Forest Policy Up in Smoke: Fire Suppression in the United States

Alison Berry*

Property and Environment Research Center

For most of the 20th century, U.S. federal fire policy focused on suppressing all fires on national forests. The goal was to protect timber resources and rural communities, but this policy ignored the ecological importance of fire. North American forests have evolved with fire for thousands of years. Fire returns nutrients to soils, encourages growth of older fire-resistant trees, and promotes establishment of seedlings.

Decades of fire exclusion have produced uncharacteristically dense forests in many areas. Some forests, which previously burned lightly every 15-30 years, are now choked with vegetation. If ignited, these forests erupt into conflagrations of much higher intensity than historic levels. Grasses, shrubs, and saplings in the understory now form a fuel ladder, through which flames can climb to the forest canopy, killing entire forest stands.

The fire problem is exacerbated by decreasing federal timber harvests since the late 1980s.[1] In the absence of fire, and with reduced timber harvests and thinning, numerous small-diameter trees have proliferated. Stressed trees compete for scarce water, sunlight, and growing space. In this weakened state, trees are not only at greater risk of catastrophic wildfire, but are also more susceptible to disease and insect infestation (Fretwell 1999).

* aberry@perc.org

[1] In the 1980's, national forests sold an average of 10.7 billion board feet of timber per year, but now they sell only about 2 billion board feet per year (Fedkiw 1998, 211; USDA Forest Service 2007a). Public dissatisfaction with federal timber management and restrictions due to the Endangered Species Act precipitated the decline.

Meanwhile, more people are living and building homes near forested areas, in the "wildland-urban interface." The combination of high fuel loads and increasing human populations elevates risks of fatality and property damage due to forest fire.

According to Forest Service estimates, almost 70 percent of federal forests (151 million acres) are in need of some fuels restoration treatment, and more than 60 million acres, an area the size of Oregon, are at high risk of catastrophic wildfire (FMI 2001). Instead of protecting resources and communities, fire policy has placed them at risk (Busenberg 2004). This paper will discuss how fire suppression policy has failed, and provide recommendations for the future.

Background-The Forests and the Trees

Although North American forests are not homogenous, most forests have been affected by fire. Throughout history, lightning has sparked fire across the landscape. In addition, people have used fire as tool since they first migrated to North America over the Bering land bridge (Pyne 1982).[2] Evidence of fire is abundant in fossil records, fire scars, and from many adaptations that plants have evolved to survive or to take advantage of fires.

Some conifers such as lodgepole and jack pines produce serotinous cones, which only release seeds when exposed to intense heat. In the Southeast, longleaf pine exists in a grass-like phase, its terminal bud protected near the ground, until it has been burned over. Without surrounding vegetation to compete with, it then sprouts vigorously to achieve a height at which it is less susceptible to damage from low flames. Some Northwestern species, such as larch,

[2] There is some debate as to the historical extent and the influence of human-caused fires in North America. Pyne (1982) claims that Native Americans used fire widely, with great impact on the landscape. Wuerthner (2006, xvii) argues that human-caused fires were limited to localized areas, such as favored areas for camping or horse pastures. Both agree, however, that Native Americans used fire as a tool.

ponderosa pine, and Douglas-fir grow thick bark which allows older trees to withstand periodic light burning.[3]

Forests of different species, with various adaptations to fire, are habituated to different burning cycles. Northwestern ponderosa stands and Southeastern longleaf pine stands are adapted to frequent, low-intensity fires that clear out grasses and shrubs in the understory. In contrast, lodgepole forests of the Rocky Mountains are suited to infrequent, stand-replacing fires, which generally decimate the existing forest, but promote growth from seeds released from serotinous cones.

Based on these fire regimes, it is possible to create general guidelines about the appropriate use of fire in particular regions. But because a variety of forest types may exist, it is not reasonable to create blanket rules for any area, let alone for the entire nation.

