

APPENDIX C.1 – ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL ASSESSMENT
FIRE MANAGEMENT PLAN
FOR
LAKE CLARK NATIONAL PARK AND PRESERVE

NATIONAL PARK SERVICE
LAKE CLARK NATIONAL PARK AND PRESERVE

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ENVIRONMENTAL ASSESSMENT

Fire Management Plan for Lake Clark 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 Lake Clark National Park and Preserve (LACL). This fire management plan is a comprehensive document that outlines LACL fire management goals and describes the policies and actions by which these goals will be realized. The plan will formalize park-specific responsibilities for implementing the Alaska Interagency Wildland Fire Management Plan and will formalize park-specific fire management decision making process and procedures, redefines fire management strategies, articulates the park's fire management organization and responsibilities, and establishes the direct linkage between the resource management goals and fire management strategies. With the implementation of the proposed action, fire management within LACL will remain status quo.

The Fire Management Plan is necessary to comply with DO-18, and codifies the way fire will be managed within LACL. 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 alternative 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 Lake Clark 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
- a goal in the park's general management plan or other relevant NPS planning documents.

In 1980, Congress created the Lake Clark 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 201.7(a) of ANILCA specifically establishes Lake Clark National Park and Preserve and ascribes to it the following mission, among others: to "Protect the watershed necessary for the perpetuation of the red salmon fishery in Bristol Bay; to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state; and to protect habitats for and populations of fish and wildlife, including, but not limited to caribou, Dall sheep, brown/grizzly bear, bald eagles, and peregrine falcons."

The Lake Clark National Park and Preserve Resource Management Plan (1994) specifies two objectives directly relevant to LACL's fire management program: 1) to maintain and perpetuate the integrity of natural ecosystems and cultural resources; 2) to maintain natural processes to the greatest degree possible while protecting human life, private property, cultural sites, critical habitat, and endangered species. Project statement LACL-N-16 the RMP further mandates: "the Park/Preserve's fire dependent ecosystems will be managed to allow fire to fulfill its role as a dynamic natural process while protecting human lives, property, and nationally significant resources."

In 1983 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 Kuskokwim / Iliamna Planning Area. This plan provided direction for fire management activity in Lake Clark National Park and Preserve until 1998, when a variety of documents were consolidated and approved as the Alaska Interagency Wildland Fire Management Plan (AIWFMP). During the development of the original interagency fire management plan, the land owners/managers determined the protection needs for the lands they manage/own. The lands were 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). Under the AIWFMP, the fire protection needs are reviewed annually by the land owners/managers. 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 fires detected in Limited Protection areas (see Map 1 Appendix F for map of Park/Preserve units).

Table 1: Alaska Interagency Wildland Fire Management Plan Options

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

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 LACL 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 minor 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.

Cultural Resources

Cultural resources can be significantly affected by fire and play a critical role in determining fire management units and specific fire responses.

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." Lake Clark National Park and Preserve was established to "maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state." Scenic values, recreational activities, and general visitation within and around fire prone areas may be temporarily impacted by fire-related actions.

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. Fires may limit economic opportunities and fire management may provide increased opportunities around bases of operation and for material suppliers.

Wetlands and Floodplains

Executive Orders 11988 and 11900 require the consideration of impacts to floodplains and wetlands. Fires in the interior of Alaska often burn the vegetation of wetlands, which may be the sites of management actions.

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, by fire management decisions.

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. Lake Clark National Park and Preserve was established to “maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state.” Air quality would potentially be affected in the short-term during any type of ignition event.

Water Quality and Fisheries

Lake Clark National Park and Preserve was established to “Protect the watershed necessary for the perpetuation of the red salmon fishery in Bristol Bay.” Increased erosion following a fire may affect water quality and is, therefore, considered a relevant impact topic. Increased erosion following a fire may affect water quality.

Wilderness Resource Values

National Park Service Director’s Orders 41, on Wilderness Preservation and Management, states that “Fire management activities conducted in wilderness areas will conform to the basic purposes of wilderness”. LACL contains large areas of designated and suitable wilderness which would be affected by any likely ignition event.

