

# WHY ARE CONIFERS DYING?

Across the state, but in the Sierra Nevada in particular, unprecedented numbers of trees have died on both public and private land. Many trees stressed from the four year drought and overcrowding have succumbed to bark beetles. Aerial detection surveys done in 2016 showed that 102 million trees have died.

Hardest hit have been ponderosa pines (*Pinus ponderosa*) but many incense cedars, sugar pine and white fir have died too. Western pine beetle is the primary culprit killing ponderosa pine, although mountain pine beetles and pine engravers have also been active.

Removing dead trees from your landscape is important, especially around your home. Dead trees should be removed to avoid falling onto homes or other infrastructure. Dead tree debris should be cleared to reduce fire risk and to create defensible space around your home.

# DEFENSIBLE SPACE:

## **REMOVE:**

Create a lean, clean, and green zone 30 feet around any structure.  
Remove branches, limbs and brush 8-10 feet above ground.

## **REDUCE:**

Reduce the number of shrubs and trees from 30 to 100 feet from the structure, or up to the property line to create a reduced fuel zone.

## **REPLACE:**

Replace fire prone vegetation with green areas and fire breaks.

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# WHAT TO PLANT AFTER TREE LOSS



**UNIVERSITY OF CALIFORNIA  
COOPERATIVE EXTENSION**

# WHAT NEXT?

## ASSESS YOUR LANDSCAPE

See what is left after tree removal. Survey your property, mapping where you find living trees and identify by species and size.

## NURTURE EXISTING TREES

If you have a significant number of trees left, you may not need to replant. Thin trees so that available sun and soil moisture is focused on the healthiest trees. Water where trees are receiving more sun to reduce stress.

## REPLANT

Native conifers are the best option and are adapted to our climates. Due to climate change, choosing trees that are from a slightly lower elevation may hedge against warmer temperatures in the future.

## MAINTAIN

Clear competing vegetation, mulch and water new trees for the first few seasons as needed.



# MORE RESOURCES:

## UC Forest Research and Outreach:

<http://ucanr.edu/forestry/>

## UC Forest Stewardship Series: Pests and Disease:

<http://anrcatalog.ucanr.edu/pdf/8246.pdf>

## CalFire Ready for Bark Beetle:

<http://www.readyforwildfire.org/Reforestation>

## CalFire's Tree Mortality Mapper:

<http://egis.fire.ca.gov/TreeMortalityViewer/>

## US Forest Service S. Sierra Forest Health Program:

[https://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3\\_046697](https://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3_046697)

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Tuolumne: 209-553-5912

# OPTIONS FOR REPLANTING:

## LARGE TREE SAPLINGS

Most expensive to purchase. Requires soil amendments and weekly waterings during the dry season for the first few years. Best for select locations near the home for visual screening or wind breaks.

## SMALL CONTAINER-GROWN TREE SEEDLINGS

Much less expensive to purchase though may require some care including watering during the dry season. May be held in pots until ready to plant.

## BARE ROOT TREE SEEDLINGS

Least expensive option. Does not require soil amendments or watering when planted during periods of high soil moisture. Best option for planting numerous trees on large acreages.

## OAKS

Container sized plants can be expensive. Least expensive option is starting by seed. Gather acorns locally in the fall and plant immediately. Germination success can be high if done right.