Fire Management Policy Review Team **December 15, 1988**

Department of Agriculture **Department of the Interior**

Memorandum for: Secretary of Agriculture
Secretary of the Interior

Through: Deputy Secretary, Department of Agriculture, Peter C. Myers
Under Secretary, Department of the Interior, Earl E. Gjelde

From: Fire Management Policy Review Team

Re: Report concerning Fire Management Policy for National Parks and Wilderness

As requested, we are submitting the enclosed report of the Fire Management Policy Review Team appointed by you on September 28, 1988.

The team was established to review current U.S. Department of Agriculture and U.S. Department of the Interior policies on fire management in light of the extreme fire situation experienced in the Greater Yellowstone Area during the summer of 1988. The team conducted a thorough review of fire policies for national parks and wilderness areas. Much useful information was obtained during consultations with various elected officials, private citizens, representatives from academia, concessioners and outfitters, environmental groups, businesses, and other knowledgeable parties.

Our recommendations include a number of significant changes in fire policy and its application to national parks and wilderness areas. While recognizing the important role of fire in natural ecosystems, we believe that these suggested improvements in fire management policy will reduce the risk of repeating the experience of this past summer.

We further recommend that the enclosed report be reviewed by the individual land management agencies concurrently with the public review. This concurrent review will ensure that approved policy changes can be implemented prior to the 1989 fire season.

We would be remiss if we did not recognize the contributions of our staff directors, John Chambers and David Behler, and many others who made it possible to complete this report in a short period. In particular, John Gerard of the National Fire Protection Association, Paul Cunningham, Executive Director of the Western Governors Association, Dr. Robert Lee of the University of Washington , and Dr. Ron Wakimoto of the University of Montana were helpful in facilitating the supply of information about fire

management policies and their applications from outside organizations and academia.

We thank you for the opportunity to serve in this important endeavor and hope that our efforts will lead to improved fire management policies and programs and increased public support for them.

Charles Philpot, Co-Chair
Special Assistant to the
Deputy Secretary, Department
of Agriculture

Brad Leonard, Co-Chair
Deputy Director
Office of Program Analysis
Department of the Interior

Gary E. Cargill
Regional Forester
Rocky Mountain Region
U.S. Forest Service

Blaine L. Cornell
Forest Supervisor
Stanislaus National Forest
U.S. Forest Service

Boyd Evison
Regional Director
Alaska Region
National Park Service

Thomas F. Follrath
Deputy Division Chief
Division of Wildlife Refuges
U.S. Fish and Wildlife Service

Dean E. Stepanek
Assistant Director for
Lands and Renewable Resources
Bureau of Land Management

Charles W. Tandy
BIA Director
Boise Interagency Fire Center
Bureau of Indian Affairs

Bruce M. Kilgore
Regional Chief Scientist
Western Region
National Park Service

Harry F. Layman
Chairman of the Fire Committee
National Association of
State Foresters

12-13-88

REPORT OF THE
FIRE MANAGEMENT POLICY REVIEW TEAM
December 15, 1988

SUMMARY

The Fire Management Policy Review Team finds that:

*prescribed natural fire policy has had many notable successes but has been interpreted to allow prescribed natural fires with essentially no prescriptions.

*some agency employees support a policy of allowing naturally caused fires to burn free of prescription so long as they do not cross park or wilderness boundaries.

*allegations were heard that some managers support "naturalness" above all else, allowing fires to burn outside of prescription without appropriate suppression action.

*planned ignitions can help achieve management objectives, however there are factors constraining their use.

*many fire management prescriptions do not place adequate limits on fire management decisions.

*the 1988 fire season revealed the risks inherent in managing wildland fires.

*many fire management plans do not meet current policy.

*fire management programs could be strengthened by incorporating improved decision criteria, additional fire management expertise, and more direct line officer involvement.

*reduction of hazard fuels in selected areas reduces risks and costs.

*agency training programs are insufficient to maintain the number of knowledgeable personnel to ensure proper and consistent application of policy.

*environmental effects of prescribed natural fires generally support land management objectives but social and economic impacts on and off site may be unacceptable.

*dissemination of information and public participation in the fire management planning process needs to be improved.

*budget structure and funding create dissimilarities in the way agencies plan and implement prescribed natural fire programs.

*inadequate definition of "light hand on the land" suppression tactics raised serious questions over management of 1988 fires.

*further research and analysis are needed to provide improved tools for management of fire management programs.

The Team recommends that:

A. Agencies strengthen existing fire management policies.

B. Agencies reaffirm their policy that fires are either prescribed fires or wildfires.

C. No prescribed natural fires be allowed until fire management plans meet current policy and additional new requirements.

D. Current fire management plans be strengthened: by joint planning along common boundaries; by improving prescriptions; by clearly describing the decision process; by including criteria for declaring a prescribed fire a wildfire; by clearly identifying areas that need protection from fire; by clearly stating management objectives and by identifying community outreach efforts.

E. Agencies implement a daily certification process verifying that adequate resources are available to assure prescribed natural fires will remain within prescription given certain conditions and, if not, to declare these fires to be wildfires and to initiate suppression action.

F. Agencies develop regional and national contingency plans to curtail or constrain prescribed fire programs under extreme conditions.

G. Prescribed fire program management be improved by establishing appropriate regional as well as unit level prescribed fire program management organizations.

H. Additional interagency emphasis be given to addressing opportunities of improving fire management programs.

I. Agencies consider opportunities to use planned ignitions to complement prescribed natural fire programs and to reduce hazard fuels.

J. Agencies assure that the NEPA process is followed for fire management plans to increase opportunities for public involvement and coordination with state and local governments.

K. Agencies improve interpretation and public information before and during fires.

L. Agencies review funding methods for prescribed fire and fire protection programs to improve interagency effectiveness.

