

FIRE MANAGEMENT PLAN

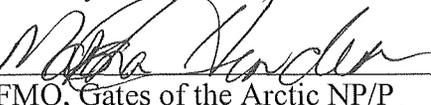
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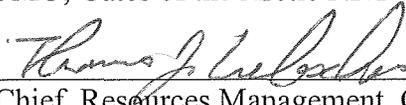
GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

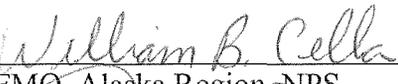
Alaska

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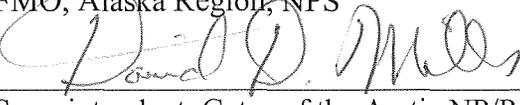
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I. INTRODUCTION

The following Fire Management Plan (FMP) is a specific action plan for the implementation of agency-wide and park-specific policies. As stated in Director's Order 18 (DO-18), the National Park Service specifies that "each park with vegetation capable of burning will prepare a fire management plan to guide a fire management program that is responsive to the park's natural and cultural resource objectives and to safety considerations for park visitors, employees, and developed facilities." Accordingly, this plan is intended to facilitate the achievement of the goals and objectives identified in the General Management Plan (GMP) and Resource Management Plan (RMP) for Gates of the Arctic National Park and Preserve. As stated in the GMP, "The overall natural resource management objective is to maintain natural features, environmental integrity, and the dynamics of natural processes operating within the Park/Preserve." Objectives are then derived from the combination of the GMP and the goals of the integrated park programs which clearly state "allow fire to fulfill its role as a natural process to the fullest extent possible while protecting human life, private property, and cultural and natural resources that warrant protection" (RMP:5). Since 1983, guidance for fire management activities within the Park/Preserve has come from a series of statewide interagency plans developed cooperatively by the National Park Service, the Bureau of Land Management, the Alaska Department of Natural Resources, the Alaska Department of Fish and Game, the U.S. Forest Service, the U.S. Fish and Wildlife Service, the Bureau of Indian Affairs, and Native Regional and Village Corporations. This Fire Management Plan, in turn, comprises a park-specific action plan; as such, it will be used in conjunction with the current Alaska Interagency Wildland Fire Management Plan (AIWFMP) to direct all personnel engaged in fire management actions within the Park/Preserve toward the fulfillment of the goals and objectives specified by the Park/Preserve's RMP.

Authority for the implementation of this Fire Management Plan originates with the Organic Act of the National Park System, August 25, 1916. The act states that the primary goal of the National Park Service is to preserve and protect the natural and cultural resources found on lands under its management in such a manner as will leave them unimpaired for future generations. Current service-wide fire management policy is specifically expressed in Director's Order 18 (DO-18) and the attendant Reference Manual (RM-18). The Fire Management Plan for Gates of the Arctic National Park and Preserve (GAAR) complies fully with these directives.

The actions described within this plan also meet the requirements of the National Environmental Planning Act (NEPA), the National Historic Preservation Act (NHPA), and the Alaska National Interest Lands Conservation Act (ANILCA). Compliance with these acts will be demonstrated as follows:

- The GAAR Fire Management Plan is accompanied by an Environmental Assessment (Appendix C.1), a substantive discussion of the effects upon the Park/Preserve's natural and cultural resources by several alternative actions, including the proposed course of action which is explained throughout the FMP.
- The Environmental Assessment, in turn, is accompanied by an ANILCA 810(a) Summary Evaluation and Findings document (Appendix C.2), an assessment of the impacts of the proposed actions upon subsistence activities within the Park/Preserve.

- The Fire Management Plan, Environmental Assessment, and 810(a) Summary Evaluation and Findings will be submitted to National Park Service staff members at Gates of the Arctic National Park and Preserve and to the Alaska Regional Support Office for review of operational soundness and compliance with federal policy.
- The Fire Management Plan, Environmental Assessment, and 810(a) Summary Evaluation and Findings will be submitted for review to local communities, local native corporations, and to all state and federal agencies holding or administering lands adjacent to or in the proximity of the Park/Preserve.
- A Programmatic Agreement among Gates of the Arctic National Park and Preserve, Wrangell-St. Elias National Park and Preserve, Yukon-Charley National Preserve, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Office specifies the actions to be taken by the three park units in conjunction with their Fire Management Plans for compliance with the National Historic Preservation Act.
- The State Historic Preservation Officer (SHPO) will review the Fire Management Plan and Environmental Assessment; in addition the SHPO will review all individual prescribed fire burn plans prior to their approval by the Superintendent.
- Notice of availability of the FMP and accompanying Environmental Assessment and 810(a) Summary will be made locally, with public comments accepted by the NPS for a period of thirty days thereafter.

II. NPS POLICY AND RELATION TO OTHER PLANS

A. NPS Policy

In 1995, an interagency review of the risks and expenses associated with wildland fire management culminated in the Final Report of the Federal Wildland Fire Management Policy and Program Review. This review contained several principles, policy changes, and recommendations that were accepted and endorsed by the Secretary of the Interior. In response to these changes and recommendations, the director of the National Park Service (NPS) issued *Director's Order #18: Wildland Fire Management (DO-18)* in 1998. The provisions of DO-18 supercede all previous requirements and statements of policy with regard to wildland fire management.

Foremost, DO-18 recognizes the need of the NPS to foster healthy and natural fire ecology within individual parks, through the development of fire management programs designed around resource management objectives. Central to this is the development of individual fire management plans for each park unit, in order to tailor the FMP to park resource management objectives while still following the national guidelines. To this end, each unit of the NPS is directed to prepare a fire management plan that supports cultural and natural resource management objectives while emphasizing safety for park visitors, employees, and developed facilities.

Using the new policy, all fires burning in parks will be classified as either wildland fires or prescribed fires. A prescribed fire is one that is intentionally ignited by park managers to achieve resource objectives. Every prescribed fire must have a detailed prescribed burn plan, approved by the superintendent that describes all aspects of the operation, including need and objectives, environmental parameters, monitoring, and contingency actions. Wildland fires are all other fires, whether ignited by natural or human causes. All wildland fires will be effectively managed by applying the guidelines specified in the park's fire management plan, which take into consideration firefighter safety, resource values to be protected, the effects of suppression, and numerous other criteria specific to the park unit.

B. Establishment and Purpose of GAAR

As early as 1950, some Alaskans and many conservationists made recommendations to the National Park Service for the creation of an Arctic Wilderness Park (Brown 1988). The publicized accounts of many of the scientists who were studying both the natural and cultural landscapes of this northern part of Alaska served to awaken the general public to the beauty of Alaska, as well as the threats to the land in the form of rapid development. In 1980, with the passage of the Alaska National Interest Lands Conservation Act (ANILCA), Gates of the Arctic National Park and Preserve (GAAR) was formed.

As defined by ANILCA, Gates of the Arctic's foremost purpose is:

To maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features; to provide continued

opportunities, including reasonable access, for mountain climbing, mountaineering, and to other wilderness recreation activities; and to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds.

Truly a wilderness park, GAAR is considered an unspoiled area of natural beauty, with foremost value placed on the undeveloped nature of the entire Park/Preserve. Significant resources include two National Natural Landmarks: Walker Lake and Arrigetch Peaks, and six National Wild and Scenic Rivers: the North Fork of the Koyukuk River, Tinayguk River, John River, Alatna River, Kobuk River and Noatak River. GAAR is one of the last Park/Preserve areas conducive to wilderness adventure, where visitors can experience a sense of solitude, isolation, and extreme natural beauty.

National Park Service Management Policies: Chapter 6.1 states “The National Park Service will manage wilderness areas for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness. Management will include the protection of these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. The public purpose of wilderness in the national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition, as well as for the purposes or recreational, scenic, scientific, education, conservation, and historical use”.

GAAR is also recognized as an area of significant scientific value with regard to vegetative communities and fish and wildlife populations. Wildlife biology, ecology, botany, and numerous other disciplines acknowledge the unique opportunity for scholarship that is possible in GAAR. As a result, maintaining the natural ecosystem within the Park/Preserve is a primary priority in all management decisions.

Although only a small portion of GAAR (less than 5% of the total area) has been adequately surveyed for cultural resources, the entire Park/Preserve has the potential to greatly contribute to our understanding of the past. Currently, over 800 prehistoric and historic archaeological sites have been identified, many of which have exceptional scientific value. Systematic archaeological surveys are planned for the upcoming field season and beyond, and will serve to further identify significant cultural resources within GAAR.

C. GAAR General Management Policy and Fire Management

The GAAR General Management Plan (GMP) was approved in 1986, and contains management actions intended to address potential issues and problems within GAAR. The overarching direction of the plan, following ANILCA, is to maintain the area as it was when established so that the significant wilderness quality of the Park/Preserve is not diminished.

Wildfire management is treated only cursorily in the GMP, which states “wildfire has been recognized as a natural phenomenon that must be permitted if natural systems are to be perpetuated” (GMP 1986:104). However, wildfire was also recognized as a threat to private property. Consequently, the National Park Service adopted a policy of limited fire suppression,

in which only fires that threaten human life or property are to be suppressed to the degree necessary. This policy followed the interagency fire plan (see below), and complied with provisions in the Alaska Native Claims Settlement Act (ANCSA) that afford native lands wildland fire protection services from the United States. Additionally, the GMP allows the use of prescribed burns to protect property.

Specific GMP management objectives that relate to fire management include:

- Maintain natural features, environmental integrity, and the dynamics of natural processes operating within the park.
- Allow wildfire as a natural process while protecting private property, significant historic resources, water quality, and air quality.
- Maintain clean air and unimpaired viewsheds.
- Protect significant cultural resources on park land with methods that are compatible with the wilderness purposes of the area.

D. GAAR Resource Management Policy and Fire Management

The current GAAR Resource Management Plan (1994) comprises an action plan for the implementation of the goals outlined in the Park/Preserve's GMP. Resource oriented guidelines are given for the development of a fire management program for Gates of the Arctic National Park and Preserve.

With respect to fire management, the RMP identifies three especially relevant objectives: 1) to maintain the wild and undeveloped character of the Park/Preserve; 2) to maintain natural features, environmental integrity and the dynamics of natural processes operations within the park; and 3) to allow fire to fulfill its role as a natural process to the fullest extent possible while protecting human life, private property, and cultural and natural resources that warrant protection. Project statement GAAR-N108, contained within the RMP, specifies the development of an integrated fire management program. The main objective of the program is to incorporate the existing interagency suppression plan while also addressing park-specific suppression capabilities, including the possible use of wildland or prescribed fire for resource benefit and/or hazard fuels reduction. The integration of the interagency FMP with this park-specific Fire Management Plan will allow the continuation of a natural fire regime in GAAR.

The accomplishment of the three resource management objectives above will occasionally demand the prioritization of wildland fire management activities by the some GAAR staff. Large or complex wildland fire incidents may demand the involvement of many of the Park/Preserve personnel, in some cases for extended periods of time.

E. Relation of GAAR Fire Management Program to Interagency Fire Management Policy

In Alaska, primary responsibility for wildland fire suppression is divided between the Alaska Department of Natural Resources (DNR), the US Forest Service (USFS), and the Bureau of Land

Management Alaska Fire Service (BLM-AFS). The BLM-AFS carries the primary responsibility for suppression actions on lands within Gates of the Arctic National Park and Preserve. Although BLM-AFS has primary responsibility for suppression, 620 Departmental Manual 2.4 states that “nothing herein relieves agency administrators in the Interior bureaus of the management responsibility and accountability of activities occurring on their respective lands.” Section 2.4 goes on to state that “each bureau will continue to use its delegated authority for applications of wildland fire management activities such as planning, education, and prevention, use of prescribed fire, establishing emergency suppression strategies, and setting emergency suppression priorities for the wildland fire suppression organization on respective bureau lands.” The NPS, as well as the US Fish and Wildlife Service (USFWS), the Bureau of Indian Affairs (BIA), and Alaska Native regional corporations and villages participate in wildland fire management training and provide suppression resources during periods of increased fire activity in GAAR, Alaska and the contiguous United States. Although the use of NPS personnel for initial attack and structure protection is not common, qualified NPS personnel may provide initial attack if they are the closest resources or if no other initial attack resources are available.

In 1984, the NPS cooperated with the Alaska Department of Fish and Game (ADF&G), BLM, DNR, USFS, USFWS, BIA, and Regional and Village Native Corporations to produce an Interagency Fire Management Plan for the Kobuk Planning Area. This plan provided direction for fire management activity for GAAR until 1998, when a variety of documents, including 13 local planning area FMPs, were consolidated and approved as the Alaska Interagency Wildland Fire Management Plan (AIWFMP). Copies of these plans can be found at GAAR headquarters in Fairbanks, Alaska. Under the AIWFMP, fire protection needs are determined through annual land manager/owner reviews, at which time lands are placed under Critical, Full, Modified, or Limited protection categories, with categorization based on values to be protected, as well as the managing agency’s resource management objectives, policies and mandates. These categories are discussed in detail in the AIWFMP.

This Fire Management Plan integrates the policies set forth in both DO-18 and the AIWFMP. Specifically, it is a detailed program of action to implement the fire management policies and objectives of the National Park Service. Additionally, this FMP will help to meet the objectives set forth in the GAAR General Management Plan and the GAAR Resource Management Plan. These objectives include maintaining the wilderness character of GAAR, and allowing wildland fire to continue in its natural role within the Park/Preserve’s ecosystem.

III. SCOPE OF WILDLAND FIRE MANAGEMENT PROGRAM

A. Fire Management Goals at GAAR

Whenever safely possible, Gates of the Arctic National Park and Preserve will utilize the role of fire in the natural environment in the fulfillment of NPS natural resource management directives. Accordingly, the Park/Preserve will direct all fire management activities toward the accomplishment of the following goals:

- The protection of human life, property, and irreplaceable natural and cultural resources.
- The preservation of fire in its natural role and as a natural process to the fullest extent possible.
- The maintenance of dynamic natural processes occurring within the Park/Preserve.
- The use of selected wildland fires for the accomplishment of resource management objectives and for the reduction of hazardous fuels.
- The minimization of adverse effects of fire and/or fire suppression activities.
- The coordination and scientific management of wildland fire on the basis of the best natural resource management program goals and objectives.
- The education of employees and public about the scope and effect of wildland fire management.
- The management of wildland fire incidents in accordance with accepted interagency standards and the achievement of maximum efficiency through interagency coordination and cooperation.
- The development of on-site protection capabilities at the Park/Preserve through the training of GAAR personnel and acquisition of wildland firefighting equipment.
- The provision of fire situation, fire behavior and fire effects information to the Park/Preserve Superintendent and to appropriate Alaska Fire Service personnel.

B. Fire Management Options

The NPS policy DO-18 specifies the various fire management options available for use by the fire management program. These options are described below, and are summarized in Table 1.

1. Wildland Fire

Wildland fire is defined as any ignition or fire occurring in GAAR that was not planned and ignited by management. Following both DO-18 and the AIWFMP, wildland fires may be

managed for the accomplishment of resource management objectives. One of two alternatives may be implemented upon detection of a wildland fire: wildland fire use, or wildland fire suppression.

a. Wildland Fire Use

Wildland Fire Use is a specific management action implemented primarily for the accomplishment of resource objectives, including the preservation of fire in its natural role in the ecosystem and/or the reduction of hazardous fuel loads. Specific elements must be in place before wildland fire use can be implemented, including an approved fire management plan, appropriate environmental and subsistence compliance, the establishment of fire management units, a prescription for implementation, and management oversight. These elements will be discussed further in the wildland fire management section below.

b. Wildland Fire Suppression

Wildland Fire Suppression is any fire management action that is based on protection goals rather than resource management concerns. All unplanned ignitions failing to meet predetermined conditions for Wildland Fire Use will be suppressed through the selection and implementation of a suppression-oriented strategy. In selecting suppression strategies, the Incident Commander and/or the suppression agency Fire Management Officer (FMO) and/or the Agency Administrator must consider firefighter and public safety, cost effectiveness, and impact of suppression activities, as well as protection of resources and values to be protected. Accordingly, suppression strategies may range from aggressive initial attack to surveillance and/or indirect containment.

2. Fuels Management

In wildland fire management, fuel is defined as live or dead organic matter. Managing the amount of fuel at any given site is one of the primary tasks of the fire management program. The two primary management options for fuel reduction are described below.

a. Prescribed Fire

Prescribed Fire is defined as the planned implementation of fire within a predetermined area and under predetermined conditions, for the accomplishment of resource management objectives and/or hazard fuel reduction. Each implementation of prescribed fire must follow a Prescribed Fire Plan prepared by the FMO (or delegate) and approved by the Superintendent. Currently the Park/Preserve has no plans to implement prescribed fire in the immediate future. Prescribed fire may, however, be an appropriate tool at GAAR for the purposes of hazard fuel reduction, scientific research, or the restoration of historical landscapes/conditions at culturally significant sites.

b. Mechanical Fuel Reduction

Mechanical Fuel Reduction is defined as the use of powersaws, cross-cut saws, mowers, handtools, or similar devices to mitigate hazard fuel buildup or recreate historical landscape conditions in areas where fire would pose an unreasonable threat to property or resources. Each mechanical fuel reduction action at GAAR must follow a written plan prepared by the FMO (or delegate) and be approved by the Superintendent. In areas designated as wilderness, a minimum

requirement/minimum tools analysis will be completed and integrated into the plan, following the conditions set forth in the Organic Act.

Table 1: DO-18 Fire Management Options

Management Option	Intent	Policy
Prescribed Fire Use Prescribed Fire Plan → management-implemented ignition	<ul style="list-style-type: none"> • Ecosystem sustainability • Achieve Resource Management goals and objectives 	<ul style="list-style-type: none"> • May only be implemented within FMUs designated for such use. • Context and circumstances of the fire dictate the appropriate response, based on the approved FMP.
Use of Wildland Fire Any ignition → managed based on resource management objectives	<ul style="list-style-type: none"> • Long-term protection of life, property, and/or fire sensitive resources. • Restoration of historic conditions. • Cost effectiveness. 	<ul style="list-style-type: none"> • Management strategy or prescribed fire plan should be based on resource management objectives.
Wildland Fire Suppression Any ignition where there are no alternative appropriate responses → suppression response	<ul style="list-style-type: none"> • Immediate protection of life, property, and/or fire-sensitive resources. • Cost effectiveness. 	<ul style="list-style-type: none"> • Suppression actions triggered automatically in certain FMUs. • Agency Administrator may select suppression actions in any FMU. • Context and circumstances of the fire dictate the appropriate response, based on the approved FMP • Suppression actions should comply with resource management objectives whenever possible. • MIST tactics will be implemented

C. Fire Management Units (FMUs)

The fire management program at Gates of the Arctic National Park and Preserve complies with the policies resulting from the Federal Wildland Fire Management Policy Review of 1995, as well as those established by the Alaska Interagency Wildland Fire Management Plan. In accordance with DO-18, the Park/Preserve has been sub-divided into four Fire Management Units (FMUs), each indexed to an appropriate AIWFMP category. It should be noted that the areas contained within individual Fire Management Units at GAAR are not contiguous (e.g., the Modified Protection FMU includes acreage in both the southeast and southwest corners of the Park/Preserve). The following map shows the general location of the Park/Preserve's FMU boundaries within the park as well as the AIWFMP protection categories for adjacent lands (Figure 1).

According to the AIWFMP, each FMU has specific, predetermined management strategies (or combinations thereof) that consist of the various management options described above. For example, wildland fire use will be the pre-planned response for ignitions detected within the Park/Preserve's Limited Protection FMU and in the Modified Protection FMU after the conversion date. These management strategies are summarized by FMU in Table 2.

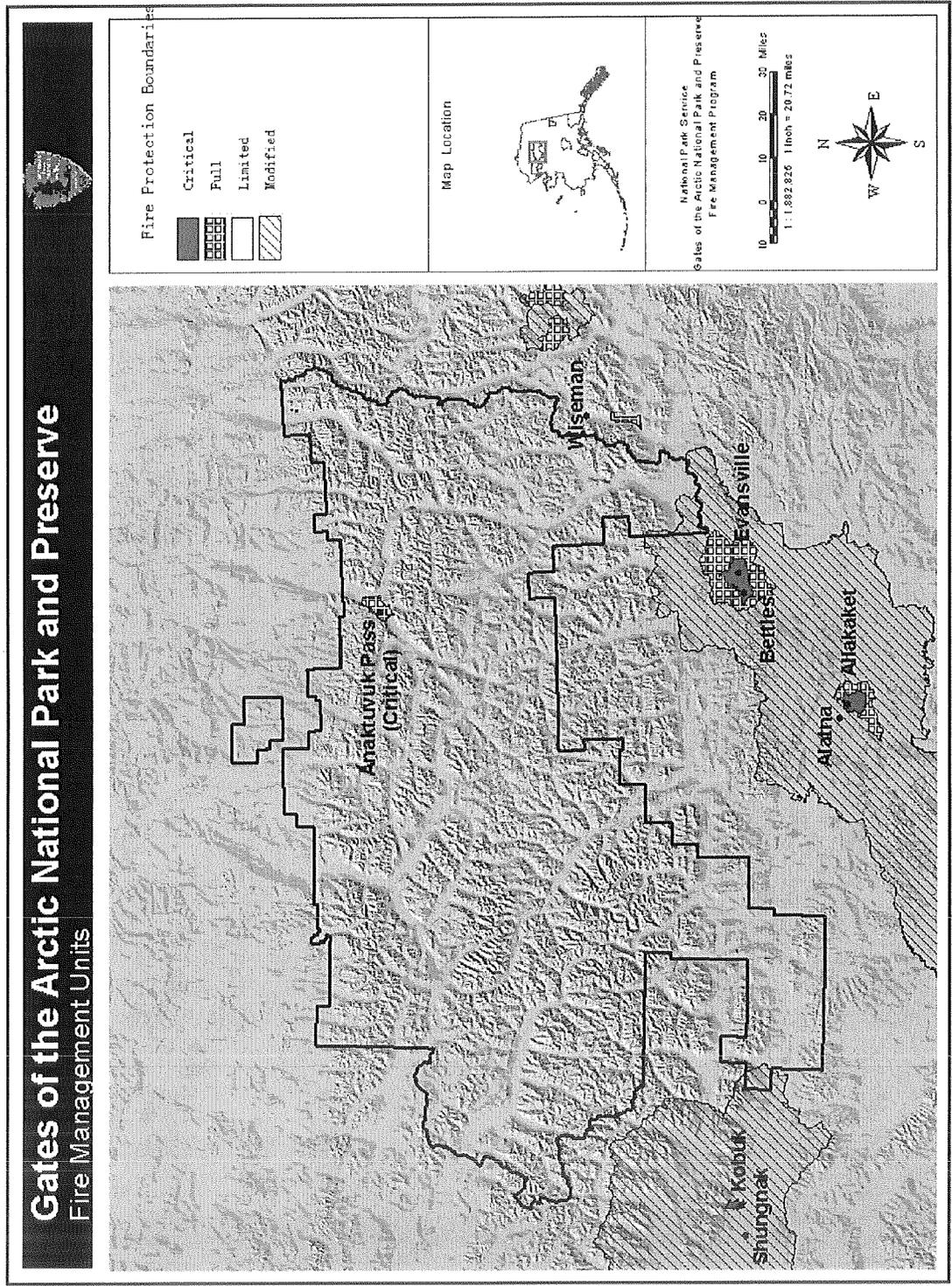


Figure 1: Gates of the Arctic Fire Management Units

Table 2: AIWFMP Management Options

PROTECTION CATEGORY	POLICY/RESPONSE	INTENT
CRITICAL	<ul style="list-style-type: none"> • Aggressive suppression of fires within or threatening designated areas. • Highest priority for available resources. 	<ul style="list-style-type: none"> • Prioritization of suppression actions for wildland fires threatening human life, inhabited property, and/or other designated structures. • Complete protection of designated sites
FULL	<ul style="list-style-type: none"> • Aggressive suppression of fires within or threatening designated areas, depending upon availability of resources. 	<ul style="list-style-type: none"> • Protection of uninhabited cultural and historical sites, private property, and high-value natural resources.
MODIFIED	<ul style="list-style-type: none"> • Fires in designated areas receive initial attack depending on availability of resources, unless land manager chooses otherwise and documents with WFSA. • After designated conversion date, operational response to Modified protection zones is identical to that of Limited zones. 	<ul style="list-style-type: none"> • Greater flexibility in selection of suppression strategies when chance of spread is high (e.g., indirect attack). • Reduced commitment of resources when risk is low. • Balancing of acres burned with suppression costs and with accomplishment of resource management objectives.
LIMITED	<ul style="list-style-type: none"> • Wildland fires allowed to burn within predetermined areas. • Continued protection of human life and site-specific values. • Surveillance. 	<ul style="list-style-type: none"> • Reduction of long-term costs and risks through reduced frequency of large fires. • Reduction of immediate suppression costs. • Facilitation of bio-diversity and ecological health

Determination of GAAR Fire Management Units and their respective policies is based on the proximity of values at risk, the role of fire within the GAAR vegetative communities, and overall management objectives, as specified in DO-18. Variables such as fuel type, loading, and moisture level will be considered in the decision-making process for specific incidents, as well as in the writing of individual prescribed fire plans. Predetermined management parameters for FMUs, however, will tend to be based instead on relative risk posed to property or sensitive resources. Table 3 below summarizes the GAAR FMUs and possible rationale for FMU determination.