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.

Four Federally listed marine species are found in the park. The Steller’s eider (Threatened) is a diving duck that spends most of the year in shallow, near-shore marine waters. The eider’s winter range includes portions of Cook Inlet adjacent to Lake Clark NP/P. The northern sea otter is a federal candidate species that lives in the near-shore marine waters along the North Pacific Ocean. The Steller Sea Lion (Endangered) is a marine mammal that inhabits Pacific Ocean

waters including much of the Alaskan coastline. The Humpback Whale (Endangered) seasonally inhabits North Pacific Ocean waters.

All Four Species are primarily marine inhabitants. The project area for this Fire Management Plan includes all terrestrial portions of Lake Clark National park and preserve and no fire management activities are expected to impact the marine environment adjacent to the park. As such it is determined that this action will have no effect on these species and their habitat. Concurrence with this determination has been granted by the US Fish and Wildlife service, and by NOAA Fisheries.

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 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 Lake Clark 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 LACL. 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

Western Area 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: 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. The suppression response is described in the Alaska Interagency Wildland Fire Management Plan. Prescribed fires would not be implemented.

Alternative 2: Combination of Prescribed Fire Use, Wildland Fire Use, and Wildland Fire Suppression (NPS Preferred Alternative and No Action Alternative)

All three of the major management actions (Wildland Fire Suppression, Wildland Fire Use and Prescribed Fire) described under DO-18 would be allowed, as determined by a combination of pre-established and incident-specific decision making criteria. This alternative represents no change in the on-the-ground implementation of fire management activities, however, it does define the strategy for Wildland Fire Use. 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 and near LACL boundaries when neighboring administrative units with different fire management objectives adjoin NPS land. In areas known to contain fire sensitive cultural and/or archeological resources that warrant protection, or whenever insufficient resources are available to ensure the effective, long-term management of wildland fire to meet resource management objectives, suppression action would continue.

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 minor.

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.

E. Environmentally Preferred Alternative.

Alternative 2 is the environmentally preferred alternative because it provides the full spectrum of fire management strategies and practices to accomplish LACL fire and resource management objectives while protecting human life and identified resources/values. The potential use of prescribed fire would permit managers to reduce the risk of catastrophic fires around important cultural resource sites as well as limiting the severity of fire in natural resource areas such as floodplain forests.

III. AFFECTED ENVIRONMENT

A. Introduction.

Lake Clark National Park and Preserve encompasses 4.03 million acres, approximately 90% of which is public lands. Much of the remaining land is owned or selected by regional and village corporations. Other ownership includes private tracks and allotments. Despite proximity to the relatively busy Kenai Peninsula across Cook Inlet LACL is a remote area. With 2.47 million acres are designated wilderness the park is wild and sparsely populated. Access is mainly by commercial air services or private plane, however, some visitors access the Park/Preserve by boat from Cook Inlet.

B. Natural Environment

Lake Clark National Park and Preserve surrounds the rugged Chigmit Mountains, which link the Alaska and Aleutian Mountain ranges. The park is characterized by rugged peaks and spires, glaciers, snow-clad volcanoes, braided glacial rivers, cascading streams and waterfalls,

turquoise-blue lakes, spruce-hardwood forests, lichen tundra, and corresponding variety of plant and animal species. In a comparatively small area, it is possible to visit ecosystems representative of nearly every part of Alaska (LACL RNP, 1994:1).

Geographically, the park spans from coastal belts, complex mountains including 10,000 plus foot volcanoes, to foothills and interior lowlands. Ecologically rich and diverse, the park area is a meeting-ground for at least four biogeographic regions: Pacific coastal rainforest, interior Alaska, Aleutian, and Alaska arctic-alpine (LACL RMP, 1994:1). Fish and wildlife include raptors, waterfowl, and seabirds; salmon and trout; harbor seals and beluga whales; bear, moose, caribou, and Dall sheep (LACL RMP, 1994:1).