M. There is a need for additional research related to fire management programs.

N. Allegations of misuse of policy need to be reviewed immediately and acted on as appropriate.

Report
on
Fire Management Policy

December 14, 1988

Department of Agriculture Department of the Interior

FIRE MANAGEMENT POLICY REVIEW TEAM

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REPORT ON FIRE MANAGEMENT POLICY

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SUMMARY

The Fire Management Policy Review Team was established on September 28th to review national policies and their application for fire management in national parks and wilderness and to recommend actions to address the problems experienced during the 1988 fire season. The Team report is due December 15th, with a minimum of a 60 day public review and comment period to follow. The goal is to have improved fire management policies and plans in effect by the end of May 1989.

The Fire Management Policy Review Team finds that:

- The objectives of policies governing prescribed natural fire programs in national parks and wildernesses are sound, but the policies themselves need to be refined, strengthened, and reaffirmed. These policies permit fires to burn under predetermined conditions.

- Many current fire management plans do not meet current policies; the prescriptions in them are inadequate; and decision-making needs to be tightened.

- There are risks inherent in trying to manage fire, but they can be reduced by careful planning and preparation. Use of planned burning and other efforts to reduce hazard fuels near high value structures and to create fire breaks along boundaries help to reduce risks from both prescribed natural fires and wildfires.

- The ecological effects of prescribed natural fire support resource objectives in parks and wilderness, but in some cases the social and economic effects may be unacceptable. Prescribed natural fires may affect permitted uses of parks and wilderness, such as recreation, and impact outside areas through such phenomena as smoke and stream sedimentation.

- Dissemination of information before and during prescribed natural fires needs to be improved. There needs to be greater public participation in the development of fire management plans.

- Internal management processes, such as training more personnel, developing uniform terminology, and utilizing similar budget structures, would significantly improve fire management.

- Claims were heard that some managers support "naturalness"

above all else, allowing fires to burn outside of prescription requirements without appropriate suppression actions.

The Team recommends that:

- Prescribed natural fire policies in the agencies be reaffirmed and strengthened.
- Fire management plans be reviewed to assure that current policy requirements are met and expanded to include interagency planning, stronger prescriptions, and additional decision criteria.
- Line officers certify daily that adequate resources are available to ensure that prescribed fires will remain within prescription, given reasonably foreseeable weather conditions and fire behavior.
- Agencies develop regional and national contingency plans to constrain prescribed fires under extreme conditions.
- Agencies consider opportunities to use planned ignitions to complement prescribed natural fire programs and to reduce hazard fuels.
- Agencies utilize the National Environmental Policy Act requirements in fire management planning to increase opportunities for public involvement and coordination with state and local government.
- Agencies provide more and better training to assure an adequate supply of knowledgeable personnel for fire management programs.
- Agencies review funding methods for prescribed fire programs and fire suppression to improve interagency program effectiveness.
- Additional research and analysis relating to weather, fire behavior, fire history, fire information integration, and other topics be carried out so that future fire management programs can be carried out more effectively and with less risk.
- Allegations of misuse of policy be promptly investigated and acted upon as may be appropriate.

REPORT OF THE
FIRE MANAGEMENT POLICY REVIEW TEAM

December 14, 1988

BACKGROUND

The 1988 fire season was severe in many parts of the western United States. Near record acreages were burned over, and more than one-half billion dollars were expended on suppression efforts. Additional resources will be required for rehabilitation and other follow-up needs.

Although the western United States experienced wildland fires exceeding recent history, the extraordinary fire situation in 1988 in the Greater Yellowstone Area was the focal point for public concern and agency criticism. Yellowstone National Park enjoys a special place in the hearts of Americans and, indeed, people worldwide. Vivid accounts of the Yellowstone fires appeared daily on television and in the newspapers from July through September. Visitor use was interrupted; smoke episodes disturbed local communities; and some summer businesses were hurt. A total of 249 separate fires were counted during the summer in the Greater Yellowstone Area, burning over a million acres. Twenty-eight of the 249 fires began as prescribed natural fires as permitted under current Department of the Interior (USDI) and Department of Agriculture (USDA) policy. Controversy arose over the adequacy of fire suppression. We have to ask ourselves:

- Is the policy allowing fire to play its natural ecological role in parks and wilderness under certain conditions flawed or inappropriate? What are the alternatives, and what are their effects?

- Should more of the fires have been declared wildfires and suppressed earlier, particularly given the drought? Should early suppression action have been more vigorous?

- Are surrounding communities being put at risks unacceptable to them by natural prescribed fire programs or from policies that restrict fire suppression tactics? Or do prescribed burns and prescribed natural fires result in an appreciable net reduction in risks?

- Are offsite effects, such as smoke and air and water pollution, acceptable, and are they adequately assessed in planning for

these programs? How do they compare to offsite effects to that which would occur without such programs?

- Is the public aware of the ramifications of current policy and alternatives, such as immediate suppression of all fires or letting all fires burn unchecked?

- Did Federal and State agencies spend too much money on suppressing the fires? Would they have spent less if prescribed natural fire programs had not been implemented or if there had been better public understanding of and support for natural fires?

- Are agencies perceived as incompetent when large, numerous fires occur that partially result from natural prescribed fire programs or from policies that restrict fire suppression tactics?

- To what extent has a long-term credibility and communication problem been created between the public and agencies, and, if so, how can it be corrected?

- Is the large array of successful fire management programs across the nation now at risk?

Activity in the Greater Yellowstone Area in 1988 has triggered public debate and professional concern about current fire policies in Federal land management agencies nationwide. Wildland fire management is a high risk activity. There are many areas of the United States where similar wildland fire disasters could occur. This risk is increasing in many areas due to the combination of fuel accumulation and the continuing development of private and commercial interests in flammable, wildland settings. Therefore, it is timely to take a national look at current wildland fire policies, their application, and implementation plans to ensure that the risks and costs to society are acceptable, in light of the alternatives.

