

CAL FIRE NEWS RELEASE

California Department of Forestry and Fire Protection Amador-El Dorado Unit

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Bark Beetles and Drought

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Camino – According to the California Department of Water Resources, 2013 proved to be California’s driest year on record, as well as the second consecutive year of below normal precipitation for the State. Winter and spring precipitation is important because it provides soil moisture that helps trees make it through California’s dry summer months. Without adequate precipitation, trees do not have enough water for normal growth and may be severely drought stressed by the end of the summer. If drought lasts more than one year, tree defenses begin to weaken and pests gain an upper hand. For pines, true firs and some other conifers, bark beetles are the pest that typically kills drought-stressed trees. As bark beetle numbers increase, tree mortality increases. By the end of 2013 there was clear evidence that bark beetle numbers were increasing.

There typically is a 1-2 year lag between when drought starts and when we start seeing increased bark beetle activity. While beetle activity started to increase in 2013, aerial surveys still recorded a fairly normal amount of tree mortality. There was significant mortality in certain areas, but overall mortality was not high. In contrast, tree mortality in 2014 is likely to be much higher. When the drought does end, there too will be a lag time before beetle activity dies down.

An effective management response to drought depends upon a number of factors. Each tree species responds differently and will be threatened by its own unique guild of pests. Additionally, site conditions and surrounding environment will influence this interaction. If possible, get advice from a local Registered Professional Forester or Certified Arborist or call CAL FIRE at 530.644.2345 if you live in El Dorado County or 209.267.5215 if you live in Amador County or 530.573.2321 if you live in the Lake Tahoe Basin or Alpine County to speak to an area forester.

What are some of the actions that can be taken to mitigate the impacts of drought? A common recommendation that is often heard during periods of drought is to cut down and remove beetle-killed trees before the beetles have the chance to fly to adjacent live trees and kill them. This is a good recommendation in theory, but one that typically fails in practice. With few exceptions, the reason for failure is because it is very difficult to identify and remove beetle-infested trees before the beetles fly. By the time the foliage of a dying tree begins to fade (change color), beetles already have begun to leave the tree or may be mostly gone. By the time a conifer’s foliage turns “red,” the bark beetles are gone. *Prompt removal of dead trees is still a good practice to reduce hazard or to capture the value of the tree’s wood before it deteriorates.*

For individual, high value trees, supplemental watering and application of pesticide sprays (registered for use on pines) to prevent bark beetle attack are viable options and have been met with limited success. But for trees in forest stands and plantations, these treatments are not practical. Reducing competition among trees through stocking control (thinning) is the best way to protect a stand of trees from the effects of drought. There is, however, an important caveat to this recommendation – ***thinning is best done during non-drought years.*** This allows the trees to adjust to and take advantage of the added space *before* drought stress hits. **Thinning during drought can actually create additional stress on residual trees.** It may also create conditions that allow the buildup of bark beetle populations in the thinned area, potentially exposing residual trees to beetle attack. ***If you must thin during drought, it is best to do it in the late summer and fall.***

There are publications available on-line that may help. The **Tree Note** series of publications from CAL FIRE provides information on bark beetles, other forest pests, and how to identify dead and dying trees. The publications can be accessed at the web address: http://calfire.ca.gov/resource_mgt/resource_mgt_pestmanagement.php.