

FIRE FIGHT

With forests burning, U.S. officials are clashing with environmentalists over how best to reduce the risk of catastrophic blazes

BY PAUL TRACHTMAN

KATE KLEIN PARKS her U.S. Forest Service pickup truck along a muddy dirt road and climbs up a steep, rocky outcrop through a ghostly stand of burned ponderosa pines. Her boots sink into soot and ash. It is spring in the Apache-Sitgreaves National Forests in eastern Arizona and new grasses and seedlings should be turning the earth green. But from the top of the hill, she looks out over black trees as far as the eye can see, the remains of one of the largest wildfires in Arizona's history.

Klein, a 49-year-old district ranger with the Forest Service, had spent the better part of a decade trying to prevent a fire here (about 130 miles north of Tucson's June 2003 Aspen Fire, the first major blaze of the season) or at least minimize its effects. The 616,000 acres of the Black Mesa District under her care had long been a powder keg, she says, "a disaster waiting to happen," with too many trees per acre, too much deadwood littering the ground and everything made incendiary by years of drought. She came to believe that the only way to avoid catastrophic fires was to thin the forests through commercial logging, a process that would reduce what foresters call the "fuel load" and slow a fire's spread, giving firefighters a better chance of stopping it.

From 1996 to 1999, Klein and her staff studied the likely impact of logging on a 28,000-acre tract about six miles southwest of Heber-Overgaard, a mountain community of nearly 3,000 people. They had warned that a big fire could roar out of the forest and threaten Heber-Overgaard and nearby communities, places where more and more vacationers and retirees have built homes. "But when we talked to these people about thinning," she recalls, "most of them opposed it, because they moved here for the forest."

If local resistance surprised her, it was nothing compared with the battles to come. In September 1999, having developed a plan to log a third of the tract, Klein's staff filed an 81-page report—required by U.S. regulations—outlining the possible environmental impacts. Environmentalists pounced. Lawyers for the Tucson-based Center for Biological Diversity, nicknamed nature's legal eagles, and two other nonprofit environmental groups said the study

had insufficiently evaluated the effects on the environment and such wildlife as the Mexican spotted owl. They challenged the Forest Service computer model that suggested that the northern goshawk's habitat would actually be improved. They protested the harvest of large trees. The center barraged Klein with questions about logging trees infested with a parasitic plant called dwarf mistletoe: "What are the levels of infection in these stands? Have past harvests designed to stop dwarf mistletoe worked? Has the Forest Service monitored any such sales? Why is such a heavy-handed approach being used?" The environmental groups appealed to regional Forest Service officials to stop the project in November 1999. In February 2000, when the appeal was rejected, they notified the service that they intended to sue to block the project. Foresters continued to ready the forest for logging, marking trees to be cut.

Over the next two years, Klein's staff worked with lawyers on the legal case, responding to more questions and gathering more data. "If we don't write everything down, it's assumed we didn't consider it," she says. "Every time we lose a battle, we have to go back and do more analysis, computer models and evaluations. It's a downward spiral. We're forced to do so much writing that we spend less time in the woods knowing what we're making a decision about."

Until now, Klein had always thought of herself as an environmentalist. She had joined the Peace Corps and served in Honduras after receiving her forestry degree from Penn State in 1976. One of her first Forest Service assignments was at a New Mexico outpost, where she'd been proud to live in a house built by the pioneering forester and conservationist Aldo Leopold, author of the 1949 *A Sand County Almanac*, a

bible of the environmental movement.

In mid-June of 2002, Klein prepared her final rebuttals to the complaints of the legal eagles. Meanwhile, the drought extended into its fourth year. “The week before the fire, there were three of us in the office working on our response,” she says. “We worked all week and Friday night and Saturday, and we had just completed our report and sent it to the regional office on Monday. A fire broke out on Tuesday, a second fire started on Thursday, and four or five days later the whole area had burned up. Talk about frustration and hopelessness and anger and depression!”