ESTABLISHMENT OF NATIONAL FIRE MANAGEMENT POLICY REVIEW TEAM

The Secretaries of Interior and Agriculture established a Fire Management Policy Review Team on September 28, 1988. This multi-agency team, co-chaired by Interior and Agriculture representatives, was assigned the task of reviewing the current national park and wilderness fire management policies and action plans of all agencies within both Departments and recommending changes needed to address the problems experienced during the 1988 fire season. The Team met regularly with representatives of the National Fire Protection Association, the Western Governors Association, and the academic community. The Team was also directed to consult with

representatives of knowledgeable organizations and individuals to arrive at proposed changes. The Team report is due on December 15, 1988. A public comment phase will then begin with publication of the Team's report in the Federal Register. Revised policy and application requirements will be implemented prior to the 1989 western fire season.

The goals of the Fire Management Policy Review Team are:

- To identify issues and concerns which arose during the 1988 fire season related to fire management policy and its application;
- To gather information from a cross-section of knowledgeable parties about current fire policy and its application;
- To develop recommendations for appropriate changes in fire policy and improvements in application; and
- To identify areas of needed additional study and analyses.

The Team began with the premise that its charter did not include detailed evaluation of the overall management direction for national parks and wildernesses and therefore focussed just on fire management policies. For example, wilderness areas and, to a more varied degree, national parks have been designated as special areas where "natural" processes can occur in perpetuity with minimum influence of human activities. This basic direction, arising from the National Park Service Organic Act of 1916 and the Wilderness Act of 1964, is usually interpreted to allow natural disturbances, such as insect infestations, disease, blowdowns, and fire, to occur without human intervention. Examining other policies that define and guide "natural" processes was not part of the Team's assignment.

CONCERNS AND VIEWS

As stated in the Team's charter, "the objective of the review process is to determine the appropriate fire policies for national parks and wildernesses which addresses the concerns expressed by citizens and public officials about the management of fires on these lands as a result of the Yellowstone fire situation."

To gather information about those concerns, individual members of the team, assisted by representatives of the National Fire Protection Association, the Western Governors Association, and the academic community, met with or called a number of knowledgeable persons, including governors, local government officials, concessioners and outfitters, individuals with businesses in nearby communities, organizations with an interest in parks and wildernesses, academic-

ians, and others. The Team also reviewed letters, summaries of correspondence, and many newspaper and journal articles related to fire management policy.

The concerns can be summarized as follows:

- Definition of prescribed fire conditions and limitations was inadequate.
- There was little opportunity for citizen participation in the development of fire management plans.
- The interdependence of park/wilderness and nearby communities was ignored in the implementation of fire management programs.
- Adequate communication and information before and during fires, whether wildfires or prescribed, was lacking.
- There appeared to be waste in the application of fire management policies, in natural resources that might have been utilized rather than burned, in the on- and off-site effects of fire on available recreation sites, wildlife habitat and forage, soil erosion, and damage to watershed, and in the costs of firefighting.
- An inadequate number of planned prescribed fires have been conducted to reduce the amount of hazard fuels.
- There were unnecessary interagency conflicts.
- Authority for action in fire management needed to remain with line officials in the field, not centralized in Washington.

There are also concerns with strongly held conflicting views. The three principal areas are:

- the definition of "naturalness" and its application in driving fire management policy;
- the extent to which planned prescribed burning (fires set by management) is used in reduction of hazard fuel in the Northern Rockies; and
- whether the fires in 1988 were allowed to burn more extensively than they should have before suppression actions were taken.

Not all comments were critical of Federal efforts to manage fire:

- The role of fire in managing vegetation and wildlife habitat was noted by many.
- The bravery and competence of fire suppression personnel were frequently extolled.
- Examples were mentioned of individual and agency actions to inform the public, to protect life and property, and to minimize disruptions during and after the fires.
- There are many positive effects from prescribed natural fires. Overreaction to the events of 1988 should not be used to justify severe curtailment of their use.

POLICY OPTIONS

Fire management policy options range from immediate control of all fires to allowing all wildland fires to burn. The team considered the full range following its discussion with interested parties and agency personnel.

The great majority of comment from knowledgeable people indicated support for the careful use of prescribed burns and prescribed natural fires, in accordance with publicly reviewed management plans. There was also general agreement that such policy must be executed in ways that give the fullest possible assurance that human lives and property or special resources will not be lost or seriously impaired.

FEDERAL FIRE POLICIES

Traditionally, the fire policies of Federal land management agencies were to control all wildland fires as promptly as possible. When initial attack failed in controlling a fire the first day, personnel and equipment were organized to control the fire by 10:00 a.m. the succeeding day.

Current fire management policies among the Federal agencies reflect similar evolutions and are similar in scope and intent. Fire management programs and activities are conducted in support of land and resource management plans and objectives. Two kinds of wildland fires are recognized: prescribed fires and wildfires. Prescribed fires may be ignited, or allowed to burn, under specified conditions to achieve established management objectives. Any other fire is considered a wildfire, and appropriate suppression action is taken on all wildfires. Suppression strategies considered in determining the appropriate action range from prompt control, minimizing acreage burned, to more indirect suppression action to contain or confine

wildfires when these alternatives are less costly than control in terms of suppression cost, damage from fire, and other adverse impacts.

These policies as applied to parks and wildernesses, implemented in 1968-85, allow for the prescribed use of fire, either by natural or human-caused, in support of land management objectives. The suppression of all wildfires is required, using economically efficient and environmentally compatible methods. All prescribed fires require pre-planning and decision criteria addressing expected fire behavior and effects.

Prescribed fires may be used to achieve agency land or resource management objectives defined in fire management plans. The following considerations are to be addressed in such plans: management objectives for the area, historic fire occurrence, natural role of fire, proposed degree of suppression, expected fire behavior, acceptable suppression techniques, adequate buffer zones, smoke management, and effects on adjacent land owners.

Prescribed fires are to be conducted only when the following conditions are met:

- They are conducted by qualified personnel under written prescriptions (prescribed fire plan).
- They are monitored to assure they remain within prescription.

Prescribed fires that exceed the limits of an approved fire plan will be reclassified as a wildfire. Once classified as a wildfire, the fire will be suppressed and will not be returned to prescribed fire status.