To Burn or Not to Burn

The Forest Service was created in 1905 to manage the nation's forest reserves, and soon thereafter the agency adopted a nation-wide policy of fire suppression. Fire historian Stephen Pyne notes that in the early years, the Forest Service needed to prove its qualifications. Many foresters at the time recognized the value of "light burning" to clear out understory vegetation, but the Forest Service wanted to set itself apart from this common practice of rural farmers and Native Americans. "The Forest Service had insisted that it should manage the forest reserves precisely because it offered something different from frontier practices" (Pyne 1982, 106).

Also, the Forest Service needed an uncomplicated message with respect to fire in the woods. It would not serve the agency to attempt to educate the public on the differences between appropriate and inappropriate uses of fire; "propaganda does not thrive on close distinctions"

[3] See Agee (1993, 126-134) for a detailed explanation of plant adaptations to fire.

(Pyne 1982, 171). Thus, the Forest Service adopted an unequivocal anti-fire position. Later, Smokey Bear's anti-fire message—"only you can prevent forest fire"—would become one of the most effective advertising campaigns in history (Kerr 2006).

Still, professional foresters within the Forest Service debated whether light burning should be applied in national forests. In particular, foresters in the Southeast and in California had long used fire to keep understory vegetation in check and reduce the risk of large conflagrations (Pyne 1982, 100-122). But after several wildfires ravaged settlements in the late 1800s and early 1900s, the scales began to tip towards full fire suppression.

The fires of 1910 had the most dramatic effect on forest management policy because they burned mostly on federally-owned forest lands, managed by the fledgling Forest Service. By the time autumn rains extinguished the flames, 5 million acres (an area the size of Massachusetts) had burned, with 3 million acres in Montana and Idaho alone, where 8 billion board feet of timber were incinerated. Eighty-five fatalities resulted (Pyne 1982, 249; Barker 2005, 111). The Forest Service was catapulted to the forefront of fire suppression activity in the nation. The public began to demand fire protection, and support for light burning practices dwindled. Professional foresters within the agency became convinced that fire protection was the primary goal of the Forest Service (Pyne 1982, 252).

Finally, and perhaps most importantly, Congress created financial incentives that favored fire suppression over any other policy. The Forest Fires Emergency Act, passed in 1908, stipulated that in fire emergencies the Forest Service could put any available funds towards suppression, and Congress would later reimburse those expenses. In other words, funding for emergency suppression had no specified limits. Though funding was not unlimited, the Forest Service could not know what limits were without testing them. The 1910 fires were the first test

of the Forest Fires Emergency Act. The Forest Service spent $1.1 million[4] extinguishing the fires of 1910—about 20 percent of its budget—and Congress dutifully reimbursed the funds after the smoke cleared (Pyne 1982, 263; O'Toole 2002, 26). The message was unmistakable: emergency fire suppression activities were to be free of normal budgetary constraints.

Such a policy provided little motivation either for the Forest Service to determine the optimal level of fire suppression or to pursue the level selected efficiently. As one observer noted after large fires in 1934, "As long as the money is plentiful, it is not necessary to worry about values; if money becomes scarce, highest protection to greatest values naturally follows" (quoted in Pyne 1982, 277-278).

The Forest Service retained its policy favoring fire suppression despite knowledge of the benefits of burning. For example, a 1908 Yale University study documented the fire dependence of southern longleaf pine. But the financial incentives of the Forest Fires Emergency Act, passed the same year, swayed Forest Service policy against light burning. The Forest Service suppressed the Yale study and other pro-burning discoveries for many decades (Schiff 1962; O'Toole 2006, 218).

Two Steps Forward, Two Steps Back

It wasn't until 1970 that the Forest Service publicly acknowledged the ecological importance of fire, allowing some fires to burn under accepted weather conditions. In 1978, the Forest Service officially abandoned its policy that required all fires to be extinguished as quickly as possible. The Forest Fires Emergency Act was repealed the same year (Pyne 1982; 259, 290-291).