The Tuesday fire had been set by an arsonist on the Fort Apache Indian Reservation, 22 miles from the Black Mesa Ranger Station in Heber-Overgaard. This fire was already burning out of control when, two days later, a hiker lost on the reservation started a fire to signal for help. Soon these two fires, the Rodeo and Chediski, would merge into an inferno.

FORESTS ACROSS THE WEST are primed for catastrophic fire, in part by a government policy put in place after the “Big Blowup,” in 1910, a two-day firestorm that incinerated three million acres in Idaho and Montana and killed 85 people. The fire was so ferocious that people in Boston could see the smoke. The U.S. Forest Service, then five years old, decided to put out every fire in its domain, and within three decades the agency had formulated what it called the 10 a.m. policy, directing that fires be extinguished no later than the morning after their discovery. As fire-fighting methods improved through the years, the amount of burned forest and grassland declined from about 30 million acres annually in 1900 to about 5 million in the 1970s.

But the success of fire suppression, combined with public opposition to both commercial logging and preventive tree thinning on federal land, has turned Western forests into pyres, some experts say, with profound ecological effects. The vast ponderosa pine forests of the West evolved with frequent low-intensity ground fires. In some places, land that had as many as 30 or 40 large ponderosa pines scattered across an acre in the early 1900s, in grassy park-like stands, now have 1,000 to 2,000 smaller-diameter trees per acre. These fuel-dense forests are susceptible to destructive crown fires, which burn in the canopy and destroy most trees and seeds.

“It’s as if we’ve spilled millions of gallons of gasoline in these forests,” says David Bunnell, the recently retired manager of the Forest Service’s Fire Use Program, in Boise, Idaho, which manages most wildland and prescribed fires and coordinates fire-fighting resources in the United States. During the past 15 years, the amount of acreage burned by wildfires has climbed, reversing a decades-long decline. In 2002, almost seven million acres burned—up from four million in 1987—and the federal government spent \$1.6 billion and deployed 30,000 firefighters to suppress wildfires. Twenty-three firefighters were killed.

Decades ago, Aldo Leopold prophetically warned that

working to keep fire out of the forest would throw nature out of balance and have untoward consequences. “A measure of success in this is all well enough,” he wrote in the late 1940s, “but too much safety seems to yield only danger in the long run.” Recently, the Forest Service has come around to Leopold’s view, but many environmentalists continue to oppose agency plans to remove timber from forests.

Klein, who took over management of the Black Mesa District in 1991, places herself in Leopold’s camp. “Over my years here, we’ve put out hundreds of lightning starts as quickly as we could,” she says. The practice protected communities at the time, she adds, but also increased the risk of fire in the long run.

BY NIGHTFALL, June 18, firefighters dispatched to the Fort Apache Indian Reservation believed they might contain the arsonist’s blaze. But the Rodeo Fire was burning too hot and too fast. On the morning of June 20, the other blaze—the Chediski Fire—was threatening to jump the Mogollon Rim and attack Heber-Overgaard and other communities. Klein’s husband, Duke, a wildlife biologist, and their three children were evacuated from the family home in Heber-Overgaard along with everyone else as the flames closed in. For most of the day, she didn’t know where they were.

Firefighters at the Black Mesa Ranger Station hoped to make a stand along a forest road on the rim, but they had only one bulldozer and fewer than 30 people. Klein called her boss and requested more firefighters. “He just said there aren’t any; you’re not going to get ‘em,” she recalls. Major fires had hit other states, and about 1,000 firefighters were already working above and below the rim.

The morning of June 22, the Chediski Fire raced 12 miles, jumped the rim and reached the Sitgreaves Forest tract that Klein had targeted for thinning. Returning from a briefing she’d given firefighters in nearby Honda that afternoon, Klein drove through “miles and miles of fire,” she recalls, past burned-out houses and a blackened trailer park. “I got back to find it had overrun the town and was threatening the ranger station. It had run six or seven miles in a few hours. Its power awed me. Flames rose a couple of hundred feet in the air. It looked like the fire was boiling up there, and you’d see pieces of trees, branches going up. People were scared. I talked to the crews, and they had gotten into some very hairy situations trying to defend the station. In the evening, the fire died down a little, but around midnight we found out that a whole subdivision was threatened. So those guys went out and started fighting the fire again. They worked all night and kept at it until about noon the next day. We didn’t have any replacements.”

