly prune infested limbs, and remove and properly dispose of dying trees so that beetles do not emerge and attack other nearby trees. The following suggestions are based on University of California Integrated Pest Management recommendations for common bark beetles. If the infestation is at the beginning stage, some of pyrethroid pesticides could be sprayed on the tree trunk. Heavily infested trees or trees that are already dead or dying due to foamy bark canker cannot be saved with pesticide treatments and should be removed. Homeowners should assess their live oaks for health and indicators of drought stress. Even applying a minimal amount of water can help reduce a tree's attractiveness to beetles and increase its natural resistance. Be aware that pruning drought-stressed live oaks when the beetles are active could attract them.

Freshly cut oak firewood should be tightly covered with clear poly sheeting for about three months to seal in and kill bark beetles. Do not move the firewood to another location as the bark beetles could infect healthy trees.

If you suspect that you have foamy bark canker, please contact the University of California Cooperative Extension office, pest control advisor, or county Agricultural Commissioner office.

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