Will the Bush administration's new forest management philosophy diminish the dangers of fire or just increase the Forest Service's budget?

Money to Burn?

By Randal O'Toole
Thoreau Institute

Late last July, Jerry and Gayle Sorenson were given a "mandatory evacuation order" to leave their home in the Illinois River Canyon of southwest Oregon. The Biscuit Fire, which had doubled in size the previous day, was fast approaching their residence; state and federal firefighters feared they would not be able to stop it.

"We had just finished building our house after five years of construction," says Jerry. "I remember pounding every nail and cutting every board. We weren't going to leave it to burn."

When they refused to leave their private inholding in the Siskiyou National Forest, firefighters gave them emergency shelters that they could retreat to if the buildings caught fire. To give them a safe place to put the shelter, the firefighters lit their meadow on fire, then departed. The Sorensons watched helplessly as the meadow fire burned $10,000 worth of pine, cedar, and Douglas-fir lumber that Jerry had hand-milled for a future addition on the house. "They just lit the fire and left," he rues.

By mid-August, the Biscuit Fire had blown up into Oregon's largest fire in a century. Smoke filled the Illinois Valley and the Forest Service warned thousands of people in Cave Junction and other valley towns that they might have to evacuate at any time.

Excess fuels Many forest policy experts claim the Biscuit Fire, like several other recent major forest fires, was fed by the buildup of "excess fuels" – downed wood, scrub growth, and sick and dead trees that have collected in the nation's forests because of a strong government commitment to fire suppression and environmentalist opposition to logging. (See "The Forest Service's Tinderbox," Vol. 23, No. 4.) With the excess fuels problem in mind, U.S. Sen. Ron Wyden (D-Ore.) visited Cave Junction in early August and promised to go back to Congress and "change United States policy so we're not coming back here summer after summer."

Randal O'Toole is senior economist for the Oregon-based Thoreau Institute, an organization that advocates environmental protection through incentives rather than government regulation. He can be contacted by e-mail at rot@ti.org.

Record-sized fires in Colorado and Arizona have led to similar calls from other members of Congress. Just a couple of weeks before the Wyden promise, Senate Democratic Leader Tom Daschle (D-S.D.) proposed to exempt fuel treatment activities in the Black Hills National Forest from environmental lawsuits. Commodity interests see Daschle's and Wyden's positions as a breakdown of the hegemony environmental groups have had over federal land policy for the last decade or so.