The important implications of these policies for parks and wilderness areas are:

- It allows managers to restore and maintain the natural role of fire on land when the land management objective is to perpetuate natural processes and values.
- Fire can be used as an important management tool to reduce fuel accumulation, control fire hazard around developments and along boundaries, and to meet other management needs.
- All fires are treated as wildfires, subject to appropriate suppression action, unless a plan is in place that describes the conditions under which prescribed fire will be allowed to burn. Both natural and management-caused ignitions are allowed.

- A prescribed fire must be declared a wildfire when it exceeds prescribed conditions.

- There is flexibility for fire management plans to address the unique characteristics and objectives of specific parks and wildernesses.

Fire management plans for national parks and wilderness areas are subject to National Environmental Policy Act (NEPA) compliance.

HISTORY AND EXPERIENCE WITH NATURAL FIRE PROGRAMS

Following prescribed burning experience in the Everglades in the 1950's, the National Park Service began to change its fire suppression and prescribed burning policies in 1968 to accept a more natural role of fire in park ecosystems. Lightning-caused fires were allowed to burn under specified conditions in Sequoia-Kings Canyon National Parks that year, followed by a similar program in another 7 parks between 1968 and 1972. In the decade that followed, another 26 parks began some parts of the prescribed fire program (Appendix, Table 1).

The purpose for this policy change was to restore fire to a more natural ecological role. "Naturalness" is defined as those dynamic processes and components which would likely exist today, and go on functioning, if technological humankind had not altered them. (For those concerned about "exclusion of man from nature," the term "wildness" may be more satisfactory; but it is not likely to displace the word "naturalness" in the common vernacular.)

No ecosystem today is totally unaltered by technological humankind. However, extensive areas in which the achievement and maintenance of naturalness is a basic purpose are increasingly important to humankind. These areas are found primarily in national parks and wildernesses. They serve as invaluable scientific benchmarks; and the uniqueness imparted by their natural qualities is irreplaceable as a source of human inspiration and enjoyment. Those natural qualities differ in each area. They are compromised by the effects of necessary and appropriate provisions for enjoyment of parks, the impacts of other uses under legislative mandates governing non-park wilderness and by potential adverse impacts outside of unit boundaries. Each unit in its management plan describes how it will attain the objective of naturalness.

In those parks and wildernesses where fire has been a historic component of the environment, it is critical to management objectives to continue that influence. An attempt to exclude fire from these

lands leads to major unnatural changes in vegetation and wildlife from that which would occur without fire suppression, as well as creating fuel accumulation that can lead to uncontrollable, sometimes very damaging, wildfire. Current fire management policy allows for inclusion of naturally occurring fire on these lands, to the extent possible, as well as the use of prescribed burns to bring these areas back into a more natural condition of fire hazard and occurrence, and to reduce the risk of damage from fire to improvements within these areas and to improvements and resources on adjacent lands.

Lightning fires are permitted to burn in designated zones within 46 areas managed by the National Park Service. Nearly 58 million acres of national parks are classified natural fire zones, including 50 million acres in Alaska alone. A total of 58 national park areas use human-ignited prescribed burns to simulate the role of natural fire in certain ecosystems.

The USDA Forest Service also began allowing lightning-caused fires to play a more natural role in wilderness in 1972, when exceptions to the policy of suppressing all fires were approved by the Chief. By 1976, policy exceptions allowing lightning-caused fires to burn under carefully prescribed conditions had been put into effect in parts of the Selway-Bitterroot, Gila, and Teton wildernesses of Idaho, New Mexico and Wyoming.

In 1978, authority to approve wilderness fire management plans was delegated to Regional Foresters as part of a revised policy that called for "fire management programs" as contrasted with previous "fire control programs." This revision--which is current policy--provided for "well-planned and executed fire protection and fire use programs that are cost effective and responsive to land and resource management goals and objectives".

Forest Service wilderness fire management policy was again revised in 1985, following public review and comment, clarifying wilderness fire management objectives and the use of prescribed fire within wilderness. Forest Service ignited prescribed fires were authorized when necessary to meet the objectives of (1) allowing lightning fires to play their natural role to the extent possible and (2) reducing the risk of wildfire within wilderness to life and property, and to life, property, and resources outside of wilderness to an acceptable level.

The Bureau of Land Management uses prescribed fire extensively to meet resource and fire management objectives. However, the use is almost exclusively through planned ignitions. Prescribed natural fire is generally not used due to the predominance of fuel types having a high rate of spread (i.e. grass and brush) commonly found

on Bureau-administered lands. Those few fire management plans that identify prescribed natural fire as a management strategy do so for lands located adjacent to wilderness managed by other agencies. The operational plans for these prescribed natural fire areas were developed through coordinated fire planning efforts with the adjacent federal wilderness management agency.

The Bureau of Land Management issued its first policy for the management of lands designated as wilderness study areas in 1979. This policy, which addressed fire management practices, was revised in 1987. Fire management policy for designated wilderness areas was issued in 1981.

The Fish and Wildlife Service manages seventy designated wilderness areas containing approximately 19 million acres; 97 percent of this acreage is in refuges located in Alaska. Prescribed natural fires are accommodated on these refuge wilderness areas through provisions in the Alaska Fire Plans in which Federal, state, Alaska Native Corporations, and general publics have participated. The experience of the period 1982-1988 demonstrates that prescribed natural fires occurring within these wilderness areas can be managed to meet the objectives of these coordinated plans.

Although the Bureau of Indian Affairs has only one Federally designated wilderness area, several tribes have designated areas within their reservations as tribal wilderness. Management of these tribal wilderness areas are based on tribally developed or approved plans and, in most instances, follow closely that outlined in the Wilderness Act of 1964. Lightning-caused fires occurring within these designated areas may be allowed to burn provided they meet <u>all</u> requirements and constraints outlined in the area specific fire management plans. In addition, the use of planned prescribed fire to reduce natural fuel buildup has been widely practiced since the early 1940's. Records indicate that only one lightning-caused fire has occurred within the single Federally designated wilderness area on Indian lands, burning an area of approximately 350 acres. No attempt has been made, to date, to separate data on fires occurring on tribally designated wilderness areas from other fires occurring within reservation boundaries.

