

ARIZONA'S RODEO-CHEDISKI FIRE: A FOREST HEALTH PROBLEM



Paul Keller

Arizona's White Mountains are not what they used to be, easily hosting the largest conflagration in Arizona history.

Arizona's White Mountains were the setting of the biggest wildland fire in Arizona's history, the Rodeo-Chediski conflagration in the summer of 2002. If conditions don't improve, this anomaly could become the norm.

Despite 23 helicopters, 9 air tankers, 237 fire engines, 89 dozers, 95 water trucks, four incident management teams, and 1,900 wildland firefighters (including 400 hotshots), Rodeo-Chediski chased 30,000 residents from their homes, gobbled up almost half a million acres of forest lands, and vaporized 450 residences.

Too Many Trees

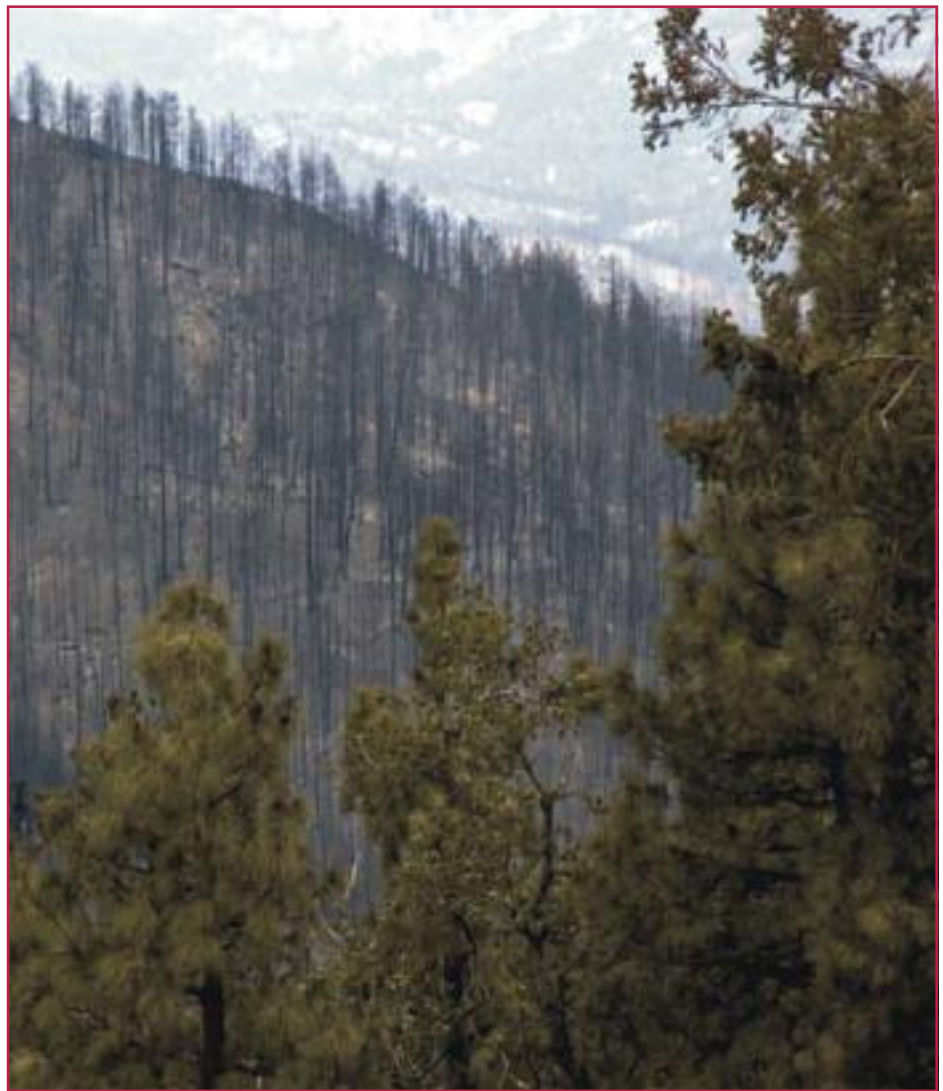
How did it happen? Drive any White Mountain road, and you will see herds of homes tucked deep into the surrounding, overgrown woods. Historically, 2 to 20 ponderosa pines per acre climbed into the sky from open, grass-covered ground. Now, a mix of 150 to 200 smaller trees per acre choke the forest floor. There's no question that the abundance of trees, coupled with a parching drought and fire-conductive weather conditions, fueled the Rodeo-Chediski explosion.

Paul Keller, a former hotshot and journalist, is a contract writer/editor for the USDA Forest Service, Fire and Aviation Management Staff, Washington Office, Washington, DC.

An overabundance of fuel—trees—coupled with a parching drought and fire-conductive weather conditions fueled the explosive Rodeo-Chediski Fire. Photo: Tom Iraci, USDA Forest Service, Pacific Northwest Region, Portland, OR, 2002.

The onslaught of high-density vegetation patterns came during the past century in the White Mountains and throughout much of the West. Researchers point to public attitudes, needs, and desires, leading at various times to overgrazing, fire exclusion, and the selective removal of large, centuries-old trees—what loggers call “high-grading.”

Climate fluctuations also figured in; rainfall in many areas was higher than normal in the late 20th century, supporting exceptional plant growth in the arid Southwest. Couple all this with declining timber removals in the last 20 years and a return to more normal aridity, and the stage was set for extreme and unusual fire behavior.



