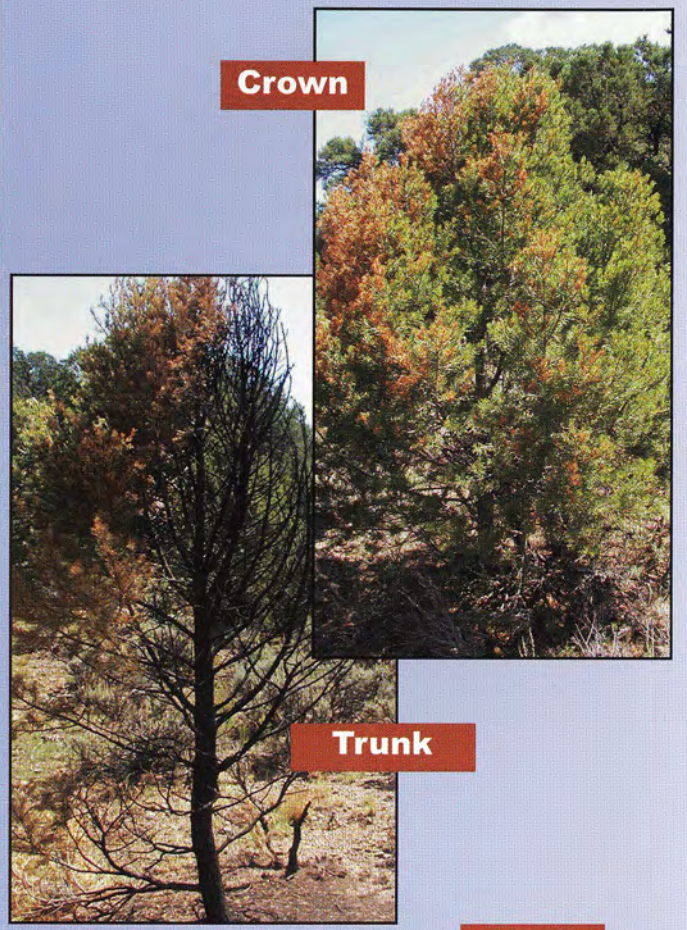
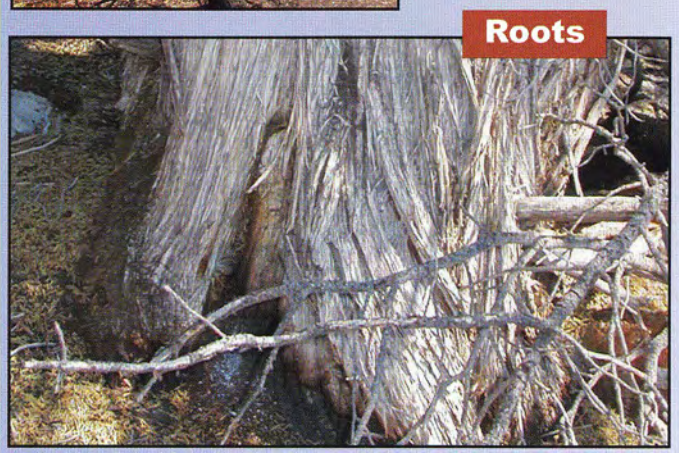
Pinyon Pine and Juniper Survivability Is Determined By Amount of Damage To:





For More Information:

Additional information may be obtained from the following sources:

Colorado State Forest Service
www.colostate.edu/Depts/CSFS

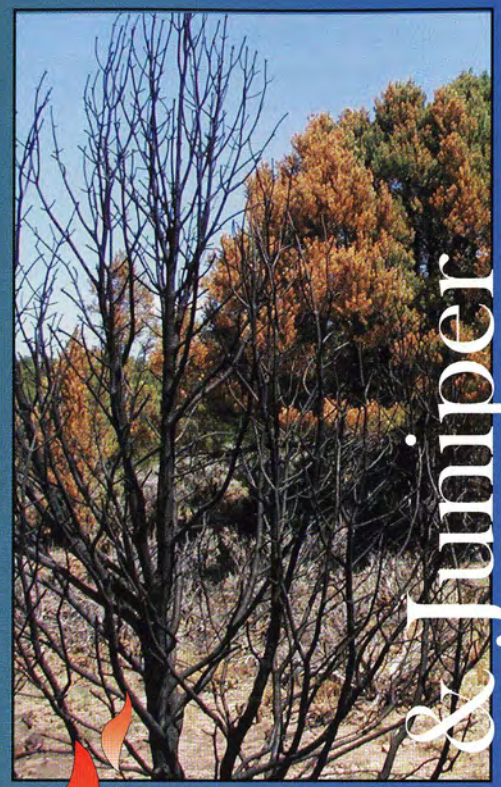
USDA Forest Service
www.fs.fed.us

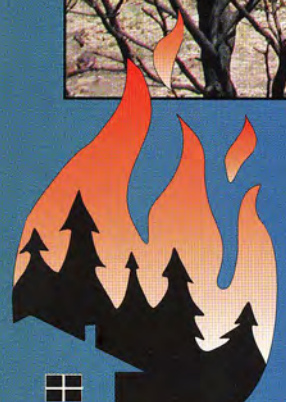
Colorado Tree Coalition

Colorado State Forest Service

Forest Service U.S. Department of Agriculture

How to:





Pinyon Pine & Juniper

- Identify Pinyon pine and Juniper which will survive fire damage
- Determine amount of fire injury which will kill pinyon/juniper trees
- Make management decisions regarding pinyon/juniper after fire

Pinyon Pine & Juniper

Pinyon pine and juniper are commonly found growing together in Colorado. There are three distinct species of juniper in Colorado; Utah juniper, Rocky Mountain juniper and Oneseed juniper. These junipers can be found growing in association with pinyon pine between 4,500 and 9,000 feet in elevation.

