

**GAO**

Report to the Chairman, Environment,  
Energy, and Natural Resources  
Subcommittee, Committee on  
Government Operations, House of  
Representatives

December 1990

# FEDERAL FIRE MANAGEMENT

## Limited Progress in Restarting the Prescribed Fire Program





United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-239642

December 5, 1990

The Honorable Mike Synar  
Chairman, Environment, Energy, and  
Natural Resources Subcommittee  
Committee on Government Operations  
House of Representatives

Dear Mr. Chairman:

Because of the severity of fires in 1988 on federal wildlands, you asked us to evaluate the federal government's fire management program. During that season, severe wildland fires burned many parts of the western United States. The most publicized of these fires occurred in and around Yellowstone National Park, where fires started by lightning early in the fire season were allowed to burn, under a policy permitting "prescribed natural fires." When several of the fires later became wild-fires, burning out of control, a public controversy ensued. This prompted the government to suspend the prescribed fire program and the Secretaries of the Interior and Agriculture to establish the Fire Management Policy Review Team to study federal policies on fire management in national parks and wildernesses. The Review Team made 15 recommendations that were adopted by the Secretaries on June 1, 1989, and formed the basis for a revamped prescribed fire program.

This report provides our findings on the benefits of allowing some fires to burn in controlled situations, progress and constraints in implementing a revamped prescribed fire program, and the need to monitor the program's implementation. The report builds on our May 24, 1990, testimony and video report before your subcommittee, which described the results of our work as of that date.<sup>1</sup>

---

## Results in Brief

The Review Team reaffirmed that fire is beneficial and even necessary to wildlands. The Review Team's report stated that where fire has been a historic component of the environment it is essential to continue that influence, and that attempts to exclude fire from such lands could result in unnatural ecological changes and increased risks created by accumulation of fuels on the forest floor.

---

<sup>1</sup>See Federal Fire Management: Evaluation of Changes Made After Yellowstone (GAO/T-RCED-90-84 and GAO/RCED-90-01VR)

---

habitat, reducing the hazardous buildup of fuels, establishing fuel breaks in parks and wildernesses, and restoring and maintaining natural processes in these wildland ecosystems. Some fires started by lightning (prescribed natural fires) or set by fire specialists (management-ignited prescribed fires) were allowed to burn providing (1) their purpose was to meet resource management objectives, (2) they did not threaten human life or property, (3) they remained within prescribed boundaries, and (4) resources were available to control them.

Before 1988, about 3,500 prescribed fires were allowed to burn in parks and wildernesses. Since the fires were usually small, they aroused no controversy or concern. This situation changed in 1988, when a number of prescribed natural fires in Yellowstone National Park burned out of control, resulting in a controversy over what the media termed the government's "let burn" policy. Ultimately, the fires in Yellowstone (including some prescribed natural fires that went out of control and, consequently, were declared wildfires) burned about 700,000 acres of the park and cost the government more than \$100 million in firefighting expenses. Because of the controversy over the Yellowstone fires, the government suspended the prescribed natural fire program.

On September 28, 1988, the Secretaries of the Interior and Agriculture appointed a Fire Management Policy Review Team to identify problems in the program.<sup>3</sup> The Review Team assessed fire management policies, reviewed individual fire management plans, held public hearings, and reported its findings and recommendations to the Secretaries of the Interior and Agriculture in a final report on May 5, 1989. (App. I shows the status of the Review Team's recommendations, as of August 31, 1990.)

---

## The Benefits of Fire Have Been Reaffirmed

The Review Team's report endorsed the practice of allowing fire to play its natural role in wildland ecosystems. The report stated that in parks and wildernesses where fire has been a historic component of the environment, the continuation of its influence is critical. The report also stated that attempts to exclude fire from these lands could lead to major unnatural changes in vegetation and wildlife and contribute to uncontrollable wildfires as the result of an accumulation of fuels.

Wildfire control in Yosemite National Park, California, in 1990 illustrates how the historical use of prescribed fires can reduce the intensity

---

<sup>3</sup>The Review Team included representatives from the Departments of the Interior and Agriculture and from the National Association of State Foresters.

have their plans approved in 1992 or later. Park Service officials estimated that 11 additional parks would have approved plans by 1992 and that the plans for the other 12 parks would be completed in 1992 or later. However, since neither agency has firmly committed to these dates, additional delays could occur.

At the regional level, eight interagency preparedness plans were to be developed, but, as of August 1990, only two had been approved. The status of these plans is particularly important to the Park Service, which requires that the interagency preparedness plan be approved before national parks within the region, including those with approved individual fire management plans, can restart their prescribed fire programs. Forest Service guidance does not include such a requirement.

