

Appendix C

ENVIRONMENTAL ASSESSMENT
FIRE MANAGEMENT PLAN
FOR
YUKON-CHARLEY RIVERS NATIONAL PRESERVE

PREPARED BY
NATIONAL PARK SERVICE
YUKON-CHARLEY RIVERS NATIONAL PRESERVE

February 8, 2000

Finding of No Significant Impact
Fire Management Plan
Yukon-Charley Rivers National Preserve

The National Park Service has prepared an environmental assessment for the proposed enactment of a fire management plan for Yukon-Charley Rivers National Preserve. Under recently implemented National Park Service guidelines, each park service unit with burnable vegetation will produce a fire management plan outlining its wildland fire management policies and strategies (Director's Order 18). The array of acceptable management strategies for park service units includes wildland fire suppression, wildland fire use for resource benefit, and prescribed fire implementation, as determined by criteria pre-specified in the fire management plan.

A public review was conducted for the proposed plan from February 14 through April 14, 2000 comments were received expressing concerns about effects of the Fire Management Plan on fire management strategies. These concerns were addressed by reiterating that the Fire Management Plan in no way changes fire management strategies currently outlined by the Alaska Interagency Fire Management Plan.

The National Park Service considered three alternatives in the development of the proposed fire management plan:

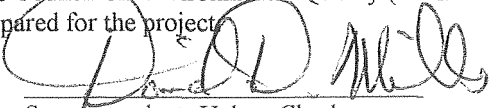
- Alternative One: Combination of wildland fire suppression and prescribed fire use.
- Alternative Two: Combination of wildland fire suppression and wildland fire use.
- Alternative Three: Combination of wildland fire suppression, wildland fire use, and prescribed fire (preferred alternative).

The National Park Service has determined the proposed action can be implemented with no significant adverse effect to natural and cultural resources as documented by the environmental assessment. The combination of wildland fire suppression, wildland fire use, and prescribed fire implementation will allow fire managers sufficient flexibility to preserve fire in its natural role within the Preserve's ecosystem while at the same time ensuring the protection of life, property, and sensitive cultural and natural resources. Through the predominate application of wildland fire use and the appropriate, site-specific application of wildland fire suppression and prescribed fire the risk of catastrophic, uncontrollable fire behavior will be lessened, the accumulation of combustible vegetation will be within the acceptable range of natural variability for fire dependent ecosystems, the health of fire-dependent plant communities and animal habitat will be preserved, and the impact of fire and fire management activities upon subsistence use and other activities will be more effectively mitigated.

There will be no significant restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

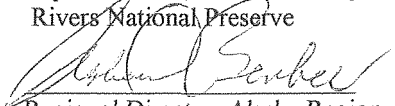
I find that the proposed action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and the regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared for the project.

Recommended:


Superintendent, Yukon-Charley
Rivers National Preserve

7/18/00
Date

Approved:


Regional Director, Alaska Region

9/29/00
Date

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ENVIRONMENTAL ASSESSMENT

Fire Management Plan for Yukon-Charley Rivers National Preserve

I. INTRODUCTION

A. PURPOSE AND NEED

The National Park Service proposes implementing National Park Service Director's Order 18 (1998) by establishing a fire management plan for Yukon-Charley Rivers National Preserve. This fire management plan is a comprehensive document and outlines Yukon-Charley Rivers

National Preserve 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 Yukon-Charley Rivers National Preserve will remain status quo and the on-the-ground application of the fire management strategies will continue as in the past.

This plan is necessary for the management of wildland fire at Yukon-Charley Rivers National Preserve which is potentially complex. Fire poses a potential threat to life and property as well as cultural and historic resources in and around the Preserve. At the same time, however, 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 proposed action and other considered alternatives entails 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 which could result from implementing the Yukon-Charley Rivers National 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 determine whether preparation of an environmental impact statement is required.

B. BACKGROUND

In 1983 the National Park Service cooperated with Bureau of Land Management, Alaska Department of Natural Resources, Alaska Department of Fish and Game, US Forest Service, US Fish and Wildlife Service, Bureau of Indian Affairs, and Native Regional and Village Corporations to produce an Interagency Fire Management Plan for the Fortymile Planning Area. This plan provided direction for fire management activity in Yukon-Charley Rivers National Preserve until 1998, when a variety of documents, including 13 local planning area Fire Management Plans (FMP) of which the Fortymile Plan was one, 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 Figure 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 2 for map of Preserve units).

