

# How Do Wildfires Weaken and Kill Trees?



Catastrophic wildfires can damage trees in many ways. It can be difficult to tell how fire-damaged and hazardous a tree is by looking at its canopy alone. The intensity, duration, and timing of the wildfire along with tree characteristics can influence the severity of damage. For example, some tree species have thinner bark and more shallow root systems, which makes them more vulnerable to fire.

## Bark char

Damage to the bark and plant tissues underneath can disrupt the flow of nutrients and water from the base to the crown of the tree.

## Crown scorch

Fire can burn the needles at the top of the tree, disrupting photosynthesis. Buds and cones can also be destroyed, which reduces future survivability of the tree.

## Damaging pests

Fire damage can affect a tree's natural defense systems against wood-boring insects. Insect pests can attack trees for years after a fire.

## Windthrow

Burned roots can make the tree unstable and more easily toppled and uprooted by wind.

## Burned roots

Even green trees can have fire-weakened roots, which compromise the structural integrity of the tree.

## Trunk failure

A fire can quickly turn a tree into a chimney, burning up through its interior and causing damage to the trunk.

