



Frequently Asked Questions

Q. *What is tree mortality?*

A. Tree mortality means trees have died. Trees dying is a normal occurrence in natural ecosystems. The difference now is that the extended drought has caused an abnormally high number—in the millions—of trees in California’s forests and wildland-urban interface areas to weaken and/or die. Weakened trees are more susceptible to attacks from bark beetles. Once a tree is successfully invaded by bark beetles, there is no recovery for the tree; it will die.

Q. *How significant is California’s tree mortality from bark beetles and drought?*

A. According to the U.S. Forest Service, tree mortality from bark beetles and drought has reached over 29 million trees, up from 3.3 million trees in 2014. Most tree mortality in California has occurred in the southern Sierra Nevada and the Central Coast. Researchers at the Carnegie Institution for Science have learned that approximately 58 million additional large trees are suffering from severe canopy water losses.

Q. *What trees in California are dying in the greatest numbers from drought and bark beetle?*

A. Ponderosa pine, Jeffrey pine, and pinyon pines are most impacted by bark beetles, but many trees have died just from lack of water in the current drought. Most other pine species, white fir and incense-cedar are also heavily impacted by the prolonged drought and by bark beetles. There is also an increase in tree mortality among oaks, although it is primarily attributed to drought, not bark beetles.

Q. *What are bark beetles?*

A. Bark beetles are small insects, generally black, hard-shelled and approximately 5 millimeters in length—about the size of a piece of cooked rice. Bark beetles tunnel under bark, cutting off the tree’s supply of food and water needed to survive. Bark beetles can kill a tree in as little as two to four weeks during warmer months.

Q. *How do I identify bark beetles?*

A. In bark: Look for reddish-brown pitch tubes. These ½-¾ inch blobs of sap on the outside of a tree trunk are a sign that bark beetles successfully attacked the tree.

Leaves/needles: Needles on dying conifer trees and pines begin to turn a reddish-brown and often start changing color at the top of the tree. The color change gradually moves down the tree. Other trees may slowly fade from green to brown.

Outside of tree: Flaking bark, or holes in the bark caused by woodpeckers, are good indicators that bark beetles or other insects are present.

Q. *What is the role of bark beetles?*

A. Under normal conditions, bark beetles renew the forest by killing older trees and those weakened by disease, drought, smog or physical damage. When trees are weakened due to lack of water from prolonged drought, they are more susceptible to bark beetle attacks. Increasingly successful attacks cause the bark beetle population to explode.



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Q. *How do bark beetles attack?*

A. Bark beetles attack stressed trees by boring holes into the bark. A normal, healthy tree would be able to fend off attack by exuding pitch into the holes pushing the beetle out. But drought-stressed trees have a difficult time producing enough pitch to fight off insects. Compounding the problem, beetles release pheromones that attract other beetles. This mass influx of beetles can quickly overwhelm a tree. Bark beetles are also attracted to freshly cut wood.

Q. *How do bark beetles multiply?*

A. Beetles bore through tree bark and lay their eggs. Larvae feed on the tree's living tissues, cutting off its natural process for transporting nutrients and water. One bark beetle infestation can create several thousand beetles and easily spread to neighboring trees.

Q. *How do I know if a tree is dead from bark beetles?*

A. Early signs may be difficult to interpret, but if there are signs that bark beetles have successfully attacked a tree (see above), the tree is dead or will die soon. It often takes months for outward signs of mortality to show.

Q. *If there are dead trees on my residential property, what should I do?*

A. Dead trees need to be removed. They are a fire hazard because they are fuel for wildfire to burn. Standing dead trees will rot, becoming unstable, and will eventually fall. Dead trees can fall on people, homes, buildings and infrastructure, such as power lines. The sooner a tree is removed the better. The more it rots, the more unstable it becomes. For larger trees located near houses and other infrastructure, foresters and arborists prefer to remove them in pieces. However, if the tree is too rotten, it is unsafe to climb and difficult to predict where it will fall.

Q. *Whose responsibility is it to remove a dead tree?*

A. On private property, it is the responsibility of the property owner to remove dead and dying trees. It is recommended that landowners consult with a licensed professional forester or arborist if they are unfamiliar with tree harvesting practices.

Q. *Will the Governor's Executive Order (October 2015) regarding tree mortality provide assistance to homeowners and private land owners?*

A. California's Tree Mortality Task Force will be looking at resources and funding to help landowners, especially those located near evacuation routes, power lines, public roads and infrastructure. Currently, CAL OES is reviewing potential use of the California Disaster Assistance Act for Tree Mortality to local jurisdictions (counties, cities, and special districts) to help with the identification, removal, and storing of dead trees. Local jurisdictions must apply and show risk to public infrastructures.