[4] About $20 million in 2002 US dollars.

Forest economist Randal O'Toole notes that initially, the policy changes of the 1970s "led to subtle yet significant changes on the ground" (O'Toole 2006, 219). Instead of immediately suppressing all fires, the Forest Service began taking greater advantage of topography and natural barriers to contain fires—keeping suppression costs down, and allowing more acres to burn. Average annual suppression costs[5] dropped from $125 million in the mid-1970s to $61 million from 1977 to 1984 (O'Toole 2006, 219).

The repeal of the Forest Fires Emergency Act put a stop to unconstrained reimbursements of emergency fire suppression spending. Like other forest management activities, firefighting was funded as a line-item—receiving around $110 to $125 million annually (O'Toole 2006, 219). For the first decade, this amount usually covered annual suppression expenditures. In years of more expensive fires, the Forest Service drew on its reforestation fund, and then paid itself back during less costly years.

But the late 1980s produced several extreme fire years. Annual Forest Service suppression costs from 1987 to 1990 averaged more than $300 million (O'Toole 2006, 219). The 1.5 million acre Yellowstone fires of 1988 attracted nation-wide interest and concerns about fire management policy. Congress, the media, and the public questioned the wildland fire use[6] policy that allowed fire to "destroy" America's first national park.

Many were not aware that the lodgepole forests which constitute 80 percent of Yellowstone National Park are habituated to such intense, stand-replacing fires. The 1988 fires were no anomaly, but a regular event occurring every century for millennia (Barker 2005; 191, 206). Nevertheless, the general outcry forced a reevaluation of fire policy (Aucoin 2006).

[5] Here and below, financial data are adjusted for inflation to 2002 US dollars.

[6] "Wildland fire use" refers to the management strategy of allowing fires to burn without suppression action. It is usually only applied in remote areas and under accepted weather conditions. Fires are allowed to burn either until they are extinguished by weather, or until they threaten property, valued resources, or human life, at which time they are actively suppressed.

Managers were mandated to create fire plans for all federal forest lands, and all fires were to be suppressed until fire plans were in place.

Congress poured more money into suppression funding, tripling the Forest Service's annual appropriation to $375 million in 1989. Even this increase did not put a dent into the agency's suppression deficit, and the Forest Service began to express concern at the depletion of its reforestation fund. In 1990, Congress granted $280 million to repay the fund, once again establishing a precedent of reimbursal of emergency firefighting spending (O'Toole 2006, 219).

This is the system today. The Forest Service receives an annual appropriation for fire suppression. If costs exceed the appropriated amount, the president can allow the Forest Service to draw on an emergency fund, which it has, every year since 1993 (O'Toole 2006, 219). Once again, the Forest Service can not ascertain the limits on funding for emergency fire suppression without pushing the boundaries. To agency personnel, emergency suppression funding seems limitless. This provides a strong incentive to suppress fires, and to do it inefficiently, regardless of the general knowledge of the benefit of fire to various forest ecosystems.

Despite the about-face in forest policy in the 1970s, little has changed with respect to suppression costs and the proportion of fires that are suppressed. In 2005, less than 1 percent of fires on federal lands were allowed to burn, and wildland fire use represented only 6 percent of acres burned. Since 2000, Forest Service fire suppression costs have averaged over $1 billion annually (NIFC nd).

The Firefighting Paradox

The Forest Service has admitted the mistake in attempting to suppress all fires on national forests. Today, fire is recognized as an essential part of many forest ecosystems. According to

former Forest Service Chief Dale Bosworth, the national forests' greatest threats include hazardous accumulations of fuels due to the exclusion of fire, and the dangerous fires that could result from ignition of these fuels (USDA Forest Service 2006).

