

## Many Big Fires Burn Where People Live, Work and Play

Forests that are most vulnerable to catastrophic fire are concentrated at lower elevations where increasingly people are building homes. Deliberate forest thinning and removal of fuels greatly reduces the danger these fires pose to firefighters, private property and communities.



*This fire burned so differently in an area previously treated with timber harvest and prescribed fire (right).*

### For More Information . . .

contact your local Forest Service office or:

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Southwestern Region  
333 Broadway Blvd., SE  
Albuquerque, NM 87102  
Phone: (505) 842-3292  
TTY: (505) 842-3198

**Or visit:** [www.fs.fed.us/r3](http://www.fs.fed.us/r3)

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## Fire and Fuels

Without fuels, what's a fire to do?





## Fire—a Historic and Living Legend

Throughout history, fire has been a natural element in our forests and grasslands. These frequent fires were a vital part of the ecosystem.

In the 19th century, increased grazing by domestic livestock removed grasses that had previously carried cool surface fires.



*These pole-sized ponderosa pines are too close together to ever allow any of them to become large trees. There is little or no vegetative ground cover and they are at high risk from bark beetles and catastrophic fire.*

Without low-intensity fires, many small trees survived that normally would have burned. Adequate moisture allowed them instead to survive and become far too dense. Today, some of these trees are quite large, and along with dead wood and brush, provide fuel for large, destructive fires.

Fuel buildup increased further because early 20th century forest managers viewed fire as an absolute enemy. When a fire started, it was extinguished as quickly as possible.

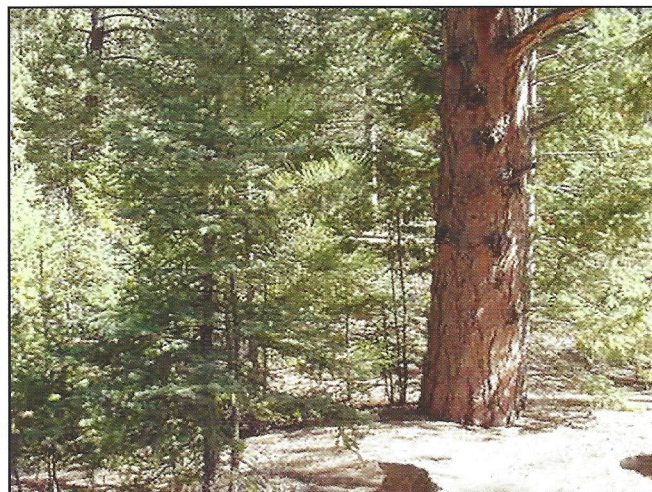
## Too Many Trees for the Forest's Own Good

There are too many live, standing trees that are too close together in the forests of Arizona and New Mexico. This is the major reason high-intensity, stand-replacing fires take control where few, if any, trees survive.

Historically, pine forests supported a few dozen trees per acre. Now most acres support hundreds, and sometimes thousands, of trees.

This kind of overcrowding stresses trees by creating excessive competition for moisture and nutrients. The resulting weakened condition of the trees leaves the forest susceptible to insect epidemics, which lead to the death of millions of trees.

Overcrowding can turn what might be a beneficial, low-intensity surface fire with flame lengths below 3 feet, into an ecologically catastrophic, high-intensity "crown fire" where extreme temperatures kill trees, destroy habitat, degrade watersheds and sterilize soils. Sometimes, extremely hot fires will change the ecosystem from forest to brushfield.