Protection Category	Intent	Policy
Critical	• Prioritization of suppression actions for wildland fires threatening human life, inhabited property, and/or other designated structures. • Complete protection of designated sites.	• Aggressive suppression of fires within or threatening designated areas. • Highest priority for available resources.
Full	• Protection of uninhabited cultural and historical sites, private property, and high-value natural resources.	• Aggressive suppression of fires within or threatening designated areas, depending upon availability of resources.
Modified	• 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.	• 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.
Limited	• 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	• Wildland fires allowed to burn within predetermined areas. • Continued protection of human life and site-specific values. • Surveillance.

Figure 1: Alaska Interagency Wildland Fire Management Plan Options

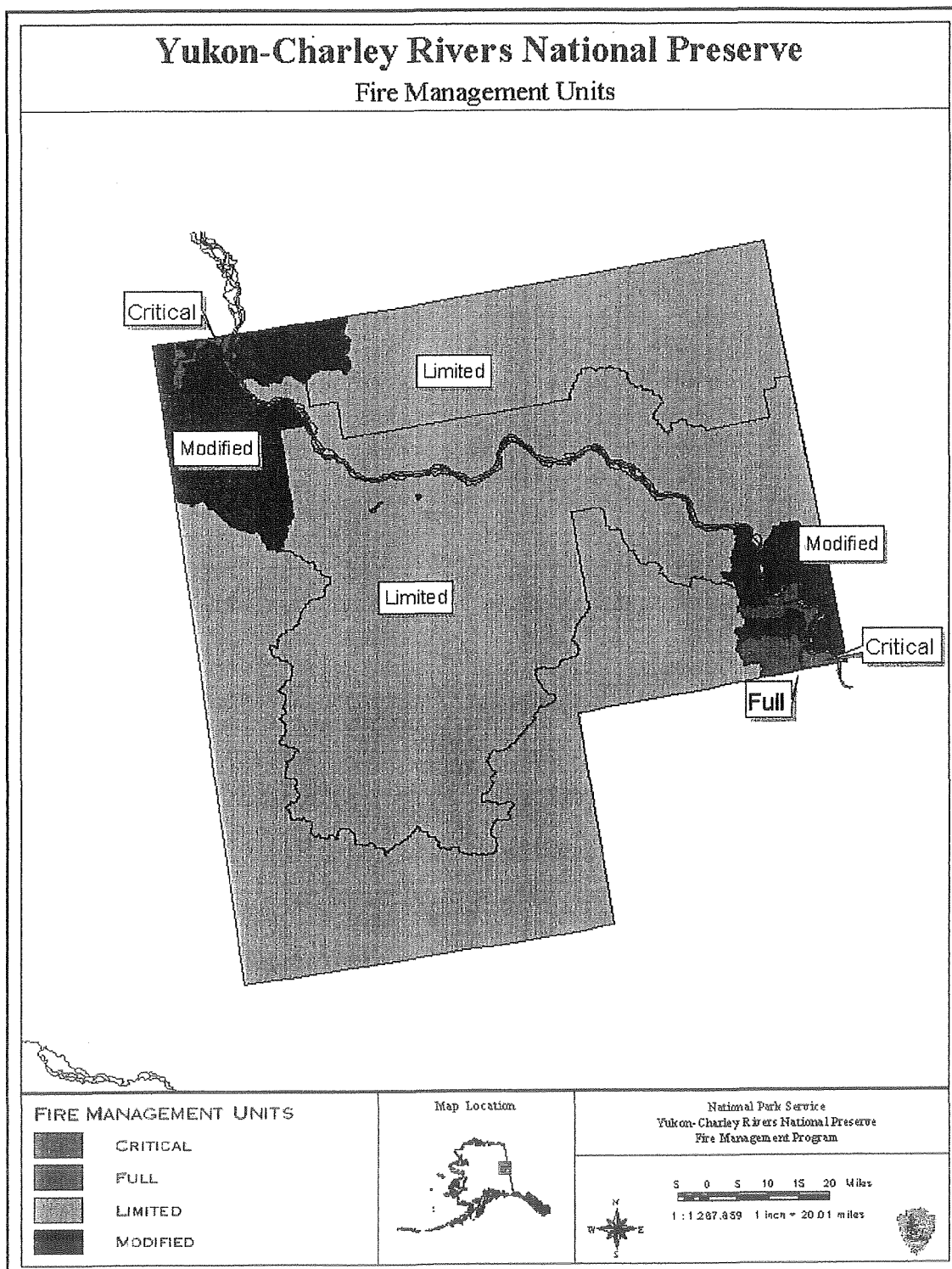


Figure 2 : Fire Protection Boundaries

All of the alternatives discussed here, including the proposed action, would entail continued compliance with the AIWFMP while at the same time bringing the Preserve's fire management program into compliance with recently developed National Park Service directives. NPS **Director's Order 18** (1998) 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. And **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.