A national interagency preparedness plan (contained in the 1990 National Interagency Mobilization Guide<sup>4</sup>) was approved in April 1990. Among other things, the plan describes the conditions under which the use of prescribed fires must be reduced or curtailed. Specifically, the plan defines five levels of preparedness based on the severity of fire conditions, the extent of fire activity, and the availability of resources. However, some regional preparedness plans describe only three or four preparedness levels. With different levels meaning different things to different people, confusion about the severity of fire conditions could prevail when the risk of wildfires is greatest.

## Resource Limitations and Resistance Could Constrain Program Implementation

To be effective, implementation of approved fire management plans requires both adequate resources and commitment. However, the implementation of prescribed fire programs at certain parks and wildernesses could be constrained by resource limitations and/or resistance to the program by fire managers and wilderness managers.

Because wildfires can threaten human life and property, they must be given priority over prescribed fires for available resources. Prescribed fires can be allowed to burn only if sufficient firefighters and equipment remain to both manage the fires and keep them under control. Over the last 7 years, the Forest Service's fire protection program has been funded at an average of about 84 percent of the amount the Forest Service calculated to be the program's maximum efficient level. In addition, over the last 10 years, the total number of firefighters has declined substantially. For example, from 1978 to 1988 the number of seasonal

<sup>4</sup>Boise, Idaho: Boise Interagency Fire Center, 1990.

---

ensure that it will remain so during the ensuing 24 hours, given reasonably foreseeable weather conditions and fire behavior. If this certification cannot be made, the fire is to be declared a wildfire and suppressed. While this new requirement sounds reassuring, a prescribed fire might not be suppressed after it was declared a wildfire if firefighting crews and equipment were committed to higher-priority fires.

---

## Monitoring Implementation of Prescribed Fire Programs Is Essential

The high risks and potential benefits of prescribed fire programs make it essential that they be closely monitored. During hearings before your subcommittee on May 24, 1990, we discussed the need for federal agencies to monitor the implementation of the prescribed fire program. Specifically, we discussed the need for a monitoring program to address the number of opportunities that arise during the fire season for prescribed fires, the number of fires that are allowed to burn as prescribed fires, the number that must be suppressed, and the factors that require the fires to be suppressed (such as weather, funding, and firefighter availability). We stated that such information would be useful to the Park Service, the Forest Service, and the Congress in determining the resources needed for a prescribed fire program that is both safe and effective.

In a June 15, 1990, memorandum to its field offices, Forest Service headquarters acknowledged the need to monitor, on an interagency basis, the implementation of the prescribed fire program as outlined above. However, as of August 1990, the Forest Service had not implemented a monitoring program nor had the Park Service gathered this kind of information.

---

## Conclusions

After operating for almost 20 years, the prescribed fire program became the subject of intense controversy during the Yellowstone fires in 1988, resulting in a reexamination of the program by the multiagency Review Team. The Review Team reaffirmed the benefits of fire as a land management tool in national parks and wildernesses. However, the Park Service and Forest Service have made limited progress in converting this conceptual reaffirmation into the detailed follow-on actions needed to allow on-the-ground implementation of the program.

Few of the individual fire management plans needed to restart the program have been completed; only two of eight regional interagency preparedness plans, which are essential to the prescribed fire program, have been approved; and firm dates for completing these plans do not exist. Furthermore, some regional preparedness plans have a different

forests across the United States, including Yellowstone National Park. We did not review the agencies' fire programs in the state of Alaska.

We interviewed fire program officials in the Park Service, the Forest Service, and the Bureau of Land Management. We also interviewed officials from the Intermountain Fire Sciences Laboratory, the Greater Yellowstone Coordinating Committee, the National Fire Protection Association, the National Wildfire Coordinating Group, and three regional interagency fire coordination centers. We visited fire sites in Yellowstone and other areas. We reviewed relevant agency fire reports and legislative documents.

As requested, we did not obtain official agency comments on a draft of this report from the Department of the Interior or the U.S. Department of Agriculture. However, we discussed the factual information in this report with Park Service and Forest Service officials in Washington, D.C., and Bureau of Land Management officials at the Boise Interagency Fire Center. These officials generally agreed that the information was accurate. We performed our work in accordance with generally accepted government auditing standards.

Unless you publicly announce its contents earlier, we plan no further distribution of the report until 30 days from the date of this letter. At that time, we will send copies to the Secretaries of the Interior and Agriculture and other interested parties and make copies available to others upon request.