Thinning the trees in overgrown ponderosa pine forests benefits both ecosystems and communities.

Unhealthy Conditions

As our forest and range managers now realize, the problem is rooted in human activity. For many years, we simply interrupted Mother Nature's plan. Now it's time to make amends; simply sitting back and doing nothing can only make matters worse (*see the sidebar*).

For thousands of years, small lightning-sparked fires frequented the southwestern ponderosa pine forests. For the most part, the flames crept and jumped along the ground through open stands of trees, which helped thin the smaller, encroaching vegetation. This natural process also produced fertile ash that stimulated the growth of grasses and wildflowers, many of which fixed nitrogen in the soil, helping to maintain the forest's overall health.

At the turn of the 20th century, as more people began settling western landscapes, forest health began to decline. Today, an overabundance of trees and brush is strangling our southwestern forests, with devastating effects for communities.

Just ask the Arizona residents along the Mogollon Rim, who watched Rodeo-Chediski's approaching fire front spew nightmare-orange flames hundreds of feet into the air. The fire destroyed hundreds of homes, costing property owners millions of dollars. The White Mountain Apache Reservation lost commercial timber valued at hundreds of millions of dollars.

"These conditions can lead to catastrophic losses from wildfire as well as from insects and disease," observed Forest Service District Ranger Ed Collins, whose Lakeside Ranger District on the Apache-Sitgreaves National Forest was 20 percent burned by the fire. "The very trees people most want protected—the large old-growth trees—are at risk. These areas need restoration."

Jim Youtz, supervisory forester for the Fort Apache Agency, USDI Bureau of Indian Affairs, said he had never before seen the scale of devastation caused by the Rodeo-Chediski Fire. "We knew this was a potential year for it," he assured. "But what this fire did—taking out an entire landscape—completely amazed us."

Active Management Needed

Open ponderosa pine normally doesn't burn severely, but a large fire could happen in any ponderosa pine forest overcrowded with brush and small trees. Although fuel treatments usually won't prevent a wildfire, they will change the fire's behavior and keep it from becoming so destructive. Rodeo-Chediski showed it again and again: Fire effects tended to be relatively light in open areas treated before the fire, whereas neglected overgrown areas often burned with uncharacteristic severity.

The answer is clear. Despite the best of intentions, people did things in the past that put many southwestern ponderosa pine forests in their present poor condition. That makes it our responsibility today to do what we can to restore these forests to a healthy, resilient condition. As our public land managers now realize, working together we must do the right thing for the future of our forests and communities. ■



Aftermath of the Rodeo-Chediski Fire in untreated (left) and treated (right) areas on the Black Mesa Ranger District, Apache-Sitgreaves National Forest. Thick ladder fuels, historically atypical in southwestern ponderosa pine, supported high-severity burning with unusual fire effects (left). Where fuels were reduced before the fire to levels more consistent with historical conditions, fire effects were more typically light (right). Photo: Tom Iraci, USDA Forest Service, Pacific Northwest Region, Portland, OR, 2002.

What Comes From Doing Nothing?

By 1994, forest health was clearly declining on the Black Mesa Ranger District of the Apache–Sitgreaves National Forest. Alarmed, forest managers and resource specialists launched a 4-year intensive environmental analysis on 28,000 acres (11,000 ha) known as the Baca Ecosystem Management Area. In 1999, the forest supervisor finally approved a plan of action.

The goal was to restore the ponderosa pine forest to something like its historical condition. The plan called for a combination of thinning and burning to remove small trees and allow the bigger ponderosa pines to flourish, thereby reducing fire danger. About a quarter of the project area was explicitly allocated for old-growth management.

Interested citizens, groups, tribes, and government officials all participated in the planning process. However, 5 weeks after project approval, the decision was appealed by a Tucson-based organization. The appeal was denied after 6 more weeks, but that wasn't the end of it. In May 2000, the same group litigated to stop the project. Three months later, the plaintiff finally agreed to allow thinning of trees up to 6 inches (15 cm) in diameter on 306 acres (124 ha).

Foresters questioned whether the “diameter cap” would allow the canopy to be opened enough to reduce fire danger and restore forest health. “To keep up with this abundance of regeneration in our mixed conifer and pine areas,” lamented Gayle Richardson, a silviculturalist, “this district should be

thinning at least 20,000 acres [8,000 ha] per year. But we're only thinning 3,000 [1,200 ha].”

Hampered by staffing cuts and collateral duties for remaining employees, the Black Mesa Ranger District struggled to complete the project. “We're all doing double duties,” Richardson said. “We're trying to run our programs. But we must

also respond to time-consuming appeals and lawsuits. It's so frustrating.”

In May 2002, drought conditions and extreme fire danger temporarily shut down the Baca project. In June, the Rodeo–Chediski Fire burned about 90 percent of the Baca Ecosystem Management Area, ending the project for good.



Ponderosa pine forest in the Baca Ecosystem Management Area in untreated (top) and treated (bottom) areas. Treatments remove thickets of small, weak trees, leaving behind the largest trees to grow in open forests more resembling those at the time of European settlement. In treated areas, fire is far less dangerous than in untreated areas. Photo: Tom Iraci, USDA Forest Service, Pacific Northwest Region, Portland, OR. 2002