A statewide Multi-Agency Coordination (MAC) group will be convened when necessary (usually when the Alaska Preparedness Level reaches Level 4 or 5) to establish priorities for suppression resource allocation and to determine the need for a temporary change in the selected fire management option identified in the AIWFMP for a specific geographic area(s). Such temporary changes may be implemented during periods of unusual fire conditions (e.g., numerous or unusually large fires, predicted drying trends, problematic smoke dispersal, shortages of suppression resources, unusually wet conditions, etc.). The duration and

geographical extent of any such changes will be determined by the MAC group and will be reflected in the Park/Preserve’s FMUs, which will be managed accordingly.

Table 3: Integration of AIWFMP and DO-18 Policy at GAAR

GAAR Fire Management Units (derived from AIWFMP Protection Categories)	POSSIBLE RATIONALES for FMU Determination	APPLICABLE Management Strategies
Critical	<ul style="list-style-type: none"> • Presence of permanent residences and valuable cultural resources, including National Historical Landmarks. 	<ul style="list-style-type: none"> • Suppression • Prescribed Fire Use • Mechanical
Full	<ul style="list-style-type: none"> • Presence of private structures and of structures included on the National Register of Historical Places. • Proximity to Critical FMU. 	<ul style="list-style-type: none"> • Suppression • Prescribed Fire Use • Wildland Fire Use • Mechanical
Modified	<ul style="list-style-type: none"> • Proximity to Critical and Full FMUs. • Presence of fire-dependent ecosystems. • Appropriate balance of cost and control. 	<ul style="list-style-type: none"> • Wildland Fire Use • Prescribed Fire Use • Suppression • Mechanical
Limited	<ul style="list-style-type: none"> • Presence of fire-dependent ecosystems. • Relative lack of significant fire-sensitive resources. 	<ul style="list-style-type: none"> • Wildland Fire Use • Prescribed Fire Use • Suppression • Mechanical

D. Description of GAAR Fire Management Units

The following discussion presents a detailed description of the four fire management units in GAAR. The units are defined primarily by the presence of significant cultural resources and private property, as opposed to being defined by the physical and biotic communities present. As a result, topics such as the historic role of fire in GAAR, weather analysis, fire regime and season, and fuel characteristics are discussed not by fire management unit, but for the entire Park/Preserve as a whole.

1. Critical Protection Fire Management Unit

a. Physical Descriptors

There are no Critical Protection FMUs on NPS land. The village of Anaktuvuk Pass is the single critical protection fire management unit within the boundaries of Gates of the Arctic, consisting of a 78-acre block located near the northern boundary of the Park/Preserve. Anaktuvuk Pass is the sole population center within the boundary of the Park/Preserve, with a population of 282 as of December, 2001. The rectangular protection unit encompasses the entire village, beginning just northwest of the landing strip and extending to the west and south.

b. Management objectives

In accordance with the AIWFMP, the highest priority for the aggressive suppression of ignitions occurs within Critical Protection zones and/or sites. Prescribed fire and/or mechanical fuel reduction is appropriate in critical protection FMUs based upon land manager/owner's land and fire management objectives.

c. Management constraints

- Park management will be involved in decisions to protect areas of private critical protection areas when these actions affect or involve Park/Preserve lands.

d. Special concerns

GAAR was established primarily for its wilderness values. Employees involved in fire management activities will make every effort to understand wilderness policy, identify sensitive overflight areas, and coordinate with the Agency Administrator, Chief of Operations or delegate prior to flying, when fire incidents take place in GAAR. The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis unless they are emergency actions.

2. Full Protection Fire Management Unit

a. Physical descriptors

The majority of the Full Protection FMU (14,159 acres) within the boundaries of GAAR consists of a large section of land that surrounds the Anaktuvuk Pass Critical Protection FMU, and acts as a buffer between the Critical and Limited FMUs. The Full Protection FMU is located in the Anaktuvuk Valley, between the Anaktuvuk River to the east, the 3000-foot contour level in the mountains to the south and west, and a designated boundary roughly ¾ of a mile north of Kongumavik Creek. This land is owned by the Arctic Slope Regional Corporation and the Nunamiut Village Corporation. Over fifty native allotments parcels located within the Park/Preserve have also been designated as full protection sites.

b. Management objectives

The primary objective in the Full Protection FMU is to protect valued resources by minimizing the presence of uncontrolled fire. AFS and/or the NPS will respond whenever possible to ignitions within this FMU with an appropriate suppression response, unless the GAAR Agency Administrator requests otherwise. Wildland fire use may occur within this FMU with the Agency Administrator's concurrence with the AFS FMO on a Decision Criteria record (See AIWFMP). Prescribed fire may also be implemented in this FMU, with the Superintendent's approval of a formal prescribed fire plan, for the purpose of preserving and/or restoring fire in its natural role, reducing hazardous fuel accumulations, or restoring historic conditions. Mechanical fuel reduction is appropriate based on land manager/owner's land and fire management objectives.

In all cases, fire management strategies for incidents within the Full Protection FMU and/or sites will be aimed primarily at the protection of structures and other valued resources. Mitigation of immediate threats will take precedence, but implementation of alternative strategies aimed at long-term hazard fuels reduction and/or other management goals will also be allowed when deemed appropriate by the Agency Administrator.

c. Management constraints

- The Park/Preserve will make every reasonable effort to communicate to the public and NPS employees ongoing fire management efforts, fire situation, and socio-political and economic impacts of any fire management activities conducted within this FMU.
- Firefighter and public safety will be the number one concern in all fire management activities.
- Retardant and heavy equipment (including bulldozers) will not be used without the permission of the Superintendent (or delegate), except in life-threatening situations.
- Helicopter flight time will be minimized in all possible situations to ensure wilderness concerns are addressed.

d. Special concerns

Gates of the Arctic was established primarily for its wilderness values. Employees involved in fire management activities will make every effort to understand wilderness policy, identify sensitive overflight areas, and coordinate with the Agency Administrator, Chief of Operations or delegate prior to flying, while fire incidents take place in Gates of the Arctic National Park/Preserve. The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis unless they are emergency actions.

3. Modified Protection Fire Management Unit

a. Physical descriptors

The Modified Protection FMU (approximately 34,306 acres) consists of two areas located in the southeast and southwest corners of the Park/Preserve. The area in the southeast corner is partially owned by Doyon Limited Regional Corporation.

b. Management objectives

The primary objective in the Modified Protection FMU is to achieve an appropriate balance between protection of life and property and cost effectiveness through the implementation of alternative suppression strategies. AFS will provide initial attack for ignitions detected within the Modified Protection FMU, if adequate firefighting resources are available and conversion has not occurred. However, the immediate reduction of potential acreage burned is less of a priority in Modified FMUs than it is in Critical or Full FMUs. Accordingly, Incident Managers will

consider a wide range of suppression strategies within the Modified FMU, including containment by natural barrier or indirect use of retardant or handline. Wildland fire use is allowed within this FMU with the Agency Administrator's concurrence with the AFS FMO on a Decision Criteria Record (see AIWFMP). Once the Modified Protection FMU has converted, management objectives are identical to those established for the Limited Protection FMU. Prescribed fire may be implemented in this FMU for the purpose of reducing hazardous fuel accumulations or restoring historical conditions, with the Superintendent's approval of a formal prescribed fire plan. Mechanical fuel reduction is appropriate based upon land manager/owner's land and fire management objectives.

c. Management constraints

- The Park/Preserve will make every reasonable effort to communicate to the public and NPS employees ongoing fire management efforts, fire situation, and socio-political and economic impacts of any fire management activities conducted within this FMU.
- Retardant and heavy equipment (including bulldozers) will not be used without the permission of the Superintendent (or delegate), except in life-threatening situations.
- Firefighter and public safety will be the number one concern in all fire management activities.
- Helicopter flight time will be minimized in all possible situations to ensure wilderness concerns are addressed.

d. Special concerns

Gates of the Arctic was established primarily for its wilderness values. Employees involved in fire management activities will make every effort to understand wilderness policy, identify sensitive overflight areas, and coordinate with the Agency Administrator, Chief of Operations or delegate prior to flying, while fire incidents take place in Gates of the Arctic National Park/Preserve. The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis unless they are emergency actions.

4. Limited Protection Fire Management Unit

a. Physical descriptors

The Limited Protection FMU (approximately 8,171,756 acres) includes all GAAR holdings (lands under NPS management) not contained within the Full or Modified FMUs.

b. Management objectives

Due to the near absence of values at risk within this unit, most ignitions occurring within the Limited Protection FMU will be managed for the purpose of preserving fire in its natural role within the ecosystem. Prescribed fire may also be implemented in this FMU, with the Superintendent's approval of a formal prescribed fire plan, for the purpose of

preserving and/or restoring fire in its natural role, reducing hazardous fuel accumulations, or restoring historic conditions. Mechanical fuel reduction is appropriate based upon land manager/owner's land and fire management objectives.

c. Management constraints

- The Park/Preserve will make every reasonable effort to communicate to the public and NPS employees ongoing fire management efforts, fire situation, and socio-political and economic impacts of any fire management activities conducted within this FMU.
- Retardant and heavy equipment (including bulldozers) will not be used without the permission of the Superintendent (or delegate), except in life-threatening situations.
- Firefighter and public safety will be the number one concern in all fire management activities.
- Helicopter flight time will be minimized in all possible situations to ensure wilderness concerns are addressed.

d. Special concerns

Gates of the Arctic was established primarily for its wilderness values. Employees involved in fire management activities will make every effort to understand wilderness policy, identify sensitive overflight areas, and coordinate with the Agency Administrator, Chief of Operations or delegate prior to flying, while fire incidents take place in Gates of the Arctic National Park/Preserve. The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis unless they are emergency actions.

E. GAAR Ecology and Fire

Gates of the Arctic National Park and Preserve encompasses 8,229,946 acres, of which the federal government manages 97%. Much of the remaining land belongs to Doyon, Limited Regional Corporation, Nunamiut Village Corporation, and Arctic Slope Regional Corporation. Other land ownership categories include Native allotments, and patented/unpatented mining claims.

Located north of the Arctic Circle, this remote Park/Preserve lies within the central Brooks Range, and is one of the nation's largest wilderness parks. The village of Anaktuvuk Pass is located in the mountains near the northern border of GAAR and is the only established community within the Park/Preserve boundary. The community of Bettles/Evansville is located south of the Park/Preserve, and serves as the primary field operations center. Access to the Park/Preserve via foot from Anaktuvuk Pass, Coldfoot or Wiseman does occur, however, entry into this remote wilderness is mainly by commercial air services or private plane. The presence and protection of these communities may affect wildland fire management decisions.

Vast and remote, the Park/Preserve contains examples of a variety of ecotypes from the taiga forest of the south slopes, to the rolling, treeless tundra of the northern foothills. The rugged peaks of the Brooks Range rise to over 8,000 feet in the park and are separated by small valleys created by creeks flowing from the summits and by broad glacial valleys that are the products of four major glaciations. The climate in GAAR consists of four distinct seasons with relatively short cool summers and long severe winters. Spring and autumn come and go rapidly with the quick increase and decrease in sunlight and temperature. The park receives continuous sunlight during the summer for at least 30 days.

1. Historic Role of Fire in GAAR

Fires are infrequent occurrences in the northernmost two thirds of the Park/Preserve due to the presence of the Brooks Ranges and the Arctic coastal influence of the North Slope. However, the southern third of GAAR lies within the northernmost belt of Interior Alaska, where fire has played a critical role in ecosystem sustainability. For thousands of years, periodic fires have served to select plants and animals that are adapted to fire-caused change. Both the black and white spruce, for example, depend on intense ground fire to clear organic layers and to thereby expose fertile seedbed. Black spruce, moreover, is at least partially dependent upon stand-replacement fire, in that its seeds become ready for germination at the peak of the Alaskan interior fire season and are released when its semi-serotinous cones are opened by canopy fire. Even more fundamentally, fire plays a key role in the regulation of the permafrost table throughout all the ecosystems of the Alaskan interior. Without fire, organic matter accumulates, the permafrost table rises, and ecosystem productivity declines. Vegetation communities become much less diverse and wildlife habitat decreases. Fire rejuvenates these systems. It removes insulating organic matter and elicits a warming of the soil. Nutrients are added both as a result of combustion and by increased decomposition rates.

The impact of aggressive suppression in Interior Alaska and GAAR is difficult to assess. Organized suppression has occurred on a large scale in Alaska since 1939, when the Alaska Fire Control Service (predecessor to the AFS) was established. The effects of this activity are not yet clear, however, the reduction of total fire acreage has been unmistakable. A past study of the Tanana/Minchumina Planning Area has shown that annual burned acreage hovered around 900,000 acres between 1957 and 1981, down from the estimated 1.5 to 2.5 million acres prior to 1940. Yet despite this reduction, large, high-intensity fires remain a frequent occurrence, in part because the detection of interior fires remains difficult, with many fires burning for days or weeks without being observed. Alaska fire management personnel feel that the fire ecology of GAAR is relatively unchanged from their condition prior to the development of organized suppression efforts.

Figure 2, below, shows the fire history of the Park/Preserve for the years in which we have data. As is evident, fire is a relatively infrequent occurrence in GAAR, with most years seeing no wildland fires at all. However, as years 1969 and 1991 indicates, fire is a significant ecological process and has the potential to impact large amounts of acreage.

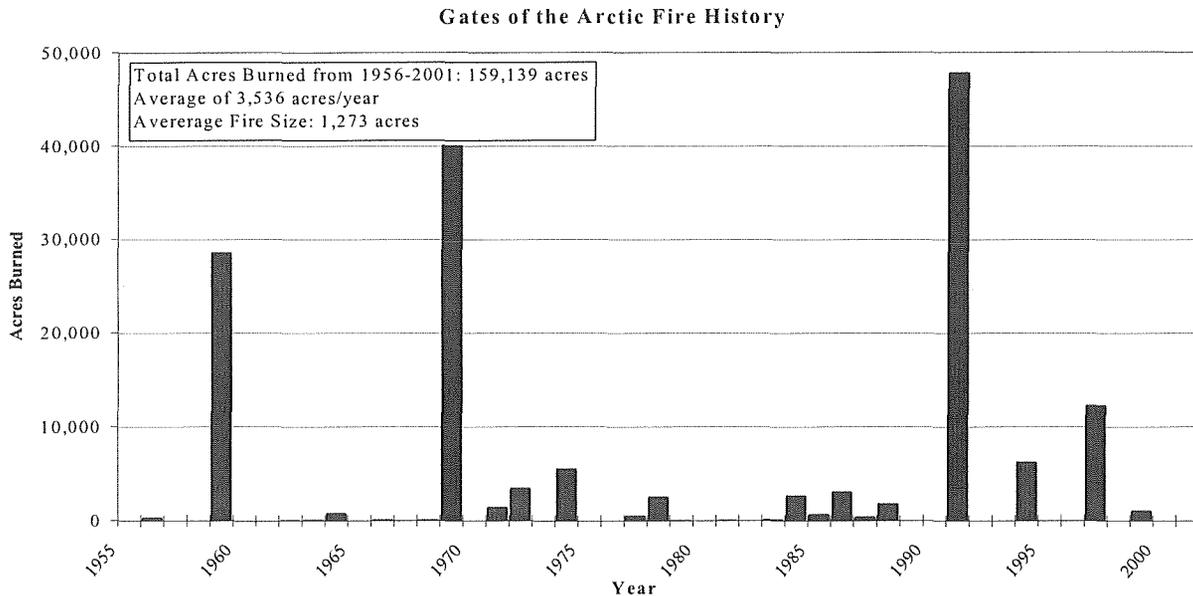


Figure 2: Gates of the Arctic Fire History 1956-2001

2. Weather Analysis

Weather in Northern Alaska is characterized as extreme, and Gates of the Arctic National Park and Preserve is no exception. The Park/Preserve weather patterns are determined by the Brooks Range. The weather south of the Brooks Range below 2,500 feet in elevation mimics that of Interior Alaska. Precipitation is low, averaging 12-18 inches in the west and 8-12 inches in the east. Snow falls approximately nine months out of the year, averaging 60-80 inches. The average maximum and minimum July temperatures are 65 to 70° F and 42 to 47° F, respectively. Average maximum and minimum temperatures in January are 0 to -10° F and -20 to -30° F. Thunderstorm activity is common during June and July, with the period of most rain occurring between June and September. Prevailing winds are usually from the north.

In contrast, the north side of the Brooks Range has an arctic climate. The influences of the Arctic Ocean and North Slope weather patterns are more significant, especially during the summer months. Mean annual temperatures are colder than on the south side. Average maximum and minimum February temperatures are -5 to -10° F. July is the warmest month, with 55 to 65° F the maximum and 35 to 45° F the minimum. Precipitation is extremely low, averaging 5-10 inches annually, resulting in arctic desert conditions. Snow has been recorded in every month of the year, and the annual average snowfall is 35-50 inches. Prevailing winds occur from the east during the summer and the west in winter, but are greatly modified by local terrain.

The NPS, FWS, and BLM maintain Remote Automated Weather Stations (RAWS) at various sites near the southern boundary of GAAR, including Bettles (PABT), Ambler (PAFM), Hogatza River (HOG), Kanuti NWR (KAN), and Norutak Lake (NRU). Data from all RAWS sites are available on the Internet through the Alaska Fire Service homepage (go to fire.ak.blm.gov; next

click **weather**, then **AFS Fire Weather Database**). Information collected from the RAWS sites contributes to interagency efforts to monitor weather and generate fire weather indices. All RAWS records are archived at the Western Region Climatological Center.

3. Fire Season

The seasonal fire cycle in the Alaskan interior consists of four micro-seasons or phases, each varying with the changing weather pattern and the stage of vegetation development for the growing season. The first begins in late May with the loss of snow cover and ends in early June when greenup (the budding of trees and shrubs) begins. During the transition from 100% winter-cured fuels to greenup, human-caused fires may occur; these fires are usually relatively easy to suppress due to high relative humidity recovery at night, cool day and night temperatures, and typical close proximity to roads, airstrips, and/or navigable water. Spring fires that are not suppressed, however, often grow later in the season as fuels become dryer.

The second and third fire-cycle phases are primarily lightning driven. Suppression of such fires is harder, because of their occurrence in remote areas where detection and access are more difficult and because more time typically passes between detection and initial attack. Fires occurring in June, the second period, usually do not develop the intensity of later summer fires. However, during hot, dry, and windy conditions, June wildland ignitions can result in extreme fire behavior.

The third period of fire activity begins in mid-July and runs through the first part of August. This is the period of maximum fire activity. The usual problems of accessibility and detection are compounded by increased rates of spread and higher fire intensities due to lower fuel moisture levels. Even with prompt initial attack, fires are often beyond immediate control by the time firefighting forces arrive, and indirect attack is often the only viable suppression strategy.

The final micro-season occurs from mid-August into early September. Ignitions during this period are usually caused by hunters and fishermen. These fires are generally easy to control, except during particularly dry autumn weather.

4. Fuel Characteristics and Fire Behavior

Fire behavior is essentially a function of fuel type, fuel loading, fuel moisture content, topography, and local weather conditions. GAAR exhibits four major fire behavior systems of vegetation that can be described under three vegetation types: grass, mixedwoods, and conifers. Two separate systems occur in conifer, spruce-lichen woodland and boreal spruce. The four systems are described below.

a. Grass

This behavior system is characterized by continuous grass cover, with occasional trees or shrubs that do not appreciably affect fire behavior. Three subtypes are found in this system: matted grass, common after snowmelt in the spring; standing dead grass, common in late summer to early fall; and tussock/tundra. The live to dead ratio and wind speed in grasslands has a pronounced effect on fire spread.

Fire behavior in the first two grass subtypes is relatively easy to suppress. This fuel type burns during the spring and fall. The burning period is shorter due to less solar radiation and high humidity recovery at night, a condition referred to as diurnal effect. The rate of spread can be high in this fuel type but there is limited smoldering and mop-up (post-suppression maintenance accomplished to ensure that all ground fire is extinguished) is relatively easy.

Fire behavior in the tussock/tundra type is substantially different than other grass models. Materials here are small in diameter and loosely compacted. The fuel wets and dries very rapidly, burns quickly, and, because there is typically a substantial amount of fuel, the fires can be remarkably intense when burning under dry, windy conditions. This fuel situation presents a set of control problems unique to the fuel type, as extinguishment can be extremely difficult due to thick mats of dry mosses, lichens and other organic matter. Elevations above 3,000 feet form effective barriers to fire spread since they generally do not support enough vegetation to carry fire.

b. Mixedwoods

The mixedwoods behavior system is characterized by aspen, willow, cottonwood, birch, and white spruce. On any specific site, individual species can be present or absent from the mixture. Stand mixtures exhibit wide variability in age and stand structure. Two phases associated with the seasonal variation in the flammability of the hardwoods are recognized—the leafless stage occurring during the spring and fall, and the green stage during summer. Rate of spread in both fuel types is weighted according to the proportion of softwood and hardwood components. In areas where the proportion of hardwoods is greater than softwoods and when the deciduous overstory and understory are in leaf, fire spread is greatly reduced with maximum spread rates only 1/5 that of spring or fall fires under similar burning conditions. During spring and fall when the deciduous overstory and understory are leafless, the leaf litter can burn similar to the grass models because the diurnal effect shortens the burning period and there is little smoldering. In areas where the proportion of softwoods is greater than hardwoods, the dryness of the organic matter will dictate the difficulty of extinguishment. The rate of spread will be relatively slow in these areas unless there is a very large grass component and conditions are extremely dry.

c. Conifers

Spruce-Lichen Woodland. This fuel type is characterized by open, white spruce. Stands occupy well-drained upland sites. Forest cover occurs as widely spaced individuals and dense clumps. Tree heights vary considerably, but bole branches that emanate from the trunk of the tree (both live and dead) uniformly extend to the forest floor and layer development is extensive. Woody surface fuel accumulation is usually very light and scattered, and shrub cover is exceedingly sparse. The ground surface is fully exposed to the sun and commonly covered by a nearly continuous mat of reindeer lichens, averaging 3-4 cm in depth.

The spruce-lichen woodland fuel type may support a high rate of spread, but may or may not support a continuous crown fire. Mop-up may be difficult if the organic mat is deep and dry. For the most part, fires occurring in this fuel type are relatively easy to control because they are primarily surface fires, which can be extinguished by firefighters on the ground.

Boreal Spruce. This fuel type is characterized by pure, moderately well stocked black spruce stands on poorly drained sites. Tree crowns occur near the ground and dead branches are typically draped with bearded lichens. The flaky nature of the bark on the lower portion of the trunk is pronounced. Low to moderate volumes of woody material is present on the ground. Labrador tea is often the major shrub component, and a carpet of feather mosses and/or ground-dwelling lichens dominates the forest floor. Sphagnum mosses may occasionally be present. A compacted organic layer commonly exceeds a depth of 20-30 cm below ground surface.

Stand replacement and crown fires dominate the fire behavior of this fuel type. A crown fire may commence when the fire reaches a rate of spread of 10 chains (660 feet) per hour. It is also common to have spotting by aerial firebrands in a crowning spruce fire. Wind is the crucial factor, with spotting frequently occurring between ½ to two miles ahead of the fire. The carrier fuel consists of the organic mat, which has a tremendous surface-to-volume ratio with immediate responses to changes in relative humidity, solar radiation, and wind. Rate of spread is relatively slow and predictable, while intensity is high in surface fuels. Mop-up may be difficult if the organic mat is dry.

5. Historical Alterations of Fuel Regimes

There is little information to be found regarding the historical alteration of the fuel regimes in GAAR. For the most part, wildland fires have been allowed to burn with little suppression activity. Therefore, the large-scale alterations to the fuel regimes in the Park/Preserve that have occurred are the result of fire, albeit as a natural part of the environmental system. Minimal alterations, such as resource use by humans, have occurred on a very small scale throughout the area.

6. Control Problems

Control and extinguishment problems are dependent on fuel type, fuel loading, weather, and time of year. Alaska has four distinct periods of fire activity with different control and extinguishment problems associated with each.

a. Spring Green-up

Ignitions during spring green-up are usually wind driven surface fires that are relatively easy to control and extinguish. High winds can cause high rates of spread and control may be more difficult. These fires are mostly limited to fine fuels (i.e. grass) that are directly exposed to solar radiation, humidity, wind, and precipitation. This period is typically from May 30 to June 10.

b. Transitional

Ignitions that occur during the transitional time are typically more difficult to control, as hand-constructed firebreaks are less effective. Water under pressure from fire pumps with hose lays and aerial support, such as a medium helicopter and bucket, may be required for effective action at the fire's head. This period is typically from June 10 to July 10.

c. Cumulative Drought

Initial ignitions during the time of cumulative drought, as well as carryover fires from the previous period, are the most difficult types to control and extinguish, and may require indirect attack, aerial back firing, and/or the use of natural barriers. Direct attack is rarely possible because of the fire's intensity, and should only be attempted with the utmost caution.

