

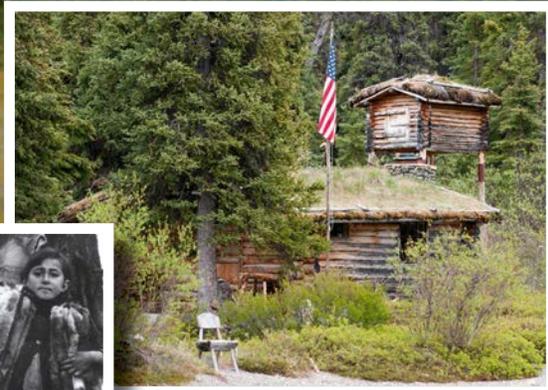


National Park Service
U.S. Department of the Interior

Lake Clark National Park and Preserve

General Management Plan Amendment / Environmental Assessment

January 2014



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**National Park Service
U.S. Department of the Interior**

**Lake Clark National Park and Preserve
Alaska**

January 2014

**LAKE CLARK NATIONAL PARK AND PRESERVE
GENERAL MANAGEMENT PLAN AMENDMENT /
ENVIRONMENTAL ASSESSMENT**

**U.S. Department of the Interior
National Park Service**

**Lake Clark National Park and Preserve General Management Plan Amendment
and Environmental Assessment**

Alaska

Lead Agency: U.S. Department of the Interior, National Park Service

Proposed Action: The National Park Service is preparing an environmental assessment for an update to the 1984 *Lake Clark National Park and Preserve General Management Plan*.

Abstract: The National Park Service is preparing a general management plan amendment for Lake Clark National Park and Preserve. This plan updates and replaces the park's 1984 General Management Plan. The environmental assessment evaluates three alternatives for managing Lake Clark National Park and Preserve. Alternative A, the no-action alternative, consists of continuation of the existing park management and serves as a basis for comparison of the other alternatives. Alternative B, the NPS preferred alternative, would continue and enhance protection of the natural and cultural resources and wilderness character of the park and preserve, but would also foster increased visitor access, opportunities, and interpretation. Alternative C is similar to alternative A in that it provides a management framework with a focus on wilderness character. Both action alternatives incorporate management zoning and visitor use management indicators and standards to reflect current National Park Service planning guidelines. Key effects from implementation of either action alternative would be beneficial effects on wilderness character and visitor use and experience. There would be some beneficial and some adverse impacts to natural and cultural resources from both action alternatives. The plan also includes a wilderness eligibility reassessment to evaluate two areas along the eastern edge of the park that were previously deemed ineligible. The land status of these areas has since changed, prompting a reassessment of wilderness eligibility. The wilderness eligibility reassessment must be approved by the NPS Director, pursuant to NPS *Management Policies 2006* (6.2.1.3) and will be published in the *Federal Register* upon finalization.

Public Comment: Comments on this *Lake Clark National Park and Preserve General Management Plan Amendment / Environmental Assessment* can be made via the Internet at <http://parkplanning.nps.gov/lacl> or by mail or hand-delivery to the following address. All comments must be postmarked, transmitted, or logged no later than 60 days after the plan is released for public comment. This deadline will be posted at <http://parkplanning.nps.gov/lacl>. Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, be aware that your entire comment—including your personal identifying information—may be made public. After the comment period ends, the National Park Service planning team will evaluate all input received and incorporate any resulting changes into the document. If no significant environmental impacts are identified and no major changes are made in the alternatives, then a finding of no significant impact can be prepared and approved by the Alaska regional director. Following a 30-day waiting period, the plan can then be implemented.

For further information you may contact: Zachary Babb, National Park Service, 240 West 5th Avenue, Anchorage, AK 99501, phone: 907.644.3531.

HOW TO COMMENT ON THIS PLAN

Comments on this General Management Plan Amendment are welcome and will be accepted for 60 days after the plan is released for public comment. To respond to the material in this plan, written comments may be submitted by any one of these methods:

Mail:

Lake Clark GMP
National Park Service
Denver Service Center – Read
PO Box 25287
Denver, CO 80225

Internet Website:

<http://parkplanning.nps.gov/lac1>

Hand Delivery:

Zachary Babb
Lake Clark GMP
National Park Service
240 West 5th Avenue
Anchorage, AK 99501

Written and/or verbal comments may be made at public meetings. The dates, times, and locations of public meetings will be announced in the media and on the Internet website (above) following release of this document.

Before including your address, telephone number, e-mail address, or other personal identifying information in your comment, be aware that your entire comment—including your personal identifying information—may be made public.

After the comment period ends, the National Park Service planning team will evaluate all input received and incorporate any resulting changes into the document. If no significant environmental impacts are identified and no major changes are made in the alternatives, then a finding of no significant impact can be prepared and approved by the Alaska regional director. Following a 30-day waiting period, the plan can then be implemented.

SUMMARY

LAKE CLARK NATIONAL PARK AND PRESERVE

Lake Clark National Park and Preserve was established on December 2, 1980, under the Alaska National Interest Lands Conservation Act (ANILCA) and is a unit of the national park system. Located in southwest Alaska, Lake Clark National Park and Preserve covers approximately 4 million acres of land and is a microcosm of many regions of Alaska. Elevations range from sea level to Mount Redoubt's 10,197 feet. Approximately 2,572,000 acres of the park are designated wilderness. The park's spectacular scenery stretches from the shores of Cook Inlet, across the Chigmit Mountains, to the tundra-covered hills of the interior. The Chigmits, where the Alaska and Aleutian ranges meet, are an awesome, jagged array of mountains and glaciers, which include two active volcanoes, Mount Redoubt and Mount Iliamna. Lake Clark, 42 miles long and the sixth-largest lake in Alaska, and many other lakes and rivers within the park are key salmon habitat for the Bristol Bay salmon fishery, one of the largest sockeye salmon fishing grounds in the world. The park also contains three designated wild rivers: the Chilikadrotna, Mulchatna, and the Tlikakila rivers.

Lake Clark National Park's nearly 2.6 million acres include the rugged Chigmit Mountains as well as 123 miles of coastline along Cook Inlet. Lake Clark National Preserve adjoins the national park to the south and west. It contains more than 1.4 million acres and adjoins the park, with rolling foothills, boreal forests, alpine lakes, wild rivers, and sweeping expanses of tundra. Sport hunting is allowed in the preserve under federal and nonconflicting state laws and regulations, pursuant to ANILCA sections 203 and 1313 and 36 *Code of Federal Regulations* (CFR) part 13.40(d). Federally qualified subsistence

use, including hunting and trapping, are allowed in both the park and preserve.

PLANNING PURPOSE AND NEED

General management plans are required for all units of the national park system and are intended to establish the future management direction of a park unit. General management plans look 15 to 20 years into the future and consider the park system holistically in its full ecological and cultural context and as part of a surrounding region. This General Management Plan Amendment will provide comprehensive guidance for conserving natural and cultural resources, protecting wilderness values, and providing opportunities for a quality visitor experience at Lake Clark National Park and Preserve.

A comprehensive General Management Plan for the park and preserve was developed in 1984. This plan updates and replaces the 1984 General Management Plan. This plan is part of a larger planning framework for Lake Clark National Park and Preserve, which includes this plan, a park foundation, and other elements of the park's planning portfolio.

The purpose of this plan amendment is to address how the National Park Service (NPS) can best fulfill Lake Clark National Park and Preserve's purpose, maintain its significance, and protect its resources unimpaired for the enjoyment of present and future generations. It updates the 1984 plan to current NPS standards for zoning and articulates desired future conditions for resources and visitor experience. The plan amendment does not provide specific and detailed answers to every issue, but serves as a framework to assist NPS managers in making decisions today and in the future.

ALTERNATIVES

Alternative A (No-action Alternative)

This alternative would continue the current management direction for visitor activities and protection of wilderness and park resources. Park and preserve lands, as well as designated and eligible wilderness, would be managed according to existing law and policy and the original General Management Plan without amendment. This alternative is included as a basis for comparison to the action alternatives.

Alternative B (NPS Preferred Alternative)

This alternative would expand opportunities for a diversity of visitor activities and would protect and maintain wilderness and park resources. This alternative would provide more prescriptive management in areas that receive higher visitor use such as in the preserve near Lake Clark and in some coastal areas. Other changes would include expanded interpretive services and commercial activities, backcountry hiking trails, and water routes.

Three to eight cabins would be designated for public use in this alternative. The Richard L. Proenneke Historic Site would be managed as an open-air exhibit. Any cabins designated beyond the first three would require a cost benefit analysis to determine whether visitor need exists and park resources are available to support management of the additional cabins. A range of management actions would be available to protect the resources in high-use destination areas. A modest approach to improved infrastructure would be provided such as support for some expanded primitive camping areas and trails.

Under alternative B, there would be moderate, long-term beneficial impacts on visitor use and experience; minor, adverse, localized impacts to wilderness character,

soils, vegetation, and brown bear. The alternative also would have both minor to moderate beneficial and minor to moderate, adverse localized impacts on cultural resources.

Alternative C

This alternative would focus on accommodating current patterns of use. The alternative would continue to maintain existing access, visitor use, and infrastructure.

Minimal new infrastructure and staff would be provided. No public use cabins would be designated under this alternative, and the Proenneke site would be managed with a focus on wilderness experience.

Under alternative C, there would be both benefits and adverse impacts of minor to moderate intensity on cultural and natural resources, visitor experience, and wilderness character.

NEXT STEPS

After distribution of this General Management Plan Amendment / Environmental Assessment, there will be a 60-day public review and comment period. After the comment period ends, the NPS planning team will evaluate all input received and incorporate any resulting changes into the document. If no significant environmental impacts are identified, compliance with section 106 of the National Historic Preservation Act is completed, and no major changes are made in the alternatives, then a finding of no significant impact can be made and approved by the Alaska regional director. Following a 30-day waiting period, the plan can then be implemented. In addition, once approved by the NPS Director, the wilderness eligibility reassessment will be published in the *Federal Register*.

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A GUIDE TO THIS DOCUMENT

This General Management Plan Amendment / Environmental Assessment (GMP Amendment) prepared for Lake Clark National Park and Preserve (hereinafter Lake Clark or the park) is organized in accordance with Council on Environmental Quality (CEQ) implementing regulations for the National Environmental Policy Act of 1966, as amended, the National Park Service Park Planning Program Standards, and Director's Order 12 and Handbook: *Conservation Planning, Environmental Analysis, and Decision-making*. Together with provisions of the Wilderness Act, section 106 of the National Historic Preservation Act, and other laws and policies, these regulations and policy requirements have been incorporated into the planning process.

Chapter 1: Introduction, presents the framework for the entire document and describes why the GMP Amendment is being prepared and what it addresses, including planning issues and how this plan will be implemented.

Chapter 2: Alternatives, begins by describing the development of the alternatives and identifies the management zones that would be used to manage the park in the future. It includes the continuation of current management practices and trends in the park (alternative A—no action). Two alternatives for managing the park (alternatives B and C) are next presented. This chapter also includes a description of rustic areas in the park, visitor use indicators and standards, mitigation measures, a description of the environmentally preferred alternative, and a summary table of the environmental consequences of implementing the alternatives.

Chapter 3: Affected Environment, describes those areas and resources that

would be affected by implementing the actions contained in the alternatives.

Chapter 4: Environmental Consequences, analyzes the impacts of implementing the alternatives on topics described in the “Affected Environment” chapter. Methods that were used for assessing the impacts in terms of intensity, type, and duration are outlined at the beginning of the chapter.

Chapter 5: Consultation and Coordination, describes the history of public and agency coordination during the planning effort, including Government-to-Government, Alaska Native Claims Settlement Act Corporations, and other Alaska Native consultations. The chapter lists agencies and organizations that will receive copies of the document.

The Appendixes present supporting information for the document. The appendixes include an Alaska National Interest Lands Conservation Act section 810 summary evaluation and finding on subsistence, a reassessment of wilderness eligibility, and a list of desired conditions and potential strategies for management of Lake Clark National Park and Preserve.

The National Park Service prepares a variety of plans and studies for national park system units, covering many topics. The NPS planning framework brings all of these plans into a single, unified system. The totality of a park's plans is referred to as the Portfolio of Management Plans (portfolio). The portfolio can be conceived as a loose-leaf binder in which certain planning elements are removed and updated, or new elements added. The portfolio consists of comprehensive plans, implementation plans, and strategic program plans, as well as studies and inventories that may support planning projects. The portfolio for Lake Clark

National Park and Preserve will include this GMP Amendment, the foundation statement (NPS 2009a), land protection plan (NPS 2014), park atlas maps (NPS 2012d),

wild river outstandingly remarkable values, and other future components that as an assemblage meet the full range of park planning needs.



INTRODUCTION

Park planning is a decision-making process, and general management planning is the broadest level of decision making for parks. General management plans (GMPs) are required for all units of the national park system and are intended to establish the overall future management direction of a national park system unit. General management planning focuses on what resource conditions and visitor experiences should be achieved and maintained (desired future conditions) throughout a park unit. General management plans look years into the future and consider the park holistically in its full ecological and cultural context and as part of a surrounding region.

A general management plan was last completed for Lake Clark National Park and Preserve in 1984. This GMP Amendment was undertaken to bring the 1984 plan up to current planning standards. This GMP Amendment revises and updates much of the 1984 *General Management Plan*, and provides guidance for a 15- to 20-year time frame. Decisions about how specific programs and projects are implemented will be addressed during more detailed planning efforts that follow this GMP Amendment.

This plan was developed by an interdisciplinary team in consultation with National Park Service (NPS) offices; federal, state, and local agencies; Alaska Natives and other interested parties; and input and participation from the general public.

BRIEF DESCRIPTION AND HISTORY OF THE PARK

Lake Clark National Park and Preserve was established on December 2, 1980, under the Alaska National Interest Lands Conservation Act (ANILCA; Public Law 96-487; 16 *United States Code* [USC] section

410hh[4][a]), and is part of the national park system. In establishing this national park system unit, ANILCA designated both a national park and preserve. Sport hunting is allowed in the preserve under federal and nonconflicting state laws and regulations, pursuant to ANILCA sections 203 and 1313 and 36 *Code of Federal Regulations* (CFR) Part 13.40(d). Federally qualified subsistence use, including hunting and trapping, are allowed in both the park and preserve. Although mostly federal lands, there are state-owned and private lands within the park and preserve. These private parcels include Native allotments and other small tracts, and Alaska Native corporation lands.

Located in southwest Alaska, Lake Clark National Park and Preserve covers approximately 4 million acres of land and is a microcosm of many regions of Alaska. Elevations range from sea level to Mount Redoubt's 10,197 feet. The park's¹ spectacular scenery stretches from the shores of Cook Inlet, across the Chigmit Mountains, to the tundra-covered hills of the western interior. The Chigmits, where the Alaska and Aleutian ranges meet, are an awesome, jagged array of mountains and glaciers, which include two active volcanoes, Mount Redoubt and Mount Iliamna. Lake Clark, 42 miles long and the sixth-largest lake in Alaska, and many other lakes and rivers within the park are key salmon habitat for the Bristol Bay salmon fishery, one of the largest sockeye salmon fishing grounds in the world.

Lake Clark National Park's nearly 2.6 million acres include the rugged Chigmit Mountains as well as 123 miles of coastline along Cook Inlet. Lake Clark National Preserve

¹ Unless otherwise indicated, the terms "park" or "Lake Clark" in this document refers to both the park and preserve.

encompasses more than 1.4 million acres and adjoins the park to the south and west, with rolling foothills, boreal forests, alpine lakes, wild rivers, and sweeping expanses of tundra.

The park has two distinct climate areas: the damp coast and the drier interior. The coast is often foggy and wet, with an average annual precipitation of 40 to 80 inches. The interior averages only 17 to 26 inches. Weather conditions can change rapidly due to extremely variable weather patterns. Frost and snow can occur any time, but are most common from September to early June. Lake Clark typically begins freezing in November and melts in April.

The varied topography of the park creates habitats for a diverse mix of plants and animals. The area supports a variety of large land mammals including Dall sheep, caribou, moose, wolves, and black and brown bears. Large, healthy populations of rainbow trout, Dolly Varden, lake trout, northern pike, and arctic grayling are found in the lakes and rivers. Over 125 species of birds have been observed in the park. From the eastern flank of the Chigmit Mountains, rivers create marshes and outwash plains—prime habitat for bald eagles, diverse migratory birds, and resident waterfowl. Cook Inlet features shallow bays, rocky headlands, and many offshore reefs populated by marine mammals. The coastal cliffs provide habitat for peregrine falcons and rookeries for puffins, cormorants, kittiwakes, and other seabirds.

This richly diverse region has been a homeland for Alaska Native peoples for centuries, since the end of the last ice age, with Dena'ina Athabascan sites throughout today's park and preserve. Many Dena'ina people living near Lake Clark today have roots at the historic Kijik Village, other sites within the Kijik National Historic Landmark, and at several sites within the park. The Richard L. Proenneke Historic Site is also noteworthy.

Residents of Nondalton, Iliamna, Lime Village, Newhalen, Pedro Bay, and Port Alsworth continue to engage in subsistence hunting, fishing, and gathering activities inside the park and preserve under federal and state regulations. These communities and the area inside the park are designated resident zone because the residents have a history of customary and traditional use of resources in the park for their sustenance and livelihood.

The park provides visitors with superlative opportunities for solitude and self-reliance. Popular recreational uses include visiting the Proenneke site, river floating, hiking, backpacking, mountaineering, sport fishing, and bear and other wildlife viewing. Access is almost exclusively by small aircraft. The park is not accessible by road. A small visitor contact station is in Port Alsworth. Due to the remote nature of the park, limited visitor services are also offered in the gateway communities of Homer, Kenai, and Anchorage.

Approximately 2,572,000 acres of the park is wilderness, designated by Congress under ANILCA to preserve the area's natural conditions and wilderness character in perpetuity as part of the national wilderness preservation system. In addition, section 601 of ANILCA designated three wild rivers in the park and preserve as part of the national wild and scenic river system:

- **Mulchatna River** — originates in the Chigmit Mountains at Turquoise Lake and flows west through the foothills approximately 22 miles to the border of the preserve.
- **Chilikadrotna River** — originates from the Chigmit Mountains at Twin Lakes and flows west through the foothills approximately 9 miles to the border of the preserve and then re-enters the preserve for another 2.6 miles.

- **Tlikakila River** — originates in the Chigmit Mountains near Summit Lake and flows southwest approximately 50 miles into Lake Clark.

Both of the park's active volcanoes (Mount Iliamna and Mount Redoubt) are designated national natural landmarks. Both were designated prior to the establishment of the park in 1976. The Iliamna Volcano National Natural Landmark covers 33,694 acres, while the Redoubt Volcano National Natural Landmark covers 37,720 acres.

PURPOSE OF AND NEED FOR THE GMP AMENDMENT

The purpose of this GMP Amendment is to update and replace the 1984 General Management Plan for Lake Clark National Park and Preserve. This GMP Amendment will replace the 1984 General Management Plan and, together with other elements of the park's Portfolio of Management Plans, will guide planning and decision making for the next 15 to 20 years for park resources, visitor use, and facilities. The GMP Amendment will also provide new direction for stewardship of park wilderness and backcountry recreation uses with management zoning and visitor use guidance. See the end of this chapter for more detail on the Lake Clark Portfolio of Management Plans.

More specifically, the purposes of the GMP Amendment are as follows:

- Clearly identify desired resource conditions and values to be maintained and visitor uses and opportunities to be provided in the park.
- Provide guidance on how to provide quality visitor opportunities, how to manage visitor use, and what kinds of visitor and administrative facilities to develop in the park.
- Complete a wilderness eligibility reassessment to determine whether units 2 and 3 should be added to the park's eligible wilderness.
- Provide direction on public use cabin management.
- Provide direction on commercial services to support visitor opportunities.

This GMP Amendment is needed because the last comprehensive planning effort for the park was completed in 1984. Since then, conditions have changed, both inside and outside the park. With changes in

technology and the increased use of web-based information, more people are likely aware of Lake Clark. Because the park is a short flight from Anchorage, the state's largest population center, it is probable that use levels will increase in the future. Private inholdings have been acquired and management direction is needed for these additions. Park managers have had 28 years to better understand the natural and cultural resources of the park and the changing needs of park visitors. For example, more information is available on the park's vascular plants and nonnative vegetation. Likewise, there is better information on commercial service activities occurring in the park.

The 1984 General Management Plan did not adequately establish visitor experience goals, nor did it specifically identify indicators, measures, and standards for measuring success. This GMP Amendment will provide a framework under which park managers can assess whether visitor use is resulting in unacceptable changes and take appropriate action if needed.

Information on some cultural resource topics, such as cultural landscapes and ethnographic resources, was limited at the time the 1984 General Management Plan was prepared. Subsequent research and investigations have contributed information enhancing understanding and management of the broad range of park cultural resources. Among these efforts, an inventory of cabins was recently completed, which in part helped inform the cultural resource sections of this plan.

This GMP Amendment is needed to meet the requirements of the National Parks and Recreation Act of 1978 and NPS policy, which mandate updated general

management plans for each unit in the national park system.

Finally, this GMP Amendment is needed because there have been changes since 1984

in NPS *Management Policies 2006* and director's orders on park planning (e.g., management zoning).

GUIDANCE FOR PLANNING

Much of the basis of park planning is derived from a park's foundation statement, which is a formal description of a core mission of the park. It is a foundation to support planning and management of the park. The foundation statement is grounded in the park's legislation and from knowledge acquired since the park was originally established. It provides a shared understanding of what is most important about the park. The foundation statement describes the park's purpose, significance, fundamental resources and values, primary interpretive themes, and special mandates. The complete foundation statement can be found on the park website at <http://www.nps.gov/lacl/parkmgmt/index.htm>.

The following key elements of Lake Clark National Park and Preserve Foundation Statement have been included here to provide the framework within which the GMP Amendment has been developed. More detail is provided in the foundation statement itself (NPS 2009a).

PURPOSE OF LAKE CLARK NATIONAL PARK AND PRESERVE

Purpose statements convey the reasons why an area was set aside as a national park. They are established in the park foundation statement (NPS 2009a). Grounded in an analysis of park legislation and legislative history, purpose statements also provide primary criteria against which the appropriateness of plan recommendations, operational decisions, and actions are tested.

The purpose of Lake Clark National Park and Preserve is to

- protect a region of dynamic geologic and ecological processes that create scenic mountain landscapes,

unaltered watersheds supporting Bristol Bay red salmon, and habitats for wilderness-dependent populations of fish and wildlife vital to 10,000 years of human history (NPS 2009a)

- Section 201 of ANILCA states that the park shall be managed for the following purposes, among others:
- to protect the watershed necessary for 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 active volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state
- to protect habitat for and populations of fish and wildlife including but not limited to caribou, Dall sheep, brown/grizzly bears, bald eagles, and peregrine falcons

Subsistence uses shall be permitted in the park where such uses are traditional in accordance with the provisions of ANILCA Title VIII.

SIGNIFICANCE OF LAKE CLARK NATIONAL PARK AND PRESERVE

Significance statements capture the essence of a national park system unit's importance to the nation's natural and cultural heritage. They are described in the park foundation statement (NPS 2009a). These statements describe the park unit's distinctiveness and describe why an area is important within regional, national, and global contexts. This

helps managers focus their efforts and limited funding on the protection and enjoyment of attributes that are directly related to the purpose of the national park system unit.

Lake Clark National Park and Preserve is nationally and internationally significant for the following reasons:

- ***Mountain Landscapes:*** Lake Clark National Park and Preserve protects extraordinary mountain landscapes dominated by two active volcanoes and cradles a system of turquoise-hued lakes and free-flowing rivers that epitomize Alaska’s scenic beauty.
- ***Mosaic of Landforms and Ecosystems:*** Lake Clark National Park and Preserve protects a complex mosaic of landforms and ecosystems that continue to evolve from dynamic tectonic, volcanic, glacial, and climatic processes.
- ***Salmon Fishery:*** Lake Clark National Park and Preserve protects necessary spawning and rearing habitat at the headwaters of the world’s most productive red (sockeye) salmon fishery.
- ***Subarctic Fish and Wildlife Populations and Habitats:*** Lake Clark National Park and Preserve protects vast, undisturbed landscapes of coastal areas, mountain ranges, tundra, foothills, and lake regions that support a full complement of subarctic fish and wildlife species.
- ***Cultural Tapestry:*** Lake Clark National Park and Preserve protects a tapestry of cultural places woven from 10,000 years of human occupancy that is vital to the cultural and spiritual continuance of the Dena’ina culture.

- ***Subsistence:*** Lake Clark National Park and Preserve protects resources and provides opportunities for local, rural residents to engage in activities necessary to support a subsistence way of life.
- ***Wilderness:*** Lake Clark National Park and Preserve manages one of the largest wilderness areas in the United States, providing visitors with superlative opportunities for solitude, challenge, and self-reliance.

FUNDAMENTAL RESOURCES AND VALUES

Fundamental resources and values are systems, processes, features, visitor experience, stories, and scenes that deserve primary consideration in planning and management because they are essential to maintaining the park’s purpose and significance. The National Park Service works to preserve those resources and values fundamental to maintaining the significance of Lake Clark National Park and Preserve. That which is most important about the park could be jeopardized if these resources and values are degraded.

Fundamental resources and values were identified for each of the above significance statements for Lake Clark. For more details on the park’s fundamental resources and values, see the Lake Clark National Park and Preserve Foundation Statement (NPS 2009a). The management alternatives and other elements of this GMP Amendment are consistent with the fundamental resources and values identified for Lake Clark National Park and Preserve.

SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS RELATED TO LAKE CLARK NATIONAL PARK AND PRESERVE

Special mandates and administrative commitments are essential to consider in managing and planning for park units. Special mandates are requirements specific to a park that expand on or contradict a park's legislated purpose. They are park-specific legislative or judicial requirements that must be fulfilled, along with the park's purpose, even if they do not relate to that purpose. Administrative commitments in general are agreements that have been reached through formal, documented processes such as memorandums of agreement.

The ongoing mandates and commitments for Lake Clark National Park and Preserve are described in this section.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542) established a national system of wild, scenic, and recreational rivers. The act preserves selected rivers that possess outstanding scenic, recreational, geological, cultural, or historic values, and maintains their free-flowing condition for future generations. Lake Clark National Park and Preserve contains three designated wild rivers (Mulchatna, Chilikadrotna, and Tlikakila rivers). While these wild rivers are within the boundaries of the park and are subject to ANILCA, management requirements are also provided by the Wild and Scenic Rivers Act (Public Law 90-542). Section 3(b) of the Wild and Scenic Rivers Act also requires a comprehensive river management plan be prepared for the park's wild and scenic rivers. This GMP Amendment is not intended to fulfill this requirement, but a comprehensive river management plan would be prepared in a subsequent planning effort.

Wilderness

The Lake Clark Wilderness was designated by Congress in the Alaska National Interest Lands Conservation Act. The area, encompassing approximately 2,572,000 acres and comprising about 64% of the entire park unit, is subject to the provisions of ANILCA and the Wilderness Act. These acts mandate how this area is to be managed and uses that are to be allowed and prohibited, ensuring that the area's wilderness character continues to be maintained and protected.

KEY LAWS, REGULATIONS, AND POLICIES

This section focuses on key statutes, regulations, and policies used to manage Lake Clark National Park and Preserve. ANILCA is the establishing legislation. Lake Clark National Park and Preserve was established on December 2, 1980, under section 201(7)(a) of ANILCA. Other applicable laws and policy referenced in this section include federal and state laws, federal regulations, and NPS policies. Because this document is an amendment to the 1984 General Management Plan, some previously approved park guidance from that plan are carried forward and referenced. Additional guidance can be found in NPS Alaska Regional Management Guidelines (NPS 2013).

Many national park system unit management directives are specified in laws and policies and are therefore not subject to alternative approaches. For example, there are laws and policies about managing wilderness (the Wilderness Act and ANILCA); managing environmental quality (such as the Clean Air Act, the Endangered Species Act, and Executive Order 11990, "Protection of Wetlands"); laws governing the preservation of cultural resources (such as the National Historic Preservation Act of 1966 [NHPA] and the Native American Graves Protection and Repatriation Act of

1990 [NAGPRA]); and laws about providing public services (such as the Architectural Barriers Act Accessibility Standards)—to name only a few. In other words, a general management plan is not needed to decide that it is appropriate to protect endangered species, control nonnative species, protect historic and archeological sites, conserve artifacts, or provide access for disabled persons. Laws and policies have already decided these and many other issues.

There are other laws and executive orders that are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service, the General Authorities Act of 1970, the National Parks and Recreation Act, and the National Parks Omnibus Management Act (1998).

The NPS Organic Act (16 USC section 1) provides the fundamental management direction for all units of the national park system:

[P]romote and regulate the use of the federal areas known as national parks, monuments, and reservations. . . . by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

The National Park System General Authorities Act (16 USC, section 1a-1 et seq.) affirms that while all national park system units remain “distinct in character,” they are “united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage.” The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, amendments

state that NPS management of park units should not “derogate . . . the purposes and values for which these various areas have been established.”

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual titled *NPS Management Policies 2006*. Additional Alaska policies are addressed in the *NPS Alaska Regional Management Guidelines* (NPS 2013). All alternatives considered in this document incorporate and comply with the provisions of these mandates and policies.

NPS Guidelines on Impairment of National Park Resources

In addition to determining the environmental consequences of implementing the preferred and other alternatives, *NPS Management Policies 2006*, section 1.4, requires analysis of potential effects to determine whether or not proposed actions would impair the resources and values of a park.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of the park. That discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the

integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values (NPS 2006a).

A nonimpairment determination for the selected action will be attached to the decision document for this plan.

SCOPE OF THE GENERAL MANAGEMENT PLAN AMENDMENT / ENVIRONMENTAL ASSESSMENT

PLANNING ISSUES AND CONCERNS TO BE ADDRESSED

Human Impacts on Natural and Cultural Resources

Popular destinations in the park, such as the large lakes (e.g., Lake Clark, Turquoise Lake, Kontrashibuna Lake, Twin Lakes, and Fishtrap Lake), the Richard L. Proenneke Historic Site, Chinitna Bay, and Silver Salmon Creek, have higher potential for impacts to resources due to human use. As human use increases, certain resources may sustain unacceptable impacts. Visitor-created trails and camping areas are found in places that are not resilient to such disturbances and management actions may be necessary. Some of these areas have unique rustic character that reflects their historic and contemporary uses. Potential conflicts between visitors and wildlife, such as brown bear, could threaten human life and property as well as wildlife. Other human factors include shifts in visitor use patterns and changes in resident zone populations and communities.

Cultural resources are impacted by human activities as well. Disturbance and loss of artifacts and inadvertent disturbance of cultural resources occur and may escalate with increased visitation.

This plan includes direction on management of human activities in Lake Clark National Park and Preserve in order to protect natural and cultural resources as well as visitors' experiences. This plan also includes guidance on the appropriate level and type of NPS administrative and management activities in the park and preserve, as these activities may

also have impacts on resources and visitor experiences.

Visitor Use and Experience

There are several factors that impact visitor experience. Visitor use (motorized and nonmotorized) has been increasing in certain areas. These factors present the potential for conflicts between visitors seeking different experiences and between visitors and wildlife in certain high use areas. Most visitors travel to the same popular areas, concentrating use on lake shores, rivers, and coastal areas in the short summer season. Questions have been raised regarding appropriate visitor use management of the park and the range of appropriate experiences for the public, e.g., in addition to providing opportunities for wilderness-based experiences (challenge, solitude, etc.), what other opportunities should be provided? The National Park Service clarifies visitor experiences via management zones, which are part of this GMP Amendment. One of the questions for the general management plan is what types of management zones should be designated in the park and where.

Access is another related visitor use issue. There are no roads to the park. Visitors reach the park by airplane or boat; there are many options for entry, which makes visitor use management challenging.

Other topics considered in this plan include the amount and type of visitor facilities that should be provided, if any, and where they should be situated. Currently, there are few NPS facilities in Lake Clark National Park and Preserve. Campgrounds and/or campsites have been requested by the public for Port Alsworth and several lakes. Trails,

public use cabins, and improved opportunities for education and interpretation were also requested by the public. Through the general management plan, existing uses of visitor facilities and whether improved visitor facilities (e.g., public use cabins, campsites, trails, boat racks) should be provided needs to be examined. These actions may concentrate visitation to the park and preserve, resulting in both more visitor opportunities and potential impacts on specific park resources and values.

Access to information about the park is changing with social media and the Internet. Therefore, another question addressed in this plan is how the National Park Service should communicate information about the park to visitors and the public.

This plan provides guidance on how to address the location, types, and management of visitor experiences and visitor amenities in and near Lake Clark National Park and Preserve. Management zoning, including identification of visitor experience, resource, and administrative desired conditions, is also addressed and included to bring the general management plan up to current NPS standards.

Cabin Management

Over 70 cabins exist in Lake Clark National Park and Preserve that are of varied age and condition. Some of the habitable cabins are used for ranger quarters or other functions, although many cabins are in ruins. Twelve of the historic cabins are in good condition, are eligible for or are listed in the National Register of Historic Places and are suitable for habitation; eight of these cabins are presently used for NPS administrative purposes. Some of the cabins are in need of repair and work has been completed or is ongoing to stabilize or restore several cabins (e.g., Snipe Lake and Joe Thompson cabins). Many of the cabins that predate establish-

ment of the park exist along the coast or are adjacent to lakes and rivers. These cabins could be used for administrative or public use purposes. There is great potential for the cabins to enhance visitor experience in the park. Support for this use was expressed during the scoping period. However, opening remote cabins to public use also may result in increased resource impacts in the vicinity of the cabins and presents management challenges.

This plan includes direction on cabin management, focusing on which cabins, if any, should be designated public use and/or which ones should be available for administrative use. The plan also assesses whether new administrative cabins are needed to improve management of the park.

Management of the Richard L. Proenneke Historic Site

This historic site (including a cabin, cache, and woodshed/privy) on Upper Twin Lake is one of the park's most visited sites. It also lies within the Lake Clark Wilderness. Naturalist Richard "Dick" L. Proenneke documented his life at the cabin in a series of journals—he is considered an icon of wilderness living in the park. As one of the park's fundamental resources, the National Park Service protects and interprets the historic site and its wilderness values. Volunteer docents who stay at the site interpret the area for visitors. It has been pointed out there is a need to address issues with camping, dogs, and visitor activities near the cabin. Questions have been raised regarding how the area should be managed in the future, what is appropriate to provide in a wilderness area, what visitor facilities should be provided, what NPS presence is needed, and what should be done with on-site and in-cabin artifacts.

This plan includes guidance on the management of the Proenneke site, such as use of the site, permitted and

prohibited uses, visitor facilities, presence of staff, and protection of park resources including cultural artifacts.

Commercial Services

Most visitors who come to Lake Clark National Park and Preserve arrive by air taxi, and many visitors to the park rely on commercial operators such as guide and outfitter services. The National Park Service provides these operators with much of the information that they, in turn, use to inform and educate visitors about the park. The NPS staff also relies greatly on commercial operators to obtain information about the activities of visitors in the park. It is likely that commercial activities in Lake Clark will increase in the future as interest in the park increases. The park does not have a commercial services plan that provides direction on the management of commercial services in the park. There is a need to determine the level and type of appropriate commercial services that are provided in Lake Clark National Park and Preserve and to ensure that they continue to support a high standard of resource stewardship, while providing safe, quality visitor services. In addition, the National Park Service supports commercial visitor services that contribute to the operation of viable businesses throughout the region.

This plan includes direction on the appropriate types, levels, and locations of commercial services provided at Lake Clark National Park and Preserve.

Determination of Eligibility for Wilderness Designation

The 1984 GMP found two areas in the southeastern portion of the park identified as unit 2 (~19,000 acres) and unit 3 (~256,000 acres) as not eligible for wilderness designation (see appendix B for more details and

a map). These areas were determined to be ineligible at the time primarily due to Alaska Native Claims Settlement Act (ANCSA) selections. However, much of the land in these areas was not conveyed to the native corporation and are now managed by the National Park Service. Section 6.2.1 of NPS *Management Policies 2006* states that lands assessed as ineligible for wilderness because of nonconforming or incompatible uses must be reevaluated if the nonconforming uses have been terminated or removed.

Thus, there is a need to reevaluate the two areas for their wilderness eligibility. The eligibility reassessment is presented in appendix B.

PLANNING ISSUES AND CONCERNS NOT ADDRESSED IN THIS GMP AMENDMENT

The following issues are not addressed in this management plan amendment because they:

- are already prescribed by law, regulation, or policy (see the “Special Mandates and Administrative Commitments” and “Guiding Principles for Park Management” sections)
- have already been addressed in recent planning documents
- cannot be addressed at this time due to uncertainty and lack of detail

Subsistence Use

Part of the purpose of Lake Clark National Park and Preserve is to provide opportunities for traditional subsistence uses. Subsistence is a fundamental value and a primary use of the park and preserve. Concerns have been raised regarding the protection of subsistence uses within the park and preserve. In particular, local residents are concerned about management

decisions or activities that have the potential to impact their subsistence uses of the park and preserve. More boat, plane, and snowmobile use is occurring around the resident villages, raising concerns about potential conflicts between recreational and subsistence users. Subsistence users are concerned that recreational visitors could disturb wildlife.

This plan does not change subsistence uses and opportunities in the park. The subsistence use management directions in the 1984 General Management Plan still apply within the park and preserve. As noted in the strategies for subsistence use in the park's desired conditions and management strategies (see appendix C), issues regarding subsistence use are addressed through the Lake Clark National Park and Preserve Subsistence Resource Commission and in the subsistence management plan, which is regularly reviewed and updated. Conflicts between subsistence users and nonconsumptive users will continue to be addressed on a case-by-case basis.

Proposals for Wilderness Designation

Under the Wilderness Act and NPS policy, a wilderness study would be required in order for the National Park Service to propose wilderness designation for eligible wilderness areas. Based on public comments during scoping for the plan, preparing a wilderness study was not seen as an important issue for the park. Consequently, this plan is focused on issues related to opportunities for visitor use, recreation, and access. As per section 6.3.1 of NPS *Management Policies 2006*, no action will be taken in these eligible areas that would diminish their eligibility until the legislative process of wilderness designation has been completed. All management decisions affecting the areas will apply the concept of "minimum requirement" for administration of the areas.

Port Alsworth Area

This GMP Amendment does not include alternatives for any substantial changes in National Park Service presence in the Port Alsworth area. The 1984 General Management Plan mentions some needed facilities such as two single-family housing units, a seasonal bunkhouse, a community building, and a maintenance building. There have been several plans and associated compliance for the Port Alsworth area since the early 1990s, including a site development plan, and housing, visitor facilities, and maintenance area plans. Decisions about NPS facilities in the Port Alsworth area will be determined on a case-by-case basis and are outside the scope of this GMP Amendment.

External Pressures and Boundary Issues

Several potential external threats exist near Lake Clark National Park and Preserve that could impact the park and preserve. Although some of these external pressures are yet to be fully understood, there is general consensus that certain types of pressures might increase in the future. The proposed Pebble Mine, which would be the world's largest open-pit copper, gold, and molybdenum mine, would be near the park and would directly impact the Chulitna River (the second-largest tributary to Lake Clark). Both the mine and its associated infrastructure, including a haul road, could affect park resources (e.g., water and air quality, salmon fisheries, wildlife), subsistence use, and visitor experience. Other mineral development could also occur in the vicinity of the park and preserve such as coal mining at the Beluga coal fields and hydropower at Chakachamna Lake. Several developments could occur to the north of the park, including geothermal development on Mount Spurr. These developments may affect water and air quality, disrupt wildlife corridors, and affect visitor use in the park.

Lake Clark National Park and Preserve has over 187,000 acres of private inholdings and allotments, the majority of which are concentrated along a few large rivers, Lake Clark, and other large lakes. Other large inholdings are near the coast. These lands could be developed for mineral extraction, tourism, and private use (e.g., residential cabins). There is concern about instances of trespassing on private land by visitors because it is often difficult to know where private lands begin and end in the back-country. Additionally, some visitors may not be aware of the locations of these private lands.

None of the alternatives in this plan directly address these external forces, nor are indirect affects expected to interact with the impacts of the action alternatives. The National Park Service is participating in early interagency and public discussions about the Pebble Mine and in discussions with private inholders outside of this GMP Amendment. In addition, the park's land protection plan (NPS 2014) provides general directions and goals for addressing external pressures such as collaborating with land management agencies, private landowners, and Alaska Native corporations.

Climate Change

Climate change refers to any substantial changes in average climatic conditions or climatic variability lasting for an extended period of time (decades or longer). Recent reports by the U.S. Climate Change Science Program, the National Academy of Sciences, and the United Nations Intergovernmental Panel on Climate Change (IPCC 2007) provide clear evidence that climate change is occurring and is likely to accelerate in the coming decades. The impacts of climate change are expected to be more severe in Alaska, where air temperature is warming at a faster rate than in other places on the globe, resulting in accelerated changes to vegetation, water resources, wildlife, and other processes such as permafrost extent,

accelerated erosion, loss of coastal and interior sites, loss of high-elevation snow and ice patch sites, and damage to interior sites from increased incidence of wildfires. Human use of and access to these natural resources is also changing as a result of the changing climate.

Down-scaled global climate models for Lake Clark National Park and Preserve predict that average annual temperature of 2.6 C by 2040 and 4.5 C by 2080. This could translate into an average annual temperature that is below freezing (-2.3 C) to near or above freezing (0.3 C) by 2040. A likely effect of these changes is a decrease in time between the first freeze dates and the first thaw dates. Winter temperatures are expected to change the most. Precipitation is predicted to increase across the park, with 20% more snowfall in the winter and 11% more rainfall during the growing seasons (The Wilderness Society 2008; Winfree et al. 2013).

There are two different issues to consider with respect to climate change: (1) what is the contribution of the proposed action to climate change such as greenhouse gas emissions and the "carbon footprint," and (2) what are the anticipated effects of climate change on park resources and visitors that are affected by the management alternatives? As later described in table 1, there will be negligible impacts from this plan on the carbon footprint of Lake Clark National Park and Preserve. Because the contribution of the proposed actions in all of the alternatives to climate change is negligible, this issue can be dismissed.

Regarding the second question, this plan amendment primarily focuses on visitor use and access. Climate change will affect park resources such as water flow timing and volume, the extent and duration of snow cover and ice on lakes, and the frequency and intensity of storms. These changes will have impacts on wildlife populations, public facilities, and access and use of the park. But it is difficult to determine when, how, or where these changes will occur and if they

will impact visitor use and access options considered in this plan. The impacts of climate change on cultural resources are evident in the exposure of prehistoric artifacts and associated biological materials from ice patch sites as these features retreat under warmer climatic conditions. Archeological sites, particularly those in coastal, lake, or river environments, may face increased threats of erosional disturbance from more frequent and intense storms and rising water levels.

The National Park Service is addressing climate change in Alaska parks through other planning efforts. The “Alaska Region Climate Change Response Strategy” (NPS 2010e) presents a framework and goals and objectives for planning for climate change in and near Alaskan national parks. Scenario planning for climate change is also being prepared, providing ideas about the effects of climate change on park resources and actions that can be taken (see NPS 2010f and Winfree et al. 2013). The National Park Service acknowledges the importance of using current climate science to inform management decisions.

Due to the scope of this planning effort, climate change is not discussed as a major issue in this GMP Amendment. However, desired conditions related to climate change and sustainability are included in appendix C, and some discussion about climate change impacts on visitor use is included throughout this plan.

IDENTIFICATION OF IMPACT TOPICS

Impact Topics in the Plan

The planning team selected the impact topics for analysis based on the potential for each topic to be affected by the alternatives. Also included is a discussion of some impact topics that are commonly addressed in general management plans, but that are dismissed from detailed analysis in this plan for the reasons given.

The “Environmental Consequences” chapter contains a more detailed description of each impact topic to be affected by the actions described in the alternatives.

Impact Topics Retained and Dismissed

Impact topics have been retained if there could be appreciable impacts on the human environment from the actions of the alternatives considered. All other impact topics have been dismissed from detailed analysis. Impact topics were dismissed if they were determined not to be relevant to the development of this GMP Amendment because either: (1) implementing the alternatives would have no effect, negligible effect, or minor effect on the resource, or (2) the resource does not occur in the park.

TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR LAKE CLARK NATIONAL PARK AND PRESERVE

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
Vegetation and Soil	Retained	Two of the primary natural resources of the park are its vegetation communities and soil. Visitors and ground-disturbing actions can affect both vegetation and soils. Several management actions in the alternatives, including proposed new facilities, could adversely affect these resources. Increased visitation also would increase the potential for the introduction of invasive, nonnative plants, which in turn would affect native vegetation. These potential impacts would be of concern to park managers and the public, as well as visitors and other park users.	NPS Organic Act; NPS <i>Management Policies 2006</i> ; "NPS Alaska Regional Management Guidelines"
Brown and Black Bear	Retained	Lake Clark’s brown bears are a key species, both from an ecological and visitor standpoint. The coast is renowned for high quality brown bear habitat, and viewing bears is one of the attractions for visitors. Black bear are also of high interest to visitors. One of the purposes of the park is to protect habitat and populations of brown bear. Actions being considered in the alternatives, such as encouraging visitor use and providing public use cabins, could affect black and brown bear behavior, distribution, and numbers. These changes could be of concern to visitors, NPS managers, and the public.	ANILCA, NPS Organic Act; NPS <i>Management Policies 2006</i> ; "NPS Alaska Regional Management Guidelines"
Wilderness Character	Retained	Over half of Lake Clark National Park and Preserve is designated wilderness and much of the remainder is eligible for wilderness designation. It is one of the largest wilderness areas in the United States. Wilderness is a fundamental resource and value of the area. Preserving the wilderness character, protecting wilderness-dependent species, and providing for wilderness recreation are all fundamental resources and values of the park.	The Wilderness Act, NPS <i>Management Policies 2006</i> , Director’s Order 41: <i>Wilderness Preservation and Management</i> ; "NPS Alaska Regional Management Guidelines"
Historic Structures / Sites / Cultural Landscapes	Retained	Selected backcountry cabins are identified for potential public use under the GMP alternatives. Some of these restored cabins (e.g., Priest Rock [Allen Woodward], Joe Thompson, and Snipe Lake cabins) have been determined historic structures eligible for the National Register of Historic Places (NRHP). The Richard L. Proenneke Historic Site on Upper Twin Lake is listed in the national register and is open for public interpretation year-round. A cultural	Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended (16 USC 470); Advisory Council on Historic Preservation’s implementing regulations regarding the "Protection of Historic Properties" (36 CFR 800); <i>Secretary of the Interior’s Standards for the Treatment</i>

**TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR
LAKE CLARK NATIONAL PARK AND PRESERVE**

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
		<p>inventory of the Proenneke site is in preparation. The cabins are in designated or eligible wilderness, and protection of wilderness character is an important consideration for the management of cultural resources, visitor experience, and use. The alternatives present a range of visitor uses and NPS management actions that could potentially affect or alter the historical and architectural integrity of these properties and associated cultural landscape features.</p> <p>Among the park's important cultural landscapes are the Kijik Archeological District National Historic Landmark, and the national register-listed Telaquana Trail. The entire park and preserve also represents an ethnographic landscape encompassing a significant part of the ancestral coastal and interior Dena'ina homelands. No undertakings are proposed under the GMP alternatives with the potential to affect these archeological or ethnographic cultural landscapes (see the following discussion regarding dismissal of ethnographic resources as an impact topic).</p>	<p><i>of Historic Properties</i> (1995); <i>Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i> (1996); NPS Director's Order 28: <i>Cultural Resources Management</i>; <i>NPS Management Policies 2006</i>; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers (2008)</p>
Archeological Resources	Retained	<p>Park archeological resources include hunting camps, villages, burials, and ritual sites that document over 10,000 years of human use, occupation, and adaptation to the area's changing environments. The Kijik Archeological District National Historic Landmark includes an old village site, a Russian Orthodox cemetery, and more than a dozen other archeological sites associated with the Inland Dena'ina Athabascan people whose descendants continue to live in the Lake Clark area. The district is recognized as the largest known grouping of Dena'ina settlements and represents the most complete and intact archeological record of Dena'ina cultural continuity and change over the last 1,000 years. Other archeological districts have been recorded in the park that are eligible for listing in the national register.</p> <p>Because some actions proposed in this GMP Amendment (e.g., campsite and trail improvements) entail limited ground disturbance or present the potential for</p>	<p>Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended (16 USC 470); NPS Director's Order 28: <i>Cultural Resources Management</i>; <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>; <i>NPS Management Policies 2006</i>; Director's Order 28A: <i>Archeology</i> (2004); <i>Archaeological Resources Protection Act</i> (1979); <i>Antiquities Act</i> (1906)</p>

TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR LAKE CLARK NATIONAL PARK AND PRESERVE

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
		visitor use impacts, the topic of archeological resources was retained for analysis. In accordance with section 106 compliance requirements, NPS staff would survey and assess all proposed project areas to ensure that archeological resources, if identified, are adequately protected and preserved.	
Museum Collections (including objects that have been accessioned into the park museum collection as well as historical objects on display that have not yet been accessioned)	Retained	The park preserves a collection of artifacts, archives, natural history specimens, oral histories, movies, and images that document the natural and cultural history of the area, as well as the park’s administrative history. Original furnishings and other items displayed at the Proenneke cabin and other historic cabins are treated as museum objects although not yet technically part of the park’s museum collections. Different approaches for their management are proposed under the planning alternatives to achieve interpretive objectives.	National Historic Preservation Act; American Indian Religious Freedom Act; Archeological and Historic Preservation Act; Archeological Resources Protection Act; Native American Graves Protection and Repatriation Act; NPS <i>Management Policies 2006</i> ; Department of the Interior Manual on Museum Property Management 411 DM; <i>NPS Museum Handbook</i> ; Director’s Order 24: <i>Museum Collections Management</i> and Director’s Order 28: <i>Cultural Resources Management</i> ; 36 CFR 79 “Curatorship of Federally-Owned and Administered Archaeological Collections”
Visitor Use and Experience (including access, recreational opportunities and experiences, and interpretation and education)	Retained	Providing opportunities for visitors to use and enjoy the park is mandated by both law and NPS policies. Wilderness recreation is a fundamental value of the park. The ways that visitors use and experience the park would be affected by the alternatives presented in this plan. These changes would be of concern to visitors, NPS managers, and the public.	NPS Organic Act; Wild and Scenic Rivers Act, <i>NPS Management Policies 2006</i> ; “NPS Alaska Regional Management Guidelines”
Subsistence Use	Dismissed	One of the purposes of the park is to support subsistence for local rural residents. Subsistence is one of the significance statements for Lake Clark National Park and Preserve. Subsistence resources and cultural knowledge are fundamental resources and values. None of the alternatives considered in this plan would affect subsistence resources, uses, or access to these resources. Under all alternatives, the National Park Service would continue to protect resources and provide opportunities for local rural	Alaska National Interest Lands Conservation Act; <i>NPS Management Policies 2006</i> ; “NPS Alaska Regional Management Guidelines”

**TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR
LAKE CLARK NATIONAL PARK AND PRESERVE**

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
		residents to engage in harvesting activities, and there would continue to be a priority for taking of fish and wildlife for other purposes.	
Other Wildlife	Dismissed	Lake Clark’s wildlife populations, including, ungulates, fur bearers, fish, and birds, are one of the park’s fundamental resources and are one of the elements that add to the quality of the visitor experience. In addition, they are important for park subsistence activities (a fundamental resource and value). Although use levels would likely increase as a result of the actions in the alternatives being considered, the increase in use levels would likely be relatively small and distributed over a large area. Most of the changes being proposed would be in areas that already are used by visitors and where wildlife populations and habitat have already been altered. Fishing pressure may increase in a few popular areas, but not enough to reduce fish populations. Under the state’s and NPS management of fish and wildlife, minimal changes to fish and wildlife populations would be expected as a result of the alternatives. Any adverse impacts that would occur from changes in visitation and new developments under the alternatives would be minor or less in magnitude.	ANILCA, NPS Organic Act; NPS <i>Management Policies 2006</i> ; “NPS Alaska Regional Management Guidelines”
Threatened and Endangered Species	Dismissed	There are no federally listed species that inhabit, breed in, or overwinter in the park. Likewise, there are no state listed species in the park.	Endangered Species Act, NPS <i>Management Policies 2006</i> ; “NPS Alaska Regional Management Guidelines”
Water Quality	Dismissed	Water quality in park rivers is considered to be unaffected by people, and most of the other surface waters in the park remain almost totally pristine. The Wild and Scenic Rivers Act mandates that water quality, an outstandingly remarkable value, be protected and enhanced in the park’s three designated wild rivers. Although the alternatives could change public use at several of the big lakes, use levels would not be expected to substantially increase to a point that human waste would affect water quality. Any adverse impacts to water quality from increased visitor use would be highly localized and minor or less in magnitude.	NPS Organic Act; Clean Water Act; Wild and Scenic Rivers Act; Executive Order 12088, “Federal Compliance with Pollution Control Standards;” NPS <i>Management Policies 2006</i> ; “NPS Alaska Regional Management Guidelines”

**TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR
LAKE CLARK NATIONAL PARK AND PRESERVE**

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
Floodplains and Wetlands	Dismissed	No changes would occur in uses or visitor activities that would result in noticeable changes in wetland vegetation, soils, or hydrology. There are not expected to be any impacts on floodplains and wetlands from the alternatives in this plan.	Clean Water Act; NPS <i>Management Policies 2006</i> ; Director's Order 77-2: "Floodplain Management"; Executive Order 11988: "Floodplain Management"; Director's Order 77-1: "Wetland Protection"; Executive Order 11990: "Protection of Wetlands"
Air Quality	Dismissed	While comprehensive data have not been collected in Lake Clark National Park and Preserve, air quality is generally considered excellent. Lake Clark is designated a class II airshed under the 1963 Clean Air Act, as amended. Class II airsheds include areas where air quality is cleaner than federal air quality standards, and future air quality degradation is protected to a moderate degree. Some minor air pollution is evident in the park. Although emissions from aircraft use may slightly increase in localized areas as a result of the alternatives, no changes are being proposed that would substantially decrease air quality in the park.	Clean Air Act; NPS <i>Management Policies 2006</i> ; "NPS Alaska Regional Management Guidelines"
Soundscape	Dismissed	Natural sound is an important component of the visitor experience at Lake Clark National Park and Preserve. There may be a slight increase in aircraft and motorboat use in several localized areas as a result of the alternatives, but this use would likely be spread out over time and distributed through the park, and might represent only a slight change from current conditions.	NPS <i>Management Policies 2006</i> ; Director's Order 47: <i>Soundscape Preservation and Noise Management</i> ; "NPS Alaska Regional Management Guidelines"
Night Sky	Dismissed	NPS <i>Management Policies 2006</i> state that the National Park Service will preserve, to the greatest extent possible, the natural lightscapes of parks, including natural darkness. There are no actions proposed in this plan that would affect night sky.	NPS <i>Management Policies 2006</i>
Geologic Resources (including paleontological resources)	Dismissed	None of the alternatives would result in ground disturbance that would affect geologic resources or geologic processes. Soils have been retained under the "Vegetation and Soil" impact topic.	NPS Organic Act; Wild and Scenic Rivers Act, NPS <i>Management Policies 2006</i> ; "NPS Alaska Regional Management Guidelines"

**TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR
LAKE CLARK NATIONAL PARK AND PRESERVE**

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
Wild and Scenic Rivers	Dismissed	Portions of three designated wild rivers are in Lake Clark National Park and Preserve: the Chilikadrotna, Mulchatna, and Tlikakila rivers. These rivers, and their outstandingly remarkable values, would not be affected by the alternatives presented in this plan. Any changes in visitor use levels on the rivers would be minimal as a result of the alternatives—no new actions are being proposed that would affect use of the rivers. Under all alternatives, the three rivers would continue to receive full protection and the National Park Service would ensure no actions are taken that would adversely affect the wild and scenic values of the rivers.	National Wild and Scenic Rivers Act (section 5[d]), NPS <i>Management Policies 2006</i> ; "NPS Alaska Regional Management Guidelines"
Ethnographic Resources	Dismissed	<p>As defined by the National Park Service, an ethnographic resource is "a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (NPS-28). Ethnographic resources typically hold significance for contemporary, traditionally associated groups whose sense of purpose, existence as a community, and identity as an ethnically distinctive people are closely linked to particular resources and places. Among Lake Clark National Park and Preserve's ethnographic resources are the traditional and cultural practices of the Dena'ina people that support their subsistence lifestyles and the traditional place names and stories that connect them with the landscape.</p> <p>The park will continue to protect ethnographic resources and traditional cultural properties in accordance with all applicable laws and policies. To the extent practicable and consistent with essential agency functions and mandates, the park will continue to accommodate access for ceremonial, subsistence, and other traditional uses. Because no undertakings are proposed under the GMP alternatives with the potential to disturb ethnographic resources or to impede traditional access, the topic of ethnographic resources was dismissed from further consideration.</p>	Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended (16 USC 470); Native American Graves Protection and Repatriation Act of 1990; NPS Director's Order 28: <i>Cultural Resources Management</i> ; NPS <i>Management Policies 2006</i> ; Executive Order 13007, "Indian Sacred Sites"(1996)

TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR LAKE CLARK NATIONAL PARK AND PRESERVE

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
Park Operations	Dismissed	Although the alternatives would result in some changes to park management (e.g., commercial services, visitor and administrative facilities, interpretation), no changes are being proposed in the alternatives that would result in more than minor changes to park operations, including park staffing, maintenance activities, operational efficiencies, and management productivity and flexibility.	<i>NPS Management Policies 2006</i>
Socioeconomics (including commercial services)	Dismissed	Lake Clark National Park and Preserve affects local businesses and the economies of individuals and communities in the area. Recreation-related tourism is an important element of the regional economy. However, none of the actions in the alternatives would substantially alter visitor use levels or visitor use patterns that would have more than a minor effect on local businesses, including guides, outfitters, and concessioners, as well as local residents.	National Environmental Policy Act
Natural or Depletable Resource Requirements and Conservation Potential	Dismissed	None of the alternatives being considered would result in the extraction of resources from the park. Relatively small quantities of depletable resources would be used in the development of facilities, such as camp-sites, in the alternatives, but the impact on these resources would be minimal. Under all alternatives, ecological principles would be applied to ensure that park natural resources are maintained and not impaired.	Council on Environmental Quality (CEQ) Regulations
Carbon Footprint	Dismissed	For the purposes of this planning effort, “carbon footprint” is defined as the sum of all emissions of carbon dioxide and other greenhouse gases (e.g., methane and ozone) that would result from implementation of any of the alternatives. It has been determined that the action alternatives described in this document would only emit a negligible amount of greenhouse gases that contribute to climate change. No substantial changes in aircraft use or other motorized travel are proposed under the alternatives, and development of only a few facilities is proposed under the alternatives. Because of the negligible amount of greenhouse gas emissions that would result from the alternatives, a quantitative measurement of their carbon footprints was determined by the planning team not to be practicable.	<i>NPS Environmental Quality Division’s Draft Interim Guidance : Considering Climate Change in NEPA Analysis;</i> “Green Parks Plan”

**TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR
LAKE CLARK NATIONAL PARK AND PRESERVE**

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
Environmental Justice	Dismissed	<p>Presidential Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency, environmental justice is the . . . fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. The goal of “fair treatment” is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.</p> <p>The communities surrounding Lake Clark National Park and Preserve contain both minority and low-income populations; however, environmental justice is dismissed as an impact topic for the following reasons:</p> <ul style="list-style-type: none"> ▪ The park staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors. ▪ Implementation of the proposed alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population. ▪ The impacts associated with implementation of the preferred alternative would not disproportionately affect any minority 	Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”

TABLE 1. IMPACT TOPICS RETAINED AND DISMISSED FOR LAKE CLARK NATIONAL PARK AND PRESERVE

Impact Topic	Retained or Dismissed	Rationale	Relevant Law, Regulation, or Policy
		<p>or low-income population or community.</p> <ul style="list-style-type: none"> ▪ Implementation of the preferred alternative would not result in any identified effects that would be specific to any minority or low-income community. ▪ The impacts to the socioeconomic environment resulting from implementation of any of the action alternatives would be beneficial. In addition, the park staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably alter the physical and social structure of nearby communities. 	
Conflicts with Land Use Plans, Policies, or Controls	Dismissed	Whenever actions taken by the National Park Service have the potential to affect planning, land use, or development patterns of adjacent or nearby lands, the effects of these actions must be considered. This plan would not affect land development or plans for areas outside the park. Therefore, none of the alternatives would affect other land use plans, policies, or controls beyond the park boundary.	Council on Environmental Quality Regulations; DO 12 <i>Handbook</i>
Energy Requirements and Conservation Potential	Dismissed	Under all alternatives, the National Park Service would continue to implement its policies of reducing costs, eliminating waste, and conserving resources by using energy-efficient and cost-effective technology. Irrespective of this GMP Amendment, NPS staff would continue to look for energy-saving opportunities in all aspects of park operations. Sustainable practices would be pursued whenever possible in all decisions regarding park operations, facilities management, and developments. Although there may be differences in the number of motorized vehicles (aircraft, motorboats) operating in the various alternatives, no changes in overall energy consumption in the park would be expected due to the alternatives.	NPS <i>Management Policies 2006</i> ; Council on Environmental Quality Regulations; Green Parks Plan (2012)

PORTFOLIO OF MANAGEMENT PLANS FOR LAKE CLARK NATIONAL PARK AND PRESERVE

Planning is a basic element of management throughout the national park system. Park managers are guided by a variety of plans and studies covering many topics. The revised NPS planning framework brings all these plans into a single, unified system. The totality of a park's plans is referred to as the Portfolio of Management Plans (portfolio). The portfolio is a dynamic compilation of planning guidance in which certain planning elements are removed and updated, or new elements added, as needed. The portfolio consists of basic descriptions of a park's purpose such as the foundation statement, comprehensive plans such as this GMP Amendment, implementation plans such as a site management plan, and strategic program plans such as a long-range interpretive plan. Resource studies, descriptions, and inventories, such as atlas maps, support planning and may help identify issues that merit future planning efforts to resolve. The Portfolio of Management Plans for Lake Clark National Park and Preserve will include this GMP Amendment (which updates and replaces the 1984 GMP), the foundation statement (NPS 2009a), the NPS Alaska Regional Management Guidelines (NPS 2013), the land protection plan (NPS 2014), the park atlas maps (NPS 2012d), the wild river outstandingly remarkable value statements, and other future components that, as an assemblage, meet the full range of park planning needs.

The 1984 General Management Plan provided direction on a variety of topics, including natural and cultural resource management; subsistence; sport hunting; fire management; wilderness management; and visitor access, recreation, and use. This GMP Amendment revises and expands guidance about visitor facilities and administrative needs. The amendment also considers topics that were either not addressed or briefly discussed in the original General Management Plan (such as commercial

services) and provides desired conditions and strategies for overall management of the park (appendix C). For topics not addressed in this plan, managers would follow other management guidance or plans in the portfolio.

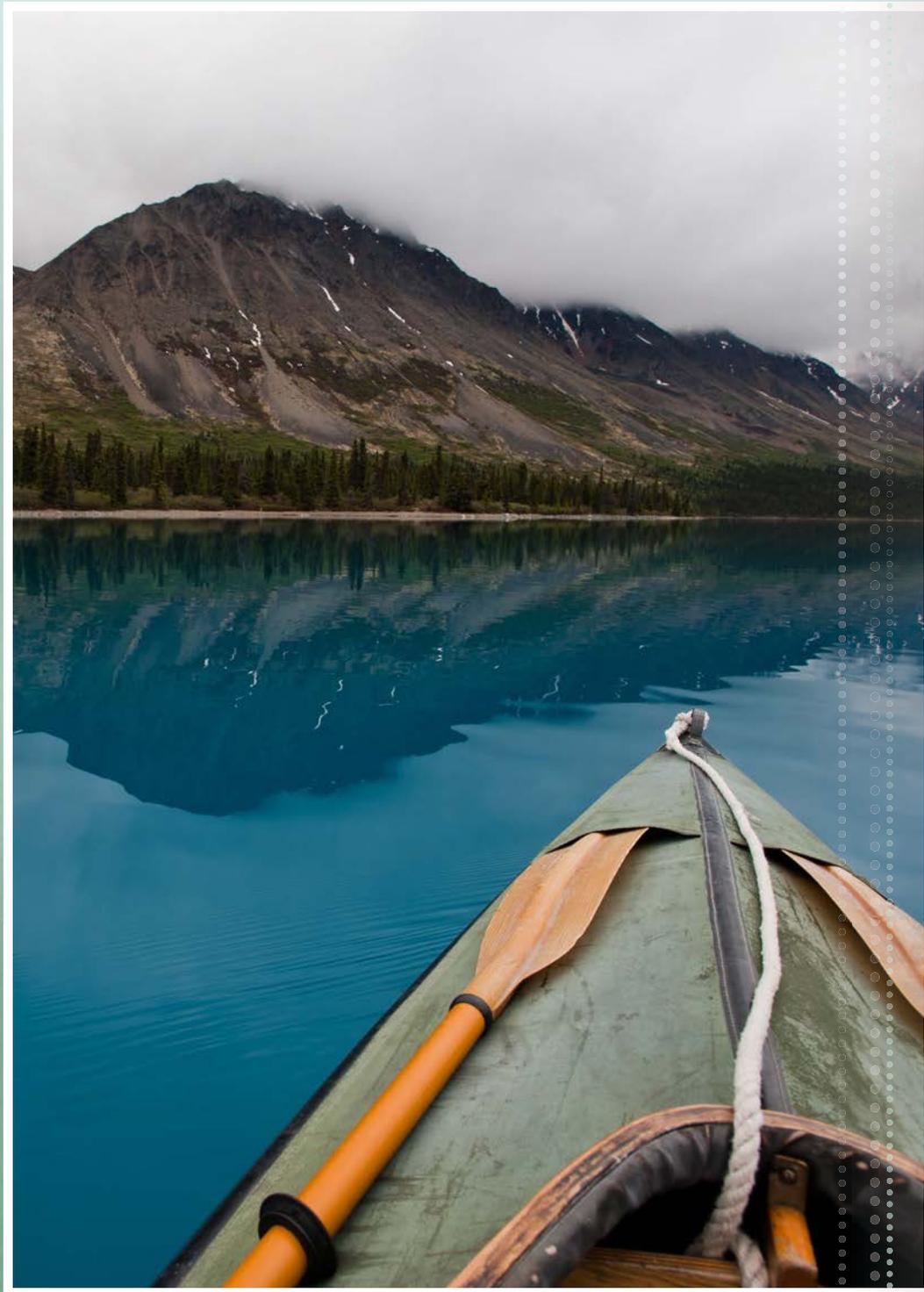
IMPLEMENTATION OF THE GENERAL MANAGEMENT PLAN AMENDMENT

After distribution of this General Management Plan Amendment, there will be a 60-day public review and comment period. After the comment period ends, the NPS planning team will evaluate all input received, and incorporate any resulting changes into the document. If no significant environmental impacts are identified and no major changes are made in the alternatives, then a finding of no significant impact can be prepared and approved by the Alaska regional director. Following a 30-day waiting period, the plan can then be implemented.

Once the planning process is completed, the selected alternative will guide management of the park over the next 15 to 20 years. It is important to note that not all of the actions in the alternative would necessarily be implemented immediately. Although the *Lake Clark National Park and Preserve General Management Plan Amendment / Environmental Assessment* provides analysis and justification for future park funding proposals, this plan does not guarantee future NPS funding. Many actions would be necessary to achieve the desired conditions for natural resources, cultural resources, and educational and recreational opportunities as envisioned in this GMP Amendment. The National Park Service will seek funding to achieve these goals; although the National Park Service hopes to secure this funding and will prepare itself accordingly, sufficient funding may not be available. Park managers will continue to pursue other options, including expanding volunteer services, drawing on existing or new partnerships, and seeking alternative funding sources. Even with assistance from supplemental

sources, NPS managers may be faced with difficult choices when setting priorities—full implementation of the plan could be many

years in the future. The GMP Amendment provides the framework within which to make these choices.



INTRODUCTION

This chapter describes three alternatives for managing Lake Clark National Park and Preserve over the next 15 to 20 years. The three alternatives embody the range of what the public and NPS staff want to see accomplished regarding natural resource conditions, cultural resource conditions, visitor use and experience, wilderness character, and management at Lake Clark. Alternative A, the no-action alternative, presents a continuation of current management direction and provides a comparison to the action alternatives. The action alternatives are alternatives B and C. These alternatives present different ways to manage resources and visitor use and to improve management of the park.

The National Park Service would continue to follow existing agreements and servicewide mandates, laws, and policies regardless of the alternatives considered in this document. (See the discussion of key laws, regulations, and policies in chapter 1, and the NPS Alaska Regional Management Guidelines [NPS 2013].) Likewise, parkwide desired conditions (and potential strategies to achieve those conditions) for topics ranging from ecosystem management to sustainability are presented in appendix C and would apply regardless of which alternative is ultimately selected for implementation.

Before describing the alternatives, this chapter explains how the alternatives were developed. Other sections describe the management zones (a key element of the alternatives) and the approaches taken to address boundary adjustments and visitor use management / wilderness character. After alternatives B and C are described, mitigation measures that would be used to reduce or avoid impacts are listed, needed future studies and implementation plans are noted, the process is described by which the

NPS preferred alternative was identified, the environmentally preferable alternative is identified, and several actions are noted that the planning team considered but dismissed. At the end of the chapter, there is a table that summarizes the impacts that would be expected from implementing each alternative based on the analysis in “Chapter Four: Environmental Consequences.”

It should be noted that several of the sections before the description of the alternatives, including the management zones, and visitor use management, apply only to the action alternatives—alternatives B and C.

FORMULATION OF THE ALTERNATIVES

Many aspects of the desired conditions of Lake Clark National Park and Preserve are defined in the establishing legislation set forth in ANILCA, the park’s purpose and significance statements, and the Servicewide mandates and policies that were noted in chapter 1. Within these parameters, the National Park Service solicited input from local residents and subsistence users, corporations, organizations, and agencies with economic or recreational interest in the park, and other private citizens who have visited in the past. Planning team members gathered information about existing visitor use and the conditions of park resources and facilities. Then a set of management zones and management alternatives were developed to reflect the range of ideas proposed by NPS staff and the public.

The alternatives focus on *what* resource conditions and *what* visitor uses and opportunities should exist at Lake Clark National Park and Preserve, rather than on

details of *how* these conditions, uses, and experiences should be achieved. Thus, the alternatives do not include many details on resource or visitor use management.

All of the alternatives would continue to ensure that the vast majority of Lake Clark National Park and Preserve would continue to be wild, undeveloped, and untrammled, with opportunities for solitude and primitive unconfined recreation.

Alternative A, the no-action alternative, reflects current management conditions at Lake Clark, which would continue for the life of the GMP Amendment, and provides a baseline against which to compare the other management concepts. Under this concept, the National Park Service would continue the present management direction for Lake Clark National Park and Preserve, guided by existing law and policy, and the 1984 General Management Plan. No changes would occur to the management of visitor activities. Emphasis would continue to be placed on protected park resources and designated and eligible wilderness.

The two action alternatives included in this chapter were developed on key issues identified by the public and NPS staff during the scoping period (see “Scope of the General Management Plan Amendment / Environmental Assessment” section in C). For each of these issues, a series of management options or actions were identified. After holding public meetings and analyzing public comments, the planning team grouped the actions into different alternatives. Each alternative is intended to effectively and efficiently manage the park and address priority management issues. Both of the action alternatives seek to incorporate resource protection and visitor opportunities, and were developed to be functional and viable. Although all the alternatives are consistent with maintaining the park’s purposes, significance, and fundamental resources and values, they vary in their focus with regard to visitor

opportunities, commercial services for visitors, and administration of the park.

After reviewing public comments on the preliminary range of alternatives shared with the public in the April 2012 newsletter, the planning team proceeded to refine the alternatives. A planning team workshop was held in June 2012 to recombine the three preliminary action alternatives into two action alternatives, capturing public comments and suggestions on which elements were most important to carry forward. Other small changes to the alternatives were incorporated at this time, based on staff input. An agency preferred alternative was identified from the two action alternatives at the conclusion of the workshop, and concurrence on the agency preferred alternative was received from the Alaska regional director in July 2012.

Alternative B, the NPS preferred alternative, would expand opportunities for visitors to enjoy a greater diversity of activities in the park, while also continuing to protect and maintain Lake Clark’s resources and wilderness character. Some primitive visitor facilities, such as backcountry trails and camping areas, and expanded interpretive and commercial visitor services would be provided mostly in areas that are not designated wilderness—such as the preserve, near Lake Clark, and areas along the coast. Management zoning for this alternative would provide for a variety of visitor experiences and amenities, and a limited amount of park management in certain areas to protect resources.

Alternative C would focus on accommodating current patterns of visitor use. The alternative would largely maintain existing access, visitor facilities, and visitor activities. It differs from alternative A in applying management zones throughout the park and monitoring visitor use indicators. Management zoning for this alternative would focus on providing support for the most primitive visitor experiences.

For more details on the three alternatives, see table 3.

The implementation of any alternative depends on future funding and environmental and other required compliance. This plan does not guarantee that funding will be forthcoming. The plan establishes a vision of the future that would guide day-to-day and year-to-year management of the park, but full implementation could take many years.

POTENTIAL FOR BOUNDARY ADJUSTMENTS

The National Park and Recreation Act of 1978 requires general management plans to address whether boundary modifications should be made to national park system units. In the case of Lake Clark National Park and Preserve, no specific boundary adjustments were identified as being necessary. Thus, none of the alternatives propose changes to the park or preserve boundaries.

However, this plan does not prohibit small additions or boundary adjustments such as those needed for administrative uses that are allowed under ANILCA 1301 (b) or may be identified in the future by other land planning processes. The purchase of any lands for visitor or operational facilities outside the existing NPS boundaries would likely require congressional approval. This plan does not preclude consideration of boundary adjustments should needs or conditions change.

The Lake Clark National Park and Preserve land protection plan has recently been completed (NPS 2014). Under section 1306 of ANILCA, the National Park Service can acquire administrative sites and visitor facilities outside the park boundary without doing a boundary adjustment. In addition, congressional approval is not needed to do so. The National Park Service is also authorized under section 103(b) of ANILCA to increase or decrease the area of the conservation system unit by 23,000 acres (a minor boundary adjustment) if the National Park Service notifies Congress.

RUSTIC AREAS IN LAKE CLARK NATIONAL PARK AND PRESERVE

The National Park Service recognizes four rustic areas in Lake Clark National Park and Preserve based on site-specific qualities that show evidence of historical occupation or provide certain contemporary recreational and visitor experiences. These four rustic areas are distinct overlays (see following maps) that would be managed based on the character and quality of the underlying management zone, described later in this chapter. These rustic areas have been identified by staff and the public, and the descriptions below are intended to depict what exists at these geographic locations at the time of the writing of this GMP Amendment and to assist with both visitor expectations and park management decisions in the future. Other laws, policies, and guidance apply to the rustic areas, including the NPS Organic Act, NPS *Management Policies 2006*, and the Wilderness Act.

These rustic areas are important because of unique features such as historic cabins, historic trails, scenic lakes, sensitive sedge grass meadows, bear viewing, and remote sport fishing. These features persuaded people to settle in these remote areas prior to designation of the park, which led to a pattern of land use that still exists in part today. The name “rustic area” was chosen to reflect the simple, undeveloped nature of these four geographic locations and to recall the pioneer “rusticator movement” that draws many visitors to the park and preserve.

The combination of unique features and continuum of land use creates a setting that also attracts visitors to these destinations. The availability of commercial services such as air taxis, boating, guided bear viewing, or sport fishing may attract visitors seeking certain recreational experiences including

bear viewing, fishing, hiking, photography, and visiting historic sites.

Recreational opportunities, accessed by plane or motorboat, and facilities such as ranger stations, cabins, trails, and nearby private lodges on inholdings, make each of these areas a unique setting in Lake Clark National Park and Preserve.

RICHARD L. PROENNEKE AREA

The Richard L. Proenneke Historic Site on the shore of Upper Twin Lake is among the park’s most popular visitor destinations. It is in designated wilderness, and it would continue to be managed in accordance with the Wilderness Act and NPS laws and policies. Lake Clark staff manages the Proenneke site as an informal outdoor exhibit to help ensure that activities are conducted in a manner that protects and sustains the area’s wilderness qualities and rustic character.

Using only hand tools, Dick Proenneke constructed his wilderness cabin and other outbuildings in the late 1960s. He lived year-round at the site for nearly 30 years. The exceptional craftsmanship of his wood-working and building skills is evident in the restored log buildings, furniture, and implements he created. The site’s cultural landscape includes historic and natural features that evoke Proenneke’s enduring legacy and wilderness ethic. Among these features are Teetering Rock Trail, Cowgill Benches Trail, and other trails used by Proenneke. Three other cabins built in the early 1960s are near the Proenneke cabin—they are seasonally used and occupied by NPS staff and volunteers to support site management. Tent camping opportunities are available for visitors at Hope Creek primitive camping area. The map for this

rustic area includes the boundary for the Richard L. Proenneke Historic Cabin Site; the map displays the 2007 national historic site boundary as well as the amended boundary as applied for in 2013.

SILVER SALMON CREEK AREA

Silver Salmon Creek, on the Cook Inlet coast in the park, offers outstanding bear viewing and sport fishing opportunities for visitors. Brown bears can be seen grazing in the sedge meadows, fishing in the creek, or digging for razor clams on the beach. Coho (silver) and humpback (pink) salmon as well as Dolly Varden run up the creek in the late summer.

The rustic Alaskan atmosphere on the ground at Silver Salmon Creek includes a staffed ranger cabin and private inholdings with two lodges offering a range of services. Small wheel planes land along the beach and off-road vehicle (ORV) use occurs along the beach and on designated trails. ORV use by local landowners is permitted on designated trails and by qualified subsistence users on an additional trail. The park prohibits ORV use off the designated trails to protect sensitive sedge grass meadows. The Silver Salmon Creek area will be managed for its wild backcountry character.

CHINITNA BAY AREA

Chinitna Bay on Cook Inlet offers world-class bear viewing along the beach, in the meadows in the uplands, and in the rivers at the head of the bay as the salmon run begins. Unique concentrations of food promote high numbers of bears intent on foraging the protein-rich sedges, clams, and salmon. In addition to bear viewing, visitors to Chinitna Bay can walk and explore the wide beaches,

fish, and dig clams. A trip to Chinitna Bay offers a unique experience in the heart of coastal bear country. Chinitna Bay consists of private lodges that bring visitors into the park for bear viewing opportunities. Small wheel planes land along the beach and ORV use occurs below mean high tide (on state land).

The sensitive Chinitna Bay sedge grass meadows are closed to visitor use. Paths and viewing areas exist to help protect the habitat in the sedge meadows and provide for the wild rustic experience that exists on the southern coast of Lake Clark National Park.

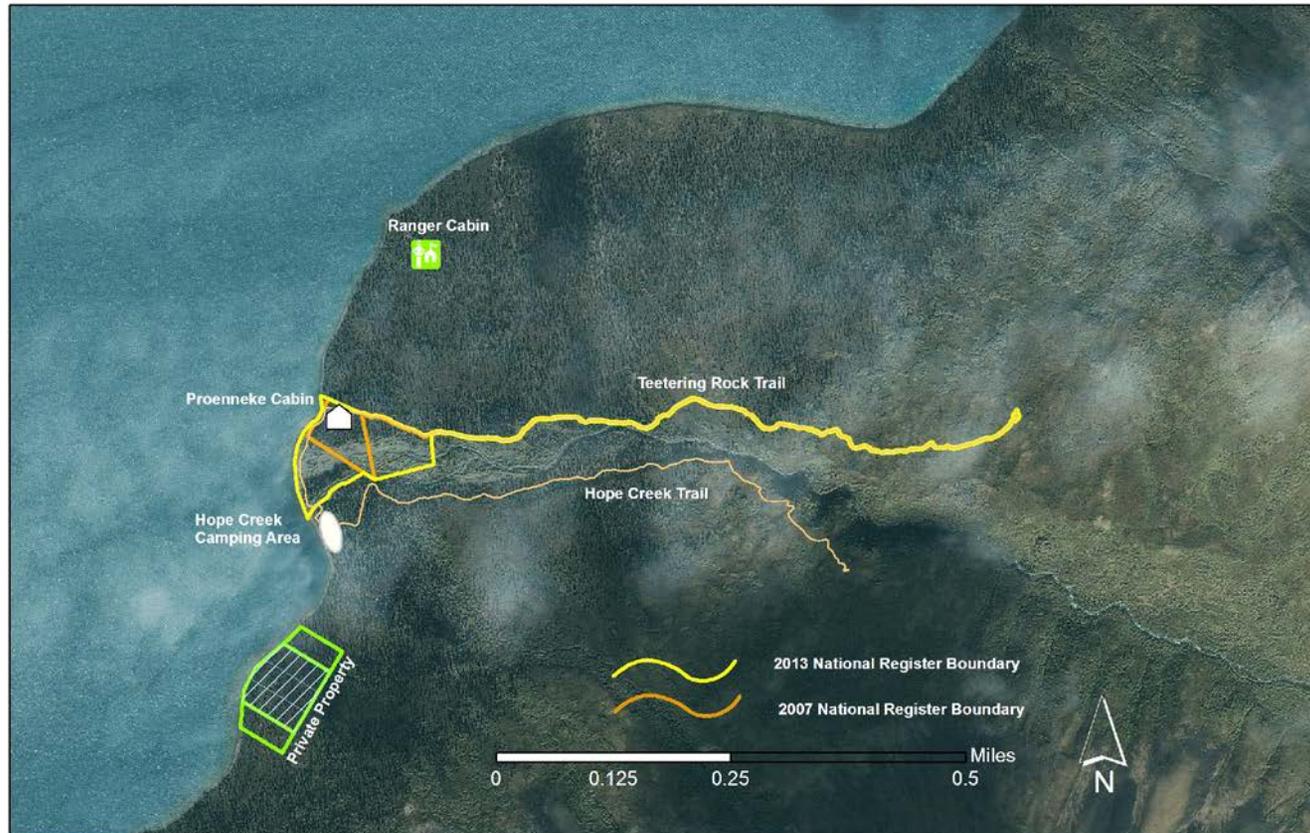
CRESCENT LAKE AREA

Crescent Lake is a glacially fed lake in the heart of the Chigmit Mountains. Views of Mount Redoubt can be seen from the lake, which is the headwaters for Crescent River. Crescent River flows southeast into Cook Inlet. The river and lake provide habitat for spawning red and silver salmon as well as Dolly Varden, arctic char, and lake trout which attract both brown and black bear.

Visitors access Crescent Lake by float plane. Some come for a day trip while others overnight at the private lodge near the outlet of the river. A ranger station also exists near the outlet of the river. From July through September, several small river boats carry visitors up and down the river to fish for salmon. A few larger-capacity boats travel along the lake in search of bear viewing opportunities and other recreation experiences. Crescent Lake is another special rustic Alaskan area that exists inside Lake Clark National Park and will continue to be managed for its wild character.

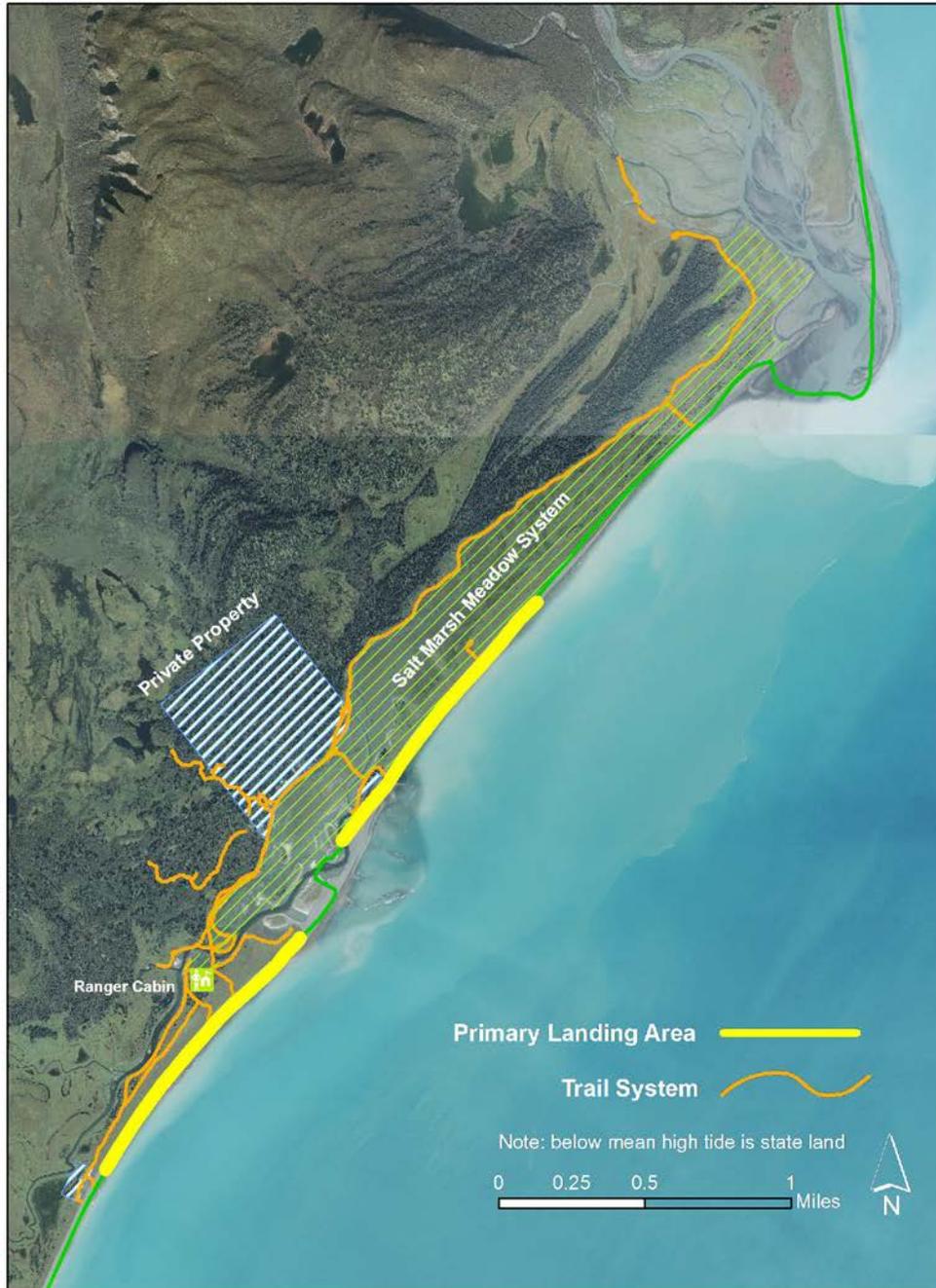


Richard L. Proenneke Area





Silver Salmon Creek Area





Chinitna Bay Area





Crescent Lake Area



MANAGEMENT ZONES

Management zones apply to different areas of a national park system unit and describe the desired conditions for resources and visitor experience in those areas. Together, they identify the widest range of potential resource conditions, visitor experience, and facilities for the national park system unit that fall within the scope of the unit's purpose, significance, and special mandates. Three management zones were identified for Lake Clark National Park and Preserve for the action alternatives presented in this plan (table 2).

In formulating the two action alternatives, the management zones were placed in different locations or configurations on a map of the park and preserve, according to the overall concept of each alternative. Maps showing the location of the zones in each action alternative are presented later in this chapter.

PRIMITIVE BACKCOUNTRY ZONE

The primitive backcountry zone will be characterized by pristine natural conditions. The zone includes all designated wilderness and will be managed to protect wilderness character. Natural processes would dominate this zone with minimal impacts on natural and cultural resources. Outstanding opportunities for solitude and unconfined recreation occur in this zone. Natural quiet will predominate. The expectation of visitors will be for few encounters with other visitors most of the time and to have a variety of hiking, climbing, river floating, and other wilderness recreation experiences. Limited primitive facilities may be used to protect resources or visitor safety per ANILCA 1306, 1310, and 1315; the Wilderness Act 4(d); 36 CFR Part 13; and *NPS Management Policies 2006*, 6.3.10.

BACKCOUNTRY ZONE

The backcountry zone will be characterized by remote wild conditions. The zone includes much of the land in the preserve as well as land along the southeast coast and will be managed to protect the wild resources and values that exist. Natural processes would dominate this zone with minimal impacts on natural and cultural resources confined to trails, routes, cabin sites, and campsites. Outstanding opportunities for solitude and unconfined recreation exist; however, some public use cabins would be available to support backcountry recreation activities. Natural quiet will predominate. The expectation of visitors will be for few encounters with other visitors most of the time and to have a variety of hiking, climbing, fishing, wildlife viewing, river floating, and other backcountry recreation experiences. Limited primitive facilities may be used to protect resources, support backcountry recreation or visitor safety per ANILCA 1306, 1310; 36 CFR Part 13; and *NPS Management Policies 2006*.

ADMINISTRATIVE ZONE

The purpose of this zone would be to support park operations and visitor services. This zone consists of administrative infrastructure such as field headquarters, employee housing, maintenance facilities, airplane hangar, visitor facilities, and use of a gravel airstrip. Facilities such as these are not found anywhere else in the park. Most of the land in the administrative zone was purchased with existing infrastructure.