By the next day, the Rodeo Fire began to merge with the Chediski Fire, becoming one great conflagration, eventually stretching 50 miles across. It was what experts call a “plume-dominated fire,” intense enough to generate its own weather, with towering thunderheads and rain that evaporated as it fell.

That night, Klein drove up a canyon and at 2 a.m. reached the head of the blaze, a harmless-looking ground fire just creeping along. But there was nobody she could dispatch to attack it. "I felt totally helpless." That morning, Monday the 24th, the fire made another run, which destroyed more houses. Then, on Tuesday, a team of firefighters arrived: soon there were more than 2,000 firefighters along Highway 260, which runs through Heber-Overgaard. Firefighters subdued part of the inferno with backfires—fires intentionally set to reduce fuel in the path of the oncoming blaze. The rest eventually burned itself out as it ran into patchier, less flammable piñon-juniper country.

Over 20 days, the Rodeo-Chediski Fire burned more than 460,000 acres. About 50,000 people were evacuated and 465 residences destroyed. Klein's house was spared, but many of her friends and neighbors were not so lucky; 15 percent of Heber-Overgaard was destroyed. Ultimately, more than 6,600 firefighters had fought the blaze, aided by 12 air tankers, 26 helicopters, 245 fire engines, 89 bulldozers and 95 water-supply trucks. Suppressing the fire cost about \$43 million. It will cost another \$42 million or so to do emergency rehabilitation in the forest, such as reseeding to prevent erosion and flooding, and long-term recovery work.

The tragedy still galls Klein. "If we had done all the thinking we wanted to over the years, we could have kept this fire from exploding, and we could have saved the towns it burned through." In a sense, she blames environmental activists. "All those arguments we heard about how 'your timber sale is going to destroy Mexican spotted owl habitat,' 'your timber sale is going to destroy the watershed.' And our timber sale wouldn't have had a fraction of the effect a severe wildfire has. It doesn't scorch the soil, it doesn't remove all the trees, it doesn't burn up all the forage. And then to hear their statements afterward! There was no humility, no acceptance of responsibility, no acknowledgement that we had indeed lost all this habitat that they were concerned about. All they could do was point their finger at us and say it was our fault."

For its part, the group that led the fight against Klein's tree-thinning proposal hasn't changed its thinking. Environmentalists at the Center for Biological Diversity believe that even if the project had gone ahead, it wouldn't have made a difference in halting such a large and destructive fire. "The Forest Service is hijacking important concepts like fuels reduction to disguise traditional timber sales," says Brian Segee, the center's Southwest public lands director. "I walked the ground and looked at the marking of trees, and they are turning the forest into a tree farm. When economics drives the decisions, it ultimately results in ecosystem degradation, and we just keep finding that when we don't resort to the courts, we're ignored."

NOT EVERY FORESTER has embraced the idea of fighting

PAUL TRACHTMAN, a former science editor at SMITHSONIAN, lives in New Mexico. He wrote about artist James Turrell in May 2003.

every fire. In 1972, in the Wilderness Area of Montana's Bitterroot National Forest, a handful of Forest Service heretics intentionally let a lightning strike burn—the first time the agency had done that. One of the maverick foresters, Bob Mutch, then a young researcher at the Forest Service Sciences Fire Laboratory, in Missoula, Montana, had had the idea that forest health might actually depend on fire. To be sure, a few foresters had previously argued that forests evolved with fire and were adapted to it, but they had been proverbial voices in the wilderness.

Mutch and the others are now retired, but in the midst of the destructive fire season of 2002—and only six weeks after the Rodeo-Chediski Fire scorched Arizona—they journeyed to the Bitterroot Mountains to assess the experiment they had begun three decades earlier. The Forest Service, whose orthodoxy they once challenged, now wanted their advice on preventing catastrophes from occurring in national forests.