Results in National Parks:

Since the beginning of these programs in 1968 until 1987, more than 1600 lightning-caused fires have been permitted to burn more than 320,000 acres of national park land. Only one serious problem had developed--the Ouzel Fire on the Rocky Mountain National Park which threatened the adjacent community of Allens Park, Colorado. At the same time, more than 1400 prescribed burns were ignited by the park

staff in 46 national park areas that covered more than 325,000 acres. The burns were designed mainly to manage vegetation by simulating the natural role of fire in reducing fuel accumulations in order to modify plant succession and to help maintain ecosystem processes. Some of the benchmark fire management programs in national parks are those found in Sequoia-Kings Canyon and Yosemite National Parks in the Sierra Nevada, the Everglades National Park in Florida and Yellowstone and Grand Teton National Parks in the Rockies.

Results in National Forest wilderness:

Since 1972 when the USDA Forest Service began permitting lightning-caused fires to play a more natural role in wilderness, 503 prescribed natural fires have burned nearly 210,000 acres within wilderness areas in the Northern and Intermountain Regions, the Forest Service Regions having the most active prescribed natural fire management programs. Of these fires, 23 became wildfires burning an additional 544,000 acres (14 of these escaped prescribed natural fires occurred in 1988). Four prescribed fires, burning 4,424 acres, have been ignited by the Forest Service in three different wilderness areas since management ignitions were permitted in 1985. (Appendix, Table 2 and 3.)

FINDINGS

After review of policies, guidelines, fire management plans, draft fire reviews of the 1988 Greater Yellowstone fires, and information obtained from written and oral communication with both Federal personnel and knowledgeable citizens, the Team has determined the following:

1. The prescribed natural fire policy in Federal agencies was designed to allow fires to play a more natural role in national parks and wilderness areas. There have been many notable successes in application of this policy. However, in some cases this policy has been interpreted to allow managers to manage prescribed natural fires with essentially no prescriptions.

- Restoration and maintenance of naturalness and natural processes are used as primary objectives of wilderness and national park prescribed fire programs. Exclusive focus on these objectives can lead to inadequate consideration for the positive and negative impacts of fire on uses such as recreation, wildlife habitat, grazing, and water quality.

- Current fire policy or guidelines are subject to abuse in that plans are developed and implemented that don't meet the literal requirements of policy.

- Some park and wilderness managers are reluctant to define size limits and specific prescriptions limiting prescribed natural fires.

- Misuses of the prescribed natural fire program could eliminate the program itself--and lose the benefits that derive from it.

2. The Team heard from agency employees who would welcome an expansion of policy to allow for fires to burn free of prescriptions and without being declared wildfires as long as such fires are not expected to cross administrative boundaries of a park or wilderness or endanger human life and property.

3. Although there are many outstanding examples of fire management plans in all agencies, the team found that some plans do not meet current agency or departmental policy and contain inadequate prescriptions.

- Some plans do not include the required set of prescription criteria for prescribed natural fire programs.

- Some plans do not adequately address suppression resource availability, values at risk outside of parks and wilderness, and the number of fires that can be managed at one time.

- Plans do not address cumulative effects of drought and other potentially important considerations.

4. Some fire management prescriptions do not place adequate limits on fire management decisions.

- Some prescribed fires that were ultimately declared wildfires were interpreted to be within prescription until they reached an arbitrary limitation of a boundary of a park or wilderness boundary.

- Insufficient attention has been given to values at risk, both inside and outside parks and wilderness boundaries.

- There was insufficient consideration of the cumulative risks associated with multiple fires, large fires, or fires with especially active perimeters.

- Insufficient attention was given to the potential cost and damage associated with a prescribed fire later becoming a wildfire requiring suppression action.

5. Beyond being brought up to current standards, fire management programs would be strengthened by a combination of improved decision criteria in plans, additional fire expertise, and more direct line officer involvement.

- Critical decision points (e.g. decision trees) are often not identified in plans.
- Lack of resident fire expertise in some locations is critical.
- Lack of coordination of policy application for prescribed natural fire programs among and within agencies results in disparate treatment of fires and inconsistent decisions.
- Documentation of decisions is often lacking and does not demonstrate the involvement of some agency line officers.
- Some fire management plans do not include the latest technology.
- Plans are not complete in terms of indicators of long-term drought and impact on shared suppression resources.
- Variations in planning and decision processes result in decisions that appear illogical, create political and public concern for competence of the agencies, and render decisions to limit fire size ineffective.
- Prescribed natural fire programs do not adequately consider the impact on other interagency programs and resources.

6. The severity of the 1988 fire season in some areas of the West (the most severe on record in the Greater Yellowstone Area) revealed the risks inherent in managing wildland fires. These risks can include high fire suppression costs as well as unacceptable social, environmental and economic impacts, and natural resource losses.

7. Prescribed fire using planned ignitions (prescribed burning) complements the use of, and reduces the risk from, prescribed natural fires to achieve management objectives. However, there are factors constraining the use of planned ignitions in some areas.

- Planned ignitions have been used successfully in some national parks and wilderness to meet management objectives, reduce hazard fuel build-up, and establish fuel breaks.
- Planned ignitions have not been used in some cases due to the perceived risks from the results of high intensity crowning fires. Also, up-front budgetary costs have limited the use of

planned ignitions. Planned ignitions have rarely been used in wilderness.

- Some people strongly support planned ignitions as a substitute for prescribed natural fires; others believe strongly that appropriate objectives cannot be achieved without prescribed natural fire.

8. The reduction of hazard fuels around structural developments, parks/wilderness boundaries, and private inholdings enhances the ability to protect these values at risk and reduces costs of wildfire suppression and prescribed natural fire.

9. Agency personnel development and training programs are not maintaining the number of personnel and levels of knowledge required to ensure proper and consistent application of policies and procedures.

