



Following the Money:

National Fire Plan
Funding and
Implementation

Policy
Analysis

SCIENCE FROM



THE WILDERNESS SOCIETY

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Following the Money:

National Fire Plan Funding and Implementation

By
Lisa Gregory, Ph.D.



THE WILDERNESS SOCIETY

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- **The Wildland Fire Challenge:** Focus on Reliable Data, Community Protection, and Ecological Restoration
- **The Federal Wildland Fire Budget:** Let's Prepare, Not Just React (Emphasis on Reduced Financial and Ecological Costs)

Science & Policy Briefs on wildland fire issues:

- **Wildland Fire Use:** An Essential Fire Management Tool
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These reports and related Science & Policy Briefs are available on The Wilderness Society's web site <www.wilderness.org> and from The Wilderness Society, Communications Department, 1615 M Street, NW, Washington, DC 20036 (202-833-2300 or 1-800-THE-WILD).

Preface

Each time our nation's forests suffer a disastrous fire season and homes burn, the halls of Congress resound with cries that policymakers must “do something” to lessen America's vulnerability to wildland fires. The National Fire Plan (NFP), a policy framework adopted in 2000, is the latest such federal effort. It allocates unprecedented amounts of funding for fire management activities, with a special emphasis on reducing the risk of fire in the wildland-urban interface — areas where communities intermingle with public land and where most of the staggering costs of out-of-control wildfires are concentrated.

Since its inception just five years ago, the NFP has allocated billions of dollars to the Forest Service for fire management. But those funds will do little to answer the nation's wildfire question if the agency focuses them on the wrong places. Unfortunately, that is too often the case. In *The Wilderness Society's* report, *Following the Money*, Natural Resource Policy Fellow Dr. Lisa Gregory traces the path that NFP funds travel from the Forest Service headquarters in Washington, D.C. through its regional offices and on to individual forest districts. In doing so, she reveals the ways in which this agency's budget and reporting structure lock it into counterproductive practices that actually hinder longer-term efforts to reduce the risk of catastrophic wildland fires.

Her findings show that NFP money bolsters skyrocketing fire suppression budgets at the expense of community assistance efforts, and funds poorly designed fuel-reduction projects that regularly disregard current scientific thinking. An inadequate accounting and reporting structure within the Forest Service then reinforces these ill-considered priorities by rewarding easily quantifiable measures of performance, criteria that cannot ensure progress toward the key objectives the NFP seeks to achieve.

The National Fire Plan was an excellent first step toward building a rational fire strategy from the ashes of previous national policy missteps. But until the Forest Service reassesses the way it prioritizes and accounts for its own budget, dismantles a misguided incentive structure, and redirects money toward work that might actually improve outcomes, not even the best-laid fire plans will reduce the risk of catastrophic wildland fire on this country's vast and wondrous forest lands.



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Acronyms and Abbreviations

ARNF	Arapaho/Roosevelt National Forest
BFES	Budget Formulation and Execution System
FRFTP	Front Range Fuels Treatment Partnership
GAO	Government Accountability Office (formerly General Accounting Office)
GPRA	Government Performance and Results Act
NAPA	National Academy of Public Administration
NEPA	National Environmental Policy Act
NFP	National Fire Plan
NFPORS	National Fire Plan Operations and Reporting System
OMB	Office of Management and Budget
PART	Program Assessment Rating Tool
PSI	Pike/San Isabel National Forest
RMRS	Rocky Mountain Research Station
SFA	State Fire Assistance
USFS	United States Forest Service
VFA	Volunteer Fire Assistance
WFLC	Wildland Fire Leadership Council
WGA	Western Governors' Association
WO	Washington Office (of the USFS)
WUI	Wildland-Urban Interface

Report Highlights

The National Fire Plan (NFP), a package of policy documents that provides the framework for managing fire on public lands, was launched in the wake of the dramatic and expensive fires of 2000 in order to reduce the many risks associated with wildfire. In the last five years, Congress has allocated billions of dollars to the implementation of the Plan, which seeks to “actively respond to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future.”

The NFP stands apart from previous efforts to manage fire on public land in two ways: the dramatic increase in funding designated to fire management; and the focus on fire prevention and fuels treatment in the wildland-urban interface (WUI), the place where private property abuts public land.

Despite the NFP’s policy strength and depth, however, the plan’s implementation is still lacking. This is in large part because of management obstacles: institutional rigidity in the federal agencies and accounting and reporting weaknesses hamper the delivery of limited funding to the places where it would do the most good. By “following the money” within the United States Forest Service, the agency primarily charged with implementing the NFP, this report examines the various factors that contribute to decision-making within the fire program on public land.

Following the money downwards — tracking Congressional appropriations as they travel through the Forest Service’s headquarters in Washington, DC through regional and state authorities and finally to individual forests — tells us much about the effectiveness of the Forest Service in meeting NFP objectives:

- National funding trends reveal strong federal preference for fire suppression and hazardous fuels reduction, along with preparedness funding, while complementary important programs like State and Local Assistance remain under-funded, severely limiting the extent to which many communities are able to prepare for fire.
- The bottomless supply of money for fire suppression creates a “blank check mentality,” and fire managers have little incentive to reduce skyrocketing suppression costs. As a result, the agency regularly runs out of money allocated for suppression and has to divert funds from other important forest management programs, money that is rarely repaid in full.

Our Conclusions

Following the money reveals important issues with NFP implementation in the USFS:

- **Incentives are powerful.** Incentives and the money that accompanies them are powerful motivators, encouraging the agency to accomplish measurable activities while delaying the implementation of equally important actions that aren’t as easily quantified.
- **“Outputs” and “outcomes”** must be differentiated. Measured accomplishments — outputs — often fail to correspond with the ultimate desired outcomes of the fire program.
- **Accounting matters.** Ongoing accounting failures and budgeting mishaps are indicators of pervasive institutional problems within the Forest Service.



PHOTO BY JOHN CARR

Forest fires behave differently depending on forest type, weather conditions, topography and location. NFP funds must support the meticulous planning necessary to protect communities from wildland fires.

- Despite consistent policy direction urging fire planners to utilize a collaborative process, there is no funding for the development of this approach. In the Forest Service, unfortunately, poor funding often means slow implementation.

Following performance measures upwards — tracing the reporting of accomplishments from the field level back up to the Washington office — reveals additional issues blocking effective NFP implementation:

- Fire program performance measures, as currently structured, often create unintended incentives that encourage managers to demonstrate “success” by accomplishing easily measurable outputs that may not in fact contribute to the larger goals of reducing wildfire risk or improving forest health.
- There are no performance measures that meaningfully encourage fire managers to devote limited resources to collaborative, long-term community involvement in fire planning.
- Forest Service fire program management is hampered by weak accounting of funds and sloppy reporting of accomplishments.

Recommendations

- Introduce improved, detailed accounting and reporting protocols across the Forest Service. Without improved accounting, attempts at reform will continue to fall short.
- Utilize only those performance measures that can reasonably be accomplished based on capacity and technology.
- Develop more precise performance measures that better link outputs and outcomes, and ensure that what is being reported is both consistent and accurate.
- Devote a substantially larger proportion of resources to programs that provide much-needed assistance to communities and private landowners who want to reduce their fire risk.
- Introduce incentives that encourage fire managers to better balance the suppression imperative with cost containment and fire use in appropriate locations.

Introduction

Since the National Fire Plan (NFP) was launched in 2000, billions of taxpayer dollars have been spent in order to reduce the many risks associated with wildland fire. While some of the practices funded through the NFP are visible to the public eye, such as the purchase of modern air tankers to help with fire suppression, other financial components of the Plan remain shrouded in layers of bureaucratic protocol.

The allocation of federal money within the USDA Forest Service (USFS) reflects national and political priorities. In other words, the distribution of scarce resources to carefully chosen public land management programs is intentional — not random — and based on deliberate strategies set at a number of levels within the government. Following the money, then, reveals the USFS's explicit and implicit objectives in implementing the NFP. Additionally, following the money uncovers substantial budgeting weakness and gaps in the way the USFS accounts for fire funds.

Recent federal efforts to improve accountability through the use of performance measures make following the money both more complex and more revealing. As NFP money moves top-down, from agency headquarters in Washington DC to the Regional offices and ultimately to projects on the ground, accomplishments are reported bottom-up. Tracking these linked funding and reporting processes will help us better understand the numerous factors that contribute to decision-making within the fire program on public lands.

Methods and Report Overview

Of more than \$3 billion dollars spent on the NFP in 2003, 73 percent was appropriated to the USDA Forest Service; of the nearly 3 million acres treated for hazardous fuels reduction, more than half took place on USFS land.

Thus, while the NFP applies to other land management agencies, including, significantly, the Bureau of Land Management, this report will focus on the implementation of fire policy solely within the USFS. Empirical data for this case study come from Fiscal Year 2003 (FY03), the most recent year with complete and final data at the time of publication. In particular, data were obtained from the Washington Office of the USFS, the Rocky Mountain Region 2 Office, and two National Forests in Colorado, the Arapaho/Roosevelt and the Pike/San Isabel. Other sources of data include federal budget documents, reports from the Government Accountability Office (GAO), and a comprehensive review of the literature.

The report also includes information gleaned from extensive interviews with agency staff and outside experts. Leaders in many departments within the USFS Washington Office provided helpful insights, as did officials with the Office of Management and Budget, the Congressional Research Service, and the Government Accountability Office. In Colorado, research for this report relied heavily on ongoing discussions with Region 2 staff, planners in the Arapaho/Roosevelt and Pike/San Isabel National Forests, local scientists at the Rocky Mountain Research Station, and Colorado State Forest Service staff. Local forest experts and university scholars were also interviewed. Throughout this report, these contacts have been referenced and sometimes quoted; however, the candid conversations conducted during the course of the research merited anonymity in some cases. A complete list of interviewees is provided in the Appendix.

This report begins with a brief history of fire management in the United States, culminating in a broad overview of the NFP. From there, we go on to explain the importance of performance measures in driving agency activity and funding

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The distribution of scarce resources to carefully chosen public land management programs reflects national and political priorities.
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levels, linking them with budget protocols and Forest Service fire planning. Having laid the groundwork, we move into the details of how money moves through the system. A brief summary of federal appropriations and budgeting is followed by more detailed analyses of Regional level allocations, tracking the money as it moves horizontally to states and downward to individual forests and projects on the ground. The analysis consists of two parts: a discussion of three main conclusions derived from the research, and a description of the ongoing challenges associated with fire suppression funding and collaborative processes. Policy recommendations conclude the report.

Main Points

Throughout this report, three topics emerge as the most important themes driving funding and performance assessment within the National Fire Plan. First, incentives — and the money that often accompanies them — are powerful motivators. Tracing the flow of NFP funding to the USFS reveals important ways in which agency choices reflect both intended and unintended policy incentive structures.

Second, the measurement and publicizing of accomplishments in the USFS is almost always done in terms of measurable outputs, although much of the NFP itself is organized around less tangible but loftier outcomes. “Outcomes” are defined as over-arching objectives, such

as “reduced fire risk.” These desired outcomes tend to be programmatic and large-scale and, necessarily, difficult to assess. “Outputs,” on the other hand, are incremental steps toward outcomes; for example, if the desired outcome is to reduce fire risk, one output might be “number of acres treated for hazardous fuels reduction.” The implicit assumption, of course, is that the measurable output is an acceptable indicator of success toward an outcome that is more difficult to measure. This research suggests that, in fact, fire program outputs and outcomes rarely correspond.

Finally, accounting matters. Managing a multi-billion dollar budget across nine regional offices and 174 national forests, linking those dollars with measurable results, and producing meaningful summaries for both internal and external audiences are all indicators of accountability and transparency. Public land management, funded with taxpayer money, comes under tremendous public scrutiny, and effectiveness is assessed primarily by the agency’s ability to demonstrate results. The Forest Service has been reprimanded for its poor accounting practices, but reform has been slow. Ongoing accounting failures and budgeting mishaps are more than simple paperwork errors. Instead, they are indicators of pervasive and systemic implementation problems in the agency that interfere with efforts to improve transparency with the public.

Federal Fire Management: Scope and Nature of the Issues

Well before Europeans settled in the United States, native cultures used fire for tasks including hunting, clearing land for forage, farming and grazing, and creating charcoal for cooking. Even after European settlers developed suppression techniques to minimize damage to human settlements, they still used fire to manage and live on the land. Indeed, wildland fire was so common through the late 1800s that fire historian Stephen Pyne (1997) refers to the era as the “great barbecue.” He notes that fires were generally not fought and that Americans considered fire to be an inevitable part of living on the land. It was not until the late 19th century that new technology and a growing awareness of the value of forest resources fostered a shift towards more aggressive fire suppression. By the turn of the 20th century, fire had become an enemy to be fought.

Our current national fire system dates back to the harrowing summer of 1910, when 5 million acres of national forests burned and 78 firefighters died. In the aftermath of this smoke-filled year, the fledgling USDA Forest Service instituted fire suppression protocols and increasingly judged its own success by the degree to which it was able to eradicate fire.¹ In 1935, the “10:00 a.m. policy” was instituted, mandating that all fires be extinguished by 10 o’clock the morning following their eruption. Suppression was effective, and the number of acres burned plummeted during the 20th century. During the mid-to-late 20th century, even controlled or prescribed burns became uncommon. This aversion to fire was complemented by policy that solidified and codified this view.

By the 1970s, evidence of the unintended consequences of fire suppression

had begun to emerge. Fire ecologists, economists and forest managers all noted negative impacts of ongoing fire suppression, including loss of habitat for wildlife, the buildup of fuels in fire-dependent ecosystems, and sub-optimal nutrient cycling in soils and water. Prescribed fire slowly re-entered the forest manager’s toolbox, but suppression of wildfires remained the norm despite growing evidence supporting a wider range of responses to fire. Indeed, the Forest Service and other federal agencies were slow to respond to the increasing evidence of the damage caused by fire suppression: “Agencies operated more from bureaucratic momentum than from conviction,” Pyne (1997) explains. Thus, fire policy continued to support a massive suppression response even as forest experts increasingly recognized the costs associated with that action.