One of the Forest Service's main objectives is to mitigate these threats through hazardous fuels reduction—prescribed burning or mechanical removal of fuels. The agency itself partly created the fuels threats—ignoring scientific research and choosing to suppress fires. Although the increased fuel load was the result of Forest Service mismanagement, Congress's reaction was to increase the agency's budget. Between 1990 and 2000, annual fuels treatment budgets rose sevenfold, and fire preparedness, or pre-suppression, budgets more than doubled (O'Toole 2002-2003).

Part of the reason for the emphasis on fuels reduction is to sustain and expand the Forest Service itself. There is no motivation to even have a Forest Service unless they can define a clear purpose. If, as seems likely, the employees want to keep their jobs, this will be high priority. With total fire suppression falling out of favor and the Endangered Species Act putting a damper on the Forest Service's timber program, by the 1990s fuels reduction had become a central purpose for the agency (O'Toole 2002). The focus on fuels reduction provides a means for the Forest Service to expand its budget, a motivation that can drive policy changes for federal agencies (McChesney 1990).

It would seem logical that a component of hazardous fuels reduction would also entail a reduction in wildfire suppression, but this is not the case. "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" (O'Toole 2002-2003, 17). The Forest Service has only completed a fraction of its fire management plans, without which all fires are automatically suppressed (Dale 2006;

O'Toole 2002, 35). Meanwhile, suppression budgets continue to skyrocket. The Forest Service's 2008 budget calls for a 23 percent increase from the 2007 appropriation (USDA Forest Service 2007b). A problem that the Forest Service created—excess fuels—prevents appropriate burning, and so the problem grows.

Increasing numbers of homes in the "wildland-urban interface" bordering forested lands add to risks associated with wildfire. Political and public pressure to protect these homes from fires often shapes management decisions. Homes and structures adjacent to forest lands raise suppression costs. Firefighters have admitted to spending more money attempting to preserve structures—like mining shacks and hunter's cabins—than the structures themselves were worth (Ingalsbee 2000, 4; Truesdale 1995). The protection of private homes in wildland-urban interface areas is comparable to federal flood insurance—a subsidy to people who build homes in risky locations.

In some cases, fires cannot be controlled without a change in the weather, but firefighters feel compelled to at least try to save homes. "Many in the firefighting community know their puny efforts are meaningless, but it is perceived as important to make the attempt, no matter how futile" (Wuerthner 2006, 203). "These large 'project fires' are sometimes dubbed 'political shows' by experienced firefighters who know when their labors will have no effect on fire behavior" (Ingalsbee 2000, 5). Public expectations and threats of negative media exposure in the wildland-urban interface direct management decisions which can be costly and inappropriate.

Aside from the money that fire suppression brings into the Forest Service, firefighting is big business in many areas. "A new 'fire-dependent' class of government agencies and private corporations has accumulated enormous power and profits from firefighting" (Ingalsbee 2006, 223). Firefighting receives about a quarter of the Forest Service's resource management funding

every year (Nelson 2000, 4). Local businesses and federal contractors have come to depend on an influx of firefighting dollars.

In sum, since fighting fire enjoys widespread support from businesses, property owners, Congress, and the Forest Service itself, only a small percentage of fires are allowed to burn unfettered on national forests. This risk-avoidance strategy is typical of "bureaucratic myopia" (Shughart 2006)—no politician or bureaucrat wants fire damage or casualties to occur on their watch. But suppressing fires in the present can result in greater problems in the future. As fuels accumulate, many forests stray further from their historical range of variation, and fires threaten to be more damaging and dangerous.

A Bad Public Good

Fire suppression policy has backfired because of the political nature of public land management. Public ownership of forests results in management decisions based on politics, rather than on local, professional, or scientific knowledge. With respect to fire management, the outcome of political decision making has been too much fire suppression—fires are extinguished regardless of the cost or ecological effect.

Publicly-owned forests offer many amenities that are non-rivalrous and non-excludable; for example, open space, clean air, and biodiversity. Many suggest that such goods will not be provided by the private sector, and instead should be the responsibility of the government (Jackson, et al. 2003, 361-63). But government management does not guarantee optimal results (see Haddock 2007 for a discussion of "bad public goods"). Indeed, government management of fire suppression on national forests has interfered with ecosystem function and put forests and communities at risk.