Vegetation reflects the geographic diversity found in the park with many of Alaska's ecotypes present. Sitka spruce and coastal marshes are found in the coastal zone. Black spruce, hardwood forest and mixed spruce-hardwood forests occur around Lake Clark and western foothills. White spruce and mixed white spruce-hardwoods are found near the shores of Lake Clark and foothills lakes. Willow, alder, and other shrubs are distributed throughout the park particularly in riparian areas. Alpine tundra covers a large portion of the park's hills and mountains. Some poorly drained wet tundra is found in the western foothill region.

C. Cultural Environment

Lake Clark National Park and Preserve contains a wealth of prehistoric, protohistoric, and historic archeological sites. Humans have occupied areas within Lake Clark National Park and Preserve for at least 8,000 years. Several cultural resources are historically significant and shed light on vital information for understanding the past of the area and Alaska in general. Kijik National Historic Landmark, for example, is the largest known Athapaskan site in Alaska and shows evidence of approximately 300 years of occupation. Although evidence points to a long tradition(s) of human occupation in the area, the past is little understood. Only a very small portion of the area has been adequately surveyed for cultural resources. Preliminary archaeological survey has been conducted for less than 1% of the total area. A multi-year systematic archaeological survey is currently underway. To date approximately 150 archaeological sites have been identified and documented. Approximately 60 cabins and cabin sites have been identified as being historic (older than 50 years).

Currently, LACL is home to approximately 300 local residents, both Dena'ina and Euroamerican residents. The majority of the residents are located in two villages, Nondalton and Port Alsworth. These people practice a mixed economy, consisting of wage labor and subsistence practices. In addition to year round residents, the park/preserve serves recreational users from around the world.

D. Historical Role of Fire

In Interior Alaska, the natural fire regime is characterized by a return interval of 50 to 200 years, depending on the vegetation type, topography and location (AIWFMP, 1998:12). Fires are infrequent occurrences in the eastern two thirds of the Park/Preserve due to the presence of the Chigmit and Neacola mountain ranges and the Maritime coastal influence of

Cook Inlet. However, the western third of LACL lies on the edge 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 LACL 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 regime of LACL is relatively unchanged from their 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/Preserve is “to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state” The Lake Clark GMP states that the National Park Service will, on lands under its authority, “emphasize the continuation of the natural processes that have shaped the landscape and sustained the plant and animal populations found on the parks land and waters” (LACL GMP, 1984:7). 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: Minor 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 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: Minor 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, impacts would include the occasional closure of specific areas due to fire activity or smoke concentrations for the safety of visitors resulting in an inconvenience for the visitors or cause them to alter their plans. Smoke will for short time periods degrade visibility which also may inconvenience visitors or cause them to alter their plans. Fire naturally occurs within LACL ecosystems and degradation in air quality as the result of smoke is part of the function of a fire dependent ecosystem.

Through careful application of mechanical clearing to reduce hazardous fuels minor aesthetic impact may occur in the form of thinning vegetation.

Conclusion: This alternative may result in a minor impact by closing certain areas temporarily and more 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.

Conclusion: This may result in a minor 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 an incident resulting from occasional suppression operations. Conversely, closures of areas due to wildfire activity may affect recreational oriented businesses.

Conclusion: Fire management in LACL under this alternative is expected to have a minor beneficial impact to the local economy.

Wetlands and Floodplains

There would be a minor impact to these area due if fire suppression operations occur (handline construction). 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 return to normal levels.

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 LACL.

Conclusion: There would be temporary minor impacts due to a loss of vegetation and temporarily increased erosion. 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 is critical 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.

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.

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 critical 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.

Selection of this alternative would not disrupt the natural function of the ecosystems within LACL. Fire is a common occurrence in portions of 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 Resource Values

Under this alternative certain wildland fires would be managed for the accomplishment of resource management goals including the preservation of fire as a natural process.

Vast amounts of LACL are designated wilderness or are suitable for such designation. The wilderness character of the area reflects natural conditions and a vast undeveloped sub-arctic landscape without permanent human residence. 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 would continue as an integral part of the wilderness experience.

Conclusion: Long-term impacts to wilderness resource values are not expected. Short-term impacts during fire suppression activities may occur but will be mitigated by adhering to special concerns outlined in the LACL FMP and by the use of 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 critical 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 fires 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 environment as well as the reduction of potentially dangerous fuel loads.