Now, early in the 21st century, fire experts, academics, agency scientists and conservation groups have reached a tentative consensus: the elimination of fire comes at great cost. First and foremost, there is the financial cost: large teams of firefighters and aerial support are required to fight fires. The costs are also ecological, because fire-dependent ecosystems starved of their regular fire cycle grow unnaturally dense; wildlife habitat, watershed function, and soil productivity are often compromised as forests lose their natural regeneration mechanism. Costs are also institutional, when land management agencies, rooted in the suppression policies of the past, find themselves unable to respond well to new scientific information and thus unable to manage public lands in the competent manner the public expects. And they are political: elected and appointed officials increasingly take public stands on controversial funding and fire management issues, allowing political pressures to interfere with a process

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¹ The Bureau of Forestry was consolidated, renamed and handed over to the new USDA Forest Service in 1905.

The Forest Service's continued emphasis on suppression shortchanges other elements of the fire program and exacts numerous costs:**Financial**

Large teams of firefighters and aerial support are required to fight virtually all naturally ignited fires; funding remains tight for critical programs that help communities at risk prepare for and protect themselves from fire.

Ecological

Fire-dependent ecosystems starved of their regular fire cycle grow unnaturally dense; wildlife habitat, watershed function, and soil productivity are often compromised as forests lose their natural regeneration mechanism.

Institutional

Agencies invested in old policies are unable to incorporate new scientific information to improve land management.

Political

Public fear during fire seasons and political pressures often cloud science-based management decisions.

that should be rooted in science, not public passions. The effort to re-incorporate a natural role for fire into our national management style will be long-term and arduous.

Part of the problem is due to institutional inertia: so many agencies and government offices now manage fire that reforming the system will be nothing short of transformative. Dozens of land management agencies influence the management of public lands in some capacity: the USDA Forest Service, the Bureau of Land Management, the Bureau of Indian Affairs, the National Park Service, and the Fish and Wildlife Service are some of the best-known examples. The Environmental Protection Agency tracks air quality and works with fire planners to manage both prescribed and wild fire use. The Office of Management and Budget works closely with the agencies to determine budget levels and performance targets. A multitude of other organizations play significant roles in the management of fire at the national level, including the National Interagency Fire Center, the inter-agency Wildland Fire Leadership Council, the Joint Fire Sciences research program, and others. Fifty states and countless local organizations also participate in fire management. The current system of fire management is institutionally complex, expensive, and deeply entrenched.

The National Fire Plan

Policy and Politics Behind the NFP

While the wildfire “problem” is certainly not new on public lands, it took the dramatic and expensive fires of 2000 to spur the U.S. government to take systematic action. Beginning with a formal letter from the Departments of Agriculture and Interior to President

Clinton in 2000, the National Fire Plan ultimately grew to encompass at least five very different policy documents (Table 1). While these five documents form the core of the NFP, the interagency NFP website actually lists 12 documents, reinforcing the breadth of policies that influence NFP implementation.

More recent forest policy such as the Healthy Forests Initiative and the 2003

TABLE 1.

National Fire Plan Policy Documents

Year	Policy Document	Author(s)	Summary
1995	Federal Wildland Fire Management: Policy and Program Review	USDA Forest Service and DOI	This report was a landmark in the development of the National Fire Plan. It offered a comprehensive look at the many facets of fire management, described key challenges facing land management agencies, and made specific recommendations for implementation.
2000	Report to the President in Response to the Wildfires of 2000: Managing the Impact of Wildfires on Communities and the Environment	USDA Forest Service and DOI	President Clinton asked the agencies to make recommendations on fire management. Themes in the report included the need to invest resources to reduce fire risk, the importance of community involvement, and agency accountability.
2001	Review and Update of the 1995 Federal Wildland Fire Management Policy	USDA Forest Service, DOI, FEMA, and other federal agencies	As a follow-up to the 1995 policy, this document overwhelmingly found the earlier manuscript to be sound and its recommendations valid. Implementation was found to be lacking, and barriers to improved implementation identified.
2001A	Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy	Western Governors' Association and Stakeholders	The strategy was crafted by a vast group of stakeholders, supported by the Western Governors' Association, and endorsed by several interest groups. It encourages a collaborative approach to improving prevention and suppression, reducing hazardous fuels, restoring fire adapted ecosystems, and promoting community assistance.
2002	Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan	Western Governors' Association and Stakeholders	A companion piece to the "Strategy," the implementation plan offers a framework for assessing progress toward fire management goals. The Plan suggests performance measures and implementation tasks for each desired outcome.

NFP Goals

1. Improve fire suppression efforts
2. Reduce hazardous fuels
3. Restore fire adapted ecosystems
4. Promote community assistance

Healthy Forests Restoration Act are not formally considered part of the NFP package, but operate almost entirely within the context of fire management, and serve to influence priorities and funding allocations.

Currently, the overarching intent of the NFP is to “actively respond to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future” (USDA FS and USDOJ 2001). Other important goals of the NFP are to: (1) improve fire suppression efforts; (2) reduce hazardous fuels; (3) restore fire adapted ecosystems; and (4) promote community assistance. Some policy documents suggest other goals as well, such as improving the overall accountability of land management agencies, improving firefighting resources, and expanding collaborative processes in fire planning.

In 2001 Congressional testimony, a GAO representative argued that two things set the NFP apart from previous efforts to manage fire on public lands (Hill 2001): (1) Congress formally recognized the need to dramatically increase and maintain high levels of funding for fire management; and (2) Congress crafted policy that focuses these efforts on the wildland-urban interface (WUI), the place where private property abuts public land.

Despite the breadth and depth of policy guidance within the NFP, many USFS employees and forest policy experts intimate with the process believe that the USFS has failed to integrate these priori-

ties into its land management practices. Several leaders in the Washington Office note that the policy documents “don’t tie together well” and that, as a result, policy direction often comes second to financial feasibility in driving fire management. “The budget drives where the money is going to be spent,” said one USFS employee in the Washington Office.

NFP Budget Structure and Funding Protocols

Federal funding for the National Fire Plan is allocated much as it is for all federal agencies, with the annual budget and appropriations process driving funding levels. Unlike some more centralized federal agencies, however, the success of the Forest Service depends almost entirely on its ability to deliver funding from its national headquarters to the field where work takes place. The USFS’s NFP funding structure can be broken down into three distinct steps: the appropriations process, the movement of funds from Washington to field offices, and the flow of money from regional offices to state and private entities.²

First, Congress determines funding levels for the agency’s Washington Office (WO), assigning specific amounts of funding to specific line items, such as Suppression and Hazardous Fuels Reduction. Once money is assigned to a budget category in Washington, the money stays in that line item as it travels to regional offices and forests. (Table 2) While strategic plans, performance measures and the “best available science” theoretically drive these allocations, and should thereby respond to

² NFP money is placed in Title IV of the overall USFS budget, although funds assigned to other budgetary sections — most notably, Title II, which supports broader land management work — can be and often are spent on fire-related activities. Because Title II funds used for fire are exceedingly difficult to separate from other land management activities — for example, a “vegetation management” project might well include some fuels reduction work, but the dollars are never itemized by intent — only Title IV dollars will be tracked for the purposes of this report.

shifts in national-level agency priorities, once money leaves the Washington Office, funding remains locked into the budget category to which it was initially assigned. Field offices rarely have the discretion to move funds from their assigned category, even when local needs suggest doing so.

Second, funds flow from Washington to field offices from top to bottom, and can generally be tracked by line item. The paths by which money moves from the Washington Office to other bodies

within the agency have a major impact on the projects that get funded — for example, regional offices are empowered to adjust funding levels between individual forests, thereby determining where work gets done. Some funds, however, such as those designated for Research and Fire Suppression, do not travel along established agency routes from top to bottom. Instead, the WO delivers these funds to the recipients directly. When a fire starts someplace, for example, suppression monies are spent in the appro-

TABLE 2.

National Fire Plan Budget Line Items

Annual appropriations are categorized by subject area. Funds in each category must be spent on activities that contribute to pre-determined strategic objectives.

Suppression

Funding in this category is used to pay for the multitude of expenses associated with fighting fires, with the largest costs attributed to the use of heavy firefighting equipment on large fires. Annual appropriated amounts are based on a 10-year average of suppression costs, but costs have exceeded appropriations each year since 1999. When the agency runs out of suppression funds, it "borrows" funds from other accounts. Unlike other line items in the fire budget, suppression money is handled exclusively at the federal level.

Preparedness

This category of funding is consistently appropriated at high levels. Money in this line is used to pay for expensive firefighting equipment, training of personnel, and research into fire science.

Hazardous Fuels Reduction

This program pays for the use of mechanical treatment and prescribed burning to treat hazardous fuels under the assumption that expanded treatments will reduce fire risk. Funding is based upon project proposals at the district and forest levels, and budgets are then compiled by regions and submitted to Washington for consideration. Forests are directed to treat as many "high priority" acres in the wildland-urban interface as possible.

Burned Area Rehabilitation

These funds are targeted to areas that have suffered from extreme fire activity. Money pays for the rehabilitation of roads, treatments to eradicate or control invasive species, manage erosion, as well as the replanting and reseedling of burned areas.

State and Local Assistance

With an estimated 85 percent of acres at risk from fire located on state and private land, this line item includes funds that will be passed from the agency to states and private entities. Most of these funds get to the ground via state forestry departments, and thereby travel outside of the federal system. Each state manages this process differently, but sub-categories with corresponding objectives used to track funds remain relatively consistent:

- State Fire Assistance: To improve state readiness and to reduce hazardous fuels on non-federal lands.
- Volunteer Fire Assistance: To improve readiness in rural and volunteer fire departments.
- Economic Action Program: To help communities develop market and business infrastructure to process forest products from fuels treatment work and ensure labor needs are met for that work.
- Forest Health: To identify and manage invasive species and pests related to fire. This line item is divided into two: Federal Lands and Cooperative (State and Private) Lands.

Source: USFS Budget Justification, Fiscal Year 2005.

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 Two things set the NFP apart from previous efforts to manage fire on public lands: (1) Congress formally recognized the need to dramatically increase and maintain high levels of funding for fire management; and (2) Congress crafted policy that focuses these efforts on the wildland-urban interface, where private property abuts public land.
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appropriate geographical location with very little financial decision-making originating in the forest where the firefighting is taking place.

Third, federal funds flow to state forest offices and private entities in the form of grants. Since the vast majority of land in the wildland-urban interface nationwide

is not federal (Aplet and Wilmer 2003), the NFP makes specific reference to the need to work across property lines and include state and private land in the overall approach to managing fire. Some funding allocated for the NFP, then, does not remain within the federal government.

The USFS's NFP funding structure can be broken down into three distinct steps:

The appropriations process

Congress determines funding levels for the agency's Washington Office, assigning specific amounts of funding to specific budget line items, such as "Suppression" and "Hazardous Fuels Reduction."

The movement of funds from Washington to field offices

Funds flow from Washington to field offices from top to bottom, and can generally be tracked by line item.

The flow of money from regional offices to state and private entities

The vast majority of land in the wildland-urban interface nationwide is not federal. NFP funds are delivered to state and local offices in the form of grant payments.

Performance Measures and Incentives

When money moves through the system from the Forest Service's Washington Office to decentralized regional offices, state forests, and research centers, each of these recipients must report back to the WO. The use of performance measures as a tool to enhance accountability and data collection at the field level is conceived as a way for money to be directly tied to results; that is, the public, through the use of performance measures, should be able to track what it got for its tax money; executive managers should be empowered to redirect funds to places in greatest need; and accountability should be improved at every level of the agency. It is impossible to understand the flow of money from the federal government downward without understanding the various incentives and measures of performance that are intended to control budget decisions.

1993 Government Performance and Results Act

In 1993, the federal government passed the Government Performance and Results Act (GPRA) in an effort to improve Congressional oversight and more closely tie appropriated dollars to measurable results. With a tagline goal of "credibility through accountability," Congress enacted GPRA to improve the link between the appropriations process and results on the ground. Since 1997, all federal agencies have been required to submit five-year strategic plans to guide funding; for the USFS, these specific annual performance plans must now be included as part of its yearly budget request. Within these plans, chronologically organized performance measures are itemized as indicators of success, designed to help the agency and Congress assess progress toward stated goals.

The performance measures themselves track outputs almost exclusively; for example, the agency tracks the number of acres of hazardous fuels treated or the percentage of fires extinguished.

A companion to the GPRA protocols is the Program Assessment Rating Tool (PART), administered by the Office of Management and Budget (OMB) and intended to assess program effectiveness. Designed to be the link between the performance accomplishments reported each year by the agencies and the allocation of funds for the next years' budgets, PART attempts to go beyond outputs and instead measure *outcomes*. The USFS develops PART standards in consultation with USDA and OMB. Four components of the fire program are assessed using this tool: program purpose and design, strategic planning, program management, and program results and accountability. The use of PART lags, however: FY04 is the first year PART was applied in the context of the wildfire program (GAO 2004). If PART becomes more smoothly integrated with the application of GPRA regulations to budgeting and results, it holds promise for systematic and regular program review. Without this component, the performance measures system tracks outputs but doesn't link these results to future budget allocations.

Performance Measures and the National Fire Plan

The use of performance measures in the NFP program ideally will enable adaptive management, whereby managers review output trends to identify specific areas of policy and implementation failure; using feedback loops, they can then redirect funds and resources to ameliorate those problems and foster improved output numbers. Those improved outputs, in turn, ideally lead to greater realization of desired outcomes.

Performance Measures as Indicators of NFP Success

Performance measures are intended to assess progress toward pre-stated goals, by measuring reported accomplishments over time. For this to be an effective tactic, the accomplishments must be legitimate indicators of success. Outcomes, such as reduced fire risk, are oftentimes impossible to measure with accuracy; outputs, such as the number of firefighters trained in a year, are much easier to capture. As a result, performance measures purporting to be indicators of progress toward outcomes are mostly

measures of outputs. The connection between a given output and the outcome toward which it is intended to contribute is too often a tenuous one.