- There is an inadequate number of professional managers in field locations with an understanding of fire management and fire management policies and practices.

- Some line officers are not requiring adherence to standards contained in fire management plans.

- Inconsistent application of required processes, such as the Escaped Fire Situation Analysis, leads to poor decisions.

- Some incident management teams, fire professionals, and line officers lack knowledge of suppression tactics necessary under extreme conditions.

- Consideration of suppression costs and potential damage related to fire suppression alternatives and decisions is not adequately documented in Escaped Fire Situation Analyses.

- Some agency fire staffs are not able to maintain expertise in fire management because of infrequent fire occurrences at their location and lack of career mobility or opportunity to gain experience in other locations.

10. The environmental effects of prescribed natural fire within wilderness and park boundaries are usually consistent with natural resource objectives for these lands. However, in some cases the social and economic impacts outside these boundaries may be unacceptable due to smoke, threats to public safety, reduced tourism, loss of income and jobs, and reduced water quality.

11. Inconsistent dissemination of information, inadequate public participation, and a perception of failure to consider some social, environmental, and economic impacts on local businesses and communities are strong issues with the public and political leaders.

- o There is a great diversity of views within and outside agencies regarding the basis and the primary objectives of natural fire programs.
- o Adequate public involvement may not have occurred in the development of some prescribed natural fire management plans.
- o The primary message communicated by agencies continued to be the biological value of prescribed natural fire to vegetation and wildlife even after the fires had been declared to be wildfires.
- o There was a lack of uniform, consistent, adequate information on the location of the fires, planned fire management actions, and their implications for the public in terms of road closures, smoke, and other effects on local populations and visitors.

12. Budget structure and funding in the Departments of Agriculture and Interior create the following effects:

- o The level of expertise and professionalism needed for the broad spectrum of fire management and use program may not be available to support management objectives in all agencies.
- o Dissimilarities between the two departments in the ways in which programs are funded and differences in agencies' terminology inhibit the ability to cooperate and coordinate in prescribed fire programs on mutual boundaries.
- o These also cause disparate treatment of naturally occurring fires in determining whether they are designated as prescribed fires or wildfires. Forest Service and Bureau of Land Management policies require that prescribed fires be managed with appropriated funds from the benefiting program. The National Park Service manages prescribed natural fires with emergency funds.
- o Hazard fuel reduction programs have not been adequately funded in some cases.
- o Very limited appropriated funds are allocated to develop expertise and apply prescribed fire in parks and wildernesses.

- There is an inadequate number of professionals in Federal agencies in fire management programs. Fire management planning and application is a collateral duty at some major parks.

- Agency budgets for presuppression activities have declined in real dollars in recent years.

- National Park Service is completing an analysis of normal fire year operations, FIREPRO III, in order to define essential minimum wildland fire program needs.

13. Lack of clear definition and inconsistent implementation of "light hand on the land" suppression tactics raise serious questions over the management of fires in 1988.

- The public, employees, and cooperators became confused by mixed messages about the intensity of suppression efforts and the objectives to be achieved.

- Incident commanders received unclear direction about the use of certain suppression tactics, which were sometimes in conflict with the selected suppression alternative.

14. Research and analysis are needed to provide tools for management of fire management programs.

- Normal climatic patterns are ordinarily used for projections, yet prolonged drought periods may result in changes in weather patterns that have an abnormal effect on fires and cause an inability to project fire behavior accurately.

- There is little agreement on whether management objectives can be achieved through planned ignitions when they result in high intensity crown fire.

- Analyses of fire history, occurrence, size, and effects are insufficient for many areas.

- Reliable methods for long-term weather prediction do not exist.

- There are a number of issues concerning the natural fire regime and fire management in subalpine ecosystems vegetated predominantly by lodgepole pine. These include such topics as whether fire behavior and effects from the 1988 fires were as predicted from pre-1988 research and modelling, whether prescribed burning in these ecosystems can be implemented to establish mosaics that would inhibit large scale, uncontrollable fires, and whether

conservation of biotic diversity on a shorter scale (less than 300 to 400 years) is feasible and/or desirable.

15. The Team heard claims that some managers with philosophies advocating naturalness above all else intentionally allow fires to burn outside of prescriptions and do not take the appropriate suppression actions required on a wildfire--allegations that these fires are allowed to burn freely as long as the fire is not expected to leave the boundary of a park or wilderness. These allegations were not supported by anything in the draft fire reviews received to date. The team did not have the mandate to investigate and verify or disprove the allegations.

RECOMMENDATIONS

The Team recommends that the Secretaries of Agriculture and the Interior implement the following policy and direction:

1. Existing USDI and USDA fire management policies governing wilderness and parks must be strengthened and reaffirmed to limit their application to legitimate prescribed fire programs. Clarification is needed to prevent inappropriate use of fundamentally sound policies.

2. The agencies reaffirm their policies that fires are either prescribed fires or wildfires. The agencies reject as impractical and unprofessional the practice that fires can be allowed to burn free of prescriptions or appropriate suppression action.

3. USDA and USDI agencies will review fire management plans for parks and wilderness for compliance with current policy, direction, and the additional requirements recommended by this report. No prescribed natural fires are to be allowed until fire management plans meet these standards.

4. Current fire management plans must be strengthened by:

a. Developing joint agency fire management plans, agreements, or addendums to existing plans for those areas where fires could cross administrative boundaries. These will include agreement on processes and criteria to be used to make decisions on prescribed vs. wildfire and suppression strategies and tactics.

b. Including a comprehensive set of criteria which will be used in deciding whether or not to allow natural ignitions to burn as prescribed fires. In addition to those criteria currently required and commonly used, the following factors will be considered:

(1) Energy release component.

(2) 1000-hour fuel or duff moisture content.

(3) Appropriate consideration of the national and regional fire situation, including the numbers of fires and amount of available resources to suppress them.

(4) Limits on numbers of fires burning in the planning unit at one time.

(5) Limits on projected length of active perimeter and acreage burned.