This report was prepared under the direction of James Duffus III, Director, Natural Resources Management Issues, who may be reached at (202) 275-7756 if you or your staff have any questions. Other major contributors are listed in appendix IV.

Sincerely yours,



J. Dexter Peach  
Assistant Comptroller General



# Seasonal Regular Fire Personnel in the Forest Service, 1978 to 1988

Calendar year	Number of personnel <sup>a</sup>
1978	8,444
1979	6,606
1980	6,245
1981	6,414
1982	4,980
1983	5,155
1984	4,636
1985	5,158
1986	4,600
1987	5,112
1988	4,859

Note: The Forest Service provides 60 percent of the federal firefighting resources.

<sup>a</sup>Includes regular fire control personnel—crews, firefighters, patrols, lookouts, etc. Does not include emergency firefighters and others who engage in fire control work.

Source: Personnel Employed on Wildfire Presuppression and Suppression Activities, U.S. Forest Service.

# Major Contributors to This Report

---

Resources,  
Community, and  
Economic  
Development Division,  
Washington, D.C.

James Hunt, Assistant Director  
Charles Barchok, Assignment Manager  
Nancy Boardman, Staff Evaluator  
June Foster, Staff Evaluator  
Sharon Butler, Reports Analyst

---

Seattle Regional Office

Robin Reid, Evaluator-in-Charge  
Brent Hutchison, Staff Evaluator

### **Ordering Information**

**The first five copies of each GAO report are free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.**

**U.S. General Accounting Office  
P.O. Box 6015  
Gaithersburg, MD 20877**

**Orders may also be placed by calling (202) 275-6241.**





# Comparison of Estimated Funds Needed With Funds Allocated for Park Service and Forest Service Prescribed Fire Programs, Fiscal Year 1990

Thousands of dollars

<b>Agency</b>	<b>Funds needed</b>	<b>Funds allocated</b>	<b>Shortfall</b>	<b>Percentage of needed funds allocated</b>
Park Service (all regions, excluding Alaska)	\$3,500	\$2,400	\$1,100	69
Forest Service (all regions, excluding Alaska)	\$34,700	\$400	\$34,300	1

Source: Park Service and Forest Service regional information.

# Status of Forest Service and Park Service Implementation of Review Team Recommendations

Recommendation	Status as of August 31, 1990	
	U.S. Forest Service	National Park Service
1. Reaffirm, strengthen, and clarify fire management policies	Completed. Directive issued to line officers that reaffirmed, strengthened, and clarified agency's policies for prescribed fire.	Same as for Forest Service.
2. Reaffirm that fires are either prescribed or wild	Completed. Directive issued to line officers.	Same as for Forest Service.
3. Review fire management plans for compliance with revised standards	In process. Regions directed to review fire management plans.	In process. Park Service has conducted an initial review of all 26 fire management plans.
4. Include specific criteria to strengthen fire management plans	In process. Eight of 75 wildernesses have completed this requirement	In process. Three of 26 parks have completed this requirement.
5. Cooperatively develop a national and regional interagency contingency (preparedness) plans	In process. National plan approved in April 1990. Two of 8 regional plans approved as of August 1990.	Same as for Forest Service.
6. Require daily certification that prescribed fire is and will remain under control given reasonably foreseeable weather conditions and fire behavior	Completed. Added to agency's policies.	Same as for Forest Service.
7. Reevaluate management-ignited fires and other methods for reducing hazardous fuels	In process. A directive to accomplish this task was issued by the Deputy Chief, State and Private Forestry.	In process. A directive to accomplish this task was issued by the Acting Director of the Park Service.
8. Establish properly staffed offices for fire program	No additional fire management staff needed, according to the Director of Fire and Aviation Management.	Completed. In fiscal years 1989 and 1990, 95 additional full-time personnel were hired.
9. Increase interagency emphasis on improving fire management programs	In process. Being done by a formal coordinating group (called the National Wildfire Coordinating Group) representing the five land management agencies and the National Association of State Foresters.	Same as for Forest Service.
10. Require that fire management plans comply with the National Environmental Policy Act	In process. Being accomplished as part of fire management plan revisions.	Same as for Forest Service.
11. Improve public information about fire programs	In process. Agency increasing public awareness through fire plans.	In process. Agency developing a public awareness program.
12. Review departmental fire funding methods	Completed. Fiscal year 1990 budget has a new separate account for the fire program.	Same as for Forest Service.
13. Conduct additional fire management research	In process through Forest Service's Forest Fire and Atmospheric Sciences Research Program. Funding constraints are limiting the program.	In process on a limited scale in various regions, individual parks, and universities.
14. In Alaska, comply with revised prescribed fire policy, but retain historical wildfire suppression terminology	Completed. A directive was issued to line officers by the Chief of the Forest Service.	Completed. A directive was issued to line officers by the Acting Director of the Park Service.
15. Review and correct any policy misuse	Completed. Interagency report (Allegations Review Task Force-Final Report) was issued March 24, 1989.	Same as for Forest Service.