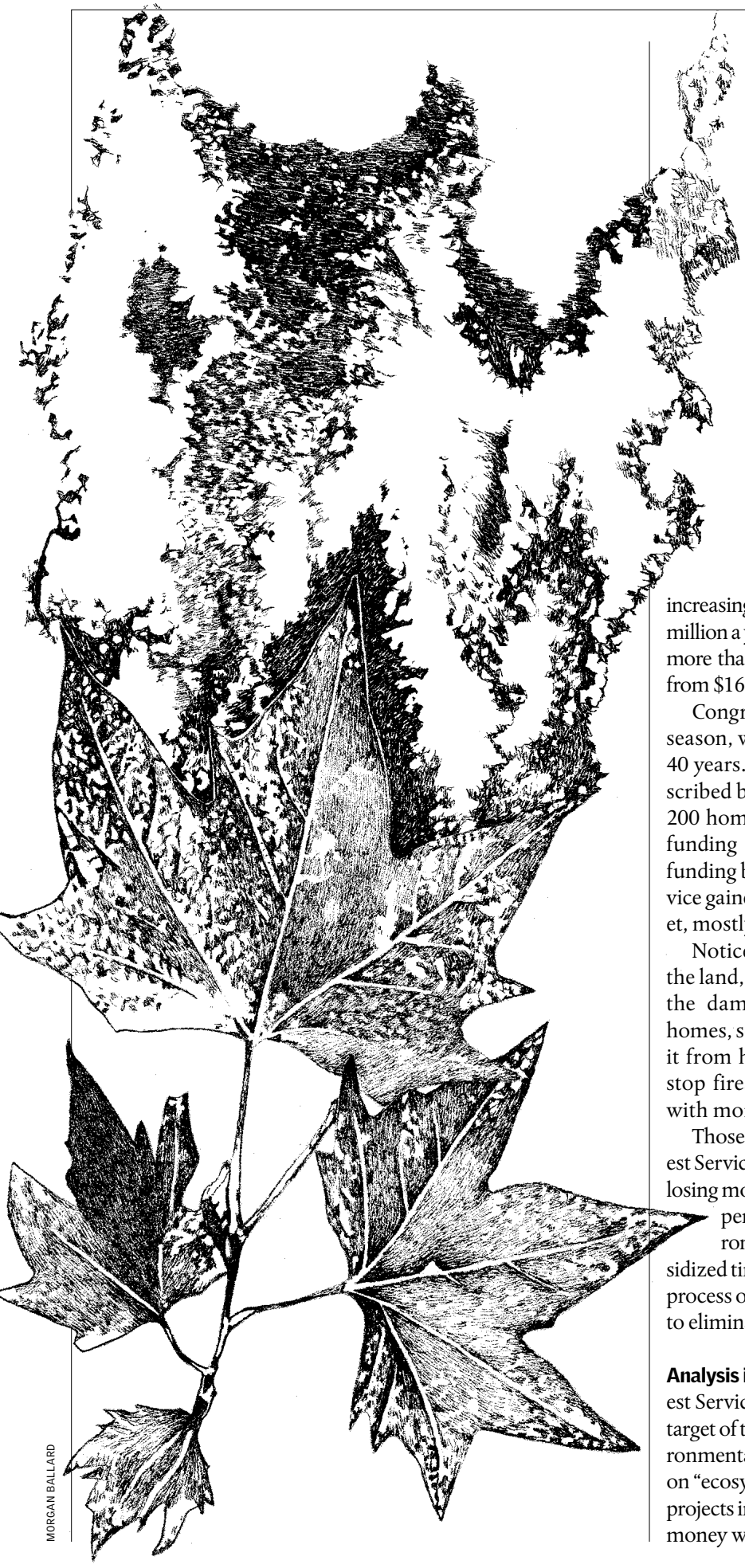
Positions on fire policy became even more polarized when President Bush flew to Oregon last August to announce a "healthy forests initiative" that would remove many of the legal impediments to forest thinning and provide funding to thin or otherwise treat 2.5 million acres of federal land a year for 10 years.

Despite the stampede to do something about fire, advocates of smaller government should hesitate before supporting proposals to give the Forest Service bureaucracy more money and power. The agency is more than willing to take advantage of public paranoia and ignorance regarding fire in order to get a bigger budget. Meanwhile, the debate between environmental and timber interests turns out to be just a battle over pork. Because Congress has proven itself willing to treat fire problems by throwing money at them, numerous interest groups are positioning themselves to get their share.

SMOKEY WAS WRONG

For five decades, Smokey the Bear has taught us to keep fire out of the forest. Yet Smokey was little more than a shill for Forest Service efforts to get bigger budgets from Congress for forest management and fire suppression. With enough money and resources, the agency promised, it could keep fires out of the forests completely.

In 1908, Congress actually gave the Forest Service a blank check for emergency fire suppression. As a result, the agency became fixated on suppression over any other fire policy. Many forest researchers and private landowners, particularly in the Southeast and in California's Sierra Nevada, argued that frequent light burns would prevent an accumulation of fuels and thus reduce the danger of catastrophic fire. But the Forest Ser-



MORGAN BALLARD

vice refused to accept such fires until the 1940s, and then allowed them only in the Southeast.

More problems, more money The Forest Service did an about-face in the 1990s and admitted that Smokey the Bear was wrong. Some 90 years of fire suppression, the agency now said, has led to a dangerous buildup of fuels in federal forests. The result is that fires today are bigger, more deadly, and more expensive to suppress than ever. To solve the problem, the Forest Service wants Congress to give federal land managers billions of dollars for thinnings, prescribed fires, and other actions to reduce fuels.

Curiously, the excess-fuels story also justifies ever-larger budgets for fire suppression. Though most fire ecologists agree that the Forest Service should let more wildfires burn, the agency argues that excess fuels make it too risky to do so. So the agency continues to suppress 99.7 percent of all wildfires on federal lands.

Congress responded to the excess-fuels story by increasing Forest Service fuel treatment budgets from about $10 million a year in 1990 to about $70 million a year in 2000 and by more than doubling presuppression or preparedness budgets, from $167 million to $409 million, over the same time period.