Q. *I can't afford to remove my trees, what should I do?*

A. Investigate local assistance opportunities. Most likely there are others in the community with a similar situation. There may be local efforts to help those needing assistance. Talk to your local [Fire Safe Council](#) or your local fire department. The state's Tree Mortality Task Force is looking for opportunities to host "funding fairs" in affected communities where local groups and individuals will be able to meet with multiple agencies to talk about available funding. Information on these funding fairs will be posted on www.PrepareForBarkBeetle.org.



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- Q. *What do I do with my dead trees now that I've cut them down?***
- A. You can either leave the dead trees on your property or you can have them removed. If you are leaving the trees on your property they need to be properly handled. If you plan on using the wood for firewood, cut to the appropriate size and store. Wood from bark beetle-infested trees can be covered with plastic, following a specific technique to kill the beetles, and left covered for several months. See [Tree Note 3](#) for more information. If wood is not going to be used, lop—or chip and scatter—the wood. The smaller the pieces the better. Chipping will kill bark beetles and the smaller pieces are less of a fire hazard.
- Q. *Can dead trees be burned?***
- A. Yes, on permitted burn days. Check with your local fire station, CAL FIRE office, or air quality district for details on burn days and proper burning requirements.
- Q. *Are there restrictions on the usage of wood from diseased trees?***
- A. If you plan to use a diseased tree for firewood, follow proper storage techniques and make sure the wood is burned locally. Do not transport firewood to another location as it may introduce detrimental insects and disease into a new area.
- Q. *Is the wood from dead trees safe to use as mulch around a home?***
- A. Yes. If chips are from a bark beetle infested tree, chipping and scattering will also kill the beetles. Trees dead from drought are also safe to use. If the tree is dead from other insects or diseases, check with a licensed forester before using around your home.
- Q. *Do I need to hire a licensed tree service or can I cut down dead trees on my property?***
- A. It is highly recommended that you hire a professional to cut down your trees, as tree removal can be dangerous. Falling trees can also be hazardous to people, nearby buildings, cars, other trees and infrastructures. It is also a good idea to make sure you, or your contractor, have adequate liability and damage insurance coverage.
- Q. *What environmental requirements are there for removing dead trees on my property?***
- A. An emergency regulation by the California Board of Forestry and Fire Protection in 2015 allows for an exemption to cut dead and dying trees of any size without the normal regulatory requirements such as a timber harvest plan, submission requirements, and completion and stocking report requirements. For more information visit: http://www.ReadyForWildfire.org/Dead_Tree_Removal
- Q. *Is there a limit to the number of dead trees that can be removed from a property?***
- A. No. If the dead trees are in areas surrounding a home, buildings or infrastructure, these trees should be removed first. If the trees are in a forest, some dead trees may be left as snags for wildlife habitat. Dead trees located near fuel breaks, and within 100 feet of all structures, need to be removed.



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Q. *Can I use the timber I cut on my property?*

A. If you plan to utilize the wood for yourself, such as for firewood, you do not need to file a timber harvest plan with CAL FIRE. However, if you plan to sell logs or chips that result from tree removal, or use their value to offset the cost of removal, you are required to file a timber harvest document with CAL FIRE.

Q. *How do I prevent bark beetles in the future?*

A. The best way to prevent bark beetles is by following best forest health practices. In order to do this, you need to plan for extreme weather years. Ensure that trees are widely spaced, and that the number of trees growing on your land is appropriate for the acreage in order to reduce competition for limited water, light and soil nutrients. There are some professional chemical treatments that may help trees fight off bark beetles, but they have not always been proven to work.

Q. *How does California's bark beetle problem compare with that of the rest of the nation?*

A. Bark beetles have destroyed 45 million acres of forest in the western United States in recent years, including 15 million acres of Forest Service land. Studies have shown that trees are dying faster than ever in old-growth forests of California and the mountains of the West. In addition to the drought and bark beetle infestations, some scientists have linked tree mortality to rising temperatures, earlier than normal snowmelt, and forest fires.

Q. *What are the long-term consequences of shrinking forests?*

A. As forests shrink, less carbon dioxide is absorbed from the atmosphere and stored in the living tissues of the trees in the forest. This means more greenhouse gases will be released from dead trees and enter the atmosphere, and fewer trees will remain to absorb carbon dioxide.

Q. *How can I reduce the risk of wildfire on my property?*

A. Be proactive. Follow defensible space regulations on your property:

- Remove dead trees, especially around your home.
- Create 100 feet of "defensible space," the natural and landscaped area around a structure that has been maintained and designed to reduce fire danger.
- Maintain trees by thinning overgrown trees and watering as necessary.
- Plant a diversity of tree species, including drought tolerant species of trees native to the area.