(6) Indicators of cumulative drought effects on fire behavior.

(7) Potential impacts upon visitors, users, and local communities, both on and off site.

c. Clearly describing the decision process and factors to be addressed before a fire is declared a prescribed natural fire.

d. Including criteria to be used in declaring a prescribed fire a wildfire. There must be interagency agreement on these factors in areas where fire may move across administrative boundaries and shared suppression resources may be required.

e. Clearly identifying areas that need protection from fire, such as developments within or adjacent to wilderness and park boundaries. Fire management plans should also include actions that are to be taken, such as hazard fuel reduction or installing fuel breaks, to protect such developments or areas.

f. Clearly stating the management objectives being addressed by the prescribed natural fire program.

g. Clearly describing the process to be used to ensure adequate public involvement and coordination with local governments.

5. Agencies will develop regional and national contingency plans and procedures and provide the appropriate program monitoring and direction, including curtailment of prescribed fire activities when necessary.

6. The responsible line officer or designee shall certify in writing daily that adequate resources are available to ensure that each

prescribed natural fire will remain within prescription, given reasonably foreseeable weather conditions and fire behavior. If the fire exceeds or threatens to exceed prescription and cannot be kept within or returned to prescription with available forces and funds, it shall be declared a wildfire and appropriate suppression action initiated.

7. Agencies must re-evaluate the opportunities to use prescribed burning (by planned ignitions) to achieve management objectives and to complement prescribed natural fire programs. Additionally, hazard fuels must be reduced to protect selected areas, particularly developments within and adjacent to boundaries, from prescribed natural fire and high wildfire risk. Fuels will be treated along park and wilderness boundaries or internally where there are high values at risk.

8. Prescribed fire program management will be improved by establishing properly staffed regional as well as unit level prescribed fire program management organizations.

a. Agencies will ensure the availability of qualified staff and knowledgeable line officers for developing, implementing, and managing prescribed fire programs.

b. National Park Service regional offices will establish a full-time regional fire coordinator to develop and oversee park programs in accordance with FIREPRO III, where appropriate.

c. Agencies will implement the concept of highly trained, well-equipped and mobile tactical teams to provide on-the-ground monitoring and management of national park and wilderness fires.

d. Agencies will ensure the strengthened policy is understood and implemented by all appropriate personnel.

e. Agency managers will assure that personnel develop a thorough understanding of the management objectives for the lands they are managing.

f. The National Park Service is to complete an analysis of normal fire year operations, FIREPRO III, in order to define essential minimum wildland fire program needs and to take action to meet those needs.

9. Additional interagency emphasis will be given to addressing opportunities for improving fire management programs.

a. The National Wildfire Coordinating Group (NWCG) charter should be expanded specifically to include prescribed fire program coordination.

b. The NWCG should take the lead in developing common terminology for prescribed burning programs and describing wildfire suppression alternatives.

c. Agencies will develop joint criteria for selecting appropriate suppression tactics in wilderness and parks. Preplanning should include these tactics.

d. Agencies will improve the understanding and acceptance of using appropriate suppression tactics that meet fire management objectives and minimize the adverse impact on wilderness values and park resources.

10. Agencies will ensure that the NEPA process is followed for fire management plans. Agencies will increase opportunities for public involvement and coordination with state and local government when revising or developing fire management plans.

11. Interpretation and public information before and during fires will be improved.

a. Agencies will ensure that timely, accurate, and consistent information is provided for the public on the purpose, presence, and status of prescribed natural fires, as well as impacts on the community due to closed roads, trails, smoke, back country restrictions, and other effects.

b. Interpretive and fire status messages are for different purposes, and agencies should strive to keep them separate and distinct.

c. Agencies will develop a common terminology for prescribed natural fire programs.

12. USDI and USDA will review the methods of funding prescribed fire and fire protection programs with the objective of improving interagency program effectiveness. Planning and presuppression activities should be financed by program funds rather than through emergency fund transfers and supplementals.

13. There is a need for additional research related to fire management programs.

a. USDI and USDA will develop coordinated research programs utilizing the unique capabilities of both organizations.

b. The feasibility of prescribed burning forests using stand replacement fire will be investigated and tested by implementing an appropriate interagency field research program.

c. Research will be increased to improve the ability to predict severe fire behavior, conduct long-term weather forecasting, and identify past abnormal events.

d. Efforts will be undertaken to develop and implement an expert system that integrates a wide array of fuel, topographic, weather, climatological, fire behavior, and other information and readily displays such information in an interactive mode for the user at a computer terminal. This expert system would help to assure that important variables are not overlooked as decisions are made regarding long duration fires.

e. Efforts will also be undertaken to develop comprehensive data bases for park and wilderness resources and provide for state of the art analyses and display as well as an efficient, continuous monitoring system to insure timely update of information.

f. Development of additional emission factors for wildland fuels and better methods for projecting air quality impacts of prescribed and wildfires are needed, since smoke and air pollution are major considerations in deciding when to terminate prescribed natural fires and in scheduling prescribed burns.

14. The agencies will cooperate fully in determining whether allegations of misuse of policy are true and take measures to ensure that any such practices not occur in the future.

ISSUES NEEDING FURTHER ANALYSES

Following are fire management policy issues that would require more time than the team had available to work out suitable solutions. Resolution of these issues is not critical to fire management readiness for the 1989 fire season, but they should be pursued during the further evolution and improvement of Federal fire management policy and application. They are:

1. Validation of the relationship between current fire management information system components (i.e., drought index, energy release component, 1000 hour fuel moisture, etc.) with actual fire occurrence, severity and size is needed.

2. Development of compatible interagency fire planning methods.

3. Determination of the effect of budgetary constraints and funding sources on fire management programs.

4. Determination of the current and future effects of residential and commercial development on the ability to design and implement prescribed fire programs, including examination of the inter-relationship between fire management plans and local planning and zoning functions.

5. Inventory of forest types and locations subject to infrequent but intense large fires, their historic occurrence in terms of drought cycles, and definition of policies to be applied in each case relative to desired results to be achieved.