Suppression actions must be restricted to the flanks and back of the fire. Indirect attack in the form of aerial ignition, if available, may be effective depending on the fire's forward rate of spread. Extinguishment may be particularly difficult in the conifers and mixedwoods due to the deep, dry organic matter present. This period is typically from July 10 to August 15.

d. Diurnal Effect

This period is typically from August 15 to September 30 when the days become shorter. Ignitions during this period of diurnal effect are easier to suppress because the reduced amount of daylight allows for the relative humidity to recover, resulting in increased moisture content in fuels. These fires are limited to fine fuels, such as grass, that are directly exposed to the drying effects of solar radiation. Smoldering and creeping fires from the previous periods may still be evident.

7. Non-Federal Land Ownership within the Park/Preserve

Certain lands contained within Gates of the Arctic National Park and Preserve were made available for selection under the Alaska Native Claims Settlement Act (1981), through the establishment of regional and village corporations and their designation of small tract allotments. The majority of the corporate lands and small-tract allotments that were selected within the boundaries of GAAR have been conveyed, providing fee title to the selecting entities. Most conveyed lands are located in the northern portion of the Park/Preserve, near Anaktuvuk Pass and the surrounding area. Other non-federal holdings within the Park/Preserve include small mining claims, state-owned submerged lands, and small private tracks.

8. Ownership of Adjacent Lands

Lands adjacent to GAAR fall under the following categories of ownership/management. Primary suppression efforts in all of these areas are the responsibility of the BLM - Alaska Fire Service.

- Trans-Alaska Utility Corridor (BLM)
- State of Alaska (owned and selected lands)
- Noatak National Preserve (NPS)
- Alaska National Petroleum Reserve
- Arctic Slope Regional Corporation
- Doyon Limited Regional Corporation
- Nunamiut Village Corporation
- Other Native-owned land
- Other Native-selected land

IV. WILDLAND FIRE MANAGEMENT

A. Wildland Fire Use

1. Rationale

Federal and NPS policy requires that the following elements be in place before Wildland Fire Use is implemented: 1) an approved Fire Management Plan; 2) appropriate environmental/subsistence compliance; 3) pre-established Fire Management Units; 4) prescription for implementation; and 5) management oversight. As defined in the Department of the Interior's Department Manual, Part 620, Chapter 1, Section 1.3K, the above-mentioned prescriptions will be based on "safety, public health, environmental, geographic, administrative, social or legal considerations." Geography comprises the primary prescriptive variable at GAAR; FMUs consist of extensive tracts of fire-dependent ecosystems, with relatively low numbers of resources to be protected.

As specified in the GMP and RMP, the Park/Preserve's resource management objectives include the preservation of the dynamics of natural processes, and allowing fire to fulfill its role as a natural process whenever safely possible. Wildland fires that do not threaten life or property offer an opportunity for the accomplishment of this objective. Accordingly, wildland fire use for resource benefit may occur in each of the Park/Preserve's FMUs when pre-specified conditions are met. Within the Limited Protection FMU, fire often poses little threat to sensitive or valued resources. Consequently, the detection of ignitions within this FMU will automatically trigger wildland fire use unless the Agency Administrator specifies otherwise. Ignitions within the Modified (prior to the conversion date) and Full Protection FMUs will trigger suppression actions; fire use, however, will remain available in these FMUs as an alternative response upon the request of the Agency Administrator.

Selection and formulation of all responses, including wildland fire use, will be accomplished through the production of a **Wildland Fire Implementation Plan (WFIP)**, described in Sections 4 through 9 below.

2. Objectives

The primary objective for wildland fire use at GAAR is to maintain the area's bio-diversity through the use of fire (including the naturally occurring spectrum of fire intensities and effects) while also ensuring the safety of life, property, and sensitive resources. Another important objective for fire use is the cost-effective reduction of hazard fuel loads. Wildland fire use will assist in the maintenance of Condition Class 1 within the Park/Preserve.

3. General Plan

Wildland fire use at GAAR is predicated upon the annual establishment and/or adjustment of appropriate boundaries and management options for the Park/Preserve's FMUs. Each winter the GAAR FMO meets with Park/Preserve staff members and fire management personnel from the AFS Tanana and Galena Zones to re-evaluate the location and categorization of these units.

Other land manager/owners will be consulted and concurrence will be sought for unit location or categorization changes that affect their lands. Final authority for the adjustment of FMUs and/or fire protection categories within the Park/Preserve rests with the GAAR Superintendent.

The FMU descriptions contained within this plan specify preplanned management actions, to be enacted automatically by Tanana Zone and Galena Zone dispatch. Alternative actions, however, may be considered and/or selected by the Agency Administrator with concurrence with the suppression FMO on a case-by-case basis, as determined by current fuel, weather, and fire management conditions and as dictated by NPS policy and the Park/Preserve FMP.

4. Responsibility for Initiation of Decision Process

NPS policy requires that strategies for all wildland fires on NPS lands are selected using the initial stage of the **Wildland Fire Implementation Plan (WFIP)**, a standardized process for determining fire management responses and for documenting the resulting actions and outcomes (Appendix E).

Wildland fire use is the preplanned action in the Park/Preserve’s Limited Protection FMU and will be implemented automatically by Tanana and/or Galena Zone dispatch unless the Agency Administrator directs otherwise. Wildland fire use comprises an alternative action within the Modified (prior to conversion) and Full Protection FMUs, and is available in these units on condition of approval and documentation by the Agency Administrator through the preparation of the Decision Criteria Record in consultation with the suppression FMO.

Responsibility for completion of initial WFIP components is summarized in Table 4.

Table 4: Responsibility for Initial WFIP Components at GAAR

FMU	Management Response (* = pre-planned response)	Required component	Completion timeframe	Responsible party
Full Protection	Suppression*	Recording of detection & Determination of FMU	ASAP	AFS FMO
Modified Protection	Suppression	Recording of detection & Determination of FMU	ASAP	AFS FMO
	Fire Use for Resource Benefit	Decision Criteria Record WFIP Stage 1	ASAP 2 hours after detection	AFS FMO Agency Administrator
Limited Protection	Suppression	Decision Criteria Record	ASAP	AFS FMO
	Fire Use for Resource Benefit *	Recording of detection & Determination of FMU	ASAP	

5. Staffing Requirements for Implementation of Wildland Fire

The Park/Preserve has no specific requirements for the staffing of wildland fire use incidents. All personnel involved with fire management activities will be appropriately qualified to meet National Wildfire Coordinating Group (NWCG) standards. Because of the remote nature, relative scarcity of structures or other sensitive values within portions of the Park/Preserve, fire

use incidents may often be adequately managed through aerial surveillance every few days. Other incidents may demand the continuous presence of monitors or fire behavior analysts. The Agency Administrator will make final staffing decisions for all GAAR wildland fires managed fully or in part for resource benefit.

6. Monitoring for Fire Use Incidents

Monitoring procedures at GAAR will follow guidelines established by Park/Preserve staff as well as the Alaska Fire Effects Task Group. Monitoring actions conducted at GAAR specifically in support of fire use incidents will, whenever possible, include measurement of fuel moisture levels for forest floor duff layers (as represented by the Canadian Forest Fire Danger Rating System) as well as for traditional fine and heavy fuel models. (See Chapter VIII for a description of the Park/Preserve's short and long-term fire monitoring program.) The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis.

7. Fire Use and Step-up Staffing

See Chapter IV Section B Unit 3 for step-up staffing.

8. Predetermined Implementation Procedures for Wildland Fire Use at GAAR

The FMU parameters described within this plan (and adjusted annually) comprise the only predetermined implementation procedures for wildland fire use at GAAR. Fire use implementation outputs such as Maximum Manageable Area maps and Short Term Implementation Plans will be produced by the GAAR Fire Management Officer as needed, and provided to the Agency Administrator.

9. Incident-Specific Implementation Procedures for Wildland Fire Use at GAAR

a. Wildland Fire Implementation Plan

Completion of the Wildland Fire Implementation Plan (WFIP) entails as many as three distinct stages, depending on the nature and complexity of the incident. **Stage I** of the **WFIP** is triggered by any wildland fire detection within the Park/Preserve and consists of the decision-making components described above. For simple pre-planned responses, these components alone will satisfy the WFIP process (Appendix E.1).

Implementation of wildland fire use at GAAR, whether as a preplanned action or through selection by the Agency Administrator, may trigger **WFIP Stage II**. This stage provides managers with the information needed to continue managing an incident for resource benefit. Stage II entails the prediction of direction, intensity, and rate of fire spread, as well as the specification of necessary short-term actions. Stage II also involves the initiation of periodic reassessment of the incident's suitability for fire use and of the possible need for long-term management actions (Appendix E.2).

The Stage II periodic reassessment component may prompt the Agency Administrator to initiate **WFIP Stage III**. This stage provides the necessary information and planning for more complex instances of wildland fire for resource benefit. Stage III results in the definition of a Maximum Manageable Area and the planning and documentation of the actions needed to strengthen and defend the MMA (Appendix E.3).
 The general implementation path for wildland fire use at GAAR is shown in Figure 3. Specific responsibilities for components of WFIP Stages II and III are outlined in Tables 5 and 6.

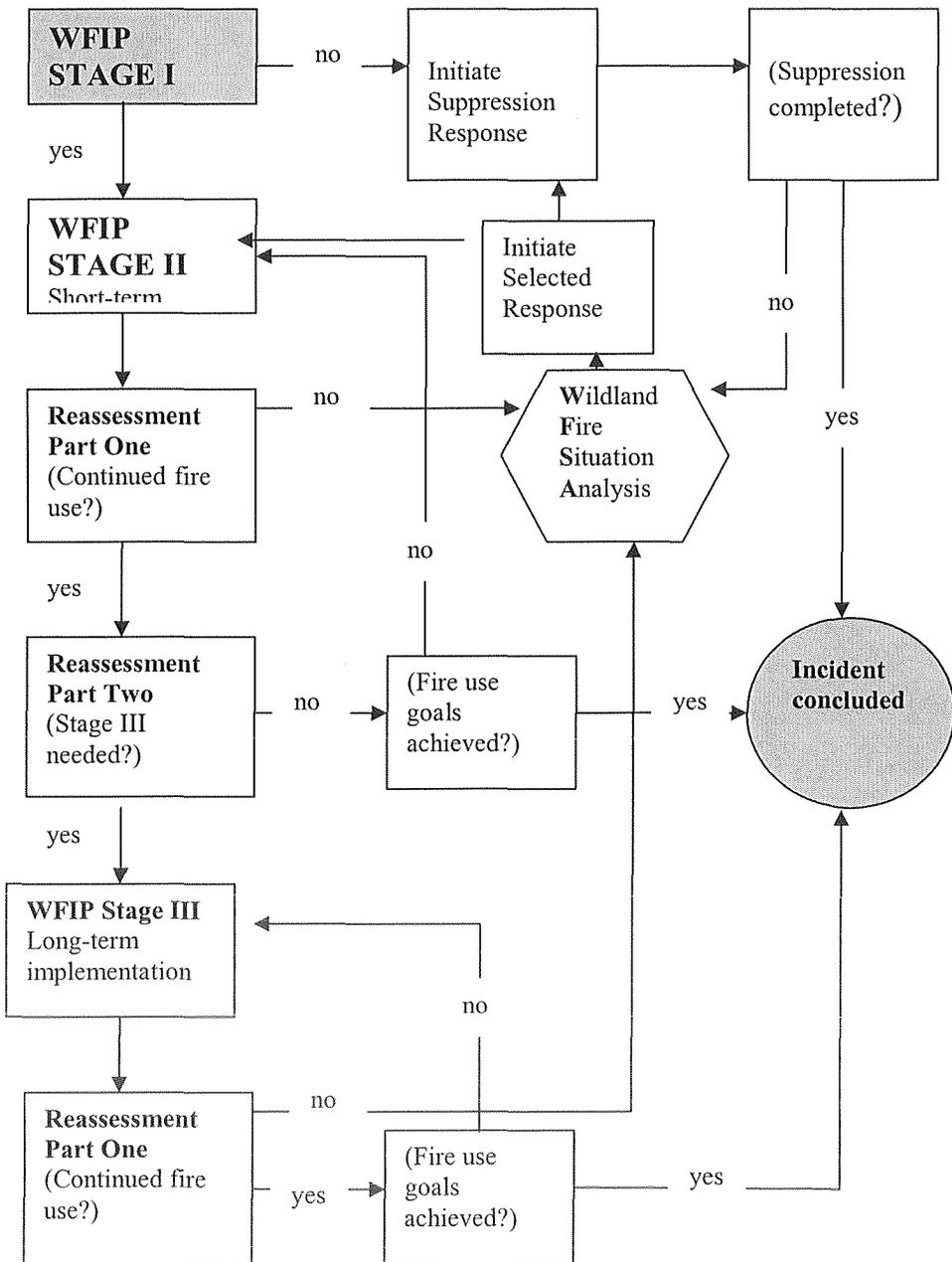


Figure 3: Implementation Paths for Wildland Fire Use

Table 5. Stage II WFIP Components for Wildland Fire Use

Component	Input	Minimum Required Output
Short-Term Fire Behavior Prediction	BEHAVE/FBP system	BEHAVE/FBP runs
Risk Assessment	Relative Risk chart, FARSITE (if available)	Relative Risk chart output
Short-Term Implementation Actions	Staff input, behavior predictions, risk assessments, overall objectives, etc.	Short-term Implementation Action sheet signed by Agency Administrator
Complexity Analysis	Staff input	Completed Wildland and Prescribed Fire Complexity Worksheet
Periodic Assessment Part One: Revalidation	Stage I and II documents, Staff input	Completed Revalidation sheet(s) (initial sheet plus any additional sheets triggered by "yes" responses)
Periodic Assessment Part Two: Stage III Need Assessment Chart	Stage I and II documents, Staff input	Stage III Needs Assessment chart output
Periodic Assessment signature page	Revalidation sheet; Stage III Need Assessment chart	Periodic Assessment signature page signed by Agency Administrator

Table 6. Stage III WFIP Components for Wildland Fire Use

Component	Input	Minimum Required Output
MMA Definition	Staff negotiated; developed through consideration of objectives, maps, on-the-ground evaluation, aerial observation, monitoring, etc.	MMA component of Long-term Implementation Action sheet (map and acreage)
Fire Behavior Predictions	BEHAVE/FBP, RERAP, and/or FARSITE	Behavior prediction program runs
Long-Term Risk Assessment	BEHAVE/FBP, RERAP, and/or FARSITE.	Risk Assessment component of Long-term Implementation Action sheet
Long-Term Implementation Actions	Staff input, behavior predictions, risk assessments, overall objectives, etc.	Long-term Implementation Action sheet signed by Agency Administrator
Periodic Assessment: Re-Validation	Stage I, II, & III documents, staff input	Completed Revalidation sheet(s) (initial sheet plus any additional sheets triggered by "yes" responses)
Periodic Assessment signature page	Revalidation sheet; Stage III Need Assessment chart	Periodic Assessment signature page signed by Agency Administrator

b. Wildland Fire Situation Analysis

The Wildland Fire Situation Analysis (WFSA) is the decision-making process used by the Agency Administrator, in consultation with the suppression FMO, to analyze an escalating wildland fire management situation and to document decisions. The Agency Administrator uses the WFSA to explain the situation, list management constraints and objectives, compare multiple strategic wildland fire management alternatives, evaluate expected effects of alternatives, select the preferred alternative, and above all, document the resulting decision. Preparation of the WFSA is triggered in several ways, including the occurrence of fire behavior beyond the capabilities of suppression actions or of prescribed fire operations. In the case of wildland fire use, the WFSA is produced when the Agency Administrator determines through periodic reassessment that resources are inadequate to accomplish fire use objectives (see Figure 3).

Whereas the previously used Escaped Fire Situation Analysis allowed only the analysis of suppression alternatives, the recently developed WFSA can, in selected situations, be used to analyze alternatives aimed simultaneously at both resource benefit *and* protection.

The WFSA consists of seven sections, including a daily assessment sheet. Various sections require the signature of the Agency Administrator or the Incident Commander, the Agency Administrator, however, is ultimately responsible for completion of the WFSA.

10. Funding/Fiscal Tracking

The Park/Preserve FMO will work with the regional FMO to remain current on funding sources and procedures and to ensure that appropriate budget accounts are utilized for the GAAR wildland fire management program and on GAAR wildland fire incidents. Guidelines for funding and financial tracking of fire management programs and activities for individual parks are contained within Reference Manual-18, Chapters 17 and 18.

11. Permanent Project Records for Wildland Fire Use

The Fire Management Officer will ensure that a complete project record will be produced and retained for each wildland fire use incident at the Park/Preserve. Each record will contain the following items:

- All approved planning documents guiding management options (e.g. WFIP and WFSA components).
- Summary of monitoring activities, including monitoring schedule; individual monitoring reports and findings.
- Funding codes and cost accounting.
- Project maps.
- DI-1202
- Other information as appropriate (e.g. photo points).

12. Information and Interpretation for Wildland Fire Use

The information and interpretation component of the Park/Preserve's fire management program is specifically addressed in Chapter X. The following objectives, however, pertain directly to wildland fire use:

- When extended wildland fire use incidents are likely to be visible to visitors, NPS personnel will prepare and distribute handouts explaining the GAAR fire management program, the nature of the specific incident, and the desirability of preserving the area's natural fire regime.
- An attempt will be made to educate all GAAR employees about local fire ecology, the Park/Preserve's fire management objectives, and fire-use incidents that are in progress.

- When fire use incidents occur near frequently used locations, interpreters or other NPS employees will make periodic visits to answer questions.

13. Potential Impact of Wildland Fire Use Implementation

In managing the use of wildland fire, GAAR administrators will take into account both the short and long-term impacts of any such activity upon all facets of Park/Preserve use, including backcountry wilderness users and subsistence activities. Although some local residents have expressed concern over the impact of wildland fire upon subsistence hunting and/or trapping operations in GAAR, the preservation of the area's fire regime is necessary for the long-term viability of wildlife populations. However, the Agency Administrator will in all cases assess the short-term impact of fire-use actions on subsistence activities.

B. Wildland Fire Suppression

1. Range of Potential Fire Behavior

Fire behavior in the Park/Preserve can range from creeping subterranean fire in tundra to fast moving ground or canopy fire in surface fuels or spruce stands. For more detailed discussion refer to Fuel Characteristics and Fire Behavior (Chapter III Section E.3).

2. Preparedness Actions

a. Fire prevention activities

- Fire prevention and wildland fire use will be discussed at selected staff safety meetings in the early spring to ensure that all personnel are aware of concerns and familiar with procedures for wildland fire, fire use, and prescribed fire.
- NPS personnel will participate in fire prevention and safety fairs at local schools so that the general public is aware of the importance of fire prevention.
- During periods of high danger, the general public and Park/Preserve visitors will be informed of conditions through press releases, interpretive media and, if necessary, the posting of signs at Park/Preserve field stations, public-use cabins, etc.

b. Staff readiness:

The FMO will oversee the annual certification, training, and evaluation of GAAR personnel involved in fire management activities, in accordance with the timetable shown in Table 7.

c. Program readiness

The FMO will ensure the accomplishment of the following objectives each winter:

- Inventory fire equipment; order needed supplies and update inventory list.
- Review and confirm GAAR and/or Regional fire-related account procedures.

- Review and adjust FMU parameters (i.e. AIWFMP protection categories).
- Review and revise GAAR Fire Management Plan.

Table 7: Staff Readiness Schedule

<p>January-February</p> <ul style="list-style-type: none"> • Triennial physical exams completed (for returning employees).
<p>March-April</p> <ul style="list-style-type: none"> • Fire qualifications updated and entered into SAC.
<p>May</p> <ul style="list-style-type: none"> • Annual wildland fire refresher training for all red-carded personnel. • Annual Work Capacity Tests administered, as per RM-18 standards. • NWCG courses in Alaska for firecrew members.
<p>September</p> <ul style="list-style-type: none"> • Critique fire season (all fire management activities). <ul style="list-style-type: none"> • Evaluate individual performance of Park/Preserve staff; correct deficiencies and nominate personnel for specific training courses.

3. Step-up Staffing and Pre-Attack Plan

The FMO and fire staff is responsible for Yukon-Charley Rivers, Wrangell-St. Elias, and Gates of the Arctic National Parks and Preserves. Therefore, the matrices outlined in Tables 8 and 9 below will be used to assist in the pre-positioning of these personnel and fire management resources.

Table 8. Complexity Level

Fire Indices	0-3 fires	3-6 fires	6+ fires
FFMC=<85	LOW COMPLEXITY LEVEL	LOW COMPLEXITY LEVEL	MODERATE COMPLEXITY LEVEL
FFMC=86-89	LOW COMPLEXITY LEVEL	MODERATE COMPLEXITY LEVEL	HIGH COMPLEXITY LEVEL
FFMC=90+	MODERATE COMPLEXITY LEVEL	HIGH COMPLEXITY LEVEL	HIGH COMPLEXITY LEVEL

Number of Current Fires—A measure of complexity due to the number of fires within or threatening the park regardless of the FMU that is burning. This is also an indication of suppression or monitoring resource shortages.

FFMC—the Fine Fuel Moisture Content (FFMC) is a numerical rating of the moisture content of litter and other cured fine fuels (needles, mosses, twigs). The FFMC is representative of the top litter layer 1-2 cm deep. FFMC fuels are affected by temperature, wind speed, relative humidity, and precipitation. FFMC values change rapidly and reflect the weather conditions that have occurred over the past three days. The FFMC is used to indicate ease of ignition, or ignition probability with the scale ranging from 0-99. Of importance is the fact that fire starts increase exponentially with an increase in FFMC values at the high end of the scale.

Complexity Level

Low: Few fires within or threatening the Park/Preserve and relatively abundant resources available. May be early or late in the year and fire behavior is reduced and control and extinguishment are relatively easy.

Moderate: Several fires within or threatening the Park/Preserve and resources becoming scarce within the AFS Zone. Fires are difficult to extinguish and carryover fires are occurring.

High: Many fires within or threatening the Park/Preserve and resources are becoming scarce within the state. Fires are difficult to control and extinguish with multiple carryover fires occurring.

Table 9. Preparedness Levels

Values at Risk

Complexity	Low	Moderate	High
Low	Low Preparedness Level	Low Preparedness Level	Moderate Preparedness Level
Moderate	Low Preparedness Level	Moderate Preparedness Level	High Preparedness Level
High	Moderate Preparedness Level	High Preparedness Level	High Preparedness Level

Values at Risk

These values are life and property including historically significant sites. The low values at risk are those under limited protection. The medium values at risk are those under full protection. The high values at risk include sites that are under critical protection (see Chapter XVI Section A. Protection of Sensitive Resources for criteria for protection levels).

Preparedness Levels

Low: The weather, fire behavior codes, and fire weather indices will be monitored daily.

Moderate: Fire staff will be available within the state. The weather, fire behavior codes, and fire weather indices will be monitored daily. AFS will be contacted daily for tactical and resource updates.

High: The contract helicopter and two fire staff will be available within the park. The weather, fire behavior codes, and fire weather indices will be monitored daily. AFS will be contacted daily for tactical and resource updates. The FMO will contact the Park/Preserve Interpretive Specialist and/or the Regional Fire Communication/Education/Prevention Specialist daily to provide information updates.

4. Minimum Impact Suppression Tactics

It is the policy of the National Park Service that all fire management activities will be executed using minimum impact suppression guidelines. Accordingly, the following constraints apply to all fire management activity in Gates of the Arctic National Park and Preserve:

- Use water rather than retardant whenever possible; when retardant is necessary, use fugitives if available and avoid as much as possible the use of any retardant in or around lakes or marshes.
- Use cold-trailing or wet-lining techniques when feasible.
- Utilize soaker hoses or foggers in mop-up; avoid “boring” or other scarring hydraulic actions.
- Dozers and other heavy equipment will be used only with the approval of the Superintendent (or delegate), except in life-threatening circumstances.
- Minimize the falling of trees and the cutting of shrubs; limb vegetation adjacent to fireline only as needed to prevent additional fire spread.
- Minimize the use of helispots that require clearing.
- Emphasize appropriate Leave No Trace practices by personnel on the fireline and/or in spike camps, particularly with regard to human waste disposal, selection of durable campsites, and food storage in bear country.

Minimum impact suppression tactics and Leave No Trace ethics will be identified as an objective on all fire suppression incidents occurring in GAAR.