Congress became even more generous after the 2000 fire season, which burned more acres than any of the previous 40 years. Lawmakers were especially incensed when a prescribed burn in New Mexico led to the destruction of some 200 homes in Las Alamos. The response was to triple the funding for fuel treatments and increase presuppression funding by more than 50 percent. Overnight, the Forest Service gained a whopping 38 percent increase in its total budget, mostly for firefighting.

Notice the pattern here: The Forest Service mismanages the land, so Congress rewards it with more money to repair the damage. The Forest Service burns down people's homes, so Congress rewards it with more money to prevent it from happening again. The Forest Service promises to stop fires, but when fires get worse, Congress rewards it with more money.

Those perverse incentives parallel misincentives in the Forest Service timber program, which rewards land managers for losing money on environmentally destructive timber sales and penalizes them for making money or for planning environmentally benign timber sales. Public outcry over subsidized timber sales led Congress to impose a central planning process on the Forest Service, the process that some now want to eliminate to stop forest fires.

Analysis is paralysis With the influx of funds in 2001, the Forest Service and other federal land management agencies set a target of treating fuels on 2.5 million acres of forest a year. Environmentalists hoped that much of the money would be used on "ecosystem restoration" projects, even though not all such projects involved fuels. Timber interests hoped that some of the money would be used for commercial timber sales.

When it became obvious that 2002 was going to be another severe fire season, both sides started accusing the other of causing the fires. Environmentalists claimed the debris left behind after timber cutting was responsible for fires. Timber interests accused environmentalists of delaying fuel treatment projects that might have prevented the fires. The pro-timber view was supported by a Forest Service report claiming that environmentalists had delayed half of the fuel treatment projects it wanted to do in 2001.

In fact, the Forest Service and other federal land agencies managed to treat 2.1 million acres in 2001, or 84 percent of their targets. But the delay argument convinced the administration to propose giving the Forest Service the authority to treat fuels without environmental appeals.

Forest Service Chief Dale Bosworth is certainly correct in arguing that the Forest Service's impossibly complex planning process has created an "analysis paralysis" that is the root of numerous problems within the agency. But there are at least three reasons why giving the Forest Service more money and power for fuel treatments will do little or nothing about federal land forest fires:

- Despite a decade of Forest Service propaganda, there is no evidence that excess fuels are causing today's fires to be larger, more deadly, or more expensive to suppress.
- There are sound ecological reasons why fuel treatments will not work on most forest lands in the West.
- The Forest Service's plan — now the president's plan — to treat 2.5 million acres a year spends too much money treating the wrong acres.

EXCESS FUELS?

Until recently, I would have agreed with anyone who said that excess fuels are causing more severe fires throughout the West. Then I started looking at fire data. If fuels are leading to more severe fires, fires should be bigger, more deadly, and more costly to suppress. But for the most part they are not. To the extent that they are, it is not because of fuels.

More acres burned in 2000 than in any of the previous 40 years. Yet the average number of acres burned in the past five years was no more than in the first five years of the 1960s (the earliest years for which annual data are available). Table 1 shows that the average number of acres burned by decade has fluctuated but not increased since the 1960s.

Drought Variations in the number of acres burned each year can largely be explained by drought. Table 1 shows a strong correlation between the average portion of the United States afflicted by summer droughts and the number of acres burned each decade. Summer droughts affected a larger area of the nation in 2000 than in any year since 1960, with 1988 being the second-worst drought year. So it should not be surprising that more acres burned in 2000 than any year since 1960, with 1988 being the second-worst fire year.

Backfire While 2002 appears to also be a drought year, there may be another explanation for the year's large fires – a change in firefighting tactics. Firefighters can attack wildfires directly by building a fireline near the fire and then smothering the fire with water, soil, or fire repellant. They can also attack fires indirectly by building a fireline some distance — perhaps many miles — from fires and then lighting a new fire to burn everything between the fire and the fireline. Because of concerns about cost and firefighter safety, the Forest Service is relying more and more on indirect attack.

I visited the Biscuit Fire a week before the president, driving with local resident James Wahlstrom past still-smoking stumps through more than 10 miles of burned area down the Illinois River Canyon to Jerry and Gayle Sorenson's home. On the western horizon, a plume of smoke could be seen where the fire was still burning fiercely.