The Yukon-Charley Rivers National Preserve Resource Management Plan (1994) specifies three objectives directly relevant to the Preserve's fire management program: 1) the maintenance of natural processes, including fire, to the greatest degree possible while protecting human life, private property, cultural sites, critical habitat, and endangered species; 2) the minimization of human disturbances, such as the manipulation of habitat or wildlife populations, except in extreme cases; and 3) the stabilization and restoration of significant historical structures and districts. Each of the alternatives presented in this Environmental Assessment comprises 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 Bio-diversity. 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 (1988) 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 the NPS Cultural Resource Management Guideline (1994), and Management Policies (1988) require the consideration of impacts on 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 described by its Organic Act of 1916, defines the purpose of all parks is to "...conserve the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same...". Yukon-Charley Rivers National Preserve was established to "maintain the environmental integrity of the entire Charley River basin...in its undeveloped natural condition for public benefit and scientific study...". Scenic visual 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) considers "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 consideration of impacts on 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. The Preserve is designated as a federal "Class II" airshed. Air quality would 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 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.

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 analysis of effects on federal species, as well as state-listed threatened, endangered, candidate, rare, declining and sensitive species. There are no species of special concern within Yukon-Charley Rivers National Preserve, therefore this topic is not addressed further.

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, with each alternative representing a different application of fire as a management tool. Under each of the considered alternatives all unplanned human-caused ignitions would be suppressed in the safest, most cost effective, and least damaging manner possible. The considered alternatives differ in their respective approaches to the management of naturally caused 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 landscape/conditions in areas where prescribed fire or wildland fire would pose an unreasonable threat to property or resources.

All fire management actions at Yukon-Charley Rivers National 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. No local or interstate air pollution control regulations exist in Alaska.

The 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 YUCH. Second, personnel conducting detection and/or reconnaissance flights within the Preserve will be directed to remain alert for the presence of any undiscovered cultural sites or structures and to report their presence to the Preserve FMO. And third, designated Incident Commanders will consult with resource 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 when possible.

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.

B. Alternatives.

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

Under this alternative 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. Prescribed fires would be conducted in order to achieve specific management objectives. Under this alternative, all wildland fires would be suppressed.

Alternative 2: 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 burnable vegetation. Unplanned human-caused fires would be aggressively suppressed, as would any fire posing a threat to life or property. Prescribed fires would not be implemented.

Alternative 3: Combination of Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression (Proposed Action):

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. Naturally occurring wildland fires which 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 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 or restoring historic landscapes and/or conditions. Suppression would continue in or near developed areas, near 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 as seen in the Preserve for the past 15 years.

C. 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 or other tools). Mechanical reduction would be limited primarily to the protection of historic and/or archeological sites and 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: the increased risk of catastrophic wildland fire which would result from the exclusion of the area's natural burn cycle and the prohibitively high cost of large-scale mechanical fuel reduction.

III. AFFECTED ENVIRONMENT

A. Introduction.

Yukon-Charley Rivers National Preserve encompasses 2.52 million acres, of which the federal government holds 84%. Much of the remaining land belongs to Doyon, Ltd., the regional native corporation; other ownership categories include Village Corporation tracts, Native allotments, and patented/unpatented mining claims. Located in the eastern interior of Alaska and bordering the Yukon Territory, Canada, the Preserve is bracketed by the small, road-connected communities of Eagle and Eagle Village to the east and Circle City, Central, and Circle Hot

Springs to the northwest. The large and historically significant Yukon River and nearly undisturbed Charley River provide access to the Preserve's roadless interior.

B. Natural Environment

The Yukon River valley is composed of low, rounded benches and ridges trending southwest to northeast. The valley region rises noticeably south of the Yukon River and gives way to the mountainous region of the Yukon-Tanana uplands. Elevations become progressively higher moving east from Circle, at 600 feet above sea level, to the U.S.-Canadian border, where mountains reach 6,000 feet. YUCH lies within a climatic region known as the interior basin. Mountains to the north and south tend to block moderating oceanic air masses, resulting in extremely low temperatures and low-level inversions in the winter and high temperatures and low precipitation in the summer.