VISITOR USE MANAGEMENT

INTRODUCTION

General management plans for national park system units are required by the National Parks and Recreation Act of 1978, 16 USC 1a-7(b), and NPS *Management Policies 2006* - sec. 2.3.1.1 and 8.2.1 (NPS 2006a) to identify and address implementation commitments for visitor use management and visitor capacity, also known as carrying capacity. The National Park Service defines visitor use management as the proactive and adaptive process of planning for and managing characteristics of visitor use and the physical, social, and managerial setting through a variety of strategies and tools to sustain desired resource conditions and visitor experiences. In short, visitor use management strives to maximize recreational benefits to visitors while meeting resource and experiential protection goals.

This planning and management process provides the framework within which visitor use characteristics—and visitor capacity, where it is necessary—should be addressed. Visitor use characteristics include the amount, type, timing, and distribution of visitor use, including visitor activities and behaviors. Visitor capacity is a smaller component of visitor use management, consisting of the maximum amount and type of visitor use that an area can accommodate while sustaining the desired resource conditions and visitor experiences consistent with the purpose for which the park was established.

Managing visitor use in national parks is inherently complex and depends not only on the number of visitors, but also on where the visitors go, what they do, and the impacts they have on resources. In managing for visitor use, the park staff relies on a variety of management tools and strategies rather than

relying solely on regulating the number of people in a park or area. In addition, the ever-changing nature of visitor use in parks requires a deliberate and adaptive approach to managing visitors.

This GMP Amendment includes indicators and standards for Lake Clark National Park and Preserve. Indicators and standards help the National Park Service ensure that desired conditions are being attained in support of the park's legislative and policy mandates. The general management plan also identifies the types of management strategies that may be taken in response to standards being exceeded.

Table 2 identifies the indicators, standards, and management strategies, allocated by management zones, which would be implemented as a result of this planning effort. These indicators and standards apply to both action alternatives presented in this plan. The components are defined and described as follows:

- Indicators specify conditions to be assessed for progress at attaining desired conditions, and satisfying visitor use management requirements.
- Standards (either qualitative or quantitative) guide management decisions on the minimum acceptable condition for indicators and serve as triggers for management strategies.
- Management strategies comprise a toolbox of options considered for implementation in order to maintain or restore desired conditions.

The planning team considered many potential issues and related indicators that would identify impacts of concern, but those

described below were considered the highest priority, given the importance and vulnerability of the resource or visitor experience affected by visitor use. The planning team also drew from lessons learned by other parks with similar issues to help identify meaningful indicators. Standards for each indicator were then assigned, taking into consideration the qualitative descriptions of the desired conditions, data on existing conditions, relevant research studies, staff management experience, and the results of scoping on public preferences. Monitoring efforts would be implemented to the extent that staff and funding allow. These indicators and standards apply to the areas of the park and preserve specified in table 2, including the three designated wild and scenic rivers.

The indicators and standards that pertain to the amount, type, timing, and distribution of visitors are most closely tied to helping NPS staff address visitor capacity. These indicators and standards also provide resiliency in the face of climate change-induced visitor use characteristics such as a longer visitation season. These indicators include deterioration of cultural resources, number of bear-human incidents, expanding footprint of designated primitive camping areas, visitor-created trails near camping areas, and visitor use levels at specific locations. These indicators and standards directly inform management of the kinds and amounts of use that can be accommodated in different areas of the park while maintaining desired conditions. This GMP Amendment does not include visitor capacities. However, visitor capacities would be addressed in future implementation plans that include significant visitor use components.

The toolbox of management strategies allows park managers to be responsive to current conditions in the most appropriate manner. The management strategies included in this plan are potential solutions, which would be further evaluated before implementation. Management strategies in

the plan focus primarily on modifying visitor behavior to protect resources and promote visitor safety, rather than on modifying the physical environment or restricting visitor access. The intention is to create a sustainable, mutually beneficial environment for visitor enjoyment of park and preserve resources.

Visitor use management is a form of adaptive management in that it is an iterative process in which management decisions are continuously informed and improved. As monitoring of conditions continues, managers may decide to modify or add indicators if better ways are found to measure important changes in resource and social conditions.

Information on NPS monitoring efforts, related visitor use management strategies, and any changes to the indicators and standards would be available to the public through the most appropriate and effective outreach method chosen by the park staff. It should be noted that revisions to indicators and standards would potentially be subject to compliance with the National Environmental Policy Act (NEPA), National Historic Preservation Act, and other laws, regulations and policies.

INDICATORS AND STANDARDS

The priority indicators for Lake Clark National Park and Preserve are associated with the following issues:

- deterioration of cultural resources
- number of bear-human incidents
- expanding area/footprint of designated primitive camping areas
- an increase in visitor-created trails near camping areas
- a change in visitor use levels at specific sites

Deterioration of Cultural Resources

Visitor use impacts on cultural resources include wear on historic structures, unintentional disturbances, and vandalism to archeological resources and historic structures. Cultural resources are nonrenewable; therefore, impacts resulting from both unintentional behaviors, such as inadvertent disturbance or wear and tear, and intentional behaviors, such as vandalism, must be minimized to the extent possible.

To monitor trends for documented cultural resources, the park staff would refer to protocols outlined in the condition assessments that are included in NPS cultural resource databases. These databases have measurable parameters that are monitored and the database is updated periodically. The List of Classified Structures (LCS), Cultural Landscape Inventory database (CLI), and Archeological Sites Management Information System (ASMIS) provide measures of physical condition and cultural/historical integrity (maintaining the character, material, and stability of the cultural resource as acquired, excavated, or existing) of a resource.

Because only a small percentage of the park has been systematically surveyed for cultural resources, the park would implement an ongoing program of survey and inventory to fulfill requirements of section 110 of the National Historic Preservation Act.

The CLI database is a comprehensive inventory of all culturally and historically significant landscapes within the national park system. The Cultural Landscape Inventory records each landscape's location, historical development, existing conditions, and management information. A condition assessment of CLI units must be reevaluated every six years to keep the inventory unit certified as complete, accurate, and reliable. This assessment describes the current condition of the unit and any impacts having a negative effect on the characteristics of the

resource's integrity for which some form of mitigation or preventive action is possible (NPS 2009c). As of 2012, there are two landscapes listed in Lake Clark National Park and Preserve's CLI database: Kijik Archeological District National Historic Landscape and the Telaquana Corridor Historic District. Several other ethnographic landscapes have not yet been inventoried.

The ASMIS is the NPS database for basic registration and management of park precontact and historic archeological resources. ASMIS records contain data on site location, description, significance, condition, threats to, and management requirements for known park archeological sites. It serves as a tool to support improved archeological resource preservation, protection, planning, and decision making by parks, support offices, and the National Center. As of 2012, there are 145 sites listed in ASMIS for Lake Clark National Park and Preserve; 69 of those sites (or 48%) are listed in good condition.

To assess resource condition and the level of visitor use impacts on cultural resources, the park and preserve staff developed an indicator that would track the deterioration of cultural resource conditions as measured by damage, items lost or damaged, recent visitor-created fire rings, and ground disturbance such as excavations for human waste disposal. The standard for this indicator specifies that there should be no deterioration of conditions, and would apply to several high use and/or sensitive areas, as well as the designated public use cabins (if applicable).

If deterioration of resources is observed, management strategies would be triggered including education for commercial operators in the park and preserve. Educational messages would include information about resource protection and concerns. Interpretive signs could be installed at restored historic cabins. Instructions for cabin etiquette and use would also be provided on-site to encourage

appropriate use of the public use cabins. Temporary closures of cabins may also be necessary during repair and restoration activities. Additionally, a comprehensive management program for collections may be developed, as may be a site plan for the Richard L. Proenneke Historic Site.

An Increase in Bear-Human Incidents

Bear-human incidents in the park and preserve have been identified as a priority indicator to ensure that bears will continue to thrive in their natural environment, and to ensure the safety of visitors within the park. The individual response of a bear to humans can vary, and the past experience of bears with people can have a substantial effect on their future responses.

One of the most common situations for bear-human incidents requiring management response results from poor management of human food and garbage, which can lead to food-conditioned bears. Bears become food-conditioned when they have fed on human food or garbage and have learned to associate humans and/or human development with potential sources of food (Gilbert 1989; MacHutchon 2000). Food-conditioning is bad for the health of the bears and also increases the chances for unsafe bear-human interactions.

The main situations leading to human injury by bears are (1) when food-conditioned bears that are also human-habituated aggressively approach people for food, and (2) when humans surprise a bear at close range, particularly a female grizzly bear with cubs. Habituated bears that are not food-conditioned are not usually a risk to humans if they behave in a predictable manner and bears do not learn to associate humans with food or garbage (Gunther 1994; MacHutchon 2000).

Because of the reasons stated above, park staff would actively monitor the number of bear-human incidents that require manage-

ment response. This indicator applies to all zones, and the standard specifies that there should be no increase in bear-human incidents of this type, from a baseline that would be established upon completion of the Lake Clark National Park and Preserve bear management plan.

If an increase in bear-human incidents is observed, management strategies would be initiated such as expanded visitor education and guide programs and adding a web-based educational component. Part of the educational messaging may include behavioral guidelines for visitors who are viewing bears or may come in contact with bears in the backcountry or on the coast.

The presence of NPS rangers at certain locations (including Silver Salmon Creek and some interior sites) during the summer season may also improve understanding of appropriate visitor behavior in bear country. Additionally, there may be a need to provide a stronger NPS ranger presence in other locations with high bear density and high visitation.

It may also be useful to install facilities for managing bear-human interactions such as bear-resistant containers or bear viewing platforms. Bear viewing areas may also be designated without structures by promoting the safest areas for bear viewing while discouraging other areas.

Expanding Footprint of Designated Primitive Camping Areas

Human activities associated with camping have the potential to influence ecological processes and cause visual impacts. In particular, overuse or inappropriate use of campsites can lead to soil compaction and loss of vegetation around the perimeter of campsites. Addressing the expanding footprint of backcountry camping areas is considered a high priority.

The indicator for the area/footprint of campsites measures the level of ground disturbance such as vegetation trampling, invasive species, and erosion. The standard for this indicator specifies that there should be no net gain in total square footage of ground disturbance in the camping areas.

An increase in ground disturbance would trigger management strategies with an increase in education and outreach for campsite users. Leave No Trace principles would be promoted at the visitor contact station, through Commercial Use Authorization (CUA) holders, and through online trip planning. In some instances, consideration would also be given to the development of hardened campsites or tent platforms, as well as to the establishment of fire rings and the provision of bear-resistant lockers. In other situations, the damaged areas may be restored.

An Increase in Visitor-created Trails Near Camping Areas

The visibility of visitor-created trails at Lake Clark National Park and Preserve has become an issue of concern, especially pertaining to trails leaving camping areas and entering the surrounding areas. Addressing the expansion of visitor-created trails is considered a high priority due to associated impacts such as vegetation loss and soil impacts.

The indicator for visitor-created trails measures the number or linear feet of visitor-created trails extending from designated primitive camping areas. The standard for this indicator specifies that there should be no increase in the number or linear feet of visitor-created trails from the designated primitive camping areas. The indicator and standard apply to backcountry and primitive backcountry zones.

An increase would trigger management strategies such as selecting some trails to be re-vegetated and allowing some appropriate

trails to continue to exist in an informal way. Leave No Trace principles would be promoted at the visitor contact station, through CUA holders, and through online trip planning information. Additionally, signs may be posted to instruct visitors not to follow or initiate visitor-created trails. If those management strategies fail, designated routes may be established.

A Change in Visitor Use Levels at Specific Locations

Crowding is one of the most frequently studied topics related to visitor use (Manning 2007) and has been evaluated extensively to better understand the number of visitors that are appropriate in specific settings. Crowding is defined as “the negative and subjective evaluation of a use level” (Manning 2007). Crowding may occur when use levels increase to the point at which they interfere with a visitor’s chosen activities and intentions (Manning 2007).

The presence of crowding at specific sites can influence visitor experience in a variety of ways. High numbers of people in the same area can lead to elevated noise levels, competition for sites, and even safety issues. By monitoring and implementing standards associated with crowding, the opportunity to experience serenity, solitude, and general enjoyment are safeguarded.

Visitor use data at Lake Clark National Park and Preserve show an increasing trend in use, although the level of use is not yet considered to be an issue. Because there is a need to better understand use levels and crowding at specific places in Lake Clark National Park and Preserve, an indicator has been established to measure the number of user days at site-specific locations. The standard for this indicator specifies that there should be no sustained increase or decrease in CUA-reported user days by location.

If sustained increases or decreases over a five-year period for CUA-reported user days occur, park management would study whether visitors perceive issues with use levels in specific areas because there is not a one-to-one relationship between use levels and perceptions of crowding. Then, management would use other strategies to mitigate crowding if it is occurring. Strategies would include increased educational and outreach efforts to CUA holders and the public through a variety of media and personal meetings. The staff would also work with an operators' working group to address and mitigate impacts and would develop a site-specific best practices working guide. If other strategies do not seem to improve conditions over time, permit stipulations would also be considered as a possible management strategy to manage visitor use at specific locations.

LONG-TERM MONITORING

The staff would continue monitoring use levels and patterns throughout the park and preserve as part of the adaptive management strategy. In addition, park staff would monitor these indicators to the extent that

staff and funding levels allow. The rigor of monitoring the indicators (e.g., frequency of monitoring cycles, amount of geographic area monitored) may vary considerably depending on how far existing conditions deviate from the standard. For example, the rigor of monitoring might be increased for existing conditions that are close to or trending toward the standard than for conditions that are substantially below or trending away.

Initial monitoring would determine if the indicators are accurately measuring the conditions of concern and if the standards truly represent the minimally acceptable condition of the indicator. Park staff might decide to modify the indicators or standards and revise the monitoring practices if better ways are found to measure changes caused by visitor use. Most of these types of changes should be made within the first several years of initiating monitoring. After this initial testing period, adjustments would be less likely to occur. Finally, if use levels and patterns change appreciably, park staff might need to identify new indicators to ensure that desired conditions are achieved and maintained.

TABLE 2. VISITOR USE MANAGEMENT INDICATORS, STANDARDS, AND MANAGEMENT STRATEGIES

Indicator	Indicator Rationale	Zone	Standard	Standard Rationale	Management Strategies
<p>Deterioration of cultural resource condition, as measured by damage, items lost or damaged, fire rings, ground disturbance such as excavations for human waste disposal</p>	<p>Condition is monitored and tracked by cultural resource managers in ASMIS and LCS, which provide established standardized procedures.</p> <p>Several specific sites are named here because they have higher visitation and/or they have unique cultural resources.</p>	<p>All zones.</p> <p>Specific sites</p> <ul style="list-style-type: none"> ▪ Richard L. Proenneke site ▪ Chinitna Bay Archeological District ▪ Chilikadrotna Headwaters (Lower Twin Lake) Archeological District ▪ Snipe Lake Archeological District ▪ Two Lakes Archeological District ▪ Public use cabins (if applicable) 	<p>No deterioration of documented condition.</p>	<p>In order to protect park resources, no deterioration would be tolerated.</p>	<ul style="list-style-type: none"> ▪ Create methods to exchange information with park CUA holders and ways for them to pass information on to park visitors. ▪ Implement a long-term program of survey, inventory and monitoring to assess cultural resources conditions. ▪ Provide educational materials about resource protection and ongoing resource concerns, through annual meetings or other appropriate methods. ▪ Educate visitors through the park website, other publications, and the promotion of Leave No Trace. ▪ Interpretive signage at restored historic cabins, with the exception of the Richard L. Proenneke site. ▪ Guidelines for cabin use provided during cabin registration. ▪ Temporary closures of public use cabins during repair and/or restoration activities. ▪ Conduct field studies to document new cultural resource sites. ▪ Develop a comprehensive management program for collections. ▪ Develop a site plan for the Richard L. Proenneke site.

TABLE 2. VISITOR USE MANAGEMENT INDICATORS, STANDARDS, AND MANAGEMENT STRATEGIES

Indicator	Indicator Rationale	Zone	Standard	Standard Rationale	Management Strategies
Number of bear-human incidents requiring ranger response	Park staff occasionally have to respond to bear-human incidents to protect both bears and humans. As visitation patterns may change in the future, it would continue to be important to monitor bear-human incidents in backcountry locations and coastal areas.	All zones.	No increase in the number of bear-human incidents that require ranger response; a baseline would be established in the future.	Management efforts should first be directed to documenting and containing the number of bear-human incidents at current levels, then focusing on decreasing the level each year.	<ul style="list-style-type: none"> ▪ Expand educational efforts including a web-based component for visitors and CUA holders. ▪ Complete a bear management plan for Lake Clark National Park and Preserve considering a range of management options. ▪ Establish behavioral guidelines for visitors who are viewing bears or who may come into contact with bears. ▪ Provide NPS ranger presence in locations with high bear density and high visitation. ▪ Consider facilities for managing bear-human incidents, such as bear-resistant containers, bear-viewing areas or platforms.
Area/footprint of designated primitive camping areas (level of ground disturbance)	Overuse or inappropriate use at camping areas can lead to resource damage including vegetation damage, trampling, invasive species spread, and erosion. Measuring the area of the camping area allows managers to understand if there is an increasing trend in ground disturbance (bare ground expanding outside of designated area).	All zones.	No net gain in total square footage of the ground disturbance in the camping area.	Evidence of ground disturbance such as vegetation trampling, invasive species, erosion, etc. already existing and should not increase.	<ul style="list-style-type: none"> ▪ Promote Leave No Trace principles at the visitor contact station, through CUA holders, and through online trip planning information. ▪ Consider development of hardened campsites or tent platforms. ▪ Establish fire rings and/or provide bear-resistant lockers. ▪ Restore damaged areas.

TABLE 2. VISITOR USE MANAGEMENT INDICATORS, STANDARDS, AND MANAGEMENT STRATEGIES

Indicator	Indicator Rationale	Zone	Standard	Standard Rationale	Management Strategies
Number or linear feet of visitor-created trails extending from designated primitive camping areas	Addressing the expansion of visitor-created trails is considered a high priority due to associated impacts such as vegetation loss and soil impacts.	Backcountry and Primitive Backcountry.	No increase in the number or linear feet of visitor-created trails extending from designated primitive camping areas.		<ul style="list-style-type: none"> ▪ Select specific trails that would be allowed to exist and restore the rest. ▪ Promote Leave No Trace principles at the visitor contact station, through CUA holders, and through online trip planning information. ▪ Post signs instructing visitors not to follow or create visitor-created. ▪ Designate some routes and restore others. ▪ Develop a trails management plan.

TABLE 2. VISITOR USE MANAGEMENT INDICATORS, STANDARDS, AND MANAGEMENT STRATEGIES

Indicator	Indicator Rationale	Zone	Standard	Standard Rationale	Management Strategies
<p>Number of user days per location, tracked through the CUA activity reports</p>	<p>There is a need to better understand visitor use levels at specific locations.</p> <p>This would allow park staff to proactively manage visitor experiences as popular locations.</p>	<p>All zones. Sites to be determined based on CUA-reported areas of use.</p>	<p>Sustained increase or decrease in CUA-reported user days by location over a five-year period.</p>	<p>If there are substantial changes in CUA-reported user days, it may be indicative of issues in getting visitors to sites within the park, or impacts to visitor experiences at heavily used sites.</p>	<ul style="list-style-type: none"> ▪ Use social science to investigate visitor perceptions of use levels and potential crowding. ▪ Use results of social science studies to reevaluate standard. ▪ Create methods to exchange information with park CUA holders and ways for them to pass information on to park visitors. ▪ Provide educational materials about resource protection and ongoing resource concerns, through annual meetings or other appropriate methods. ▪ Develop a commercial operators working group to address/mitigate impacts to specific sites. ▪ Develop site-specific "Best Practices" materials such as rack cards and brochures to enhance visitor experience at some locations. ▪ Develop CUA permit stipulations to address management and visitor concerns at specific locations.

ACTIONS COMMON TO ALL ALTERNATIVES

The following actions would be common to all alternatives:

- Subsistence use in the park and preserve would continue to be recognized and supported in accordance with ANILCA.
- The wild and undeveloped character of the park would be maintained throughout most of the park and preserve. The visitor would have opportunities to experience solitude and other wilderness values. All designated and eligible wilderness areas would continue to be managed consistent with the Wilderness Act and NPS policies.
- Limited primitive facilities may be used to protect resources or visitor safety per ANILCA 1306, 1310, and 1315; the Wilderness Act 4(d); 36 CFR Part 13; and NPS *Management Policies 2006*, 6.3.1.0.
- Leave No Trace ethics would be promoted to all visitors and partners.
- Sustainability of park operations and facilities would be a high priority in management decisions and facility development.
- Collaboration with partners (i.e., commercial operators, Alaska Natives, private landowners and inholders, education/research groups, and other governmental organizations) would be a high priority, although emphasis may differ among the alternatives.
- Interagency and tribal planning efforts would be pursued in all action alternatives due to the unique landscape of the park and the collaborative opportunities it presents.
- Under all alternatives, the Richard L. Proenneke Historic Site boundary would be expanded with the concurrence of the state historic preservation office (SHPO).
- All proposed undertakings with the potential to affect historic properties would be assessed in consultation with the SHPO, associated tribes, and other appropriate agencies and stakeholders in compliance with federal law.
- Boat mooring at Crescent Lake would continue to be evaluated to meet the needs of commercial operators as well as prevent resource damage.
- The action alternatives B and C contain options for trail management, including:
 - **Brushed Route:** These routes would be brushed (cleared of large debris) as needed and as staff is available. The brushed routes shown on the maps are intended to indicate places where the public can expect to find a trail, although it may not be regularly maintained.
 - **Maintained Trails:** These trails are found in Port Alsworth and other high-visitation areas and are regularly maintained. The public can expect to find maintained trails at these sites.
 - **Routes:** These are historic routes, such as the Telaquana Trail, that have important cultural values. These routes may not be maintained.

In the action alternatives, the National Park Service recognizes four rustic areas in Lake Clark National Park and Preserve based on site-specific qualities that show evidence of historical occupation and/or provide for certain contemporary recreational and visitor experiences. In the action

alternatives, these areas will be managed per the underlying management zone. Other laws, policies, and guidance apply to the rustic areas, including but not limited to: the NPS Organic Act, and NPS *Management Policies 2006*, the Wilderness Act, and the visitor use indicators and standards set forth in this chapter.

COMMERCIAL SERVICES

Commercial service operations within national park system units are consistent to the highest practicable degree with preservation and conservation of the fundamental resources and values of the park and preserve. By welcoming the private sector as a partner in park operations, the National Park Service broadens the economic base of the region and encourages resource stewardship in communities surrounding parks (NPS 2012e).

Commercial service providers and the National Park Service work as partners to practice sound environmental management and stewardship. All commercial services are administered in accordance with ANILCA, the National Park Service Concessions Management and Improvement Act of 1998 (Public Law 105-391), 36 CFR 51, NPS *Management Policies 2006*, and other applicable laws and regulations.

The commercial services program at Lake Clark National Park and Preserve includes concession contracting, commercial film permit issuance, and issuance of commercial use authorizations. Activities that are authorized within the park and preserve through commercial use authorizations include:

- air taxi
- backpacking (guided)
- bear viewing (guided)
- big game transport
- boating (guided)

- charter boat
- hiking (guided)
- incidental hunt transport
- kayaking (guided)
- mountaineering (guided)
- photography (guided)
- sportfishing (guided)
- winter backcountry (guided skiing, sledding, snowshoeing)

All of these activities are administered in accordance with park management plans and policies, which are: (1) determined to be an appropriate use for the park, (2) have minimal impact on park resources and values, and (3) are consistent with the purposes of the park and preserve (NPS *Management Policies 2006*, 10.3.1 and Public Law 105-391 sec. 418).

The National Park Service administers hunting guide services through concession contracts. Hunting is an authorized activity (ANILCA section 1313) in national preserves in Alaska and is conducted in accordance with applicable federal and nonconflicting state law and regulations (36 CFR 13.40[d]).

Hunting guide services (AS 08.54) are an appropriate and necessary means to provide hunting opportunities for both Alaska resident and nonresident hunters within Alaska national preserves. Lake Clark National Preserve has three designated areas for the operation of guided hunter services by Alaska registered guide-outfitters. The southernmost is the Lake Clark guide area; the Mulchatna guide area occupies the central portion of the preserve; and the Stony River guide area is the northernmost. The Lake Clark guide area is currently vacant and does not have an authorized concessioner. The two current concession contract holders operate within a designated guide area under a contract with a term of 10 years.

All commercial visitor services at Lake Clark National Park and Preserve are managed pursuant to the following objectives:

- The service enhances visitor experience and provides the opportunity for visitors to understand and appreciate the purpose and significance of the park. This may include interpretive materials or opportunities.
- Commercial operations provide a valuable means of transportation for visitors to personally experience and explore the backcountry.
- Commercial operations may provide the only means by which some visitors may engage in specialized activities (for example hunting, dog mushing, or mountain climbing).
- Commercial operators are welcomed as partners by the National Park Service in promoting good stewardship of public lands with unique resources and values. They assist the public in engaging in personal park experiences and in making lasting connections to national parklands (NPS 2012e).

Commercial Services in Wilderness

Section 4(d)(6) of the Wilderness Act states, “Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing *the*

recreational or other wilderness purposes of the areas” (emphasis added). Section 4(b) of the act further provides that “. . .wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.” The wilderness areas within Lake Clark National Park and Preserve were established in 1980 for recreational and other purposes, which include traditional subsistence uses and protection of habitat for fish and wildlife populations.

Commercial service providers fill a vital role in helping the National Park Service carry out its mission. Through the use of concession contracts or CUAs, the National Park Service provides visitor services that are necessary and appropriate for public use and enjoyment through all areas of the park and preserve, including wilderness areas.

Commercial visitor services are diverse and responsive to public needs and are administered within wilderness areas to promote park goals and objectives and protect park resources. The level of commercial visitor services that occur in wilderness areas within Lake Clark National Park and Preserve is currently low. The National Park Service is not proposing a limit to, or an allocation of, commercial visitor services at Lake Clark National Park and Preserve at this time. In the future, if and when monitoring shows physical or social conditions are approaching unacceptable levels due to visitor use, the National Park Service may reconsider this determination (see the “Visitor Use Management” section in chapter 2).

ALTERNATIVE A (NO ACTION)

CONCEPT DESCRIPTION

This alternative would continue the current management direction for visitor activities and protection of wilderness and park resources. Park and preserve lands, as well as designated and eligible wilderness, would be managed according to existing law and policy and the original General Management Plan without amendment.

MANAGEMENT ZONING

No management zones would be applied under the no-action alternative.

STAFFING

There would be no changes to staffing due to this GMP Amendment under the no-action alternative.

DETAILS OF THIS ALTERNATIVE

See table 3 for details on the no-action alternative. See table 4 for details on the cost of this alternative. See table 5 for a summary of impacts on natural and cultural resources, wilderness character, and visitor use and experience.

ALTERNATIVE B (NPS PREFERRED)

CONCEPT DESCRIPTION

This alternative would expand opportunities for a diversity of visitor activities and would protect and enhance wilderness and park resources. This alternative would provide more prescriptive management in areas that receive higher visitor use such as in the preserve near Lake Clark and in some coastal areas. Other changes would include expanded interpretive services and commercial activities, backcountry hiking trails, and water routes. A range of management actions would be available to protect the resources in high-use destination areas. A modest approach to improved infrastructure would be provided.

MANAGEMENT ZONING

Under this alternative, the management zones would support the concept description above by protecting the wildest desired conditions in the designated wilderness portion of the park within the primitive backcountry zone. The western areas would be zoned backcountry, generally aligned with the wilderness boundary, to provide a slightly wider range of visitor and resource conditions and management strategies. The Port Alsworth area would be zoned administrative under alternative B to support park operations and visitor services.

Under alternative B, less than 0.01% (approximately 2,000 acres) of Lake Clark National Park and Preserve would be in the administrative zone. Approximately 30% (approximately 1,111,000 acres) would be in the backcountry zone, and approximately 70% (approximately 2,574,700 acres) would be in the primitive backcountry zone. The four rustic areas described earlier in this chapter would apply to this alternative, and

those locations would be managed consistent with the underlying zone.

Highlights of Alternative B

- expanded opportunities for visitor use
- support for expanded commercial services
- designation of three to eight public use cabins
- support for some expanded primitive camping areas and trails
- Proenneke site managed as open-air exhibit

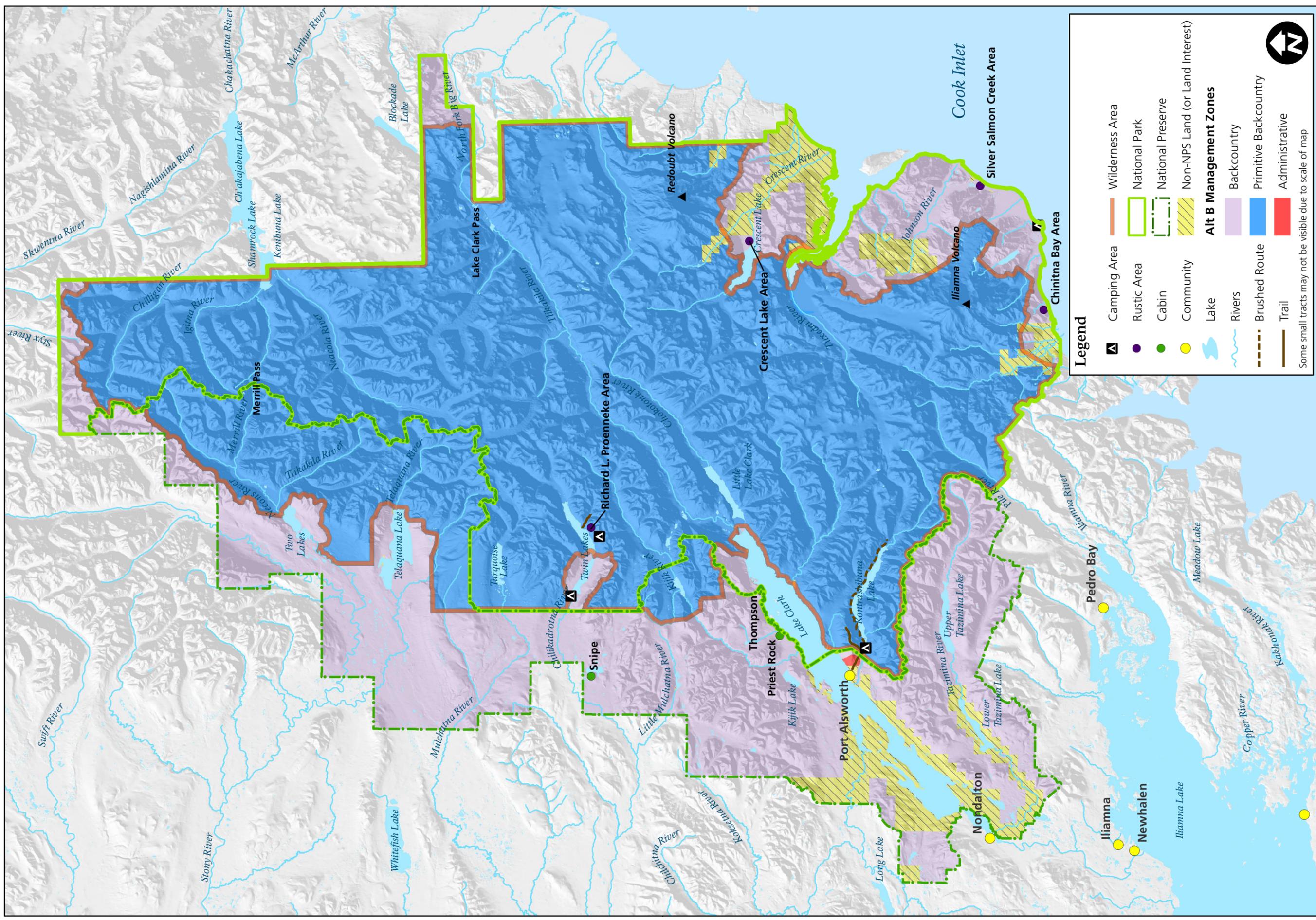
STAFFING

Additional interpretation, concessions, and resources staff would provide optimal staffing to meet the goals of this alternative. However, implementation of some aspects of this plan is not dependent on additional staffing or funding. The total new full-time equivalent (FTE) employees could increase by up to 3.3 FTE, depending on availability of funding. These new employees would include 1.5 FTE interpretive staff (consistent with staffing recommendations in the Long-range Interpretive Plan (NPS 2010d), a 0.8 FTE biological technician, and a 1.0 FTE concessions manager. The total budget request for these additional staff would be \$413,000. Lake Clark National Park and Preserve currently has a staffing level of 26.0 FTE.

DETAILS OF THIS ALTERNATIVE

See table 3 for details on alternative B. See table 4 for details on the cost of this alternative. See table 5 for a summary of impacts on natural and cultural resources, wilderness character, and visitor use and experience.

Alternative B



Legend

- Camping Area
 - Rustic Area
 - Cabin
 - Community
 - Lake
 - Rivers
 - Brushed Route
 - Trail
 - Wilderness Area
 - National Park
 - National Preserve
 - Non-NPS Land (or Land Interest)
- Alt B Management Zones**
- Backcountry
 - Primitive Backcountry
 - Administrative

Some small tracts may not be visible due to scale of map



ALTERNATIVE C

CONCEPT DESCRIPTION

Alternative C would focus on preserving the wilderness character of the park and accommodating current patterns of use. This alternative would continue to maintain existing access, visitor use, and infrastructure. Minimal new infrastructure and staff would be provided.

MANAGEMENT ZONING

Under alternative C, the management zones would support the concept description above by protecting the wildest desired conditions in the designated wilderness portion of the park within the primitive backcountry zone, as well as almost all the eastern coastal areas and other northeastern sections of the park. Between the coastal areas and the wilderness on the eastern boundary of the park, the primitive zone reflects the dense brush that makes this area difficult to access. The western areas would be zoned backcountry, generally aligned with the wilderness boundary, to provide a slightly wider range of visitor and resource conditions and management strategies. The Port Alsworth area would be zoned administrative under this alternative to support park operations and visitor services.

Under alternative C, less than 0.01% (approximately 2,000 acres) of Lake Clark National Park and Preserve would be in the frontcountry zone. Approximately 24%

(approximately 900,600 acres) would be in the backcountry zone, and approximately 76% (approximately 2,784,000 acres) would be in the primitive backcountry zone.

The four rustic areas described earlier in this chapter would apply to this alternative, and those locations would be managed consistent with the underlying zone.

Highlights of Alternative C

- focus on wilderness character of the park
- support for existing commercial services
- no public cabins would be designated
- maintain existing access, visitor use, and infrastructure
- Proenneke site focused on wilderness experience

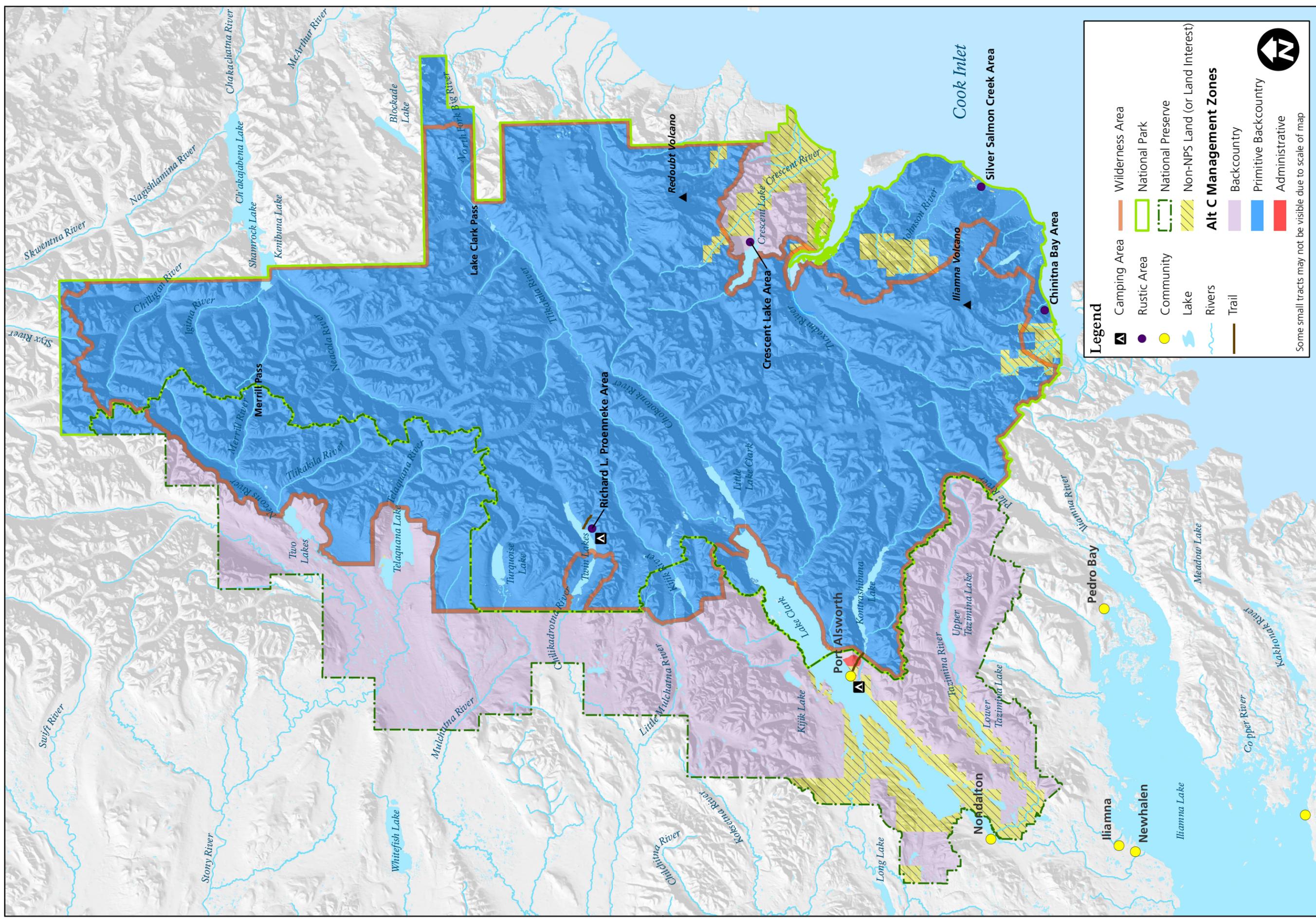
STAFFING

No additional staff is anticipated under alternative C.

DETAILS OF THIS ALTERNATIVE

See table 3 for details on alternative C. See table 4 for details on the cost of this alternative. See table 5 for a summary of impacts on natural and cultural resources, wilderness character, and visitor use and experience.

Alternative C



Legend

- Camping Area
 - Rustic Area
 - Community
 - Lake
 - Rivers
 - Trail
 - Wilderness Area
 - National Park
 - National Preserve
 - Non-NPS Land (or Land Interest)
 - Backcountry
 - Primitive Backcountry
 - Administrative
- Alt C Management Zones**

Some small tracts may not be visible due to scale of map



COMPARISON OF THE ALTERNATIVES

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

	ALTERNATIVE A (No-action Alternative)	ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
Concept	This alternative would continue the current management direction for visitor activities and protection of wilderness and park resources. Park and preserve lands as well as designated and eligible wilderness would be managed according to existing law and policy and the original General Management Plan without amendment.	This alternative would expand opportunities for a diversity of visitor activities and would protect and maintain wilderness and park resources. This alternative would provide for more prescriptive management in areas that receive higher visitor use, such as in the preserve, near Lake Clark, and in some coastal areas. Other changes would include opening several existing cabins for public use, expanded interpretive services and commercial activities, backcountry hiking trails, and water routes. A range of management actions would be available to protect the resources in high-use destination areas. A modest approach to improved infrastructure would be provided.	This alternative would focus on accommodating current patterns of use. The alternative would continue to maintain existing access, visitor use, and infrastructure. Minimal new infrastructure may be provided.
Visitor Services			
Overview	There would be no plan for additional visitor facilities. Existing infrastructure would be maintained, and new facilities would be addressed on a case-by-case basis.	Additional visitor facilities (e.g., trails, public use cabins, primitive camping areas) would be provided primarily in undesignated wilderness portions of the park.	Minimal new infrastructure would be provided if necessary to protect wilderness character or address resource impacts.
Proenneke Site	The site would be managed as it is today: to protect park resources and provide education and interpretation of the site. NPS staff would continue to be on-site during the summer. Most on-site and in-cabin artifacts would be left in place, though others would be replicated and removed. There would continue to be an opportunity for visitors to be self-guided. There would continue to be three primitive camping	The site would be managed as an open-air exhibit focused on the connection between RLP and the surrounding wilderness and specific natural features. Visitors would have the opportunity for both NPS-led and self-guided visits. NPS staff would be on-site during the summer to provide interpretation of the site and to ensure protection of park resources. Selected on-site and in-cabin artifacts would be left in place, though	The site would be managed to provide an experience that would feel much like Richard L. Proenneke was still living there. Site management would focus on the wilderness aspect of Proenneke’s experience in the area and protection of resources. Visitors would have the opportunity for self-guided visits. NPS staff may occasionally be available to answer questions and

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

	ALTERNATIVE A (No-action Alternative)	ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
	<p>areas at Hope Creek.</p> <ul style="list-style-type: none"> Manage and maintain pit toilet for visitor use. 	<p>others would be replicated and removed.</p> <ul style="list-style-type: none"> The existing primitive camping area at Hope Creek would be maintained. Manage and maintain privy for visitor use. 	<p>ensure protection of park resources, but NPS staff would not be stationed at the site itself. Most on-site and in-cabin artifacts would be removed. Some objects would be replicated and left on-site.</p> <ul style="list-style-type: none"> The existing primitive camping areas at Hope Creek would be maintained. Manage and maintain privy for visitor use.
Kontrashibuna Lake	<ul style="list-style-type: none"> No boat storage or public use boat rentals would be authorized. 	<ul style="list-style-type: none"> A mechanism, service or facility to appropriately store nonmotorized boats seasonally may be considered. Public use (day/multiday use) nonmotorized boat rentals would be authorized. Boats, paddles, oars and personal flotation devices would be available to visitors. 	<ul style="list-style-type: none"> No boat storage or public use boats would be authorized.
Public Use Cabins	<ul style="list-style-type: none"> No public use cabins would be designated. 	<ul style="list-style-type: none"> Three to eight existing cabins would be designated for public use under this alternative. The Joe Thompson, Priest Rock (Allen Woodward), and Snipe Lake cabins would be three of the eight possible public use cabins. There would be no public use cabins in designated wilderness. After designating the first three cabins, an additional five cabins (for a total of eight) may be designated for public use in the future in order to accommodate emerging uses and to mitigate possible future resource impacts. A cost benefit analysis 	<ul style="list-style-type: none"> No public use cabins would be designated.

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

	ALTERNATIVE A (No-action Alternative)	ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
		would be conducted on additional cabins beyond the first three to evaluate factors such as visitor need, the level of use of the first three cabins, and available park resources for managing and maintaining the cabins.	
Trails and Routes	<ul style="list-style-type: none"> ▪ The following existing trails would continue to be maintained: Port Alsworth area trails including the Tanalian Mountain and Beaver Loop trails, the trail to the falls and to Kontrashibuna Lake; the Joe Thompson trail; Teetering Rock trail and Hope Creek trail to First Canyon. ▪ Brushing routes would be determined on a case-by-case basis. 	<ul style="list-style-type: none"> ▪ The following existing trails would continue to be maintained: Port Alsworth area trails including the Tanalian Mountain and Beaver Loop trails, the trail to the falls and to Kontrashibuna Lake; the Joe Thompson trail; Teetering Rock trail and Hope Creek trail to First Canyon. ▪ National Park Service would improve accessibility of some existing trails in the Port Alsworth area. ▪ Dispersed hiking would be encouraged throughout the park; however, additional routes would be brushed to provide expanded visitor opportunities. ▪ Establish water route on Lake Clark. 	<ul style="list-style-type: none"> ▪ The following existing trails would continue to be maintained: Port Alsworth area trails including the Tanalian Mountain and Beaver Loop trails, the trail to the falls and to Kontrashibuna Lake; the Joe Thompson trail; Teetering Rock trail and the Hope Creek trail to First Canyon. ▪ No new trails would be established.
Primitive Camping Areas	<ul style="list-style-type: none"> ▪ Maintain three existing primitive camping areas at Hope Creek. ▪ Address new camping areas on a case by case basis. 	<ul style="list-style-type: none"> ▪ Encourage primitive camping throughout the park. ▪ Improve management of camping areas such as at Shelter Creek, Port Alsworth, Kontrashibuna Lake, Hope Creek, and Lower Twin Lake. ▪ Camping areas may be designated to address resources impacts at access points on lakes, streams, and the coast. ▪ Designated sites may include a leveled tent site, pit toilet, fire ring, 	<ul style="list-style-type: none"> ▪ If needed, develop a camping area in Port Alsworth. ▪ Maintain three existing primitive camping sites at Hope Creek.