Linking annual outputs to long-term outcomes is exceedingly challenging in any policy-making area. The many intervening variables between agency policies and long-term outcomes are commonly called the “black box” of policymaking (Easton 1965): differentiating the impact of one policy from other natural and planned phenomena is often impossible. In the case of land management, there are additional layers of complexity. The desired outcomes themselves are oftentimes difficult to define; identifying “forest health,” for example, has eluded scientific consensus in part because there are simply too many variables at play. Additionally, the time horizon for ecological outcomes is oftentimes so long (decades, generations, centuries) that annual outputs are rendered distant contributors. In short, ecological realities lend “unique problems” to land management agencies’ attempts to implement GPRA (Long and Franklin 2004). Agency efforts to identify outputs that might reasonably be used as indicators of progress toward desired outcomes are necessary, of course, but *equating* an output with the outcome is so oversimplified as to be inaccurate and misleading to the public.

Current performance measures used for the NFP within the USFS have roots in the 10-Year Comprehensive Strategy Implementation Plan and have been negotiated between the OMB and the agency. They are, by all accounts, not final; as the agency struggles to measure the data it is being asked to track, and the OMB works to understand the implications of what has been measured, there will undoubtedly be ongoing adjustments. At the time of this writing, the Wildland Fire Management program was tracked by outputs from 17 performance measures, each matched to both agency

TABLE 3.
Wildland Fire Management: Performance Measures by Line Item

The 17 performance measures currently used in the wildland fire program are grouped by budget category:

Preparedness

- Chains of fireline per hour (FFPC)
- Gross fire suppression cost per acre
- Percent unplanned and unwanted fires controlled during initial attack
- Number of fire facility projects completed
- Number of research products, tools, and technologies developed
- Percent of NFP RandD products and services that meet customer expectations as assessed through targeted, standardized evaluations

Hazardous Fuels

- Acres of non-WUI hazardous fuels mitigated
- Acres of high priority WUI hazardous fuels mitigated
- High priority acres in condition class 2 or 3 treated outside the WUI in fire regimes 1, 2, or 3
- Acres in fire regimes 1, 2, or 3 moved to a better condition class
- Acres in fire regimes 1, 2, or 3 moved to a better condition class per million dollars gross investment

Restoration and Rehabilitation

- Number of rehabilitation projects completed

State and Local Assistance

- Number of forest health acres protected on federal lands
- Number of forest health acres protected on cooperative lands
- Number of natural resource dependent communities assisted
- Number of communities assisted (State Fire Assistance)
- Number of fire departments assisted

(Note: Since suppression money is managed exclusively at the federal level, performance targets related to suppression are generally tracked under the "preparedness" line.)

Source: USFS Budget Justification, Fiscal Year 2005.

strategic goals and individually appropriated line items (Table 3).

These existing measures are deeply flawed. The OMB noted in its 2004 program review that “discrete targets and baseline data have not been developed for either annual or long-term goals. In addition, some performance measures are vague and in need of greater definition” (OMB 2004). For example, the agency is asked to track the number of communities “assisted.” This measure is intended to track outreach success, which, in turn, is seen as an output tied to the larger goal of increasing cross-jurisdictional cooperation. However, the measure does not adequately define the term “assistance,” making it all but impossible to expect consistency in reporting across forests and regions. Indeed, one Congressional Research Service analyst noted in testimony to Congress that many performance measures lack clarity, combine activities, miss important qualitative achievements, fail to capture important activities, count only a portion of what has been accomplished, and provide data that are difficult to interpret (Gorte 2000).

Nowhere are these weaknesses more vivid than in a close examination of the highly touted measure tracking the number of acres of hazardous fuels treated. Forests report the number of acres they treat, and track these acres both by method of treatment (prescribed fire or mechanical means) and location (priority wildland-urban interface, or “other”). This measure is intended to demonstrate increased activity on public lands, more active management, and a concerted effort to reduce the risk from fire. The assumption is that reducing fuels on as many acres as possible equals reduced fire risk in those locations — an excellent example of the confusion between outputs and outcomes. Does reducing fuels necessarily equal decreasing fire risk?³ Many fire experts, including prominent

agency decision-makers, privately acknowledge that this link is nothing more than an “article of faith,” based overwhelmingly on fire behavior modeling and anecdotal evidence. An exhaustive search of the scientific literature reveals a scant number of empirical studies on the topic, none of them conclusive (Carey and Schumann 2003). Without more information about the specific location of the treatments, the type(s) of treatment(s) performed over time, and the scale of the project, it is inaccurate to suggest that each additional treated acre creates greater community protection from fire. Still, the measure is widely used and is considered the primary proxy for assessing success in the highly funded (and highly publicized) hazardous fuels component of the fire program.

If performance measures are supposed to serve as indicators of success for the NFP, then this analysis raises some important concerns. Outputs do not appear to be well connected to outcomes, and the measures currently in use are flawed. Policymakers and the public must be made aware of the shortcomings of these measures. They are not acceptable metrics for determining the success of such a large and complicated program.

Performance Measures as Incentives for Agency Behavior

While the GPRA performance measurement process is still quite new, there are already visible impacts of the legislation on agency behavior. Since so many key functions of any organization defy easy quantification, agencies operating under a system where their success is indicated by performance targets are drawn to performing tasks that produce measurable outputs rather than those tasks that might be more important yet less tangible. Thus, adding performance measures to initially broad National Fire Plan objectives and long-term goals has

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³ The concept of “fire risk” is quite complex, and includes estimates of ignitability, fire hazard, and values at risk.

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For performance measures to guide fire management effectively, they must be understood not merely as reporting tools for work that has already been completed, but as incentives that drive the type of work that gets done in the first place.
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meant a narrowing of its implementation. For example, research into the sociological, political and economic dimensions of fire management — how private landowners respond to economic incentives to reduce wildfire risk, for instance, or how communications strategies can encourage public participation in wildfire planning — remains in its infancy due in large part to lack of funding, and management that includes wider use of naturally burning fire in the backcountry is still an elusive goal (Burke 2004, Gregory 2004). There are countless other examples of worthwhile components of holistic fire management that are currently underfunded and deprioritized because of the emphasis on expensive suppression and hazardous fuels reduction, both activities that lend themselves to quantified measurement under GPRA.

Perhaps most significantly, efforts to improve the “collaborative” component of the fire management *process* have been sacrificed in the pursuit of measurable outputs. In the past several decades, writes one scholar, widespread “dissatisfaction with the adversarial, command-and-control style of governance embodied by conventional environmental policies” (Lubell 2004) has contributed to a growing belief that greater cooperation up front will result in improved social and ecological outcomes. Fire policy documents reflect increasingly urgent calls for fire planners to use collaborative efforts as a way of involving a wide array of stakeholders in fire planning and management.

Despite this widespread agreement and publicity touting the benefits of collaborative fire management, the development of measures that assess its success has proven difficult for planners; as a result, the federal fire program currently does not measure *anything* process-related. It may be argued that collaboration is not an end in itself, and instead should be seen as a way to achieve more substantive work which *is* then mea-

sured. But one of the costs of this gap in performance measurement is a fire management administration that is understandably reluctant to invest in such an expensive and time consuming activity as collaborative decision-making.

Performance measures thus function as powerful incentives for decision-making, in this case by omission — since there are no incentives measuring collaboration, such efforts tend to take a back seat. Agency personnel respond to incentives by directing limited resources toward places where efforts will be recognized and away from places where investments are invisible.

Efforts are being made by the USFS and the OMB to improve and refine performance measures. The development of performance measures reflects the ongoing integration of new scientific insights, public demands and management priorities. For example, Forest Service managers have come to recognize that the previous “acres treated” metric is inadequate unless it also includes incentives to first identify and then treat high priority areas. Instead of just measuring sheer quantity of acres treated, many managers now also track the condition of the forest under treatment. However, this information must be better integrated into the reporting of performance. While the precise methods used to measure Condition Class have some serious shortcomings (Aplet and Wilmer 2003), the recent shift towards tracking ecological condition along with acres treated is an encouraging sign of flexibility within the system.

For performance measures to guide fire management effectively, they must be understood not merely as reporting tools for work that has already been completed, but as incentives that drive the type of work that gets done in the first place. “Performance measures drive everything,” says one Forest Service senior fire manager. As such, they should be constantly reviewed and adjusted to produce the best results.



PHOTO BY TOM STORY

Performance Measures: Data Collection, Recording and Tracking

Across the federal agencies, efforts to improve data collection, as mandated by GPRA, have been uneven. Indeed, 57 percent of cabinet-level agencies report GPRA implementation difficulties attributable to the “lack of valid and reliable data” (Long and Franklin 2004). Land management agencies are no different. Actions taken to improve inter-agency coordination in fire management have been stymied by inconsistent data collection and poor record-keeping. Not until 2004 did the USFS and Department of Interior agree on standardized performance measures and reporting protocols that link to both agencies’ strategic plans as well as national-level GPRA direction. Since both agencies are intimately involved in fire management, oftentimes working on adjacent parcels of land, it is astonishing that they haven’t collected comparable data or shared information until now.

Within the Forest Service, new software for data collection is poorly under-

stood and record-keeping methodology is inconsistent. The agency has a history of disorganization and weak implementation in this arena; the GAO observed in 2003 that “the Forest Service has made little progress in resolving its long-standing performance accountability problems and, based on the status of its current efforts, remains years away from establishing a credible performance accountability system” (GAO 2003). Chief among the problems identified by the GAO are: an agency organizational structure that fails to establish clear authority for performance measurement; the difficulty of decision-making in an agency that “relies heavily on consensus” (GAO 2003); and weak leadership in prioritizing better performance measurement tools. An internal inquiry concluded that fire “data had been lost or never gathered, too aggregated or of poor quality, and scattered or inconsistent over time” (Schuster et al. 1997).

Agency leaders agree that the high number of performance measures in the fire program is problematic. Senior

The use of hand tools to treat fuels is usually more expensive than large motorized equipment, but less damaging to the resource.

▼
Performance measures simply do not function as intended if they are not accurately tracked and reported.
▲

managers are hard pressed to make sense of so much information. The agency has not demonstrated the capacity to collect all the data required by the 17 total measures, let alone report it accurately.

Researching this report was indicative. Spreadsheet data obtained from agency contacts invariably conflicted with other spreadsheets purporting to display the same data. Different forests had tracked different metrics or hadn't tracked at all. Data were unavailable for mind-boggling reasons, including the inability to access the requisite software because "they never gave us a password." A single spreadsheet had been filled out by several staff members over an extended period of time using different protocols for calculation and recording, so the numbers were incomparable and therefore worthless. Some offices included overhead and administrative costs in their totals; others did not. Federal data failed to match regional data. Regional data conflicted with forest data. In Colorado, the subject of this case study, the state fiscal year begins on a different date than the federal fiscal year, making it literally impossible to reconcile budget and accomplishment numbers between the two entities.⁴

A number of Forest Service employees and interested observers interviewed for this report suggested that better software would help standardize data collection and improve accountability. Software currently in use for tracking and recording progress includes National Fire Plan

Organizing and Reporting System (NFPORS), a program many agree has been helpful in streamlining the process, and Budget Formulation and Execution System (BFES), used primarily to determine funding levels by category. There are so many software programs involved in the fire program in some capacity (Rideout and Biotti 2002), however, that finding anyone who understands the relationship among them is difficult. New programs promising better results are frequently introduced, and it seems the agency is unable to allow any one system to remain in place long enough to train its staff and develop multi-year comparable data.

It is unlikely that any magic bullet will effectively remedy the reporting difficulties that continue to plague the USFS's implementation of performance measures. Performance measures simply do not work if they are not accurately tracked and reported; improving accountability is only feasible if results are consistently and accurately communicated to a variety of audiences. Agency leadership could raise expectations for its field staff, perhaps by instituting clear protocols for the gathering of data and the timely reporting of such. Any reforms, however, must come from the top. So long as Forest Service accounting behavior remains as dismal as it has been for the last several years at the federal level, regional and forest staff will be hard pressed to improve their own accounting methods.

⁴ The federal fiscal year runs October–September. The Colorado state fiscal year runs July–June.

National Fire Plan: Following the Money in the USDA Forest Service

Funding in every category of fire management has increased since the advent of the NFP. These appropriations are strong indicators of just how politically important fire management has become. This section traces fiscal year 2003 NFP money as it moved through the USDA Forest Service's organizational system (Figure 1), tracking money that flowed through Region 2 in the Rocky Mountains to two national forest units: the Arapaho/Roosevelt (ARNF) and the Pike-San Isabel (PSI).⁵ In the case of the ARNF, project-level data for FY03 also helped complete the picture.

Federal Level NFP Funding Appropriations

Congress, the OMB, and the Forest Service work together in an iterative process to produce an annual budget. The process of creating an annual budget begins fully two years ahead, so that in any given year, three budgets are effectively in play: the one currently being implemented, the one in planning, and preliminary requests for a third. A recent report from The Wilderness Society examines the allocation of money to land management agencies in detail (Alkire 2004).

The sheer number of institutions involved in the production of an annual budget is astounding; the step-by-step budget process is illustrated in Figure 2. The total amount of money available for distribution within the agency is critically important for understanding federal fire management priorities, as is the categorization of that money into discrete

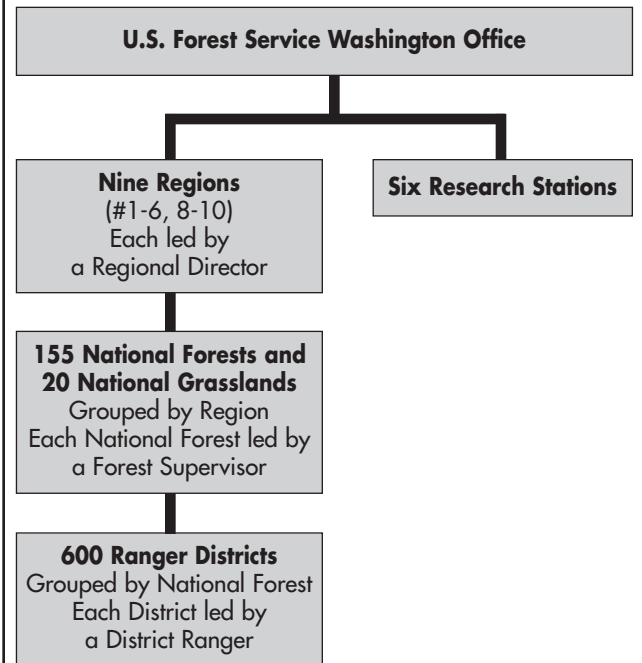
pots for strategic and organizational purposes. Likewise, trends in the total appropriation to specific line items are revealing (Figure 3) and demonstrate changing priorities over time. A full description of the appropriations process is beyond the scope of this report; instead, the allocation of money from the WO downward is of primary interest.