A purpose of the Park/Preserve is "to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state" The Lake Clark GMP states that the National Park Service will, on lands under its authority, "emphasize the continuation of the natural processes that have shaped the landscape and sustained the plant and animal populations found on the parks land and waters" (LACL GMP, 1984:7). 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.

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.

Conclusion: This alternative may result in minor impacts 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 that 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 to communities supporting fire management operations would result in a minor beneficial impact.

Wetlands and Floodplains

The impacts would be similar to Alternative 1 with the addition that 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: There would be temporary minor 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.

Conclusion: The natural function of the ecosystems within LACL would not be disturbed, therefore maintaining wildlife habitat and subsistence use within the Park/Preserve. There would be a minor short-term impacts resulting from a displacement of wildlife in the burned area. This, however, would replicate a naturally functioning ecosystem and subsistence regime. Additional impacts may result from suppression actions; however, limited acreage of critical and full protection designation minimizes suppression needs. 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. Fire is a naturally occurring event in the LACL 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.

Selection of this alternative would not disrupt the natural function of the ecosystem within LACL. 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 management area.

Wilderness Resource Values

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.

The wilderness character of the area reflects natural conditions and a vast undeveloped sub-arctic landscape without permanent human residence. 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.

Conclusion: Long-term impacts to wilderness character are not expected. Short-term impacts during fire suppression activities (surface disturbance by handline construction) may occur but will be mitigated by adhering to special concerns outlined in the LACL FMP and by the use of 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
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Vegetation and Bio-diversity	Minor 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	Minor 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	Minor impact: occasional closures of specific areas; vegetation burned may decrease aesthetics.	Minor impact: occasional closures of specific areas; vegetation burned may decrease aesthetics.
Local Economy	Minor impact	Minor impact
Wetlands and Floodplains	Minor impact: may be some erosion until vegetation returns.	Minor 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	Minor impact.	Minor 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

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APPENDIX C.2 - ANILCA 810

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 that could result from the implementation of the proposed fire management plan in Lake Clark National Park and Preserve.

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 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. Lake Clark National Park and Preserve was created by ANILCA Section 201.7(a) specifically establishes Lake Clark National Park and Preserve and ascribes to it the following mission, among others: to “Protect the watershed necessary for the perpetuation of the red salmon fishery in Bristol Bay; to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state; and to protect habitats for and populations of fish and wildlife, including, but not limited to caribou, Dall sheep, brown/grizzly bear, bald eagles, and peregrine falcons.”

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.

III. 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 Lake Clark are determined by NPS and Alaska Department of Forestry (DOF) 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 Lake Clark 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 Lake Clark 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.

IV. AFFECTED ENVIRONMENT

Lake Clark National Park and Preserve is located in Southcentral Alaska adjacent to Cook Inlet and was established in 1980 by Title II Section 201(7) of ANILCA. Subsistence uses are allowed within Lake Clark National Park and Preserve in accordance with Title II, Section 201(1) and Title VIII of ANILCA.

Section 803 of ANILCA defines subsistence uses as: “the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of non-edible by-products of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade.”

In accordance with Title 36 CFR Part 13 regulations, residents of the NPS designated resident zone communities of Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay and Port Alsworth are qualified to engage in subsistence activities within Lake Clark National Park and Preserve. Local rural residents who do not live in these communities, but who have customarily and traditionally engaged in subsistence activities within the park may continue to do so with a subsistence use permit issued by the park superintendent. ANILCA and NPS regulations allow local rural residents to engage in subsistence uses in Lake Clark National Preserve.

Major resources used by Lake Clark National Park subsistence users include caribou, brown bear, moose, beaver, Dall sheep, snowshoe hare, fox, lynx, mink, wolf, wolverine, ptarmigan, waterfowl, otter, marine mammals, salmon, trout, Dolly Varden, grayling, pike, suckers, humpback and round whitefish, halibut, crab, clams, berries, wild edible plants, and wood.