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

	ALTERNATIVE A (No-action Alternative)	ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
		<p>while the general character remains primitive.</p> <ul style="list-style-type: none"> ▪ Designated camping areas would generally occur outside of designated wilderness. ▪ Encourage development of camping infrastructure on private lands where appropriate. 	
Other	<ul style="list-style-type: none"> ▪ No additional facilities planned at this time. 	<ul style="list-style-type: none"> ▪ Provide an improved restroom facility at Port Alsworth. ▪ Provide a public bear-resistant privy and day-use storage facility at Silver Salmon Creek. ▪ Explore possible future sites for bear-proof storage and human waste management. 	<ul style="list-style-type: none"> ▪ No additional facilities.
Commercial Services			
Overview	<p>This alternative would accommodate current types of commercial services for visitors while managing the park and preserve to protect resources and wilderness character. New commercial needs and uses would be addressed on a case-by-case basis.</p>	<p>This alternative would offer limited new commercial services aimed at improving visitor access and expanding the range of recreation opportunities for visitors who are recreating in a predominantly natural setting.</p>	<p>This alternative would accommodate current types of commercial services for visitors while managing the park and preserve to protect resources and wilderness character. Commercial services provide for access and primitive and unconfined recreation, and no expanded opportunities for commercial services would be expressly identified or pursued.</p>
Specific Commercial Opportunities	<p>The National Park Service would address new commercial needs and uses on a case-by-case basis.</p>	<p>Consistent with the fundamental purposes of the park and preserve, the National Park Service would authorize some expanded opportunities for commercial services on a case-by-case basis through the competitive process of CUA or concession contracting at Kontrashibuna Lake, Crescent Lake and Port Alsworth.</p>	<p>The National Park Service would not provide expanded opportunities for commercial services through concession contracting at Crescent Lake.</p>

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

ALTERNATIVE A (No-action Alternative)		ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
		<p><u>Kontrashibuna Lake</u> All commercial activities at Kontrashibuna Lake would place particular emphasis on providing primitive and unconfined types of recreation that contribute to public education and visitor enjoyment of wilderness resources and values.</p> <ul style="list-style-type: none"> ▪ Commercial operators would be authorized to provide a variety of nonmotorized boat rentals for recreational use for the public. ▪ Commercial operators would be authorized to provide guided services for a greater variety of nonmotorized recreational opportunities than currently exist. ▪ Commercial operators would be authorized to provide limited nonmotorized boat storage for the public. <p><u>Crescent Lake</u></p> <ul style="list-style-type: none"> ▪ Commercial operators would be authorized to provide a greater variety of water-based recreation visitor services (guided/ unguided) than currently exist. The National Park Service would provide a land use assignment to support a seasonal boat storage concession. 	
Interpretation and Education			
Overview	No change in educational and interpretive programming.	More opportunities would be provided for people to obtain educational and interpretive programming.	Minimal changes in educational and interpretive programming.
Information Facilities/ Exhibits	<ul style="list-style-type: none"> ▪ Implement the Long-range Interpretation Plan. 	<ul style="list-style-type: none"> ▪ Implement the Long-range Interpretation Plan. ▪ Provide interpretive exhibits in the historic public use cabins. 	<ul style="list-style-type: none"> ▪ Implement the Long-range Interpretative Plan.

TABLE 3. A COMPARISON OF THE MANAGEMENT ALTERNATIVES

	ALTERNATIVE A (No-action Alternative)	ALTERNATIVE B (NPS Preferred Alternative)	ALTERNATIVE C
		<ul style="list-style-type: none"> Expand visitor contact opportunities through partnerships with state and federal agencies, tribes, local communities, educational institutions and nonprofit organizations and electronic media. 	
Administrative Facilities and NPS Presence			
Overview	No changes to park administrative facilities.	Additional facilities built to manage increased visitation in the park. Additional staffing required to administer this alternative.	Minimalist approach, providing new facilities only when necessary to protect wilderness character and/or address resource impacts.
Park Headquarters	<ul style="list-style-type: none"> Park headquarters remains in Anchorage. 	<ul style="list-style-type: none"> The park headquarters would remain in Anchorage at this time. As funding or circumstances permit, the National Park Service would continue to assess the best available options for funding and staff. 	<ul style="list-style-type: none"> Park headquarters would remain in Anchorage.
Facilities Inside the Park	<ul style="list-style-type: none"> Restored historic cabins available for administrative use. 	<ul style="list-style-type: none"> On occasion, public use cabins may be used for administrative use (i.e. field camps for staff). Improve/expand administrative cabin at Crescent Lake. 	<ul style="list-style-type: none"> Restored historic cabins available for administrative use.
Additional Staff	<ul style="list-style-type: none"> No additional staff required. Active FTE: About 26. 	<ul style="list-style-type: none"> Three additional interpretation, concessions, and resources staff anticipated (about 29 FTE). 	<ul style="list-style-type: none"> No additional staff anticipated. Active FTE: About 26.

COST SUMMARY OF ALTERNATIVES

The presentation of costs in a general management plan is based on the types and general intensities of development in a comparative format. The National Park Service believes the costs presented are justified due to the sheer size and identified needs of the park. Currently, funding is sufficient for approximately 26 FTE staff at Lake Clark National Park and Preserve.

The table below summarizes the annual cost estimates for each alternative, including the no-action alternative. The following applies to costs presented in this GMP Amendment.

- Actual costs would be determined at a later date and would take into consideration the identification of detailed resource protection needs and changing visitor expectations.
- Approval of the GMP Amendment does not guarantee funding or staffing for proposed actions. Project funding would not come all at once. Some proposals may not be funded within the life of this plan and full implementation may occur many years into the future. Park operations would continue as normal with no loss of services or resource protection during the period of implementation of the proposals detailed in this GMP Amendment.
- The costs are presented as estimates and are not appropriate for budgeting purposes.
- The cost estimates are general in nature and intended for alternative comparison purposes only.

TABLE 4. ANNUAL COST ESTIMATES FOR THE ALTERNATIVES

	Alternative A	Alternative B	Alternative C
Annual Operating Costs (ONPS) ¹	\$3,458,000	\$4,030,000	\$3,458,000
Staffing (FTE) ²	26	29	26

¹Annual operating costs (ONPS) are the total costs per year for maintenance and operations associated with each alternative including utilities, supplies, staff salaries and benefits, leasing, and other materials. Cost and staffing estimates assume that the alternative is fully implemented as described in the narrative in chapter two. The estimated ONPS for alternative B is alternative A's ONPS plus new staff plus cabin maintenance cost, multiplied by 1.04 per NPS guidance on future cost estimation.

²The total number of FTE employees is the number of person-years of staff required to maintain the assets of the park at an adequate level, provide acceptable visitor services, and support the park's general operations. The FTE number indicates ONPS-funded NPS staff only, not volunteer positions or positions funded by partners. FTE salaries and benefits are included in the annual operating costs. The three new FTE under alternative B are estimated to cost \$413,000 annually.

MITIGATION PROCEDURES COMMON TO ALL ALTERNATIVES

Congress charged the National Park Service with managing the lands under federal government stewardship “in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations” (NPS Organic Act, 16 USC 1). As a result, NPS staff routinely evaluate and implement mitigation measures whenever conditions occur that could adversely affect the sustainability of NPS resources.

Mitigation measures are the practicable and appropriate methods that would be used under the action alternatives to avoid and/or minimize harm to park natural and cultural resources, wilderness, visitors, and the visitor experience.

Because there is limited facility development or construction planned in either of the action alternatives and due to the wild nature and light footprint of NPS management of the park, most of the mitigation procedures apply to ongoing operations and management rather than effects from new proposals in the action alternatives. Therefore, the following procedures are not traditional mitigation measures. Rather, they are efforts to support relationships between the National Park Service and its partners, thereby increasing understanding and protection of the unique resources of Lake Clark National Park and Preserve. The “Desired Conditions” section in appendix C provides details on strategies that would be continued or developed as part of this plan, especially for natural and cultural resource protection and visitor safety and experience.

The following mitigation measures would be used to avoid or minimize potential impacts from the implementation of the action alternatives, largely through

education of visitors, staff, and other park users. These measures would be applied to all of the action alternatives, subject to funding and staffing constraints. Additional mitigation would be identified as part of implementation planning and for individual projects to further minimize resource impacts.

- A minimum requirements analysis would be carried out for projects in designated wilderness to determine if and how actions or research would be implemented in accordance with the Wilderness Act, section 4 (c).
- Visitors would be educated in Leave No Trace ethics in order to minimize or avoid impacts on natural and cultural resources in and around historic cabins.
- All projects with the potential to affect cultural or natural resources would be implemented in compliance with state and federal laws, such as sections 106 and 110 of the National Historic Preservation Act and ANILCA section 810, to ensure that any possible effects would be adequately addressed. All reasonable measures would be taken to avoid, minimize, or mitigate adverse effects in consultation with the Alaska state historic preservation office, Alaska Native tribal groups, traditional councils, the Lake Clark National Park Subsistence Resource Commission, and Federal Subsistence Regional Advisory Councils, as well as Alaska Native Regional and Village corporations, as appropriate and necessary.

- To appropriately preserve and protect national register-listed or eligible historic structures and associated cultural landscape features, all stabilization, preservation, or restoration efforts would be undertaken in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties (1995)* and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996)*.
- An emphasis would be placed on improving and maintaining relations with State of Alaska and Alaska Native tribal offices, local community groups, and community development efforts, including but not limited to
 - continued emphasis on working with the Lake Clark National Park Subsistence Resource Commission
 - continued participation in meetings of the Bristol Bay Federal Subsistence Regional Advisory Council
 - continued participation and emphasis on developing strong partnerships with local communities, including but not limited to all Lake Clark resident zone communities
- continued emphasis on building relationships with tribes and initiating and engaging in formal government-to-government consultation
- An emphasis would be placed on educating Lake Clark and other NPS staff, visiting researchers, and other partners on
 - the Alaska Native Claims Settlement Act, the Alaska National Interest Lands Conservation Act, and other important laws in Alaska that relate to land management and land use
 - unique aspects of Alaska history and culture, especially those that relate to the residents and communities of the park's resident zone that use areas within Lake Clark for traditional and customary activities
 - areas or topics of special concern such as archeology in the park, subsistence use, and wilderness management
 - the distinctive and special aspects of the remote and wild character of Lake Clark National Park and Preserve

FUTURE STUDIES AND IMPLEMENTATION PLANS

INTRODUCTION

After completion and approval of this GMP Amendment, other more detailed studies and plans would be needed before certain actions can be implemented. Some of these actions would require additional environmental compliance, public involvement, and consultation with partner agencies and other stakeholders. Appropriate permits may also be needed for certain actions.

Implementation of these studies and plans would also depend on future funding and staffing levels. The approval of this GMP Amendment does not guarantee that the funding needed for implementation would be forthcoming.

The following list includes future studies and plans that would likely be needed to implement the action alternatives.

- A **cabin management plan** would be developed with detailed strategies for the appropriate treatment and use of selected historic cabins, associated structures, and cultural landscape features. The plan would also assist park managers in determining the disposition of cabins and structures throughout the park and preserve; prioritizing preservation treatments and other management alternatives; and establishing protocols for public use (e.g., possible reservation requirements, education/ orientation for cabin users).
- A **boundary study** of the Richard L. Proenneke Historic Site is currently under way to recommend expansion of the site's boundaries to update the property's listing in the National Register of Historic Places. The study is being undertaken to incorporate site features and resources identified from recent park staff investigations that contribute to a broader understanding of Richard Proenneke's residency and use of the site. A site plan for the entire site would also be undertaken in the future to explore options for management and visitor opportunities.
- As noted in the park's *Museum Management Plan* (2012), **preservation maintenance plans** for the Proenneke cabin, Joe Thompson Cabin, the Allen Woodward Cabin (Priest Rock), and the Earl Woodward Cabin (Hardenburg Bay) have not been completed. These comprehensive plans would include condition assessments of on-site objects, cataloging and accessioning guides for cabin items, furnishing guides, and preservation maintenance and exhibit plans. It would provide site managers and cultural resource specialists with systematic guidance for addressing the use, protection, and replication of historic furnishings and other on-site objects used in site interpretation.
- A **wilderness stewardship plan** would be developed for the park's designated and eligible wilderness, as required under section 6.3.4 of NPS *Management Policies 2006* and section 6.3 of Director's Order 41: *Wilderness Stewardship*.
- **Comprehensive river management plans** would be developed for the park's three designated wild rivers, as required under section 3(d)(1) of the Wild and Scenic Rivers Act.
- **Historic structure reports** may be required to guide future preservation treatments of the Richard L. Proenneke Historic Site (cabin and

contributing site structures) as well as other public use cabins slated for restoration.

- A **resource stewardship strategy** would be developed to provide

comprehensive, long-range direction for resource management, interpretation and education, and law enforcement activities.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The National Park Service is required to identify an environmentally preferable alternative in its NEPA documents for public review and comment. Guidance from the Council on Environmental Quality states that the environmentally preferable alternative is the alternative that “causes the least damage to the biological and physical environment”; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources (CEQ 1981). Multiple alternatives may be selected as the environmentally preferable alternative.

As described in chapter 4, all of the alternatives would have minimal impact on biological or physical resources, such as vegetation and wildlife, and those impacts would be slight and localized in most cases. There are only minor facility improvements in the park and preserve under alternative B, and none under alternative C. Although both action alternatives would have different impacts on the environment due to their slightly different emphasis on visitor use, education, and management activities, the impacts from both alternatives would be small.

Under alternative B, there would be slightly more active management in certain management zones or locations where human use may be slightly higher in the future. These areas include the Proenneke site, primitive camping areas, and designated public use cabins. Under this alternative, there would be a general management strategy of concentrating use in some areas and managing for impacts if necessary. There would also be more opportunities to provide visitor education on historic, cultural, and natural resources, with the

intention to promote long-term awareness and protection by park visitors and other users.

Under alternative C, there would be a lesser amount of active resource management in accordance with the wilderness emphasis of that alternative. There would be no designated public use cabins under alternative C, thus reducing the environmental impacts and the possible need for management around those areas. Under this alternative, there would be a general management strategy of accepting use and impacts in dispersed locations. There would be less emphasis on education under this alternative, possibly reducing the outreach that could provide visitors and other users with enhanced knowledge about resource protection.

Both action alternatives provide environmental benefits over the no-action alternative through the use of management zoning, visitor use indicators and standards, and progress toward desired conditions for fundamental resources and values of the park and preserve. There is little difference between the two action alternatives because both are strongly grounded in the provisions of the Wilderness Act, ANILCA, and NPS policies for protection of resources from damage. There are only slight differences between the two action alternatives in the ways they would impact, protect, preserve, and enhance historic, cultural, and natural resources. The main difference would be the emphasis of management, either on more concentrated public use in alternative B or with more dispersed use in alternative C. Therefore, both action alternatives have been identified as environmentally preferable.

ALTERNATIVES AND MANAGEMENT ACTIONS CONSIDERED BUT DISMISSED

During early phases of the planning process, the planning team drafted several concepts that are slightly different than the alternatives presented in this GMP Amendment. These elements were dismissed because of technical or economic infeasibility or because of duplication with similar alternatives.

Early in the development of the plan, the team developed four management zones. After working with four management zones for several months, the planning team determined there was not enough differentiation between them, either conceptually or for on-the-ground management. The initial four management zones were recombined into the three management zones that appear in this GMP Amendment. These three zones represent a range of desired conditions for resources and visitor experience that are distinct and realistic, both conceptually and for on-the-ground management.

A second element of the plan that has changed is the wilderness study. This planning effort began as a management plan amendment and wilderness study. However, public comments during the summer 2011 comment period focused on visitor use and access issues. The National Park Service altered the direction of the GMP Amendment to take an issue-driven and more focused approach on visitor use and access and postponed the wilderness study. The

shift in scope of the GMP Amendment prompted a change in the NEPA pathway from an environmental impact statement to an environmental assessment because significant impacts from the remaining components of the plan were not anticipated. A wilderness eligibility reassessment for some areas in the southeastern part of the park has been retained in this plan (see appendix B).

A third element of the plan that was considered and reevaluated was the preliminary management alternatives. In the April 2012 newsletter, three preliminary alternatives were shared with the public. After reviewing public comments, the planning team recombined the elements of the three preliminary action alternatives into the two action alternatives that are presented in this plan. Most of the elements that were eliminated were focused on a higher level of facility development and visitor facilities, which were not in keeping with public comments about maintaining a predominantly wild and natural park with limited facilities.

During the planning process, elements of these early concepts were incorporated into the action alternatives and other components of this plan. Many individual elements or actions were retained and recombined during the development of alternatives B and C presented in this plan.

IMPACTS SUMMARY TABLE

TABLE 5. IMPACTS SUMMARY TABLE

Impact Topic	Alternative A	Alternative B	Alternative C
Natural Resources—Soils and Vegetation	Minor, long-term, adverse impacts to soils and vegetation in localized areas—primarily in a few relatively small popular destinations like the coastal strip, Twin Lakes, and Port Alsworth/Lake Clark areas.	Overall, a minor, long-term adverse impact on the park’s soils and vegetation due to visitors altering soils and vegetation at a few popular destinations (Twin Lakes and Port Alsworth/Lake Clark areas) and development of a few facilities.	Overall, a minor, long-term adverse impact on the park’s soils and vegetation due to visitors altering soils and vegetation at a few popular destinations like the Twin Lakes and Port Alsworth / Lake Clark areas.
Brown Bear	Alternative A would continue to have a minor, long-term, adverse impacts to bears in localized areas, primarily due to continuing visitor use at popular destinations along the coast, such as Silver Salmon Creek.	Alternative B would have a long-term, minor, adverse impact on brown bears in localized areas, primarily due to visitor use along the coast. However, alternative B would also benefit bears from the implementation of a visitor use management framework and providing bear-resistant facilities at Silver Salmon Creek and possibly other locations.	Alternative C would have a long-term, minor, adverse impact on brown bears in localized areas, primarily due to visitor use along the coast. However, alternative C would also benefit bears from the implementation of a visitor use management framework.
Cultural Resources—Historic Structures, Sites, and Cultural Landscapes	The no-action alternative would have long-term, minor adverse and minor to moderate beneficial impacts on selected historic cabins, associated structures and cultural landscape features and on the Proenneke site.	Alternative B would have long-term, minor adverse and minor to moderate beneficial impacts on selected historic cabins, associated structures and cultural landscape features and on the Proenneke site.	Alternative C would have long-term, minor adverse and minor to moderate beneficial impacts on selected historic cabins, associated structures and cultural landscape features and on the Proenneke site.
Cultural Resources—Museum Collections and Historic Objects	The no-action alternative would continue to have long-term, minor to moderate beneficial impacts on furnishings and objects associated with historic cabins, including the Proenneke site. Short- and long-term, minor to moderate adverse impacts may also occur from visitor use impacts on exhibited collection items.	Alternative B would have long-term, minor to moderate beneficial impacts on furnishings and objects associated with historic cabins, including the Proenneke site. Short- and long-term, minor to moderate adverse impacts may also occur from visitor use impacts on exhibited collection items.	Alternative C would have long-term, minor to moderate beneficial impacts on furnishings and objects associated with historic cabins, including the Proenneke site. Short- and long-term, minor to moderate adverse impacts may also occur from visitor use impacts on exhibited collection items.

TABLE 5. IMPACTS SUMMARY TABLE

Impact Topic	Alternative A	Alternative B	Alternative C
<p>Cultural Resources – Archeological Resources</p>	<p>Long-term or permanent, localized, minor adverse impacts on precontact and historical archeological resources would occur under alternative A from erosion, visitor use, and other factors. Long-term, minor to moderate beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines, and public educational outreach.</p>	<p>Long-term or permanent, localized, minor to moderate adverse impacts on precontact and historical archeological resources would occur under alternative B from erosion, visitor use, and other factors. Long-term, minor to moderate beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines, and public educational outreach.</p>	<p>Long-term or permanent, localized, minor adverse impacts on precontact and historical archeological resources would occur under alternative C from erosion, visitor use, and other factors. Long-term, minor to moderate beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines, and public educational outreach.</p>
<p>Wilderness Character</p>	<p>The vast majority of the wilderness character of the Lake Clark Wilderness would not be affected by alternative A. A long-term, minor, adverse impact to wilderness character, primarily due to the continuing effects of visitors, at the Proenneke site and Kontrashibuna Lake.</p>	<p>The vast majority of the wilderness character of the Lake Clark Wilderness would not be affected by alternative B. Overall, alternative B would result in a minor, long-term, adverse, localized impact on wilderness character, primarily due to the effects of visitor use at the Proenneke site and Kontrashibuna Lake.</p>	<p>The vast majority of the wilderness character of the Lake Clark Wilderness would not be affected by alternative C. Overall, alternative C would have a minor, long-term, localized, adverse effect on the park’s wilderness character, primarily due to the effects of visitor use and management at the Proenneke site and Kontrashibuna Lake.</p>
<p>Visitor Use and Experience</p>	<p>Alternative A would continue providing good quality visitor experiences and would not alter the amount of visitation at the park and preserve. However, due to continued adverse effects on resources and wilderness character, this alternative would result in continued minor, long-term, beneficial and adverse impacts to visitor use and experience.</p>	<p>Alternative B would provide more options to visitors to better tailor their experiences to meet their needs, without infringing on the experiences identified as fundamental to the park’s purpose and significance. As such, this alternative would result in moderate, long-term, beneficial impacts to visitor use and experience due to the greater diversity of opportunities.</p>	<p>Alternative C would provide high quality visitor experiences and would not influence the amount of visitation at the park and preserve. Reducing staffing and guided interpretation at the Proenneke Site would further instill in visitors the sense of a wilderness experience. As such, this alternative would result in minor, long-term, beneficial impacts to visitor use and experience due to the preservation of wilderness character throughout the park.</p>



INTRODUCTION

The “Affected Environment” chapter describes the existing environment and the current condition of those resources that would be affected by implementing the actions considered in this GMP Amendment. These resources include

vegetation and soils, wilderness character, historic structures / cultural landscapes, museum collections, and visitor use and experience. The rationale for considering or dismissing these and other impact topics is explained in the introduction of chapter 1.

NATURAL RESOURCES

The landscapes of Lake Clark National Park and Preserve range from the irregular coastline of western Cook Inlet framed by rugged peaks and spires, glaciers, and snow-clad volcanoes to the interior region characterized by braided glacial rivers, cascading streams, waterfalls, and lakes. Within a relatively small area, the park contains a diversity of ecosystems and plants. As noted in chapter 1, Lake Clark National Park and Preserve is the only Alaska park unit containing four biogeographic provinces: subarctic, boreal, maritime, and alpine. It is a microcosm of Alaska.

SOILS

Little soil information exists for Lake Clark. However, given the park's diverse landscapes, one would also expect a diversity of soil types. A recent draft report classified 95 soil types (at the subgroup level) at 353 plots in the park (ABR, Inc. 2012). Climate, glaciers, rivers, and volcanoes all have helped shape and modify soils in the area. In general, soils in the park are young, poorly developed, extremely variable, and derived from glacial or volcanic processes (Racine and Young 1978 as cited in NPS 2001). Most of the land surface below elevations of 1,500 to 2,000 feet has been scoured by Pleistocene glaciers and most of the land surface above 2,000 feet is too steep to develop soils and/or is covered by snow and ice (NPS 1975). Moist organic soils are found in lacustrine (lake) environments and in upland areas such as spruce woodlands that have been stable, allowing the accumulation of organic material. Permafrost is found in isolated masses in areas of the upper Chilikadrotna River drainage, the lower Stony River valley, the lower Chulitna River, the southern end of Lake Clark near Sixmile and Pickerel, and

the Tommy Creek drainage immediately north of Tanalian Mountain.

Aside from some localized compaction of soils by visitors creating social trails and at camping areas in a few localized areas, the vast majority of park soils have not been noticeably disturbed or altered by people. In the Silver Salmon Creek area, years of off-road vehicle use also has altered topsoil, compacting soils in a few localized areas on NPS lands (NPS 2010a).

ECOSYSTEMS AND VEGETATION

The park and preserve's major ecosystems can be divided into three areas: coastal (Cook Inlet), mountainous spine, and lake side (NPS 2005a). Forests dominate the southern and eastern sides of the park and preserve, while the northern and western sides are primarily tundra with patches of spruce forest at lower elevations. The Cook Inlet coastline has a narrow fringe with coastal salt marshes in Tuxedni and Chinitna bays and scattered marshes and lagoons along the inlet coast. The salt marshes are a rich zone of sedges and some grasses. Narrow bands of young spruce are establishing themselves into the *Elymus* perennial grass community behind the beaches. The depositional flats and lower mountainsides behind the beaches are covered with spruce forests and alder thickets. The forests on the coast side of the Chigmit Mountains, where the climate is wetter, tend to be denser and have larger trees than the forests in the drier interior. Both white and Sitka spruce grow along the coast, with Sitka spruce generally south of the Johnson River and white spruce to the north. The conifer forests have trees of various ages with thick moss understory, devil's club, salmonberry, and scattered alder. Scattered stands of spruce rise out of a sea of alder, especially around the Tuxedni

coast and above the dense spruce forest. Alder thickets grow above the spruce zone, thinning out into *Calamagrostis* (bluejoint reedgrass) meadows at the upper limits. The alpine tundra zone is very narrow on the coastal side of the mountains, dominated by partridgefoot, crowberry, and forbs. (See appendix D for scientific names of the species mentioned in this chapter.)

The center of the park comprises the mountainous spine, primarily glacial ice and bedrock or till. Most valley glaciers are in retreat, leaving large expanses of moraines and ground till, which are slowly revegetating with mosses and lichens, fireweed and Dryas, willow and alder.

The western side of the park is dominated by a series of large, long lakes with eastern extents in the Alaska Range and the western edge bounded by terminal moraines from the most recent advances of large valley glaciers. Low ridges and subdued mountains lie between the lake systems. The northern part of the park, by the Stony River, is boreal in character, with black spruce, muskeg, aspen, and birch and subject to wildfire. Farther south, vegetation is a mosaic of spruce and mixed spruce/birch or cottonwood forests, paper birch, low shrubs dominated by dwarf birch, dwarf shrub tundra with ericaceous (heath family) shrubs, scattered wetlands, and alpine tundra. Vegetation patterns are arrayed in response to soil texture and drainage patterns from a complex glacial and alluvial history.

Twenty-four different vegetation communities (cover classes) have been identified in the park and preserve (NPS 1998). See the park atlas for a land cover map for the park and preserve.

Four major vegetation communities would most likely occur in the areas that may be affected by the alternatives in this plan and are briefly described below. The following descriptions are adapted from the "Lake Clark National Park and Preserve Land

Cover Mapping Project User's Guide" (NPS 1998).

Spruce woodlands are very sparse conifer stands with total tree cover 10%–25%. This vegetation community occurs on the south and west shores of Lake Clark, growing on well-drained lateral moraines and glacial outwash plains. It consists of white spruce with lichen and ericaceous ground cover, interspersed with birch stands and small sedge and shrub bog meadows.

Closed and open mixed forests are dominant along the shores of Lake Clark and the associated valleys of Kijik, Tlikakila, and Chokotonk rivers, Current Creek, and Tazimina and Kontrashibuna lakes. Mixed forest also occurs around Telaquana Lake, Crescent River, and the north shore of Tuxedni Bay. Closed mixed forest are stands of primarily white spruce mixed with birch and/or balsam poplar, so that the total tree component is 60% to 100% crown closure. Mixes range from 25% to 75% proportions of deciduous to conifer, to the reverse at 25% to 75% conifer to deciduous species. Openings in the overstory are often filled with alder, which extends to the understory of the stand. A wide variety of understory and ground cover communities are present, depending on the proportion of tree species and total crown closure.

Open mixed forest is a common cover type throughout the country around Lake Clark and the valleys flowing into it. Open mixed forest stands are similar to closed forest mix stands, except the crown closure of tree species ranges from 25% to 60%. Mixes range from 25% to 75% proportions of deciduous to conifer, to the reverse at 25% to 75% conifer to deciduous species. Open forest mix stands are intermingled with closed mix stands in broad swaths through open slopes and valley bottoms. As in closed forest mixed stands, the dominant conifer species is white spruce and the deciduous species are birch and balsam poplar. Alder is a major component in the understory and canopy openings. Spruce mixes have an

understory with more moss and ericaceous ground cover, while deciduous mixes have a wider variety of shrubs, such as prickly rose and highbush cranberry, with ferns and forbs for ground cover.

Low shrub communities are concentrated in the center of the western lake country and along the southwestern coast of Lake Clark. These communities are dominated by a mixture of dwarf birch and several willow species 1.6 feet to 4.9 feet (0.5–1.5 meters) high. Crown closures range from a low of 25% to 80% in the densest stands. Some alder may be mixed in with dwarf birch and willow in these communities. A low growing ericaceous layer of Labrador tea, blueberry, lowbrush cranberry, and crowberry lies under the taller shrubs and in openings between patches. Ground cover is mosses with patches of fruticose lichens on dryer sites.

Closed coastal spruce are stands of conifers with total crown cover generally greater than 60%. These rich and productive forests are distributed in the major valleys and along the coastal plain of the east side on the coastal side of the Alaska Range. Large, closed conifer stands grow on the old outwash plain east of Crescent Lake and are scattered throughout the valley downstream and along the coastal plain between the Red River and East Glacier Creek and along the floodplain of West Glacier Creek. Sitka and white spruce are the dominant species, with a deciduous component (balsam poplar) less than 25% of total crown cover. Sitka spruce is more predominant south of Tuxedni Bay, with white spruce becoming predominant north of Tuxedni Bay. The understory consists of alder, devil's club, salmonberry, and a ground cover of mosses with scattered grasses and forbs. Stands of dense white spruce along Tuxedni Bay and north are becoming infested with spruce bark beetle.

NONNATIVE VEGETATION

The park currently does not suffer from the negative ecological impacts of invasive plants like many parks outside Alaska. However, while the remoteness of most areas in the park is a natural protection against unwanted invasive species introductions, if invasive species become established it may take many years for any infestation to be observed (NPS 2005b).

Lake Clark National Park and Preserve was surveyed for nonnative plants in 2005 (NPS 2009b). Twenty invasive plant species were identified within the park, while 30 species were identified within and near the park. Of the inventoried area, a total of about 22 acres were infested with invasive plants, or 31% of the land inventoried. The species with the greatest mapped distribution in and around the park were pineapple weed (17 acres), common dandelion (10 acres), common plantain (7 acres), and common chickweed (5 acres).

Six invasive species in the park were identified to be of the greatest threat to the park. In priority order they were: reed canarygrass, orange hawkweed, oxeye daisy, white clover, common dandelion, and common tansy. Orange hawkweed is of particular concern because it is well-adapted to Alaska and has a high potential to spread in the park (M. Shepard, program manager, SW AK Inventory & Monitoring Network, 05/15/12). Two other species, only documented outside the park, were also considered to be of concern: smooth brome grass and alsike clover.

Port Alsworth contained the greatest number of invasive species documented in the Lake Clark area. Species such as common dandelion could use Port Alsworth as a springboard into wilderness areas through wind- and human-dispersed seeds. Park staff has removed dandelions from Upper Twin Lake and at Lake Clark.

Based on an earlier vascular plant inventory (Lipkin 2002) and an analysis of previous collections (NPSpecies), invasive plants were identified in several areas of the park. These areas tend to be among the higher visitation areas such as in the Twin Lakes area, around the Proenneke site, and at Silver Salmon Creek and other coastal areas.

VEGETATION AND PEOPLE

Although humans have inhabited the Lake Clark area for thousands of years, most vegetation in the park and preserve has not been substantially altered. Subsistence use of vegetation, including use of fuel wood and harvesting vegetation for food and medicines (e.g., berries, roots, greens), affects small areas (Kari 1995). The white spruce is one of the most important plants people use (Johnson et al. 1998). It is used for building log cabins and other structures, fuel (home heating, cooking, steam baths), and furniture. Although humans altered small areas of the natural environment, it should be noted that natural geologic events such as earthquakes and volcanic eruptions in the park have had a far greater impact on park vegetation than any human activities.

Areas in the park that have experienced some direct vegetation disturbance by visitors are typically in proximity to the large lakes, the coastal strip, and areas that have trail access. The most common disturbance is trampling/crushing of vegetation in localized areas by visitors creating trails and unofficial camping areas.

Surface vegetation disturbance is evident from years of ORV use in the Silver Salmon Creek area—there has been a reduction in plant cover, simplification of the vegetation structure, and alteration of the habitat for plant growth along trails. ORV use on existing trails also could further the expansion of invasive plant species (NPS 2010a).

Climate change likely is having some effect on park vegetation, although the rate and magnitude of specific vegetation changes are not known. It is probable that alterations due to climate change include expansion of trees and shrubs onto higher elevations and into areas that were previously tundra or covered by glaciers, changes in growing season due to changes in temperature and precipitation, and increased potential for fire and for the spread of nonnative invasive species (NPCA 2009; Loya 2008; NPS n.d., R. Winfree, Alaska region science advisor, pers. comm., 05/10/12; Winfree et al. 2013).

Shrub encroachment and treeline advance have been documented with repeat photography over the last century in Southwest Alaska Network parks, including Lake Clark (AK n.d., ABR, Inc. and SWAN Inventory & Monitoring Program 2006). Low shrub vegetation communities in the park are also converting to high shrub vegetation (M. Shephard, Southwest Alaska Inventory & Monitoring Network, pers. comm., 05/01/12).

BROWN AND BLACK BEAR

Healthy populations of brown/grizzly bears (*Ursus arctos*) are found in all park habitats, from coastal beaches to alpine areas, while black bear (*Ursus americanus*) are present in all habitats, but spend less time at higher elevations. Brown bears are a key species in the subarctic ecosystems of Lake Clark. They are both a top predator, shaping population dynamics of other animals and circulating nutrients in terrestrial ecosystems. Without bears, it is likely that the park's terrestrial ecosystems would look very different (NPS 2007c).

Brown and black bears are very adaptable and consume a wide variety of foods. Common foods include salmon, berries, grasses, sedges, cow parsnip, ground squirrels, carrion, and roots. They may prey on moose and caribou, especially newborns. Both black and brown bears may also be

attracted to human campsites by stored food and garbage. The park's coastal shoreline is a common place to see brown bears beach-combing for dead animals, foraging on shellfish, or grazing on sedges. Although generally solitary in nature, brown bears often occur in large numbers in concentrated feeding areas such as salmon spawning streams, sedge flats, or on whale carcasses. In late July through early November they usually concentrate at streams to feed on spawning salmon. Climate change may alter stream flow, temperature, and vegetation patterns in the park and preserve (Winfree et al. 2013), which in turn could change brown and black bear habitat and behavior.

An aerial survey estimated there were 466 brown bears in the coastal portion of Lake Clark National Park during 2003–2004 (NPS 2007c). They are widely distributed throughout the park for most of the year. Brown bears are most abundant in the coastal areas, but are also common in the Lake Clark area and along streams during salmon runs. Racine and Young (1978) noted that a major bear concentration area near Lake Clark was along the Kijik River, which supported the major salmon run of the area. Bear trails were clearly distinguishable from the air in this area. Other areas of concentrated bear use in the park's interior include Tlikakila River, Telaquana Lake, and Upper Necons River.

Brown bears are most numerous along the park's coast, where an estimated 140 to 230 bears graze in salt marshes during the summer (B. Mangipane, Lake Clark National Park, pers. comm., 12/12/2012). Salt marsh habitat provides important forage for coastal brown bears from May until August, when silver salmon appear in the local streams. The Silver Salmon Creek area is one of nine important salt marsh areas along the 125-mile (200-kilometer) Cook Inlet coastline of the park, which provides critical foraging habitat for coastal brown bears (Bennett 1996). The largest salt marsh areas and greatest density of coastal brown bears are

found near the heads of Tuxedni and Chinitna bays. Brown bear densities (bears/km²) were 7.1 at Glacier Spit Marsh in Chinitna Bay, 5.2 at on the south side of Tuxedni Bay, and 0.8 at Silver Salmon Creek (NPS 2010a).

There is less information on black bears in Lake Clark National Park and Preserve. The last black bear survey in 2003 in the park's coastal area reported 302 black bears in the Lake Clark subarea of Game Management Unit 9A, which corresponds to a density of 136 bears per 1,000 square kilometers (Olson and Putera 2007). The last black bear survey in Game Management Unit 9B (which includes the park's interior and the preserve) in 1999 reported a black bear density of 77 bears per 1,000 square kilometers. The black bear population may be expanding its range in certain parts of the park (M. Shephard, Inventory & Monitoring Coordinator, Alaska Regional Office, pers. comm., 11/20/12).

Although the park's black and brown bear populations are considered to be healthy, in a few areas near inholdings, enclaves, and areas adjacent to state land, people are affecting bear behavior. Tolerance of bears to people is likely increasing, primarily for brown bears along the park's coast. The brown bear population in the Silver Salmon Creek area is generally believed to have become more tolerant of the presence of people and off-road vehicles; bears less tolerant of people and off-road vehicles avoid this area (NPS 2010a). Brown bear viewing is a popular park activity; increasing numbers of visitors are coming to view bears on the coast. For example, with the addition of a single bear viewing camp in 1997, visitation at a small coastal salt marsh grew from 30 in 1995 to more than 550 in recent years (NPS 2007c). Three other coastal marshes in the park show similar increases in use.

Some bears are harvested by sport hunters in the preserve. Subsistence hunters also take bears, although the harvest in the park and

preserve is limited to a total of up to 10 brown bears annually, of which no more than four may be sows. (However, it has been estimated that only 14%–18% of bears taken by substance users are reported [Ballard et al. 1993 as cited in NPS 2007c]). A few black and brown bears are taken in defense of life and property, although these incidents are rarely reported. (Some bears killed in defense of life and property are reported as legal sport hunting or subsistence-harvested bears.)

There have been several instances of undesired bear-human encounters. Black and brown bears have entered camps in search of food. From 1979 to 2003, bear-human incidents most frequently occurred along the coast—51% of all bear-human incidents in the park occurred in this area,

and 74% of these incidents occurred at Silver Salmon Creek. Other areas where bear-human incidents occurred frequently included the Lake Clark area (particularly the Port Alsworth area) and Telaquana Lake (Wilder et al. 2007). There is the potential for these confrontations to result in human injury, particularly in heavily forested or brush areas such as occur commonly near the coast and in the Lake Clark area. One human injury occurred in 2001 at Upper Twin Lake. Bears that take food also become more susceptible to being killed in defense of life and property. In the park, 46% of incidents between 1979 and 2003 resulted in bears receiving food, which Wilder et al. noted may explain why bears were killed in 23% of incidents in the park.

CULTURAL RESOURCES

HISTORIC STRUCTURES, SITES, AND CULTURAL LANDSCAPES

Historic Cabins

During the late 19th to mid-20th centuries, prospectors and miners were drawn to the Lake Clark area in search of gold and copper deposits. Others found economic opportunities in trapping furbearing animals, primarily during the winter. The Bristol Bay commercial salmon industry provided another source of employment. European Americans and Alaska Natives alike adapted these activities into their subsistence lifestyles, commonly alternating between different occupations on a seasonal basis. These individuals built a variety of cabins that were widely dispersed across what is now Lake Clark National Park and Preserve. Trappers typically established a base cabin from which they ran their trap lines and built outlying cabins as needed. Miners and prospectors similarly constructed primary summer camps / cabins to support their activities. The transitory nature of these economic ventures typically led miners and trappers to abandon their cabins and rebuild elsewhere in pursuit of new ore discoveries or more profitable fur trapping opportunities (NPS 2003; NPS 1994).

Although hunting had long served as a mainstay of subsistence in the area, sport hunters in search of big game trophies were drawn to the area as early as the late 19th century. Sport hunting gained increasing popularity after World War II with the arrival of charter airplane and lodge services, which increased accessibility and comfort for visiting hunters. Hunters also constructed or used existing cabins. With the passage of ANILCA in 1980 and the establishment of Lake Clark National Park and Preserve, sport hunting and trapping were prohibited in Lake Clark's park unit,

but were allowed in the preserve. Subsistence activities continued to be allowed throughout the park and preserve. NPS land management policies consequently affected the land use patterns associated with hunting and the use of existing wilderness cabins (NPS 2003; NPS 1994).

In addition to the sport hunters who were drawn to the Lake Clark area after World War II, the area attracted a new group of settlers seeking to leave post-war American society behind with its increasing congestion and industrialization. Among this group, World War II veterans such as Richard Proenneke, Allen Woodward, and Jay Hammond (later to become governor of Alaska) embraced the opportunities and challenges presented by Alaska's idyllic wilderness areas. They came to reflect a conservationist ethic that was eventually manifested in the establishment of Lake Clark National Park and Preserve and other Alaska parks. On land parcels often obtained under various homesteading programs that extended preferential filing status to veterans, they built permanent and seasonal residences that suited their pursuit of a frontier lifestyle (NPS 2009d).

The early cabins and outbuildings constructed by area trappers, hunters, and miners were simple utilitarian structures (often one room) that provided basic shelter and served subsistence and recreational purposes. Outbuildings commonly consisted of a raised storage cache, woodshed, privy, and other multipurpose sheds. The seasonal and temporary nature of the activities pursued by many of these rugged individuals resulted in structures that were similarly intended for temporary or semipermanent use, although more skillfully constructed structures (particularly those built by 20th-century settlers such as Richard Proenneke and Joe Thompson) were also built for

longer-term settlement. Locally procured logs were used as primary building materials; logs were often left unpeeled and round, but were sometimes hand-hewn on one side or squared. Log walls were typically joined by corner notching methods, most commonly by saddle notching, but in a few instances by more complex dovetail joinery (e.g., used in the square log walls of the Russian Orthodox Church at Kijik). Many winter-use cabins were insulated with earthen berms along the walls and frequently incorporated an “arctic entry” (a small sometimes uninsulated entryway) at the front of the cabin.

Following the introduction of sawmills to the Lake Clark area in the 1930s, framed, milled-lumber cabins began to be constructed although log cabins continued to predominate. Framed cabins were typically sheathed with horizontal boards or vertical board-and-batten siding. Beginning in the late 1920s, regional air transportation facilitated the introduction of other modern building materials and supplies such as metal and plywood began to be incorporated into cabin construction (NPS 2003).

Information regarding Lake Clark National Park and Preserve’s cabins and historic structures was gathered between 2001 and 2003. NPS staff documented cabins and cabin sites throughout the park and assessed their eligibility for inclusion in the National Register of Historic Places. Results of these investigations were compiled in the two-volume *Cabins of Lake Clark National Park and Preserve* (NPS 2003), which documented current condition, use, fire protection level, historical background, and national register eligibility. Twenty cabins were identified as meeting the criteria of national register eligibility with conditions ranging from poor to good. In some instances the cabins had collapsed, but the sites nevertheless retained archeological potential. None of the cabins recommended eligible for the national register were determined to meet the criteria of architectural significance. Twenty-nine cabins were identified as ineligible for the national register, either because they were

less than 50 years old, lacked integrity, or did not demonstrate historical significance. Since 2003, several cabins have become national register-eligible including the Joe Thompson Cabin, the Earl Woodward Cabin in Hardenburg Bay, and the Allen Woodward Cabin at Priest Rock.

The following three cabins have been identified for possible visitor use in alternative B. None are in designated wilderness.

1. Snipe Lake Cabin

This one-room, gable-roofed log cabin (14 ft x 16 ft) exhibits skillful craftsmanship and is in fair condition. It was built in 1950 by Frank Bell on a hillside south of a small, unnamed lake immediately west of Snipe Lake. Its appearance has changed little since it was constructed, and it retains a high degree of integrity associated with the park’s historic theme of big game hunting and sport fishing. Walls are constructed of round logs joined with corner saddle-notching. Simple furnishings include a built-in table, sleeping bench and other benches, and a wood-burning stove. The cabin site is identified as having historical archeological potential that can further understanding of trap-line and hunting habitation / land-use patterns from the mid- to latter 20th century (NPS 2003). The Snipe Lake Cabin was determined eligible for the national register at the local level of significance. Restoration of the cabin was completed in 2008, and a wood shed and privy were constructed just outside the historic site boundary (NPS, Strategic Plan 2008a; LCS – LACL 218C; NPS 2008c).

2. Joe Thompson Cabin

This gable-roofed cabin was built in 1962 by long-time Lake Clark resident Joe Thompson. It consists of a main room (12 ft x 17 ft) with a small bedroom / storage addition. It is on the north shore of Lake Clark along Portage Creek. The peeled wall logs are joined with two half logs on the front side of the cabin and by lap-notch

joinery on the rear. The roof is covered with metal shingles made from 5-gallon gas cans. A wood stove, supply items, and hand-made wooden furniture (table, chairs, and beds) were identified inside the cabin. Associated outbuildings include a privy, elevated cache, and a woodshed. A trail runs from the shore of Lake Clark past the cabin site toward Portage Creek and Thompson's gold prospecting "diggings."