Contrary to Smokey Bear posters, forest fires rarely burn healthy trees to the ground. The tree stumps we saw smoking were mostly from trees that were previously rotted by some disease; a sound fire-killed tree is likely to remain standing for several years. In many places, most of the trees we passed were still alive. In some spots, the fires killed every tree; in others, the trees were untouched except for some blackening at their bases. Although the perimeter of the Biscuit Fire encompassed 500,000 acres, the Forest Service's analysis indicates that 100,000 of those acres did not burn at all and 320,000 acres were only lightly to moderately burned.

When we finally reached the Sorensons, I asked Jerry how much of what we had seen was Forest Service backfire. "On this side of the river, all of it," he said. "The 'real' fire never got beyond my place. On the other side of the river, the fire reached McCaleb Ranch," about four miles upstream from the Sorensons but still six miles from the firelines. The backfire we drove through covered 34,000 acres, or nearly seven percent of the entire Biscuit Fire. Yet it was just one of several backfires used to contain the fire. The increased use of indirect attack methods in recent years likely has increased the amount of acreage burned.

Deadliness and costliness Are fires more deadly than they used to be? Annual firefighter fatalities have more than doubled in the last 50 years, from eight per year in the 1950s to 17 per year in the 1990s—but not because of excess fuels. The number killed by smoke or fire actually declined from 6.5 a year in the 1950s to 5.5 a year in the 1990s. The increase in overall fatalities was in aircraft and vehicle accidents and heart attacks.

TABLE 1

Dryness and Fires

Acres burned and drought index by decade

Decade	Acres Burned (millions)	Drought Index
1950s	94	17
1960s	46	9
1970s	32	6
1980s	42	10
1990s	36	8

Drought index is the average percent of the nation afflicted by drought during July, August, and September.

Source: National Interagency Fire Center and the National Climatic Data Center

Nor are excess fuels causing firefighting costs to increase. A 1999 Forest Service analysis of fire costs since 1970 found that suppression costs had grown no faster than inflation. Costs have grown since the report, but only because Congress encouraged the Forest Service to spend more after the Las Alamos fire in 2000.

Post-fire reports on individual fires make little or no mention of excess fuels. Instead, fire scientists agree that drought is the cause of the severe fires in recent years. This year's Rodeo-Chedisky Fire, the largest fire in Arizona history, was on heavily managed and thinned federal lands, not an untouched wilderness brimming with excess fuels.

FIRE ECOLOGY

The Forest Service is fond of showing "before-and-after" photographs of the effects of its fire suppression philosophy. The "before" photos, usually taken 80 to 100 years ago, will typically show an open, park-like forest with stately trees and little or no underbrush. The "after" photos show the same ground overgrown by impenetrable shrubs and brush. The shrubs form a "fuel ladder" connecting dead leaves and twigs on the forest floor with the tops of the trees, leaving the largest trees vulnerable to fire.

It is certainly true that 90 years of fire suppression have led to major changes in forest ecosystems. Forests have replaced grasslands; forests dominated by one species of tree have replaced forests dominated by another species of tree. But those changes do not necessarily translate to increased fire danger.

Adaptation Advocates of fuel treatments argue that North American forests were frequently burned by Native Americans prior to European settlement. Ecologists have found that many U.S. forests are ecologically adapted to frequent, light fires. Suppressing fires in such forests can lead to catastrophic results.

However, not all forests are alike. Many are adapted to infrequent, severe fires. Suppressing fires in those forests has less of an effect on ecosystems and may not increase fire risk at all.

In the Southeast, where both private and public land managers have practiced prescribed burning for decades, the Forest Service says that 80 percent of the forests are adapted to frequent, light fires. But only a third of the forests in the West are similarly adapted, mainly the interior ponderosa pine forests and the Sierra Nevada mixed conifer forests. Moreover, a recent Forest Service analysis found that less than half of those forests, or 15 percent of the total, have been dramatically altered by fire suppression.

Not surprisingly, almost every Forest Service photo of a western forest altered by fire suppression is a ponderosa pine forest. But most western forests, including Douglas-fir, spruce, fir, lodgepole pine, and redwood forests among others, are adapted to infrequent but often severe fires. There is little evidence that thinning or fuel treatments will alter fire frequencies in those forests.

The promise that bigger fuel treatment budgets will stop large fires turns out to be just as hollow as the earlier promise that bigger fire suppression budgets would stop large fires. The truth is that the West has always had large fires, and until the forests turn to deserts, it will always have them.