Located in Wildlife Management Units 9A, 9B, 16B, 17B and 19B, Lake Clark National Park (which encompasses 2,439,000 acres) and Preserve (which encompasses 1,214,000 acres) contain exceptional geologic features, scenery, wildlife, and cultural landscapes. These wildlife units also include other federal public lands such BLM administered lands in 9B, 16B and 17B; the Denali National Park and Preserve in 16B; and the Upper Mulchatna Controlled Use Area in 17B.

The following harvest figures represent rough estimates extrapolated from several sources for a relatively typical year for the region and the 1983 estimates for the park and preserve.

<u>Subsistence Resource</u>	<u>Annual Regional Harvest</u>	<u>1983 Estimated Park/Preserve</u>
Bears	107 animals	10 animals
Moose	164 animals	65 animals
Caribou	79 animals	100 animals
Dall sheep	107 animals	7 animals
Furbearers	2,421 animals	530 animals
Small game	1,786 animals	1,200 animals
Waterfowl	1,750 animals	930 animals
Fish	164,286 fish	16,560 fish
Berries	67,429 pounds	7,200 pounds
Plants	16,186 pounds	2,000 pounds
Firewood	1,321 cords	75 cords
House logs	714 logs	100 logs

“Bears” includes both brown and black bears. “Furbearers” include beaver, coyote, ground and red squirrel, land otter, lynx, marten, mink, muskrat, red fox, weasel, wolverine, and wolf.

“Small game” includes gallinaceous birds such as rock and willow ptarmigan and spruce grouse, as well as porcupines and snowshoe hares. “Waterfowl” include bufflehead, eider, golden-eye, harlequin, mallard, old-squaw, pintain, scaup, scoter, green-wing teal, wigeons, cranes, geese and swans. “Fish”—in approximate order of importance—include sockeye salmon, whitefish, northern pike, longnose suckers, grayling, Dolly Varden, arctic char, rainbow trout, lake trout,

and burbot. “Berries” include several varieties from blueberries to salmonberries. “Plants” include wild celery, Labrador tea, rose hips and other edible plants. “Firewood” refers to spruce, birch and cottonwood cut into cords for home heating. These wood species, in addition to willows and alders, are also used for crafts. “House logs” are primarily white spruce.

A subsistence harvest in any given year may vary considerably from one year to the next due to spatial and temporal factors and natural causes such as weather, climate change and natural population cycles. The primary species taken for subsistence are moose, caribou, fish (primarily sockeye salmon) and berries. By weight in pounds, the overall subsistence pattern of the region is characterized by the following proportions:

<u>Edible Subsistence Resource</u>	<u>Percentage</u>
Bears	1
Moose	35
Caribou	10
Dall Sheep	3
Furbearers	5
Small Game	2
Waterfowl	2
Fish	20
Berries	15
Plants	7
TOTAL	100

Studies of subsistence use in the area include: Final Environmental Statement for the Proposed Lake Clark National Park (NPS); the park general management plan; Resource Use and Subsistence in the Vicinity of the Proposed Lake Clark National Park (Behnke 1978); Subsistence Production and Exchange in the Iliamna Lake Region, Southwest Alaska, 1982-1983 (Morris 1983); Land Use and Economy of Lime Village (Russell-Kari 1983); Lake Clark National Park and Preserve: Historic Uses of Cook Inlet Natural Resources (McNabb and Petrivelli 1992); Subsistence Uses of Vegetal Resources In and Around Lake Clark National Park and Preserve (Johnson et. al. 1998), and Community Profile Database (Alaska Department of Fish and Game Subsistence Division 2001).

The majority of LACL 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 wildlife 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;
- 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.

1). 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 LACL 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 (LACL RMP, 1994:27). 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, LACL 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 Lake Clark 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 included under Critical Suppression protection 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 may permit reconstruction of this structure. Subsistence use may be an important factor in the determination of prescribed fire within the Park/Preserve. NPS regulations and provisions of ANILCA provide the tools for adequate protection of fish and wildlife populations.

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 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.

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, 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. Provisions of ANILCA ensure a subsistence priority for rural residents.

VI. 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.

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 (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.

VIII. FINDINGS

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