Joe Thompson settled in the Lake Clark area during the 1930s and adopted a subsistence lifestyle of prospecting and trapping. He was also an accomplished builder and craftsman who contributed to the construction of several Port Alsworth buildings. He resided at his cabin until his departure from the area in about 1971. As noted in the draft national register nomination for the property, Thompson is recognized as one of the most "consequential and industrious builders" associated with the early 20th century wave of European American "pioneer" settlers in the Lake Clark area.

The National Park Service completed restoration of the cabin, cache, and privy in 2012. The unique original ceiling planks were saved by splicing replacement sections on the rotted ends. The floor, sill logs, and door were replaced. The woodshed and back addition of the cabin were rebuilt because the original structural members were too rotten to retain. New roofs were placed on all structures using replicated flattened gas cans. The historic trail from the cabin to the prospect site, hiked daily by Thompson, was also partially mapped and brushed in 2012. Selective clearing of encroaching forest and understory vegetation around the cabin was undertaken in 2010 to reduce fuel loads contributing to potential wildfire hazards (NPS 2012c; NPS 2003; NPS, 2008a; NPS 2012a; NPS 2012f).

3. Allen Woodward Cabin (Priest Rock)

This L-shaped gable-roofed cabin (originally 17 ft x 14 ft) was constructed in 1978 using peeled spruce logs and includes at least two

additions (a bedroom and a small sauna on the north elevation). It was built on the north shore of Lake Clark and is surrounded by dense spruce and birch forest. A framed wood deck is accessed by log stairs on the west elevation. The cabin has several windows; three wood-burning stoves were installed for heating. Restoration measures were undertaken in 2009 that included replacement of the cabin sill logs, foundation, floor, and porch. Additional restoration was completed in 2012.

Allen Woodward served as a pilot during World War II. He and other veterans were drawn to the Alaskan wilderness and the vicinity of Lake Clark in search of solace and recreation. He staked a 5-acre homesite near Priest Rock in 1949. From his primary residence in Anchorage, Woodward flew his float plane to his cabin at Priest Rock, primarily on weekends and vacations, to hunt and enjoy the surrounding wilderness. The cabin is included in a multiple property national register nomination for its associations with Allen Woodward and the theme of postwar settlement in Lake Clark National Park and Preserve (NPS 2008a; LCS – LA CL 153C; NPS 2012a; NPS 2009d).

Richard L. (Dick) Proenneke Historic Site

Another historic cabin site that is of great cultural value in the park is the Richard L. Proenneke Historic Site. This site is in designated wilderness.

Dick Proenneke (1916–2003) completed construction of his renowned log cabin and outbuildings in 1968 on the southeastern shore of Upper Twin Lake. The cabin site was listed in the National Register of Historic Places in 2007. Unlike the trappers and prospectors who more commonly built seasonal-use cabins, Proenneke lived year-round at the site as a writer, wildlife photographer, naturalist, and avid hiker/climber during his nearly 30-year site occupancy. Using only hand tools, he built

the cabin, an elevated storage cache, and woodshed/privy that continue to showcase his exceptional craftsmanship, wood-working, and building skills. He also fashioned furniture and a variety of implements, often creatively reusing items and materials. Proenneke filmed the construction of his cabin and activities and kept detailed journals that provide insight into his wilderness experiences. His journals were used in compiling the book, *One Man's Wilderness* (Keith 1973), which gained worldwide popularity. The National Park Service has published two volumes of edited journals—*More Readings from One Man's Wilderness: The Journals of Richard L. Proenneke 1974–1980* (2006) and *The Early Years: The Journals of Richard L. Proenneke 1967–1973* (2010). The park has also produced a short DVD (*No Place Like Twin Lakes*), which features film footage from Proenneke's last visit to his home in 2000. This DVD is shown frequently at the Port Alsworth visitor contact station and is available to commercial operators to educate the public and encourage visitors to “take care of the cabin as if they had built it with their own hands.” Using Proenneke's own film footage, a 2003 documentary, *Alone in the Wilderness*, is often televised on Public Broadcasting Service stations. Through his writings and films, Proenneke became a prominent voice for the protection and conservation of Alaska wild lands and is credited with influencing the establishment of Lake Clark National Park and Preserve in 1980 (NPS 2007a).

The cabin (10 ft x 12 ft) was constructed of peeled round spruce logs with saddle-notched corner joinery. The gabled spruce pole roof was covered with sod and moss. Distinctive features include three windows, stone fireplace and chimney, and hand-crafted Dutch-style entrance door with wooden hinges and lock. The cache (4 ft x 6 ft) was also constructed of saddle-notched peeled spruce logs supported 9 feet above the ground by log corner posts. The woodshed/privy (10 ft x 12 ft) has three log walls with log posts supporting the overhanging

shed roof on the open (front) side of the building. Restoration of the buildings was undertaken between 2000 and 2004 that included roof sealing and repairs (overlying sod and moss layers were replaced), other water-proofing measures, and replacement of deteriorated cabin sill logs and cache support posts. Visitor use and natural weathering result in wear and tear on the site's structural features (e.g., the hand-made cabin door latches) and NPS staff conduct cyclic preservation maintenance and repairs of the cabin and outbuildings. Other constructed site features include additional supply and firewood caches, two beach jetties, levees to divert flood waters, and the surviving abutments of a log bridge (no longer extant) that Proenneke built across Hope Creek (NPS 2007a; LCS – LACL C8A, B, and C; NPS 2011b).

The National Park Service has recently undertaken a cultural landscape inventory of the Proenneke cabin complex (report in draft). The complex is in good condition and retains integrity reflecting the period of significance corresponding to Proenneke's initial felling of trees for construction in 1967, to the conclusion of his residency in 1998. The cultural landscape associated with the site is identified as a 1.97-acre district including all known historic features and relevant landscape features associated with Proenneke's period of settlement at Twin Lakes. Character-defining cultural landscape features include the cabin and outbuildings, small-scale features, topography, spatial organization, natural systems and features, views and vistas, circulation (e.g., Teetering Rock Trail, Cowgill Benches Trail, and other trails), and archeological resources (trash dumps and other potential sites—formal archeological investigations have not been undertaken). Potential threats to the integrity of the site include structural weathering due to harsh climatic conditions and pest infestations. Unmaintained vegetation also presents threats to the viewshed, as well as potentially obscuring trails and other contributing features (NPS 2011b).

The cabin has become a popular visitor destination managed by the National Park Service as an informal outdoor exhibit. Visitors can experience Proenneke's craftsmanship in the preserved cabin and support structures, along with originals and replicas of furnishings, tools, and implements that he fashioned for his use. Volunteers staff the property in the summer, carrying out routine site maintenance and giving interpretative talks about Proenneke and his wilderness experiences. Tent camping opportunities are available for visitors at Hope Creek primitive camping area (across Hope Creek about 300 yards south of the Proenneke site.) Other nearby cabins constructed in the early 1960s consist of Spike's cabin (occupied by summer NPS volunteers), Hope's cabin (used by NPS staff), and the Weisser cabin (used for storage and shop space). These cabins are maintained to support site management and preservation. The Spike and Hope cabins are currently being assessed as features contributing to the national register significance of the Proenneke site.

Other Historic Structures / Landscapes

Additional historic log and wood frame cabins and structures are listed in the Lake Clark List of Classified Structures, which have been determined eligible for the national register for their associations with the park's historic themes of 20th century trapping, prospecting, and settlement. These structures consist of the Igitna River / Kenibuna Lake cabin (built in the 1930s), the Joe Munger trapline cabin, the Wilbur Morris bunkhouse, and the Earl Woodward cabin at Hardenburg Bay (1955). The Earl Woodward Cabin is scheduled to be completely restored in 2013 for potential use as a public exhibit. Ruins of the Red River Trapping Cabin and the Spring Lakes Trapping Cabin (both built ca. 1950) are also included in the List of Classified Structures. A historic Dena'ina fish cache has been restored and has been nominated for the

national register. These cabins and structures are not currently identified for potential public use although they do receive cyclic maintenance and repairs as staffing and funding allow. The Dr. Elmer Bly House near Port Alsworth, built in 1947, has been rehabilitated for present NPS administrative use and was listed in the national register in 2006. A restored Bristol Bay sailboat, *Libby's No. 23*, is on exhibit at the park's visitor contact station in Port Alsworth. The wooden double-ender boat was built in 1914 and was once used in the salmon fishing industry. It is included in the List of Classified Structures and is managed as a cultural resource pending a formal determination of national register eligibility (LCS – LA CL 236C; 158C; XLC – 00160; 216C; boat – 001).

In addition to the cultural landscape inventory underway for the Proenneke cabin complex (noted above), cultural landscape inventories have been completed for the Kijik Archeological District National Historic Landmark and the Telaquana Corridor Historic District. An ethnographic landscape inventory has also been initiated for the Chulitna River – Sixmile Lake Dena'ina cultural landscape. These landscapes have been assessed as being in good condition.

MUSEUM COLLECTIONS AND HISTORIC OBJECTS

The Lake Clark National Park and Preserve museum collection consists of cultural objects, natural history specimens, and associated records generated by systematic baseline investigations, day-to-day staff activity, special research studies, and other park operational records. The collections support the park's interpretive and educational exhibits and programs and inform management and other resource stewardship decisions. The Lake Clark 2009 foundation statement identifies museum collections as one of the park's fundamental resources and values. The collections consist

of approximately 222,000 items (as of September 2012). In accordance with the *Alaska Region Collection Curatorial Facilities Plan* (2007), the primary storage facility for the Lake Clark collections is the multipark Alaska Regional Curatorial Center at the NPS Alaska regional office in Anchorage. Some natural history collections are stored at partner repositories (NPS 2012a).

Natural history items include a herbarium for plant species and a diverse collection of mammal, fish, insect, paleontological, and geological specimens collected from across the park. Inventory and Monitoring (I&M) program activities are expanding the numbers of collected natural resource items. Cultural resource items include archeological materials and artifacts, ethnological items, and historic objects. Over 200 oral history recordings of local inhabitants and over 2,500 historic photos are in the collection. Archival materials include the Richard L. Proenneke collection (including all of Proenneke's handwritten journals), park administrative history, and project files, maps, diaries and scientific and resource management records (NPS 2011a; NPS 2012a).

Two primary documents have recently been prepared to guide the management of the park's museum collections. The Museum Management Plan (2012) replaces the park's outdated Collection Management Plan (1995). The plan provides programmatic guidance and recommendations to enhance professional and organizational collections management to support the park's educational mission. It further supports objectives to connect people and affiliated communities to the park. The draft Scope of Collection Statement (2011), currently on review, is intended to ensure that the museum collection is relevant to the park and defines the scope of present and future collection items that contribute to the understanding and interpretation of the park's purpose, themes, and resources.

Among the considerations of the Museum Management Plan having particular relevance to the present GMP Amendment is the treatment of historic cabin furnishings and other artifacts/objects. Several tools, objects, and other irreplaceable and/or more fragile Proenneke cabin furnishings were removed and stored off-site. Some original Proenneke-fashioned objects were replicated for use in on-site interpretation. Apart from the removed objects and replications, on-site and in-cabin items are either originals created by Proenneke or items he acquired. These objects are not currently part of the museum collection, but retain strong importance to the park and visitors and may be part of the museum collection in the future.

Other restored cabins or those undergoing restoration (e.g., the Joe Thompson Cabin; Allen Woodward Cabin (Priest Rock); Earl Woodward Cabin (Hardenburg Bay) have also had their historic furnishings and interior content items temporarily removed. Some of these items are anticipated to be returned upon completion of cabin treatments as part of small exhibits (Thompson and Priest Rock cabins), or larger exhibits (Hardenburg Bay cabin). The park staff adopted an interdisciplinary team approach (using the services of the park cultural resources manager, archeologist, curator, and historian) to guide and enhance the preservation treatment of the Thompson and two Woodward cabins. Effective management of cabin furnishings and objects often requires an interdisciplinary evaluation to determine if the objects are more properly museum collection items requiring curatorial treatment or should be managed as contributing cultural landscape features or exhibit props. For example, several small-scale features identified in the draft 2011 Cultural Landscape Inventory for the Proenneke site (e.g., a food storage cool box, a rustic chair, canoe, cache ladder, survey markers, rainfall gauge) have intrinsic value as collections items, but also contribute to the significance of the historic landscape. Although a preservation

management plan for the Proenneke Cabin is periodically updated, object condition assessments and furnishing plans for the cabin's interior objects and for those of other cabin sites have not been prepared (NPS 2012a).

Another consideration recommended in the scope of collection statement is the addition of representative examples of original building fabric removed from historic structures and cabins during preservation or repair projects. The collected fabric (e.g., building materials, character-defining architectural elements, customized detailing) and associated documentation would be accessioned into the museum collection to provide a permanent record that could be consulted to assist future investigations and preservation treatments. No examples of historic fabric are currently included in the museum collection (NPS 2011a).

ARCHEOLOGICAL RESOURCES

Archeological investigations have documented evidence of human occupation in the area of Lake Clark National Park and Preserve from at least 10,000 years ago. The long linear history revealed by this evidence parallels the oral traditions of local Alaska Native peoples. Small mobile groups of Paleo-Arctic hunter-gatherers subsisted on a diverse array of edible plants and berries collected during the brief summers; hunted caribou, Dall sheep, moose, small mammals and wildfowl; and harvested salmon (red fish) and other fish species. The Paleo-Arctic Tradition extended from about 8000 BC to 5500 BC. These people are recognized as the distant ancestors of the Athabaskan-speaking Dena'ina people, who continue to reside in the area. The harsh climate, rugged terrain, and frequently dense ground cover made survival and travel a difficult challenge. The population of these early inhabitants likely only numbered in the hundreds. Little enduring evidence of the Paleo-Arctic Tradition is reflected in the archeological record. A notable exception, however, is the

“microblade” technology associated with the Paleo-Arctic Tradition and later cultural periods. The technology entailed the insertion of several small pieces of sharpened chert or suitable lithic material into bone projectile points and other tools. Microblade tools have been widely identified across Alaska, and the technology persisted as late as 500 BC (NPS 2008b).

Another culturally distinct group of early inhabitants were the Alutiiq-speaking people who adapted their subsistence strategies and watercraft skills to the maritime environment along the Cook Inlet coastlines, the Alaska Peninsula, and Kodiak Island. They survived primarily on fish, mollusks, and sea mammals. Small settlements developed on the more sheltered eastern side of the inlet at Kachemak Bay on the Kenai Peninsula; some of the densest populations appeared on Kodiak Island where the first settlement developed around 5500 BC. The western or Lake Clark side of the inlet presented a harsher environment exposed to extreme Pacific storms, and swift and widely fluctuating tides (NPS 2008b).

Interior Dena'ina villages were typically small until after 900 years ago when settlement appeared in the Kijik area on the north shore of Lake Clark. Small settlements emerged in Tuxedni Bay that date to 3,500 years ago, and several late precontact settlements have been recorded in Chinitna Bay. The Dena'ina maintained connections with fellow kinship groups and other bands living over vast areas of the interior (NPS 2008b).

The Outer Cook Inlet, and especially the Lake Clark shoreline, marked a cultural frontier between interior and maritime societies. Along this fluid, ever-shifting frontier, the interior ancestral Dena'ina and coastal Alutiiq peoples occasionally engaged in sporadic trade, warfare, and other interactions. The Dena'ina adapted some Alutiiq practices and technologies such as the use of harpoons, kayaks, and open skin boats for hunting sea mammals. After about

a thousand years ago, the Dena'ina occupied the Lake Clark coastline, and the Alutiiq became less regular visitors (NPS 2008b).

About 2500 BC, hunter-gatherers of the Northern Archaic Tradition appeared in the Lake Clark area. Northern Archaic sites, with distinctive corner and side-notched projectile points, have been found over broad regions of Alaska at elevations varying from sea level to mountain locales. Although little is currently known of these people and their sparse population in the Lake Clark area, they may represent proto-Athabaskan speaking ancestors of the Dena'ina (NPS 2008b).

Coastal Dena'ina groups and those living inland constructed semisubterranean winter dwellings of logs and earth, with tree bark and grass used as roofing and insulation materials. Hearths were centrally located in the dwellings for warmth and cooking. They left their winter dwellings following the seasonal ice breakup and the return of the salmon and constructed summer dwellings (also partially excavated into the ground) near important fishing places. These dwelling sites are often evident as shallow depressions. Dena'ina hunters in the interior built simple lean-to shelters that served their need for temporary protection from the elements. Their frequent overland treks resulted in a vast network of trails across the interior of the park that linked villages and seasonal camps and served as trade routes for the exchange of furs, game meat, and other items. Many of these trails are now used as recreational hiking trails in the park. The Telaquana Trail between Telaquana Lake and Kijik Village was an important Dena'ina route that also served as a subsistence area. The trail was also later used by 19th and early 20th century miners, trappers, and explorers. It has been designated both a historic district and cultural landscape (NPS 2008b; NPS, Telaquana Trail, n.d.).

Only a small portion (estimated at 1%) of Lake Clark National Park and Preserve has been systematically surveyed for archeolog-

ical resources, a consequence in large measure of the vast, rugged terrain and dense vegetation of the predominantly wilderness landscape that renders productive survey work difficult. The park's archeological database (ASMIS) lists 145 archeological sites (as of 2012)—69 of those sites (or 48%) are listed in good condition. Few material traces of the early inhabitants have been discovered, partly because of their small population densities and their use of perishable items for house construction and other objects of material culture. Much of the archeological record survives in the form of lithic artifact scatters associated with small campsites. Many more sites are likely to exist in the park.

The following archeological districts consist of multiple sites, have been listed or determined eligible for listing in the National Register of Historic Places, and/or (in the case of the Kijik Archeological District National Historic Landmark) recognized for exceptional national significance as a national historic landmark.

Kijik Archeological District National Historic Landmark

The Kijik Archeological District National Historic Landmark is between the base of Kijik Mountain and the northwestern shore of Lake Clark and is composed of the subsurface remains of numerous well-preserved sites associated with Dena'ina settlements dating from ca. AD 1170 to the abandonment of Kijik Village around 1910. Included in the 1,881-acre district is site evidence of the densest concentration of precontact Interior Dena'ina settlements in Alaska. Extensive clusters of house-depression foundations have been recorded (31 known archeological sites containing 316 mapped house-depression foundations) and many more are expected to exist. Thousands of cache pits have also been documented that were commonly used for fish storage. Bathhouse structures, often connected to the primary dwellings, are also abundant.

The district contains a historic component reflecting cultural interaction with Russian fur traders following contact in the late 18th century. Historic period sites are included in a small inholding within the larger NPS-managed district. These include Kijik Village on the shore of Lake Clark, an associated cemetery, and remnants of a Russian Orthodox church built in 1884. The Kijik Fish Camp is near the outlet of Kijik Lake. An abundance of metal objects and other items in the district's archeological record are indicative of European interaction and trade, evidence of the profound cultural changes that occurred in Dena'ina society following the contact period. Kijik's precontact and historic resources contribute to knowledge of Athabascan / Dena'ina settlement patterns, lifeways, cultural change / adaptation, site planning, and architecture. A cultural landscape inventory of the Kijik Archeological District National Historic Landmark was completed in 2005 (NPS 2005d; NPS 2008b).

Snipe Lake Archeological District

The Snipe Lake Archeological District includes 11 precontact archeological sites and 2 historic cabins on the western edge of Lake Clark National Park and Preserve. Although the archeological evidence suggests occupation between 5,900 and 3,900 years ago, regional archeological, ethno-historical and linguistic evidence strongly points to occupation from a much earlier period (perhaps as early as 12,000 years ago) extending to the beginning of the historic era about 200 years ago. All 11 of the archeological sites are characterized by surface lithic artifact assemblages and three were found to possess subsurface artifact deposits. A recovered microblade core and a lanceolate-shaped point also suggest the possibility of Paleo-Arctic occupation. A side-notched projectile point recovered from one of the sites suggests a later Northern Archaic cultural affiliation. Based on known occupation of the area by the ancestral Dena'ina approximately 1,000

years ago, it is also likely that the Snipe Lake district received Dena'ina use or occupation although this is not currently supported in the archeological record. The Snipe Lake Cabin included in the archeological district is proposed for visitor use under the present GMP Amendment (NPS 2012g).

Chilikadrotna Headwaters Archeological District

At the mouth of the Lower Twin Lake valley, the Chilikadrotna Headwaters Archeological District encompasses 15 precontact archeological sites and 2 historic cabin sites. The archeological evidence indicates that occupation occurred between approximately 9,000 to 700 years ago, although regional archeological, ethno-historical and linguistic evidence suggests occupation likely occurred earlier (perhaps as early as 12,000 years ago) and extended to the beginning of the historic era about 200 years ago. All of the district's archeological sites consist of surface lithic artifact assemblages, and five sites demonstrated the presence of subsurface cultural materials. Microblade cores recovered from two sites could represent Paleo-Arctic occupation, and notched projectile points were identified suggesting later occupation (between approximately 5,900 and 3,900 years ago) during the Northern Archaic Tradition. An asymmetrical lithic biface recovered from one of the sites also bears potential cultural associations with the Norton Tradition between approximately 2,462 and 671 years ago. Similar to the findings of the Snipe Lake district, it is also likely that the Chilikadrotna Headwaters district witnessed ancestral Dena'ina use or occupation although this is not currently supported in the archeological record (NPS 2012h).

Chinitna Bay Archeological District

The Chinitna Bay Archeological District on the northern shore of Chinitna Bay consists of two discontinuous subdistricts separated

by nearly 4 miles (7 kilometers) of shoreline. Five archeological sites are within the western subdistrict, and eight are within the eastern subdistrict. Most of the sites are associated with late precontact and historic Dena'ina settlements and are marked by house depressions. One of the house depression sites also includes the Clam Cove Rock Shelter with rock art, one of only two such known sites in the park (discussed below). The dates of occupation obtained from three sites range from 1,740 to 110 years before present. The majority of the sites are considered stable and in good condition (NPS 2012i).

Two Lakes Archeological District

The Two Lakes Archeological District encompasses 23 sites along the shore at the southern end of Two Lakes. One of the sites has produced the earliest radiocarbon date (in excess of 10,000 years before present) obtained from the park and preserve. The recovery of microblade cores and microblades suggests the presence of the Paleo-Arctic Tradition and is consistent with this early radiocarbon date. Material remains recovered from two sites are consistent with the Northern Archaic Tradition, although these materials are presently undated. Archeological, historical, and linguistic evidence suggests that the region was occupied by the ancestors of the historic Dena'ina during the late precontact period. Three sites with radiocarbon dates ranging between approximately 1200 and 550 years ago may represent ancestral Dena'ina occupation, although this is currently uncertain. Virtually all of the sites in the district contain subsurface and potentially intact cultural deposits (NPS 2012m).

Tuxedni Bay and Clam Cove Rock Shelters

The Tuxedni Bay and Clam Cove rock shelter sites were likely created as part of the ritual activities of the area's precontact

indigenous peoples and are renowned for the pictographs (rock art) panels painted on the rock faces. In 1976, the Cook Inlet Native Corporation selected the two pictograph sites as historical places under the Alaska Native Claims Settlement Act. The sites were systematically mapped and photographed as part of a long-term monitoring program. The isolated Tuxedni Bay Rock Shelter is on a terrace along the Tuxedni River and is virtually inaccessible except by kayak during high tide. The site's 26 human and animal images were executed in red pigment, perhaps made from red ochre (hematite), animal fat, and oil. The site does not contain datable archeological materials, but appears to be associated with late precontact Alutiiq coastal groups. The Clam Cove Rock Shelter is directly on the coastline facing the Gulf of Alaska, but boat access to the site is often difficult because of rough ocean conditions at the mouth of Chinitna Bay. The site bears many similarities to the Tuxedni Bay shelter, but with a denser concentration of images (over 75 pictographs have been recorded) fashioned from red ochre pigment. The site has been systematically mapped and photographed. As at Tuxedni, the pictographs depict human and animal forms such as birds, sea mammals, and whales, as well as abstract geometric designs (NPS 2008b).

Ice Patch Sites

Archeological resources have recently been discovered in association with perennial snow fields and ice patches throughout Alaska, western North America, and on other continents. In Alaska, caribou and Dall sheep are known to gather on alpine snow fields in the summer to cool off and seek relief from mosquitoes and other biting insects. Early hunters targeted these places, adapting their hunting strategies to their observations of predictable summer use of the snow fields by their quarry. Archeological evidence of precontact hunting activities has emerged as ice patches have retreated, occasionally revealing projectile

points and a wide array of organic objects such as wooden arrow shafts, sinew lashing, baskets, and other materials. The well-preserved biological remains of the species that were hunted have also been identified at these sites. Once exposed from their former preserved condition in ice and snow, these fragile objects are particularly vulnerable to rapid decay and loss due to erosion and theft (NPS, Ice Patch Archeology, n.d.).

In 2008, park staff initiated a five-year project in partnership with E. James Dixon of the University of New Mexico (UNM) to identify, survey, and assess ice patches in Lake Clark National Park and Preserve that are likely to contain preserved cultural remains. Park and UNM staff conducted fieldwork on the eastern flank of the Neacola Range that included aerial reconnaissance and pedestrian survey of 17 ice patch sites. The perimeters of the ice patches were global positioning system (GPS)-mapped to facilitate analysis of the areal extent of the patches and to monitor size fluctuations attributable to weather or climatic change (NPS 2012f).

Three archeological sites were recorded, two of which contained organic artifacts associated with precontact hunting activities dating from 150 to 2000 years before present. A third site contained historic-era culturally modified animal bones and may be associated with trapping. All three sites are in fair to poor condition and are at risk of further degradation if ice melt continues (NPS, Schaaf pers. comm., 2012).

Intensive aerial reconnaissance and pedestrian surveys of the landforms below

the identified ice patch archeological sites were conducted in 2011. Four new ice patches were identified and pedestrian-surveyed, and a small rock shelter was documented and tested (NPS, Schaaf, pers. comm., 2012).

Historical Archeological Resources

Historical archeological resources are identified in the park commonly associated with the construction and occupation of 19th and 20th century cabins and other historical sites. Cabins identified for public use in this GMP Amendment have (or likely to have) associated archeological resources; sensitive materials have been collected and/or accessioned into the museum collection. These resources, often found in the context of buried trash deposits or randomly strewn about cabin sites, can provide insight into the lifeways of historic period hunters, trappers, prospectors, and other settlers. As identified at Kijik Village, historical archeological resources are well represented in the archeological record following Dena'ina contact with Russian fur traders in the 18th century and later American traders in the 19th century. In addition to traditional Dena'ina tools and projectile points fashioned from ground-stone, antler, and other materials, Kijik archeologists have discovered widespread use of metal such as that obtained from tin cans used in the manufacture of dishes and implements. Metal knives and other utensils appeared in native households along with glass bottles and other trade goods (NPS 2008b; NPS 2005d).

WILDERNESS CHARACTER

In 1980, Congress designated approximately 2,470,000 acres as the Lake Clark Wilderness in section 701(6) of the Alaska National Interest Lands Conservation Act. This section describes the wilderness character of the Lake Clark Wilderness, which forms the basis for NPS management and planning efforts in this area. Additionally, certain installations and structures are allowed by sections 1310 and 1315 of ANILCA, notwithstanding the Wilderness Act. With changes in land status and the adoption of modern digital mapping and calculation methodologies, the wilderness acreage has been updated; as of 2012, there are 2,572,000 acres of designated wilderness. Wilderness character is the fundamental concept in the Wilderness Act of 1964 and is broadly defined in section 2(c) of the act. The Wilderness Act speaks of wilderness as a resource in itself. A wilderness, in contrast to those areas where humans dominate the

landscape, is defined by the qualities comprising its wilderness character. Wilderness character encompasses a combination of biophysical, experiential, and symbolic elements as described by four principal qualities: natural, undeveloped, untrammeled, and having outstanding opportunities for solitude or a primitive and unconfined type of recreation. These four qualities are of equal importance. The four qualities are defined below based on interagency guidance (USFS 2008).

In addition to these four qualities, there may be a fifth quality, called “other features,” which defines wilderness character. This quality is based on the last clause of section 2c in the 1964 Wilderness Act that a wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

Wilderness Character Qualities

Natural — The Wilderness Act describes wilderness as “protected and managed so as to preserve its natural conditions.” In short, wilderness ecological systems are substantially free from the effects of modern civilization. This quality is degraded by intended or unintended effects of people on the ecological systems inside the wilderness since its designation.

Undeveloped — The Wilderness Act states that wilderness is “an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation,” “. . .where man himself is a visitor who does not remain” and “with the imprint of man’s work substantially unnoticeable.” This quality is degraded by the presence of structures, installations, habitations, and by the use of motor vehicles, motorized equipment, or mechanical transport that increases the ability of people to occupy or modify the environment.

Solitude or a primitive and unconfined type of recreation — The Wilderness Act states that wilderness has “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is about the opportunity for people to experience wilderness; it is not directly about visitor experiences per se. This quality is degraded by settings that reduce these opportunities, including visitor encounters, signs of modern civilization, recreation facilities, and management restrictions on visitor behavior.

Untrammeled — The Wilderness Act describes wilderness as “an area where the earth and its community of life are untrammeled by man,” and “generally appears to have been affected primarily by the forces of nature.” In short, wilderness is essentially unhindered and free from modern human control or manipulation, unrestrained and evoking humility. This quality is degraded by modern human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness.

These other features are unique to an individual wilderness and typically occur only in specific locations within a wilderness. In the case of the Lake Clark Wilderness, there is an “other features” quality that is focused on the Dena’ina culture and other cultural resources and historical sites.

NATURAL

Lake Clark Wilderness is a dynamic landscape where forces of nature continue unfettered and whole ecosystems function. The park holds two active volcanoes, vast ice field and glacier systems, coastal salt marshes, and complex riverine systems. Indeed, Lake Clark’s ecosystems are among the most dynamic in the world: tectonics; glaciers; volcanoes; intact plant, wildlife, and fish populations; and human activities.

For thousands of years people have gathered to harvest salmon in the wilderness area. Today, local residents continue to pursue a subsistence lifestyle dependent on resources including salmon, wildlife, berries, birch bark, and spruce. There are few remaining places in the United States where subsistence lifestyles are an active part of the ecological integrity.

Being remote and relatively difficult to access, little biophysical degradation has occurred in the wilderness area. Ecosystem processes are largely intact throughout the park. Habitats are seamlessly interconnected. The majority of the area has been left to the forces of nature. Uninterrupted ecological processes are prevalent and contribute to pristine conditions. From an overall perspective (and compared to most of the United States), the wilderness area is relatively free from the effects of human interference.

UNDEVELOPED

Lake Clark Wilderness is one of the largest wilderness areas in the national park system and is one of the least developed. Remoteness, difficulty of access, and the associated high cost of access has helped protect the area’s undeveloped quality. Even the manner in which people access this wilderness highlights its undeveloped nature. Primary access is by airplane. The park staff actively preserves the undeveloped quality by administering the commercial services program in a manner that allows people with an existing connection to the place to continue to work and recreate here but without adding structures or facilities.

The installations in wilderness include equipment used to improve communication and aviation safety and scientific instruments and to monitor the park’s volcanoes, climate, and geologic dynamics, as permitted by ANILCA, section 1310. In general, installations that occur in the Lake Clark Wilderness are barely noticeable across the landscape and do not include large structures such as prominent buildings or roads. There are no trailheads or trails in the wilderness area. Except for the Proenneke area, other structures are in a state of benign neglect, slowly folding back into the natural landscape. It is unlikely that visitors will find substantial signs of contemporary human civilization such as mechanized equipment, signs, unnatural noise aside from airplane noise, artificial light, and other modern artifacts.

SOLITUDE OR UNCONFINED PRIMITIVE RECREATION

The Lake Clark Wilderness provides a setting where visitors can find solitude, challenge, discovery, and renewal. The wilderness area offers superb opportunities for solitude that can rarely be found in the rest of the United States. With over 2.5 million acres of remote wilderness, visitors

have the opportunity in many places to feel like the first person to ever be there. Natural soundscapes and naturally dark night skies contribute to the visitors' sense of remoteness and solitude.

The sense of immersion in the landscape that one feels at Lake Clark is enhanced by the physical separation of the wilderness from urban centers. Inside the Lake Clark Wilderness, the feeling of remoteness is heightened by knowing it is a great distance to assistance should a person need it. Most forms of communication aren't reliable and weather can prevent or delay rescue. The sense of isolation enhances the feeling of being on one's own.

Lake Clark Wilderness combines remoteness with harsh weather, lack of infrastructure, and rugged geography (including an extensive network of crevassed glaciers, steep mountainsides carpeted in thick vegetation, and swift cold rivers); this combination creates opportunities for personal growth, self-discovery, and the self-fulfillment that comes from overcoming adversity. Without trails, bridges, designated camping areas, markers, and public use cabins, visitors must be self-reliant.

Visitors get the opportunity to navigate the challenges associated with protecting food from weather and wildlife; staying dry; traveling through bear country; staying warm in extreme weather; figuring out how to cross rivers; avoiding falls down cliffs or slips into crevasses; and evaluating the hazards of active volcanoes, rockfall, and avalanches. It is these challenges and the promise of the corresponding rewards that attract people to the Lake Clark Wilderness.

There are a multitude of opportunities for primitive, unconfined recreation in the wilderness area. Visitors can choose from a variety of activities and modes of travel, although whether one chooses to hike, climb, boat, ski, snowmachine, hunt, fish, or camp, visitors tend to experience the wilderness on the land's terms. Rapidly

changing weather, rugged topography, and abundant wildlife force the visitor to relinquish control over the land.

Except for fishing and sport hunting, recreation in the wilderness area is unconfined (the preserve requires state permits, requirements to secure food and garbage from bears and other wildlife, and a time limit on camping at one location). Access to recreation in most of the wilderness area is unregulated.

UNTRAMMELED

Lake Clark Wilderness protects a complex mosaic of landforms and ecosystems that continue to evolve from dynamic tectonic, volcanic, glacial, and climatic processes. The isolation, geography, and weather associated with the Lake Clark Wilderness make human influence difficult. If explorers from the 1800s returned to the region, they would see a similar landscape (with the exception of more vegetation and receded glaciers) and similar fish and wildlife as they did in the 1800s. It's one of the few areas in the world where ecological systems are not intentionally modified by the actions of managers—dynamic ecological processes continue largely as they have for millennia, unimpeded by park management.

There is a legacy of not taking management actions in order to maintain the untrammeled quality of wilderness character. Wildlife habitat in the wilderness varies naturally based on complex interactions between physical (e.g., precipitation, temperature) and biological (e.g., insect outbreaks, plant disease) factors. Wildlife is free to move through the area.

OTHER FEATURES (CULTURAL RESOURCES AND VALUES)

Precontact sites and cultural artifacts provide tangible evidence of thousands of years of human presence and adaptation to

the Lake Clark Wilderness (NPS 2008b). Precontact sites represent past human and ecological interaction on ancient landscapes and relict lake shores. Among camp refuse and other artifacts, some sites contain fish and animal bones that provide evidence of the animal species hunted or gathered since the close of the last ice age. In rare cases, such as high elevation ice patch sites that are melting, organic cultural materials such as bone and wood artifacts have been preserved. Site faunal remains may also contain proxy climate data that can be derived from isotope analysis as well as DNA possibly distinct from what exists in present animal populations.

The wilderness area also is important to the continuing cultural connections and way of

life of the Dena'ina people, who continue to depend on, identify with, and care for this place.

Historic sites like the Proenneke cabin contribute to education and understanding of the rusticator era when many people like Dick Proenneke went into the back country to carve out their own personal relationship with the wilderness. The Proenneke site represents the intrepid, pioneering spirit and the courage to immerse oneself in a wilderness environment free from development and amenities. Other historic sites in the wilderness area are associated with the park's historic themes of mining, trapping, and scientific exploration.

VISITOR USE AND EXPERIENCE

VISITOR ACCESS AND TRANSPORTATION

Lake Clark National Park and Preserve is approximately two hours by plane from Anchorage (Alaska's most populous city). Bordered to the east by Cook Inlet, across from the Kenai Peninsula, the park is not on the road system and access is primarily by small aircraft and authorized air taxi service. Flight prices depend on group size, type of airplane, length of flight, and where the flight originates. Many air services also offer scenic flights of the park, and air taxi operators can be helpful in determining the most efficient way for visitors to reach their destination. Park and preserve lands and waters are also open to privately owned and operated fixed-wing aircraft.

When weather and tides permit, the coastal eastern side of the park may be accessed by boat in addition to aircraft. Operators are allowed to provide boat tours in the park and preserve.

Within the park and preserve, transportation is generally by small aircraft, boating or rafting down rivers, snowmachine, and ORV use on designated trails (NPS 2010a) or by following one of the few foot trails that are maintained by park staff. See "Visitor Locations and Activities" for more information about trails in the park.

VISITOR USE AND CHARACTERISTICS

The majority of visitors to the park and preserve use a lodge, guiding service, or air taxi operator. The different commercial operators report to the park when, where, and how visitors are coming to Lake Clark National Park and Preserve. These data are compiled through the CUA reports, which are managed by the Alaska Region's Office

of Concession Operations. Annual reports summarize monthly and yearly user days² by location³ and activity.

Seasonality of visitation has remained consistent—almost all of the visitor use days are reported between May and September. Approximately 60%–70% of these visits are during the months of July or August. Visitation is very low in winter months, but usually between 120 and 220 people still visit the park each month (NPS 2012b).

Over the last six years, the number of user days reported by CUA holders has more than doubled from approximately 3,900 days to over 8,400 user days. Most of that visitation has been to the coast and most has occurred in July and August.

CUA holders report visitation at up to 24 different places within the park and preserve; approximately 13 sites were visited regularly in the last six years. Silver Salmon Creek, Crescent Lake, and Chinitna Bay are the most highly visited places in the park and preserve; together they account for approximately 75% of user days in Lake Clark National Park and Preserve (figure 1).

The three main activities reported by commercial operators are bear viewing, sport fishing, and photography (figure 2). The data suggest that there has been substantial growth in the number of visitors coming to the park and preserve for these three activities. For example, the number of user days reporting bear viewing as the main activity has tripled from approximately 1,000 user days in 2007 to over 3,100 in 2012. The

² User days reflect one person for one day, e.g., if three people are on a trip for two days, it will be represented as six user days.

³ Location is roughly defined as a watershed or larger spatial area within the park and preserve.

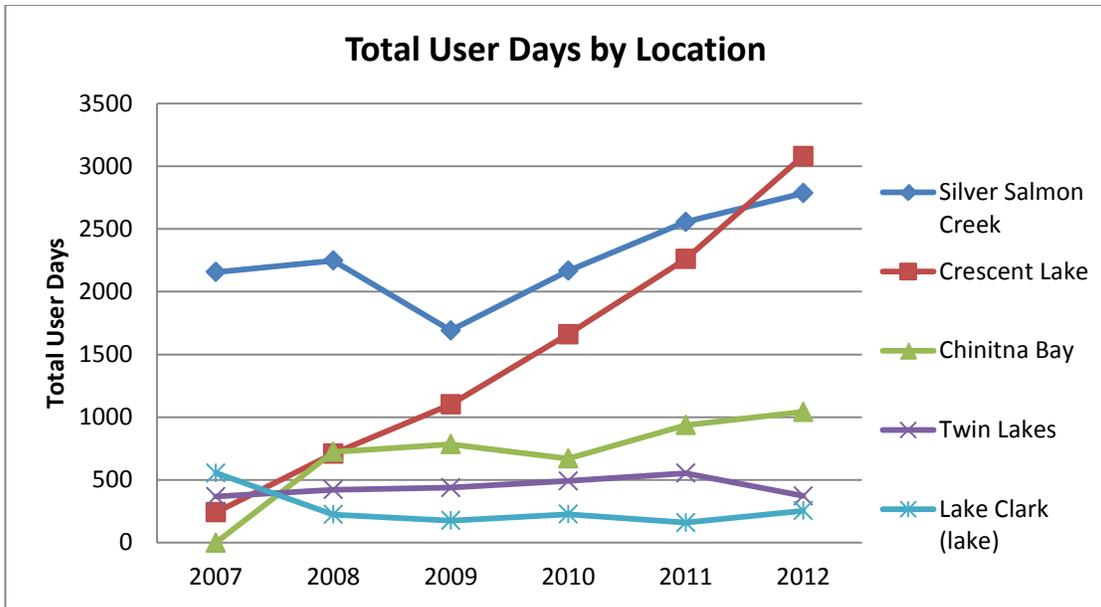


FIGURE 1. TOTAL USER DAYS BY LOCATION (2007–2012)

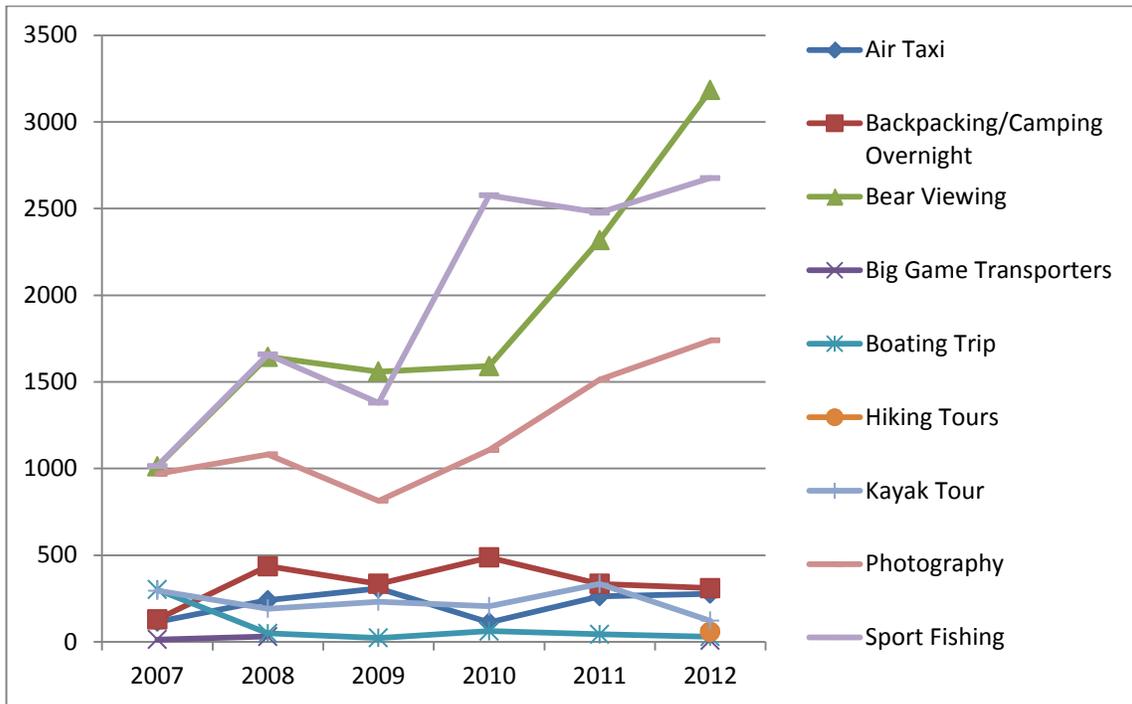


FIGURE 2. TOTAL USER DAYS BY ACTIVITY (2007–2012)

numbers of reported user days focused on sport fishing and photography have likewise more than doubled in this same period of time.

Ages of visitors vary, but anecdotal information from park staff suggest that a lot of retired couples visit the park, and that in recent years more younger couples have come to hike and visit the backcountry. Most large groups that visit the park are with a guide and/or are staying at a lodge within the park.

VISITOR LOCATIONS AND ACTIVITIES

Due to the size of the park, the lack of a road network and the presence of some high-interest visitor destinations, visitor trips tend to be concentrated by location. The various areas of the park offer different activities and experiences, as described below.

Climate change may alter the length and timing of the visitor season in different areas of the park and preserve (Winfrey et al. 2013). This could have implications on the visitor patterns and visitor activities described below; for example, the seasonality of bear viewing on the coast may change due to climate change impacts on bear habitat and behavior as well as visitor choices.

Lake Clark and Port Alsworth Area

The 42-mile-long Lake Clark is along a dividing line between the park and the preserve. Designated wilderness in the park borders much of the southeastern side of the lake. The preserve is on the northwestern shore, and Native corporation lands, which are private lands, surround the southwestern half of the lake. Fishing, kayaking, and boating are popular activities and there are several day hikes that originate in Port Alsworth. These day hikes range from moderate to strenuous and allow visitors to

access unique park locations such as Beaver Pond, Tanalian Falls, Kontrashibuna Lake, and Tanalian Mountain. Kontrashibuna Lake is also accessed by CUA holders with guided trips for kayaking, sport fishing, and photography.