The Yukon-Charley region lies within a greater ecological zone known as the Taiga, or northern boreal forest, an area extending from the Alaskan interior east into Canada and dominated by spruce and several species of deciduous hardwoods. In the 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. Tundra dominated by tussock-forming sedges occurs at lower elevation sites where poor drainage precludes the presence of black spruce stands. Much of the preserve is underlain by permafrost as much as several hundred feet thick, with the top of the permafrost layer often lying as little as 2 or 3 feet below the 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.

The Preserve is home to Dall sheep, moose, caribou, grizzly and black bear, wolves, and various small-mammal species; to eighteen species of fish; and to 159 species of birds, including twenty different species of raptor.

C. Cultural Environment

The history of the Yukon-Charley Rivers area includes occupations by Athabaskan peoples as well as by non-Native participants in the turn-of-the-century gold rush. To date, over 160 structures have been located within the Preserve, consisting for the most part of cabins, roadhouses, check dams, caches, and diversion ditches.

D. Historical Role of Fire

Fire has been an inextricable component of the ecosystems of the Yukon-Charley area for thousands of years, with periodic fires having served throughout the centuries to select plants and animals that are adapted to fire-caused change. Black spruce 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 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 the Yukon-Charley area in particular is difficult to assess. Organized suppression has occurred on a large scale in Alaska since 1939, the effects of this activity, however, are not yet clear. Alaskan fire management personnel feel that the fire ecology of the roadless portions of the Yukon-Charley area may be relatively unchanged from its condition prior to the arrival of whites and the subsequent 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 late April or early 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. Prescribed Fire Use and Wildland Fire Suppression

Vegetation and Bio-diversity: This alternative would have the greatest impact of a gradual loss of bio-diversity as the size and remoteness of the Preserve prohibit the implementation of prescribed fire on a scale sufficient to keep up with the natural accumulation of burnable vegetation. As such, management under the first alternative would eventually result in various disruptions of the area's natural components, including depth and thickness of permafrost layer

and reduction of the bio-diversity of plant communities. The exclusion of routine, relatively low-intensity wildland fires would result in the periodic eruption of catastrophic fire events.

Cultural Resources: Under this alternative the short-term protection of registered and unregistered cultural resources would increase with the suppression of fires and the use of prescribed fire to reduce the vegetation accumulation surrounding these resources. The size and remoteness of the Preserve prohibit the implementation of prescribed fire on a scale sufficient to keep up with the natural accumulation of burnable vegetation. Therefore, long-term protection of these resources would diminish in that the exclusion of routine, relatively low-intensity fires would result in the periodic eruption of catastrophic fire events.

Aesthetics and Recreation: There would be a moderate impact under this alternative with occasional closures of specific areas due to fire suppression operations or prescribed fire operations to ensure the public's safety. There would also be a gradual degradation of sight lines and backcountry access as vegetation was not reduced because the size and remoteness of the Preserve prohibits the implementation of prescribed fire on a scale sufficient to keep up with the natural accumulation of burnable vegetation.

Local Economy: There would be a slight influx of revenue from occasional suppression operations. However, the exclusion of routine, relatively low-intensity wildland fires would result in the periodic eruption of catastrophic fire events causing a reduction of tourist activity thus resulting in a reduction of revenue.

Wetlands and Floodplains: Under this alternative there would be moderate impact due to the loss of bio-diversity in the fire-dependent tussock communities. Without fire, organic matter accumulates, the permafrost table rises, and ecosystem productivity declines. The size and remoteness of the Preserve prohibit the implementation of prescribed fire on a scale sufficient to keep up with the natural accumulation of burnable vegetation. Fire suppression operations may disrupt these communities through the construction of fireline.

Subsistence Use and Wildlife Habitat: This alternative would have a long-term effect on hunting, trapping, and gathering through the gradual deterioration of fire-dependent habitat communities. The exclusion of routine, relatively low-intensity wildland fires would result in various disruptions of the area's natural components, including depth and thickness of permafrost layers and productivity of wildlife habitat.

Air Quality: There would be short-term improvements through the elimination of fire use, which can allow fire to burn for many months. If detected quickly enough, new ignitions within the Yukon-Charley area can generally be suppressed before substantial growth; prescribed fires, in turn, could be executed under conditions favorable to the effective dispersion of smoke. But this alternative would result in a long-term degradation through increased occurrence of catastrophic fire due to the increase in accumulation of burnable vegetation.