Note: The recommendations are contained in a report entitled Final Report on Fire Management Policy, May 5, 1990.

---

# Contents

---

Letter	1
Appendix I Status of Forest Service and Park Service Implementation of Review Team Recommendations	12
Appendix II Seasonal Regular Fire Personnel in the Forest Service, 1978 to 1988	13
Appendix III Comparison of Estimated Funds Needed With Funds Allocated for Park Service and Forest Service Prescribed Fire Programs, Fiscal Year 1990	14
Appendix IV Major Contributors to This Report	15

number of preparedness levels than the national plan. Resource limitations and resistance to the prescribed fire policy also constrain the program's implementation.

While there have been and will always be inherent risks in using fire as a land management tool, there are also benefits to its use. Consequently, we believe that firm dates are needed for completing those actions prerequisite to implementing an effective prescribed fire program and that monitoring is essential to determine the degree to which resource limitations and other factors are constraining the program from reaching its full potential. The information gained from such monitoring would be useful, over the course of the next several years, to the Park Service, the Forest Service, and the Congress in determining risks, benefits, and resources needed to have a prescribed fire program that is both safe and effective in achieving its goals.

---

## Recommendations to the Secretaries of the Interior and Agriculture

We recommend that the Secretaries of the Interior and Agriculture do the following:

- Establish firm dates for completion of fire management plans for all units where prescribed fire programs are to be reinstated as well as for completion of regional interagency preparedness plans.
- Direct that the regional interagency preparedness plans include the same number of preparedness levels as the national plan.
- Develop an interagency program to monitor and periodically report to the Congress (1) the number of opportunities for prescribed natural fires that occur during a fire season; (2) the number of fires that are allowed to burn and the number that are immediately declared wildfires, and the factors (such as weather, funding, and firefighter availability) that required the fires to be declared wild; and (3) the number of prescribed natural fires that are later declared wildfires (including the reasons for this declaration).
- Identify and implement additional actions, such as increased training, that would mitigate the concerns raised by those fire and wilderness managers who are reluctant to use fire as a land management tool.

---

We conducted our work from April 1989 through August 1990 at Forest Service and Park Service headquarters in Washington, D.C.; the Boise Interagency Fire Center, Boise, Idaho; Forest Service regional offices in Montana, Utah, California, and Oregon; Park Service regional offices in Washington, Colorado, and California; and various national parks and

---

firefighters in the Forest Service, which provides about 60 percent of the federal government's firefighting resources, dropped from 8,444 to 4,859, or by about 40 percent. (See app. II for details.)

These limits on the firefighting resources available to manage or control prescribed fires can necessitate the suppression of otherwise beneficial prescribed fires. To illustrate, during the first 8 months of 1990, three of seven prescribed fires in one Forest Service region had to be declared wildfires because resources to manage them as prescribed fires were scarce.

The funds available to specifically operate a prescribed fire program have fallen short of the amount managers say they need. In fiscal year 1990, the Park Service allocated \$2.4 million for prescribed fires in the nation's parks, or 69 percent of the funds needed, and the Forest Service allocated only about \$400,000 for prescribed fires in wildernesses, or 1 percent of the funds needed, according to the agencies' regional staffs. (See app. III.) About 86 percent of the shortfall concerned funds needed in California for management-ignited fires. Fire experts in both the Park Service and the Forest Service told us that management-ignited fires are often needed in parks and wildernesses to return such fire-dependent ecosystems to their natural state and to protect private holdings and wilderness borders, thereby reducing the risk associated with future prescribed natural fires. Without adequate funds, fire and wilderness managers committed to the ecological benefits of fire often lack the resources required to effectively operate prescribed fire programs.

Not all fire and wilderness field office managers, however, are convinced of the benefits of prescribed fires. Consequently, some still subscribe to the philosophy of suppressing all fires. For example, a Forest Service report on prescribed fire management states that risks with prescribed fire can be great, and failure is often publicly ridiculed. It noted that rewards appear to be personal and "success" often not appreciated internally or by the general public, and that this can provide an incentive to avoid the prescribed natural fire program and declare all such fires as wildfires.