5. Rehabilitation

Firelines will be rehabilitated to stabilize the burn area and to mitigate the effects of suppression activities. The Agency Administrator will ensure that the Incident Commander consults with natural resource managers as needed, regarding any specific rehabilitation needs. When possible, burned areas will be allowed to regenerate naturally.

6. Completion of Records and Reports

The general pathway for documentation of wildland suppression incidents is shown in Chapter IV, Section A. For each suppression incident the Park/Preserve Fire Management Officer will be responsible for the completion of some or all of the following items, as indicated.

a. Wildland Fire Implementation Plan

The FMO will ensure that a Wildland Fire Implementation Plan is enacted for every wildland fire at GAAR. For default suppression responses within the Park/Preserve, the WFIP is satisfied

by the Tanana Zone dispatch and Galena Zone dispatch offices through their recording of initial detection and determination of the incident location. For alternative suppression responses (e.g. suppression in the Limited Protection FMU), the WFIP is completed with the Agency Administrator's preparation of the Decision Criteria record. Documentation for suppression incidents stemming from an escalating *fire use* response will include Stage II or III components as well as a Wildland Fire Situation Analysis, as discussed below (See Chapter IV, Section A, Wildland Fire Use for further discussion of the WFIP).

b. Wildland Fire Situation Analysis

Preparation of a Wildland Fire Situation Analysis is required whenever an initial suppression response is unsuccessful or a fire-use response is found to be insufficient for the accomplishment of management objectives or a prescribed fire has escaped the planned prescription. In either case, the Agency Administrator is responsible for ensuring that all WFSAs are completed (See Chapter IV, Section A, Wildland Fire Use for further discussion of the WFSAs).

c. DI-1202

The 1202 is the standard format for submission of fire data into the Department of Interior Shared Applications Computing System (SACS). On GAAR incidents an initial 1202 will be prepared by the Incident Commander and submitted by the Alaska Fire Service. The GAAR Fire Management Officer, however, will ensure the preparation and entry of an additional 1202 on behalf of the Park/Preserve. The following items are pertinent to the production of the 1202; the FMO will ensure that these items are retained and filed at the Yukon-Charley/Gates of the Arctic office in Fairbanks.

- Fire number (obtained from Tanana or Galena Zone dispatch)
- Copy of WFIP (all stages)
- Copy of WFSAs (for unsuccessful initial attack or fire use operations)
- Resource order forms (NFES 1470)
- Equipment rental or purchase receipts
- Accident and/or injury reports
- Personnel lists (including Emergency Time slips)
- All weather data reports and records
- Situation maps
- Rehabilitation plan

V. PRESCRIBED FIRE MANAGEMENT

A. Long-term Scope

Though Gates of the Arctic presently has no plans to use prescribed fire, it may be implemented in the future for the accomplishment of specific resource management goals. Because of the relatively undisturbed nature of the Park/Preserve's fire ecology, the FMO does not anticipate implementing landscape-scale burning for the purpose of restoring or preserving the area's ecosystems. The Park/Preserve may, however, use prescribed fire for the purposes of restoring historical conditions at selected sites or for reducing hazard fuel loads in the vicinity of valued resources. These uses would facilitate the accomplishment of goals identified in the GAAR Resource Management Plan.

B. Prescribed Fire Planning

1. Annual planning

Any implementation of prescribed fire within the Park/Preserve will be predicated upon an annual planning session attended by the FMO, the Chief of Operations, the Chief of Resource Management, and any other interested parties. Topics covered in this meeting may include the determination of prescribed burn units, the establishment of prescribed fire objectives, the presence and protection of sensitive resources, the mitigation of smoke management problems, determination of prescriptions and/or burning windows, and the impact of the proposed action on the full spectrum of Park/Preserve uses, including wilderness values, and subsistence hunting and trapping. The use of motorized equipment or mechanized transport that is generally prohibited by the Wilderness Act (helicopter landings, use of chainsaws, use of bulldozers, etc.) will not be permitted on lands that are designated as Wilderness or suitable for Wilderness prior to the preparation of a Minimum Requirement/Minimum Tool Analysis.

2. Individual plans

Each implementation of prescribed fire will follow a specific plan prepared by the FMO in accordance with the parameters outlined in RM-18, Chapter 10, Fuels Management. The State Historical Preservation Officer for compliance with the National Historic Preservation Act, will review the written plan. It will then be reviewed and approved by the Superintendent, in consultation with the Chief of Resource Management. Final authority for the implementation of the prescribed fire plan rests with the designated Burn Boss.

3. Staffing

All prescribed fires at GAAR will be supervised by a certified Prescribed Fire Burn Boss (RXB2, RXB1) for the conduction of prescribed fires in appropriate fuel types and at the appropriate level of complexity. Burn bosses for GAAR prescribed fires may be obtained from other agencies, provided that designated individuals are certified as such. Prescribed fires at GAAR will be staffed exclusively by certified wildland firefighters. The amount and specific nature of resources required for prescribed fire operations will be determined initially by the GAAR FMO

through the preparation of the prescribed fire plan. The designated burn boss, however, is responsible for the tactical implementation of the plan and as such must confirm the adequacy of planned staffing levels prior to ignition.

4. Monitoring

All prescribed fires will be monitored on both a short and long term basis, in order to provide the following types of information: 1) anticipated fire conditions including rate of spread, predicted weather, potential threats to resources and/or safety, fuel load, etc.; 2) observed ambient conditions including topographic influences, current weather conditions, drought index, fire and smoke behavior, etc.; and 3) assessment of post-fire effects including fuel reduction, vegetative change, etc. Collection of all three types of information is necessary in order to help ensure adherence to prescription, accomplishment of management objectives, and establishment of baseline data. Complexity, frequency, and duration of monitoring activity will be dictated by burn objectives and will be specified in the prescribed fire plan. Objectives and guidelines for monitoring procedures at GAAR are further specified in Chapter VIII.

5. Documentation

The GAAR Fire Management Officer will ensure that each prescribed fire is documented with the following items:

- Approved prescribed fire plan.
- Compliance and planning documents.
- Map of project and surrounding area.
- Monitoring data (including weather, fire behavior, and fire effects observations).
- Smoke dispersal information.
- DI-1202

6. Reporting Requirements

The FMO will report the intent to conduct a prescribed fire via SACS and/or phone to the AKSO Fire Management Office by 3:00 p.m. the day before a prescribed fire. The FMO will also notify the Tanana and/or Galena zone dispatch, specific individuals/organizations/agencies identified in the burn plan, and the Alaska Interagency Coordination Center the day prior to the burn and again immediately upon its completion.

7. Prescribed Fire Critiques

Immediately following the prescribed burn the Burn Boss will conduct a review of the prescribed burn operation. The review will be attended by the overhead staff, crewmembers, Chief of Operations, resource specialists, and the Fire Management Officer. Items for discussion will include safety, accomplishment of objectives, fire behavior and effects, and effectiveness of operations.

8. Air Quality/Smoke Management

All fire management actions at Gates of the Arctic National Park and Preserve will be conducted in full compliance with local, state, and interstate air pollution control regulations as required by the Clean Air Act, 42 U.S.C. 7418. The Alaska Department of Environmental Conservation issues open burning permits; no local or interstate air pollution control regulations exist in Alaska.

VI. FIRE MANAGEMENT ORGANIZATION AND RESPONSIBILITIES

A. Organizational Structure

1. Cooperation with Alaska Fire Service

In order to ensure safe and efficient operations, a basic understanding of the cooperative relationship between the Park/Preserve's fire management program and the BLM-Alaska Fire Service (AFS) is imperative for all personnel. As specified in the Alaska Interagency Wildland Fire Management Plan, the Alaska Fire Service is responsible for providing fire suppression services on all wildland fires occurring within the Park/Preserve. The management and staff of Gates of the Arctic National Park and Preserve, in turn, will ensure that all suppression services contribute to the achievement of the management goals of the Park/Preserve and the National Park Service and to the greatest extent possible, support suppression efforts as required.

2. Additional Resources

Gates of the Arctic National Park and Preserve may use personnel to assist in information collection above and beyond the information provided by the AFS. These personnel may work directly for the NPS Fire Management Officer or, when an Incident Commander is assigned, directly for the IC. The NPS Fire Management Officer and the suppression agency FMO will work together to determine the chain of command for these individuals.

3. Agency Administrator

An Agency Administrator will be designated for each incident at Gates of the Arctic. The Agency Administrator will function as the direct representative of the Park/Preserves' Superintendent and as such will be responsible for the identification and accomplishment of GAAR and NPS resource management goals. The Agency Administrator will prepare, in consultation with the NPS Area FMO and suppression FMO, and sign key decision-making and validation documents (e.g. Wildland Fire Implementation Plan and Wildland Fire Situation Analysis components). The Agency Administrator may also request that additional personnel be ordered to assist specifically with the accomplishment of GAAR and/or NPS goals (e.g., resource advisors, monitors, fire behavior analysts, etc.).

4. Incident Command Structure

For incidents at Gates of the Arctic, resource advisors will report to the Planning Section Chief as per NWCG specifications for Incident Command structure. Other personnel requested specifically to assist with the accomplishment of agency or Park/Preserve resource management goals (e.g. monitors, fire behavior analysts, fire-use module personnel, etc.) will normally report to the NPS Fire Management Officer. Affected personnel will be briefed on contingent procedures and alternative chain of command for situations in which the FMO departs the incident or falls out of regular contact.

In summary, NPS personnel may participate in fire management operations within the Park/Preserve in two distinct ways:

1. NPS employees may work to help ensure the achievement of Park/Preserve management goals under the supervision of the Fire Management Officer (or the Planning Section Chief, in the case of NPS personnel serving as resource advisors). For example, an NPS employee working as a monitor in support of the fire use validation process would typically report to the Park/Preserve FMO; a GAAR staff member advising an incident command team on the presence of sensitive resources would report to the Planning Section Chief.
2. NPS employees may serve directly with operational forces (or other branches of command) assigned by the Alaska Interagency Coordination Center, under supervisors provided by the AFS or ordered through the interagency mobilization system. For instance, a GAAR employee assigned to assist smokejumpers during line construction on a small wildland fire might report directly to a jumper-in-charge dispatched from Fairbanks.

GAAR employees dispatched directly by the Park/Preserve may occasionally serve as interim Incident Commanders, as qualified, on GAAR incidents. These rare instances will be in consultation with the suppression FMO. In most cases, however, operations will be conducted from the outset by the AFS, with GAAR managers focusing on the identification and achievement of resource management goals and the conduction of monitoring efforts when necessary.

5. Fire Management Responsibilities for GAAR Personnel

In light of the interagency nature of fire management actions at GAAR as well as the co-lateral nature of the Park/Preserve's assigned FMO and fire crew, fire management responsibilities for individual employees are best explained in two steps. All personnel at GAAR have predetermined responsibilities within the Park/Preserve's fire management program; these fixed responsibilities are shown in Table 10 below. For specific incidents, however, specific functions will be filled by any one of several appropriate personnel. These incident specific functions, their organizational structure, and lists of personnel who may perform them are shown in Figure 4.

B. Relation of Fire Management Program to GAAR Organization

As indicated in Section A, the GAAR Fire Management Program is coordinated by a co-lateral duty FMO based in Fairbanks. The FMO administers fire programs in Yukon-Charley Rivers National Preserve, Wrangell St. Elias National Park and Preserve and Gates of the Arctic National Park and Preserve.

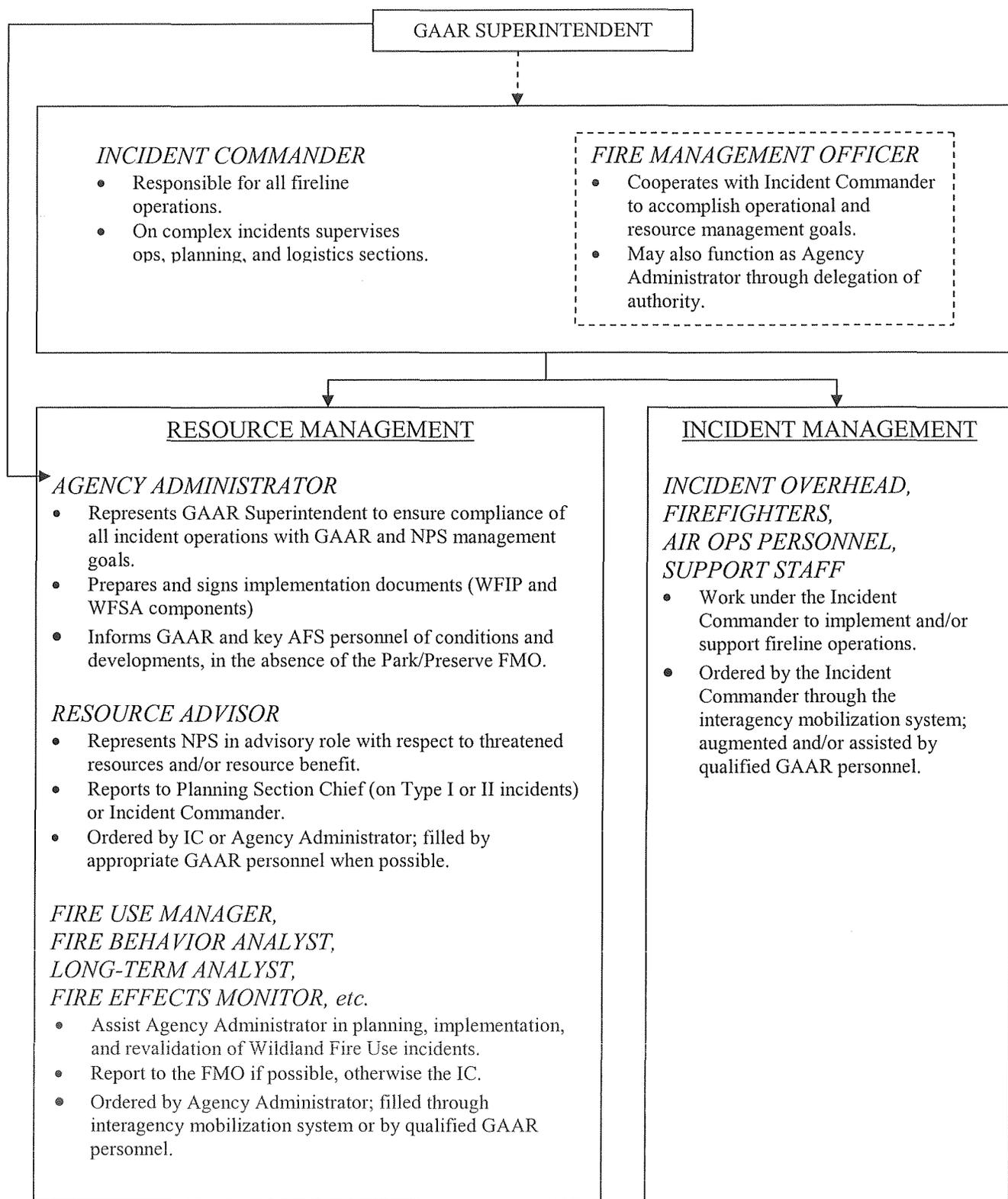


Figure 4. Incident-Specific Fire Management Functions at GAAR

Table 10. Predetermined Fire Management Responsibilities

Position:	Superintendent
Fire management role:	The Superintendent of Gates of the Arctic National Park and Preserve is responsible for the planning and direction of all Park/Preserve activities and programs and as such is ultimately responsible for any wildland fire operation at GAAR. The Superintendent may, however, choose to delegate any or all fire management responsibilities to appropriate personnel (e.g., Fire Management Officer, Chief of Operations, etc.).
Specific responsibilities:	<ul style="list-style-type: none"> • Approves Limited Delegation of Authority and provides briefing and evaluation of Incident Management Teams. • Serves as Agency Administrator unless delegated. • Approves Wildland Fire Use implementation. • Approves prescribed fire plans. • Approves mechanical hazard fuel reduction plans. • Approves use of retardant and/or heavy equipment in non life-threatening wildland fire situations. • Participates in all official fire reviews. • Participates in NWCG functions as qualified.
Position:	Chief of Operations
Fire management role:	The Chief of Operations is the on-scene supervisor for all Park/Preserve operations.
Specific responsibilities:	<ul style="list-style-type: none"> • Provides guidance to the FMO in fire management issues pertaining to GAAR. • Participates in all official fire reviews. • Participates in NWCG functions as qualified.
Position:	Fire Management Officer
Fire management role:	The FMO oversees and coordinates the Park/Preserve's fire management program. The Park/Preserve's FMO is currently based in Fairbanks and administers two other Fire Management Programs. Responsibilities listed below may be delegated to appropriate personnel (including, typically, the Chief of Operations, fire staff, and DENA FMO).
Specific responsibilities:	<ul style="list-style-type: none"> • Works with Incident Commander, Zone FMOs, suppression organization personnel. • May serve as Agency Administrator for GAAR incidents when feasible. • Ensures that GAAR Superintendent/staff and key AFS personnel are informed of pertinent conditions and/or situations. • Works with GAAR staff and AFS zone managers to determine and

- adjust boundaries and strategies for GAAR FMUs.
- Prepares Prescribed Fire Plans.
- Prepares Mechanical Fuel Reduction Plans.
- Represents Region and Park/Preserve on taskforces and in agency and interagency training.
- Ensures the education of Park/Preserve staff on fire management issues.
- Participates in all official fire reviews.
- Prepares and maintains fire records and reports.
- Prepares funding proposals and manages the Park/Preserve's fire accounts.
- Manages the Park/Preserve's fire cache and coordinates acquisition of supplies.
- Ensures qualifications of staff.
- Serves as liaison with regional office staff.
- Ensures Federal Fire Policy is followed.
- Participates in NWCG functions as qualified.

Position **Chief of Resource Management**

Fire management role: The GAAR Chief of Resource Management functions as the primary resource advisor for all fire management activities at the Park/Preserve.

- Specific responsibilities:**
- Advises GAAR Superintendent on approval of prescribed fire and mechanical reduction plans.
 - Advises Agency Administrator on wildland fire use for resource benefit.
 - Advises Agency Administrator and Incident Commander/overhead team of location and sensitivity of significant resources during wildland fire incidents.
 - Participates in all official fire reviews.
 - Assists with the development of fire management objectives.
 - Participates in NWCG functions as qualified.

Position **Regional Communication/Information/Prevention Specialist**

Fire management role: The Regional Fire Communication/Information/Prevention Specialist is responsible for informing and educating media, visitors, and residents within and around the Park/Preserve about all fire management goals, objectives, and actions.

- Specific responsibilities:**
- Develops and coordinates on-going programs for educating the public about the area's fire ecology and the Park/Preserve's fire management program.
 - Develops and coordinates a "step-up staffing plan" for disseminating information during large or complex incidents.

- Informs public of current fire situation.
- Participates in NWCG functions as qualified.
- Coordinates with AFS on prevention efforts.
- Coordinates with AFS on information distribution.

Position **Regional Fire Ecologist**
Fire management role: The Regional Fire Ecologist is responsible for coordinating fire effects monitoring and research within Gates of the Arctic and with other agencies.

- Specific responsibilities:**
- Coordinates all fire monitoring activities.
 - Develops fire research program for the Park/Preserve.
 - Coordinates with other agencies on research/monitoring.
 - Member of the Fire Effects Task Group.
 - Provides ecological expertise on vegetation communities and fire effects.

Position **Fire Staff**
Fire management role: Fire staff is based at Fairbanks and work at GAAR to help plan and implement fire management activities within the Park/Preserve.

- Specific responsibilities:**
- May serve as Agency Administrator or Acting FMO in the absence of the FMO, as qualified.
 - Serves as helicopter manager and/or crewmember during fire management and other resource management activities.
 - Serves as crew boss, etc. as qualified.
 - Supervises and assists with gathering and processing of data for use in long-term and incident-specific fire management planning.
 - Plans and implements hazard fuel reduction projects.
 - Assists with planning and supervision of prescribed fires.
 - Supervises and/or performs various resource management projects throughout the Park/Preserve.
 - Participates in NWCG functions as qualified.

Position **Other GAAR Employees**
Fire management role: Any GAAR employee may be assigned to assist with fire management activities as environmental and/or cultural specialists, logistical advisors, firefighters, support personnel, law enforcement officers, etc., depending on qualifications, skills, and regular duties.

- Specific responsibilities:**
- Advising FMO or Agency Administrator during planning of fire management activities.
 - Gathering and processing of data for use in long-term and incident-specific fire management planning
 - Reports ignitions in the Park/Preserve.
 - Law enforcement.
 - Participate in NWCG functions as qualified.

C. Assessment of Wildland Fire Use

The GAAR Superintendent, or delegate, is ultimately responsible for the re-certification of wildland fire use incidents through daily written or verbal evaluation. This is to ensure that fire strategies and tactics meet fire and resource management goals at GAAR.

D. Interagency Coordination

(See Chapter VI Section A)

E. Interagency Contacts

Pertinent interagency contacts include dispatch personnel at the Alaska Interagency Coordination Center as well as operational and dispatch personnel at the AFS Upper Tanana and Galena fire management zone offices. Current phone numbers for these positions are listed in Appendix D.1.

F. Fire-Related Agreements

The cooperative arrangement between the NPS Alaska Region and the BLM's Alaska Fire Service is discussed in the Alaska Interagency Wildland Fire Management Plan and is further specified in a memorandum of agreement.

G. Reporting of New Ignitions

GAAR personnel with phone access should report undetected wildland fire (possible or confirmed) directly to the Tanana or Galena Fire Management Zone dispatch (See Appendix D.1 for phone number). Personnel should be prepared to provide as much basic information as possible (size, fuel type, topography, behavior, weather, probable cause, values at risk, etc.).

H. Limited Delegation of Authority for Incident Management Teams

Type I and II Incident Management Teams ordered for and/or assigned to incidents at Gates of the Arctic will operate under a written Limited Delegation of Authority, prepared, in consultation with the suppression FMO, and signed by the Park/Preserve Superintendent or delegate. The Limited Delegation of Authority will specify pertinent priorities, concerns, and constraints for the incident in progress and will be treated as Park/Preserve policy until the conclusion of the incident or the Superintendent's amendment of the original Delegation statement through a subsequent signed statement.

VII. FIRE RESEARCH

The implementation of the GAAR Fire Management Plan will not be dependent upon the prior completion of fire research. Whenever possible, however, fire management actions at the Park/Preserve will incorporate and facilitate research activities designed to increase understanding of local fire ecology and effects.

VIII. MONITORING

As already indicated, wildland fire comprises an integral component of the Park/Preserve's wildlife and plant communities. Accordingly, GAAR managers seek to develop a monitoring program that will help managers to better understand the relationship between fire and other components of the area's ecosystem. Goals for present and future monitoring practices include but are not limited to the following:

To understand the natural variability of fire occurrence, extent, and burn severity.

To understand fire effects on vegetation, fuel, soil and wildlife habitat parameters in order to project changes over time.

To develop predictive tools in terms of fire occurrence, fire behavior, fire severity and consumption for Fire Management.

Specific objectives and criteria for monitoring activities are discussed within the context of Prescribed Fire Use in Chapter V, Section B.4. These objectives and criteria will generally apply to the monitoring of Wildland Fire Use incidents, as well.

Guidelines for monitoring wildland fires, prescribed fires and mechanical treatments within GAAR were developed in consultation with the Interagency Alaska Fire Effects Task Group (FETG), NPS Fire Monitoring Handbook (FMH 2001), and NPS Alaska Regional Fire Ecologist. These guidelines provide recommendations for minimum variables to monitor fire or treatment effects within a framework of three monitoring intensities (Level I – III). A brief description of the three monitoring levels is provided below:

Level I, Reconnaissance - This level provides a basic overview of the baseline data that is required to be collected for all wildland or prescribed fires, some variables are required for mechanical treatments. Information at this level includes such items as RAWS weather data, general description of the fire environment (i.e. topography and fuel types), and fire location or perimeter. Information collected at this level precludes the necessity for on the ground measurements and can be done from remote sensing or an aerial platform.

Level II, Fire and Fuel Observations - This level documents fire behavior observations, fuels, and general effects of wildland fires, prescribed fires or mechanical treatments on vegetation. Information at this level includes characteristics of fire, such as rate of spread, fire behavior, and burn severity, as well as current weather and fuel conditions. Information to assess pre and post fire or treatment effects would include duff depth and moisture measurements, photo points, vegetation cover, and tree parameters. This level of monitoring is recommended for all wildland and prescribed fires, but is dependent on the objectives of the burn and the resources of concern. Variables monitored at this level would require on the ground measurements of specific sites.

Level III, Short or Long-term Fire Effects – This level would be used to monitor the effects of prescribed or wildland fires in greater depth, it may also be used for mechanical treatments. Level III monitoring requires collecting information on fuel reduction, vegetative changes, and soil parameter changes; the number of variables monitored increases and the techniques are more

rigorous. Information collected at this level is based upon management objectives and the resources of concern. Variables monitored at this level would require the establishment of plots.