Allocation of Federal Money to Regional Offices

Once the WO receives its annual appropriation, budget leaders decide how to allocate these monies among the nine regions of the agency (Figure 4).⁶ Suppression funds remain at the WO, and the allocation of those resources is determined and tracked by federal staff. Likewise, the administrative overhead and fire equipment budget is tracked under the "National Shared Resources" heading and retained in the WO and distributed directly to individual forests as needed. Research monies are also allocated separately. Fire program allocation from the WO to regional offices thus is restricted to the "Preparedness," "Hazardous Fuels," "Restoration and Rehabilitation,"

FIGURE 1.
Forest Service Organization Chart

This simplified organization chart illustrates the decentralized structure of USFS National Forest Administration.



Source: USFS.

⁵ Both are single administrative units managing two national forests as one. Thus, four Forests are managed by two administrative office units. Within each unit, neither money nor performance accomplishments are separated by forest in the tracking systems employed by the agency.

⁶ Note that while the Regions are numbered up to 10, there is no Region 7. There are, then, nine total Regions within the USDA Forest Service.

and “State and Local Assistance” line items.

Since each region compiles budget requests from its many National Forest units and submits an overall regional budget justification as part of the upward process of budgeting, distributing money back down to the regions is relatively straightforward. If annual funding in the

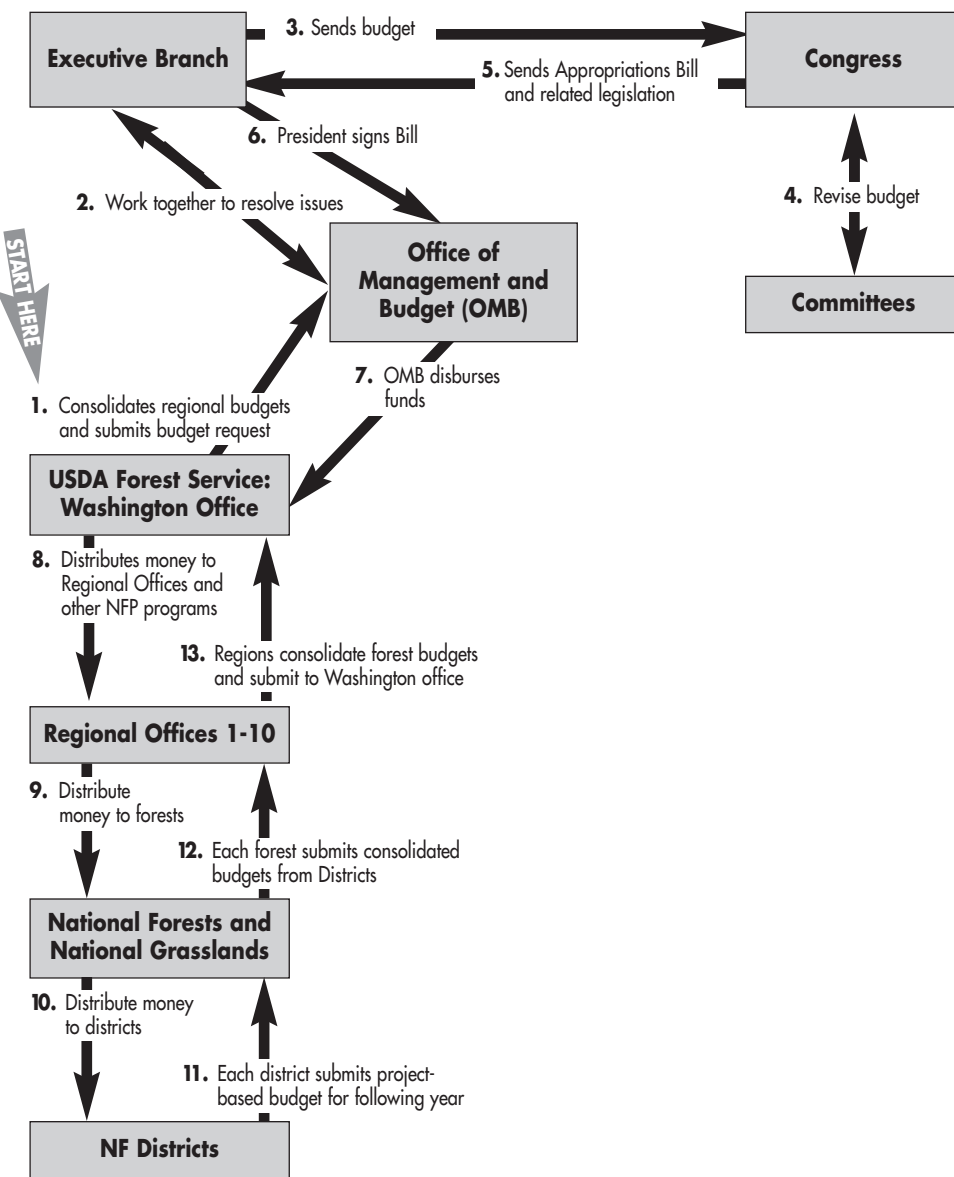
WO does not permit full regional funding levels as requested, the WO generally opts to “spread the pain” and reduces total funding levels proportionally across the regions. These allocation decisions are made in consultation with the Office of Management and Budget.

Forest Service funding within any given region remains relatively stable year to year. Regional strategic plans tend to situate forest and fire work within a long-term context, thereby assuring a somewhat steady stream of funding. This does not mean that each region receives the same amount. Rather, funding is distributed based upon land mass, perceived land management needs, estimates of fire risk, regional capacity to accomplish needed work, and other considerations. The result is that regional budgets are highly variable (Figure 5). The highest funding overall goes to Region 5, California; by way of comparison, Region 10 (Alaska) has both the smallest budget total as well as the smallest proportion of its money devoted to fire management (9 percent).

Political strength also drives the regional allocation of NFP funds. Nowhere is this trend more evident than the recent restructuring of NFP funding following the destructive California fires of 2003.⁷ Senator Dianne Feinstein, a member of the Senate subcommittee for Interior Appropriations, helped to assure the inclusion of several million dollars in the FY04 Appropriations bill specifically itemized for California post-fire rehabilitation. While the role of politics in driving federal funding is not exactly news, it is important to

FIGURE 2.

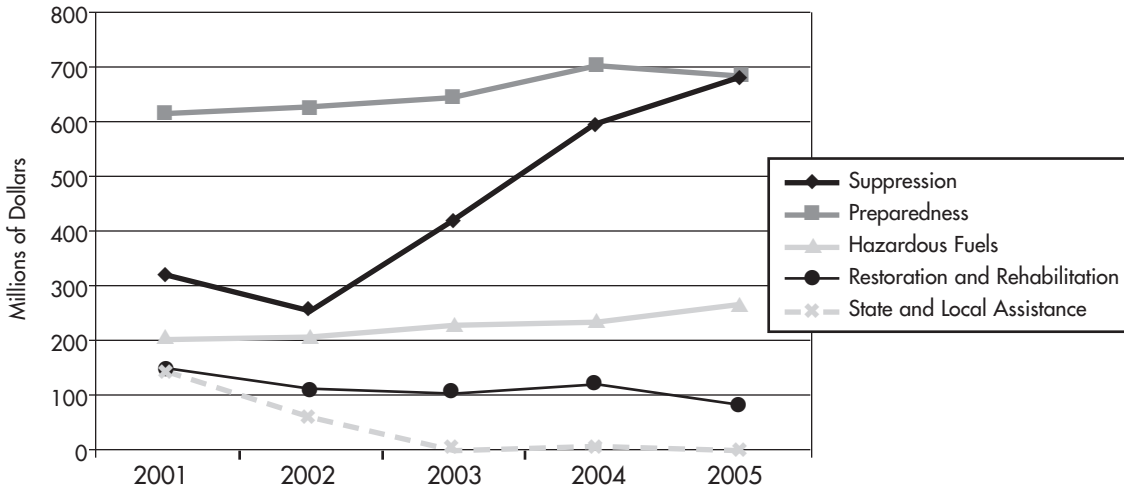
Forest Service NFP Appropriations System



⁷ In October 2003, Southern California fires burned 743,000 acres, destroyed approximately 3,570 homes, and caused the deaths of 22 people.

FIGURE 3.

Forest Service NFP Appropriations



Appropriation trends reveal exponentially growing suppression spending, with most other line items flat or declining.

Source: USFS Budget Justification, Fiscal Year 2005.

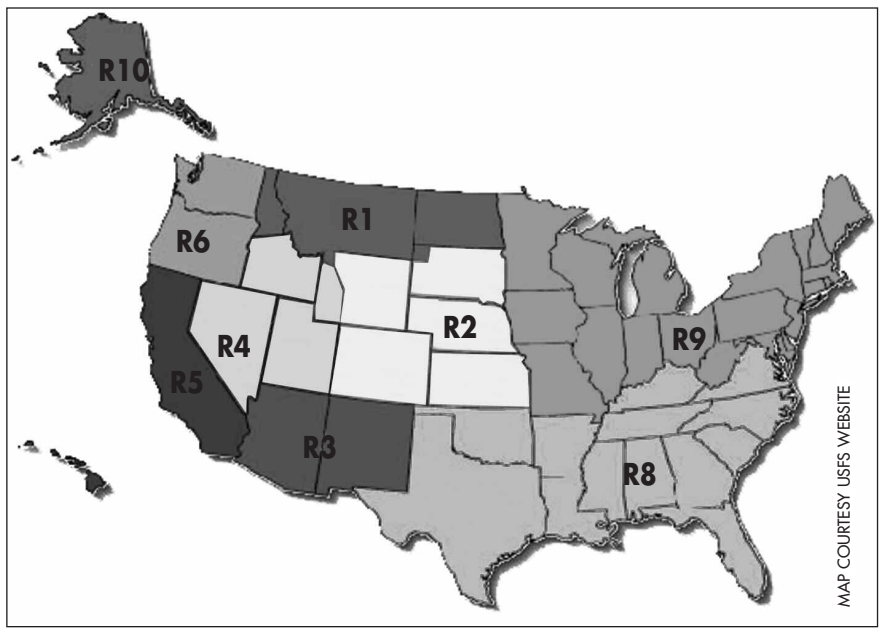
be aware of it as a powerful factor, lest we be convinced that the process is objective and entirely scientific.

Issues and Concerns

At the federal level, concerns about NFP funding are primarily related to the overall proportion by which limited funds are obligated to discrete accounts. With suppression funding accounting for approximately 70 percent of all NFP dollars spent,⁸ many policy experts have identified this explosion of suppression costs as a primary source of concern. Current incentives do not encourage cost savings (Donovan and Brown 2004), and fire managers on the ground have something of a blank check mentality. When costs exceed allocated funds, the WO transfers money from other accounts to cover suppression needs. In FY03, the USFS was appropriated a total of \$351.9 million for suppression, including Congressionally authorized emergency appropriation funds. Still, suppression expenditures for that year were \$1.023 billion, leaving a \$671.1 million shortfall which was covered only

FIGURE 4.

Forest Service Region Map



MAP COURTESY USFS WEBSITE

by transferring money out of other national forest accounts (Alvarez 2004).

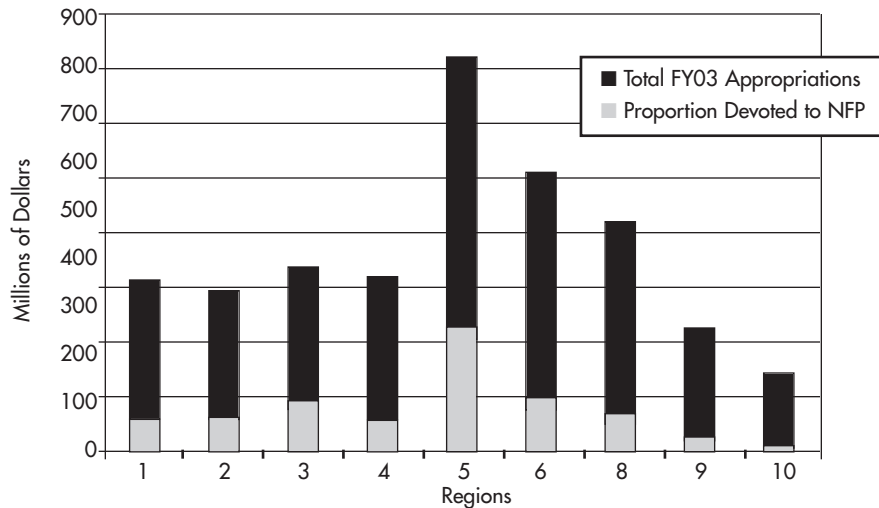
Preparedness budgets are also troublesome. High suppression expenditures are supported by highly-funded preparedness

⁸ This calculation includes funding in the preparedness line item, since the vast majority of those funds contribute to the effectiveness of a suppression response.

FIGURE 5.

Forest Service Regional Allocations

Based on a complex formula, USFS Regions receive different annual amounts of appropriated funds, with different percentages devoted to NFP work.



Source: USFS Budget Justification, Fiscal Year 2005.

accounts; in part, this allocation has been justified by a popularly repeated statistic: \$1 spent on preparedness equals a \$5-\$7 reduction in suppression costs. In truth, this statistic has no identifiable scientific source. An OMB study designed to establish a relationship between preparedness spending and suppression costs concluded that any relationship between the two variables is exceedingly weak. John Pasquantino, lead OMB budget analyst for the USFS, characterized the preparedness statistic as an “urban legend.” Still, reducing preparedness funding unilaterally would be foolhardy if the suppression mandate remains as strong as it is. However, if expanded fire use and incentive reforms succeed in reducing suppression needs on the national forests, then the amount allocated for preparedness might also be decreased. In other words, the struggle to fight fire on public lands means a great deal of money must be expended not only on the act of fire suppression, but also on purchasing equipment and planning suppression activity. If suppression costs are effectively contained, then preparedness costs will also decrease.