The community of Port Alsworth sits on the southern shore of Lake Clark. Port Alsworth offers visitor services such as lodging, air taxis, guide services, kayak rentals, and a campground. The park's visitor contact station and field headquarters are also in Port Alsworth. The visitor contact station receives approximately 600 to 700 visitors per year (M. McBurney, pers. comm., 2012) and hosts interpretive programs, a boat exhibit, and other outdoor exhibits. (For more information on interpretive programs, see the section titled "Education, Interpretation, and Visitor Experiences.") Many visitors who stop at the visitor contact station also hike to Tanalian Falls, which seems to have gained popularity through word of mouth.

Coastal Areas

There are several main coastal areas of the park along the Cook Inlet coast—Silver Salmon Creek, Chinitna Bay, and Crescent Lake—which are all outside designated wilderness and are the primary areas for bear viewing and sport fishing. Shelter Creek also serves as a point of access and primitive camping area.

Silver Salmon Creek offers outstanding bear viewing, photography, and sport fishing opportunities for visitors and is the most heavily visited area by CUA groups, as shown in figure 4. A ranger cabin is here and is the base point for the Silver Salmon Creek Guide Program, which aims to ensure appropriate and consistent behavior among bear viewing and sport fishing guides at Silver Salmon Creek (NPS 2010c). Privately owned and operated lodging at Silver Salmon Creek is available at two resort-style

lodges that offer guided activities in addition to accommodations and dining. Visitors occasionally hike from Silver Salmon Creek approximately 26 miles down the beach to Chinitna Bay.

Along the beaches of Chinitna Bay at the southeasternmost part of the park, visitors can fish, dig clams, and participate in world-class bear viewing. Views of bears grazing in the meadows are possible in several identified viewing areas, although the meadows themselves are closed to visitors; this is the only locational restriction on visitor hiking and camping. A ranger cabin is on the site. Two privately owned and operated lodges are at Chinitna Bay.

Crescent Lake, on the Cook Inlet side of the park, but approximately 15 miles inland, has been steadily growing in popularity among visitors in recent years. Visitation reported through CUA reports show that user days in 2011 were more than eight times higher than they were in 2007 (see figure 4). Like Silver Salmon Creek, the primary activities at Crescent Lake are bear viewing, photography, and sport fishing. Crescent Lake also has a ranger cabin and a privately owned and operated lodge.

Twin Lakes Area

The Twin Lakes area is divided between wilderness (Upper Twin Lake) and park (Lower Twin Lake) land. The visitation trend for this area has remained relatively flat; however, in 2012, CUA holders began to report user days at the upper and lower lakes separately in order to better track visitor locations. In 2012, Upper Twin Lake had more than twice the visitation of Lower Twin Lake.

The popular Richard L. Proenneke Historic Site on Upper Twin Lake is the site of a rustic wilderness cabin constructed by Richard L. “Dick” Proenneke, which is maintained and staffed by volunteers and managed like an outdoor exhibit. Visitors

who arrive at the site are greeted by volunteers and given an interpretive tour of the site and its original artifacts. A few hardened tent sites with an “outcan” and suspension system for food containers are available for overnight camping across Hope Creek from the Proenneke site on a first come, first served basis.

The primary commercial activities in the Twin Lakes area are backpacking/overnight camping, kayak tours, photography, bear viewing, and sport fishing. There is a camping area on Upper Twin Lake near the Proenneke Historic Site. Although there are no maintained trails, there are several opportunities for hiking and backpacking from Upper and Lower Twin Lakes.

Backcountry

In addition to the popular areas described above, the park has a vast, trailless wilderness in its center that offers rugged terrain, primitive camping, and cross-country challenges such as fording rivers, sitting out bad weather, and changing hiking route due to mis-navigation and/or difficulty. Thorough advance preparation is necessary for safe and enjoyable backcountry experiences. Although no backcountry hiking and camping permits are required, visitors are required to comply with park rules and regulations and are encouraged to follow Leave No Trace principles.

Preserve

Sport hunting and trapping are permitted in Lake Clark National Preserve with all required licenses and permits and in accordance with applicable state and federal laws. The preserve lands are along the western spine of the park, and there are three hunting guide concession contracts that are authorized to provide big game hunting services to the public.

Telaquana Lake is a popular area within the preserve, offering good lake fishing, backpacking, and camping opportunities. There is a ranger cabin on the lake.

The historic Telaquana Trail route also begins at the lake and goes south all the way to Lake Clark; backpackers opting for this trail are following in the footsteps of the Dena'ina Athabascan people.

Wild Rivers

There are three rivers in the park that are designated as national wild rivers—the Tlikakila, Mulchatna, and the Chilikadrotna. These rivers are used by three to four groups per year for long rafting trips. Each of the three rivers contains large sand or gravel bars offering plentiful places to fish and camp, and all are navigable by canoe, kayak, raft, or pack raft.

Homer

Although outside the boundaries of the park, there is a field office and interagency visitor center operated by the Alaska Maritime National Wildlife Refuge and the Kachemak Bay Research Reserve in Homer, Alaska, on the Kenai Peninsula approximately five hours' drive from Anchorage. NPS staff presence in Homer allows many more visitors to learn about the park (which is visible from Homer on a clear day) since the town has a strong ecotourism industry and is a stop for cruise ships.

EDUCATION, INTERPRETATION, AND VISITOR EXPERIENCE

Educational and interpretive programming are offered online at the Port Alsworth visitor contact station and ranger cabins within the park, as well as in Homer. Port Alsworth field headquarters has a multi-purpose visitor contact station and several outdoor exhibits. The contact station

includes several modest exhibits highlighting various topics related to the natural history and cultural heritage of the area and a small Alaska Geographic retail outlet selling Lake Clark-themed books, postcards, hats, and tee shirts. The outdoor exhibits feature a Bristol Bay double-ender fishing boat and an old steam engine from an early Port Alsworth sawmill. An exhibit representing a Dena'ina fish camp with a historic cache was temporarily on display at the visitor contact station.

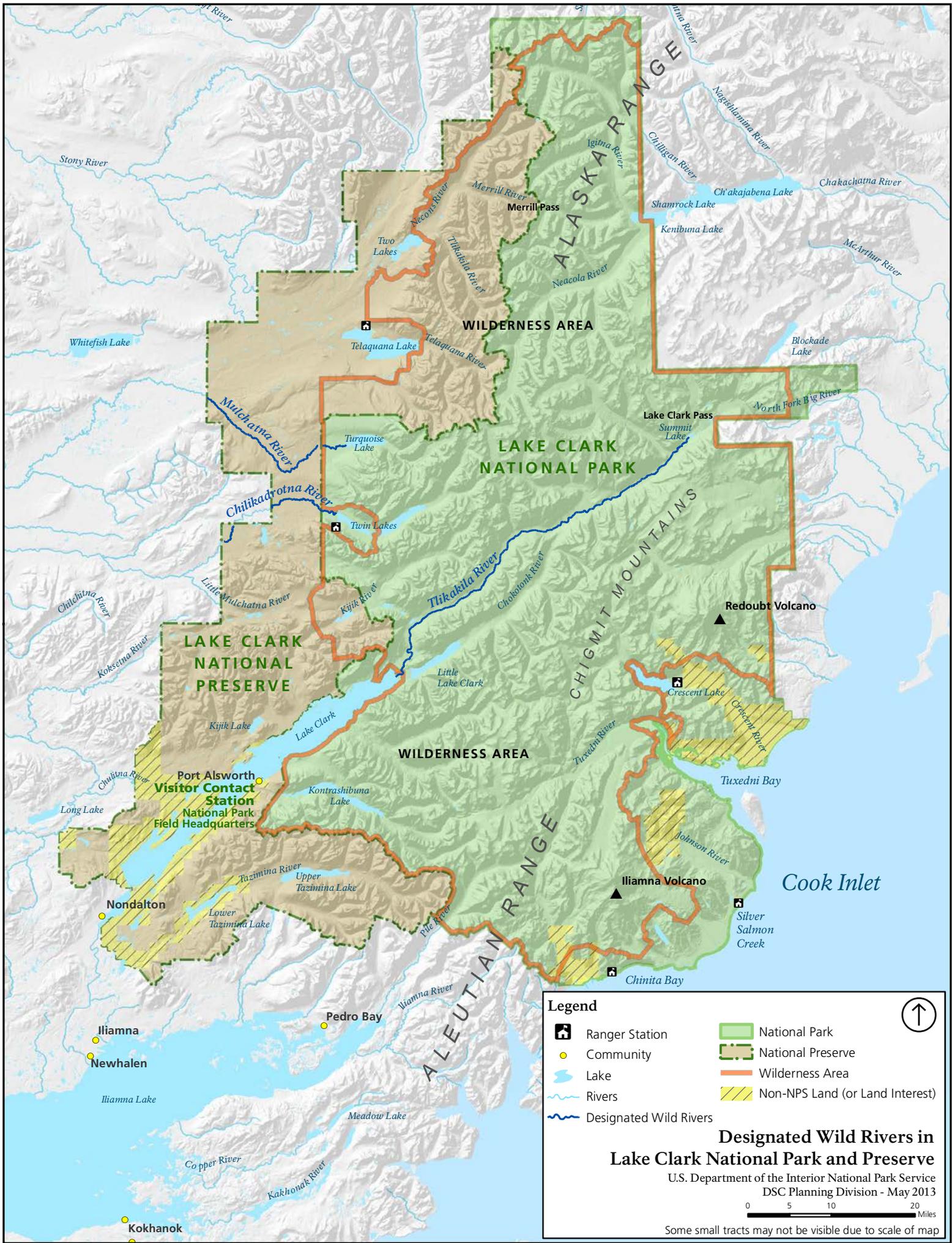
In the summer of 2012, staffing by a Student Conservation Association intern at the Port Alsworth visitor contact station provided evening programming that consistently drew between 20 and 30 visitors and expanded morning children's programs that were popular with the local community and families staying at lodges (Y. Evanoff, pers. comm., 2012). The most frequent topic of informal interpretation is the local Dena'ina culture. An Alaska Native interpretive ranger at the visitor contact station answers visitors' questions about Dena'ina culture and traditions and the local subsistence lifestyle. Leave No Trace principles are also promoted at the visitor contact station.

As previously mentioned, the Silver Salmon Creek Guide Program aims to educate guides who bring groups to view bears and sportfish. In addition, NPS staff at all ranger cabins provide education information to visitors, including information about rules and regulations. NPS staff are scheduled into rotation at the Alaska Islands & Oceans Visitor Center in Homer and provide programming at the visitor center through the Pratt Museum and at various locations throughout the Homer community (NPS 2010d). Programming in Homer focuses on interpretive themes related to the coastal portion of the park on Cook Inlet such as volcanoes, glaciers, estuaries, coastal brown bears, and salmon.

The park's Long-range Interpretive Plan identifies the physical, intellectual, and emotional experiences that should be

available to visitors. These experiences are largely centered around wilderness character, which values untrammeled, natural, and undeveloped wilderness that provides opportunities for solitude or primitive and unconfined recreation. The Long-range Interpretive Plan also

emphasizes themes related to the understanding of traditional, cultural, and rural experiences that can link visitors to park resources and values, and help them connect to Lake Clark National Park and Preserve on a personal level.



Legend

- Ranger Station
- Community
- Lake
- Rivers
- Designated Wild Rivers
- National Park
- National Preserve
- Wilderness Area
- Non-NPS Land (or Land Interest)

Designated Wild Rivers in Lake Clark National Park and Preserve

U.S. Department of the Interior National Park Service
DSC Planning Division - May 2013



Some small tracts may not be visible due to scale of map



INTRODUCTION

The National Environmental Policy Act mandates that environmental impact statements disclose the environmental effects of proposed federal actions. In this case, the proposed federal action would be the adoption of a GMP Amendment for Lake Clark National Park and Preserve. This “Environmental Consequences” chapter analyzes the potential effects of three management alternatives on soils and vegetation, historic structures / cultural landscapes, museum collections, and visitor use and experience. By examining the environmental consequences of all alternatives on an equivalent basis, decision makers can determine which alternative produces the most desirable combination of beneficial results with the fewest adverse effects on the park.

The impact topics presented in this chapter and the organization of the topics correspond to the resource discussions contained in “Chapter Three: Affected Environment.” This chapter includes information on the general methodology and assumptions for analyzing impacts, a discussion of cumulative impacts, and definitions of impact thresholds (minor, moderate, and major) for each impact topic. As required by CEQ regulations implementing the National Environmental Policy Act, a summary of environmental consequences for each alternative is provided in table 5, which can be found in “Chapter Two: Alternatives.”

The alternatives in this GMP Amendment provide broad management directions, including management zoning that provides desired conditions for different areas of the park. Because of the general nature of the alternatives, the potential consequences of the alternatives are analyzed in similarly general terms using qualitative analyses. Thus, this environmental assessment should

be considered a programmatic analysis covering many aspects of park management.

Several possible actions in the alternatives are not analyzed in this environmental assessment. The possible seasonal storage of nonmotorized boats at Kontrashibuna Lake in alternative B, and several general actions in the alternatives (e.g., brushing routes, providing primitive camping areas and other infrastructure if necessary to address resource impacts) are generally analyzed in this chapter. However, depending on the project may require additional appropriate site-specific environmental and cultural compliance documentation.

The existing conditions for all impact topics that are analyzed here were identified in the “Affected Environment” chapter. All of the impact topics are assessed for each alternative. For each impact topic there is a description of the beneficial and adverse effects of the alternative and a brief conclusion.

GENERAL METHODOLOGY FOR ANALYZING IMPACTS

The planning team based the impact analysis and the conclusions in this chapter on the review of existing literature and studies, information provided by experts in the National Park Service, park staff insights, public scoping, and professional judgment. The analysis includes an assessment of both direct and indirect impacts. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or are farther removed from the place, but are still reasonably foreseeable. It is important to remember that all the impacts have been assessed assuming that mitigation measures described in chapter

two have been implemented to minimize or avoid impacts.

Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making*, presents the approach used to identify the duration (short or long term), geographic context, type (adverse or beneficial), and intensity or magnitude (e.g., minor, moderate, or major) of the impacts. Assumptions used when considering impacts are explained further in this section.

Duration

Impact duration refers to how long an impact would last. The planning horizon for this plan amendment is approximately 15 to 20 years. Unless otherwise specified in this document, the following terms are used to describe the duration of impacts:

Short-term Impacts. Effects that are temporary in nature and last for up to two consecutive visitation seasons (or years), such as impacts associated with site development.

Long-term Impacts. Effects that last for more than two consecutive visitation seasons (or years) and can be permanent in nature such as the loss of soil due to the development of a new facility. (Although an impact may only occur for a short duration at one time, if it occurs regularly over a longer period of time the impact may be considered a long-term impact. For example, the noise from a vehicle driving on a road would be heard for a short time and intermittently, but because vehicles would be driving the same road throughout the life of the plan, the impact on the natural soundscape would be considered long term.)

Type of Impact

The following definitions of an adverse and beneficial impact were used in the analysis:

Adverse. Effects that reduce the quality of, degrade, or diminish visitor experience or park resources (e.g., wildlife, historic resources, wilderness).

Beneficial. Effects that improve or enhance visitor experience or park resources.

Geographic Context

Context refers to the setting within which an impact may occur such as the affected region or locality. In this document, most impacts are either localized (site-specific) or parkwide.

Local Impacts. For most impact topics, effects would occur in specific sites or areas such as at a lake.

Regionwide or Parkwide Impacts. Effects would occur throughout or beyond the park.

Intensity

Determining impact thresholds is a tool for applying NPS *Management Policies 2006* and Director's Order 12. These thresholds provide the reader with an idea of the intensity of a given impact on a specific topic. Because the intensity of impacts varies by resource, definitions of these impacts are provided separately with each impact topic analyzed in this document. Table 6 in this section contains all impact topic intensity threshold definitions.

TABLE 6. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Minor	Moderate	Major
Natural Resources (soil/vegetation)	An impact that would result in a detectable change, but the change would be slight and localized. Effects on vegetation and soil productivity would be slight. There could be changes in the abundance or distribution of individual plants in a relatively small area, but the change would not affect local plant populations. There would be no noticeable change in the potential for erosion and minimal signs of soil compaction. Changes to local ecological processes would be minimal.	An impact that would result in a clearly detectable change in the vegetation and/or soil character in multiple areas. Changes in vegetation, soil compaction, and soil productivity would be apparent. Other effects could include changes in the abundance or distribution of local plant populations. The potential for erosion to remove small quantities of additional soil would noticeably increase or decrease. Changes to ecological processes would be limited to localized areas.	Changes would be obvious and may be severely adverse or exceptionally beneficial to a plant population and/or soil. The effects would be substantial and highly noticeable, altering regional abundance and distribution of vegetation and soil productivity. There would be a strong likelihood of erosion removing large quantities of additional soil (adverse) or that erosion would be substantially reduced (beneficial). Key ecological processes would be altered and “landscape-level” (regional) changes would be expected.
Brown Bear	Effects on bears and bear habitat would not be expected to be outside the natural range of variability and would not be expected to have any notable effects on bears or the natural processes sustaining bear habitat. The effects could result in minimal changes to bear habituation to humans, if any.	Effects on bears and their habitat would cause changes to brown bear feeding, mating, or caring for young. The effects could be intermittently outside the natural range of variability. Some limited changes to bear tolerance of humans would be expected. Changes to regional bear populations would be minimal.	Effects on bears and their habitat would cause substantial changes to brown bear feeding, mating, or caring for young. The effects would be expected to be outside the natural range of variability. Distinct changes to bear tolerance of humans would be expected. Changes to regional bear populations would be apparent.
Cultural Resources (historic structures / sites / cultural landscapes, in particular, cabins that may be designated for public use)	<i>Adverse</i> – Impacts would affect a character-defining feature(s), but would not diminish the overall integrity of the structure, site, or cultural landscape. <i>Beneficial</i> – Preservation maintenance and stabilization of character-defining features of structures, sites, or cultural landscapes is conducted in accordance with the <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i> .	<i>Adverse</i> – Impacts would alter a character-defining feature(s), diminishing the overall integrity of the structure, site, or cultural landscape to the extent that its national register eligibility could be jeopardized. <i>Beneficial</i> – Preservation maintenance, stabilization, and restoration of character-defining features of structures, sites, or cultural landscapes is conducted in accordance with the <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i> .	<i>Adverse</i> – Impacts would alter a character-defining feature(s), diminish the integrity of the structure, site, or cultural landscape to the extent that it would no longer be eligible to be listed in the national register. <i>Beneficial</i> – Preservation maintenance, stabilization, and restoration of character-defining features of structures, sites, or cultural landscapes is conducted in accordance with <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i> .

TABLE 6. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Minor	Moderate	Major
<p>Cultural Resources (museum collections and historic objects)</p>	<p><i>Adverse</i> – Impacts would affect the integrity of few historic objects or items in the museum collection but would not degrade the usefulness of the objects or collection items for future research and interpretation.</p> <p><i>Beneficial</i> – Impacts would protect the integrity of a few historic objects and museum collection items and would retain the usefulness of the objects and collection items for future research and interpretation.</p>	<p><i>Adverse</i> – Impacts would affect the integrity of many historic objects or items in the museum collection and diminish the usefulness of the objects or collection items for future research and interpretation.</p> <p><i>Beneficial</i> – Impacts would protect the integrity of many historic objects and museum collection items and would moderately enhance the usefulness of the objects and collection items for future research and interpretation.</p>	<p><i>Adverse</i> – Impacts would affect the integrity of most historic objects or items in the museum collection and destroy the usefulness of the objects or collection items for future research and interpretation.</p> <p><i>Beneficial</i> – Impacts would protect the integrity of most historic objects and museum collection items and would substantially enhance the usefulness of the objects and collection items for future research and interpretation.</p>
<p>Cultural Resources (archeological resources)</p>	<p><i>Adverse</i> – Disturbance of a site(s) results in little loss of integrity.</p> <p><i>Beneficial</i> – Efforts are undertaken to maintain and preserve a site(s) in situ.</p>	<p><i>Adverse</i> – Site(s) is disturbed with noticeable loss of integrity, but is not obliterated.</p> <p><i>Beneficial</i> – More extensive efforts are undertaken to survey, record and stabilize a site(s) in situ.</p>	<p><i>Adverse</i> – Site(s) is disturbed to the extent that most or all of its information potential is lost or eliminated.</p> <p><i>Beneficial</i> – Substantial measures are undertaken to survey, document, and preserve a site(s) in situ, including more extensive and/or active intervention.</p>

TABLE 6. IMPACT THRESHOLD DEFINITIONS

Impact Topic and Duration	Minor	Moderate	Major
Wilderness Character	A change to wilderness character would be slight but noticeable, affecting a few areas. Changes in visible development or other factors that alter the undeveloped, natural, or untrammled qualities of wilderness would be evident to a low degree and affect an isolated part of the wilderness (or wilderness-eligible) area. A change to natural, cultural, or undeveloped conditions due to human-caused actions (either beneficial or adverse) would be apparent but confined to small areas. Very limited, one-time trammeling of a few components of ecological systems may occur in a few areas. Effects on opportunities for solitude or primitive and unconfined recreation would be slightly beneficial or adverse and confined to a limited area.	A change to wilderness character would be noticeable and spread over a number of locations in different areas. Changes in visible development or other factors that alter the undeveloped, natural, or untrammled qualities of wilderness would be evident and would affect one or more portions of the wilderness area (or wilderness-eligible areas). A change to natural, cultural, or undeveloped conditions due to human-caused actions (beneficial or adverse) would be apparent in several areas. Some trammeling of components of ecological systems may occur on a repeated basis in several areas. Effects on opportunities for solitude or primitive and unconfined recreation (beneficial or adverse) would be apparent to visitors in a few areas.	A change to wilderness character would be highly noticeable and widespread, affecting many areas and could result in substantial changes that enhance or detract from the qualities of wilderness character. Changes in visible development or other factors that alter the undeveloped, natural, or untrammled qualities of wilderness would be extensive and would affect multiple portions of the wilderness area (or wilderness-eligible areas). Changes to natural, cultural, or undeveloped conditions due to human-caused actions (beneficial or adverse) would be readily apparent in a large area. Large-scale trammeling of ecological systems may occur on a repeated basis in several areas. Effects on opportunities for solitude or primitive and unconfined recreation would be substantial and would be obvious to most visitors throughout the wilderness area.
Visitor Use and Experience	Changes in visitor opportunities and/or setting conditions would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance visitor experience.	Changes in visitor opportunities and/or setting conditions would be noticeable, would affect many visitors, and would result in some changes to visitor experience.	Changes in visitor opportunities and/or setting conditions would be highly apparent, would affect most visitors, and would result in several changes to visitor experience.

GENERAL ASSUMPTIONS

For the purposes of this analysis, several assumptions were made in analyzing impacts of the alternatives:

- Parkwide, visitor use patterns would not substantially change from current patterns. The majority of visitors would continue to visit the Lake Clark / Port Alsworth area, Twin Lakes area (including the

Richard L. Proenneke Historic Site), Telaquana Lake, the coast (i.e., Crescent Lake, Silver Salmon Creek, and Chinitna Bay) and the park's three wild rivers. Overall, park visitor use levels may increase, but there would not be a substantial change in visitation.

- Three public use cabins would be designated in the nonwilderness portion of the park and preserve,

including the Joe Thompson, Priest Rock, and Snipe Lake cabins.

- No major changes would occur in land uses adjacent to or near the park that would directly affect the topics being analyzed in this plan.
- All of the specific NPS actions proposed in the alternatives would occur during the life of the plan, except for possible actions noted in the introduction.
- Commercial operators would continue to provide services for park visitors.

CUMULATIVE IMPACT ANALYSIS

A cumulative impact is described in CEQ regulation 1508.7 as follows:

Cumulative impacts are the impacts that result from incremental impacts of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

Each cumulative impact analysis is additive, considering the overall impact of the alternative when combined with effects of other actions—both inside and outside the park—that have occurred or that would likely occur in the foreseeable future.

To determine potential cumulative impacts, past, present, and reasonably foreseeable future potential actions and developments within and surrounding Lake Clark National Park and Preserve were considered by the planning team. The primary area considered

for cumulative impacts is in the vicinity of the park.

Lake Clark National Park and Preserve is a relatively remote park. The area is only accessible by foot, air, or boat and it is mostly surrounded by federal, state, and Native corporation lands. No changes in landownership and management of adjacent lands are expected to occur that would directly or indirectly affect the park and preserve. No substantially different uses of the area or changes in transportation or access into the park and preserve are considered likely to interact with the action alternatives or result in additive or synergistic impacts. Although there could be changes in land uses near the park in the future, such changes are speculative at this point in time and it is difficult to predict what might happen or when the changes may occur.

For example, while the possible future opening of the Pebble Mine may have impacts on park resources, those impacts are unlikely to occur in the near future, unknown in intensity and quality, and do not interact with the possible impacts of the action alternatives. While there has been some past use of several cabins for occasional administrative use, impacts have been negligible. The impacts of ongoing use of camping areas and trails and management and use at the Proenneke site are analyzed under alternative A, the no-action alternative, and are considered continued use, not cumulative impacts.

Consequently, no past, ongoing or foreseeable actions were identified that would combine with the proposed actions in the alternatives and result in cumulative effects during the lifetime of the plan. Therefore, there is no cumulative impact analysis in this document.

NATURAL RESOURCES

METHODOLOGY

There are two subtopics under the general impact topic of natural resources: soil and vegetation and brown and black bears.

Impacts of the alternatives on soil and vegetation were grouped together due to their interrelatedness, as noted in chapter 1. The overall impact of each alternative on soil and vegetation was identified based on considering the impacts on these resources.

Impacts of the alternatives on brown and black bears include changes in bear habitat, behavior, populations, movements, and habitation.

SOILS AND VEGETATION

Alternative A (No-Action)

Analysis. As described in the “Affected Environment” chapter, Lake Clark National Park and Preserve is a mostly undisturbed area with respect to soils and vegetation. A few adverse impacts would continue to occur to soils and vegetation in localized areas that are relatively popular visitor destinations such as Twin Lakes (Proenneke site), Kontrashibuna Lake, Telaquana Lake, the coastal strip (i.e., Crescent Lake, Silver Salmon Creek, and Chinitna Bay), the three wild and scenic rivers, and areas near Lake Clark / Port Alsworth. In these popular areas, visitors would likely continue to walk on and compact soils and trample/crush vegetation in localized areas, sometimes creating trails and unofficial camping areas. Some loss of organic matter and litter cover may occur. In areas where camping is frequent, bare mineral surfaces can form from compaction and trampling (Kuss et al. 1990; Hammitt and Cole 1998; Monti and Mackintosh 1979 as cited in NPS 2005c).

Visitor-created trails are typically devoid of vegetation and may gully and impound water. Trail braiding can occur with increased use in wet or boggy areas or steep slopes. Periodic brushing of trails could result in the removal of some shrubs and small trees like spruce. In addition, visitors may introduce nonnative plants into the park with unknown possible effects although this has not been documented.

Overall, the vast majority of park soils and vegetation would not be affected by alternative A—very little of the park would show any effects of direct human disturbance. Continuing visitor use under alternative A would be expected to result in minor, long-term, adverse impacts to soils and vegetation in small, localized areas. These impacts would include vegetation trampling and loss of native vegetation and soil compaction. All of these visitor impacts would be of short duration during the visitation season, but would be repeated over the lifetime of the plan and thus would be long-term impacts.

Conclusion. Alternative A would have little effect on most of the park’s soils and vegetation. With no substantial change in the level of visitor use, visitors would continue to cause minor, long-term, adverse impacts to soils and vegetation in localized areas—primarily in a few relatively small popular destinations such as the coastal strip, Twin Lakes, and Port Alsworth / Lake Clark areas.

Alternative B (NPS Preferred Alternative)

Analysis. Few actions in alternative B would affect the soils and vegetation of Lake Clark National Park and Preserve and those effects that do occur would be localized. No new developments or programs that would substantially increase use in the park would

occur under the alternative. All of the same adverse effects to soils and vegetation due to visitor use described under alternative A would occur under alternative B. Some adverse impacts would occur to soils and vegetation at popular visitor destinations, including Twin Lakes (Proenneke site), Kontrashibuna Lake, Telaquana Lake, the coastal area (i.e., Crescent Lake, Silver Salmon Creek, and Chinitna Bay), the three wild and scenic rivers, and areas near Lake Clark / Port Alsworth. These adverse effects would include soil compaction and loss of organic matter and litter cover, and the alteration or loss of native vegetation in small localized areas due to people walking in the areas, and the possible formation of visitor-created trails, camping areas, and campfire rings.

In addition, under alternative B the designation of three existing cabins for public use would increase visitor use in these areas, altering soils and vegetation in the vicinity of the cabins—increased soil compaction and vegetation trampling would be expected in these areas. Some trees around the cabins may be cut down for firewood. There also would be the potential for some soil erosion to occur on visitor-created trails that lead down to the lakes.

The possible development of boat storage facilities at Kontrashibuna and Crescent lakes, a privy and storage facility at Silver Salmon Creek, would result in the clearing of these areas of native vegetation and loss of soils. A small area of vegetation and soils, large enough for the siting of this boat rack, would be affected by these new developments. In addition, an unknown number of new routes may be brushed, altering some shrubs and trees in these areas.

A future water route on Lake Clark may lead to more informal campsites on the lake-shore. Shoreline vegetation could be affected in localized areas by firewood gathering or cutting, trampling in campsite areas, fire rings, and social trails.

Alternative B also would have some benefits for the park's soil and vegetation. Improved management of existing camping areas, such as at Hope Creek, Kontrashibuna Lake, and Lower Twin Lake, and the designation of official camping areas at access points on lakes, streams, and on the coast would help reduce the expansion of visitor-created camping areas and additional loss and trampling of plants and soil compaction.

The possible development of a boat storage rack at Kontrashibuna Lake would also help reduce some trampling of plants and soil erosion in places where people store their boats on the ground.

The application of a visitor use management system, including identifying standards, monitoring footprints of designated primitive camping areas and the presence of visitor-created trails, and taking action if standards are exceeded, would benefit vegetation and soils by avoiding potential adverse impacts that might otherwise occur if visitor use was not being monitored in the park.

Compared to alternative A, alternative B would have similar minor, long-term, adverse impacts on soils and vegetation parkwide due to continuing visitor use. These adverse impact to soils and vegetation, including the alteration and/or loss of some soils and vegetation, would be focused at a few popular destinations. Alternative B would result in some new impacts. Increased visitor use at the three designated public use cabins would result in the loss or alteration of some vegetation and increased soil compaction in these localized areas, resulting in a minor, long-term, adverse impact. These impacts would occur each year during the visitation season. Some soils and vegetation also would be altered and/or lost due to the development of a few new facilities, resulting in a long-term minor adverse impact to soils and vegetation in these localized areas. None of the above changes would affect the abundance,

distribution, or productivity of local plant populations and soils.

Alternative B also would result in some minor, long-term, benefits due to the improvement of existing camping areas, the designation of camping areas in areas that have experienced resource impacts, and the establishment and monitoring of visitor use management indicators and standards. The establishment of primitive camping areas would benefit resources by consolidating use and reducing the dispersed impacts of visitor use. Consolidated use would also be easier for park staff to monitor (i.e., knowing where most campers might cause resource damage).

Conclusion. Overall, alternative B would have a minor, long-term adverse impact on park soils and vegetation due to visitors altering soils and vegetation at popular destinations like the Twin Lakes and Port Alsworth / Lake Clark Lake areas. An increase in visitor use due to the designation of three public use cabins would result in long-term, minor, adverse impacts to soils and vegetation in these localized areas. There also would be some minor, long-term, adverse impacts due to the development of a few new facilities. However, alternative B also would benefit soils and vegetation from actions such as the designation of primitive camping areas in places experiencing resource impacts, and the application and monitoring of visitor use management indicators and standards.

Alternative C

Analysis. Alternative C would not affect the vast majority of Lake Clark National Park and Preserve soils and vegetation, and those impacts that occur would be localized. No new developments are proposed in this alternative that would affect soils and vegetation. No new resource management actions would be implemented that would affect soils and vegetation. The adverse effects to soils and vegetation due to visitor

use described under alternative A would continue under alternative C. Additionally, under alternative C some new adverse impacts would occur to soils and vegetation at popular visitor destinations, including Twin Lakes (Proenneke site), Kontrashibuna Lake, Telaquana Lake, the coastal strip, the three wild and scenic rivers, and areas near Lake Clark / Port Alsworth. These adverse effects would include soil compaction and loss of organic matter and litter cover and the alteration or loss of native vegetation in small localized areas due to people walking in the areas and the possible formation of visitor-created trails, primitive camping areas, and campfire rings.

The application of a visitor use management system, including identifying standards, monitoring footprints of designated primitive camping areas and the presence of visitor-created trails, and taking action if standards are exceeded would benefit soils and vegetation by avoiding potential adverse impacts that might otherwise occur if visitor use was not being monitored in the park.

Compared to alternative A, alternative C would have similar minor, long-term, adverse impacts on soils and vegetation parkwide due to continuing visitor use. These adverse impact to soils and vegetation, including the alteration and/or loss of some soils and vegetation, would be focused at a few popular destinations. None of the above changes would affect the abundance, distribution, or productivity of local plant populations and soils. Alternative C also would result in some minor, long-term, benefits for soils and vegetation due to the establishment and monitoring of visitor use management indicators and standards.

Conclusion. Overall, alternative C would have a minor, long-term, adverse impact on park soils and vegetation due to visitors altering the soils and vegetation at a few popular destinations like the Twin Lakes and Port Alsworth / Lake Clark areas. However, alternative C would benefit soils and vegetation from the application and

monitoring of visitor use management indicators and standards.

BROWN AND BLACK BEAR

Alternative A (No Action)

Analysis. Under alternative A it is expected that there would be minimal changes in bear habitat and in bear populations, assuming some new trails were brushed and/or primitive campsites established. No new developments would be built under alternative A that would affect bears. Likewise, most of the bears in the park would not be affected by changes in visitor use under this alternative.

Along the coast in a few localized areas where visitors come to view bears, such as in the Silver Salmon Creek area, some bears would continue to be disturbed and behavior altered. Some bears that are intolerant of people would likely continue to avoid these areas. There would likely be some continued bear-human encounters on the coast and inland areas along Lake Clark and the Kijik River, which would further exploit bears tolerance of humans. There may be a few bears that continue to be killed in defense of life and property, although with continued visitor education these incidents would be expected to be rare.

Overall, alternative A would continue to result in a long-term, minor, adverse impact on brown and black bears in localized areas, primarily due to continuing visitor use on the coast and in the Lake Clark area during the summer. Changes in the quality of park bears' habitat would be minimal and not have any notable effects on bears. The vast majority of bears in the park would not be affected by alternative A—very little of the park would show any effects of direct human disturbance.

Conclusion. Alternative A would have little effect on most of the brown and black bears in the park. With no substantial change in

the level of visitor use, visitors would continue to cause minor, long-term, adverse impacts to bears in localized areas, primarily at popular summer destinations along the coast such as Silver Salmon Creek.

Alternative B (NPS Preferred Alternative)

Analysis. Few actions under alternative B would affect brown and black bear habitat and populations in Lake Clark National Park and Preserve, and those effects that do occur would be localized. No new developments or programs that substantially increase use in the park would occur under the alternative. All of the same adverse effects to brown and black bears due to visitor use described under alternative A would occur under alternative B (e.g., disturbance and displacement of some bears, continued tolerance of bears to people, infrequent loss of bears killed in defense of life and property). In addition, with three cabins being designated for public use and potentially more informal campsites along Lake Clark due to the proposed water trail, there would be an increased potential for bear-human encounters and incidents in these areas. However, with increased education efforts and proper food and garbage storage these adverse impacts would be expected to be infrequent. There also could be more designated primitive camping areas in the future, but since these sites would likely be already-existing visitor-created sites it would have little effect on bear-human encounters.

Alternative B would have several benefits for bears. Establishment of a visitor use management system, which includes increased monitoring of bear-human incidents requiring management responses, would be expected to result in the implementation of management actions that would reduce potential conflicts (see the actions in table 3). In addition, providing a bear-resistant privy and day-use storage facility at Silver Salmon Creek, and possibly providing bear-proof storage and human waste management at

other locations, would reduce potential bear-human conflicts in these areas.

Overall, compared to alternative A, alternative B would have similar minor, long-term, adverse impacts on brown and black bears due to continuing visitor use. These adverse impacts would include disturbance and displacement of some bears and some individual bears becoming more tolerant of people, primarily in a few small popular destinations along the coast and potentially in the Lake Clark area. The alternative would have minimal effects on overall bear habitat and on the regional species populations of the park. However, compared to alternative A, this alternative would likely reduce adverse impacts on brown and black bears. This reduction would be due to increased bear-human monitoring and resulting management actions as part of the park's visitor use management system and providing a bear-resistant privy and day-use storage facility at Silver Salmon Creek (and possibly bear-proof storage and human waste management at other locations).

Conclusion. Alternative B would have a long-term, minor, adverse impact on brown and black bears in localized areas, primarily along the coast. This effect would be due to continuing visitor use. The alternative would have adverse effects on individual bear behavior, movements, and stress levels. However, alternative B would also benefit bears by the implementation of a visitor use management system (which would include increased monitoring of bear-human incidents and actions to avoid an increase in these incidents) and providing bear-resistant facilities at Silver Salmon Creek and possibly other locations.

Alternative C

Analysis. Few actions under alternative C would affect brown and black bear habitat and populations in Lake Clark National Park and Preserve, and those effects that do occur would be localized. No new developments or programs that substantially increase use in

the park would occur under the alternative. All of the same adverse effects to brown and black bears due to visitor use described under alternative A would occur under alternative C (e.g., disturbance and displacement of some bears, continued tolerance of bears to people, infrequent loss of bears killed in defense of life and property).

Alternative C would have a beneficial effect on bears. Establishment of a visitor use management system, which includes increased monitoring of bear-human incidents requiring management responses, would be expected to result in management actions that would reduce potential conflicts (see the actions in table 2).

Overall, compared to alternative A, alternative C would have similar minor, long-term, adverse impacts on brown and black bears due to continuing visitor use. These adverse impacts would include disturbance and displacement of some bears and some individual bears becoming more tolerant of people, primarily in a few small popular destinations along the coast. The alternative would have minimal effects on overall bear habitats and on regional species populations of the park. However, compared to alternative A, alternative C would likely reduce adverse impacts on brown bears. This reduction would be due to increased bear-human monitoring and resulting management actions as part of the park's visitor use management system.

Conclusion. Alternative C would have a long-term, minor, adverse impact on brown and black bears in localized areas, primarily along the coast. This effect would be due to continuing visitor use. The alternative would have adverse effects on individual bear behavior, movements, and stress levels. However, alternative C would also benefit bears from the implementation of a visitor use management system that would include increased monitoring of bear-human incidents and actions to avoid an increase in these incidents.

CULTURAL RESOURCES

METHODOLOGY

Impacts on Cultural Resources

In this environmental assessment, impacts on cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality that implement the National Environmental Policy Act. Impact intensity thresholds have been provided to characterize the adverse and beneficial impacts of actions on historic structures, sites, and associated cultural landscapes; museum collections and historic objects; and archeological resources.

HISTORIC STRUCTURES, SITES, AND CULTURAL LANDSCAPES

Impacts on these cultural resources were measured by analyzing the potential for project actions to diminish or protect their integrity or character-defining features.

Alternative A (No-Action)

Public Use Cabins.

Analysis. Under the no-action alternative, none of the park's backcountry cabins would be designated for public use. Consequently, there would be little potential for impacts to historic cabins and associated cultural landscape features by authorized visitor use activities. Trespass or unauthorized use of these and other cabins may still occur, however, which could place contributing architectural or landscape features at potential risk of disturbance or damage. NPS staff have completed restoration of the Snipe Lake Cabin, Allen Woodward Cabin (Priest Rock), and the Joe Thompson Cabin and would continue to

monitor the condition of these and other historic cabins and structures. Ongoing preservation maintenance, stabilization, or other appropriate treatments (restoration and rehabilitation) of selected cabins would be carried out in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Associated cultural landscape features (e.g., out-buildings, patterns of circulation, spatial organization, views and vistas, small-scale features) would also be preserved and managed in accordance with the *Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes*.

Because ongoing preservation management actions could entail necessary repairs, minor alterations or replacement of deteriorated historic fabric or contributing landscape elements, these actions would have long-term, minor, adverse impacts on historic cabins and cultural landscape features. Long-term, minor to moderate, beneficial impacts would also occur from the stabilization and restoration of historic cabins and cultural landscape elements conducted in accordance with the Secretary's Standards and in a manner that protects the wilderness character of the cabin sites. These treatments would assist long-term preservation of these important structures and landscape elements. More detailed discussion of strategies for the treatment and use of historic cabins would be included in a future cabin management plan.

Conclusion. The no-action alternative would have long-term, minor, adverse, and minor to moderate beneficial impacts on selected historic cabins, associated structures, and cultural landscape features.

Richard L. Proenneke Historic Site.

Analysis. Under the no-action alternative, the Proenneke cabin and historic site would continue to be protected and managed as it is currently. The cabin, other site structures, and associated cultural landscape features would continue to be interpreted to the public in the manner of an outdoor exhibit with the assistance of seasonal on-site NPS staff and volunteers. Visitors would also have self-guided interpretive opportunities, and the nearby Hope Creek camping area would remain open for overnight tent camping. The cabin and other site buildings have received prior restoration treatments, and park staff would continue to monitor resource conditions and carry out preservation maintenance and future treatments as necessary. These measures would be performed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* as well as the minimal tool requirements for the protection of wilderness character. Other character-defining features and attributes of the site's cultural landscape (e.g., small-scale features, spatial organization, views and vistas, trails) would also be protected and preserved in accordance with the *Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes* and wilderness protection requirements.

Visitor use activities would continue to have a minor adverse impact on the cabin and other site structures and landscape features, primarily as a result of routine wear and tear on historic fabric (e.g., the wear on wooden door hinges and other hand-crafted cabin features and finishes). However, the on-site presence of NPS and volunteer staff would help promote visitor education regarding the significance of site resources and help to discourage inadvertent visitor use impacts and potential vandalism. Because ongoing preservation management actions could entail necessary repairs, minor alterations, or replacement of deteriorated historic fabric or contributing landscape elements, these actions would also have long-term, minor,

adverse impacts. Long-term, minor to moderate, beneficial impacts would occur from preservation treatments of site structures and cultural landscape features conducted in accordance with the Secretary's Standards. More detailed strategies for the treatment and use of the historic site would be incorporated as appropriate in updated site management plans. Along with visitor education and outreach, these measures would benefit the fulfillment of long-term site protection and preservation objectives.

Conclusion. The no-action alternative would have long-term, minor, adverse, and minor to moderate beneficial impacts on the Richard L. Proenneke Historic Site (cabin, associated structures, and cultural landscape features).

Alternative B (NPS Preferred Alternative)

Public Use Cabins.

Analysis. Under alternative B, up to eight of the park's backcountry cabins may be designated for public use, including the Joe Thompson, Allen Woodward, and Snipe Lake cabins. NPS staff have completed restoration of the latter three cabins and would continue to monitor their condition. Ongoing preservation maintenance, stabilization, or other appropriate treatments (restoration and rehabilitation) of these and other selected cabins would be carried out in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Associated cultural landscape features (e.g., outbuildings, patterns of circulation, spatial organization, views and vistas, small-scale features) would also be preserved and managed in accordance with the *Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes*.

Visitor use activities could have a minor adverse impact on the cabins and associated site structures and landscape features, primarily as a result of routine or inadvertent wear and tear on historic fabric (e.g., the wear on wooden floors, doors, and other cabin features and finishes). However, NPS staff would provide visitors with educational information regarding proper overnight use of the cabins and the significance of site resources in efforts to avoid or minimize inadvertent site impacts and discourage potential vandalism. Because ongoing preservation management actions could entail necessary repairs, minor alterations, or replacement of deteriorated historic fabric or contributing landscape elements, these actions would also have long-term, minor, adverse impacts. Long-term, minor to moderate, beneficial impacts would occur from preservation treatments of site structures and cultural landscape features conducted in accordance with the Secretary's Standards and in a fashion that protects the wilderness character of the cabin sites. More detailed strategies for cabin treatment and use would be incorporated in a future cabin management plan. Along with visitor education and outreach, these measures would benefit the fulfillment of long-term cabin protection and preservation objectives.

Conclusion. Alternative B would have long-term, minor, adverse, and minor to moderate, beneficial impacts on selected historic cabins, associated structures, and cultural landscape features.

Richard L. Proenneke Historic Site.

Analysis. Under alternative B, the Proenneke historic site would be protected and managed much as it is currently. The cabin, other site structures, and associated cultural landscape features would continue to be interpreted to the public in the manner of an outdoor exhibit with the assistance of seasonal on-site NPS staff and volunteers. Interpretation would emphasize Proenneke's connection with the

surrounding wilderness and specific natural features. Visitors would also have self-guided interpretive opportunities, and the nearby Hope Creek camping area would remain open for overnight tent camping. The cabin and other site buildings have received prior restoration treatments, and park staff would continue to monitor resource conditions and carry out preservation maintenance and future treatments as necessary. These measures would be performed in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* as well as the minimal tool requirements for the protection of wilderness character. Other character-defining features and attributes of the site's cultural landscape (e.g., small-scale features, spatial organization, views and vistas, trails) would also be protected and preserved in accordance with *The Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes* and wilderness protection requirements.