TREATING THE WRONG ACRES

President Bush announced his healthy forest initiative at the site of the Squires Peak Fire, which burned in July 2002. The Bureau of Land Management had thinned 400 acres of forest in the area, but environmental regulatory delays forced workers to leave 80 acres untreated. Those 80 acres caught fire and burned uncontrollably, eventually spreading to 2,800 acres and costing $2.2 million to suppress.

The lesson the administration learned from the Squires Peak fire is that environmental delays are bad, so the administration proposed to expedite planning to allow the Forest Service to reach its target of 2.5 million acres of fuel treatments a year. But that is the wrong lesson. The real lesson is: Unless you thin every acre, you might as well not thin any at all.

The Forest Service says that 70 million acres of federal lands in the West have been "significantly altered" by fire suppression, and another 140 million acres have been "moderately altered." Treating fuels on 2.5 million acres a year for 10 years, as the president proposes, will affect just 12 percent of that total. In fact, the percentage will be smaller because some of the 2.5 million acres of treatments will take place in the Southeast. Meanwhile, the agency's continued fire suppression program will bump more acres into the "significantly altered" category each year.

A better way The president's plan will do little to protect homes and communities near federal forests from fires that start on those forests. But Forest Service researcher Jack Cohen has shown that those homes and communities can be protected at a far lower cost.

Cohen's research has found that wildfires ignite buildings in one of two ways: Either burning embers land on flammable rooftops or the radiant heat of the fires ignites building walls. Replacing wood shingle roofs with metal or other nonflammable roofing materials can prevent rooftop fires. Replacing bushes, shrubs, woodpiles, and other flammables with relatively fireproof landscaping, such as a regularly mowed lawn, within 130 feet of buildings can protect walls from radiant heat.

Cohen says that treating fuels on federal forests is "inefficient and ineffective"—inefficient because it is costly and ineffective because it will not protect homes from burning embers. Cohen's alternative should cost far less than what the Forest Service plans to spend: A recent Forest Service report concluded that only 1.9 million acres of land with homes near federal forests are at high risk of fire, and more than 1.4 million of those acres are private. The Forest Service is not treating the private acres.

The day the Sorensons were ordered to evacuate, the Biscuit Fire blew up into a firestorm that sent a plume of smoke into the sky that was visible more than 50 miles away. Rising hot air generated winds that rapidly spread the fire through the forest.

The Sorensons had several lines of defense between their

buildings and the fire. First, Jerry bulldozed a fireline around the edge of their property. Inside the fireline was a partially irrigated meadow closely cropped by livestock. (Firefighters burned the unirrigated portion of the meadow, but that was probably unnecessary.) Next, a large garden featured vegetables and flowers that, even if they caught fire, posed no real threat to nearby structures. Another fireline in the form of a road separated the garden from their house and barn.

The Sorensons stayed up all night dowsing any firebrands that got too close. Their water supply dried up in the early hours of the morning when the fire burnt through their PVC pipe. By then, most of the danger was passed. Several neighboring homes were lost because they were either less fireproof or left undefended, but the Sorensons did not lose a single building.

CONCLUSION

The real problem with federal land wildfire is not a shortage of funds but too much money combined with incentives to spend it in all the wrong places. Forest Service Chief Bosworth is right to criticize the agency's central planning process, which is far too expensive and time consuming. But without more systematic reform, eliminating that process will no more stop forest fires than it will solve the problems created by perverse budgetary incentives.

A systematic reform of the Forest Service should decentralize federal lands and fund each national forest, park, or other unit of land out of its own receipts. Land managers would then be able to decide which combination of thinning, prescribed burnings, and fire suppression is most appropriate to local needs and resource values. Reforms could also provide safeguards for non-market resources, but eliminating the subsidies and perverse incentives would do the most towards protecting those resources.

The first step towards such decentralization can be found in a "charter forest" proposal in the Bush administration's 2003 budget. Under the proposal, a few selected forests would operate independent of the Forest Service hierarchy, reporting instead to boards of trustees. Such charter forests would demonstrate the benefits of decentralization and how such decentralization could influence management in various regions and ecosystems. Unfortunately, the attention now being given to fire issues is likely to lead Congress to ignore the charter forest idea in favor of schemes that will cost taxpayers far more and accomplish far less. R