Difficulties prioritizing fuels reduction work also continue to plague all levels of the agency. While fuels reduction budgets are increasing, projects are proceeding without clearly stated priorities, amounting to a preference for quantity over quality. This creates ongoing discord between the agencies and the public, which loses trust when it sees unnecessary work being done on certain lands while more urgent projects languish. In addition, despite evidence that the majority of fire risk reduction should be accomplished on non-federal lands in the WUI, an average of only 7.8 percent of the total wildland fire budget has been allocated for State and Local Assistance projects since the advent of the NFP.

Finally, and perhaps most pervasively, the USFS has long been dogged with consistently bad audits. The impact of poor accounting goes beyond fiscal management; without good tracking of revenue and expenditures, the agency is unable to generate reliable data about outputs and future planning. The GAO has long followed this aspect of the agency’s management, and has identified the USFS as an agency of “particular concern” within the similarly troubled Department of Agriculture. In 2003, the GAO reported an improvement from past dismal performance; still, the agency had to “make an adjustment” of \$107 million to get its books to balance in 2002, and was considered an ongoing “high risk” because of ongoing “serious internal control weaknesses” (GAO 2003a). One federal research analyst who asked not to be identified went so far as to describe the agency as “fiscally unconscious” and “completely oblivious.”

Poor accounting is not limited to budget numbers. Data of all kinds, including ecological monitoring information, performance assessment totals, and financial breakdowns are in disarray, amounting to a lack of transparency with the public

(NAPA 1999). The Forest Guild, a long-time community forestry research institute, has noted that “consistent data to assess outcomes of the NFP across the West were nearly impossible to obtain, underscoring the need for a better system for documenting the effects of this important federal policy” (McCarthy 2004).

Regional Level Spending Receipt and Processing of Federal Funds

Once regions have received their allocated amounts, they are required to go back through proposed projects and adjust plans to better fit funding and personnel capacity. In December of each year, regional leaders consult with the Washington Office and realign their budgets to meet current political priorities. When USFS Chief Dale Bosworth listed the “four threats” facing national forests in 2003,⁹ for example, WO budget hawks called regional offices to ensure that planned projects adequately “met the intent” of these publicly stated national priorities.

Regions are relatively responsive to shifting priorities that come from above, and regularly rewrite plans to reflect new direction. In one example of this discretion, Region 2 shifted \$2 million of its FY03 funding away from nine of its forests and toward two along the Front Range of Colorado where the need for hazardous fuel reduction was considered highest: the Arapaho/Roosevelt and the Pike/San Isabel. The money was used to create the Front Range Fuels Treatment Partnership, a 10-year interagency effort to accelerate fuels treatments in the priority WUI areas along the highly populated Front Range.¹⁰ Most agree that much of the credit (or blame) for this massive transfer of funds goes to Rick

Cables, the Region 2 Regional Forester. This money was transferred outside of the regular budget process in FY03, meaning that forest supervisors had not specifically proposed projects that would demand such an increase in funds. Rather, Cables, with support from the WO, identified what he saw as a critical need and, in an unusual decision, simply moved the money allocated to other forests to meet the geographical priority.

Allocation to Forests

Forest units within regions are allocated money based upon the budget request they submitted the prior year. Budget Formulation Evaluation Software (BFES) has been used since 2001 to standardize the process of budgeting at the forest and regional level; as part of a process conducted two fiscal years ahead, the software helps field staff formulate specific budget needs to meet project proposals.

Just as the WO cuts regional funding proportionally when facing reduced budgets, the regions also “spread the pain” by proportionally reducing funding to forests based on BFES-generated project plans submitted in advance. Mirroring the devolution of funds from the WO to the various regions, allocation to forests is based on estimates of productive capacity and projections of treatable acres, but often falls short of the amount requested. Forests frequently find themselves in the position of planning projects years ahead, and then discovering that funding allocations do not permit their full development.

Issues and Concerns

Given the discretion held by planners in Regional offices, funding at the regional level holds the greatest promise for productive reform. For example,

⁹ The four threats identified by Chief Bosworth were invasive species, unmanaged recreation, loss of open space, and fire/fuels.

¹⁰ The Region shifted \$2 million to each of the two national forests that comprise the FRFTP in its inaugural year, and planners hope to maintain this funding increase through annual appropriations in the future.

▼
The hazardous fuels program is ripe for reform at the regional level.
 ▲

suppression money is retained and controlled in the WO, but often passes through the regions on its way to forests hit with a fire event. A proposal currently in review would give the regions responsibility for managing at least some suppression funds themselves. One version of this reform concept includes a powerful cost-saving incentive: regions would be empowered to keep half of whatever money remained in their suppression account at the end of the fire season. Concerns about this proposal are substantial, including the observation that “lucky” regions with a relatively calm fire season would unfairly profit from the scheme. Still, as various solutions to the escalating suppression costs are raised in policy circles, much attention is being paid to reform at the regional level (GAO 2004a).

The hazardous fuels program is also ripe for reform at the regional level. While guidance on how best to prioritize

treatable acres does come from the WO, federal planners generally restrict their direction to advising forests to treat WUI acres as opposed to non-WUI acres. Ecologically, it is reasonable to expect regional offices to provide more specific direction. Region 2, for example, as part of the FRFTP effort, has been working with Colorado experts to develop a comprehensive spatial analysis of hazardous fuels, values at risk, and the location of homes and communities; ideally, the result will be a carefully nuanced digital depiction of priority areas for treatment. Other regions might follow R2’s lead and tap into local expertise to create meaningful, science-based prioritization for understanding which portions of the landscape face the greatest risk from fire. These areas can then become targets for fuels treatment to protect homes and can be woven into Fire Management Plans as potential areas of concern.



PHOTO BY KARI BROWN

Federal fire funds are allocated through the regions to individual forests. Suppression funds, however, are distributed directly from the Forest Service Washington Office to locations where fire events occur.

Opportunities for “ground-truthing” and tapping into local knowledge are likewise best harnessed at the regional level, where inter-agency partnerships and stakeholder participation can result in lasting relationships among individuals personally connected to the landscape. However, the WO Partnership office notes that the biggest gaps in collaborative effort seem to exist at the regional level. Inter-agency partnerships are being pursued in Washington DC by policymakers and planners, and many forests regularly conduct outreach with local communities affected by a given project. Regions, however, have not yet capitalized on the chance to bring politicians together with land managers and the interested public. The FRFTP “Roundtable,” comprised of diverse stakeholders in Region 2, is a potential model and is being closely watched by fire and collaboration experts in Washington, as well as state politicians such as U.S. Reps. Mark Udall and Tom Tancredo.

Regional offices might also play a leading role in record keeping and data tracking. Regions could function as a link between WO instructions on data collection and recording protocols and practices at the forest level, holding forest units responsible for providing information in due time and with strict accuracy. Regions could then give the WO usable information consolidated from the forests.

Forest and Project Level Spending Receipt and Processing from Regional Office

Individual Forest Supervisors have little formal interaction with those at the national level of their agency; forests receive money from the regional office and report accomplishments there. Forest

Supervisors have a great deal of discretion over spending. While districts provide input on current and planned projects with budget estimations, Supervisors consolidate and adjust planning both in upward budget requests and in downward funding allocations. District Rangers have very little discretion. They are allocated project-specific funds based on field-based requests they made through BFES in the upward process of budgeting.

This relatively passive role in the budgeting process does not mean that forests lack political sway. In Region 2, the ARNF and PSI are adjacent to the Denver metro area and as such struggle to manage extensive recreation use¹¹ and an enormous WUI. In 2002 the forests became the focus of international attention when the Hayman fire destroyed 132 homes (Graham 2003). Administrators in those forests had demonstrated a consistent capacity to get hazardous fuels reduction work done before the Hayman Fire, but had lacked funding to tackle the magnitude of the challenges facing them. In the wake of the 2002 fires, more fuels treatment money became available through the creation of the FRFTP, with funding allocated directly to the two national forests. Some additional money was also given to Rocky Mountain National Park, the Colorado State Forest Service, and the Rocky Mountain Research Station, all in an effort to build capacity among the many entities involved in treating fuels along the Front Range. The forests have largely continued to approach fuels treatment projects in the same manner as they did before the Hayman Fire, but now with additional money that should allow them to treat more acres of hazardous fuels on public lands.

¹¹ According to John Bustos, ARNF Communications Director, recent estimates for the Arapaho/Roosevelt are 22 million visitors per year.

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 In the absence of more rigorous efforts to prioritize hazardous fuels reduction treatments, projects are often selected for reasons such as ease and safety of treatment and lack of local objection.
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Planning and Project Execution

Forests begin the planning process two annual budget cycles ahead of implementation. Relying on the BFES software, forest planners submit funding requests for large-scale programs, such as “vegetation management,” with specified activities, such as “reduce noxious weeds,” all tied to estimated costs. The software responds by providing four possible funding levels, called “P-points.” At P1, the lowest level, planners are asked to estimate the least amount of funding necessary to continue program functioning. P2 funding levels would continue to support existing programs at current levels; P3 includes 10 percent additional funding for program expansion, and at the P4 level, funding is considered unlimited. These discrete funding levels help forest planners set priorities and estimate costs.

Using these funding levels, forests then submit proposed programmatic work to the regions, who work to fit plans into regional priorities and consolidate information for further submission to the WO, and then to Congress. While real funding discretion exists primarily in the upper reaches of the USFS, the integration of BFES at the forest level has meant vastly increased authority at the forest level in the out-year budgeting and planning phase. Determining programmatic needs and funding requests has empowered forests with discretionary power formerly retained at the regional level; one agency budget officer termed this shift a “seismic change in the power structure.”

When funding is delivered two years later, forest supervisors must then work to reconcile early planning needs with actual available money. District Rangers and the Forest Supervisor hold a series of

“leadership team” meetings to identify projects that fit well into current regional priorities and funding. Although the fiscal year officially begins in October of each year, forestry work is exceedingly seasonal and in most cases the cash doesn’t arrive in forest coffers until March of the following year.

Once projects have been selected to match funding, the forests determine which projects they will be able to execute using internal staff and which projects will need to use outside contractors. Individual projects in the fire program often span multiple years, including the planning processes, implementation of National Environmental Policy Act requirements,¹² additional public outreach activities, and then final project approval and implementation.

Despite rigorous, multi-year planning cycles, costs rarely line up with initial estimates, varying by forest and individual project. For example, in FY03 the PSI and ARNF accomplished vastly different work with their allocated funds (Figure 6). The ARNF received approximately \$3.6 million for hazardous fuels reduction treatments; they reported treating nearly 5,000 acres, 87 percent of them in the WUI, and were able to use prescribed burning for 63 percent of the work. By contrast, the PSI got \$5.8 million (60 percent more than the ARNF), treated 18,869 acres (280 percent more than the ARNF) with WUI and prescribed burning percentages similar to those of the ARNF. The bottom line of these wildly different outputs is that hazardous fuels treatment cost the ARNF \$736.74 per acre, more than double the \$311.14 it cost the PSI.

Explanations for this disparity have been many and varied. Some insiders have suggested that the use of discrete

¹² NEPA requires a series of time-restricted stages in planning and publicizing projects. Most projects begin with the development and release of “scoping” documents, the processing of public feedback, and then the preparation of an Environmental Assessment or Environmental Impact Statement. These documents, too, are subject to public input and the process can take several years before a final decision notice is released.

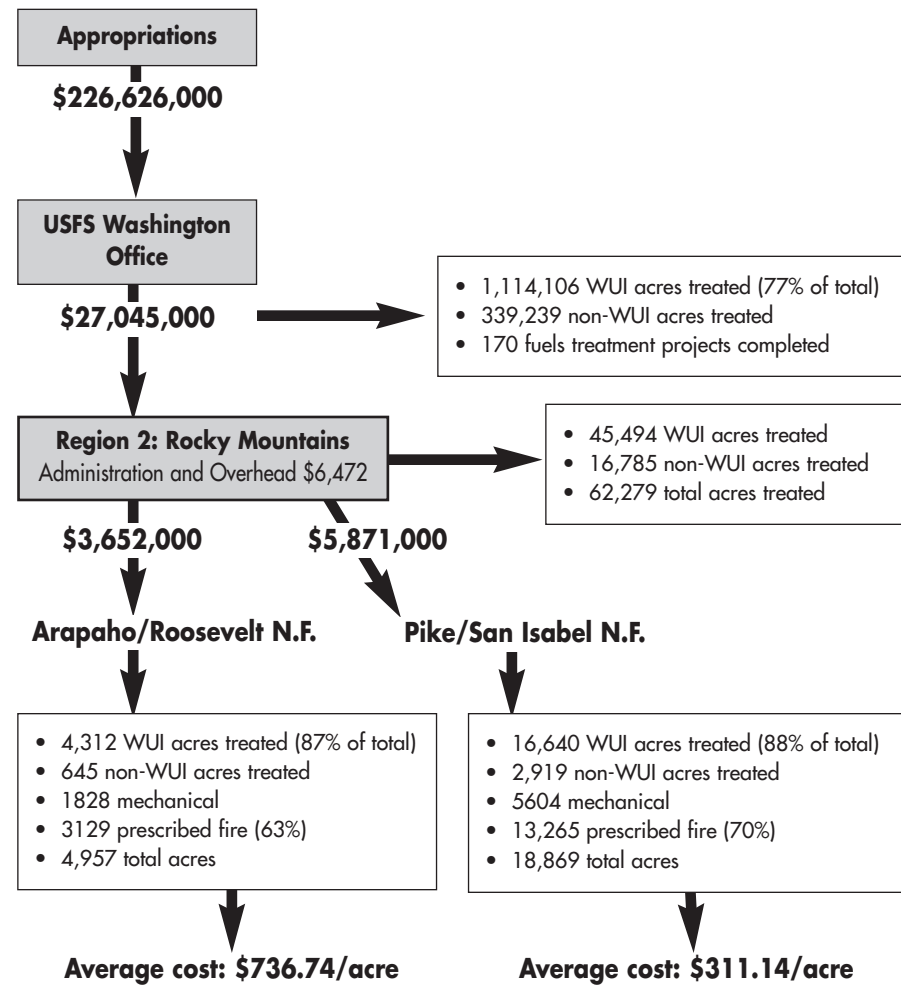
dollars was more efficient in the PSI for administrative reasons, specifically the hiring of more new field staff instead of planners. Others interpret the results to be the inevitable manifestation of the different terrain within each forest's boundaries. This explanation is based both on the PSI's perceived ability to treat larger areas at one time, and possible harvesting and sale of more valuable trees to help offset costs. Whatever the reason, these two forests, located in very similar forest types with extensive WUI areas and a similar proportion of acres treatable with prescribed fire rather than mechanical means, highlight the tremendous variability in costs and accomplishments even within a limited geographic area. Because planners and budget managers rely on cost averages to predict funding needs, reliable cost-per-acre numbers are essential to the functioning of the fire program.