In the Bitterroot Mountains, it's only a short way from Paradise to Hell's Half Acre. The ranger outpost at Paradise, where the veterans initially gathered, is a place of deep silence, sparkling water and tall ponderosa pines. The men were eager to look at "the scene of the crime," as they called it. They hardly looked like rebels. Among them was Bud Moore, in his mid-80s, who had grown up in a family of woodcutters and trappers in these mountains, and was hired as a Forest Service smoke chaser in 1935. There was Bill Worf, just a few years younger, who today is almost blind and last summer hiked the wilderness trail with black glasses and a white cane while someone ahead warned of fallen logs across the path. Orville Daniels, now 68, was the supervisor of the Bitterroot National Forest back in 1970. And there were Bob Mutch and Dave Aldrich, who now looked a bit like members of the Monkey Wrench Gang (as author Edward Abbey called a bunch of radical environmentalists in his 1975 novel of the same name). Aldrich, a muscular 63-year-old, had always looked at fire as the enemy until he joined the group. Mutch, 69, an intellectual and a researcher with a passion for ecology, had once been a smoke jumper, a Forest Service firefighter who parachutes from planes.

The only member of the group still employed at that time by the Forest Service was David Bunnell, 59. He was a firefighter before falling in with the Bitterroot bunch in the 1970s, and he remembers well his first encounter with them. "Renegades! Heretics!" he recalls thinking. "I'm surprised they weren't all fired."

As the group hiked a nine-mile trail from the Paradise guard station to a clearing called Cooper's Flat, every step took them through country they'd once watched burn. They pitched tents and talked late into the night over a campfire, reminiscing, and discussing what their experiment had told them about how best to manage America's national forests.

It was Bud Moore who had ignited their conspiracy. In 1969, he was transferred from Washington, D.C. to Missoula

as regional director of what was then called Fire Control and Air Operations. As a Bitterroot native, he knew these woods deeply and sensed that fire was a part of their ecology. “When we were starting this program,” he says, “we got tremendous support from the environmental community. The biggest resistance we had was in the Forest Service. We had that big culture of firefighters, and I was one of them.”

Worf was one of them also. The idea that fire might belong in the wilderness didn’t come easily to him. He’d spent years managing timber sales and fighting fires. In 1964, he landed on a task force in Washington, D.C. that was looking at how the Forest Service could implement the recently passed Wilderness Act, which defined wilderness as a place where “the earth and its community of life are untrammelled by man.” Worf says, “They weren’t talking about a pretty place to backpack!” He read Leopold, who had proposed that the United States set aside wilderness areas and watch nature without getting in its way. In 1969, Worf took a job as regional director of Recreation, Wilderness and Lands in Missoula, where he and Moore got together and agreed that managing wilderness meant leaving some natural fires alone.

“We’re thinking about a pilot project on fire use in wilderness,” Daniels recalls Moore telling him in a phone call. “It just flashed through my mind, ‘Of course this is what we should do.’” Mutch and Aldrich, who had recently joined Daniels’ staff, began making inventories of trees and other vegetation, searching for clues to the history of fire in the forests. They cut into fire scars on ponderosa pine, revealing charred tree rings going back as far as the 1720s, showing that fires had burned there every 10 to 20 years. Those blazes evidently were ground fires that periodically cleared away flammable debris, stimulated regeneration of shrubs and grasses and, in general, did not kill large, healthy trees. “We were trying to re-create in our minds how fires had burned on these lands,” Aldrich says, “and then write prescriptions for trying to bring fire back.”

Their main concern was to keep wildfires from escaping beyond the wilderness, and they developed criteria for letting a fire burn and provisions for fighting the blaze if things went wrong. Aldrich remembers refining his ideas with Mutch late into many a night at Cooper’s Flat. Finally, in August 1972, Daniels and Mutch flew to Washington and presented a plan to the agency’s top brass to form what would become the Wilderness Prescribed Natural Fire Program. The plan was approved. Now all they needed was a fire.

