

# THE PARADOX OF WILDLAND FIRE

By Jane Braxton Little

Who who love wilderness face a daunting dilemma. Every summer we watch smoke clouds rise over the land. Some people flee the flames. Others die fighting them. When fires threaten homes and the wild places that are our secret escapes, we feel compelled to control them.

Yet we know that fire is a quintessential force of wilderness—that it evolved with these ecosystems to cleanse and restore them. We know that removing fire from the land leaves it less natural. Our challenge is to find a way to allow fire to play its historic role in landscapes that depend on it and, at the same time, protect our human needs.

We began curtailing the role of fire in forests 150 years ago, when entrepreneurs started moving sheep and cattle west into ponderosa pine groves. The animals grazed on native grasses, devouring the light fuels that had historically carried ground fires through the forest in low-intensity burns. Then the loggers arrived. They felled the large trees that were nurtured by the grass fires. Most loggers left the tree crowns and limbs on the ground, building up fuels that the surface fires no longer consumed.

After the 2002 Biscuit fire in Oregon, regrowth occurred quickly, as it usually does.



The Wilderness Society 2003-2004  
**Wilderness**





**Large trees, like this Douglas fir in Plumas County, California, often survive fires.**

The *coup de grace* for fire's natural role in the woods was delivered by the U.S. Forest Service. Gifford Pinchot, its first chief, decided to eliminate fire. It claimed too much of the commercial timber he viewed as the objective of forest management. Our government has waged war on wildland fires ever since. Last year taxpayers spent \$1.6 billion suppressing these fires. We can measure Pinchot's success in the dog-hair thickets found in national forests today.

Soon we had more reasons to keep fire at bay. Lulled by assurances that we could control fire—by 10 a.m. the next morning, according to one Forest Service policy—we built cabins and entire communities at the edges of wildlands. Road systems and power lines began fragmenting the landscapes that once stretched unbroken over mountains and across remote valleys. When fires erupted, the consequences were too dire to let them burn.

Or so we thought. The latest science confronts us with this uncomfortable reality: Fireproofing forests is not only an oxymoron; it is also ecological folly. Many forests need fire. Suppressing all fire upsets ecological balance and dramatically increases the potential for catastrophic fire.

Flames affect different ecosystems differently. Lodgepole pine and Engelmann spruce forests burn every several hundred years, but the heat is so intense that it destroys entire stands, which then start over from the seedling stage. The 1988 Yellowstone fire burned 1.4 million acres in a fire that ecologists say arrived exactly on that ecosystem's schedule and provided precisely the benefits fire evolved to perform.

In lower-elevation mixed conifer and ponderosa pine forests, tree-ring scientists have chronicled scores of fires occurring over several centuries. These surface fires not only kept undergrowth and ground litter from accumulating; they also recycled nutrients into the soil and created habitat for plants and wildlife. The 2002 Biscuit fire burned through a 500,000-acre area in southwest Oregon, but most of the land burned lightly, relieving the ground of flammable debris and encouraging fire-adapted plants.

It is in these mid-to low-elevation pine forests—the most desirable places for cabins—that we have disrupted ecosystems most dramatically. Suppressing fires here has removed a basic element as necessary as sunshine and rain. The result is a buildup of fuels primed for the spark that will kindle “the big one.”

Climate, too, has contributed to forest fuel loading. Tom Swetnam, director of the Laboratory of Tree-Ring Research in Arizona, says that wet periods followed by dry periods in the Southwest made the 1700s “very fiery.” The warm, wet weather between 1976 and the early 1990s was unprecedented over the last 1,000 years. That led to a pulse of fuel accumulation. Swetnam thinks we are now facing a megadrought, a trigger for stand-replacing fires abnormal in healthy ponderosa pine ecosystems.

Ecologists are convinced that we cannot stop fires from burning, but they believe we may have some effect on how they burn. Options include: thinning small-to mid-diameter trees that create a ladder to



the forest canopy; prescribed burns, which are intentionally set under controlled conditions to consume brush and small trees; and natural fires, started by lightning and allowed to burn under close supervision.

Most fire scientists consider thinning helpful, particularly where the undergrowth is too dense to burn naturally. But it is fire that fire-adapted ecosystems truly need, they say. Returning fire to ecosystems is our only hope of reducing the long-term risk of catastrophic burns, and the only way to restore and sustain wildlands.