Water Quality and Fisheries: The exclusion of routine, relatively low-intensity wildland fires would result in the periodic eruption of catastrophic fire events which may include greater

erosion potential along streams and rivers. This may have short-term effects on fisheries in the clear water streams.

Alternative 2. Wildland Fire Use and Wildland Fire Suppression

Vegetation and Bio-diversity: There would be minimal impacts with the use of this alternative. Certain naturally ignited 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. However, in the Critical and 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.

Cultural Resources: Under this alternative, 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.

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.

Local Economy: There would be a slight influx of revenue from occasional suppression operations with this alternative.

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 the wetlands or floodplain.

Subsistence Use and Wildlife Habitat: There would be a short-term impact on game species and plants in specific areas due to the decrease of vegetation within the 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 natural role in the ecosystem.

Air Quality: Under this alternative, smoke would be monitored for trajectory, mixing height, and impact to overall air quality. Certain naturally ignited 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.

Water Quality and Fisheries: Under this alternative certain naturally ignited 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 allow more low-intensity wildland fires that would reduce the erosion along streams.

Alternative 3. Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression (Proposed Action)

Vegetation and Bio-diversity: This alternative would have the least impact with the maximum potential for diversity through the careful implementation of prescribed fire in areas ill-suited to wildland fire use. Wildland fire posing a potential threat to life, property, or sensitive resources would be suppressed, while continued implementation of wildland fire use in remote portions of the Preserve would ensure the cost-effective preservation of the area's natural fire ecology as well as the reduction of potentially dangerous fuel loads.

Cultural Resources: Under this alternative 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.

Aesthetics and Recreation: The impacts would be similar to Alternative 2 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.

Local Economy: The impacts would be similar to Alternative 2 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.

Wetlands and Floodplains: The impacts would be similar to Alternative 2 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.

Subsistence Use and Wildlife Habitat: The impacts would be similar to Alternative 2 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.

Air Quality: The impacts would be similar to Alternative 2 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.

Water Quality and Fisheries: The impacts would be similar to Alternative 2 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.

B. Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act, requires assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined by CEQ as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). The on-going and future activity that would have a cumulative effect on resources of concern within and outside of the 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 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 Preserve boundary. These impacts are 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: Prescribed Fire and Wildland Fire Suppression	Alternative 2: Wildland Fire Use and Wildland Fire Suppression	Alternative 3 (Proposed): Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression
Vegetation and Bio-diversity	Greatest impact: gradual loss of bio-diversity through accumulation of organic matter, encroachment of species, etc.	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	Improved short-term protection of registered and unregistered historic and/or archeological sites.	Minimal impact.	Improved long-term protection of registered and unregistered historic and/or archeological sites; improved maintenance of historical landscapes and conditions.
Aesthetics and Recreation	Moderate impact: occasional closures of specific areas and gradual degradation of sight lines, backcountry access, etc.	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	Slight influx of revenue from occasional suppression operations; greater potential for long-term disruption of tourist activity from catastrophic fire.	Minimal impact	Minimal impact
Wetlands and Floodplains	Moderate impact: loss of bio-diversity in fire-dependent tussock communities; risk of disruption by suppression activity.	Minimal impact: may be some erosion until vegetation returns.	Minimal impact; may be some erosion until vegetation returns.
Subsistence Use and Wildlife Habitat	Long-term degradation of hunting through gradual deterioration of fire-dependent habitat communities.	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	Increased erosion potential due to catastrophic fire	No long-term impact; some short-term erosion.	No long-term impact; some short-term erosion.
Air Quality	Short-term improvements through elimination of fire use; long-term degradation through increased occurrence of catastrophic fire.	No impact.	Minimal impact.

V. COORDINATION AND CONSULTATION

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LITERATURE CITED

Alaska Land Managers Cooperative Task Force. 1979. Fortymile Interim Fire Management Plan.

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

National Park Service. 1998. Director's Order 18: Fire Management.

National Park Service. 1994. Resource Management Plan, Yukon-Charley Rivers National Preserve.

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APPENDIX:

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

I. 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 which could result from the implementation of the proposed fire management plan and the actions described therein.

