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Bark beetle scourge is killing coastal conifers

By NAOMI JARVIE Of the Advocate

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The bark beetle tree predator is decimating coastal coniferous trees. Different types of trees are attacked by different types of the bark beetle species, each having its favorite kind of bark

U.C. Cooperative Extension Forest and Wildlands Ecology Advisor Greg Giusti said in a telephone interview that in Mendocino County the beetles are currently most active along the coast. He said a complex set of circumstances have to come together to allow the bark beetle population to erupt.

Giusti said that in 2000 the amount of precipitation was high, but it all fell between November and February. This occurred two years in a row.

"By fall 2001," he said, "those trees had gone two years for eight-month periods without a sizable drink. Those trees were stressed for water." He said that weakened their condition.

Giusti said another factor is trees in big clusters with lots of stems competing for available water. When the bark beetles enter high density pine stands, he said, the water-stressed trees set up a prime condition for the beetles to attack. If the stressed trees are not removed, the area becomes "nursery galleries for the beetles to multiply," he said.

He estimates, "We will probably see a couple of more years of the same." Giusti said a lot of rain and a severe harsh winter could drop the beetle population, or a disease could kill off the beetles."

He said he receives a lot of calls from landowners with questions about dead and dying trees. Once a conifer tree turns yellow, it's rare for the tree to become healthy again, Giusti added.

Beetle facts

According to U.C. Extension, bark beetles are the most destructive insect pests of California forest trees and are always present.

Bark beetles typically begin their attacks on trees weakened by stress or other factors, but healthy trees can also be subject to attack.

The first insects to invade a tree emit odors into the air chemical messages called aggregation pheromones that attract large numbers of beetles of the same species. The beetles carry microscopic fungi which plugs the water-conducting system of the tree they attack, hastening its death.

The first signs of beetle attack are pitch tubes, small yet visible masses of pitch and boring dust. It may be visible in bark crevices and in cobwebs in the trees. There are no other major visible symptoms to determine whether a tree has come under attack.

After bark beetles reproduce in a tree, the youngsters emerge through the bark causing quantities of boring dust to collect on bark plates or in cobwebs. They feed and reproduce in the thin layer of plant tissue between the bark and the wood.

The most noticeable sign of bark beetle attack in a forest is the appearance of single or groups of trees with red tops. The upper parts of beetle-infested trees usually fade, first passing from a normal green color to a light green, then to a straw yellow and finally to red.

The beetles winter beneath the bark, with very little movement, until temperatures warm again.

Reduce, prevent loss

Droughts occur. According to U.C. Extension, timbered land can be managed in such a way that only an optimum number of trees are allowed to grow on any site with enough available light and soil moisture. A given site can only be expected to properly support a certain number of trees per acre. As the trees grow older and larger, their moisture, light and nutritional requirements increase, even though the capacity of the site remains fixed. According to U.C. Extension, when optimum density is exceeded, bark beetle losses must be anticipated.

The longer a "killed" tree is allowed to stand, the worse its condition becomes. Once the tree is dead and its moisture content reduced, it is no longer attractive to most bark beetles. It is then attacked by other insects causing more deterioration.

Prevention is the only effective course of action. Keep pines from becoming stressed by providing supplemental irrigation during the summer and fall. Prevent soil compaction above the root zone.

Giusti said if a pine is fading and has been diagnosed as being under bark beetle attack, cut it down and remove it from the premises. If the tree remains on the site, or is cut into firewood, cover it securely with an ultraviolet ray-resistant clear polyethylene tarp to prevent the beetles from escaping and attacking nearby trees. If a healthy pine is cut down, follow the same procedure since exposed fresh pine wood will quickly attract bark beetles that will in turn threaten nearby pines.

U.C. Extension recommends several other conifers to consider when replacing or replanting trees that are not attacked by bark beetles; redwood, atlas and some cedar and cypress species.

For more information about the bark beetle, or on use of protection with insecticides and other methods to prevent the infestation, contact U.C. Extension at 463-4495.

Tan oak fungus

When Giusti was asked about tan oak tree fungus, he said the only confirmed site in the county is in the Yorkville-Boonville area. He said Mendocino County hasn't seen the devastation that other counties, like Marin, have.