The Forest Service is staffed by qualified professionals, but they respond to incentives, like anyone else (O'Toole 2002). Bureaucratic incentives do not always encourage responsible stewardship of natural resources. This is exemplified in fire policy decisions that increase the Forest Service's budget, but result in fuel-choked forests of weakened trees.

Also, government management at the federal level often ignores local variation. Decision makers located in Washington, D.C. are remote and thus less able to comprehend the nuances of that variation, and less able to react to environmental changes as they occur. The challenge for policy makers is to create a national fire management policy that effectively supports decisions based on local conditions.

To put it mildly, there is room for improvement in federal fire policy. Most fires are suppressed, at a huge cost to taxpayers, and often to the detriment of forest resources and amenities. There are a number of ways fire policy could be restructured.

Alternative 1: Limit Emergency Fire Spending and Encourage Wildland Fire Use

With unlimited funding for emergency fire suppression, federal agencies have little motivation to allow burns. If Congress appropriately reformulated firefighting funding, managers would have better incentives to adjust suppression strategies, as they did initially in the late 1970s. This would not only reduce suppression costs, but also restore fire to the landscape. The first step would be to curtail repayments of emergency fire suppression spending.

Another option could be to fund fire suppression out of each individual forest's budget. During a Forest Service investigation of expensive fires, managers "said they would have fought fires differently, and at a lower cost, if the money had come from the forest's allocated budget," instead of from federal emergency fire suppression funds (Truesdale 1995, 10). This approach

would curb suppression costs, better encourage fire management tailored to local conditions, and likely encourage more wildland fire use.

O'Toole suggests that each national forest, park, or Bureau of Land Management district should be funded out of its own receipts (O'Toole 2006, 220). Timber revenues could be supplemented with fees for recreation, grazing, mining, and other forest uses (O'Toole 1995).

Limiting emergency suppression funds might be the best way to ensure that fire will be restored to forests and that firefighting expenses do not spiral out of control. But in the face of large fires that will inevitably occur, Congress is unlikely to retain a policy that curbs emergency suppression funding. It may be more realistic to first fund fire suppression expenses from local budgets on a trial basis in some areas. Based on the relative success of this step, policy reform could begin to work towards eliminating unconstrained reimbursements of emergency firefighting expenses.

Alternative 2: Concentrated Fuels Reduction

Fuels reduction, either by prescribed burning or mechanical removal of fuels, can address the fire problem before the sparks fly.[7] Currently, federal agencies treat about 2.5 million acres for fuels reduction annually. Some estimate that at this rate, it will take more than 70 years to address all acres in need of treatment (Power 2006, 211). Before the task could be completed, the first areas treated would again be at risk. Estimated costs vary, but even conservative approximations run into the hundreds of billions of dollars (Power 2006, 213).

[7] Prescribed burning can only occur when weather conditions are amenable to a controllable fire, generally in the spring or fall, with low temperatures and low winds. Mechanical removal encompasses a range of treatments from hand-piling to timber harvesting—all of which entail some sort of physical elimination of fuels. Mechanical treatments are often paired with burning; for example, slash burning following thinning. This pairing increases the effectiveness of treatments for fuels reduction purposes.

Furthermore, it is not clear that fuels reduction is the correct answer to the fuels accumulation problem. Once again, federal policy is attempting to force a nationwide program on an ecologically diverse national forest system. Like fire suppression, fuels reduction is not appropriate on all forests. Some forests historically burned every 100-200 years or more (FMI 2001), and therefore have not strayed far from their historical range of variation during the decades of fire suppression. Also, forests habituated to infrequent but intense fires rely on an accumulation of fuels to carry flames. Fuels reduction would force these forests away from their historical states. It seems that federal agencies may be embarking on an endless, excessively costly mission in their fuels reduction programs. While this assures continuing employment for the bureaucracy, it is not an efficient solution to the fuels problem.