They got their first one within days, but it petered out. It took a year of waiting before they got a big one. On August 10, 1973, lightning struck at Fitz Creek, which runs into White Cap Creek just above Paradise. As fire spread over the steep canyon slope along the White Cap, Daniels, Aldrich and Mutch stood by and watched. “Every day was a surprise,” Aldrich recalls. “I learned more in a few days watching that fire than I did in the preceding 15 years fighting fire.” He expected a much more intense fire. But up in the ponderosa pine forests, carpeted with thick layers of

needles, the fire merely crept along. “I was able to step through the fire, or if it was burning intensely, I could run through it,” he says. Blue grouse were picking away at the roasted pinecones. Mice and chipmunks scurried about. He saw a bull elk nonchalantly grazing about ten feet from the flames. Mutch noticed a black bear poking along the edges of the fire. Nowhere did they see any animals running scared.

But after five days, serenity gave way to shock. A “spot” of burning debris flew across White Cap Creek and ignited the north-facing slope, which was outside the area of the fire plan. Here, thick stands of highly flammable Douglas fir grew in the shade, surrounded by a heavy buildup of broken branches and other debris. “Dave and I were up at a lookout when we got the call that the fire was across the creek, and we turned around and saw this mushroom cloud,” Mutch says. “In 30 minutes the fire had gone from the creek bottom 2,000 feet up to the ridge top, with 100-foot flame lengths, throwing spots everywhere. We just stared at it and said to each other, ‘Oh my God, what have we done?’”

Daniels was called out of a public meeting in Missoula and raced back to the Bitterroot. Mutch was dispatched to brief a team of firefighters, some of them his old buddies, who were called in to stop the blaze. The firefighters wanted to put out the fire on both sides of the creek. But Daniels defended his turf. He designated the escaped fire the Snake Creek Fire and insisted that the firefighters leave his Fitz Creek Fire alone.

“They just absolutely thought we were crazy,” he says, “but they put out the escaped fire after a week, at the cost of half a million dollars, and we allowed our fire to burn clear into the middle of September, and never had any more trouble with it.”

THE UNCHECKED FITZ CREEK FIRE marked a profound change in Forest Service philosophy. Since 1972, says the Forest Service’s Bunnell, federal agencies have made more than 4,000 decisions to stay the firefighter’s hand, resulting in more than a million acres of public lands “treated” by natural wildland fires. In the Bitterroot Wilderness alone, Daniels and his successors have let more than 500 wildland fires burn freely, with impressive results. The Fitz Creek Fire veterans were amazed by what they saw in 2002. “It was the first time I’ve ever seen a forest working the way a natural forest should work,” Daniels says. “You could see the results of all the old and new fires blended together in a mosaic; everything from old stands of decadent and dead trees where woodpeckers love to nest, to thick patches of young trees providing a home for the snowshoe hare, which in turn is prey to the lynx we’re trying to recover. It’s probably the way the forest looked before anyone began to influence it.”

In 2000, a drought year, when Montana had its worst fire season in nearly a century, the Bitterroot Wilderness turned out to be fire resistant. A lot of fires got started, burning some 60,000 acres, but not one firefighter was needed to put them out. As the new fires kept running into places that

had previously been allowed to burn, they stalled and expired for lack of fuels on the ground. "We've gained a lot of knowledge about natural fires in these ecosystems," says Jerry Williams, the Forest Service's director of Fire and Aviation Management, "and a lot of it came about watching wildland fires that we've let burn freely in the Bitterroot Wilderness over the past 30 years."

So far, though, the hands-off approach to fires has been mostly limited to wilderness areas. Other national forest areas are generally so dense and so loaded with debris and fuels that letting a lightning strike burn freely would lead to catastrophe. Foresters say that such areas would benefit from natural fires, but only after undergoing "mechanical treatment"—thinning trees and removing deadwood and other fuels. But when foresters propose such treatments, some environmentalists, who believe they, too, have the forest's best interests in mind, oppose the efforts.