Monitoring variables for Level I and Level II are specified in Table 11. These levels are cumulative, for instance all variables monitored in Level I would be included in Level II monitoring. Level I variables are minimums for all fires. The implementation of variables at Level II and Level III (not shown) would depend on the objectives of the fire and the resources of concern, and would remain up to the discretion of the FMO, Resource Staff, and Fire Ecologist.

Table 11. Recommended Monitoring Variables

Level	Variable	Wildland Fire	Prescribed Fire	Mechanical Treatment
I	Fire Perimeter Map (> 100 acre fire) or Point Location	X	X	X
I	Weather (RAWS)	X	X	O
I	Fuel Types	X	X	X
I	Topographic characteristics	X	X	O
II	Burn Severity Map (> 300 acre fire)	O	O	NA
II	Burn severity assessment (i.e. CBI)	O	O	NA
II	Fire Behavior Parameters	O	X	NA
II	Fire Weather Observations	O	X	NA
II	Photo points*	O	O	O
II	Duff Moisture/Depth	O	O	O
II	Vegetation/Ground Cover	O	O	O
II	Tree density	O	O	O
II	Tree canopy heights (average)	O	O	O
II	Ground to live crown/ladder fuel heights	O	O	O

* Photo points were recommended as Level I monitoring variable from the FETG, however this was for monitoring selected fires not all fires. List of recommended variables to be monitored under the three fire management options, where X's are required, O's are recommended.

IX. PUBLIC SAFETY

A. Safety Issues at GAAR

Fire management safety concerns at Gates of the Arctic include threats posed by fire and smoke to visitors, local residents, employees and wildland firefighters.

B. Mitigation of Safety Issues

1. Operational safety

All personnel engaged in fire management activities within the Park/Preserve will be qualified by NWCG standards to perform the task they are ordered to do, while remaining aware of the standard fire orders. Every employee will also work to ensure constant implementation of LCES (effective use of lookouts, communication, escape routes, and safety zones).

2. Visitor safety

Visitor use will not be allowed near fire perimeters. An attempt will be made to inform all visitors of any known wildland fire activity within the Park/Preserve, and signs will be posted on nearby roads and departure points if smoke produced during wildland and prescribed fire creates a safety concern. The Superintendent may initiate a temporary closure of some or all of the Park/Preserve if large or erratic fire behavior endangers visitor and employee safety to a significant degree. Closures may also apply to airspace.

3. Evacuation procedures

The Alaska Division of Emergency Services has developed standard procedures for the evacuation of personnel and/or public due to risks posed by fire and/or smoke. Either the GAAR Superintendent or the GAAR Agency Administrator may request the Alaska Division of Emergency Services (ADES) to implement evacuation procedures for the Park/Preserve or for adjacent communities.

X. PUBLIC INFORMATION AND EDUCATION

The National Park Service Fire Management Staff will coordinate with AFS in all aspects of public information and education. The following steps will be taken to facilitate the awareness of GAAR fire management policies, objectives, and actions:

- Fire Management Officer, fire staff, and Regional Fire Communications, Education and Prevention Specialist will work together to effectively inform and educate National Park Service employees and the public about the fire management program, the role of fire and the Firewise prevention concepts
- Fire Management Staff will assess, coordinate, and facilitate wildland fire trainings for National Park Service personnel as needed
- The Regional Fire Communications, Education and Prevention Specialist will work with the Fire Management Staff, Interpreters, Education Specialists, Prevention Specialists and others in order to feature the fire management plan, the role of fire and Firewise concepts in park brochures, exhibits, bulletin boards, interpretive presentations and off-site programs
- The Regional Fire Communications, Education and Prevention Specialist will work towards creating a specific outreach/public information plan for GAAR
- During ongoing fires, the fire management staff will be responsible for fire information dissemination. The fire management staff will communicate orally and in writing the current fire situation to NPS employees, interagency partners and the media; press releases and articles will be written by either the Regional Fire Communications, Education and Prevention Specialist or the Public Information Officer and released to local and when necessary, national media
- When fires are visible and likely to continue, the Fire Information Officer may choose to establish a fire information center near the incident. All requests for incident information will be channeled here. At this center, accurate and timely information will be compiled, organized and disseminated to the public and news media.

XI. PROTECTION OF SENSITIVE RESOURCES

A. Archeological/Cultural/Historic Resources

If historic fire activity is any indication, one may presume that wildland fire has, at some point, affected many of the prehistoric sites within the Park/Preserve, and perhaps even some of the historic sites. Wildland fire effects on the types of materials commonly found in prehistoric sites will tend to be minimal. Thus, the Fire Management Plan will have no immediate impact on the majority of archeological and non-structural historical resources within the Park/Preserve.

Known historic and prehistoric sites that have the potential to be impacted by wildland fire will be identified and assessed by qualified cultural resource personnel. Each threatened site will be assigned a fire protection category (see below) so that the FMO will be able to identify those cultural resources that may warrant special attention in the event of a wildland fire. Each site will be assigned to one of the four fire protection categories using a variety of criteria, including National Register of Historic Places status and eligibility, GAAR management objectives, and site or structure integrity, among others. Assigning protection categories will expedite the planning of, and subsequent response to, wildland fire incidents. The cultural resource staff will continue to update the FMO on changes to integrity and condition of these resources that may change their protection status.

In addition, where wildland fire activity threatens cultural sites that have been designated Full or Critical protection status, the FMO will immediately contact the park Cultural Resource Specialist for consultation, particularly if ground disturbing activities are required for protection or fire suppression. The FMO will also contact the Cultural Resource Specialist if fire suppression activities for the protection of inholdings/allotments might affect sites on surrounding parklands.

1. Fire Protection Categories

Because the protection of every known site within the Park/Preserve is not feasible, criteria have been established to provide cultural resource specialists and park management with a sound methodology for determining which key sites will be afforded special protections from wildland fire. The criteria are as follows and may be updated or improved upon should new information come to light. Please note that although this section focuses on cultural resources that are not currently occupied, the following protection categories apply to all buildings and structures located within the park boundary. It is for this reason that “year-round residence” or “trespass structures” are listed as criteria.

CRITICAL:

Definition: Fires immediately threatening this designation will receive highest priority for protection from wildland fires by immediate and continuing aggressive actions dependent upon the availability of suppression resources.

Objectives: Protect human life, inhabited property and designated physical developments without compromising fire fighter safety. Protection of the aforementioned elements is the primary objective, not control of the wildland fire.

Recommended criteria:

1. any historic property designated as a National Historic Landmark.
2. any cabin or building that has been specified as actively occupied on a resident use permit granted to the user by the NPS.
3. any property that is essential to the Park/Preserve's management and resource operations; examples include: ranger stations, remote base camps, etc.

FULL:

Definition: Fires immediately threatening this designation will receive aggressive initial attack dependent upon the availability of suppression resources.

Objectives: Protect sites designated as Full management from the spread of wildland fires burning in a lower priority management option. Minimize damage from wildland fires to the resources identified for protection commensurate with values at risk.

Recommended criteria:

1. any historic property designated, or determined eligible for, inclusion on the National Register that retains structural integrity (i.e., standing with a roof).
2. any property that has received NPS funds for stabilization or rehabilitation, or is designated to receive funds in the future.
3. administrative sites (i.e., public use cabins, actively used airstrips, etc.).
4. cultural resources that are representative of historical themes established by the park unit and retain a high degree of structural integrity.

NON-SENSITIVE:

Definition: Fires immediately threatening this designation will be allowed to burn under the influence of natural forces within predetermined areas while continuing protection of human life.

Objectives: Within land manager policy constraints, accomplish land and resource management objectives through the use of wildland fire. Reduce overall suppression costs through minimum resource commitment without compromising firefighter safety.

Recommended criteria:

1. trespass structures that do not meet any of the criteria listed above.
2. cultural resources that are not eligible for the National Register.
3. historic properties that lack significant structural integrity:
 - a. stand-alone log buildings/structures that consist of four courses of logs or less
 - b. stand-alone frame buildings with one or more collapsed wall(s)
 - c. stand-alone tent frames and other camp features (meat racks, fish wheels, etc.) that are less than 50% intact
 - d. stand-alone mining features (adit, penstock, flume, dam, etc.) that are less than 50% intact
 - e. multi-component properties in which the majority of the contributing structures are less than 50% intact
 - f. bridges, trestles, aerial tramways, or other transportation-related features that are less than 50% intact
 - g. machinery, vehicles, or other equipment that has degraded to the extent that function and/or interpretive value has been compromised

NON-SENSITIVE/DEFENSIBLE SPACE:

Definition: Fires occurring immediately threatening this designation will be allowed to burn under the influence of natural forces within predetermined areas while continuing protection of human life. Defensible space will be built prior to any fire starts.

Objectives: Within land manager policy constraints, accomplish land and resource management objectives through the use of wildland fire. Allow protection of structural resources using minimum tool and ensuring firefighter safety.

Recommended criteria:

1. cultural resources that are not eligible for the National Register, but that are representative of historical themes established by the park unit and have a decrease in structural integrity.
2. cultural resources that are in the process of assessment for the National Register.
3. historic properties that have a decrease in structural integrity:
 - a. stand-alone log buildings/structures with a collapsed roof
 - b. stand-alone frame buildings with a collapsed roof
 - c. stand-alone tent frames and other camp features (meat racks, fish wheels, sheds, outhouses, etc.) that are less than 75% intact
 - d. stand-alone mining features (adit, penstock, flume, dam, etc.) that are less than 75% intact
 - e. multi-component properties in which the majority of the contributing structures are less than 75% intact
 - f. bridges, trestles, aerial tramways, or other transportation-related features that are less than 75% intact

2. Undetermined National Register Status Sites

According to the park's current Cabin Database, there are 34 sites containing structural components that have yet to be evaluated for National Register eligibility. Of these, 15 sites have been designated as non-historic, meaning they have been constructed within the last 50 years. Visiting, documenting, and researching each of the remaining 19 sites will be a complicated undertaking and logistical challenge. In addition, it is likely that several of the sites reported to be in fair or good condition in the past are now completely overgrown, collapsed, or washed away by periodic riverbank flooding.

In order to approach the task of assessing each of the 19 sites for eligibility, cultural resource staff has proposed working together with the FMO to determine areas in which conditions are most ripe for wildland fire activity. This information will be used to formulate a prioritized plan for systematic inventory and documentation of known, poorly documented sites, with the most threatened sites at the top of the list. Site proximity to areas of high human impact will also factor into prioritization for site documentation and assessment. Any newly discovered sites will be incorporated into the assessment process. Currently, site documentation and evaluation for all potentially impacted sites is scheduled to be completed by FY 2005.

3. Cabin Management Plan

The park is currently in the process of developing a Cabin Management Plan that will address a variety of concerns related to cabin sites. Utilizing existing data, cultural resource staff will

outline documentation and survey needs within the park. Site eligibility for the National Register will be researched and nominations sent to the State Historic Preservation Officer.

In addition, recommendations for rehabilitation and stabilization projects will be made to the National Park Service Alaska Region Historian and Historic Architect. These recommendations will be based on careful consideration of site significance, condition, and relationship to established park historic themes. As the Cabin Management Plan develops any necessary alterations or revisions will be made to the Fire Management Plan.

B. Sensitive Natural Resources

Knowledge of threatened, endangered, or candidate plant and animal species found within the Park/Preserve is minimal. Two subspecies of Peregrine falcon, *Falco peregrinus* subs. *anatum*, and *Falco peregrinus* subs. *tundrius*, were recently delisted however, the park maintains responsibility for monitoring their populations. An Aster also exists in Gates of the Arctic (*Aster yukonensis*) that has recently been removed from the rare plant list but remains a species of concern for Park/Preserve managers. This plant occupies a specific microsite along rivers and streams in sandy soils that occur within the gravel bar/shrub interface. Because of the proximity of this plant's habitat to rivers and moist fuels, it is unlikely that a fire would negatively affect this species, except under the most severe drought circumstances when fire behavior supercedes normal patterns.

There are also a number of bird species that are of concern to GAAR managers (see GAAR RMP, GAAR-N101 for species list). If large-scale fires occur in the boreal forests there is possibility of reduced suitable habitat and food sources within the boundaries of GAAR, however vast expanses of habitat and food surround the Park/Preserve. Fortunately, adverse effects from fire the immediate generations of wildlife may experience are usually greatly offset by the benefits accrued to future generations.

When suppression strategies are imminent, certain suppression activities could also pose a threat to fragile soil layers and to other ecosystem components. This type of risk will be mitigated through the use of minimum impact suppression tactics, as specified by NPS policy (see Chapter IV, Section B.4).

C. Developments and Inholdings

Private property within the Park/Preserve will be assigned to an appropriate AIWFMP protection category by State of Alaska, Department of Natural Resources.

XII. FIRE CRITIQUES AND ANNUAL PLAN REVIEW

A. Park-level Incident Reviews

All wildland fire incidents requiring suppression actions within GAAR will be reviewed. Prescribed fires will be reviewed as appropriate. The nature and scope of such reviews will vary in accordance with the complexity of the incident at hand, as follows.

1. Single-shift incidents

For incidents within the Preserve lasting no more than one operational period, a critique will be conducted as quickly as practical upon completion of control and mop-up. As many personnel involved in the incident as possible will participate in the critique. The Incident Commander or Burn Boss will relay any special concerns or problems identified during the critique to the Chief of Operations.

2. Low-complexity multi-shift incidents

For simple incidents lasting longer than one operational period, a critique will be conducted within three days of completion of mop-up by the Chief of Operations, the Chief of Resource Management, the Fire Management Officer, and any others with special knowledge of or interest in the incident in question. The objective of the critique will be to determine the effectiveness of the GAAR Fire Management Program; procedures for such critiques are outlined in NPS-18, Chapter 13, Exhibit 2.

3. Higher-complexity multi-shift incidents

AFS and Park/Preserve staff will conduct a closeout meeting with the Incident Management Team at the conclusion of each Type I or II incident to ensure the successful transition of the incident back to the GAAR staff and to identify any incomplete fire business. Refer to Chapter 13, Exhibit 1 of Reference Manual 18 for a sample.

4. All ongoing incidents

“Hotline” reviews will be used to examine the progress of ongoing fire incidents, regardless of duration, size, or complexity. This type of review will provide confirmation of the decisions being made daily in the WFSA/WFIP and/or help determine where the decision process has been faulty. The Incident Commander in conjunction with the GAAR FMO or the Agency Administrator will conduct hotline reviews of GAAR incidents. Hotline reviews don’t follow pre-established procedures; results, however, will be recorded in fire reports.

B. Regional and National-level Incident Reviews

A regional or national-level incident review may be conducted under any of the following circumstances:

- Fire crosses the Park/Preserve’s boundaries into another jurisdiction without the approval of the landowner or agency.
- An incident results in adverse media attention.

- An incident involves death, serious injury or significant property damage, or exhibits potential to do so.
- An incident results in controversy involving another agency.

Refer to Chapter 13, Reference Manual 18 for distinction between regional and national-level reviews and for examples of each.

C. Entrapment and Fire Shelter Deployment Reviews

Fire shelter deployment is defined as the use of a fire shelter for its intended purpose in any situation other than training. All entrapments and fire shelter deployments will be reported to the regional Fire Management Officer, who will in turn develop a review team in cooperation with the Fire Management Program Center. The team leader will obtain reporting information from the GAAR Superintendent, and the review will be conducted in accordance with the guidelines presented in Chapter 3 of Reference Manual 18 (Exhibits 4 and 5).

D. Program and Plan Reviews

An informal fire management review will be conducted annually to evaluate current procedures and to identify any needed changes to the Gates of the Arctic National Park and Preserve Fire Management Plan. A formal internal fire management review will be conducted every five years.

Minor changes to the GAAR Fire Management Plan (including minor procedural changes, deletions, corrections, additions to appendices, etc.) may be made with the authority of the GAAR FMO. The Superintendent, however, must approve significant changes to the body of the Fire Management Plan.

XIII. CONSULTATION AND COORDINATION

The following individuals were consulted in the preparation of this plan:

Fred Anderson, Fisheries Biologist/Subsistence Manager, National Park Service, Gates of the Arctic National Park and Preserve

Brad Cella, Fire Management Officer, National Park Service, Alaska Region

Ken Coe, Fire Management Officer, Alaska Fire Service, Galena Zone

Joan Darnell, Chief of Environmental Quality, National Park Service, Alaska Region

Eileen Devinney, Cultural Resource Specialist, National Park Service, Gates of the Arctic National Park and Preserve

Roger Semler, Chief of Operations, National Park Service, Gates of the Arctic National Park and Preserve

Bruce Greenwood, Environmental Protection Specialist, National Park Service, Alaska Support Office

Kato Howard, Fuels Management Specialist, Alaska Fire Service, Upper Yukon Zone

Dave Jandt, Assistant Fire Management Officer, Alaska Fire Service, Tanana Zone

Marsha Henderson, Fire Management Officer, National Park Service, Gates of the Arctic National Park and Preserve, Yukon-Charley Rivers National Preserve

Dave Mills, Superintendent, National Park Service, Gates of the Arctic National Park and Preserve

Debbie Nigro, Biological Technician, National Park Service, Gates of the Arctic National Park and Preserve

Sarah Robertson, Interagency Fire Planner, National Park Service/USDA Forest Service, National Interagency Fire Center

Shelli Swanson, Biologist, National Park Service, Gates of the Arctic National Park and Preserve

Steve Ulvi, Management Assistant, National Park Service, Gates of the Arctic National Park and Preserve

Tom Zimmerman, Fire Science/Ecology Manager, National Park Service, National Interagency Fire Center

APPENDIX A

References

The following sources are either cited within the Fire Management Plan, were consulted during its preparation, or are otherwise pertinent to the management concerns outlined within the plan.

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APPENDIX B

Definitions

Agency Administrator: An incident-specific position filled by any qualified GAAR staff member as designated by the Superintendent. The Agency Administrator represents the GAAR Superintendent and works with the incident command team to ensure the compliance of wildland fire operations with GAAR and NPS resource management policy.

Appropriate Management Response (AMR): Any wildland fire action selected and developed through either the initial decision-making process (i.e. WFIP stage I) or a WFSA. AMRs may be directed toward suppression or resource benefit, depending on predetermined parameters and incident-specific conditions.

BEHAVE: A system of interactive computer programs used for formulating fuel models based and predicting fire behavior.

Condition Class 1: Fire regimes are within an historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within an historical range.

Director's Order 18 (DO-18): A comprehensive statement of National Park Service wildland fire management policy.

Extended Attack: Any wildland fire suppression action lasting beyond one operational period.

Fire Management Officer (FMO): A permanent position with responsibility for the planning and coordination of fire management programs. A co-lateral duty area FMO based in Fairbanks serves GAAR.

Fuel Loading: Amount of live and dead organic matter present at a particular site.

Fuel Model: A simulated fuel complex based on representative descriptors; used to estimate rate of spread and other fire behavior indices.

Initial Attack: A wildland fire suppression action lasting no more than one operational period.

Prescribed Fire Use: Planned implementation of fire within a predetermined area and under predetermined conditions, for the accomplishment of resource management objectives and/or hazard fuel mitigation.

Reference Manual 18 (RM-18): A detailed set of guidelines for the operational implementation of the wildland fire management policies specified in DO-18. RM-18 consists of a continuously evolving on-line document.

Maximum Manageable Area (MMA): A geographical parameter established during the WFIP process and indicating the size which a fire use incident may grow to before triggering a WFSA.

Wildland Fire: Any occurrence of fire not planned and ignited by management.

Wildland Fire Implementation Process (WFIP): A multi-stage decision-making process triggered by the detection of any wildland fire. Initial WFIP components help managers determine initial strategies (e.g. fire use or suppression); subsequent components document continued viability of fire use.

Wildland Fire Situation Analysis (WFSA): A standardized decision-making process triggered when an escalating incident renders present management actions inadequate. WFSA components provide a means of evaluating alternative strategies and serve to document decisions, actions, and results.

Wildland Fire Suppression: Any management action based on protection goals rather than resource management concerns.

Wildland Fire Use: Any management action implemented primarily for the accomplishment of resource objectives (including the preservation of fire in its natural role and/or the reduction of hazardous fuel loads). Also referred to as wildland fire use for resource benefit (WFURB).

ACRONYMS

AIWFMP	Alaska Interagency Wildland Fire Management Plan
ANILCA	Alaska National Interest Lands Conservation Act
AKSO	Alaska Support Office
BLM-AFS	Bureau of Land Management – Alaska Fire Service
DENA	Denali National Park
DNR	State of Alaska, Department of Natural Resources
DO-18	Director’s Orders 18 – Wildland Fire Management
DOF	State of Alaska, DNR, Division of Forestry
FFMC	Fine Fuel Moisture Content
FMO	Fire Management Officer
FMP	Fire Management Plan
FMU	Fire Management Units
GAAR	Gates of the Arctic National Park and Preserve
GMP	General Management Plan
IC	Incident Commander
LCES	Lookouts, Communication, Escape Routes, Safety Zones
LCS	List of Classified Structures
MAC	Multi-Agency Coordination Group
NEPA	National Environmental Planning Act
NHPA	National historical Preservation Act
NPS	National Park Service
NWCG	National Wildfire Coordinating Group

RAWS	Remote Automated Weather Station
RM-18	Reference Manual 18 – Wildland Fire Management
RMP	Resource Management Plan
SACS	Shared Applications Computing System
SHPO	State Historic Preservation Officer
USFS	United States Forest Service
WFSA	Wildland Fire Situation Analysis
WFIP	Wildland Fire Implementation Plan
WRST	Wrangell-St. Elias National Park and Preserve
YUCH	Yukon-Charley Rivers National Preserve

APPENDIX C.1

ENVIRONMENTAL ASSESSMENT

FIRE MANAGEMENT PLAN

FOR

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

PREPARED BY

NATIONAL PARK SERVICE

GATES OF THE ARCTIC NATIONAL PARK AND PRESERVE

April 21, 2003

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ENVIRONMENTAL ASSESSMENT

Fire Management Plan for Gates of the Arctic National Park and Preserve

I. INTRODUCTION

A. Purpose and Need

The National Park Service proposes implementing National Park Service Director's Order 18 (DO-18) (2002) by establishing a fire management plan for Gates of the Arctic National Park and Preserve (GAAR). This fire management plan is a comprehensive document that outlines GAAR's fire management goals and describes the policies and actions by which these goals will be realized. The plan will formalize the fire management decision making process and the procedures that have been in place for over 15 years, redefine fire management strategies, establish the park's fire management organization and responsibilities, and relate resource management goals to fire management strategies. With the implementation of the proposed action, fire management within GAAR will remain status quo and the application of fire management strategies will continue as in the past.

The Fire Management Plan is necessary to comply with DO-18, and codifies the way fire will be managed within GAAR. Although fire protection needs may arise and remain our first priority, managers need to consider that fire has long been an integral component of the area's ecosystems and is critical for the maintenance of virtually all indigenous conditions, from plant and animal populations to soil and permafrost layers. Accordingly, the scope of the preferred alternative and other considered alternatives entail the planning and implementation of policies and practices flexible enough to allow the simultaneous pursuit of protection and resource management goals.

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act of 1969 and the regulations of the Council of Environmental Quality (40 CFR 1508.9). It evaluates the potential impacts to cultural and natural resource values that could result from implementing the Gates of the Arctic National Park and Preserve Fire Management Plan. The environmental assessment is intended to facilitate decision-making, based on an understanding of the environmental consequences of the proposal, and to determine whether preparation of an environmental impact statement is required.

B. Background

Two federal legislative acts, the Organic Act and the General Authorities Act, prohibit impairment of park resources and values. NPS Management Policies and Director's Order 12 use the terms "resources and values" to mean the full spectrum and intangible attributes for which the park is established and are managed, including the Organic Act's fundamental purpose and any additional purposes as stated in the park's establishing legislation. The impairment of park resources and values are not allowed unless directly and specifically provided by statute. The primary responsibility of the National Park Service is to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and

future opportunity for enjoyment of them. The evaluation of whether impacts of a proposed action would lead to an impairment of park resources and values is included in this environmental assessment. Impairment may occur when there are potential impacts to a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or
- identified as a goal in the park's general management plan or other relevant NPS planning documents.

In 1980, Congress created the Gates of the Arctic National Park and Preserve through the passing of the Alaska National Interest Lands Conservation Act (ANILCA), a comprehensive statement of purpose for several Alaskan Park and Preserve areas. Section 201[4] of ANILCA specifically establishes Gates of the Arctic National Park and Preserve and ascribes to it the following mission, among others: to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features; to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and to other wilderness recreation activities; and to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds.”

The Gates of the Arctic National Park and Preserve Resource Management Plan (1994) specifies three objectives directly relevant to GAAR's fire management program: 1) To protect significant cultural resources on park land with methods that are compatible with the wilderness purposes of the area; 2) To maintain natural features, environmental integrity and the dynamics of natural processes operating within the park; and 3) To allow fire to fulfill its role as a natural process to the fullest extent possible while protecting human life, private property and cultural and natural resources that warrant protection.