Also, fuels reduction programs may ignore the important effects of climate and weather on fire behavior. Some studies suggest that it is drought and warmer temperatures—not fuels accumulations—that are the major explanatory factors for large fires (O'Toole 2002-2003, Pierce et al. 2004). Reducing fuels may be appropriate in some areas, but it is an unrealistic goal to return all forests to historical states, in light of the fact that agencies have no control over drought or temperature.

Fuels reduction treatments are only necessary in some areas, such as ponderosa and longleaf pine forests that are adapted to frequent, low-intensity fires. This fire regime makes up about half of federal forests, about three-quarters of which are in need of fuels reduction treatment—a total of 83 million acres (FMI 2001). At a rate of 2.5 million acres per year, this area could be treated for hazardous fuels reduction in about 33 years. Also, these forests are likely the easiest to treat for fuels reduction, and therefore least costly. Once they are brought

within their historical range of variation, periodic, low-intensity prescribed fires—or wildland fire use—could maintain this state at a relatively low cost.

Alternatively, and in other fire regimes, it may only be appropriate to implement fuels reduction programs in wildland-urban interface areas, where catastrophic fires put lives and property at risk. This may alter the ecology of these forests, but interface areas have already been modified by roads, structures, and other trappings of civilization. Efforts to keep such forests in their historical state will only put rural dwellers at greater risk.

The Forest Service can treat wildland-urban interface areas for hazardous fuels, but research suggests that homeowners can make a significant reduction in risk of home ignition through actions on their own property (Cohen 2000). The first preventative step would be to carefully consider the fire safety of building sites. It may not be wise to build homes in heavily forested areas that are suited to periodic wildfires. Appropriate building materials and landscaping also decreases the risk of home ignitions during wildfires (Cohen 2000). Cedar roofing shingles can be replaced with less flammable materials. Maintaining a green lawn within a radius of 30-120 feet from buildings can also help to protect homes. Thinning of adjacent forest lands outside of the 120 feet radius may have little effect on home ignitions (Power 2006, 210).

Concentrating fuels reduction treatments to the immediate area around homes would significantly reduce the task load. The Forest Service estimates that only about 1.9 million acres in the wildland-urban interface are at risk of fire. The majority of this area is private land (O'Toole 2002-2003, 19). At current rates and funding levels, and with landowner cooperation, the Forest Service could treat the entire 1.9 acres within a single year. Even if federal dollars went towards reducing fuel hazards on private lands, it would be a considerable savings in suppression costs later.

Insurance companies are beginning to implement programs that require homeowners to take steps to "fireproof" their homes, such as trimming branches, moving firewood piles away from structures, and cleaning gutters and lawns of pine needles and other flammable debris. State Farm Insurance Company offers lower premiums to homeowners in Arizona, Nevada, New Mexico, Utah, Colorado, and Wyoming, who have taken steps to prevent home ignition (Power 2006).

Local jurisdictions are also adopting regulations that require homeowners to protect themselves from wildfires. Regulations exist at the state, county, or city level in California, Oregon, Colorado, Florida, Idaho, Montana, New Mexico, Utah, and Washington. Some local fire departments and zoning boards have enacted fire standards for new developments in high-risk areas. Codes may prevent development on steep slopes, or require fire-resistant building materials and wider streets to facilitate access for emergency vehicles (Power 2006).

Fires will occur regardless of fuels reduction efforts. In some areas, forests will burn catastrophically, and this is largely beyond the control of federal agencies. Many forest ecosystems depend on intense, stand-replacing fires. Efforts to prevent these are not only futile, but counter-productive. Drought and temperature play a significant role in fire behavior, and are beyond the control of federal agencies. Fuels treatments should be concentrated in only certain areas, such as low-intensity fire regimes and in the wildland-urban interface.