Issues and Concerns

At the forest level, data collection and performance-measure incentives are matters of concern. Prominent among the many data collection problems is the protocol whereby forests report acres as "treated" when they go under contract, not when the acres have actually been burned or thinned. Defenders of this practice point out that it is the job of the USFS to develop contracts and negotiate with private entities to get the work done, not necessarily to do the work itself. Once a parcel of land has successfully gone under contract, the money is placed in an "obligated"¹³ category and considered effectively spent in that fiscal year, despite the many months or years that will likely transpire before

FIGURE 6.
The Path of Hazardous Fuels Money in the USFS, FY 2003

Following the money allocated to hazardous fuels reduction in two Colorado forests illustrates the variability of cost per acre across different projects and forests.



Sources: USFS Budget Justification, Fiscal Year 2005; USFS Washington Office, Region 2, Arapaho/Roosevelt and Pike/San Isabel national forests.

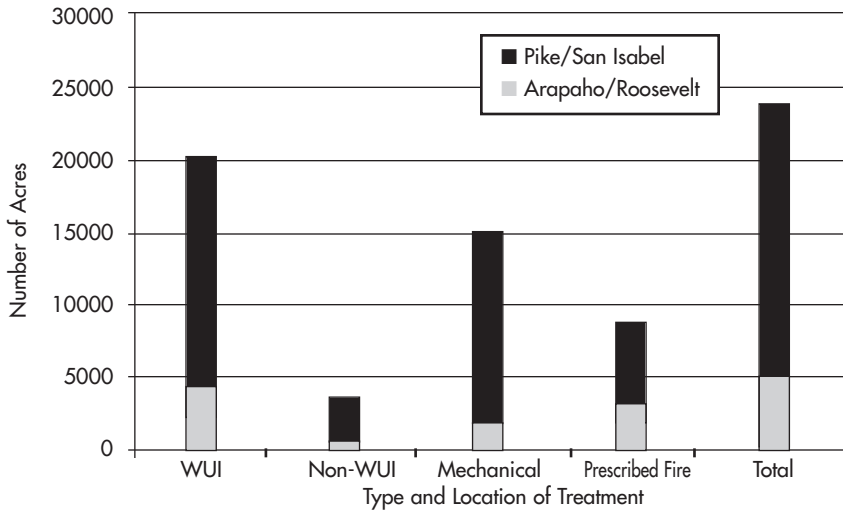
the actual work is completed and payment is made. For example, in FY03 the ARNF reported having treated 4,957 acres. However, 1,505 (30 percent) of those acres were merely contracted to outside entities in that time. The other two-thirds of the work was accomplished internally and therefore verified as completed; the rest of the work was almost certainly not performed by the end of the fiscal year, but since the contract

¹³ "Obligated" funds are protected from suppression transfer and are considered spent.

FIGURE 7.

Acres Treated FY 2003

A breakdown of the location and type of fuels treatment by two national forests in Colorado shows a strong priority to treat in the WUI, with the majority of acres treated by mechanical means, rather than prescribed fire.



Source: USFS Arapaho/Roosevelt and Pike/San Isabel national forests.

administration for the job was, it was recorded as complete.

Other data collection habits are equally problematic. For example, forests track acres treated by location and type of treatment. More recently, they have also begun to record fire regime and Condition Class changes. In many cases, acres get counted twice or even three times. A single WUI acre might be thinned one year, burned the next, and contribute to a landscape-scale Condition Class change. Most readers of the data would easily conclude that three times as much terrain had actually been treated, since the treatment of that single

acre would appear in several columns over two different years.

These practices may make sense administratively¹⁴ but are quite misleading for the public. In the WO, acreage numbers are consolidated and loudly reported as annual accomplishments; these accomplishments are then used to tout success and justify continued funding for the program. For example, to demonstrate the success of the Healthy Forests Initiative in treating hazardous fuels, the WO announced that the agency had treated 335,000 acres in 2004, 126,300 of which were in the high-priority WUI (USDA et al. 2004). If the 30 percent of work contracted in 2003 by the ARNF but not yet completed was consistent across all forests, then in fact only 234,500 acres would actually have been treated that year. Many of those acres may well have been treated before or still require additional attention to be considered “finished” (Figure 7).¹⁵

Treating a high number of acres to reduce fire risk is clearly a legitimate goal in the WUI along highly populated corridors such as the Front Range of Colorado, and thus incentives that encourage treatment there might be considered appropriate. But treating acres that may not represent the highest hazard but help elevate accomplishment data is clearly inadequate. Prioritizing acres in need of treatment requires a rigorous analysis including spatial risk assessment, forest type and fire regime history, values identification, and accessibility estimates. Until that happens

¹⁴ Agency planners argue that placing a fuels treatment project under contract is a significant step, and should be reported. If weather or other conditions then prevent immediate follow-through on the part of the contractor, the agency shouldn't be “penalized” for lateness in completion. Likewise, if an area is thinned one year and then burned the next, the costs associated with each those treatments are paid out of fuels treatment funds and therefore that work must be reported to account for the expenditures.

¹⁵ It is likely due to these confusing protocols that the data for the ARNF and the PSI is so variable. The total number of acres treated rarely matches the sum of sub-total lines such as WUI versus non-WUI, or burned versus thinned. Several data sheets supplied by different Forest Service sources offered radically different totals for each sub-category. This report uses one set of data provided by a Fire Management Officer.

(at the time of this writing, much of this analysis is still underway by forest managers in Colorado) large numbers of hazardous fuels acres treated should not be equated with the strategic reduction of fire risk.

In the absence of more rigorous efforts to prioritize hazardous fuels reduction treatments, projects are often selected for reasons such as ease and safety of treatment and lack of local objection. The Pawnee and Comanche Grasslands, for instance, which are administratively connected to the ARNF and PSI, respectively, have seen a great deal of prescribed burning in recent years. Although these treatments may well be justified in the name of habitat preserva-

tion and landscape health, these remote areas are in sparsely populated locales, and thus do little to meet the goal of the NFP: to reduce the risk of fire in the WUI. But for the ARNF and the PSI, demonstrating a high number of burned acres as well as a high number of total acres treated — regardless of where those acres lie — helps justify increased funding requests through the FRFTP. Again, this example highlights the disconnect between outputs (high number of acres treated) and the outcomes they are intended to represent (reduced fire risk). Incentives — as the recurrent prescribed burns in these remote grasslands illustrate — are powerful drivers of agency behavior.

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Treating remote areas in sparsely populated locales does little to meet the goal of the NFP: to reduce the risk of fire in the WUI.
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 Nobody denies that private land must be integrated into any landscape-scale fire management planning.
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National Fire Plan: Following the Money to External Recipients

States The Role of States in Fire Management

In 2001, federal planners identified 11,376 “communities at risk” (66 FR 751-777, 2001), a number that suggests the extent of the land ownership problem — the intermixing of public and private land in the WUI — facing fire managers. While inconsistencies and methodological flaws plague development of the list, nobody denies that private land must be integrated into any landscape-scale fire management planning. State forest officials, often the only formal link between federal land managers and private landowners, therefore have a fundamental role to play in the development of cooperative management relationships to help reduce fire risk in the WUI. The passage of money from the federal level to the state is a critical building block toward that end.

State forestry offices are organized differently in every state and receive funds from disparate sources, but all are directly influenced by federal fire policies and funding paths. Indeed, recent research suggests that a state’s capacity for performance is in many cases defined by the degree to which the “federal government creates and constrains opportunities by providing technical and financial resources in specific policy areas” (Steelman et al. 2004). Since the advent of the NFP, monies allocated for the State and Local Assistance budget category have steadily declined in real numbers and even more dramatically as a proportion of total NFP funds (Figure 3, p. 19). This is unfortunate because State and Local Assistance funds contribute to

work contacting homeowners, encouraging “FireWise”¹⁶ behaviors, cooperating with federal foresters to implement cross-boundary fuels reduction projects, and providing grants to communities for fire planning.

Following the Money and Tracking Accomplishments

States receive National Fire Plan money through a number of channels. Most prominently, the State and Local Assistance line item in the budget delivers NFP money in the form of competitive grants for states. To apply for these funds, each state forest service submits a proposal to the WO, which then divides State and Local Assistance funding among the states. Allocation to the states is accomplished through the use of a formula that can only be characterized as obscure and outdated; based in large part on the number of protected federal acres per state, it fails to account for innumerable other relevant factors, including capacity to treat acres or scientific assessment of where wildfire risk is highest. States receive the money earmarked for specific line items like “hazardous fuels” or “forest health”; according to Jim Shell, the Branch Chief for Cooperative Fire and Aviation in the WO budget office, 70 percent of the NFP monies received by states in recent years have been tied to hazardous fuels treatments.

Most of this money arrives at state forestry offices via the regional office, but in many cases the region functions solely as a pass-through, with the state offices interacting more directly with the WO. One such track is a “consolidated payment grant” from the State and Local Assistance account, with several smaller grants for individual projects wrapped into one payment. These funds are divided into four categories: Cooperative Fire — which, in turn, is broken down

¹⁶ FireWise behaviors refer to a suite of actions homeowners can take to protect their homes from fire. Perhaps most importantly, the creation of “defensible space” means the removal of flammable vegetation close to the home. See www.firewise.com for more information.

into Volunteer Fire Assistance and State Fire Assistance; Economic Action; Urban and Community Forestry, and Forest Health Management.

Another track of money is delivered through competitive grant processes. In the western U.S., 17 states compete for NFP money, with a committee of fire managers making final allocation decisions based on the WO national prioritization of programs. These monies are allocated not by specific line item, but rather for specific projects. States submit bids, and those projects that most closely match national priorities tend to get funded.

States also receive NFP funding through the Federal Emergency Management Agency (FEMA) and the Department of the Interior (DOI). In addition, states receive base funding from a variety of sources, including fees and service work. The use of FEMA and DOI funds offers the states substantially more programmatic discretion than they have with federal NFP funds. Given the number of different funding sources, the multiple entities involved, and the varying degrees of spending discretion retained by the state, the process of delivering money to the states is so complex that leading budget officers in the WO insisted that “nobody is clear how it really works.” Once states receive their money, they report their accomplishments via the regional office. These measures are added to totals reported by the national forests and transmitted upward as part of the regional annual summary.

Colorado has long been considered one of the most progressive states in terms of forest management, in part due to the charismatic leadership of longtime Colorado State Forest Service Chief Jim Hubbard.¹⁷ As a result of this leadership, the high number of public land acres relative to the other states in the region, the

intensity of the WUI risk along the Front Range, and an elevated capacity to accomplish work on the ground, Colorado regularly gets the lion’s share of grants offered through the regional office. In FY03, Region 2 distributed a total of \$21 million to states in its jurisdiction, and Colorado received 63 percent of those funds (Figure 8). Additionally, the Colorado State Forest Service (CSFS) received \$500,000 for its role in expanded fuels reduction treatments with the FRFTP.

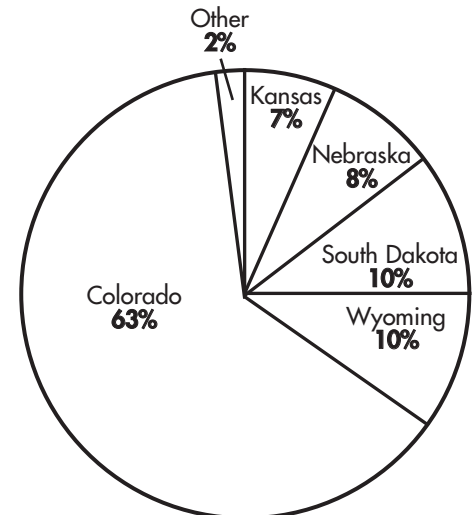
Accomplishments within the CSFS are regularly reported to Region 2, but linking those measures with annually appropriated money and grants received is essentially impossible since the state and federal governments operate with different fiscal years. In FY03, the CSFS reported a great number of varied accomplishments (Figure 9); however, separating NFP-sponsored activities from work that relied on base funding or other sources of revenue is exceedingly difficult.

Issues and Concerns

There are two primary concerns about the flow of money to states. First, the sheer quantity of funding allocated to states is inadequate. Policy documents purport to recognize the critical importance of working across administrative boundaries through the states, but those words simply cannot be matched by action unless funding backs intention. Policy objectives can only be as successful as the resources assigned to support them. Federal reluctance to take responsibility for private actions by supporting state efforts to help private landowners

FIGURE 8.
FY 2003 Distribution of NFP Grants in Region 2

Colorado receives the great majority of Region 2 funding, allocated to states through a complicated grant process.



Source: USFS Region 2

¹⁷ In late 2004, Jim Hubbard retired from the Colorado State Forest Service and took the position of National Fire Plan co-leader for the Bureau of Land Management in Washington, DC.