Most Forest Service professionals advocate selling timber from national forests to help thin aging stands and also to defray the costs of noncommercial thinning. But some environmental groups argue that commercial logging does more to destroy the environment than to restore it, and some, like the Sierra Club, have called for an end to all commercial logging in national forests.

The environmental community's distrust of the Forest Service has deep roots, and veteran foresters acknowledge past mistakes. Retired forester Bill Worf concedes that his generation was slow to accept the spirit, if not the letter, of environmental protection laws, and he even admits to a bit of creative obfuscation in times gone by. "You'd decide what you want to do, and then you would write an environmental impact statement that would support it. And that takes a lot of paper because you'd have to hide a lot of stuff." Environmentalists were particularly angered over the years by clear-cutting, or removing all trees from an area. Indeed, at the same time Daniels was approving fire use in the Bitterroot Wilderness, other parts of the Montana forest were the focus of a national battle over the practice. Mutch, the former forester, remembers that loggers "simply harvested what was there, then went in with bulldozers to put in terraces, and planted ponderosa pine seedlings." The result hardly replaced the complex forest that had been there. "It looked like rice paddy terraces in Southeast Asia," he went on. "It was very harsh treatment of the land. And people said, 'Hell no, that's timber mining!'"

The chief of the Forest Service, Dale Bosworth, says that clear-cutting is a thing of the past: "Most of what we harvest now is for stewardship purposes, habitat improvement for wildlife, restoration of watersheds and fuels reduction. All this shrill screaming about timber harvests is just a distraction from the real issue, which is about getting these fire-adapted ecosystems back into a healthy condition so they will be more resistant to catastrophic wildfires."

CONTROVERSY OVER fire management in national forests was boosted last year with the president's Healthy Forests Initiative, which followed the half-million-acre Biscuit Fire, in Oregon. The proposal, which is still being hammered into final form by the Forest Service and Congress, would let forest managers make some decisions about thinning and timber sales with less of the environmental impact analysis and documentation now required by law, and it would also limit the internal Forest Service appeals process, which some environmental groups have used to challenge decisions. A recently released audit by the General Accounting Office of Congress reports that 59 percent of the Forest Service's hazardous fuels reduction projects that were required to have environmental impact statements were appealed during fiscal years 2001 and 2002.

Political debate over the initiative has largely followed party lines, although a new Republican-sponsored Healthy Forests Restoration Act passed the House on May 21, 2003, with the support of 42 Democrats. For their part, Republican supporters say that the bill reflects the current thinking of Western governors and most foresters.

The National Resources Defense Council, a nonprofit environmental action organization, says the initiative is part of a Bush administration plan "to roll back 30 years of environmental progress." The proposal, the council says in a fundraising flyer, "gives timber companies the right to cut down your last wild forests." Other environmental groups have called it a plan for "lawless logging" and "corporate giveaways."

Still, there are sprouts of compromise coming up though the ashes of last summer's major fires. Local citizens groups across the West are working with the Forest Service and other agencies, focusing on protecting communities near or within national forests. Everyone agrees that the "wildland-urban interface," where peoples' homes and other structures abut forest lands, is the place to start. "It's the first place you have to defend," says Klein. "But you can't devise all your strategies around the wildland-urban interface." That wouldn't protect watersheds, wildlife, old-growth stands, endangered species habitats, recreation areas and other parts of the fire-prone forest ecosystems out in the backcountry, she says.

The sometimes angry debate over healthy forests legislation rings hollow to Klein and many other foresters in the field. "We've almost gotten ourselves into a situation where nothing but a fire will fix it!" she says. "I think most of us working on the ground are disturbed with where we are, and we don't see an easy way out." She foresees a time when fire is allowed to play a larger role in forests, but not before communities are protected, forests thinned, the load of dead fuels reduced and political considerations tempered by ecological ones. Meanwhile, there will be more infernos, she says: "I think we have to accept that catastrophic wildfires are going to be part of getting back to a natural regime." ●