*One large yellow pine surrounded by young, small trees. Oftentimes, the small trees out-compete the larger ones for moisture, and the larger tree may die if no treatment is done.*



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## Forest Thinning, Fuel Removal, Selective Harvesting

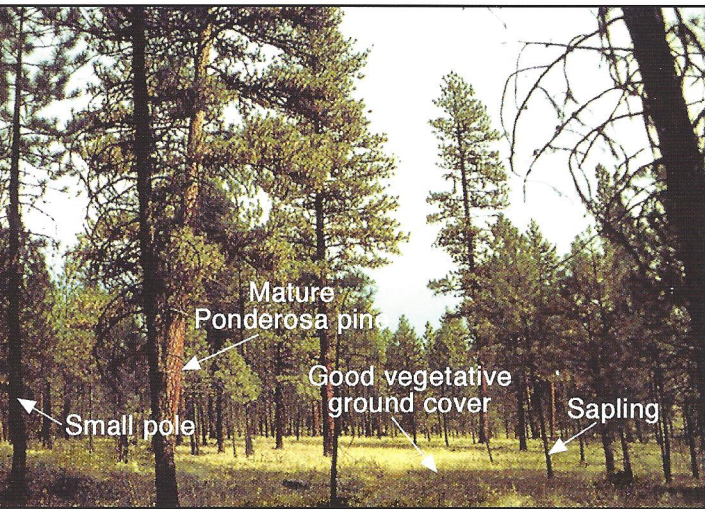
Three factors determine the extent and intensity of forest fires:

- abundance of fuel
- weather
- terrain

We can influence only one of these factors in a meaningful way: we can reduce available fuels. With less fuel, the severity of wildfires is significantly less.

One way to thin out trees is with prescribed fire, a low-intensity flame applied by trained experts. Under the right conditions, a prescribed fire will thin out some trees and clear the ground of dead wood and brush.

Another way is to remove trees by occasional selective harvesting or tree thinning. Large and small trees can be removed so that a diverse forest with trees of all sizes remains. Selective harvesting is a forest manager's way of helping nature do its job.



*orable ponderosa pine stand: open and multistoried.*

Firefighters oftentimes cannot stop these very dangerous fires. The fires will burn until weather or terrain slow their advance—or they run out of fuel.



*This previously treated area burned at low intensity during the Rodeo-Chediski Fire causing little damage. Surrounding untreated stands experienced high-intensity crown fire.*



*The green area at left had been treated pre-fire by removing some trees. Minimal damage was caused when the 2002 Rodeo-Chediski Fire swept through.*



## Forest Thinning: Not a One-Time Deal

Once sunlight and moisture are able to reach the forest floor, an abundance of new growth is triggered. Grasses, shrubs, berries and insects that are the cornerstones of a food chain, attract birds, deer and bear. The thinned forest mimics an old-growth forest where all ages of trees exist.

### As trees continue to grow—thinning continues to be necessary.

Every year, a healthy tree will produce a one-tenth inch growth ring—all the way around, all the way up. Picture that amount of growth on all trees in a healthy, uncrowded stand. In recent years less than 5 percent of new growth annually has been removed by thinning or harvesting from the national forests of Arizona and New Mexico.

### What becomes of trees that are removed? Are they put to good use? You bet!

- Lumber to build new houses
- Telephone poles and posts for fences
- Pellets to heat schools and houses
- Paper for your daily newspaper
- Shavings for animal bedding
- Piled and left onsite for wildlife
- and hundreds more!



## You Can be Involved to Help Lessen the Threat of Wildfire

- Contact your local Forest Service office. Let the ranger hear your concerns and your interest in getting involved.
- Share your ideas to find reasonable solutions and your willingness to assist in taking action to get on with the thinning and fuel reduction program.
- Arrange for an information presentation by a Forest Service resource professional. They are available and willing to speak to interested groups about forest health issues.
- Organize a group of volunteers who can help Forest Service employees pile or clear brush, pull invasive weeds, or assist with other tasks.
- Learn more about your forests and grasslands and the need to thin and care for them so they stay healthy and disease free.
- Where you live, create a fire-safe, defensible space around your home. See [www.firewise.org](http://www.firewise.org) for more information.



*Before 1962, these two areas were identical. The stand at left was thinned in 1962 and has been treated since then to maintain tree density. The stand above remains untreated. It provides almost no benefit to wildlife and, should a fire start, it would be destroyed.*