In 1984 the National Park Service cooperated with Bureau of Land Management, Alaska Department of Natural Resources, Alaska Department of Fish and Game, US Fish and Wildlife Service, Bureau of Indian Affairs, and Alaska Native regional and local village corporations to produce an Interagency Fire Management Plan for the Kobuk Planning Area. This plan provided direction for fire management activity in Gates of the Arctic National Park and Preserve until 1998, when a variety of documents were consolidated and approved as the Alaska Interagency Wildland Fire Management Plan (AIWFMP). Under the AIWFMP, fire protection needs are determined through annual land owner/manager reviews and lands are then placed under critical, full, modified or limited protection categories, with categorization based on presence and/or proximity of values to be protected, as well as the resource management objectives of the pertinent land management agency (see Table 1 for description of categories). Each reported wildland fire is managed in accordance with the categorization of the sub-unit in which it occurs, with responses ranging from rapid and aggressive attack by all available forces in the case of

fires detected in Critical Protection areas, to periodic surveillance for certain fires detected in Limited Protection areas (see Figure 1 for map of Park/Preserve units).

Table 1: Alaska Interagency Wildland Fire Management Plan Options

Protection Category	Policy	Intent
Critical	<ul style="list-style-type: none"> • Aggressive suppression of fires within or threatening designated areas. • Highest priority for available resources. 	<ul style="list-style-type: none"> • Prioritization of suppression actions for wildland fires threatening human life, inhabited property, and/or other designated structures. • Complete protection of designated sites.
Full	<ul style="list-style-type: none"> • Aggressive suppression of fires within or threatening designated areas, depending upon availability of resources. 	<ul style="list-style-type: none"> • Protection of uninhabited cultural and historical sites, private property, and high-value natural resources.
Modified	<ul style="list-style-type: none"> • Fires in designated areas receive initial attack depending on availability of resources, unless land manager chooses otherwise and documents with WFSA. • After designated conversion date, operational response to Modified protection zones is identical to that of Limited zones. 	<ul style="list-style-type: none"> • Greater flexibility in selection of suppression strategies when chance of spread is high (e.g., indirect attack). • Reduced commitment of resources when risk is low. <ul style="list-style-type: none"> • Balancing of acres burned with suppression costs and with accomplishment of resource management objectives.
Limited	<ul style="list-style-type: none"> • Wildland fires allowed to burn within predetermined areas. • Continued protection of human life and site-specific values. • Surveillance. 	<ul style="list-style-type: none"> • Reduction of long-term costs and risks through reduced frequency of large fires. • Reduction of immediate suppression costs. <ul style="list-style-type: none"> • Facilitation of bio-diversity and ecological health

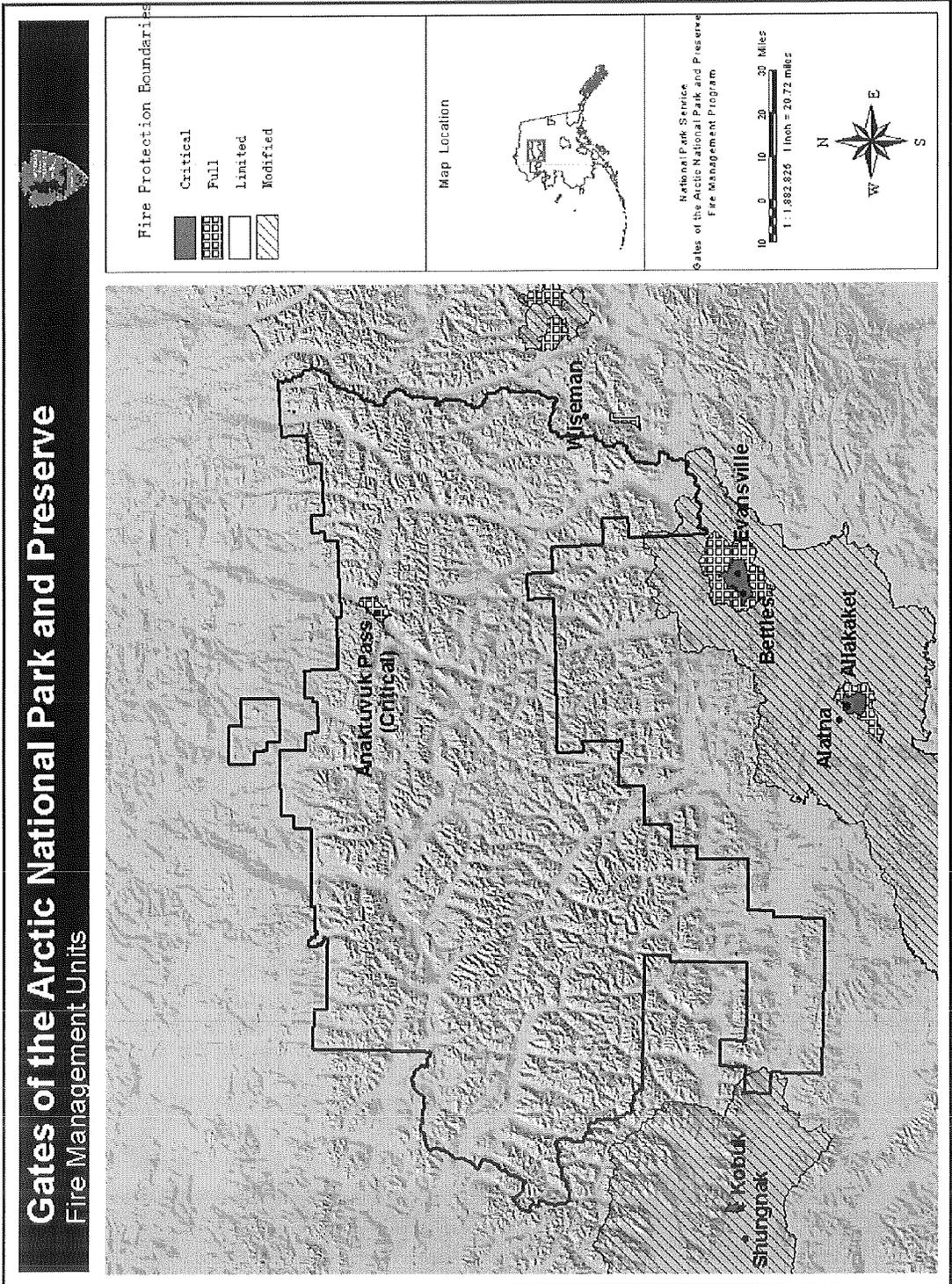


Figure 2: Fire Protection Boundaries

This EA presents two alternatives for the application and use of wildland fire as a management tool for resource benefits. All of the alternatives discussed here, including the preferred alternative described throughout the proposed GAAR fire management plan, would entail continued compliance with the AIWFMP, while at the same time bringing the Park/Preserve's fire management program into compliance with recently developed National Park Service directives. **NPS Director's Order 18 (2002)** mandates a distinction between **prescribed fire**, defined as any fire planned and implemented by management, and **wildland fire**, defined as any unplanned ignition, whether human or natural. Wildland fire incidents, in turn, fall into two categories: **Wildland fire use** entails the management of certain unplanned ignitions for the achievement of management goals, including the reduction of dangerous and unnatural accumulations of burnable vegetation and the preservation of fire in its natural role; **wildland fire suppression** entails a broad spectrum of actions aimed at protecting life, property, and sensitive resources while also ensuring firefighter safety, cost effectiveness, and minimal disturbance from suppression activities.

Each of the alternatives presented in this Environmental Assessment comprise a particular combination of the various management strategies permitted under NPS Director's Order 18. These alternatives have been evaluated for their ability to contribute to the accomplishment of the resource management objectives described above.

C. Impact Topics Addressed and Analyzed

Impact topics were identified to focus the analysis of alternatives on the most relevant subject matter and resources of concern. A brief rationale for each impact topic follows, as well as the reasons for dismissing specific topics from further analysis.

Vegetation and Biodiversity

The National Environmental Policy Act (1969) requires analysis of impacts on all affected components of the ecosystem, including biotic communities of plants and animals. NPS Management Policies (2001) requires maintenance of these communities, including their natural abundance, diversity and ecological integrity. Fire plays an important role in changes to vegetative cover, which in turn affects habitat and overall ecological health; therefore, effects on vegetation and bio-diversity are analyzed as an impact topic.

Cultural Resources

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq.*); the National Environmental Policy Act; and NPS Cultural Resource Management Guidelines (1994) and Management Policies (2001) require the consideration of impacts to cultural resources listed on or eligible for listing on the National Register of Historic Places. The undertakings described in this document are also subject to section 106 of the national Historic Preservation Act, under the terms of the 1995 Programmatic Agreement among the NPS, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. Impacts to cultural resources (archeological, historic, and paleontological) are therefore analyzed in this environmental assessment.

Aesthetics and Recreation

The mission of the NPS, as stated in the Organic Act of 1916, is to “conserve the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same.” Gates of the Arctic National Park and Preserve was established to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, ...and scenic beauty...to provide reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities.” Scenic values, recreational activities, and general visitation within and around fire-treated areas may be temporarily impacted, thus visitor use will be considered as an impact topic.

Local Economy

The National Environmental Policy Act (NEPA) regards impacts to the human environment to include any effects of federal actions on the social and economic well-being of communities and individuals. Impacts to the local economy are therefore analyzed in this environmental assessment.

Wetlands and Floodplains

NPS guidelines and policies require the consideration of impacts to floodplains and wetlands (Executive Orders 11988 and 1190). Impacts to wetlands and floodplains are therefore analyzed in this environmental assessment.

Subsistence Use and Wildlife Habitat

Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) states “in determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands...the head of the federal agency...over such lands...shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs.” Subsistence use may be temporarily impacted, thus subsistence use will be considered as an impact topic.

Air Quality

The 1963 federal Clean Air Act (42 U.S.C. 7401 *et seq.* as amended) stipulates that federal land managers have an affirmative responsibility to protect a park’s air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse air pollution impacts. Specifically one objective of the GAAR RMP is to maintain clean air and unimpaired viewsheds. Air quality would potentially be affected in the short-term during any type of ignition event; therefore, it is analyzed as a relevant impact topic.

Water Quality and Fisheries

National Park Service policies require the protection of water resources consistent with the Clean Water Act. Increased erosion following a fire may affect water quality and is, therefore, considered a relevant impact topic.

Wilderness Character

National Park Service Director’s Orders 41, Wilderness Preservation and Management (DO-41) states that “Fire management activities conducted in wilderness areas will conform to the basic purposes of wilderness”. Gates of the Arctic is predominately designated wilderness and therefore will be analyzed as a relevant topic.

D. Impact Topics Considered and Dismissed

Threatened and/or Endangered Species

The Endangered Species Act (1973) requires disclosure of impacts on all federally threatened or endangered species. NPS policy also requires the analysis of effects on federal species, as well as state-listed threatened, endangered, candidate, rare, declining and sensitive species. Two subspecies of Peregrine falcon, *Falco peregrinus* subs. *anatum*, and *Falco peregrinus* subs. *tundrius*, were recently delisted, however, the park maintains responsibility for monitoring their populations. GAAR is also within the range of a species of Aster (*Aster yukonensis*) that has recently been removed from the rare plant list but remains a species of concern for Park/Preserve managers. This plant occupies a specific microsite along rivers and streams in sandy soils that occur within the gravel bar/shrub interface. Because of the proximity of this plant's habitat to rivers and moist fuels, it is unlikely that a fire would negatively affect this species except under the most severe drought circumstances, when fire behavior supercedes normal fire behavioral patterns.

Environmental Justice. Executive Order 12898, "Environmental Justice." Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires all federal agencies identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project would not be expected to result in significant changes in the socioeconomic environment of the project area, and, therefore, would not be expected to have any direct or indirect impacts to minority or low-income populations or communities.

II. RANGE OF ALTERNATIVES

A. Introduction.

Each alternative consists of a different combination of the fire management strategies as mandated by NPS Director's Order 18 (DO-18), with each alternative representing a different application of fire as a management tool. The considered alternatives differ in their respective approaches to the management of wildland ignitions and in their allowance or preclusion of prescribed fire.

B. Actions Common to all Alternatives

Under each alternative, mechanical fuel reduction may be used to mitigate hazard fuel buildup or recreate historical landscapes/conditions in areas where prescribed fire or wildland fire would pose an unreasonable threat to the property or resources.

All fire management actions at Gates of the Arctic National Park and Preserve will be conducted in full compliance with local, state, and interstate air pollution control regulations as required by the Clean Air Act, 42 U.S.C. 7418. Currently, no local or interstate air pollution control regulations exist in Alaska.

The Park/Preserve will employ three primary strategies in order to protect archeological, cultural, and historic sites from damage by fire or fire suppression activities. First, culturally significant structures will be assigned Critical or Full Protection status, as dictated by the recommended criteria for fire protection of structural resources within GAAR. Second, personnel conducting detection and/or reconnaissance flights within the Park/Preserve will be directed to remain alert for the presence of any undiscovered cultural sites or structures and to report their presence to the Park/Preserve FMO. Third, designated Incident Commanders will consult with appropriate resource advisors regarding the identification and sensitivity of previously unknown sites, and will cooperate with the Agency Advisor to mitigate any damage to such sites.

Certain fire suppression activities could pose a threat to fragile soil layers and to other ecosystem components. This type of risk will be mitigated through the use of minimum impact suppression tactics as specified by NPS policy.

C. Alternatives

Alternative 1: Combination of Wildland Fire Use and Wildland Fire Suppression

Natural ignitions occurring in certain areas and under predetermined conditions would be managed for the accomplishment of resource management goals, including the preservation of fire in its natural role and the reduction of hazardous accumulations of burnable vegetation. Any fire posing a threat to life or property would be immediately suppressed. Prescribed fires would not be implemented.

Alternative 2: Combination of Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression (NPS Preferred Alternative)

All three of the major management actions described under DO-18 would be allowed, as determined by a combination of pre-established and incident-specific decision making criteria. Wildland fires that do not pose a threat to life, property, or significant resources would be managed for the accomplishment of resource management goals, including the preservation of fire in its natural role and the reduction of hazardous accumulations of burnable vegetation. Prescribed fire would be implemented, in certain cases, under the direction of National Park Service personnel for the purpose of reducing hazardous fuel loads. Suppression would continue in or near developed areas, near Park/Preserve boundaries with administrative units having different fire management objectives, in areas known to contain sensitive cultural and/or archeological resources, or whenever insufficient resources are available to ensure the effective, long-term management of wildland fire to meet resource management objectives. This action would be a continuation of the fire management strategies that have occurred in GAAR for the past 15 years.

D. Alternatives Considered but Rejected.

Full Wildland Fire Suppression

All ignitions, including those of natural origin, would be suppressed and no prescribed fire would be implemented. Reduction of flammable vegetation would be accomplished strictly by mechanical means (e.g. through the use of chain saws, cross cut saws or other tools). Mechanical

reduction would be limited primarily to the protection of historic and/or archeological sites and Park/Preserve boundary areas. In some cases, however, mechanical reduction could be used to restore selected landscapes to historic conditions.

This alternative is rejected for the following reasons: 1) the increased risk of catastrophic wildland fire which would result from the exclusion of the area's natural burn cycle; 2) the prohibitively high cost of large-scale mechanical fuel reduction; 3) non-conformance with the existing interagency management scheme and a potential to cause an impairment of park resources and values.

Full Wildland Fire Suppression and Prescribed Fire

All ignitions, including those of natural origin, would be suppressed. The effects of natural wildland fire would be simulated through the use of planned ignitions conducted by park personnel in defined zones. Such fires would be ignited under predetermined fuel and weather conditions; control problems would thereby be minimal.

This alternative is rejected for the following reasons: 1) the inability to maintain a natural burn cycle through only prescribed burns; 2) the increased risk of catastrophic wildland fire which would result from the exclusion of the area's natural burn cycle; 3) the prohibitively high cost of large-scale mechanical fuel reduction and prescribed burns; 4) non-conformance with the existing interagency management scheme and a potential to cause an impairment of park resources and values.

III. AFFECTED ENVIRONMENT

A. Introduction.

Gates of the Arctic National Park and Preserve encompasses 8,229,946 acres, of which the federal government manages 97%. Much of the remaining land belongs to Arctic Slope Regional Corporation and Doyon, Ltd. Other ownership categories include local village corporation tracts, allotments, and patented/unpatented mining claims. Located north of the Arctic Circle, this remote Park/Preserve lies within the central Brooks Range, and is one of the Nation's largest wilderness parks. The village of Anaktuvuk Pass is located in the mountains near the Park/Preserve's northern border and is the only established community within the boundary of GAAR. The community of Bettles/Evansville is the field operations center for GAAR, located south of the Park/Preserve. Other nearby communities include Coldfoot and Wiseman, located to the east of the Park/Preserve on the Dalton Highway. Access is mainly by commercial air services or private plane, however, some visitors access the Park/Preserve by foot from Anaktuvuk Pass, Coldfoot or Wiseman.

B. Natural Environment

Gates of the Arctic National Park and Preserve contains examples of a variety of ecotypes including taiga forest, alpine tundra, and boreal forest communities. The rugged peaks of the Brooks Range rise to over 8,000 feet in the park and are separated by small valleys created by creeks flowing from the summits and by broad glacial valleys that are the products of four major

glaciations. GAAR's climate consists of four distinct seasons with relatively short cool summers and long severe winters. Spring and autumn come and go rapidly with the quick increase and decrease in sunlight and temperature. The park receives continuous sunlight during the summer for at least 30 days.

The southern portion of Gates of the Arctic lies within a greater ecological zone known as the taiga, an area extending from the Alaskan Interior north to the Brooks Range that is dominated by black spruce. In the Park/Preserve, as elsewhere in the taiga, lowlands and drainages are often heavily forested. Uplands become more thinly forested with increasing elevation, with most areas above 2,000 feet consisting of treeless shrub tundra. The mountainous regions and northern foothills represent the tundra community, dominated by tussocks and sedges at lower elevations where poor drainage precludes the presence of black spruce stands. Much of the Park/Preserve is underlain by permafrost that can average several hundred feet thick, with the top of the permafrost layer often occurring as little as 2 to 3 feet below the ground surface at the peak of summer. Permafrost hinders subsurface drainage, causing unstable soil conditions on sloping surfaces. Consequently, when surfaces are disturbed and permafrost is allowed to melt, soils often collapse.

Numerous species of large and small mammals occur within GAAR. Large mammals include Dall sheep, moose, muskoxen, caribou, black and brown bear, and wolves. Smaller mammals, such as arctic hare, wolverine, porcupine, weasel, land otter, ground squirrel, muskrat, vole, lemming, and many others are abundant throughout the park area. In addition, over 20 species of fish and 140 species of bird are also present in GAAR on a seasonal basis.

C. Cultural Environment

Gates of the Arctic contains a wealth of prehistoric, protohistoric, and historic archeological sites. Humans have continuously explored and lived in the region and used its resources for more than 10,000 years. Approximately 5% of the total area of GAAR has been surveyed by archeologists, and over 800 sites have been recorded to date. Of these, only 34 contain some manner of combustible structural components, such as cabins, caches, outhouses, caribou drivelines, corrals, campsites, etc. The remaining 566 sites are prehistoric and historic, containing largely lithic and organic materials and little to no combustible components.

Currently, GAAR is home to the last remaining group of the Nunamiut, or inland Iñupiat, who live in the village of Anaktuvuk Pass. The Nunamiut practice a mixed economy, consisting of both wage labor and traditional hunting and gathering practices (commonly referred to as subsistence in Alaska).

D. Historical Role of Fire

Historically, the northernmost two thirds of GAAR are less susceptible to fire due to the presence of the Brooks Ranges and the Arctic coastal influence of the North Slope. However, the southern third of the Park/Preserve lies within the northernmost belt of Interior Alaska, characterized by boreal forest. In Interior Alaska, fire has played a critical role in ecosystem sustainability. For thousands of years, periodic fires have resulted in plants and animals that are adapted to fire-

caused change. For example, both black and white spruce depend on intense ground fire to clear organic layers and thereby expose the fertile seedbed. Black spruce, moreover, is at least partially dependent upon stand-replacement fire, in that its' seeds become ready for germination at the peak of the Alaskan interior fire season and are released when its semi-serotinous cones are opened by canopy fire. Even more fundamentally, fire plays a key role in the regulation of the permafrost table throughout all of the ecosystems of the Alaskan interior. Without fire, organic matter accumulates, the permafrost table rises, and ecosystem productivity declines. Vegetation communities become much less diverse, and wildlife habitat decreases. Fire rejuvenates these systems. It removes some of the insulating organic matter and elicits a warming of the soil. Nutrients are added both as a result of combustion and by increased decomposition rates.

The impact of aggressive suppression on the Alaskan interior at large and GAAR in particular is, difficult to assess. Organized suppression has occurred on a large scale in Alaska since 1939; however, effects of suppression efforts are not clear. Alaska fire management personnel postulate that the fire ecology of the area may be relatively unchanged from its condition prior to the development of organized suppression efforts.

E. Wildland Fire Management Situation

The seasonal fire cycle in the Alaskan interior consists of four "micro" seasons or phases, each varying with the changing weather patterns and the stages of vegetation development for the growing season. The first begins in mid-May with the loss of snow cover, and ends in late May or early June when greenup begins. During the transition from 100% winter-cured fuels to greenup, human-caused fires occur frequently. These fires are usually relatively easy to suppress. Spring fires that are not suppressed, however, often grow later in the season as fuels become dryer. The second and third fire-cycle phases are primarily lightening driven. Suppression of such fires is harder. Fires occurring in June, the second period, usually do not develop the intensity of later summer fires; during hot, dry, and windy conditions, however, June wildland ignitions can result in extreme fire behavior. The third period of fire activity begins in mid-July and runs through the first part of August. This is the period of maximum fire activity. The final micro-season runs from late August into early September. These fires are generally easy to control except during particularly dry autumn weather.

IV. ENVIRONMENTAL CONSEQUENCES

A. Impacts of Alternatives

Alternative 1. Wildland Fire Use and Wildland Fire Suppression

Vegetation and Biodiversity

Certain wildland fires would be managed for the accomplishment of resource management goals, including the preservation of fire in its natural role and the reduction of burnable vegetation therefore maintaining a naturally functioning ecosystem. However, in the Full Protection Units the exclusion of prescribed fire may result in an unacceptable increase in vegetation thereby increasing the threat to the resources found within these units.

A purpose of the park is to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural feature.” Fire is an inextricable component of the fire dependant ecosystem of this area and is known to maintain a balanced, naturally functioning ecosystem. This alternative would manage ignitions within established resource objectives to maintain the natural function of the ecosystem in the Park/Preserve.

Conclusion: Minimal impacts are expected with the use of this alternative due to an increase in vegetation resulting from no prescribed fire. The level of impacts to vegetation and biodiversity anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Cultural Resources

The prohibition of prescribed fire could hamper both the protection of historic and/or archeological resources and the restoration and/or protection of historic landscapes and conditions. Mechanical techniques employed in place of prescribed fire would tend to be more expensive and in some cases might not sufficiently mimic the effects of fire. However, certain wildland fires would be managed for the accomplishment of resource management goals including the reduction of burnable vegetation thereby better protecting the cultural resources from catastrophic fire.

Cultural resources are not specifically stated as a purpose of the Park/Preserve.

Conclusion: Minimal impact would occur due to an increase in vegetation resulting from no prescribed fire. The level of impacts to cultural resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Aesthetics and Recreation

Under this alternative the only impact would be the occasional closure of specific areas due to fire activity for the safety of visitors resulting in an inconvenience for the visitors or cause them to alter their plans.

A purpose of the Park/Preserve is “to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and to other wilderness recreation activities.” Selection of Alternative 1 would not result in a change in vegetative composition and it would support a naturally functioning ecosystem. Sight lines and access would be maintained.

Conclusion: This may result in a minimal impact by closing certain areas and more vegetation may be burned decreasing aesthetics. The level of impacts to aesthetics and recreation anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Local Economy

There would be a slight influx of revenue for businesses in communities near the incident from occasional suppression operations.

Conclusion: The increase in revenue would result in a minimal beneficial impact. The level of impacts to the local economy would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Wetlands and Floodplains

There would be a minimal risk of disruption to these communities due to fire suppression operations. There may be impacts due to erosion after fire has burned through a wetlands or floodplain. Once vegetation in these areas re-establishes erosion is expected to diminish.

A purpose of the Park/Preserve is to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural feature.” Fire is an inextricable component of the fire dependent ecosystem of this area and is known to maintain a balanced, naturally functioning ecosystem. Managing wildland fire within established resource objectives would encourage the natural function of the ecosystem in the Park/Preserve.