6. Examination of the adequacy and consistency of application of current fire suppression and prescribed fire cost analysis and risk assessment procedures.

7. Development of interagency guidelines for "light hand on the land" suppression tactics by the National Wildfire Coordinating Group.

8. Development of a better understanding of agency objectives as they relate to fire planning standards and decision criteria.

9. Reexamination as to whether human-caused fires (not ignited by management) should be managed as prescribed natural fires in certain well-defined circumstances.

10. Additional studies of fire history, occurrence, and size in parks and wildernesses.

APPENDIX - Historical Data of Prescribed Fire Programs of the USFS and NPS.

TABLE 1. PRESCRIBED FIRE OCCURRENCE THE NATIONAL PARKS SERVICE 1968-1987
(data obtained from NPS Wildland Fire Management Computer System, 1988)

NPS Units by Region	Area Size Acres	PRESCRIBED FIRE Lightning Ignitions No.	Lightning Ignitions Acres	Human Ignitions No.	Human Ignitions Acres
Alaska Region					
Bering Land Bridge	2,784,960	6	452		
Denali	6,028,091	23	44,110		
Gates of the Arctic	8,472,517	23	8,560		
Noatak	6,574,481	13	28,961		
Wrangell-St. Elias	13,188,325	7	134		
Yukon-Charley Rivers	2,523,509	13	44,778		
Mid-Atlantic Region					
Delaware Water Gap	66,637			2	11
Midwest Region					
Fort Larned	718			20	572
George Washington Carver	210			14	66
Herbert Hoover	187			7	50
Homestead	195			20	327
Indiana Dunes	13,815			8	333
Isle Royale	571,790	6	1		
Ozark	80,788			69	889
Pipestone	282			25	708
Scotts Bluff	2,997			6	1,871
National Capital Region					
George Washington Memorial Parkway	7,131			2	1
Rock Creek	1,754			5	1
North Atlantic Region					
Cape Cod	43,556			8	3
Pacific Northwest Region					
Crater Lake	183,224	44	682	21	5,402
John Day Fossil Beds	14,014			3	15
North Cascades	504,781	58	231		
Olympic	921,935	3	179		
San Juan Island	1,752			3	1
Whitman Mission	98			6	105

Parks and Monuments by Region	Area Size Acres	PRESCRIBED FIRE Lightning Ignitions No.	Lightning Ignitions Acres	Human Ignitions No.	Human Ignitions Acres
Rocky Mountain Region					
Badlands	243,302			5	4,543
Dinosaur	211,142	193	4,176	2	1,441
Fort Laramie	833			4	165
Glacier	1,013,572	4	2		
Grand Teton	310,521	32	7,759		
Rocky Mountain	265,200	6	1,051		
Wind Cave	28,292	6	309	26	7,630
Yellowstone	2,219,785	152	34,140		
Zion	146,598	24	335	5	37
Southeast Region					
Big Cypress	570,000	37	9,829	168	68,253
Biscayne	173,039			4	17
Blue Ridge Parkway	85,993			3	4
Cape Hatteras	30,319			7	99
Chickamauga and Chattanooga	8,103			5	2
Cumberland Island	36,415			8	216
Everglades*	1,398,938	337	128,255	245	185,337
Shiloh	3,848			3	11
* Research begun in 1951					
Southwest Region					
Arkansas Post	389			9	52
Bandelier	32,737	5	34	21	311
Big Bend	735,416	26	462	8	24
Big Thicket	85,774	4	40	33	6,225
Buffalo	94,219			13	285
Carlsbad Caverns	46,755	14	3,063	7	80
Fort Union	721			2	2
Jean Lafitte	20,000			2	77
Lake Meredith	44,978			10	160
Lyndon B. Johnson	1,571			4	109
Sunset Crater	3,040	2	1		
Wupatki	35,253	2	4		

Parks and Monuments by Region	Area Size Acres	PRESCRIBED FIRE			
		Lightning Ignitions		Human Ignitions	
		No.	Acres	No.	Acres
Western Region					
Golden Gate	73,117			6	17
Grand Canyon	1,218,375	81	3,723	19	3,148
Joshua Tree	559,954	4	20	3	12
Lassen Volcanic	106,372	18	9		
Lava Beds	46,560	3	32	4	461
Pinnacles	16,265	8	1,993	86	7,861
Point Reyes	71,046	12	653	57	2,504
Redwood	110,178	2	2	6	135
Saguaro	83,574	36	42	3	105
Santa Monica Mountains	150,000			3	105
Sequoia and Kings Canyon	863,683	384	32,518	48	8,247
Whiskeytown	42,503			8	99
Yosemite	761,170	333	34,998	75	26,802
Totals		**1,921**	**391,538**	**1,131**	**334,931**

TABLE 2. FOREST SERVICE WILDERNESS FIRE MANAGEMENT PROGRAM HISTORY AND ACCOMPLISHMENTS (Regions 1 and 4)

The following information is provided for wilderness areas in Regions 1 and 4. These two Regions have the most active wilderness prescribed fire programs in the Forest Service.

WILDERNESS FIRE MANAGEMENT HISTORY, 1972-1988.

	# Prescribed Natural Fires	Acres Burned	# That Became Wildfires	Acres Burned	# Wildfires Suppressed	Acres Burned
R-1	378	160,583	9	324,126	1,402	291,967
R-4	135	49,035	14	219,813	616	550,685
Total	503	209,618	23	543,939	2,018	842,652

TABLE 3. FOREST SERVICE IGNITED PRESCRIBED FIRES IN WILDERNESS

	YEAR	# FIRES	ACRES BURNED
REGION 3			
Chiricahua Wilderness	1988	1	606
REGION 8			
Bradwell Bay Wilderness	1988	2	3,000
REGION 9			
Hercules Glades Wilderness	1987	1	818
TOTAL-ALL REGIONS		4	4,424

Note: Some prescribed burning was done in the LaVentana Wilderness in California prior to 1985 as authorized through legislation establishing this wilderness.