These concerns are not unfounded. One of the Review Team's recommendations for providing stricter controls over prescribed fire programs requires line officers to certify daily that each prescribed natural fire is within prescribed limits and that adequate resources are available to

---

and severity of subsequent wildfires. According to the park's fire management officer, previous prescribed fires were an important factor in helping the Park Service to bring the 1990 fires under control in 1 week with minimal damage to the park's ecosystem. He said that one of the wildfires was suppressed quickly because Yosemite's prescribed fire program had reduced the accumulation of fuels and created mosaics of burned and unburned areas that significantly diminished the fire's spread, size, and complexity.

Conversely, because the Forest Service has not implemented prescribed fire programs in wildernesses in California, Oregon, Washington, and the Rocky Mountain areas of Colorado and Wyoming, the buildup of fuels has created some potentially dangerous situations, according to Forest Service officials. One Forest Service fire manager in California compared the situation to a time bomb that could explode into catastrophic fires. Similarly, a Rocky Mountain area Forest Service fire specialist told us that the buildup of fuels during decades of fire suppression practice has changed the character of the wildland ecosystem and is creating a dangerous threat to life and property in and around the wildernesses. Both individuals predicted that future fires would be more intense, more dangerous, and more costly to suppress than they would be if the areas had active prescribed fire programs.

---

## Planning Delays and Inconsistencies Limit Program Implementation

The Review Team recommended that no prescribed natural fires be allowed to burn in a park or wilderness until the unit's fire management plan was approved. The Review Team also recommended that the federal fire management agencies cooperatively develop national as well as regional preparedness plans for curtailing prescribed fires within common boundaries when the danger is high and/or resources to suppress fires are already committed. However, both the Park Service and the Forest Service have been slow to develop the required plans.

In late 1988, the Review Team established a goal of having improved individual park and wilderness fire management plans in effect by May 1989. However, as of August 1990, the Forest Service had approved fire management plans for only 8 of the 75 wildernesses, or 11 percent, where it plans prescribed fire programs. Similarly, the Park Service had approved fire management plans for only 3 of the 26 parks, or 12 percent, where it plans prescribed fire programs.

On the basis of Forest Service estimates, another 36 wildernesses should have plans approved by 1992, and the remaining 31 wildernesses should

Implementation of the revamped prescribed fire program has been limited because federal fire management agencies have been slow to approve fire management plans for individual parks and wildernesses, as well as regional interagency fire preparedness plans. These fire management plans are a prerequisite for restarting the program. Moreover, some regional preparedness plans are inconsistent with the national interagency preparedness plan, which was approved in April 1990. Additionally, the prescribed fire program faces both resource limitations and resistance by some fire and wilderness managers. The funds available to manage a prescribed fire program fall far short of the amount managers say they need. Also, some fire and wilderness field office managers still subscribe to the philosophy of suppressing all fires.

Although the need to monitor resource requirements for fully implementing the revamped prescribed fire program has been recognized by fire managers, neither the Park Service nor the Forest Service has undertaken such an effort.

---

## Background

For almost a century, the federal government's general policy was to suppress all fires on federal lands.<sup>2</sup> However, fire experts and research findings on the subject agree that fire is beneficial—even essential—to wildlands, and that, by suppressing all fires, the government had interfered with nature. Fire returns valuable nutrients to the soil, opens overgrown areas to sunlight, and allows new growth that provides food and habitat for various animal species. Fire also removes dead wood and other debris—fuels that can kindle larger, more dangerous fires—from the forest floor. In addition, fire can create a mosaic of burned and unburned areas, resulting in natural breaks in the landscape that reduce the potential for catastrophic wildfires.

From the 1950s to the early 1970s, National Park Service managers experimented with prescribed fire programs, which allow fire to play its natural role in parks and wildernesses so that its ecological benefits are realized. By 1972, both the National Park Service and the Forest Service had formally adopted the policy of using fire as a tool to achieve land management objectives. These objectives include improving wildlife

---

<sup>2</sup>The primary federal agencies involved in fire management are the Forest Service in the U.S. Department of Agriculture and four agencies in the Department of the Interior—the Bureau of Land Management, the National Park Service, the U.S. Fish and Wildlife Service, and the Bureau of Indian Affairs. This report focuses on the Park Service and the Forest Service because they administer the majority of the lands where prescribed fires are used for resource management in the nation's parks and wildernesses.