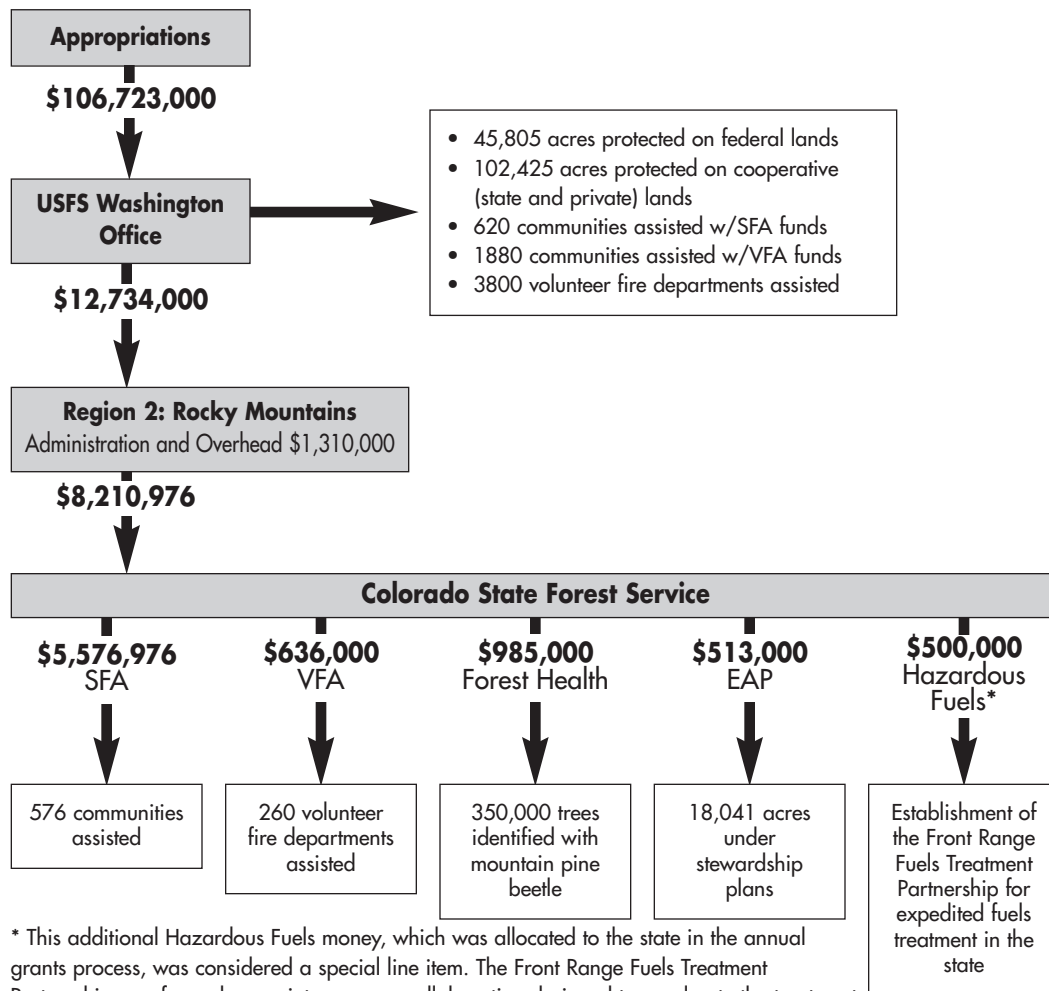
reduce fire risk in the WUI is in many ways understandable, as it is rooted in American passions for private property rights. Still, skyrocketing suppression expenditures suggest that taxpayers already foot the bill for private landowners who haven't taken the necessary steps to protect their properties. Increasing NFP funding to state and private entities would go a long way toward communicating commitment and building capacity to bridge the public-private divide.

Second, incentive structures are just as deterministic at the state level as they

have been shown to be at the federal level. Since states receive money from so many sources, they are also responding to a great variety of unintended, and in some cases conflicting, incentives. For example, FEMA, in an effort to spur states to plan ahead for fire emergencies, currently has the authority to reimburse states for "pre-positioning" to combat wildfires on federal lands. These funds are only available for two weeks following the declaration of an emergency by FEMA, thereby creating a perverse incentive for state fire planners. Former Montana Governor Judy Martz

explains: "This authority actually acts as disincentive to states. When states proactively and effectively extinguish a fire before it becomes an emergency, they do not qualify for reimbursement. Conversely, when state efforts fail at initial containment and a large fire ensues, they are rewarded by FEMA" (Martz 2004). While FEMA policy is not the focus of this report per se, it does serve as a vivid example of the unintended outcomes of poorly designed incentives at the state level. Reforming fire policy to create clear and productive incentives is a necessary prerequisite to more efficient use of public funds for risk reduction on state and private lands.

FIGURE 9.
Flow of State and Local Assistance Money FY 2003



* This additional Hazardous Fuels money, which was allocated to the state in the annual grants process, was considered a special line item. The Front Range Fuels Treatment Partnership was formed as an inter-agency collaboration designed to accelerate the treatment of hazardous fuels along the wildland-urban interface in the Front Range of Colorado.

Sources: USFS Budget Justification, Fiscal Year 2005; Washington Office, Region 2, and Colorado State Forest Service.

Research

The integration of new scientific information that can help planners make more informed decisions is fundamental to managing fire. Part of the problem with studying fire ecology is that

replicable, empirical research is nearly impossible. Replicating natural variability can't be done, and repeated controlled experiments are impossible, so scientists must instead rely on models, simulations and anecdotal evidence. Detailed analyses of fire events form the core of some fire ecology research, but some scientists fear that the use of the anecdotal method can introduce bias and politics into an otherwise objective process. One remedy for these shortcomings is more funding, more rigorous applied research, more case studies, and the inclusion of more fields including the social sciences to improve the implementation of ecologically-based policies in complicated social settings.

Most NFP research money travels via the State and Local Assistance line item. Historically, these monies went to existing agency research stations to fund staff work. While agency researchers frequently collaborated with scientists affiliated elsewhere, control over the money remained largely intra-agency. Since FY02, however, some of this research money has been earmarked for specific universities. Occasionally, research funding also comes from other sources. For example, in FY02, Fire and Aviation, whose money comes through the Preparedness line item, shifted an additional \$5 million to Research, earmarking it for work pertaining to hazardous fuels.

Other outlets for fire research have also sprung up in recent years. Perhaps most prominently, the Joint Fire Sciences Program, established in 1998 by six federal land management agencies,¹⁸ was directed by Congress to conduct research to enhance managers' abilities to make decisions based on the best available science. The program releases regular Requests for Proposals and both university

and agency scientists compete for grant money. Funding for this program has increased since the advent of the NFP.

While fire behavior continues to be the mainstay of fire research, interest in and funding for the social sciences such as economics, political science, and communications has also blossomed since the advent of the NFP. These inquiries include a focus on developing mechanisms for measuring the benefits fire has on ecosystems. Most agency researchers are quick to note that while measuring economic costs is difficult for social scientists, capturing the range of benefits over the long-term is even more challenging. Other social science research includes study into how better to communicate with the public on fire issues, and how to motivate private homeowners to take responsibility for addressing fire risk on their property.

Overall, the NFP has meant the "biggest chunk of new money in a long time" for fire research, according to Forest Service Resource Valuation and Use scientist Linda Langner. Still, despite growing interest in and funding for fire research, many long-time scientists with the agency feel that their contributions are chronically under-emphasized. As prominent Forest Service ecologist Merrill Kaufmann put it, "research budgets are abysmal."

At a time when decades-old National Forest management regulations are being re-evaluated and, in many cases, re-written,¹⁹ scientists urge better integration of scientific knowledge into policy. Within the fire program, limited resources are being funneled into fuels reduction and suppression even though the effectiveness of these strategies remains clouded by scientific uncertainty.

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Despite growing interest in and funding for fire research, many agency scientists feel that their contributions are underemphasized.
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¹⁸ U.S. Forest Service, Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and U.S. Geological Survey.

¹⁹ The National Forest Management Act has been particularly targeted for reform, and the Bush administration released new rules for its application on December 22, 2004. The National Environmental Policy Act and the Endangered Species Act are also under review.

▼ This pattern, whereby suppression begets more intense suppression, is a downward spiral that has substantial ecological and financial costs. ▲

Other Challenges: Current Issues in the Funding of the National Fire Plan

The National Fire Plan is nearing its fifth anniversary, and yet the problems associated with risks from wildfire haven't subsided. Costs of suppression continue to exceed available funds, budget and performance data are nearly impossible to verify, and the agencies responsible for managing fire still struggle to work together effectively.

Some ecologically undesirable outcomes from the NFP are inevitable. Any program that seeks to address just one element of ecosystem health — in this case, fire — will necessarily cause unintended consequences. Ecosystems are so complex that any one-size-fits-all solution will always be flawed. Despite these inevitable pitfalls, however, most fire experts also agree that providing national standards is critical to uniform and coordinated policy. The NFP seeks to balance the conflicting goals of protecting local ecosystems, respecting community self-determination, and creating national-level guidance for foresters in order to create a coherent system of fire management on public lands.

Status reports on the NFP present a mixed picture. A recent OMB evaluation concluded that “the program faces significant obstacles in meeting its long-term goals, most of which appear to be management challenges.” Moreover, while the OMB deemed the purpose and design of the program “clear and well-focused,” the assessment also stressed the need for more and better data, as well as better prioritization of management goals. Ultimately, the program received a perfect grade in only one area: purpose. The OMB report ranked NFP implementation far lower on other counts, giving the program a 57-percent grade for planning performance, 43 percent for man-

agement, and only 27 percent for results/accountability (OMB 2004).

As stated in the introduction, the analysis in this report has revolved around three themes: the powerful role of incentives, the need to differentiate between outputs and outcomes, and the importance of good data tracking. Tracing the flow of money downward and the reporting of performance measures upward has verified these issues as legitimate areas of analytical concern and helped to identify pervasive stumbling blocks for full realization of NFP policy goals. Two substantive areas in particular stand out as trouble spots for the NFP: suppression funding and collaboration.

Suppression Funding and Transfers

The single biggest problem facing the realization of National Fire Plan goals is the recent explosion of costs for wildland fire suppression (Figure 3, p. 19). Since 2000, wildfire suppression has cost federal agencies over \$1 billion annually. Appropriated dollars for fire suppression have fallen far short, and even emergency appropriations, which take place after final appropriations bills have been released, have failed on many occasions to meet the need. As a result the agencies have been forced to borrow money from other programs to fund their suppression activities. Although attempts are made to reimburse programs that have had funds transferred, these repayments are rarely in full; additionally, the disruption and uncertainty associated with suppression funding transfers have compounded inefficiencies. The Government Accountability Office analyzed this trend, and concluded, “Despite Forest Service and Interior efforts to minimize the effects on programs, transferring funds caused numerous project delays and cancellations, strained relationships with state and local agency partners, and disrupted

program management efforts” (GAO 2004a).

In FY03, more than \$2 billion was transferred out of other USFS programs and placed in a suppression reserve account. While some of those dollars remained untapped for suppression needs, regional leaders were not immediately reimbursed for the programs affected; instead, monies remaining in the reserve account after the fire season of 2003 simply rolled over into next years’ emergency firefighting needs. According to policy analyst David Bixer of the Government Accountability Office, Region 2 saw over \$14 million transferred into suppression accounts from other programs in FY03. Of that, \$343,000 came from State and Local Assistance accounts, \$7,254,000 came from the National Forest System line item, and the remainder (\$6,408,000) came out of capital improvement and maintenance. While FY03 didn’t see any direct transfers within the Wildland Fire Program budget to cover suppression needs, over \$5 million was transferred between 1999 and 2002, limiting hazardous fuels reduction projects and disrupting fire management programming to pay for ongoing suppression needs.

Reducing Suppression Costs

Containing costs associated with suppression has become a matter of great concern at all levels of both the BLM and the USFS. Ongoing drought in the western U.S., combined with a dramatic increase in the number of WUI acres, has contributed to escalating suppression costs. In addition, decades of fire suppression have deprived fire-dependent forests of their natural fire cycle and led to an accumulation of fuels in some locations. Under the right conditions, wildfires that start in those areas can become extremely dangerous. Suppression efforts on these unnaturally large and intense fires are full-scale battles that incur stunning costs. This pattern, whereby sup-

pression begets more intense suppression, is a downward spiral that has substantial ecological and financial costs.

A number of reforms has been proposed for the budgeting process to better plan ahead for inevitable suppression costs and thereby reduce the need to transfer money from other critical programs. The Wildland Fire Leadership Council convened a blue ribbon panel in 2004 to study this question, and countless other formal and informal groups have been assembled to consider possible solutions. In the end, many forest policy experts privately agree that the most expensive components of suppression on large fires are also the most futile; it is a truism in many circles that excessively large and erratic fires only go out when it rains. The use of high-tech aerial suppression efforts amounts to nothing more than a politically-motivated “air show” in most cases, and a budgetary black hole. The only way to reduce costs, insist some experts, is to “get rid of the helicopters.” Perhaps most importantly for the purposes of this report, the ongoing suppression funding shortfall reflects a narrowing of the NFP so that its many objectives are reduced to an overwhelming emphasis on suppression and fuels reduction. With structural roots dating back to the 1911 Weeks Act, fire management has suffered from what one scholar of fire policy terms “an issue definition focused on wildfire suppression and the basic institutional arrangements that would be used to implement that policy” (Busenberg 2004).

The OMB argues that many of these unsustainable and economically unsound



PHOTO BY KARI BROWN

Helicopters and other aviation equipment are the most expensive components of the federal wildland fire suppression program.

OMB Report Card:

Program purpose:	100%
Planning performance:	57%
Management:	43%
Results/Accountability:	27%

PHOTO BY KAREN WATTENMAKER



Drought in the western U.S., a dramatic increase in homes in and near fire-prone wildlands, and an accumulation of fuels in some locations has contributed to unnaturally large and intense wildfires. Suppression efforts on those fires are full-scale battles that incur stunning costs.

practices highlight the need to bring statistics and analysis into the fire management process, a call that in turn highlights a need for capacity building in the form of more economists and business minds working for the USFS. Without critical analysis informing spending, wildland fire budgets become, in part, jobs programs for wildland firefighters; slowly, the agency has suffered “mission creep,” providing rural employment in addition to managing forests and fire on public lands.