Conclusion: There would be temporary minimal impacts due to a loss of vegetation. The level of impacts to wetlands and floodplains anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Subsistence Use and Wildlife Habitat

A short-term impact on game species and plants in specific areas could occur due to the decrease of vegetation within burned areas. However, this alternative would more adequately facilitate the long-term preservation of the area’s natural processes by allowing fire to play its role in the ecosystem.

A purpose of the Park/Preserve is to “protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds” and “subsistence uses by local residents shall be permitted in the park, where such uses are traditional, in accordance with the provisions of title VIII.” Fire is an inextricable component of the fire dependent ecosystem of this area and is known to contribute toward the maintenance of a balanced, naturally functioning ecosystem.

Conclusion: This would not disrupt the natural function of the ecosystem in the Park/Preserve, therefore maintaining wildlife habitat and subsistence use within the Park/Preserve. There would be a negligible short-term impact resulting from a displacement of wildlife in the burned area. This, however, would replicate a naturally functioning ecosystem and subsistence regime. The level of impacts to subsistence and wildlife habitat anticipated from this alternative would not

result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Air Quality

Under this alternative, smoke would be monitored for trajectory, mixing height, and impact to overall air quality. Certain wildland fires would be managed for the accomplishment of resource management goals, including the preservation of fire in its natural role and the reduction of burnable vegetation. This would reduce the possibility of catastrophic fire thereby reducing long-term, intense reduction of air quality.

Air quality is not specifically stated as a purpose of the Park/Preserve, though a degradation of air quality by fire could affect visitor use and recreation purposes. Fire naturally occurs in the Park/Preserve ecosystem and degradation in air quality at the levels expected would also be similar to a natural occurrence.

Conclusion: No long term impacts to air quality are expected. The level of impacts to air quality anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Water Quality and Fisheries

Under this alternative certain wildland fires would be managed for the accomplishment of resource management goals including the preservation of fire in its natural role and the reduction of burnable vegetation. This would result in a greater number of low-intensity wildland fires thereby reducing the potential for erosion along streams.

A purpose of the Park/Preserve is “to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds.” Fire is an inextricable component of the environment of this area and is necessary to maintain a balanced, naturally functioning ecosystem. Selection of this alternative would not disrupt the natural function of the ecosystem in the Park/Preserve. A fire is a common occurrence in this ecosystem and does result in some erosion, affecting water quality and fisheries habitat. Under this alternative, the amount of erosion is expected to continue at the same natural level and will not result in an impairment of the stated park purpose, or any resources or values.

Conclusion: Long term impacts to water quality and fisheries are not expected. Short-term negligible impacts of increased sedimentation may occur initially after the fire and prior to reestablishment of vegetation. The level of impacts to water quality and fisheries anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Wilderness Character

Under this alternative certain wildland fires would be managed for the accomplishment of resource management goals including the preservation of fire in its natural role and the reduction of burnable vegetation.

Much of Gates of the Arctic is designated wilderness. The wilderness character of the area reflects natural conditions and a vast undeveloped arctic landscape untrammelled by humans. There are no human caused trails or modern structures on designated wilderness lands. A sense of solitude and distance from modern civilization and its modifications of the natural world dominate the recreational experience. Under this alternative natural fire would be allowed to continue and will not result in an impairment of the stated park purpose or any resources or values.

Conclusion: Long term impacts to wilderness character are not expected. Short-term impacts during fire suppression activities may occur but will be mitigated by using minimum tool/minimum requirement analysis. The level of impacts to wilderness character anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural integrity of the park.

Alternative 1, Cumulative Impacts: The on-going and future activity that would have a cumulative effect on resources of concern within and outside of the Park and Preserve's boundaries analyzed in this Environmental Assessment is the adjacent landowners' fire management plans. All public land management agencies in Alaska are signatories of the Alaska Interagency Fire Management Plan, which allows for fire to burn on the landscape in limited suppression units. Much of the public lands surrounding the Park and Preserve is in a limited suppression unit and may result in multiple large fires, especially with an increase in vegetation due to no prescribed burns. The results of these multiple fires may be greater than fires managed just within the Park and Preserve boundary.

Alternative 2. Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression (NPS Preferred Alternative)

Vegetation and Biodiversity

Alternative 2 would have the least impact on vegetation with the maximum potential for maintaining diversity, by way of careful implementation of prescribed fire in areas ill suited to wildland fire use. Wildland fire that poses a potential threat to life, property, or sensitive resources would be suppressed, while continued implementation of wildland fire use in remote portions of the Park/Preserve would ensure the cost-effective preservation of the area's natural fire ecology as well as the reduction of potentially dangerous fuel loads.

A purpose of the park is to "maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features." Fire is an inextricable component of the environment of this area and is necessary to maintain a balanced, naturally functioning ecosystem. Selection of this alternative to use prescribed fire; wildland fire

use within established resource objectives, and wildland fire suppression would result in a natural functioning ecosystem within the Park/Preserve.

Conclusion: A balanced and naturally functioning ecosystem would be maintained with the use of this alternative. The level of impacts to vegetation and biodiversity anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Cultural Resources

There would be improved long-term protection of registered and unregistered cultural resources with the use of fire near and surrounding cultural resources. The occasional use of prescribed fire would allow a relatively cost-effective means of reducing fuel loads and preserving historic landscapes and conditions where the presence of values to be protected prohibits the implementation of wildland fire use.

Cultural resources are not specifically stated as a purpose of the Park/Preserve.

Conclusion: Long-term protection of registered and unregistered cultural resources would result from this alternative. This is anticipated to not result in an impairment of park resources fulfilling specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Aesthetics and Recreation

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire that would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

A purpose of the Park/Preserve is “to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and to other wilderness recreation activities.” Selection of Alternative Two would not result in a change in vegetative composition and it would support a naturally functioning ecosystem. Sight lines and access would be maintained.

Conclusion: This may result in a minimal impact by closing certain areas and some vegetation may be burned decreasing aesthetics in limited areas. The level of impacts to aesthetics and recreation anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Local Economy

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

Conclusion: The increase in revenue would result in a minimal beneficial impact. The level of impacts to the local economy would not result in an impairment of park resources that fulfill

specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Wetlands and Floodplains

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

A purpose of the park is to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features.” Fire is an inextricable component of the environment of this area and is necessary to maintain a balanced, naturally functioning ecosystem.

Conclusion: There would be temporary minimal impacts due to a loss of vegetation. The level of impacts to wetlands and floodplains anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Subsistence Use and Wildlife Habitat

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire would also allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

A purpose of the Park/Preserve are “to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds” and “subsistence uses by local residents shall be permitted in the park, where such uses are traditional, in accordance with the provisions of title VIII.” Fire is an inextricable component of the environment of this area and is necessary to maintain a balanced, naturally functioning ecosystem.

Conclusion: The natural function of the ecosystem in the Park/Preserve would not be disturbed, therefore maintaining wildlife habitat and subsistence use within the Park/Preserve. There would be a negligible short-term impact resulting from a displacement of wildlife in the burned area. This, however, would replicate a naturally functioning ecosystem and subsistence regime. The level of impacts to subsistence and wildlife habitat anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Air Quality

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

Air quality is not specifically stated as a purpose of the Park/Preserve, though a degradation of air quality by fire could affect visitor use and recreation purposes. Fire is a naturally occurring

event in the Park/Preserve ecosystem. Degradation in air quality at the levels expected would be similar to a natural occurrence.

Conclusion: No long term impacts to air quality are expected. The level of impacts to air quality anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Water Quality and Fisheries

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire that would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

A purpose of the Park/Preserve is “to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds.” Fire is an inextricable component of the environment of this area and is necessary to maintain a balanced, naturally functioning ecosystem. Selection of this alternative would not disrupt the natural function of the ecosystem in the Park/Preserve. Fire is a common occurrence in this ecosystem and does result in some erosion, affecting water quality and fisheries habitat. The erosion is expected to continue at the same natural levels.

Conclusion: Long term impacts to water quality and fisheries are not expected. Short-term negligible impacts of increased sedimentation may occur initially after the fire and prior to reestablishment of vegetation. The level of impacts to water quality and fisheries anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural or cultural integrity of the park.

Wilderness Character

The impacts would be similar to Alternative 1 with the addition of the occasional use of prescribed fire that would allow a relatively cost-effective means of reducing fuel loads where the presence of values to be protected prohibits the implementation of wildland fire use.

Much of Gates of the Arctic is designated wilderness. The wilderness character of the area reflects natural conditions and a vast undeveloped arctic landscape untrammled by humans. There are no human caused trails or modern structures on designated wilderness lands. A sense of solitude and distance from modern civilization and its modifications of the natural world dominate the recreational experience. Under this alternative natural fire would be allowed to continue and will not result in an impairment of the stated park purpose or any resources or values.

Conclusion: Long term impacts to wilderness character are not expected. Short-term impacts during fire suppression activities may occur but will be mitigated by using minimum tool/minimum requirement analysis. The level of impacts to wilderness character anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or are key to the natural integrity of the park.

Alternative 2 Cumulative Impacts: The on-going and future activity that would have a cumulative effect on resources of concern within and outside of the Park and Preserve's boundaries analyzed in this Environmental Assessment is the adjacent landowners' fire management plans. All public land management agencies in Alaska are signatories of the Alaska Interagency Fire Management Plan, which allows for fire to burn on the landscape in limited suppression units. Much of the public lands surrounding the Park and Preserve is in a limited suppression unit and may result in multiple large fires. The results of these multiple fires may be greater than fires managed just within the Park and Preserve boundary.

B. Cumulative Impact Mitigation

Potential cumulative impacts can be mitigated by the convening of a Multi-Agency Coordinating (MAC) group. As directed in the Alaska Interagency Fire Management Plan, "A statewide Multi-Agency Coordinating (MAC) group may be convened to implement a temporary change from the selected management options for a specific geographic area(s) during periods of unusual fire conditions (e.g., numerous fires, predicted drying trends, smoke problems, unusually wet conditions or suppression resource shortages)."

C. IMPACTS OF ALTERNATIVES SUMMARY

	Alternative 1: Wildland Fire Use and Wildland Fire Suppression	Alternative 2 (Preferred): Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression
Vegetation and Bio- diversity	Minimal impact: continued potential for minimal loss of diversity through fire exclusion in or near Critical and Full Protection Units and sites.	Least impact: maximum potential for diversity through careful implementation of prescribed fire in areas ill-suited to wildland fire use.
Cultural Resources	Minimal impact: Increased potential for uncontrolled fire due to increased fuels through fire exclusion in or near Critical and Full Protection Units and sites.	Improved long-term protection of registered and unregistered historic and/or archeological sites; improved maintenance of historical landscapes and conditions.
Aesthetics and Recreation	Minimal impact: occasional closures of specific areas; vegetation burned may decrease aesthetics.	Minimal impact: occasional closures of specific areas; vegetation burned may decrease aesthetics.
Local Economy	Minimal impact	Minimal impact
Wetlands and Floodplains	Minimal impact: may be some erosion until vegetation returns.	Minimal impact; may be some erosion until vegetation returns.
Subsistence Use and Wildlife Habitat	No long-term impact; some potential for short-term displacement of game from specific areas.	No long-term impact; some potential for short-term displacement of game from specific areas.
Water Quality and Fisheries	No long-term impact; some short-term erosion.	No long-term impact; some short-term erosion.
Air Quality	Minimal impact.	Minimal impact.
Wilderness Character	No long-term impact; some short-term impact from fire suppression activities.	No long-term impact; some short-term impact from fire suppression activities.

V. COORDINATION AND CONSULTATION

Brad Cella, Fire Management Officer, Alaska Region, National Park Service

Marsha Henderson, Area Fire Management Officer, Gates of the Arctic National Park and Preserve, Yukon-Charley Rivers National Preserve, and Wrangell-St. Elias National Park and Preserve

LITERATURE CITED

Alaska Interagency Fire Management Council. 1984. Alaska Interagency Fire Management Plan, Kobuk Planning Area.

Alaska Wildland Fire Coordinating Group. 1998. Alaska Interagency Wildland Fire Management Plan.

National Park Service. 2002. Director's Order 18: Fire Management.

National Park Service. 1994. Resource Management Plan, Gates of the Arctic National Park and Preserve.

PREPARER

Janet Hobby, Forestry Technician, Gates of the Arctic National Park and Preserve

APPENDIX C.2

ANILCA Title VIII Section 810 (a) Summary Evaluation and Findings

INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence activities that could result from the implementation of the proposed fire management plan and the actions described therein.

EVALUATION PROCESS

Section 810(a) of ANILCA states:

In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands...the head of the federal agency...over such lands...shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease, permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be affected until the head of such Federal agency—

- (1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805;
- (2) gives notice of, and holds, a hearing in the vicinity of the area involved;
and
- (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

ANILCA created new units and additions to existing units of the national park system in Alaska. Gates of the Arctic National Park and Preserve was created by ANILCA Section 201[4] in order to “maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features; to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and to other wilderness recreations activities; and to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial

birds.” The act also states “subsistence uses by local residents shall be permitted in the park where such uses are traditional, in accordance with the provisions of title VIII.”

The potential for significant restriction to subsistence resources must be evaluated for the proposed action’s effect upon subsistence uses and needs, the availability of other lands for the purposes sought to be achieved and other alternatives which would reduce or eliminate them.

PROPOSED ACTION ON FEDERAL LANDS

The National Park Service requires every administrative unit with burnable vegetation to develop a fire management plan—a unit-specific document outlining fire management goals and describing the policies and actions by which these goals will be realized (Director’s Order 18). Since 1983, the Park/Preserve’s fire management program has operated under the jurisdiction of various statewide interagency documents, including the **Alaska Interagency Wildland Fire Management Plan**, or **AIWFMP** (1998). Under the AIWFMP, fire protection needs at Gates of the Arctic are determined by NPS and Bureau of Land Management (BLM) managers; lands within the Park/Preserve are categorized as **critical**, **full**, **modified**, or **limited** protection, depending on the proximity of values to be protected and on overall resource management objectives.

The proposed action consists of the establishment of a Fire Management Plan for Gates of the Arctic National Park and Preserve. The preferred alternative and the other considered alternatives (see Appendix C1, Environmental Assessment, this document) specify continued adherence to the AIWFMP as well as compliance with recently developed National Park Service directives. Specifically, NPS Director’s Order 18 mandates a distinction between **prescribed fire** (planned and implemented by management) and **wildland fire** (unplanned ignitions), with wildland fire incidents further categorized, in turn, as either wildland **fire use** or wildland fire **suppression**. Each of the considered alternatives mandates a specific configuration of DO-18 management options and relates these options to the policies and procedures outlined in the AIWFMP.

The preferred alternative allows for the continued management of wildland fire at Gates of the Arctic National Park and Preserve through a combination of wildland fire suppression, wildland fire use, and prescribed fire use. This statement of Summary Evaluations and Findings addresses the impact of these fire management policies and actions on subsistence activities within the Preserve.

AFFECTED ENVIRONMENT

As mandated by ANILCA section 1313, the “preserve” portion of GAAR will be managed so as to allow for subsistence trapping as well as hunting and fishing for either sport or subsistence under applicable state and federal regulations. “Park” designated lands allow for subsistence trapping and hunting only, available to residents of the resident zone communities around or within Gates of the Arctic (See Subsistence Management Plan, 2000 Appendix B for descriptions of Resident Zone Communities). Subsistence activities occur throughout the year and are usually concentrated in the northern and eastern portions of the park or along.

Residents from eleven local communities have exclusive use of the parklands for subsistence use (See Subsistence Management Plan, Appendix B). Winter trapping efforts concentrate on the harvest of lynx, wolverine, wolves, marten and fox. Caribou, moose, sheep and several species of fish make up major portions of the subsistence diet. Hunting, fishing, trapping and gathering in repeated seasonal cycles remains a vital part of the evolving subsistence lifeways of local residents in this region and an unbroken link to the past. Many factors including disruption of the natural fire regime, air or water pollution, mineral development, or an increase in human populations may significantly impact the timing and nature of traditional subsistence activities.

The majority of GAAR lies within the Limited Protection Fire Management Unit. Under the proposed action, wildland fire ignitions occurring within this unit would be managed for the accomplishment of resource management goals, including the preservation of the natural fire regime, and the perpetuation, in turn, of healthy and biologically diverse plant communities and fish and game habitat.

SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources that could be impacted.

The evaluation criteria are:

- the potential to reduce important subsistence fish and wildlife populations by (a) reductions in numbers, (b) redistribution of subsistence resources, or (c) habitat losses;
- the effect the action might have on subsistence fisherman or hunter access; and
- the potential for the action to increase fisherman or hunter competition for subsistence resources.

Potential to Reduce Populations:

The National Park Service has generally found populations of plants and animals important to subsistence activities to be healthy. Because site-specific information on population, distribution, and harvest is lacking for many of these species, however, recognition of declining populations has been difficult.

The GAAR Resource Management Plan (1994) identifies several potential threats to the continuation of traditional and customary subsistence lifestyles, including, specifically, any activity that impairs the overall health of the ecosystem through the disruption of the natural fire regime. The actions that would be implemented under the preferred alternative would be aimed directly at the safe and cost-effective preservation of the area's natural fire ecology. As such, GAAR enactment of the preferred alternative would have a beneficial effect on the long-term viability of plant and animal populations pertinent to subsistence use within the Park/Preserve. The occasional displacement of plant and animal populations from specific locales by wildland

fire is a natural and inevitable occurrence within the fire-dependent ecosystems of the Gates of the Arctic area. Although current populations may experience some adverse effects, usually those effects are greatly offset by the benefits accrued to future generations of populations.

Under the proposed action, potential losses to subsistence users could be mitigated through the consideration of hunting and trapping activities by land managers in the planning and implementation of wildland fire use and prescribed fire incidents. There are a few users who have permits for the use of public structures within the Preserve. These structures are protected under Critical Suppression as noted in the accompanying Fire Management Plan (FMP, Section XVI Protection of Sensitive Resources). In the event of loss of or damage to this structure, the Superintendent of the Preserve may permit reconstruction of this structure. The long-term benefits of fire to the wildlife habitats of GAAR outweigh any short-term losses by subsistence users and, therefore, will not be the sole reason for suppressing a wildland fire. However, subsistence use is an important factor in the determination of prescribed fire within the Park/Preserve.

Restriction of Access:

Occasional restriction of access to local areas by subsistence users because of fire behavior and/or fire management practices is inevitable as a result of public safety issues. Under the proposed action, such restrictions would be minimized in the future through the reduced possibility of widespread, catastrophic fire.

Increase in Competition:

The enactment of the preferred alternative would not significantly increase competition for the use of subsistence resources. Displacement of plant and animal populations from specific sites would be short-term, and, in fact, in most cases the long-term viability of the populations in question depends directly on the natural processes that the proposed plan is intended to safely perpetuate.

AVAILABILITY OF OTHER LANDS

As stated earlier, wildland fire is an inevitable component of the plant and animal communities of the Park/Preserve area. Consequently, the availability of other lands is not a pertinent consideration in this particular case.

With respect to the question of subsistence use, the scope and intensity of wildland fire incidents managed for resource benefit (i.e., fire use incidents) will generally be of small significance when considered within the context of overall available acreage. Prescribed fires will be planned and managed so as to avoid any significant hardship to subsistence users.

ALTERNATIVES CONSIDERED

This section discusses the considered alternatives with respect to their respective reduction or elimination of the need to use public lands necessary for subsistence purposes. Alternative one (a

combination of prescribed fire use and wildland fire suppression) would perhaps result in the least short-term disruption of subsistence activities, with suppression responses preventing the spread of many wildland fire ignitions. The long-term impacts of this alternative, however, would be negative, with the exclusion of wildland fire leading to the gradual decline of biodiversity and viable habitat throughout all areas within the Park/Preserve utilized by subsistence hunters and trappers.

Alternative two (a combination of wildland fire use and wildland fire suppression) would not significantly differ from the preferred alternative with respect to the reduction or elimination of the need to use public lands for the accomplishment of fire management goals.

The preferred alternative (a combination of wildland fire use, wildland fire suppression, and prescribed fire use) would yield the same favorable long-term effects on lands used for subsistence activities as alternative two, while allowing more effective protection and restoration of significant fire-sensitive sites and/or landscapes.

FINDINGS

This analysis concludes that the proposed action will not result in a significant restriction of subsistence uses.

APPENDIX D.1

Interagency Contacts

Alaska Interagency Coordination Center:

Center Manager Dave Curry 356-5677

Initial Attack Coordinator Bob Dickerson 356-5670

Tanana Fire Management Zone:

Fire Management Officer Ed Strong 356-5570

Assistant FMO Dave Jandt 356-5562

Fuels Management Spec. Dave Whitmer 356-5574

Upper Yukon-Tanana Zone Dispatch Corey Doolin 356-5555

Galena Fire Management Zone:

Fire Management Officer Ken Coe 356-5623

Assistant FMO Marlene Eno 356-5626

Fuels Management Spec. 356-5627

Galena Zone Dispatch 356-5629

National Park Service:

Fire Management Officer,
Alaska Region Brad Cella 257-2643

Fire Management Officer,
Denali National Park Dan Warthin 683-9548

APPENDIX D.2

Descriptions of FMU Boundaries

Critical

Only one unit within the boundaries of Gates of the Arctic is designated as critical. This unit is a privately owned 73-acre parcel located in the north of Gates of the Arctic and surrounds the village of Anaktuvuk Pass.

Full

The majority of the Full Protection FMU (14,152 acres) is a section surrounding the Anaktuvuk Pass area. The eastern boundary of this full protection unit begins on the Anaktuvuk River from north to south starting approximately 5 miles northeast of the village. The boundary leaves the river when the Anaktuvuk turns from westbound to northbound in the broad glacial valley. The boundary then climbs from the valley floor to 3,000 feet and contours the mountains just southeast of town on both sides of the Inukpasugruk Creek. At the base of Kollutuk Mountain, approximately 3 ½ miles south of the village, the boundary bends sharply at an unnamed creek and crosses the John River valley from southeast to northwest. Once hitting the 3,000-foot mark on the opposite side of the valley the boundary heads northeast following the contour briefly before dropping into Contact Creek. From this point the boundary climbs again this time to only 2,500 feet and follows this contour until approximately ¾ mile past Kongumavik Creek. There the boundary heads due east to meet its starting point along the Anaktuvuk River. A small section (700 acres) of full protection also exists on the eastern boundary. Just over the boundary from the town of Wiseman, two slivers of Full Protection Management Units enter the park, one just northeast of snowshoe creek and the other just south of Pasco creek. Over fifty native allotments within the Park/Preserve have been designated as full protection sites (5,554 acres).

Modified

The Modified Protection FMU (approximately 52,557 acres) includes two portions located in the southeast and southwest corners of the Park/Preserve. The southwest Modified protection boundary enters the park from the south along the Selby River. The boundary follows the river upstream to Selby Lake and crosses the lower ¼ of the lake from southeast to northwest. There it meets the unnamed creek inlet to Selby Lake on the west shore. The boundary follows that inlet into the mountains to its source and continues on a similar trajectory out of the park management boundary near Coal Pass. The southeastern Modified protection unit enters the park roughly 25 miles up the middle fork of the Koyukuk River from Bettles/Evansville. The unit follows a topographically random route northbound past two small, unnamed lakes at the 1049-foot elevation mark. From there the unit heads northwest to the wetlands of the North Fork of the Koyukuk and finds a definite point at the confluence of Florence Creek and the North Fork. From here out the Modified protection unit meanders with Florence Creek nearly to its headwaters before jogging west out of the park's jurisdictional boundary.

Limited

The Limited Protection FMU (approximately 8,399,809 acres) includes all GAAR holdings not contained within the Critical, Full or Modified FMUs.

APPENDIX E

Wildland Fire Implementation Plan

Fire Name	
Fire Number	

<i>Documentation Product</i>	<i>Product Needed</i>	<i>Product Completed</i>
WFIP - Stage I: Initial Fire Assessment		
Fire Situation	<input type="checkbox"/>	<input type="checkbox"/>
Initial GO/NO-GO Decision	<input type="checkbox"/>	<input type="checkbox"/>
WFIP - Stage II: Short-Term Implementation Actions		
Short-Term Fire Behavior Predictions And Risk Assessment	<input type="checkbox"/>	<input type="checkbox"/>
Short-term Implementation Actions	<input type="checkbox"/>	<input type="checkbox"/>
Complexity Analysis	<input type="checkbox"/>	<input type="checkbox"/>
Stage III Need Assessment Chart	<input type="checkbox"/>	<input type="checkbox"/>
WFIP - Stage III: Long-Term Implementation Actions		
Periodic Fire Assessment		
Part 1, Re-validation	<input type="checkbox"/>	<input type="checkbox"/>
Part 2, Stage III Need Assessment	<input type="checkbox"/>	<input type="checkbox"/>
Wildland Fire Situation Analysis	<input type="checkbox"/>	<input type="checkbox"/>

**Fuel Model/
Conditions**

--

Weather:

Current

--

Predicted

--

Fire Behavior:

Current

--

Predicted

--

**Availability of
Resources**

--

DECISION CRITERIA CHECKLIST

Decision Element:

Is there a threat to life, property, or resources that cannot be mitigated?