II. 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 effected 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 the (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. Yukon-Charley National Preserve was created by ANILCA Section 201[10] in order to “maintain the environmental integrity of the entire Charley River basin...in its undeveloped natural condition for public benefit and scientific study; to protect habitat for, and populations of, fish and wildlife, including but not limited to the peregrine falcons and other raptorial birds, caribou, moose, Dall sheep, grizzly bears and wolves; and in a manner consistent with the foregoing, to protect and interpret historical sites and events associated with the gold rush on the

Yukon River and the geological and paleontological history and cultural prehistory of the area...”

The act also states that “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 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.

III. PROPOSED ACTION ON FEDERAL LANDS

The National Park Service specifies that every administrative unit with burnable vegetation 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 Preserve’s fire management program has operated under the auspices of various state-wide interagency documents, including most recently the **Alaska Interagency Wildland Fire Management Plan**, or AIWFMP (1998). Under the AIWFMP, fire protection needs at Yukon-Charley are determined by NPS and BLM managers; lands within the Preserve are then placed within **critical, full, modified, or limited** protection categories, depending on the proximity of values to be protected and on overall resource management objectives.

The proposed action entails the establishment of a Fire Management Plan for Yukon-Charley Rivers National Preserve. Both the preferred alternative and the other considered alternatives allow for continued adherence to the AIWFMP while at the same time bringing the Preserve’s fire management program into 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, whether naturally ignited or human-caused), 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 calls for the continued management of wildland fire at Yukon-Charley Rivers National 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.

(See the Fire Management Plan and the accompanying Environmental Assessment for further discussion of fire management policies and actions.)

IV. AFFECTED ENVIRONMENT

As mandated by ANILCA section 1313, the entirety of Yukon-Charley Rivers National Preserve 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. The area of concentrated subsistence use within the Preserve extends along the Yukon River as well as lower stretches of the Charley, Kandik and Nation Rivers. Along the Yukon, residents of Central (population 52), Circle City (population 73), Eagle (population 168) and Eagle Village (population 35) engage in subsistence activities during a five-month ice-free period. As many as fifteen individuals reside along rivers within the Preserve; subsistence use by these individuals tends to be restricted to their immediate environs.

Caribou, moose, salmon, black bear, marten, and lynx are the most important species for subsistence users in and around the Preserve. These species are supplemented by waterfowl, snowshoe hares, grouse, ptarmigan, wolves, beaver, and various species of resident fish. In addition to fish and game species, bark, firewood, berries and other plant materials are harvested. Subsistence hunting activities are concentrated in the spring and fall months, fishing and plant gathering in summer and fall, and trapping in mid-winter. Subsistence harvests vary considerably each year because of weather, migration patterns, and population cycles.

The majority of subsistence use occurring at Yukon-Charley takes place within the Preserve's Limited Protection fire management unit, with most of the remaining subsistence use occurring in the Preserve's Modified Protection fire management unit. Under the proposed action, certain natural ignitions occurring within these areas would be managed for the accomplishment of resource management goals, including the preservation of fire within its natural role and the perpetuation, in turn, of healthy and biologically diverse plant communities and fish and game habitat.

V. 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;
- what effect the action might have on subsistence fisherman or hunter access;
- the potential for the action to increase fisherman or hunter competition for subsistence resources.

1) The 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, is lacking, however, recognition of declining populations has been difficult.

The Preserve's Resource Management Plan (1995) 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 which would be implemented under the preferred alternative would be aimed directly at the safe and cost-effective preservation of the area's indigenous fire ecology. As such, the Preserve's 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 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 Yukon-Charley area. Under the proposed action, however, potential losses to subsistence users could be mitigated through consideration of hunting and trapping activities by land managers in the planning and implementation of wildland fire use and prescribed fire use incidents. There are a few users who have permits for use of public structures within the Preserve. These structures are protected under Critical Suppression as noted in Section XVI. Protection of Sensitive Resources. In the event of loss or damage of this structure, the Superintendent of the Preserve may permit reconstruction of this structure. The long-term benefits of fire to the wildlife habitats of the Yukon-Charley area 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 Preserve.

2) Restriction of Access:

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

3) 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 which the proposed plan would be intended to safely perpetuate.

VI. AVAILABILITY OF OTHER LANDS

As stated earlier, wildland fire is an inevitable component of the plant and animal communities of the Yukon-Charley 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.

VII. 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 (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 bio-diversity and viable habitat throughout all areas within the Preserve utilized by subsistence hunters and trappers.

Alternative two (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 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.

VIII. FINDINGS

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