Alternative 3: Take it to the State

Several researchers propose that forests would be better managed in the hands of the states, instead of the federal government (Nelson 2000, Leal 1995). This would ensure more local decisions, and get away from one-size-fits-all forest management policies.

University of Maryland environmental policy professor Robert Nelson notes that state management of forests would reduce the impact of national media and national interest groups. Also, Nelson suggests that current policy amounts to a budgetary tragedy of the commons, in that each state tries to get the largest chunk of federal forest management dollars, while bearing a minimal portion of the cost. Furthermore, he remarks "most of the tasks of national forest management do not really involve issues of national significance" (Nelson 2000, 112-113).

States could get involved in several ways in managing federal forests. One is the transfer of ownership and all management responsibilities from the federal government to the state governments. Alternatively, federal agencies could retain ownership and some management responsibilities, but turn fire management and suppression operations over to the states.

Decentralization has several strikes against it. First, it is not likely to be politically popular with the general public, and even less with Congress. Furthermore, while some state and local agencies are more efficient and ecologically responsible than their federal counterparts others are not. For example, Leal (1995) found that state forests in Montana and county forests in northeastern Minnesota outperformed neighboring federal forests both economically and environmentally. But O'Toole notes that state forest agencies respond to incentives in the same manner as the Forest Service. State forests which are not funded out of their own receipts often lose money at a similar per-acre rate as the national forests. Also, most states do not have wildland fire use policies and require all fires be extinguished as quickly as possible (O'Toole 2002, 43-44).

Turning only fire management responsibilities to the states may be more palatable to the public, but it could overwhelm state forestry agencies. In addition, many states would need to adopt wildland fire use policies. Nevertheless, this approach is already working to some degree

in Oregon, where the Bureau of Land Management (BLM) contracts with the state for fire protection on 3 million acres (O'Toole 2002, 43). This system could work efficiently if it were allowed to be phased in gradually to allow state agencies to reform fire policies and to adjust to the additional fire management responsibilities.

Turning responsibility for forest management over to state agencies will result in management more suited to local conditions, but it will not necessarily solve all problems in fire policy. State foresters will also be influenced by politics, powerful interest groups, and financial incentives. Without incentives to curb suppression costs and to implement wildland fire use, it is unlikely that all states will perform better than federal agencies.

Conclusion

As long as there is a blank check for emergency fire suppression, most fires will be suppressed and wildland fire use will be limited. Suppression costs are likely to be excessive. To achieve management goals, incentives need to be restructured.

It will take a shift for Congress to put a cap on reimbursement of emergency fire spending. The public is sensitive to reports of devastation by fire, and Congress responds by throwing money at the flames. If funding for emergency firefighting is withdrawn, the public will question the lack of support and the policy that allows forests to burn, putting lives and structures at risk.

There is no simple solution to remedy the problems of fire policy. Ecosystems are diverse and constantly changing. Fire's role is not the same across all landscapes or to all species. Therefore, a successful fire policy should incorporate a greater degree of local control.

In addition, a policy that encourages managers to allow fires to burn when appropriate will curtail suppression spending and restore fire to forests.

A first step could be funding suppression from local budgets. In addition, in the wildland-urban interface, fuels reduction and homeowner responsibility may prevent excessive fire suppression spending. Turning over some—or all—management responsibilities to the states would allow for local decision-making, but it is unlikely to result in significant change in all states in the absence of restructured incentives.

As a public good, fire suppression on public lands is not guaranteed to be provided at optimal levels. It may not be possible to reach an ideal solution under current institutional arrangements. But a comparative approach to the problem (Demsetz 1969) could at least produce a fire policy that will not increase risks to forest resources and rural communities. It is unreasonable to spend billions of dollars on a counter-productive program of fire suppression. With a few changes, federal policy can be adjusted to curb wasteful spending and to encourage the return of fire to forest ecosystems.

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