Are potential effects on cultural and natural resources outside the range of acceptable effects?

Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?

Is there other proximate fire activity that limits or precludes successful management of this fire?

Are there other Agency Administrator issues that preclude wildland fire use?

<i>Yes</i>	<i>No</i>

The Decision Criteria Checklist is a process to assess whether or not the situation warrants continued wildland fire use implementation. A “Yes” response to any element on the checklist indicates that the appropriate management response should be suppression-oriented.

Recommended Response Action (check appropriate box)	NO-GO (Initial attack/suppression action)	
	GO (Other appropriate management response)	

Signature _____ Date _____

APPENDIX E.2

Stage II Short-Term Implementation Action

Attach Stage I information.

Action Items
Objectives and Desired
Effects

<i>Information specific to this fire</i>

Safety Considerations

--

External Concerns

--

Environmental Concerns

--

Threats

--

Short-Term Actions
(describe)

--

Estimated Costs

--

Signature

--

Title/date

--

Wildland and Prescribed Fire Complexity Rating Worksheet Numeric Rating Guide

Complexity Element	GUIDE TO NUMERIC RATING		
	1	3	5
Safety	Safety issues are easily identifiable and mitigated	<ul style="list-style-type: none"> • Number of significant issues have been identified • All safety hazards have been identified on the LCES worksheet and mitigated 	<ul style="list-style-type: none"> • SOF1 or SOF2 required • Complex safety issues exist
Threats to Boundaries	<ul style="list-style-type: none"> • Low threat to boundaries • POI<50% • Boundaries naturally defensible 	<ul style="list-style-type: none"> • Moderate threat to boundaries • 50<POI<70% • Moderate risk of slopover or spot fires • Boundaries need mitigation actions for support to strengthen fuel breaks, lines, etc. 	<ul style="list-style-type: none"> • High threat to boundaries • POI>70% • High risk of slopover or spot fires • Mitigation actions necessary to compensate for continuous fuels
Fuels/Fire Behavior	<p>Low variability in slope & aspect Weather uniform and predictable Surface fuels (grass, needles) only Grass/shrub, or early seral forest communities Short duration fire No drought indicated</p>	<p>Moderate variability in slope & aspect Weather variable but predictable Ladder fuels and torching Fuel types/loads variable Dense, tall shrub or mid-seral forest communities Moderate duration fire Drought index indicates normal conditions to moderate drought; expected to worsen</p>	<p>High variability in slope & aspect Weather variable and difficult to predict Extreme fire behavior Fuel types/loads highly variable Late seral forest communities or long-return interval fire regimes Altered fire regime, hazardous fuel /stand density conditions Potentially long duration fire Drought index indicates severe drought; expected to continue</p>

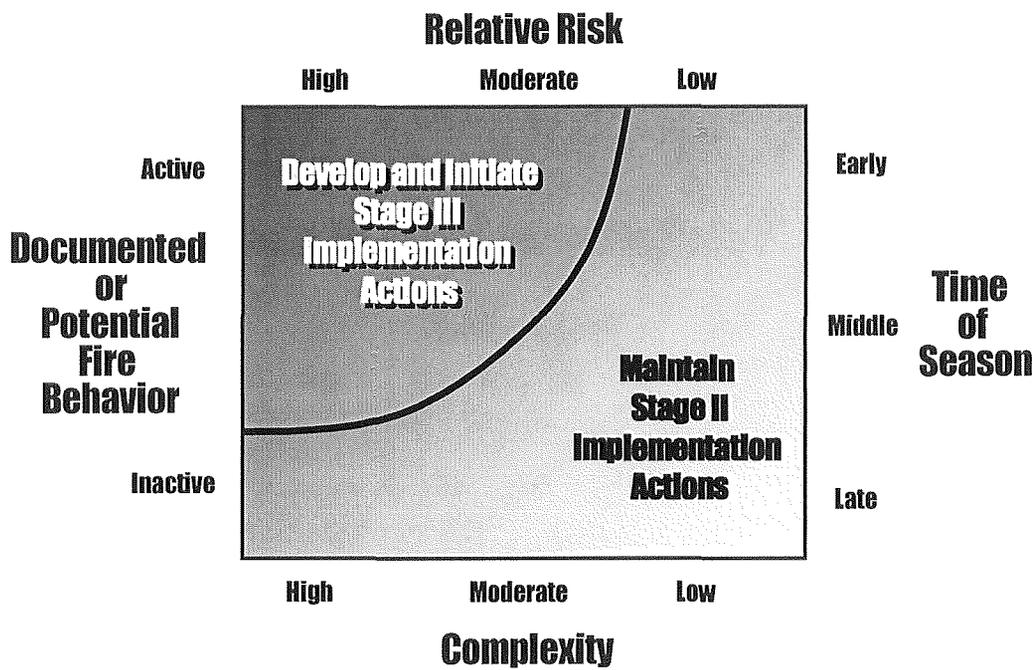
Complexity Element	GUIDE TO NUMERIC RATING		
	1	3	5
Objectives	Maintenance objectives Prescriptions broad Easily achieved objectives	Restoration objectives Reduction of both live and dead fuels Moderate to substantial changes in two or more strata of vegetation Objectives judged to be moderately hard to achieve Objectives may require moderately intense fire behavior	Restoration objectives in altered fuel situations Precise treatment of fuels and multiple ecological objectives Major change in the structure of 2 or more vegetative strata Conflicts between objectives and constraints Requires a high intensity fire or a combination of fire intensities that is difficult to achieve
Management Organization	Span of control held to 3 Single resource incident or project	Span of control held to 4 Multiple resource incident or project Short-term commitment of specialized resources	Span of control greater than 4 Multiple branch, divisions or groups Specialized resources needed to accomplish objectives Organized management team (FUMT, IMT)
Improvements to be Protected	No risk to people or property within or adjacent to fire	Several values to be protected Mitigation through planning and/or preparations is adequate May require some commitment of specialized resources	Numerous values and/or high values to be protected Severe damage likely without significant commitment of specialized resources with appropriate skill levels
Natural, Cultural, and Social Values to be Protected	No risk to natural, cultural, and/or social resources within or adjacent to fire	Several values to be protected Mitigation through planning and/or preparations is adequate May require some commitment of specialized resources	Numerous values and/or high values to be protected Severe damage likely without significant commitment of specialized resources with appropriate skill levels

Complexity Element	GUIDE TO NUMERIC RATING		
	1	3	5
Air Quality Values to be Protected	Few smoke sensitive areas near fire Smoke produced for less than 1 burning period Air quality agencies generally require only initial notification and/or permitting No potential for scheduling conflicts with cooperators	Multiple smoke sensitive areas, but smoke impact mitigated in plan Smoke produced for 2-4 burning periods Daily burning bans are sometimes enacted during the burn season Infrequent consultation with air quality agencies is needed Low potential for scheduling conflicts with cooperators	Multiple smoke sensitive areas with complex mitigation actions required Health or visibility complaints likely Smoke produced for greater than 4 burning periods Multi-day burning bans are often enacted during the burn season Smoke sensitive class 1 airsheds Violation of state and federal health standards possible Frequent consultation with air quality agencies is needed High potential for scheduling conflicts with cooperators
Logistics	Easy access Duration of fire support is less than 4 days	Difficult access Duration of fire support between 4 and 10 days Logistical position assigned Anticipated difficulty in obtaining resources	No vehicle access Duration of support is greater than 10 days Multiple logistical positions assigned Remote camps and support necessary
Political Concerns	No impact on neighbors or visitors No controversy No media interest	Some impact on neighbors or visitors Some controversy, but mitigated Press release issued, but no media activity during operations	High impact on neighbors or visitors High internal or external interest and concern Media present during operations

Complexity Element	GUIDE TO NUMERIC RATING		
	1	3	5
Tactical Operations	No ignition or simple ignition patterns Single ignition method used Holding requirements minimal	Multiple firing methods and/or sequences Use of specialized ignition methods (i.e. terra-torch, Premo Mark III) Resources required for up to one week Holding actions to check, direct, or delay fire spread	Complex firing patterns highly dependent upon local conditions Simultaneous use of multiple firing methods and/or sequences Simultaneous ground and aerial ignition Use of heli-torch Resources required for over 1 week Multiple mitigation actions at variable temporal and spatial points identified. Success of actions critical to accomplishment of objectives Aerial support for mitigation actions desirable/necessary
Interagency Coordination	Cooperators not involved in operations No concerns	Simple joint-jurisdiction fires Some competition for resources Some concerns	Complex multi-jurisdictional fires High competition for resources High concerns

Stage III Need Assessment Chart

Stage III Need Assessment Chart



To obtain the need indication, connect the top and bottom variables with a single line and then connect the left and right variables with a single line. Where the line crosses indicates the need for WFIP Stage III. The appropriate need is read directly off the chart.

APPENDIX E.3

Stage III: Long-Term Implementation Actions

Attach Stage I and Stage II information. Update and/or revise Stage I and II as necessary.

Objectives and Risk Assessment Considerations

Natural and Cultural
Resource Objectives and
Constraints/ Considerations

--

Maximum Manageable Area (MMA)

Acres in MMA:

--

Attach Map of MMA

Fire Projections, Weather, and Map

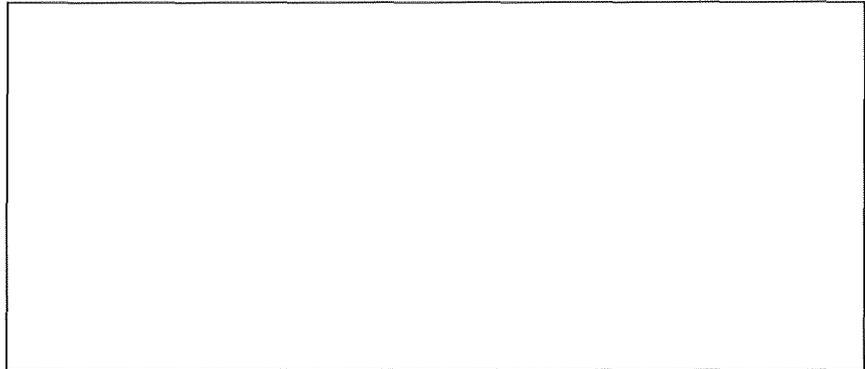
Projected Fire Area Under Expected Weather Conditions

For date:
Area:

Projected Fire Area Under Experienced Severe Weather
Conditions

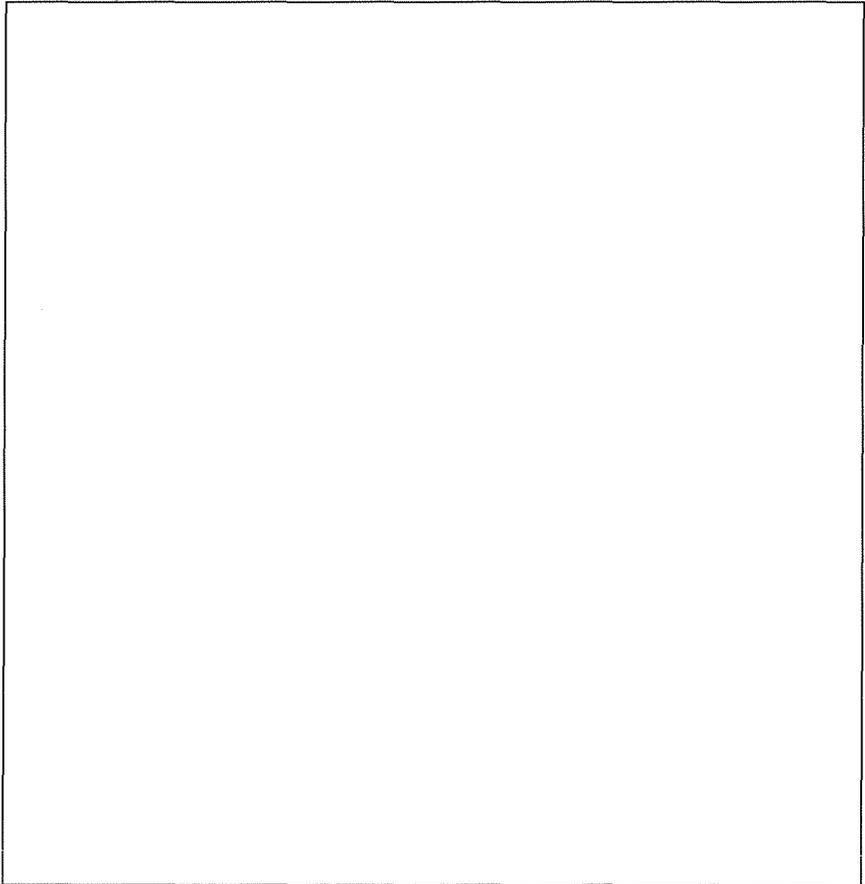
For date:
Area:

Weather Season/Drought:
Discussion and Prognosis



Long-Term Risk Assessment and Map (if applicable)

Risk Assessment (Describe
techniques utilized and
outputs, include maps as
appropriate)



Probability of Success
Describe Probability of
Success



Threats

Threats to MMA

--

Threats to Public Use and
Firefighter Safety

--

Smoke Dispersion and
Effects

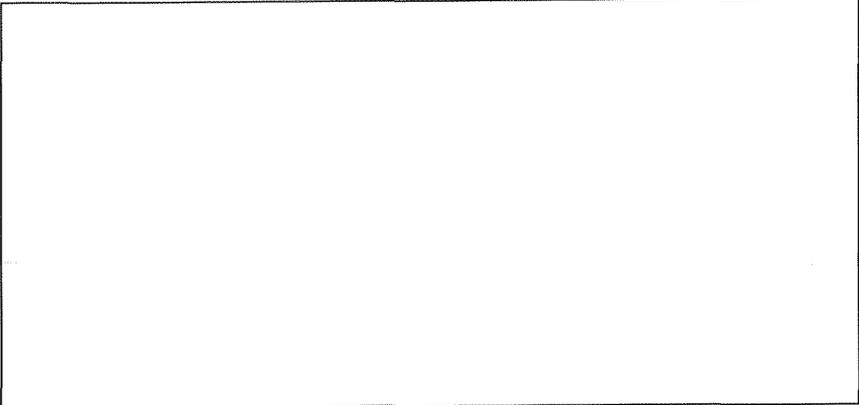
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Other

--

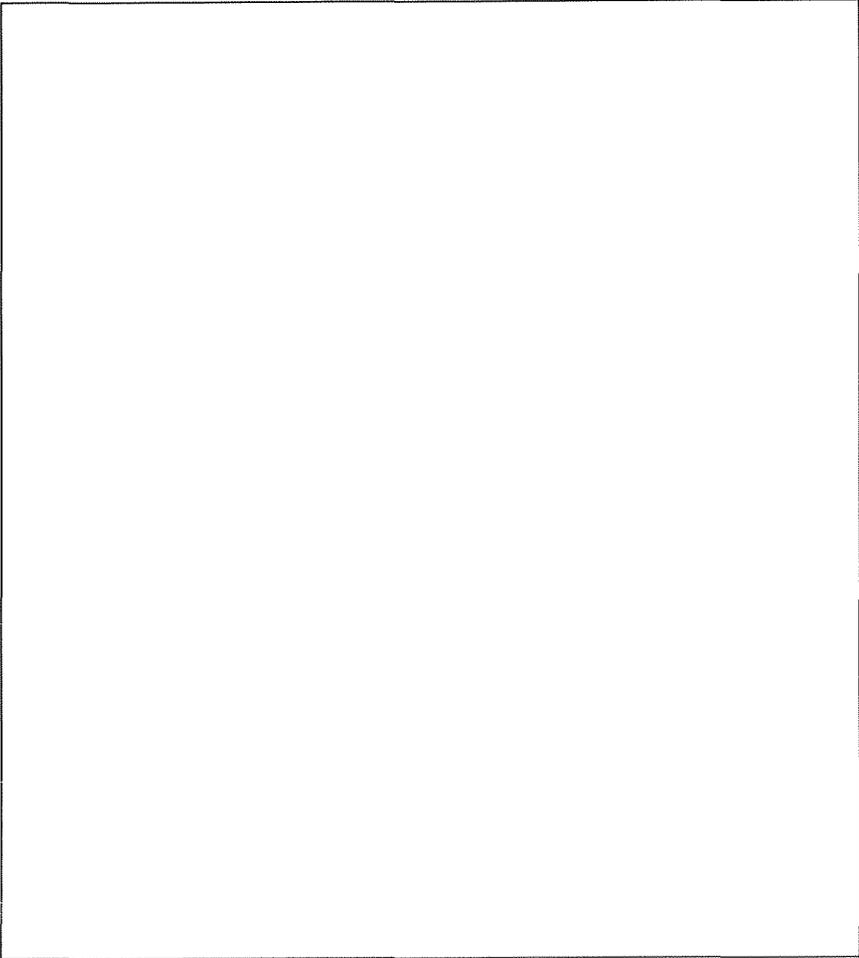
Monitoring Actions

Describe Monitoring
Actions, Frequency, Duration

A large, empty rectangular box with a thin black border, intended for describing monitoring actions, frequency, and duration.

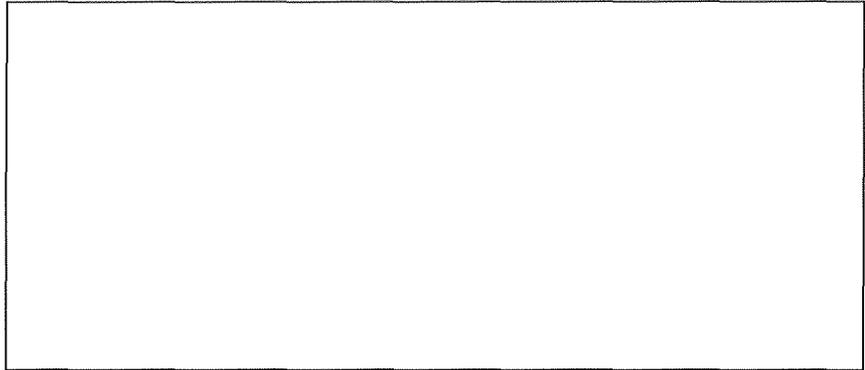
Holding Actions

Describe Holding Actions,
Management Action Points
that initiate these actions, and
Key to Map if necessary

A large, empty rectangular box with a thin black border, intended for describing holding actions, management action points, and keys to maps.

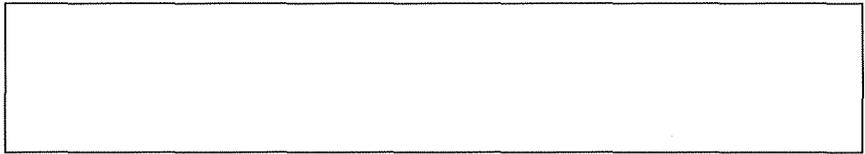
Resources Needed to Manage the Fire

Describe resources necessary to accomplish ignition, holding, and monitoring actions



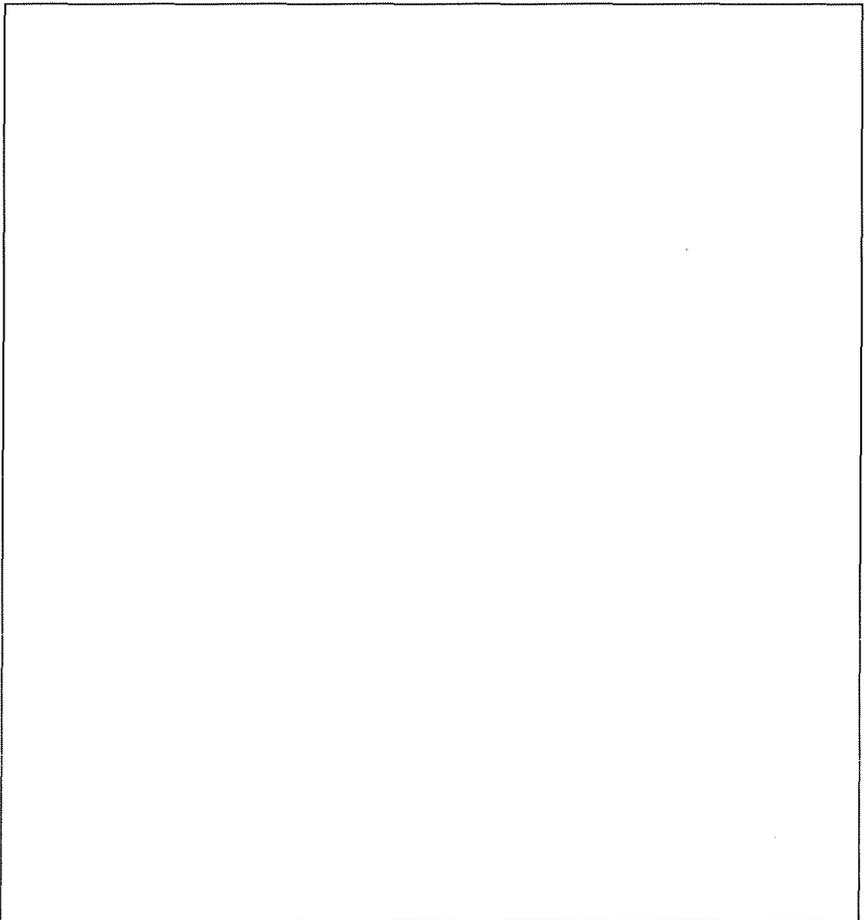
Estimated Costs of Managing the Fire

Describes costs in terms of resources needed, projected duration, etc.



Contingency Actions

Describe Contingency actions, management action points that initiate them, resources needed, etc.



Information Plan

Describe Information Plan,
Contacts, Responsibilities,
etc.

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Post-burn Evaluation

Describe post-burn
evaluation procedures,
resource requirements, costs,
duration, etc.

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Signatures

Include signatures/titles/
dates for preparing,
approving, and any
concurring individuals

PERIODIC FIRE ASSESSMENT, INSTRUCTIONS

The Periodic Fire Assessment is a process to prevent the unchecked escalation of an individual fire situation or the total fire management situation without evaluation and adequate planning. Part 1 evaluates the capability to continue implementation of the appropriate management response to this fire for achieving resource benefits for a specified period following the assessment i.e., the next 24 hour period or longer, depending upon fire weather and fire behavior forecasts or other anticipated conditions. This assessment will be completed and periodically reviewed for validity. The "assessment frequency" box on page 1 specifies the frequency of assessing the particular fire. Assessment frequencies will be set by the local unit but are recommended to range from every day to every ten (10) days depending on the fuel type and geographic location of the fire. Recommendations for minimum assessment frequency include the following: Grass fuel types = daily; shrub and timber fuel types = every 1 – 5 days; Alaska = every 1 – 10 days.

The "valid date(s)" box is inclusive of those dates where the assessment remains valid, as indicated by the dated signature. When any decision elements change from "No" to "Yes", a new checklist must be completed for documentation purposes. A "Yes" response to any element on the Part 1 checklist indicates that the selected appropriate management response is not accomplishing or will not accomplish desired objectives and that a new strategic alternative should be developed immediately through the use of a Wildland Fire Situation Analysis (WFSA).

The Periodic Fire Assessment, Part 2 is a process that must be completed periodically for all wildland fires managed for resource benefits that do not have a completed WFIP Stage III. For isolated ignitions in fuel-limited situations, Part 2 does not have to be completed. When completing Part 2 of this checklist, if the chart indicates that WFIP Stage III is needed, it must be prepared within 24 hours.

When units establish monitoring and assessment frequency, it may be appropriate to develop a "step-up" system based on fire size or levels of fire activity. Then, as an individual fire gets larger or becomes more active, the monitoring and assessment frequency can correspondingly increase. Conversely, as fire activity lessens and fire size increases become less common, monitoring and assessment can "step-down" and become less frequent. Units must identify standards and rationale for establishing assessment frequency, especially "step-up" and "step-down" actions. If fire size is used as a determinant, then past burning rates should be used to formulate standards. If fire activity is used, then levels of burning (acres per day, etc.) must be definable and justifiable.

The Agency Administrator or delegated individual must sign the Signature Page on the specified assessment frequency.

**PERIODIC FIRE ASSESSMENT
PART 1: RE-VALIDATION CHECKLIST**

Decision Element

Is there a threat to life, property, or resources that cannot be mitigated?

Are potential effects on cultural and natural resources outside the range of acceptable effects?

Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?

Is there other proximate fire activity that limits or precludes successful management of this fire?

Are there other Agency Administrator issues that preclude wildland fire use?

Do expected management needs for this fire exceed known capabilities?

<i>Yes</i>	<i>No</i>

PERIODIC FIRE ASSESSMENT
PART 2: STAGE III NEED ASSESSMENT CHART

Stage III Need Assessment Chart