Visitor use activities would continue to have a minor adverse impact on the cabin and other site structures and landscape features, primarily as a result of routine wear and tear on historic fabric (e.g., the wear on wooden door hinges and other hand-crafted cabin features and finishes). However, the on-site presence of NPS and volunteer staff would help promote visitor education regarding the significance of site resources and would help to discourage inadvertent visitor use impacts and potential vandalism. The cabin and privy may be closed to public entry when NPS staff are not present. Because ongoing preservation management actions could entail necessary repairs, minor alterations, or replacement of deteriorated historic fabric or contributing landscape elements, these actions would also have long-term, minor, adverse impacts. Long-term, minor to moderate, beneficial impacts would occur from preservation treatments of site structures and cultural landscape features conducted in accordance with the Secretary's Standards. More detailed strategies for the treatment and use of the

historic site would be incorporated as appropriate in updated site management plans. Expansion of the site's national register boundary to more broadly encompass associated cultural landscape features would also provide long-term, minor to moderate, beneficial impacts by bringing additional site features under management consideration for protection and interpretation. Along with visitor education and outreach, these measures would benefit the fulfillment of long-term site protection and preservation objectives.

Conclusion. Alternative B would have long-term, minor, adverse, and minor to moderate, beneficial impacts on the Richard L. Proenneke Historic Site (cabin, associated structures, and cultural landscape features).

Alternative C

Public Use Cabins.

Analysis. Under alternative C, none of the park's backcountry cabins would be designated for public use. Consequently, there would be little potential for impacts to historic cabins and associated cultural landscape features by authorized visitor use activities. Trespass or unauthorized use of these and other cabins may still occur, which could place contributing architectural or landscape features at potential risk of disturbance or damage. NPS staff have completed restoration of the Snipe Lake Cabin, Allen Woodward Cabin (Priest Rock), and Joe Thompson Cabin and would continue to monitor the condition of these and other historic cabins and structures. Ongoing preservation maintenance, stabilization, or other appropriate treatments (restoration and rehabilitation) of selected cabins would be carried out in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Associated cultural landscape features (e.g., outbuildings, patterns of circulation, spatial organization,

views and vistas, small-scale features) would also be preserved and managed in accordance with the *Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes*.

Because ongoing preservation management actions could entail necessary repairs, minor alterations, or replacement of deteriorated historic fabric or contributing landscape elements, these actions would have long-term, minor, adverse impacts on historic cabins and cultural landscape features. Long-term, minor to moderate, beneficial impacts would also occur from the stabilization and restoration of historic cabins and cultural landscape elements conducted in accordance with the Secretary's Standards and in a manner that protects the wilderness character of the cabin sites. These treatments would assist the long-term preservation of these important structures and landscape elements. More detailed discussion of strategies for the treatment and use of historic cabins would be included in a future cabin management plan.

Conclusion. Alternative C would have long-term, minor, adverse, and minor to moderate, beneficial impacts on selected historic cabins, associated structures, and cultural landscape features.

Richard L. Proenneke Historic Site.

Analysis. Under alternative C, the Proenneke historic site would be protected and managed much as it is currently. The cabin, other site structures, and associated cultural landscape features would continue to be interpreted to the public in the manner of an outdoor exhibit with the occasional assistance of seasonal on-site NPS staff and volunteers (staff would not be stationed at the site). Interpretation would emphasize Proenneke's connection with the surrounding wilderness and specific natural features. Visitors would also have self-guided interpretive opportunities, and the nearby Hope Creek camping area would

remain open for overnight tent camping. The cabin and other site buildings have received prior restoration treatments, and park staff would continue to monitor resource conditions and carry out preservation maintenance and future treatments as necessary. These measures would be carried out in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* as well as the minimal tool requirements for the protection of wilderness character. Other character-defining features and attributes of the site's cultural landscape (e.g., small-scale features, spatial organization, views and vistas, trails) would also be protected and preserved in accordance with the *Secretary's Standards with Guidelines for the Treatment of Cultural Landscapes* and wilderness protection requirements.

Visitor use activities would continue to have a minor adverse impact on the cabin and other site structures and landscape features, primarily as a result of routine wear and tear on historic fabric (e.g., the wear on wooden door hinges and other hand-crafted cabin features and finishes). However, NPS and volunteer staff would help promote visitor education regarding the significance of site resources and help to discourage inadvertent visitor use impacts and potential vandalism. Because ongoing preservation management actions could entail necessary repairs, minor alterations, or replacement of deteriorated historic fabric or contributing landscape elements, these actions would also have long-term, minor, adverse impacts. Long-term, minor to moderate, beneficial impacts would occur from preservation treatments of site structures and cultural landscape features conducted in accordance with the Secretary's Standards. More detailed strategies for the treatment and use of the historic site would be incorporated as appropriate in updated site management plans. Expansion of the site's national register boundary to more broadly encompass associated cultural landscape features would also provide long-term, minor to moderate, beneficial impacts by

bringing additional site features under management consideration for protection and interpretation. Along with visitor education and outreach, these measures would benefit the fulfillment of long-term site protection and preservation objectives.

Conclusion. Alternative C would have long-term, minor, adverse, and minor to moderate, beneficial impacts on the Richard L. Proenneke Historic Site (cabin, associated structures, and cultural landscape features).

MUSEUM COLLECTIONS AND HISTORIC OBJECTS

Impacts on these cultural resources were measured by analyzing the potential for project actions to diminish or protect their integrity, informational potential, or ability to contribute to site interpretation.

Alternative A (No-Action)

Analysis. Under the no-action alternative, the multipark Alaska Regional Curatorial Center in Anchorage would continue to serve as the primary collections storage facility for Lake Clark National Park and Preserve. Among the collection items stored at the Alaska Regional Curatorial Center are furnishings, other interior objects, and site artifacts associated with the park's historic cabins. Many of the historic objects that have not been accessioned into the museum collection would remain on-site at the historic cabins. These on-site items, used as exhibit elements, provide further understanding of the backcountry adaptations and lifestyles of the early cabin occupants. Collection items temporarily removed during the restoration of selected cabins (e.g., the Joe Thompson Cabin, Allen Woodward Cabin [Priest Rock], and Earl Woodward Cabin [Hardenburg Bay]) are scheduled to be returned to the cabins in accordance with the park's Museum

Management Plan (2012). Similarly, among the compelling visitor experiences at the Richard L. Proenneke Historic Site are the furnishings, tools, and implements that Proenneke fashioned for his use. Irreplaceable and/or more fragile furnishings and tools were removed and stored off-site. Replicas of some original Proenneke-fashioned objects would continue to be used in on-site interpretation.

Fragile and irreplaceable historic objects would continue to be removed to the Alaska Regional Curatorial Center where they would be accessioned into the museum collection and protected under approved environmental and other curatorial storage conditions in accordance with all NPS museum collection policies and standards. Selected original items determined sufficiently durable as on-site exhibit items would continue to be placed at historic cabins to enhance interpretation objectives. Continuation of these current collection management actions with regard to cabin furnishings and objects would have long-term, minor to moderate, beneficial impacts on collections. Short- and long-term, minor to moderate, adverse impacts to collection items may nevertheless occur as a result of visitor handling that damages the condition or interpretive value of these objects, as well as the loss of items by theft. However, only nonsensitive items would be exhibited, and the presence of on-site NPS staff and seasonal volunteers would assist in minimizing the loss of objects or damage from improper or inadvertent visitor use. The handling and transfer of collection items between the cabins and curatorial center could increase the potential for damage. However, park staff would oversee the packaging of objects, monitor their transport, and ensure their secure storage. No adverse effects would be anticipated.

Conclusion. The no-action alternative would continue to have long-term, minor to moderate, beneficial impacts on furnishings and objects associated with historic cabins, including the Richard L. Proenneke Historic

Site. Short- and long-term, minor to moderate, adverse impacts have also occurred and may continue to result from visitor use impacts on exhibited objects.

Alternative B (NPS Preferred Alternative)

Analysis. Under alternative B, the multipark Alaska Regional Curatorial Center in Anchorage would continue to serve as the primary collections storage facility for Lake Clark National Park and Preserve. Among the collection items stored at the center are furnishings, other interior objects, and site artifacts associated with the park's historic cabins. Several of the historic objects that have not been accessioned into the museum collection would remain on-site at the historic cabins. These on-site items, used as exhibit elements, provide further understanding of the backcountry adaptations and lifestyles of the early cabin occupants. Collection items temporarily removed during the restoration of selected cabins (e.g., the Joe Thompson Cabin, Allen Woodward Cabin [Priest Rock], and Earl Woodward Cabin [Hardenburg Bay]) are scheduled to be returned to the cabins in accordance with the park's Museum Management Plan (2012). However, most of the historic objects would not be returned to cabins proposed for public use and would instead be accessioned to the park's museum collection in Anchorage. A few selected objects would be placed in each public use cabin as part of unobtrusive interpretive exhibits. Most of the historic objects from the Earl Woodward (Hardenburg Bay) Cabin would be returned to the cabin after restoration as part of an interpretive exhibit. Similarly, among the compelling visitor experiences at the Richard L. Proenneke Historic Site are the furnishings, tools, and implements that Proenneke fashioned for his use. Irreplaceable and/or more fragile furnishings and tools were removed from the historic site and stored off-site. Replicas of some original Proenneke-fashioned

objects would continue to be used in on-site interpretation.

Ongoing collection management actions would continue with regard to cabin furnishings and objects under alternative B. Fragile and irreplaceable historic objects would continue to be removed to the Alaska Regional Curatorial Center where they would be accessioned into the museum collection and protected in accordance with all NPS museum collection policies and standards. Selected original items determined sufficiently durable as on-site exhibit items would continue to be placed at historic cabins slated for public use to enhance interpretation objectives. Continuation of these collection management actions with regard to cabin furnishings and objects would have long-term, minor to moderate, beneficial impacts on collections. Short- and long-term, minor to moderate, adverse impacts to collection items may nevertheless occur as a result of visitor handling that damages the condition or interpretive value of these objects, as well as the loss of items by theft. However, only non-sensitive items would be exhibited, and the presence of on-site NPS staff and seasonal volunteers would assist in minimizing the loss of objects or damage from improper or inadvertent visitor use. The handling and transfer of collection items between the cabins and curatorial center could increase the potential for damage. However, park staff would oversee the packaging of objects, monitor their transport, and ensure their secure storage. No adverse effects would be anticipated.

Conclusion. Alternative B would have long-term, minor to moderate, beneficial impacts on furnishings and objects associated with historic cabins, including the Richard L. Proenneke Historic Site. Short- and long-term, minor to moderate, adverse impacts have also occurred and may continue to result from visitor use impacts on collection items.

Alternative C

Analysis. Under alternative C, the multipark Alaska Regional Curatorial Center in Anchorage would continue to serve as the primary collections storage facility for Lake Clark National Park and Preserve. Among the collection items stored at the Alaska Regional Curatorial Center are furnishings, other interior objects, and site artifacts associated with the park's historic cabins. Several of the historic objects that have not been accessioned into the museum collection would remain on-site at the historic cabins. These on-site items, used as exhibit elements, provide further understanding of the backcountry adaptations and lifestyles of the early cabin occupants. Collection items temporarily removed during the restoration of selected cabins (e.g., the Joe Thompson Cabin, Allen Woodward Cabin [Priest Rock], and Earl Woodward Cabin [Hardenburg Bay]) are scheduled to be returned to the cabins in accordance with the park's Museum Management Plan (2012). Among the compelling visitor experiences at the Richard L. Proenneke Historic Site are the furnishings, tools, and implements that Proenneke fashioned for his use. Under this alternative, because of the limited presence of on-site NPS staff and volunteers to deter visitor use impacts, most of the original objects currently exhibited in the Proenneke cabin would be removed and accessioned in the park's museum collection in Anchorage. Replicas of some original Proenneke-fashioned objects would continue to be used in on-site interpretation.

Ongoing collection management actions would continue with regard to cabin furnishings and objects under alternative C. Fragile and irreplaceable historic objects would continue to be removed to the Alaska Regional Curatorial Center where they would be accessioned into the museum collection and protected under approved environmental and other curatorial storage conditions in accordance with all NPS museum collections policies and standards.

A few original items determined sufficiently durable as on-site exhibit items would continue to be placed at historic cabins to enhance interpretation objectives. Continuation of these collection management actions with regard to cabin furnishings and objects would have long-term, minor to moderate, beneficial impacts on collections. Short- and long-term, minor to moderate, adverse impacts to collection items may nevertheless occur as a result of visitor handling that damages the condition or interpretive value of these objects, as well as the loss of items by theft. Only nonsensitive items and replicas would be exhibited. The handling and transfer of collection items between the cabins and curatorial center could increase the potential for damage. However, park staff would oversee the packaging of objects, monitor their transport, and ensure their secure storage. No adverse effects would be anticipated.

Conclusion. Alternative C would have long-term, minor to moderate, beneficial impacts on furnishings and objects associated with historic cabins, including the Richard L. Proenneke Historic Site. Short- and long-term, minor to moderate, adverse impacts have also occurred and may continue to result from visitor use impacts on collection items.

ARCHEOLOGICAL RESOURCES

The impacts on archeological resources are described in terms of their potential to diminish or protect the ability of archeological resources to yield information important to Alaska prehistory or history.

Alternative A (No Action)

Analysis. Under alternative A, no major changes to park operations, facilities, or visitor use activities are anticipated. Archeological assessments and investigations would continue to be carried out as necessary in particular project areas should

ground-disturbing construction activities be proposed. NPS archeologists would also continue to routinely monitor the condition of known and/or potentially at-risk sites and would undertake appropriate protection and stabilization measures as necessary to avoid or reduce adverse site impacts possibly occurring from natural processes of erosion, visitor use (e.g., erosion or site disturbances resulting from hiking or camping activities), the illegal removal of artifacts, and other factors. In consideration of NPS management policy objectives and requirements to preserve wilderness qualities, there would be little potential for impacts to archeological resources in wilderness areas as a result of development actions. Any adverse effects resulting from ongoing park management or foreseeable actions would likely be long-term or permanent, localized, and of minor intensity.

In accordance with section 110 of the National Historic Preservation Act, NPS archeologists would continue to systematically survey park lands as funding and staffing permit. Identified sites would be recorded and information entered in the NPS ASMIS database. Additional archeological testing may be conducted for selected sites to address specific research questions and/or to assist determinations of site eligibility for listing in the National Register of Historic Places. Archeological resource management actions would be carried out in accordance with all pertinent laws and policies including consultation with the Alaska state historic preservation office, associated Alaska Native tribes and groups, and other concerned parties under section 106 of the National Historic Preservation Act. Park staff would continue to provide visitors with educational information regarding the importance of protecting archeological and historical resources at the Richard L. Proenneke Historic Site and at other appropriate locations throughout the park. These management actions would further advance the documentation and protection of the park's archeological

resources, resulting in long-term, minor to moderate, beneficial impacts.

Conclusion. Long-term or permanent, localized, minor, adverse impacts on precontact and historical archeological resources would occur under alternative A from erosion, visitor use, and other factors. Long-term, minor to moderate, beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines and public educational outreach.

Alternative B (NPS Preferred Alternative)

Analysis. Under alternative B, expanded visitor opportunities could present increased potential for impacts to archeological resources in high visitor use areas. This could occur, for example, in the vicinity of public use cabins should visitors (perhaps either inadvertently or deliberately) disturb archeological resources associated with historic occupation of the cabins, or (as in the case of the Snipe Lake Cabin and Chinitna frontcountry management activities) precontact resources associated with surrounding archeological districts. Dispersed visitor hiking on brushed trails and the use of primitive and/or designated camping areas could also lead to potential visitor use-related disturbance of lithic scatters and other archeological resources in the identified archeological districts and along lake shores and waterways (e.g., Fishtrap Lake). However, archeological inventories, assessments, and investigations would continue to be carried out as necessary in proposed project and visitor use areas. It is anticipated that should archeological resources be identified, they can be avoided by project design modifications (e.g., placing designated camping areas away from sensitive site areas) or by implementing other site avoidance measures. NPS archeologists would also continue to routinely monitor the condition of known and/or potentially at-risk sites and would

undertake appropriate protection and stabilization measures as necessary to avoid or reduce adverse site impacts possibly occurring from natural processes of erosion, visitor use (e.g., erosion or site disturbances resulting from hiking or camping activities), the illegal removal of artifacts, and other factors. In consideration of NPS management policy objectives and requirements to preserve wilderness qualities, there would be little potential for impacts to archeological resources in wilderness areas as a result of development actions. Any adverse effects resulting from ongoing park management or foreseeable actions would likely be long term or permanent, localized, and of minor to moderate intensity.

In accordance with section 110 of the National Historic Preservation Act, NPS archeologists would continue to systematically survey park lands as funding and staffing permit. Identified sites would be recorded and information entered in the NPS ASMIS database. Additional archeological testing may be conducted for selected sites to address specific research questions and/or to assist determinations of site eligibility for listing in the National Register of Historic Places. Archeological resource management actions would be carried out in accordance with all pertinent laws and policies including consultation with the Alaska state historic preservation office, associated Alaska Native tribes and groups, and other concerned parties under section 106 of the National Historic Preservation Act. Park staff would provide visitors with educational information regarding the importance of protecting archeological and historical resources at the public use cabins, the Richard L. Proenneke Historic Site, and at other appropriate locations throughout the park. These management actions would further advance the documentation and protection of the park's archeological resources, resulting in long-term, minor to moderate, beneficial impacts.

Conclusion. Long-term or permanent, localized, minor to moderate, adverse

impacts on precontact and historical archeological resources would occur under alternative B from erosion, visitor use, and other factors. Long-term, minor to moderate, beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines and public educational outreach.

Alternative C

Analysis. Under alternative C, an emphasis on preserving wilderness character and limiting new facility development and infrastructure would also tend to reduce the potential for development- or visitor use-related impacts to archeological resources. No public use cabins would be designated and no new trails or camping areas would be established. Although future development would be limited, archeological assessments and investigations would continue to be carried out as necessary in proposed project and visitor use areas. It is anticipated that should archeological resources be identified, they can be avoided by project design modifications or by implementing other site-avoidance measures. NPS archeologists would also continue to routinely monitor the condition of known and/or potentially at-risk sites and would undertake appropriate protection and stabilization measures as necessary to avoid or reduce adverse site impacts possibly occurring from natural processes of erosion, visitor use (e.g., erosion or site disturbances resulting from hiking or camping activities), the illegal removal of artifacts, and other factors. In consideration of NPS management policy objectives and requirements to preserve wilderness qualities, there would be little potential for impacts to archeological resources in wilderness areas as a result of

development actions. Any adverse effects resulting from ongoing park management or foreseeable actions would likely be long-term or permanent, localized, and of minor intensity.

In accordance with section 110 of the National Historic Preservation Act, NPS archeologists would continue to systematically survey park lands as funding and staffing permit. Identified sites would be recorded and information entered in the NPS ASMIS database. Additional archeological testing may be conducted for selected sites to address specific research questions and/or to assist determinations of site eligibility for listing in the National Register of Historic Places. Archeological resource management actions would be carried out in accordance with all pertinent laws and policies including consultation with the Alaska state historic preservation office, associated Alaska Native tribes and groups, and other concerned parties under section 106 of the National Historic Preservation Act. Park staff would provide visitors with educational information regarding the importance of protecting archeological and historical resources at appropriate locations throughout the park. These management actions would further advance the documentation and protection of the park's archeological resources, resulting in long-term, minor to moderate, beneficial impacts.

Conclusion. Long-term or permanent, localized, minor, adverse impacts on precontact and historical archeological resources would occur under alternative C from erosion, visitor use, and other factors. Long-term, minor to moderate, beneficial impacts would result from the continued management of archeological resources in accordance with NPS policies and guidelines, and public educational outreach.

WILDERNESS CHARACTER

METHODOLOGY

Based on the Wilderness Act mandate to preserve wilderness character, this impact topic focuses on the extent to which the alternatives affect the character of the Lake Clark Wilderness Area. Four principal qualities define wilderness character: natural, undeveloped, untrammeled, and having outstanding opportunities for solitude or a primitive and unconfined type of recreation. (See chapter 3 for more details on what wilderness character is and definitions of the four qualities.)

It also should be noted that impacts on natural and cultural resources and visitor access in the wilderness area are evaluated elsewhere in this chapter.

Alternative A (No-Action)

Analysis. Under alternative A, no changes in management would occur in the wilderness area—the area would continue to be managed as it is now. With use levels expected to not substantively change, no changes in management would occur.

Alternative A would not change the undeveloped or natural character of the wilderness area. No new developments or human occupation would occur in the wilderness area. Most visitors in this alternative would continue to find what they perceive to be natural conditions in the wilderness area—visitors would continue to find an alpine tundra/shrubby/forested landscape that appears pristine, with few obvious signs of disturbance or alteration of the natural landscape.

Some signs of people would continue to be evident such as occasional visitor-created trails and trampled vegetation from informal

camping areas in a few localized places in the wilderness area. Occasionally, sounds from aircraft and motorboats would be heard, particularly in popular areas (e.g., Twin Lakes, Kontrashibuna Lake), affecting the undeveloped quality, although these would be transient infrequent sounds. Thus, alternative A would detract from the apparent naturalness and undeveloped qualities in a few localized spots in the wilderness area.

No actions would occur under alternative A that would result in trammeling or manipulation of resources— all of the wilderness area would remain untrammeled in this alternative.

Likewise, alternative A would result in no changes to the “other features” quality— cultural resources and historic sites—that are unique to the Lake Clark Wilderness. Although some on-site and in-cabin artifacts would be removed and replicated in the Richard L. Proenneke Historic Site, this would not measurably affect the stories or feeling for this area.

There would be no changes in the opportunities for solitude in the wilderness area under alternative A. The vast majority of the wilderness area would receive very low use. Visitors would infrequently encounter NPS staff involved in management of the area and/or hear noise from aircraft, which would adversely affect opportunities for solitude for short periods of time. There would also continue to be a few popular places where multiple groups may occasionally encounter each other during the prime use season such as Twin and Kontrashibuna lakes. In particular, the Richard L. Proenneke Historic Site would be an area where, depending on weather, time of day, and day of the week, groups would more likely encounter other groups and NPS

staff or volunteers during the peak use period. These impacts to solitude would occur each year during the visitation season.

Opportunities for primitive, unconfined recreation would continue to be present throughout the wilderness area. There would continue to be little to no notable NPS presence (in the form of infrastructure, management activity, or personnel) in the wilderness area. Visitors would have complete freedom to go wherever they desired. A couple of requirements would continue to affect wilderness visitors, including requirements to secure food from bears and other wildlife in designated areas and a time limit on camping in the Twin Lakes / Hope Creek area. Although most visitors would likely agree there would be outstanding opportunities for primitive, unconfined recreation in the wilderness area, these requirements would continue to slightly diminish this quality.

Considered as a whole, the five qualities of wilderness character would not change for the vast majority of Lake Clark Wilderness under alternative A. In a few localized, popular use areas, such as the Proenneke Historic Site and Kontrashibuna Lake, there would continue to be long-term, adverse impacts to wilderness character (primarily the natural and solitude qualities) due to human use in these areas. Thus, overall, alternative A would have a long-term, minor, adverse impact on the wilderness character of the park.

Conclusion. The vast majority of the wilderness character of the Lake Clark Wilderness would not be affected by alternative A. However, alternative A would result in a long-term, minor, adverse impact to wilderness character, primarily due to the continuing effects of visitors at the Proenneke historic site and Kontrashibuna Lake. The natural and solitude qualities would be slightly degraded in these localized areas.

Alternative B (NPS Preferred Alternative)

Analysis. Under alternative B, few changes in management would occur in the wilderness area—the vast majority of the area would continue to be managed as it is now.

No new developments or human occupation would occur in practically all of the wilderness area. The application of a visitor use management system, including monitoring footprints of designated primitive camping areas and the presence of visitor-created trails, would help avoid potential adverse impacts that might otherwise occur to the natural quality of wilderness character. Most visitors in this alternative would find what they perceive to be natural conditions in the wilderness area—visitors would see an alpine tundra/shrubby/forested landscape that appears relatively pristine, with few obvious signs of disturbance or alteration of the natural landscape.

Occasionally, sounds from aircraft and motorboats would be heard, particularly in popular areas (e.g., Twin Lakes, Kontrashibuna Lake), affecting the undeveloped quality, although these would be transient and infrequent sounds.

In the Kontrashibuna Lake area, the possible development of a boat storage rack would diminish the undeveloped quality at that site, but it would also reduce impacts to the natural quality in a larger area of people hauling and leaving their boats along the shoreline. In addition, under alternative B, improved management of camping areas, such as the provision of pit toilets or primitive camping areas at Kontrashibuna Lake, would decrease the areas being disturbed by visitors who are camped there, including soil compaction, ground cover denudation, and vegetation trampling. Providing these primitive facilities would help reduce impacts to the natural quality of the site, but also would diminish the undeveloped quality of the area.

If additional trails were brushed in the wilderness area, this would also affect some vegetation and adversely affect the natural quality of the area(s).

Overall, in the wilderness area, alternative B would likely improve the natural quality of wilderness character and detract from the undeveloped quality in a few localized spots.

No actions would occur under alternative B that would result in trammeling or manipulation of resources—all of the wilderness area would remain essentially unhindered and free from modern human control or manipulation untrammled in this alternative.

Under alternative B, there would be no changes to the “other features” quality—cultural resources and historic sites—that are unique to the Lake Clark Wilderness. Although some on-site and in-cabin artifacts would be removed and replicated in the Richard L. Proenneke Historic Site, this would not measurably affect the stories or feeling for this area or connections with the cultural resources.

There would be no changes in opportunities for solitude in the wilderness area under alternative B. The vast majority of the wilderness area would receive very low use. Visitors would infrequently encounter NPS staff involved in management of the area and/or hear noise from aircraft, which would adversely affect opportunities for solitude for short periods of time. There would also continue to be a few popular places where multiple groups may occasionally encounter each other during the prime use season such as Twin and Kontrashibuna lakes. In particular, the Richard L. Proenneke Historic Site would be an area where, depending on weather, day of the week, and time of day, groups would more likely encounter other groups as well as NPS staff or volunteers during the peak use period. These impacts to solitude would occur each year during the visitation season

and consequently would be a long-term impact.

Opportunities for primitive, unconfined recreation would not change under alternative B and would continue to be present throughout the wilderness area. There would continue to be little or no notable NPS presence (in the form of infrastructure, management activity, or personnel) in the wilderness area. Visitors generally would have freedom to go wherever they desired. The institution of a visitor use management system could restrict visitor behavior in certain popular wilderness areas in the future, although these types of restrictions are not expected to occur during the life of this plan. A couple of existing requirements would continue to affect wilderness visitors, including requirements to secure food from bears and other wildlife in designated areas and a time limit on camping in the Twin Lakes / Hope Creek area. Although most visitors would likely agree, there would be outstanding opportunities for primitive, unconfined recreation in the wilderness area. These requirements would continue to slightly diminish this quality.

Considered as a whole, the five qualities of wilderness character would not change for the vast majority of Lake Clark Wilderness under alternative B. In a few localized, popular use areas, such as the Richard L. Proenneke Historic Site and Kontrashibuna Lake, there would be long-term, minor, adverse impacts to wilderness character due to human use, primarily affecting the natural and/or solitude qualities in these areas. Alternative B also would have some minor, long-term, benefits to the natural quality and long-term, minor, adverse impacts to the undeveloped quality of wilderness due to the possible development of a few primitive visitor facilities in areas experiencing resource impacts. Overall, alternative B would have a similar effect on the park’s wilderness character as alternative A—a long-term, minor, adverse impact on

wilderness character in a few popular, localized areas of the park.

Conclusion. The vast majority wilderness character at the Lake Clark Wilderness area would not be affected by alternative B. Alternative B would result in long-term, minor, beneficial, and adverse impacts to wilderness character in a few localized areas (e.g., Kontrashibuna and Lower Twin lakes) due to improved management of camping and the possible addition of a few new, small primitive visitor facilities to reduce/avoid resource impacts. The natural quality of these areas would improve while the undeveloped quality would be slightly degraded. Overall, alternative B would result in similar minor, long-term, adverse, localized impacts on wilderness character as alternative A, primarily due to the effects of visitor use in a few popular areas—the Richard L. Proenneke Historic Site and Kontrashibuna Lake.

Alternative C

Analysis. Under alternative C, few changes in management would occur in the wilderness area—the vast majority of the area would continue to be managed as it is now.

Alternative C would not change the undeveloped or natural qualities for the vast majority of the wilderness area. No new developments or human occupation would occur in practically all of the wilderness area. The application of a visitor use management system, including monitoring footprints of designated primitive camping areas and the presence of visitor-created trails would help avoid potential adverse impacts that might otherwise occur to the natural quality of wilderness character. Most visitors in this alternative would find what they perceive to be natural conditions in the wilderness area—visitors would see an alpine tundra/shrubby/forested landscape that appears relatively pristine, with few obvious signs of disturbance or alteration of the natural landscape.

Occasionally, sounds from aircraft and motorboats would be heard, particularly in popular areas (e.g., Twin and Kontrashibuna lakes), affecting the undeveloped quality, although these would be transient infrequent sounds.

Under alternative C, minimal infrastructure may be provided if necessary to protect wilderness character or address resource impacts. If this were to occur in the wilderness area, the undeveloped quality at that site would be diminished, but the natural quality would be improved with a reduction in resource impacts. If additional trails were brushed in the wilderness area, it would also affect some vegetation and adversely affect the natural quality of the area(s). Overall, alternative C could improve the naturalness quality and detract from the undeveloped quality in a few localized spots in the wilderness area.

No actions would occur under alternative C that would result in trammeling or manipulation of resources—all of the wilderness area would remain untrammled in this alternative.

Under alternative C, there would be a change to the “other features” quality—cultural resources and historic sites—that is unique to the Lake Clark Wilderness. With the absence of NPS staff and/or volunteers at the Richard L. Proenneke Historic Site for much of the season and the removal and replication of most on-site and in-cabin artifacts, there would be a noticeable diminishment in the stories and understanding of the value of this site that visitors would receive in this area.

There would be minimal changes in the opportunities for solitude in the wilderness area under alternative C. The vast majority of the wilderness area would receive very low use. Visitors would infrequently encounter NPS staff involved in management of the area, and/or hear aircraft, which would adversely affect opportunities for solitude for short periods of time. There

would also continue to be a few popular places where multiple groups may occasionally encounter each other during the prime use season such as Twin and Kontrashibuna lakes. In particular, the Richard L. Proenneke Historic Site would be an area where, depending on weather, day of the week, and time of day, groups would more likely encounter other groups. However, there would be a low likelihood in this alternative that visitors would encounter NPS staff or volunteers at the site during the peak use period, which would increase opportunities for solitude for visitors in this area.

Opportunities for primitive, unconfined recreation would not change under alternative C and would continue to be present throughout the wilderness area. There would continue to be little or no notable NPS presence (in the form of infrastructure, management activity, or personnel) in the wilderness area. Visitors generally would have freedom to go wherever they desired. The institution of a visitor use management system could restrict visitor behavior in certain popular areas in the wilderness in the future, although these types of restrictions are not expected to occur during the life of this plan. A couple of requirements would continue to affect wilderness visitors, including requirements to keep food away from bears and other wildlife in designated areas and a time limit on camping in the Twin Lakes / Hope Creek area. Although most visitors would likely agree there would be outstanding opportunities for primitive, unconfined recreation in the wilderness area, these

requirements would continue to slightly diminish this quality.

Considered as a whole, the five qualities of wilderness character would not change for the vast majority of the Lake Clark Wilderness under alternative C. At Kontrashibuna Lake there could be long-term, minor, adverse, and beneficial impacts to wilderness character if minimal primitive visitor facilities are provided to address resource impacts. Changes at the Proenneke historic site would result in minor, long-term, beneficial, and adverse impacts on wilderness character. Overall, alternative C would have a similar effect on the park's wilderness character as alternative A—a long-term, minor, adverse impact on the wilderness character in a few localized areas of the park.

Conclusion. The vast majority of wilderness character of the Lake Clark Wilderness would not be affected by alternative C. Alternative C would result in long-term, minor, beneficial, and adverse impacts to wilderness character at Kontrashibuna Lake if minimal primitive visitor facilities are provided to address resource impacts. Changes at the Richard L. Proenneke Historic Site would result in minor, long-term, beneficial, and adverse impacts on wilderness character. Overall, alternative C would have similar minor, long-term, adverse effects on the park's wilderness character as alternative A, primarily due to the effects of visitor use in a few popular areas and changes in management of the Proenneke historic site.

VISITOR USE AND EXPERIENCE

METHODOLOGY

As noted in chapter 1, visitor use and experience includes the level, distribution, and types of visitor use, as well as visitor access, facilities, and information. Together, these factors influence the quality of visitor experience. The overall impact of each alternative was identified based on considering the impacts on these factors.

Alternative A (No-Action)

Analysis. As described in the “Affected Environment” chapter, Lake Clark National Park and Preserve is not on the road network. Under alternative A, the primary access mode would continue to be small aircraft, with some access by boat. Transportation within the park would also not change, and the existing trails would continue to be maintained. Visitor use levels and distribution would likely be consistent with the current trends. No new commercial opportunities would be planned in the foreseeable future; therefore, the variety of visitor activities would also remain the same.

No additional visitor facilities would be made available to visitors, maintaining the sense of solitude in nature that visitors currently experience in the park and preserve. The three existing primitive camping areas and the privy at Hope Creek would continue to be maintained due to relatively high visitation at this site. No cabins would be designated for public use, but use of cabins in emergencies would likely continue at the same level as the present time.

Education and interpretation would continue under the guidance of the Long-range Interpretative Plan. This includes current staffing, management, and

interpretive services, media, and opportunities at Port Alsworth, the Richard L. Proenneke Historic Site, and other locations around the park.

Without any changes in the way visitors are currently managed, however, the quality of visitor experience would decline over time due to degradation of resources at the informal camping areas, along social trails, and at cultural sites.

Overall, implementation of alternative A would result in continued minor, long-term, beneficial, and adverse impacts to visitor use and experience because of the degradation of resources and wilderness character.

Conclusion. Alternative A would continue providing high quality visitor experience and would not alter the amount of visitation at the park and preserve. As such, this alternative would result in continued minor, long-term, beneficial, and adverse impacts to visitor use and experience due to the preservation of the wild and undeveloped nature of the park.

Alternative B (NPS Preferred Alternative)

Analysis. Under alternative B, access to the park would not change, but routes within the park may be slightly improved through the occasional brushing of a few popular trails. In addition, trails around Port Alsworth would be improved and a water route would be established on Lake Clark. Dispersed hiking in wilderness would also be encouraged for visitors seeking solitude. Alternative B includes actions that may result in minimal increases to visitor use levels and slight shifts in current visitor use patterns.

Expanded commercial services at Kontrashibuna Lake and Crescent Lake may encourage more use at those areas and would provide additional opportunities to engage in primitive and unconfined recreation. Whether guided or unguided, visitors would be able to explore the lakes and surrounding rivers to better understand and appreciate wilderness resources and values. Seasonal storage for nonmotorized boats would make it easier for repeat visitors to recreate within the park and would provide better services to the public through commercial service providers who may also store boats there.

Designating several historic cabins for public use would provide another option for visitors who do not want to stay in a private, full-service lodge, but who do not want to camp in the backcountry. These cabins may also allow off-peak and winter use. Primitive camping areas at popular locations would also be maintained to enhance the comfort and convenience of visitors and dispersed wilderness camping would be promoted throughout the park.

An improved restroom facility in Port Alsworth and a bear-resistant privy in Silver Salmon Creek would be provided to better meet public health and safety needs. The pit toilet at Hope Creek would also be maintained.

Education and interpretation would be expanded through a diversity of partnerships and electronic media, consistent with implementation of the Long-range Interpretative Plan. Additional staff would also provide expanded interpretive opportunities, such as the continuance of the popular evening programs held in 2012. Interpretation at the Richard L. Proenneke Historic Site would be changed to create an open-air exhibit experience, with NPS staff present to provide a range of interpretive options. Interpretive panels in the historic public use cabins would enhance the experience of visitors who stay there and

may encourage stewardship of the cabin and the surrounding area.

Overall, alternative B would result in moderate, long-term, beneficial impacts to visitor use and experience.

Conclusion. Alternative B would provide more options to visitors to better tailor their experiences to meet their needs without infringing on the experiences identified as fundamental to the park's purpose and significance. As such, this alternative would result in moderate, long-term, beneficial impacts to visitor use and experience due to the greater diversity of opportunities.

Alternative C

Analysis. Under alternative C, access to and transportation within the park and preserve would not change, nor would visitation levels or visitor use patterns. No new commercial opportunities would be planned in the foreseeable future; therefore, the variety of visitor activities would likely remain the same.

No additional visitor facilities would be made available to visitors, maintaining the sense of solitude in nature that visitors currently experience in the park and preserve. The three existing primitive camping areas and the pit toilet at Hope Creek would continue to be maintained due to higher visitation at these locations. No cabins would be designated for public use, but use of cabins in emergencies would likely continue.

Education and interpretation would continue under the guidance of the Long-range Interpretative Plan. Interpretation at the Proenneke Site, however, would be almost completely self-guided and NPS staff would not be stationed at the site itself. This would allow visitors to experience the site much like Richard L. Proenneke did while he was living there, and would focus on the wilderness aspect of his experience. The

removal of many of the artifacts from the cabin, however, would likely diminish the understanding of and connection to the site that visitors may develop.

Overall, implementation of alternative C would result in continued minor, long-term, beneficial impacts to visitor use and experience.

Conclusion. Alternative C would provide high quality visitor experience and would not influence the amount of visitation at the park and preserve. Reducing staffing and guided interpretation at the Proenneke historic site would further instill in visitors the sense of a wilderness experience. As such, this alternative would result in minor, long-term, beneficial impacts to visitor use and experience due to the preservation of wilderness character throughout the park.



PUBLIC AND AGENCY INVOLVEMENT

The General Management Plan Amendment / Environmental Assessment for Lake Clark National Park and Preserve represents thoughts presented by the National Park Service, park staff, Alaska Native groups, the State of Alaska, and the public. Ongoing consultation and coordination among the tribes, corporations, agencies, and the public were vitally important throughout the planning process. The public had two primary avenues by which it participated in the development of the plan: by participating in public meetings and by responding to newsletters by mail and through the NPS Planning, Environment, and Public Comment (PEPC) website.

PUBLIC MEETINGS AND NEWSLETTERS

Public meetings and newsletters were used to keep the public informed and involved in the planning process for this GMP Amendment. A mailing list was compiled that consisted of members of governmental agencies, organizations, businesses, legislators, local governments, and interested citizens. Comments and suggestions offered by participants have provided NPS planners with important insights about what visitors, subsistence users, commercial operators, state and local governments, and others expect from this plan.

A notice of intent to prepare an environmental impact statement for a general management plan / wilderness study for Lake Clark National Park and Preserve was published in the *Federal Register* (76 FR 31359) on May 31, 2011. The park superintendent initiated government-to-government consultation with associated tribes prior to publication of the notice.

Public Scoping Meetings

Ongoing consultation with the public was initiated in June 2011. A scoping newsletter was distributed inviting the general public to open house events at several locations. Meetings were held in Homer on July 12, 2011, in Soldotna on July 13, 2011, and in Anchorage on July 14, 2011. A total of 13 people participated in the public scoping process at these meetings. Notes were taken and participant concerns were recorded by park staff. Five meetings were held in the resident zone communities. A meeting was held in Nondalton on July 26, 2011, in Pedro Bay on July 27, 2011, in Port Alsworth on July 28, 2011, in Iliamna/Newhalen on July 29, 2011, and in Kokhanok on September 23, 2011. A total of 36 people attended these meetings and notes were recorded for further analysis. A total of 25 comments were submitted after the public meetings, including web form submissions as well as e-mails and mail-back comment cards. These comments, as well as comments collected during the public meetings, were considered and incorporated into the plan.

After reviewing public comments shared during the scoping public comment period, the National Park Service altered the direction of the GMP Amendment to focus on visitor use and access. Additionally, consultation with the Subsistence Resource Council was initiated, and no concerns were raised. Public comments focused on visitor use and access issues such as public cabins, campsites, and expanded opportunities for interpretation and recreation. Therefore, the National Park Service terminated the wilderness study and environmental impact statement portion of the plan and proceeded with an environmental assessment focusing on visitor use and access issues. This change was published in the *Federal Register* (77 FR 33239) on June 5, 2012.

A second newsletter focused on preliminary management alternatives was distributed in March 2012. An update on the wilderness eligibility reassessment was also included in the newsletter. The public was invited to share their feedback at open houses and an online public meeting. The public comment period ran for 45 days, from March 27, 2012 to May 8, 2012. Open house events were held on April 10, 2012, in Homer; April 11, 2012, in Soldotna; and April 12, 2012, in Anchorage. In total, 21 people attended the meetings. Public comments were recorded for further analysis. An online public meeting was held on April 26, 2012, through social media platforms Facebook and Twitter. A total of 47 separate correspondences were received during the comment period. These comments, as well as comments collected during the public meetings, were considered and incorporated into the plan.

A third newsletter was distributed to the public and tribes in February 2013. The newsletter was informational in nature, and focused on the preferred alternative for the draft plan and included a schedule for the rest of the planning process. The newsletter was left open on PEPC for comments for 30 days, so that comments could be accepted, but comments were not expressly requested. Public comments generally focused on the zones and the number of cabins. The National Park Service considered all comments and made changes to the zone names and descriptions. The number of cabins was changed back to what was stated in the alternatives newsletter.

CONSULTATION WITH OTHER AGENCIES, OFFICIALS, AND INDIVIDUALS

During the preparation of this plan, the members of the planning team met and consulted with various entities, as follows:

Section 7 Consultation

The Endangered Species Act of 1973, as amended, requires in section 7(a)(2) that each federal agency, in consultation with the Secretary of the Interior, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Using the USFWS Alaska Region endangered species consultation website map, the planning team assessed whether there was critical habitat or listed species in the park and preserve. Critical habitat for the northern sea otter is along Cook Inlet, but this species is not found in the park. Additionally, several listed marine species are not found in the park and preserve. Therefore, section 7 consultation with the U.S. Fish and Wildlife Service was not necessary.

Section 106 Consultation

Agencies that have direct or indirect jurisdiction over historic properties are required by section 106 of the National Historic Preservation Act to take into account the effect of any undertaking on properties eligible for listing in the National Register of Historic Places. To meet the requirements of 36 CFR 800, the National Park Service initiated consultation with the Alaska state historic preservation office as part of state review of this document. Park staff met with the state historic preservation office staff on April 9, 2012; July 13, 2012; and February 5, 2013. Discussions focused on implementation of the preferred alternative, section 106 consultation processes and collaboration, and the need to include archeology as an impact topic. Archeology was added as an impact topic due in part to these consultation discussions.

State of Alaska Consultation

Throughout the planning process, the National Park Service has consulted with the State of Alaska. A draft of this document was provided to the State of Alaska ANILCA program office for review. Park and regional office staff met with state staff on December 19, 2012. Discussions focused on questions and concerns about the plan and suggestions from the state to edit some language in the plan. Changes to the plan resulting from these discussions included clarifications to language in the draft plan about management zoning, wilderness eligibility, and hunting.

GOVERNMENT-TO-GOVERNMENT CONSULTATION

Prior to publishing a notice of intent in the *Federal Register* to prepare an environmental impact statement for an amendment to the park's 26-year-old general management plan, the Lake Clark National Park and Preserve superintendent initiated ongoing consultation in a letter sent to tribes and Native corporations on May 24, 2011. The letter stated the park's intent to conduct government-to-government consultation with tribes as well as to consult with tribes and corporations pursuant to section 106 of the National Historic Preservation Act. The Lake Clark National Park and Preserve community liaison based in the Pedro Bay tribal office communicated largely via phone and e-mail with tribal offices to call attention to the planning newsletter that had been mailed to corporations and tribes, to provide additional copies, and to encourage participation in the upcoming community meetings. The liaison assisted park staff in communicating with tribes and encouraging comment and input on the planning process.

Five public scoping meetings were held in the park's resident zone communities during the summer of 2011 to discuss the planning effort. NHPA consultation was not the purpose of the meetings, although attendees

had the opportunity to raise concerns about historic properties of significance that might be affected by proposed actions. These were general community meetings during the peak of the subsistence fishing season. Tribal governments were not represented, so these meetings did not constitute government-to-government consultation.

A second government-to-government consultation letter was sent by the superintendent to the tribes (with native corporations copied) on October 25, 2011, to follow up on the summer 2011 public meetings (see above) and to share the record of public comments from those meetings. This letter invited and encouraged participation in the planning process and specifically invited tribes to request that meetings be scheduled with the superintendent at their convenience.