The Wilderness Society has launched a program to reintroduce fire to wildland ecosystems in a socially acceptable manner, which requires reducing the threat to communities near forests. It encourages strategic thinning and prescribed burning to create “community protection zones.” The work literally starts at home. Once homeowners have removed brush and other hazardous fuels around their houses, the thinning should extend out around communities. “Only when people feel safe will they be receptive to reintroducing wildland fire,” says Jay Watson, director of the program.

Bolstered by the \$1.9 billion Congress allocated for the 2001 National Fire Plan, work has begun in places like Santa Fe, where landowners have developed a plan with the Forest Service to thin 7,000 acres. They will harvest no commercial timber and retain a canopy that mimics the natural ponderosa pine forest. Melissa Savage, who lives near the Santa Fe National Forest, is prepared to accept the risk that comes with living in a fire-adapted area. “I love it here. It’s beautiful,” she says. But she worries that government funding is going toward removal of large, fire-resistant trees in remote areas, not the small-diameter trees that pose the greatest

risk to communities. “That’s nothing but a give-away for loggers,” she says.

Besides providing safety, community protection zones offer an opportunity to learn how soils and plants respond to different tree spacing and to prescribed burns. Ecologists are taking these lessons to remote forests and wilderness areas. By monitoring how understory forbs, owls, and other species respond, they are learning how fires behave in ecosystems drastically altered by decades of fire exclusion.



© Lomakatsi Restoration Project

Whether these human-set fires will perform the way fire did historically is still unknown. Management techniques have a built-in bias against extreme events, says Norm Christensen, professor at Duke University. Key biological elements may depend on the infrequent fires that burn intensely. It’s almost impossible to replicate these without risking the dire consequences of the 2000 fire in Los Alamos, when an escaped prescribed burn destroyed 235 structures.

**Thinning can help limit the size of a wildfire, but such efforts should be focused on lands near homes (as above) rather than on remote forests.**





© Lou Gold

**If preventive steps are taken, as they have been around this house near Selma, Oregon, houses are much more likely to survive wildfire.**

National Park Service officials have been working with fire in the backcountry since the 1970s, when they began shifting from fire suppression to fire management. One of the most ambitious programs is in Yosemite. Last year, when their neighbors in Sequoia National Forest were battling a 160,000-acre fire, Yosemite officials were quietly monitoring a lightning-sparked blaze as it crept through the high country around White Wolf Campground. They escorted 30 visitors a day on fire history walks. Weeks later Yosemite crews ignited the needle litter and brush cluttering the ground beneath a stand of sugar pines and black oaks in Gin Flat. The goal, says Tom Nichols, Yosemite's fire management officer, is to burn 16,000 acres annually. The reality is closer to 6,000 acres.

Besides fear, the main obstacle is public opposition to smoke. Both the natural fires that park officials monitor and the prescribed burns they set generate so much criticism they are often forced to suppress them. "After a week of smoke, the public loses tolerance," Nichols says. He had to halt his Gin Flat burn at the halfway point: 3,500 acres.

The Forest Service is also shifting its philosophy from suppressing fires to managing them as natural phenomena, and each national forest is required to develop a fire management plan.

This summer 11 percent of the acres burning on federal land were started by lightning and allowed to burn. Wildland fires are not only better for the land, they're better for taxpayers, says Paul Boucher, Gila National Forest fire management officer. The cost of suppressing fire ranges from \$250 to \$1,000 an acre. Boucher spent less than \$20 an acre monitoring this year's lightning-caused burns using wildland suppression funds.

Unfortunately, "suppression mentality" continues to dominate the Forest Service, says Greg Aplet, a Wilderness Society forest ecologist. And the plans aren't always implemented. The Biscuit fire, the largest in 2002, burned on the Siskiyou National Forest, which recognizes the essential role of fire in its management plan. Nevertheless, officials spent over \$150 million putting it out.

Nature and the inevitability of fire may overpower even the best plans and intentions. Last year's Hayman fire in Colorado taught us that neither prescribed burning nor thinning with chain saws can prevent devastation. The 137,000-acre blaze raged through dry pine forests whether or not they had been burned or thinned. Nature trumped all. Only after the weather settled down did the flames ebb, halting at the edge of two recent fires.

Although scientists are more aware than ever of how little they understand about fire, they also know the hardest decisions ahead are not scientific but social. Our love for wild places has created a dilemma that is deepening as we give in to the urge to live near them. How much safety should we guarantee to people who choose to build houses in harm's way? Are we capable of accepting our place in the natural world? Only by resisting the temptation to control natural places can we keep them wild.

**Jane Braxton Little** writes for *Audubon*, *American Forests*, and other national publications from California's northern Sierra Nevada.