Incentives Promoting Suppression

Incentives to extinguish all fires are evident in the oft-cited performance measure for the suppression category, whereby fire managers are praised for the percentage of fires contained in initial attack. One goal of this measure is to encourage behavior that will contribute to cost control; that is, it is both cheaper and easier to put out a fire while it is still small, rather than waiting for it to become a large conflagration. Still, the one-size-fits-all approach to fire response fails to capture opportunities for using fire (instead of suppressing it) in appropriate locations, a tool that not only reduces costs but also has substantial

ecological benefits. Despite growing interest in expanding what is called Wildland Fire Use (Gregory 2004) — carefully choosing which fires to fight and which to monitor as they burn naturally in designated, remote sections of forests — current incentive structures work against this practice. For example, when fire managers do elect to use naturally ignited fire to improve forest health, they are forbidden from “counting” those acres toward the hazardous fuels reduction target. OMB defends this protocol as necessary for separating fuels treatment projects from the chance happening of fire, but many planners bemoan the restriction as a disincentive for developing a more comprehensive fire use program.

The confusion between outputs and outcomes regarding suppression also underscores institutional barriers to increased fire use. When 99 percent of fires are suppressed annually, the agency touts these numbers as evidence of “success” and justification for continued high funding. But suppression must not be considered a desired outcome in all circumstances. Protecting homes and communities, and preventing massive watershed damage that would affect those private lands, are indeed good reasons to suppress fires. In many locations, however, other resource values, such as wildlife habitat and long-term soil quality, would actually *benefit* from increased fire. Funding trends and performance measures do not reflect the gains that would come from a more diverse fire response toolkit.

The bottom line is that suppression data collected for performance measurement simply cannot speak for themselves. Interpretation and analysis are always necessary. After all, if effective fire suppression is framed to be synonymous with NFP success, then a 99 percent effective suppression rate sounds like a 99 percent NFP success rate. But when suppression spending continues to

grow dramatically, the interpretation of the data should lead to just the opposite conclusion. Suppression budgets are in fact canaries in the fire program's coal mine. Escalating costs indicate systemic problems with funding protocols, the definition and measurement of success, and the absence of effective feedback loops that could insert new information into future planning and budgeting.

Collaboration

In the second half of the 20th century, the public slowly began to question its blind technocratic respect for land managers, and the proliferation of environmental interest groups reflected the desire of the American public to become involved with land management. The dramatic drop in timber harvest from public lands in the late 1980s also reflected public pressure on the agencies to perform differently, to embrace a sustainability ethic and replace the old output model.

Finding a workable path for integrating public feedback into the planning process has been challenging for the USFS. Numerous studies have indicated current low levels of public trust in land management agencies. The USFS has a strong interest in repairing this damage by improving relations with local communities and thereby increasing the odds of successful project implementation. Politicians agree: former Montana Governor Judy Martz has said that increased collaboration between federal and state fire managers “needs to be encouraged at every opportunity” (Martz 2004), and the Western Governors’ Association has repeatedly called for improved implementation of the collaborative ideal.

Policy Foundations for Collaboration in the NFP

GPRA requires “consultation” with stakeholders, and this is consistent with the spirit of the law: to improve accountability between the agencies and the

public they serve. However, many observers note that the policy is poorly designed to achieve improved collaboration; as one researcher puts it, “the paradox of GPRA is that it uses a top-down, one-size-fits-all policy direction to mandate a bottom-up implementation approach” (Long and Franklin 2004). So much discretion is afforded to the agencies in the way they choose to implement the GPRA that collaboration success in anything but assured.

Direction for the USFS comes more specifically from the 10-Year Comprehensive Strategy. Facilitated by the Western Governors’ Association (WGA) and created by a stakeholder group in 2000, the Strategy was the first formal policy document to codify the term “collaboration.” In that piece, the authors include collaboration in the document’s short list of “core principles.” The framework for collaboration presented there stresses the importance of communication “across public and private lands, administrative boundaries, geographic regions, and areas of interest” and reminds readers that “successful implementation will include stakeholder groups with broad representation” (WGA et al. 2001).

Following the WGA Strategy, the same group of stakeholders released an Implementation Plan in 2002, laying out lofty goals for the collaborative framework. Perhaps most importantly for the purposes of this report, the Implementation Plan provides performance measures for its stated goals. However, measuring collaboration is elusive and the Plan offers nothing specific to guide participants. There is only one performance measure which even comes close to assessing collaboration success: Goal Four, to “promote community assistance,” seeks to improve community capacity and suggests counting the percentage of “communities at-risk that initiate volunteer and community funded efforts” (WGA et al. 2002).

▼
If effective fire suppression is framed to be synonymous with NFP success, then a 99 percent effective suppression rate sounds like a 99 percent NFP success rate. But suppression budgets are in fact canaries in the fire program's coal mine.
▲



PHOTO BY TOM STORY

When a wildland fire erupts, fire managers make difficult “response” decisions, all of which have cost implications.

▼ Collaboration is needed ‘across public and private lands, administrative boundaries, geographic regions, and areas of interest.’ ▲

The 2001 Federal Wildland Fire Management Policy, often considered to be the backbone of the National Fire Plan, also weighs in on collaboration. The Policy notes that “uneven collaboration” has contributed to unsuccessful implementation of the 1995 Fire Policy. Lack of funding for collaboration, lack of an agreed-upon definition of collaboration, lack of federal guidance, and lack of effective performance measures all contribute to incomplete implementation of the ideal.

Implementation Challenges

First among the current limitations in increasing collaboration is agency capacity. The USFS’s National Partnership Office has one employee, reflecting less than wholehearted financial support for the development of better collaborative tools. Optimistically, the Director of the Partnership Office reports that at the national level, interagency cooperation is strong and thriving like never before. These relationships, though, are “partnerships,” characterized by the building of coalitions among entities with similar interests. True collaboration is the building of coalitions among entities who often harbor different interests and objectives.

At the local level, there are more fitting examples of collaboration success stories. Forests in many areas regularly go beyond the “public meeting” style of interaction mandated by NEPA and foster long-term involvement of local citizens. Stewardship Contracting, a program that established a set of new rules for how forests work with local contractors on USFS lands, also encourages this kind of group formation in the development of projects and in its “multi-party monitoring” requirement, provisions that encourage the formation of stakeholder groups to help determine where, when, and how projects will be conducted. The 2003 Healthy Forests Restoration Act asks communities to prepare “Community Wildfire Protection Plans,” and thus bolsters opportunities to connect local governments, fire planners, and interested citizens.

What’s absent, according to the USFS Partnership Office, is regional-level collaboration. The gap is significant and represents a missed opportunity to engage regional interest groups and citizens at the ecologically important landscape-scale. A rare example of progress in this arena comes from the case study profiled here: the FRFTP has been prominently hailed as “the best example [in Colorado] of cross-jurisdictional collaboration, planning and implementation on forest health” (Martz 2004).

At all levels of fire policy governance, commitment to collaborative processes is, at best, uneven. One school of thought holds that although the tool is perhaps ideologically sound, in practice it is unwieldy and simply unnecessary. In this rendition, the collaboration fad is nothing more than an inevitable pendulum swing that started in the early 1990s with a transformative shift away from local timber sales and back to national control; now the “collaboration” buzz is merely a compensatory swing back to the local. The OMB argues that agency budget leaders will not embrace the process

as more than a passing trend unless it can be assessed using more tangible outcomes; for example, if collaboration increases efficiency, links to larger strategic goals, or reduces the likelihood of litigation, then perhaps it would be worth funding more completely. Collaboration, then, ought not to be seen as an end in itself, but rather as a technique to better achieve broader NFP goals.

Those agency observers reluctant to embrace collaboration do not speak for all staff. Research suggests that agency commitment to collaboration varies by individual and location; the mythic “agency culture” must not be miscon-

strued as a homogenous attitude toward proposed changes in procedure (Martin and Steelman 2004). Still, skeptics of the agency’s commitment to a collaborative process tend to see policy statements that encourage its use as a smokescreen, and may suspect that agency leaders are “trying to smooth ruffled interest group feathers without paying the costs of significant progress” (Lubell 2004). If the agency wants to address these suspicions and prove the sincerity of its commitment, appropriate performance measures backed by dedicated funding are opportunities for demonstrating real progress.

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When new science emerges, the existing system proves overwhelmingly resistant to change.
▲

Conclusions: Themes Revisited

Three themes were introduced at the beginning of this report: the role of incentives in driving agency behavior, the importance of differentiating outputs from outcomes, and the need to improve agency accounting. Evident both in the flow of money through the system and the way performance measures are being used to track accomplishments, these themes illuminate ongoing challenges with NFP implementation in the USFS. Ultimately, many of these problems stem from inexorable institutional momentum. The agency is hamstrung by its own bureaucratic protocols and embedded incentive structures. When new science emerges suggesting the redirection of money toward work that might improve outcomes, the existing system proves overwhelmingly resistant to change. Good governance requires a degree of structural flexibility to move resources to respond to new information. The structure of the USFS does not seem to permit this sort of adaptation, and as a result the agency may be achieving outputs but falling short in its ability to reach desired outcomes. To better align agency activity with NFP policy goals, substantial reform will be required.

Incentives are nearly always embedded in policy direction; the many unintended and counterproductive incentive structures currently in place, however, are ripe for change. Performance measures

are perhaps the lowest-hanging fruit in this reform endeavor. The first step is to identify which measures work and then eliminate those that are either not being tracked successfully or result in undesirable outputs. From there, policy makers can craft new measures to better capture the wide variety of activities under the NFP umbrella, carefully monitor how well they are working, and continue to update them as needed. Too much tinkering, however, will result in measures that are not comparable across years, and to the degree possible, consistency should also be sought.

As measures are tightened, agency planners must rigorously keep in mind the difference between outputs and outcomes. The difference between the two speaks to the need for more funding devoted to research that can help support links between individual projects at the forest level and overarching land management objectives. Separating the two will also help agency communicators better reach both internal and external audiences, and thereby build trust with a skeptical public. Throughout the ongoing reform process, leaders must demonstrate accountability by demanding rigorous bookkeeping from the top down, and staff must be held responsible for meticulous reporting.

The NFP policy direction is overwhelmingly sound. To ensure its success, changes must be made in its implementation.

Policy Recommendations

- Reduce the number of official performance measures tracked and list only those that can reasonably be accomplished based on capacity and technology.
- When new measurement tools are introduced, identify them as trial reporting requirements that do not contribute to formal performance assessment. For example, measures should be developed to capture the less quantifiable work done by the field staff, including the creation and revision of Fire Management Planning documents and efforts made to improve collaboration.
- Use more precise measures. Ensure that what is being reported is both consistent and accurate; that is, “acres of hazardous fuels treated” should refer only to truly hazardous acres that have actually been treated (not just placed under contract). Acres that have already been counted as “treated” must not be double-counted when follow-up work is performed later. The agency must define these terms so there is no confusion as to what has actually been performed.
- Readjust the proportion of money allocated to various line items. More money should be devoted to the State and Local Assistance line item, including programs such as Economic Assistance and Community and Private Land Fire Assistance. Both programs provide much-needed assistance to communities and private landowners who want to reduce their fire risk. Since 2001, an average of only 7.8 percent of total wildland fire appropriations has gone to the State and Local Assistance line, and the President’s FY06 budget allocates a mere 3 percent of fire money to state and local targets. We recommend raising this to a minimum of 10 percent.
- Suppression money should be allocated with close attention to cost control. This means introducing incentives that encourage fire managers to better balance the suppression imperative with cost containment. Among the ways to accomplish this is an increased use of wildland fire in appropriate locations and regional control over suppression funds.
- The Forest Service has been reprimanded for its poor accounting practices, but reform has been slow. Leaders within the agency must model rigorous reporting practices, reward similar behavior in subordinates, and introduce improved, detailed accounting protocols across the agency. Without reliable data collection and reporting, it will be impossible to gauge progress and tighten the link between outputs and desired outcomes.

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Appendix A: Interviews and Contacts

Name	Title	Organization
Bedwell, Jim	Forest Supervisor: Arapaho/Roosevelt National Forest	USDA FS: ARNF
Bixer, David	Analyst: Natural Resources Department	GAO
Burnett, Ben	Program Examiner for the Bureau of Land Management	OMB
Bustos, John	Communications Director: ARNF	USDA FS: ARNF
Cheng, Antony	Assistant Professor of Forest Sciences	Colorado State University
Chun-Thornburg, Sandy	Budget Officer	USDA FS: R2
Engert, Jan	Program Manager: National Partnership Office	USDA FS: WO
Foley, Mike	Front Range Fuels Treatment Partnership Coordinator	USDA FS: ARNF
Gibbs, Hal	Ecosystem Group Leader	USDA FS: ARNF
Gorte, Ross	Senior Researcher	Congressional Research Service
Homann, Rich	Fire Division Supervisor	Colorado State Forest Service
Hubbard, Jim	Chief	Colorado State Forest Service
Kauffman, Merrill	Ecology Researcher	USDA FS: RMRS
Kent, Brian	Team Leader: Social Science Research Department	USDA FS: RMRS
Langner, Linda	Researcher: Resource Valuation and Use	USDA FS: WO
Larsen, Paulicia	Budget Coordinator	Colorado State Forest Service
Lewis, Paige	Policy Director	Colorado State Forest Service
Lundgren, Stuart	Branch Chief for Planning and Budget, Fire and Aviation	USDA FS: WO
Moore, Ted	Fire Management Officer: Pike/San Isabel National Forest	USDA FS: PSI
Norell, Joe	Program Analyst for Budget, Fire and Aviation	USDA FS: WO
Pasquantino, John	Senior Program Examiner for the Forest Service	OMB
Plym, Katherine	Program Analyst: State and Private Forestry	USDA FS: R2
Shell, Jim	Branch Chief for Cooperative Fire, Fire and Aviation	USDA FS: WO
Snyder, Glenn	Branch Chief: Cooperative Fire Protection Planning	USDA FS: R2
Weiber, Orval	Chief Financial Officer	USDA FS: R2
Wilson, Bruce	Rocky Mountain Region: Renewable Resources	USDA FS: R2

COVER PHOTOS:

Wildland firefighter trainees
prepare for a field exercise,
Alamosa, Colorado.
Photo by Tom Story.

Wildland fire in sagebrush
habitat along the lower
Snake River, Idaho.
Photo by Bryan Day.



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