Crown Scorch:

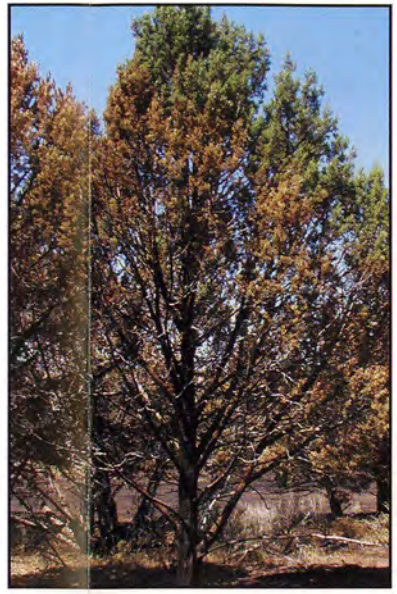
Both pinyon and juniper trees are very sensitive to wildfire due to their low-growing bushy habit. Trees that are 4 feet tall or smaller are likely to die even if an approaching fire has a low intensity. Older trees have a more open growth habit allowing trees to survive a low intensity wildfire. Pinyon pine and junipers with greater than 50% burned foliage are prone to die.

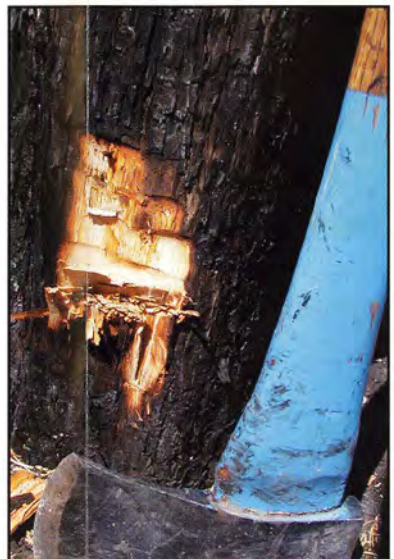
Trunk Scorch:

Young pinyon and juniper trees have thin bark predisposing trees to 100% mortality. Older trees have thick bark and can survive low intensity fires, which typically have two foot or less flame lengths. The bark on an old pinyon can be as thick as one inch, which will insulate inner bark from heat of a low intensity fire. Juniper bark on older trees can also withstand fires with short flame lengths.

Root Damage:

Due to over all sensitivity of these trees to wildfire examine the crown first and then the root crown. Pinyons and junipers do not sprout like other native forest trees when the crown has burned.





Assessing Damage

Crown: Look for brown, dried, or burned foliage. Estimate amount of foliage burned; be sure to look at all sides of the tree. If more than 50% of foliage is dead, the tree will likely not survive.

Trunk: Remove a small section of bark (about 1-inch square), near the tree's base, down to the white colored wood. Determine color and condition of inner bark. If it is pale green and moist, it is still alive and healthy. If it is brown and dry, it has been killed. Check at several sites around the tree's circumference. If inner bark at more that two of those sites is dead, tree survival is questionable.

Roots/Root Collar: At or below the soil line, check condition of inner bark using the same method as used on the trunk. If inner bark on more than half of the samples (more than half of tree's circumference, or more than half of large lateral roots) is brown, tree survival is unlikely. Trees with this amount of damage are often attacked and killed by bark beetles.

What to Do?

Remedial Action:

Pinyon and juniper trees are usually less than 30 feet tall. Unless the burned tree has a potential target that could be damaged if hit by a fallen tree, then these trees are not usually considered to be hazardous. Leaving some standing dead trees on the site is desirable for cavity nesting birds.

Protective Action:

If at least half of the pinyon pine's inner bark and foliage is alive, it will probably survive the effects of the wildfire. It will, however, be very susceptible to attack by bark beetles or borers. These insects can detect trees stressed by wildfire. A sure sign of bark beetle activity is the presence of boring dust or globs of pitch on the branches or main trunk. Woodpeckers pecking and leaving large patches of rough holes in the bark also indicates the presence of insects inside trees. All pinyons that have 50% or better live foliage and are important to retain on site must be sprayed with a chemical that is registered to protect them against attack by bark beetles.

Notes: Bark beetle activity in a burned over area will increase as long as the junipers and pinyons have wood that is suitable for breeding. Bark beetles need green inner bark to produce a successful brood. Dry wood will not be attractive to bark beetles. Likewise bark beetles are attracted to the resins produced by cutting activity. Therefore cutting of trees should be confined to the winter months or when bark beetles are not active. Bark beetles could be active from March through early November.