The title of the frontcountry zone, which was termed "developed zone" in early draft elements of the plan, was changed to "frontcountry" zone due to suggestions during tribal consultation. Further modifications of the zone occurred by deleting the frontcountry zone and adding an administrative zone for Port Alsworth.

A third letter was mailed February 19, 2013, to continue consultation on the plan. Meetings were held in April 2013 with the Nondalton and Iliamna Tribal Council. No concerns about the GMP Amendment were raised.

ALASKA NATIVE CLAIMS SETTLEMENT ACT CONSULTATION

On May 25, 2011, and October 25, 2011, ANCSA corporations associated with Lake Clark National Park and Preserve received letters initiating ongoing consultation. Corporations were also invited to the public meetings in 2011 and 2012. Additionally, new USDI policy on consultation with ANCSA corporations was released in August

2012. Although elements in this plan are not anticipated to affect corporation land, water, or resources, or impact the ability of corporations to participate in departmental programs, consultation was continued in spring 2013 via letters mailed March 2013. There were concerns raised about the term Non-NPS Land Interest in the alternatives map legend. As a result, a change was made to the legend to depict Non-NPS Land (or Land Interest).

INVOLVEMENT OF OTHER FEDERAL AND STATE AGENCIES, REGIONAL AND LOCAL GOVERNMENTS, AND PARTNER ORGANIZATIONS

NPS staff communicated on occasion with representatives of federal and state agencies and regional and local governments on topics of mutual interest related to this plan. The National Park Service informed these groups of the plan and invited suggestions for additional discussion topics and planning issues. These agencies/organizations included:

Federal Government Agencies

- U.S. Bureau of Land Management
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

Local Communities and Governments

- City of Homer
- City of Kenai
- City of Newhalen
- City of Nondalton
- Kenai Peninsula Borough
- Lake and Peninsula Borough

Nongovernment Organizations and Businesses

- Alaska Conservation Foundation
- Alaska Wilderness League
- Alaska Wilderness Recreation & Tourism
- Alaska Wildlife Alliance
- Earthjustice Legal Defense Fund
- National Parks Conservation Association
- National Wildlife Federation
- Natural Resources Defense Council
- The Nature Conservancy of Alaska
- The Pebble Partnership
- The Wilderness Society
- Resources Development Council
- Sierra Club
- Wilderness Watch
- Wildlife Conservation Society

LIST OF AGENCIES, ORGANIZATIONS, AND INDIVIDUALS RECEIVING A COPY OF THIS DOCUMENT

FEDERAL AGENCIES

- U.S. Bureau of Land Management
- U.S. Fish and Wildlife Service

VILLAGE TRIBAL COUNCILS

- Chickaloon Native Village
- Kenaitze Indian Tribe
- Knik Tribal Council
- Lime Village Traditional Council
- Native Village of Tyonek
- Newhalen Village Council
- Ninilchik Traditional Council
- Nondalton Village Council
- Pedro Bay Village Council
- Seldovia Village Tribe
- Tribal Council of Salamatof
- Village of Iliamna
- Village of Stony River

ANCSA REGIONAL AND VILLAGE CORPORATIONS

- Alaska Peninsula Corporation
- Bristol Bay Native Corporation
- Calista Corporation
- Chickaloon Moose Creek Native Association, Inc.
- Cook Inlet Region, Inc.
- Iliamna Natives Limited
- Kenai Natives Association, Inc.
- Kijik Corporation
- Knikatu, Inc.
- Lime Village Company
- Ninilchik Natives Association, Inc.
- Pedro Bay Corporation
- Salamatof Native Association
- Seldovia Native Association, Inc.
- Tyonek Native Corporation

STATE OFFICIALS, SENATORS, AND REPRESENTATIVES

- U.S. Senator Mark Begich
- U.S. Senator Lisa Murkowski

- U.S. Representative Donald Young

STATE AGENCIES AND COMMISSIONS

- Judith E. Bittner, Chief, State Historic Preservation Office
- Stan Leaphart, Citizens Advisory Commission on Federal Areas
- Susan Magee, ANILCA Project Coordinator State of Alaska

REGIONAL AND LOCAL GOVERNMENTS

- City of Homer
- City of Kenai
- City of Soldotna
- City of Newhalen
- City of Nondalton

ORGANIZATIONS, BUSINESSES, AND UNIVERSITIES

- Alaska Outdoor Council
- National Park Conservation Association
- The Pebble Partnership
- Resource Development Council of Alaska
- Sierra Club Alaska
- The Wilderness Society
- Wilderness Watch

LIBRARIES

- Z. J. Loussac Public Library

NEWSPAPERS AND MAGAZINES

- *Anchorage Daily News*

LAKE CLARK SUBSISTENCE RESOURCE COMMISSION MEMBERS

- Glen Alsworth
- Lary Hill

Appendixes, References, Preparers, and Consultants

A



**APPENDIX A: ANILCA SECTION 810(A)
SUBSISTENCE EVALUATION**

ANILCA SECTION 810(A) SUBSISTENCE EVALUATION

INTRODUCTION

This section was prepared to comply with Title VIII, section 810 of the Alaska National Interest Land Conservation Act (ANILCA) of 1980. It summarizes the evaluations of potential restrictions to subsistence activities that could result should the National Park Service (NPS) allow the adoption and implementation of an amendment to the 1984 *Lake Clark National Park and Preserve General Management Plan*.

EVALUATION PROCESS

Section 810(a) states:

“In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands... the head of 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 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 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. . . 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. In establishing these new park areas, ANILCA Title II states the purposes for which Congress created each unit and outlines the human uses and activities that may be permitted. ANILCA Title II Section 201(7)(a) states the following purposes for Lake Clark National Park and Preserve:

“To protect the watershed necessary for 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 active volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state; and to protect habitat for and populations of fish and wildlife including but not limited to caribou, Dall sheep, brown/grizzly bears, bald eagles, and peregrine falcons. . . 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 of subsistence uses 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 the use” (Section 810, ANILCA).

PROPOSED ACTION ON FEDERAL PUBLIC LANDS

The purpose of the EA is to amend and revise the 1984 General Management Plan (GMP) for Lake Clark National Park and Preserve to provide management direction for the next 15 to 20 years. The EA is being prepared in response to increasing levels of park use and visitation; changing resource management and protection needs, and requests for activities and facilities not anticipated or addressed in the 1984 General Management Plan.

The proposed action alternatives provide a spectrum of management opportunities related to cultural and resource protection, visitor use, scientific research, administrative and commercial services. The following three alternatives are being considered:

Alternative A: Continuation of current NPS management direction for visitor activities and protection of wilderness and park resources. (*No Action*)

Alternative B: Expand opportunities for a diversity of visitor activities and protect and maintain wilderness and park resources. (*NPS Preferred Alternative*)

Alternative C: Accommodate current use patterns with minimal new infrastructure to preserve the park's wilderness character.

These alternatives are described in Chapter 2 of the EA and assessed for their potential impacts to subsistence resources and uses in this analysis. All of the alternatives protect the opportunity for NPS federally qualified subsistence users to continue traditional subsistence uses within Lake Clark National Park and Preserve as authorized in ANILCA.

AFFECTED ENVIRONMENT

This section summarizes the affected environment as it pertains to subsistence resources and use.

Lake Clark National Park and Preserve (LACL) is on the northern end of the Alaska Peninsula approximately 140 miles southwest of Anchorage, 50 miles west of Homer and 40 miles west of Kenai in the Lake and Peninsula Borough. The landscape includes Lake Clark—the sixth-largest lake in Alaska— boreal rainforests and saltwater marshes on the Cook Inlet coast; open expanses of tundra; mixed forests of spruce, birch and balsam poplar; and rugged rocky peaks, active volcanoes and glaciers along the Chigmit Mountains, which separate the coastal areas of the park from the interior. The region's primary subsistence resources are sockeye salmon, caribou, moose, Dall sheep, brown bear, black bear, migratory and upland game birds, small mammals such as snowshoe hare, furbearing animals, berries, various plants, and dead and live trees for construction and firewood.

ANILCA authorizes subsistence uses within LACL and on other Federal public lands in Alaska where specifically permitted. ANILCA also permits sport hunting in areas designated as national preserves. LACL contains 2,618,713 acres in the park and 1,410,294 acres in the preserve. Portions of the park and preserve are located in Game Management Units (GMU) 9A, 9B, 16B, 17B, 19B and 19C. Lands managed by the Bureau of Land Management share common boundaries with LACL on the east side of the park and along the southwest corner of the preserve. These are the closest Federal public lands to the proposal area where Title VIII subsistence activities occur.

To engage in subsistence activities within the park, individuals must either live inside the park, in one of the park's six designated resident zone communities, or have a subsistence use permit issued by the park superintendent. Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay and Port Alsworth are designated resident zone communities (36 CFR 13.1602) for Lake Clark National Park. Rural residents who do not reside in the park or a resident zone community, but who have

(or are members of a family that has) customarily and traditionally engaged in subsistence activities in the park, without the use of aircraft, may continue to do so pursuant to a subsistence eligibility permit issued by the park superintendent in accordance with federal regulations (36 CFR 13.440). To engage in subsistence activities within the preserve, individuals are not required to live in a resident zone community, but must live in a rural community or area that has a positive customary and traditional use determination for the species and area they wish to hunt or fish.

Eligibility for the Federal Subsistence Program in the Preserve is determined primarily through customary and traditional (C&T) use determinations by the Federal Subsistence Board. When communities or areas have a positive C&T determination for a species in a particular game unit or fishery management area, only residents of those communities or areas have a Federal subsistence priority and are eligible to hunt, fish or trap that species in that game unit or fishery management area under federal subsistence regulations. Table 1 lists the areas and communities that have positive C&T use determinations for the fish and game species in LACL most commonly utilized for subsistence.

Table 1. Customary and Traditional Use Determinations for Species Used for Subsistence in LACL (USFWS)

Species	GMU	Residents with Positive Customary and Traditional Use Determinations
Brown Bear	9A	Rural residents of Pedro Bay
	9B	Rural residents of 9B
	16B	No Federal Subsistence Priority
	17B	Rural residents of Unit 17
	19B	Rural residents of Units 19 and 18 in the Kuskokwim River drainage upstream from and including the Johnson River
	19C	No Federal Subsistence Priority
Caribou	9A	Rural residents of Units 9A, 9B and 17
	9B	Rural residents of Units 9A, 9B and 17
	16B	Rural residents of 16B
	17B	Rural residents of Units 9B, 17, Lime Village and Stony River
	19B	Rural residents of Units 19A, 19B, 18 (with in the Kuskokwim River drainage upstream from and including the Johnson River), Marshall, Pilot Station, Russian Mission and St. Mary's
	19C	Rural residents of Units 19C, Lime Village, McGrath, Nikolai and Telida
Sheep	9A	All rural residents
	9B	Rural residents of Iliamna, Newhalen, Nondalton, Pedro Bay and Port Alsworth, and Lake Clark National Park and Preserve within Unit 9B
	16B	No Federal Subsistence Priority
	17B	All rural residents

Species	GMU	Residents with Positive Customary and Traditional Use Determinations
	19B	All rural residents
	19C	All rural residents
Fox	ALL LACL GMUs	All rural residents (For both hunting and trapping in GMUs 9A, 9B, 16B, 17B, 19B and 19C)
Lynx	ALL LACL GMUs	All rural residents (For both hunting and trapping in GMUs 9A, 9B, 16B, 17B, 19B and 19C)
Moose	9A	Rural residents of Units 9A, 9B, 9C and 9E
	9B	Rural residents of Units 9A, 9B, 9C and 9E
	16B	Rural residents of 16B
	17B	Rural residents of Unit 17, Goodnews Bay, Levelock, Nondalton and Platinum
	19B	Rural residents of Unit 18 (with in the Kuskokwim River drainage upstream from and including the Johnson River) and Unit 19
	19C	Rural residents of Unit 19
Ptarmigan	ALL LACL GMUs	All rural residents
Salmon & Other Freshwater Fish	Bristol Bay Area	Residents of the Kvichak/Iliamna-Lake Clark drainage
	Kuskokwim Area	Residents of the Kuskokwim Area, except those persons residing on United States military installations located on Cape Newenham, Sparrevohn USAFB, and Tataline ASAFB
Wolf	ALL LACL GMUs	(Hunting) Rural residents of Units 6, 9, 10 (Unimak Island only), 11, 12, 12, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, and Chickaloon (Trapping) All rural residents
Wolverine	ALL LACL GMUs	All rural residents (For both hunting and trapping)

Salmon, particularly sockeye salmon, represent the majority of subsistence fish harvested in the park and preserve. Subsistence fishers use gillnets or beach seines to take sockeye salmon in the summer, which are then preserved for use throughout the year by smoking, canning or freezing. Subsistence salmon fisheries occur primarily on Lake Clark near Port Alsworth and adjacent to Native allotments, homesteads and private residences around the lakeshore. Subsistence harvested fish are also taken in the preserve on the south shore of Six Mile Lake near the resident zone community of Nondalton. While meat from large mammals such as caribou, moose, Dall sheep, and brown and black bears are important food sources for federally-qualified local rural residents, salmon and other fish species represent between 65% (Lime Village) and 87% (Pedro Bay) of the total protein harvested and consumed by residents of the park’s resident zone communities (Table 2).

Most subsistence hunting within LACL occurs in areas accessible by foot; by boat in the spring, summer and fall or by snow machine in the winter. Federal registration permits are required in the portion of Unit 9B within LACL boundaries for federal subsistence harvests of brown bear and Dall sheep; but not for other subsistence hunts including black bear, caribou, moose and furbearers. Federal registration permits are also not required for federal subsistence hunts in those portions of Units 16B, 17B, 19B and 19C located in the park or preserve. A State registration permit is required for federal subsistence harvests of moose in GMUs 9A, 9B, 17B and 19C and for federal subsistence brown bear hunting in Unit 19B. Local residents may also elect to harvest under State of Alaska general hunting or fishing regulations. Permits are not currently required for the subsistence harvest of firewood or for gathering other plant resources such as berries or edible plants.

Sport hunting is authorized within the preserve under section 1313 of ANILCA. The relatively close proximity of the preserve to Anchorage and availability of caribou from the Mulchatna Caribou Herd has made it a historically popular destination for sport hunters. Most sport hunters access the preserve either by private aircraft or chartering air taxi or transporter services from Anchorage, Kenai or Port Alsworth. Since the early to mid-2000s, the number of sport hunters using the preserve has declined due to changing migration patterns of the Mulchatna Caribou Herd, an overall drop in the caribou population and corresponding reductions in bag limits. Guided sport hunting occurs only under the conditions of a concession permit. The preserve is divided into three guided hunting units. One guide unit is currently vacant and two sport hunting guide concessions operate in the remaining areas.

In addition to federally-qualified subsistence hunters and fishers, residents of the State of Alaska and nonresidents are permitted to hunt and fish in the preserve under State of Alaska regulations, consistent with authorized methods and means, seasons and bag limits. Sport fishing is also allowed in the park pursuant to 36 CFR 13.66 (a).

Table 2. Consumption in Pounds per Capita of Fish, Wildlife, Berries and Edible Plants by Residents of LACL Resident Zone Communities (ADF&G)

NOTE: Date in parenthesis is the year in which ADF&G conducted the most recent community harvest survey

	Iliamna (2004)	Lime Village (2007)	Newhalen (2004)	Nondalton (2004)	Pedro Bay (2004)	Port Alsworth (2004)
Salmon	370	555	502	253	250	89
Non-salmon Fish	34	49	31	33	15	12
Caribou	7	158	59	16	2	9
Moose	25	63	37	55	27	6
Dall Sheep	0	0	0	0	0	6
Brown Bear	0	0	3	0	0	0
Black Bear	0	20	1	2	0	0
Small Mammals	0	17	3	7	0	1

	Iliamna (2004)	Lime Village (2007)	Newhalen (2004)	Nondalton (2004)	Pedro Bay (2004)	Port Alsworth (2004)
Birds	4	21	16	3	2	1
Berries and Edible Plants	19	48	29	18	6	4

The National Park Service recognizes that patterns of subsistence use vary temporally and spatially depending on access, proximity to villages and traditional use areas, and the availability of wildlife, fish and other renewable natural resources. A subsistence harvest in a given year may vary considerably from previous years because of difficulties accessing subsistence use areas due to increased fuel costs or poor travelling conditions. They are also influenced by factors that affect animal abundance such as weather, migration patterns, changes in habitat and natural population cycles.

SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources which 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 affect 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:

Alternative A: No Action Alternative

The No Action Alternative reflects current management conditions at Lake Clark, which would continue for the life of the GMP Amendment. Under this alternative, the NPS would continue managing LACL in compliance with existing laws, regulations and policies, and the 1984 General Management Plan. No changes would occur to the management of visitor activities and emphasis would continue to be placed on protected park resources and designated and eligible wilderness.

The potential for Alternative A to reduce or redistribute populations of fish important for subsistence is negligible to minor. Likewise, potential impacts to wildlife populations are negligible to minor and dependent on the nature and intensity of human activity, level of human disturbance, and habitat modification associated with existing uses in the park and preserve. Alternative A represents the status quo, which has not created any significant reductions in important fish and wildlife populations, caused any redistribution of subsistence resources, or resulted in habitat losses.

Alternative B: NPS Preferred Alternative

Alternative B would expand opportunities for visitors to enjoy a greater diversity of activities in the park while continuing to protect and maintain LACL's resources and wilderness character. Some primitive visitor facilities, such as backcountry trails and camping areas, and expanded interpretive and commercial visitor services would be provided mostly in areas that are not designated wilderness—such the majority of the preserve, and areas near Lake Clark and along the coast. Management zoning for this alternative would provide for a variety of visitor experiences and amenities, and a limited amount of park management in certain areas to protect resources.

The overall potential for Alternative 2 to reduce or redistribute populations of fish important for subsistence is negligible to minor. Potential impacts to wildlife populations are also negligible to minor depending on the nature and intensity of human activity, level of human disturbance, and degree of habitat modification associated with expanded interpretive and commercial visitor services in particular areas. Alternative B may potentially impact wildlife populations and habitat in areas of concentrated activity, but should not affect the overall health or abundance of species important for subsistence. Any potential habitat losses would be negligible.

Alternative C:

Alternative C focuses on preserving the wilderness character of the park, while accommodating current patterns of visitor use. This alternative largely maintains existing access, visitor facilities, and visitor support for the most primitive visitor experiences and the lowest level of park management.

The potential for Alternative C to reduce or redistribute populations of fish important for subsistence is about the same as Alternatives A and B; negligible to minor and dependent on the nature and intensity of human activity, and level of human disturbance in particular areas. Alternative C may result in fewer potential impacts to wildlife populations than Alternatives A or B, since human disturbances will be minimized through measures to preserve wilderness character. The potential for habitat loss is negligible to none.

2) Restriction of Access:

Rights of access for subsistence activities on NPS lands are granted by §811 of ANILCA, however §816 allows temporary closures to subsistence in emergency situations that threaten public safety. Emergency closures necessary for reasons of public safety cannot exceed 60 days and may not be extended without public notice and public hearing. None of the proposed alternatives restrict access of federally-qualified subsistence users to areas of LACL used for hunting and other authorized subsistence activities.

3) Increase in Competition:

No Action Alternative

Alternative A has negligible potential for increasing competition between federally-qualified subsistence users and other hunters and fishers utilizing fish and wildlife resources in the park or preserve. Federally-qualified subsistence hunters living in the park or a resident zone community have no competition from nonlocal hunters since the park is closed to all sport hunting. In addition, federal subsistence hunting regulations, which also apply to preserve areas, often provide subsistence hunters with longer seasons for certain species in specific game management units than State sport hunting regulations. Federal subsistence regulations also provide larger bag limits for some species in particular areas. These longer seasons create a temporal separation between sport and subsistence hunters that helps alleviate the potential for competition between user groups. Similarly, competition for fish, particularly salmon, is also negligible. Subsistence users prefer to use gillnets and beach seines to harvest salmon in large quantities to preserve for use throughout the year while sport anglers enjoy the challenge of catching individual fish using rod and reel. These activities generally take place in different parts of Lake Clark and its tributaries, which reduces the likelihood of competition between subsistence fishers and sport anglers.

Provisions of ANILCA and NPS regulations mandate that if and when it is necessary to restrict the taking of fish or wildlife on NPS lands, subsistence users will have priority over other user groups. Implementation of this subsistence preference would reduce or eliminate any increased competition that might result from increased visitation by backcountry recreationists, sport hunters or anglers. In addition, the superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

Alternatives B and C

The adoption and implementation of new visitor services and management approaches outlined in Alternatives B and C may result in negligible increases in competition between federally-qualified subsistence users and other hunters and fishers. However, provisions of ANILCA that prohibit sport hunting in the park; federal subsistence regulations that provide federally-qualified subsistence users greater access to fish and game resources than State regulations, and existing measures to protect park resources and ensure the priority of subsistence uses can mitigate any increase in competition between users groups. In addition, nonlocal visitation to LACL is limited by the expense and logistics of getting there and the annual number of visitors is not expected to increase appreciably due to changes outlined in the general management plan.

Provisions of ANILCA and NPS regulations mandate that if and when it is necessary to restrict the taking of fish or wildlife on NPS lands, subsistence users will have priority over other user groups. Implementation of this subsistence preference would reduce or eliminate any increased competition that might result from increased visitation by backcountry recreationists, sport hunters or anglers. In addition, the superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

AVAILABILITY OF OTHER LANDS

– Lands managed by the Bureau of Land Management share common boundaries with LACL and are the closest federal public lands to the proposal area where Title VIII subsistence occurs. There are other lands outside LACL where local rural residents may harvest subsistence resources under State of Alaska general hunting and fishing regulations including state, tribal and private lands and lands belonging to ANCSA corporations.

ALTERNATIVES CONSIDERED

- The three alternatives described in the EA all pose similar levels of potential adverse impacts to federally-qualified subsistence users. Since annual visitation to the park is not expected to increase appreciably under the no-action or action alternatives, the likelihood of significant potential adverse impacts is reduced.
- The potential for adverse impacts to federally-qualified subsistence users by the No Action Alternative is negligible and currently managed through existing laws, regulations and policies governing public use of park lands, including subsistence. The potential adverse impacts presented by Alternatives B and C are similar to those in the No Action Alternative and should not affect access to or competition for resources importance for subsistence.

FINDINGS

All three alternatives present some potential for adverse impacts to fish and wildlife populations and habitat, and subsistence uses, but those impacts are generally negligible and easily addressed through existing measures to protect park resources and ensure the priority of subsistence uses above all other consumptive uses.

The No Action Alternative represents the status quo and there have been no significant adverse impacts to subsistence users by visitors to LACL since the park and preserve were established in 1980. Alternative B proposes increased recreational opportunities through the designation of public use cabins and a boat storage or rental facility on Kontrashibuna Lake near the terminus of the Tanalian Falls Trail. Since the areas proposed for potential public use cabins and the boat facility are not heavily used by federally-qualified subsistence users, increased visitor use in those areas should not disrupt subsistence uses or access to resources. Alternative C emphasizes protecting LACL's wilderness character, but proposes few changes that would impact subsistence users any more than the status quo.

This analysis concludes that the NPS preferred action outlined in Alternative B will not result in a significant restriction of subsistence uses or access to subsistence resources. Alternative B provides LACL greater flexibility to manage visitor use in the park and preserve and meets the needs of a wider range of visitors than either the No Action Alternative or Alternative C. In addition, the designation of public use cabins is a potential benefit for subsistence users who may use as emergency shelter cabins, particularly during the winter months.

REFERENCES CITED

2011/2013 Federal Subsistence Fisheries Management Regulations, Office of Subsistence Management, U.S. Fish and Wildlife Service.

2012/2014 Federal Subsistence Wildlife Management Regulations, Office of Subsistence Management, U.S. Fish and Wildlife Service.

Alaska Department of Fish and Game, Subsistence Division
2012 Harvest Information for Community, retrieved December 7, 2012, from the Community Subsistence Information System.

APPENDIX B: WILDERNESS ELIGIBILITY REASSESSMENT

WILDERNESS ELIGIBILITY REASSESSMENT

BACKGROUND

All lands in the national park system must be assessed to determine if they are eligible or ineligible for inclusion in the national wilderness preservation system (Alaska National Interest Lands Conservation Act (ANILCA) Section 1317, the Wilderness Act, NPS *Management Policies 2006*, and Director's Order 41). To meet this requirement, Lake Clark National Park and Preserve (LACL) included a wilderness eligibility review as part of its 1984 *Lake Clark National Park and Preserve General Management Plan* (GMP). The assessment found approximately 952,500 acres eligible for wilderness designation, in addition to the 2.47 million acres designated as wilderness under ANILCA in 1980. The 1984 General Management Plan identified two areas along the eastern edge of the park as "less suited" for wilderness primarily due to Alaska Native Claims Settlement Act (ANCSA) selections and a possible land exchange. NPS *Management Policies 2006*, Section 6.2.1, states that lands that were assessed as ineligible for wilderness because of nonconforming or incompatible uses must be reevaluated if the nonconforming uses have been terminated or removed. This Wilderness Eligibility Reassessment evaluates those lands for eligibility.

STUDY AREA

The two areas that the 1984 GMP did not explicitly identify as eligible were labeled as Unit 2 and Unit 3 (see map "Wilderness Eligibility Reassessment, 2 and 3"). Unit 2 consists of approximately 19,000 acres and Unit 3 is approximately 259,000 acres.

Unit 2. This unit protects a portion of the headwaters of Big River. It protects features such as a big plunge-pool waterfall near Lake Clark pass, small alpine lakes, and a moraine system that includes the Pleistocene high water mark of Cook Inlet.

The 1984 GMP stated, "This area is less suited for inclusion in wilderness because it projects into nonwilderness areas outside the park boundaries. It does possess wilderness qualities and is also suitable for exchange. . ." This language indicates that the area possesses wilderness qualities but suggests that the parcel was being considered for a land exchange, which has not occurred. The language is somewhat ambiguous in terms of clearly identifying whether or not this parcel meets eligibility criteria or not, warranting a re-evaluation. A determination of eligibility would not preclude a land exchange in the future if there was a specific proposal involving a desirable parcel for exchange that met the public's interests and had sufficient support.

Unit 3. The northern part of this unit includes Crescent Lake and the Crescent River and captures the hillside coming off Mount Redoubt. The southern part encompasses the coastal areas at Tuxedni Bay, Silver Salmon Creek and Chinitna Bay. It includes the Tuxedni and Clam Cove pictographs, critical bear habitat, the Red Glacier, and Hickerson Lake.

The 1984 GMP stated, "Dependent upon the disposition of Native selections in this area, very little land may remain that could be considered for wilderness." Much of the land comprising Unit 3 was not conveyed to the Native Corporation and was ultimately retained in federal ownership.

ELIGIBILITY CRITERIA

National Park Service lands are considered eligible if they are at least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition and if they meet five primary criteria (*NPS Management Policies 2006* section 6.2.1.1).

The five primary criteria are:

- The earth and its community of life are untrammelled by humans, where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

NPS Management Policies 2006 identify nine additional guidelines to be considered in determining eligibility:

- A wilderness area may contain significant ecological, geological, or other features of scientific, educational, scenic, or historical value, although it does not need these things to be considered eligible for wilderness designation.
- Lands that have been logged, farmed, grazed, mined, or otherwise used in ways not involving extensive development or alteration of the landscape may also be considered eligible for wilderness designation if, at the time of assessment, the effects of these activities are substantially unnoticeable or their wilderness character could be maintained or restored through appropriate management actions.
- An area will not be excluded from a determination of wilderness eligibility solely because established or proposed management practices require the use of tools, equipment, or structures if those practices are necessary to meet minimum requirements for the administration of the area as wilderness.
- In the process of determining wilderness eligibility, lands will not be excluded solely because of existing rights or privileges (e.g., mineral exploration and development, commercial operations, agricultural development, grazing, or stock driveways). If the National Park Service determines that these lands possess wilderness character, they may be included in the eligibility determination so that they can be considered for designation as wilderness or potential wilderness.
- Lands containing aboveground or buried utility lines will normally not be considered as eligible for wilderness designation, but they can be considered as eligible for "potential" wilderness designation if there is a long-term intent to remove the lines. No new utility lines may be installed in wilderness, and existing utility lines may not be extended or enlarged except as may be allowed pursuant to section 1106 of the Alaska National Interest Lands Conservation Act (16 USC 1133[c]).
- Historic features that are primary attractions for park visitors will generally not be recommended as eligible for wilderness designation. However, an area that attracts visitors primarily for the enjoyment of solitude and unconfined recreation in a primitive setting may also contain cultural resource features and still be included in wilderness. Historic trails may serve and be maintained as part of the wilderness trail system, as identified and coordinated within an approved wilderness management plan and the park's cultural

resource plan. The presence of historic structures does not make an area ineligible for wilderness. A recommendation may be made to include a historic structure in wilderness if (1) the structure would be only a minor feature of the total wilderness proposal; and (2) the structure will remain in its historic state, without development.

- Dams within or affecting the area being studied do not make a waterway ineligible for wilderness designation. The nature and extent of impacts and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies.
- The established use of motorboats, snowmobiles, or aircraft does not make an area ineligible for wilderness. The nature and extent of any impacts on the environment and on eligibility, and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies, along with the possible need to discontinue the use.
- Overflights do not make an area ineligible for wilderness designation. The nature and extent of any overflight impacts and the extent to which the impacts can be mitigated would need to be addressed in subsequent wilderness studies.

ASSESSMENT

The purpose of this assessment is to determine whether or not the lands in Units 2 and 3 meet these eligibility criteria. The Assessment does not consider management goals or feasibility of managing these lands as wilderness; a Wilderness Study includes that level of analysis and is the next step in the wilderness designation process. A Wilderness Study is consistent with the requirements of the National Environmental Policy Act and the National Historic Preservation Act. No timeframe has been established for such a study. In preparing this assessment, the park considered existing and updated park information, including plans completed since 1984, results from scientific investigations, recent work on describing and monitoring wilderness character, and updated land status.

- *At least 5,000 acres or of sufficient size to make practicable their preservation and use in an unimpaired condition*

The areas under consideration are of sufficient size to make practicable their preservation and use in an unimpaired condition as they are more than 5,000 acres in size and contiguous to existing designated wilderness.

- *The earth and its community of life are untrammelled by humans, where humans are visitors and do not remain*

Unit 2 is untrammelled by humans and contains no evidence of past trammeling.

Unit 3 is largely untrammelled by humans, though logging has occurred in the Crescent River area. While effects of logging are not readily apparent, and the area can restore itself naturally, much of the area is in nonfederal ownership and therefore is not a part of this wilderness eligibility reassessment. There was a small saw mill around Red River and small-scale logging by the Red River delta; this is an isolated area and it is recovering from past disturbance. The surrounding lands are natural and untrammelled, including the ridges above the Red Glacier, referred to as Diamond Ridge due to slate ribbons littered with quartz crystals.

The park has permitted research that involves collaring wildlife and collecting natural resource specimens in Units 2 and 3, but it is at extremely low levels, and rarely occurs outside of the coastal areas.

The remainder of Units 2 and 3 are relatively void of manipulation. These units protect a complex mosaic of landforms and ecosystems that continue to evolve from dynamic tectonic, volcanic, glacial, and climatic processes. The isolation, geography, and weather associated with these areas make human influence difficult.

The park does not engage in wildlife manipulation, and wildlife habitat varies naturally based on complex interactions between recent physical (e.g., precipitation, temperature) and biological (e.g., insect outbreaks, plant disease) factors. Wildlife are free to move through the landscape and populations that range outside the park are free to come and go. Water flows through intact ecosystems connecting mountain headwaters with tidally influenced streams.

- *The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation*

Most of the study area is undeveloped. Unit 2 contains no developments. Unit 3 contains developments on private inholdings (which are not being considered in this assessment) and some minor administrative developments on NPS land to aid in managing the coastal region of the park.

There are about a dozen private inholdings along the Silver Salmon Creek coast, including two commercial lodges and a number of seasonal residences. A commercial lodge operates on private land at Crescent Lake, which attracts visitors for bear viewing and fishing and has become a popular fly-in destination over the past couple years. There is also a lodge located on private land at Chinitna Bay and a seasonal commercial bear-viewing operation on a private parcel. While the National Park Service is not assessing eligibility of private lands, activities and developments on these lands may be seen and/or heard from adjacent NPS land.

The headwaters area of the Johnson River contains a private inholding where mining is possible. A mining camp and air strip have been established. If the mine is developed, the land owner would be provided reasonable access which could include a road from the mine to the coast through park land.

On National Park Service land, there is an NPS administrative cabin and an ORV trail system along the Silver Salmon Creek coast, an NPS administrative cabin located at the head of Chinitna Bay, and an NPS administrative cabin at Crescent Lake. Those three areas (Silver Salmon Creek, Chinitna, and Crescent Lake) would be excluded from eligibility due to land status and these aforementioned developments.

There are a handful of cabins along the coast (especially in the Tuxedni Bay area where many are still used as a base of operations for commercial setnet fisheries) and one cabin along the Johnson River. Along the northern part of Tuxedni Bay there are remnant developments from the clamming industry, and there are set net sites along the coast. The remainder of the unit is undeveloped.

- *The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable*

These areas appear natural and wild. Unit 2 contains no signs of modern humans. Unit 3 contains Alaska Volcano Observatory seismic stations, a RAWS weather station, a Plate Boundary

Observatory site, and an old National Oceanic and Atmospheric Administration cabin on Slope Mountain. As mentioned above, the only significant developments are found along the coast, which would be excluded from eligibility. Instruments located inland are barely noticeable across the landscape and do not include large structures such as prominent buildings or roads. It is unlikely that visitors will find any sign of contemporary human civilization such as mechanized equipment, signs, and other modern artifacts in these areas.

- *The area is protected and managed so as to preserve its natural conditions*

Units 2 and 3 have been managed since designation to preserve natural conditions. It is a dynamic landscape where forces of nature continue unfettered and a rich diversity provides a framework for natural functioning of spectacular ecosystems. The flanks of two active volcanoes, ice field and glacier systems, intricate riverine systems, and coastal salt marshes where bears gather to feed and breed are found in Unit 3.

Outside the developed area near Silver Salmon Creek, the park protects a number of sedge meadows that are critical brown bear habitat. Specifically they include the marsh through which Sargent Creek flows, and the marshes just south of the Johnson River, on the north shore of Chinitna Bay, on both shores of Tuxedni Bay, and at Shelter Creek. The salt marsh meadows on NPS lands in Chinitna Bay are currently the only open meadow system protected from human entry during the summer season. However, all of the coastal marshes, including the Shelter Creek sedge meadows, are shrinking due to uplift of tectonic plates. Along these coastal areas, bear, moose, and wolf populations fluctuate naturally.

On Slope Mountain, near Silver Salmon Creek, there is a Type exposure, which is a world class exposure of Jurassic sediments. The park protects Fossil Point, potential fossils along the coast, and the pictographs at Clam Cove.

Farther inland, the Red Glacier is a special natural area as the terminus of the glacier is simultaneously vegetating and collapsing. Alders are growing over the ice and falling into pools of water as the glacier melts. This unit also includes Hickerson Lake and the huge landslide deposition that blocks the lake outlet. There is no river draining the lake; instead, water goes through the rocks. Along East Glacier Creek and the Johnson River there are early groundwater springs and beaver ponds that provide valuable moose habitat.

- *The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation*

These two areas provide a setting where visitors can leave behind societal constraints in search of solitude, challenge, discovery, and renewal. With the exception of the coastal areas and Crescent Lake, the remainder of Unit 3, and all of Unit 2, is void of recreational developments and management restrictions on visitor behavior. In these areas, remoteness, harsh weather, lack of infrastructure, and rugged geography (including an extensive network of crevassed glaciers, steep mountainsides carpeted in thick vegetation, swift cold rivers) create opportunities for personal growth, self-discovery, and the self-fulfillment that comes from overcoming obstacles.

This is a place where it's possible to detach from modern life and become steeped in the timelessness of a landscape that hasn't been altered in hundreds of years. A visitor to this area (outside of the three previously mentioned areas) could expect to not encounter another party for the duration of their trip.

CONCLUSION

The National Park Service has determined the lands depicted on the map “Wilderness Eligibility Reassessment, Units 2 and 3” to be eligible for wilderness designation. All of Unit 2 (approximately 19,000 acres) and part of Unit 3 (approximately 177,500 acres) are eligible for inclusion in wilderness because they are federally owned and meet the eligibility criteria. All the lands assessed as eligible in the 1984 General Management Plan are still considered eligible. Thus, the lands eligible for wilderness designation has increased from the original determination of approximately 952,500 acres to currently a total of approximately 1.149 million acres. The map “Wilderness Eligibility Reassessment” depicts the total area of eligible land in Lake Clark National Park and Preserve.

In the Crescent River area, the National Park Service finds that the northern part of this area meets the criteria for wilderness eligibility. This is the portion of the unit that is contiguous with existing designated wilderness and captures the hillside southeast of Mount Redoubt. This area is natural and undeveloped, and has been outside of past human manipulations. While there is great potential for wilderness float trips on the Crescent River, much of the land in this area is not owned by the National Park Service so is not eligible to become wilderness.

Due to private property, existing development, and the level of use and motorized access at Crescent Lake, the National Park Service excludes Crescent Lake from eligibility as wilderness. South of the Crescent River there is a parcel of NPS land that meets the eligibility criteria but is virtually surrounded by nonfederal land interest. In a subsequent wilderness study, the National Park Service may consider excluding that parcel from a wilderness proposal due to potential development on private land and impracticality of management of the area as wilderness.

The Johnson River area includes a private inholding that could be developed as a mining operation. The landowner has expressed interest in operating and constructing an access route from the coast to the mine. These developments would diminish wilderness character of the surrounding Federal lands. For the purpose of determining eligibility, however, all lands outside of the immediate impact area of the proposed mine (including a one-mile buffer around the private parcel) meet the eligibility criteria. If a mine and access road are contemplated in the future, these developments would be considered in a subsequent wilderness study.

The developed area at Silver Salmon Creek is also not eligible for wilderness due to existing developments, concentrated visitation and associated noise impacts from the private developments and modes of accessing these private properties.

The remainder of the unit is eligible for wilderness. It includes the area south of Tuxedni Bay, the south side of the Lateral Glacier, the Johnson River, and most of the coast.

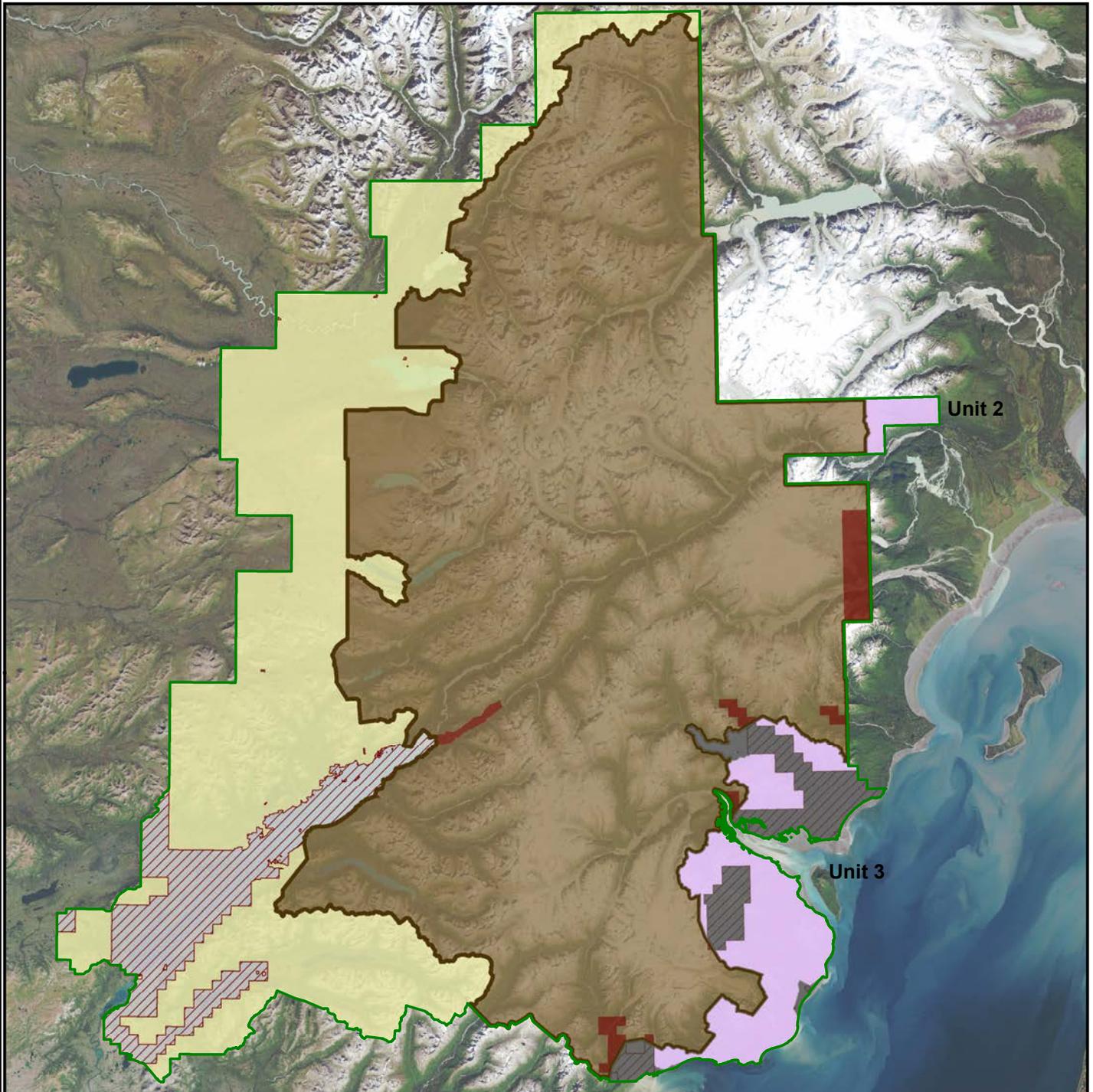
NEXT STEPS

NPS Management Policies 2006 (6.2.1.3) describe the NPS wilderness assessment process. This eligibility reassessment is being undertaken in tandem with the GMP Amendment to inform the public. A final decision on an eligibility determination must be approved by the NPS Director and published in the *Federal Register*.

Wilderness Eligibility Reassessment

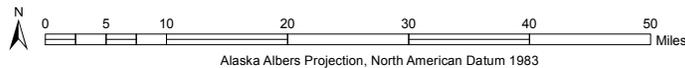
Lake Clark National Park and Preserve

Alaska Region
National Park Service
U.S. Department of the Interior



- | | |
|---|--|
|  Limited or Non-NPS Land Interest within Designated Wilderness |  Ineligible Wilderness |
|  Limited or Non-NPS Land Interest within Ineligible Wilderness |  Assessed as Eligible Wilderness 2012 |
|  Designated Wilderness |  Assessed as Ineligible Wilderness 2012 |
|  Eligible Wilderness |  National Parkland Unit |

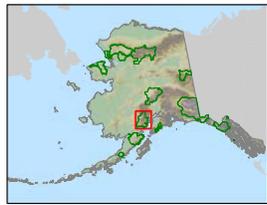
Note: Wilderness eligibility for Lake Clark National Park and Preserve was determined per the 1984 General Management Plan and current NPS Alaska boundary and land status information. In the eligible wilderness area, land selections appear as eligible wilderness because it is expected that all or most of these lands will remain in federal ownership. If any land selections are conveyed into non-federal ownership, they are not eligible for wilderness based on land ownership and will be reclassified as ineligible wilderness.



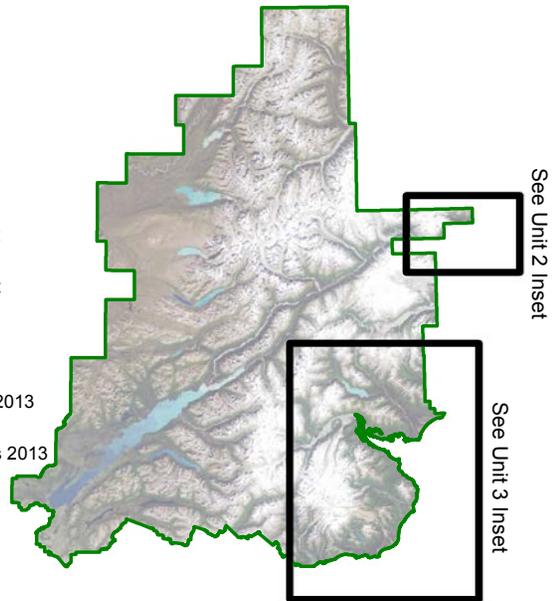
Wilderness Eligibility Reassessment, Units 2 and 3

Lake Clark National Park and Preserve

Alaska Region
National Park Service
U.S. Department of the Interior



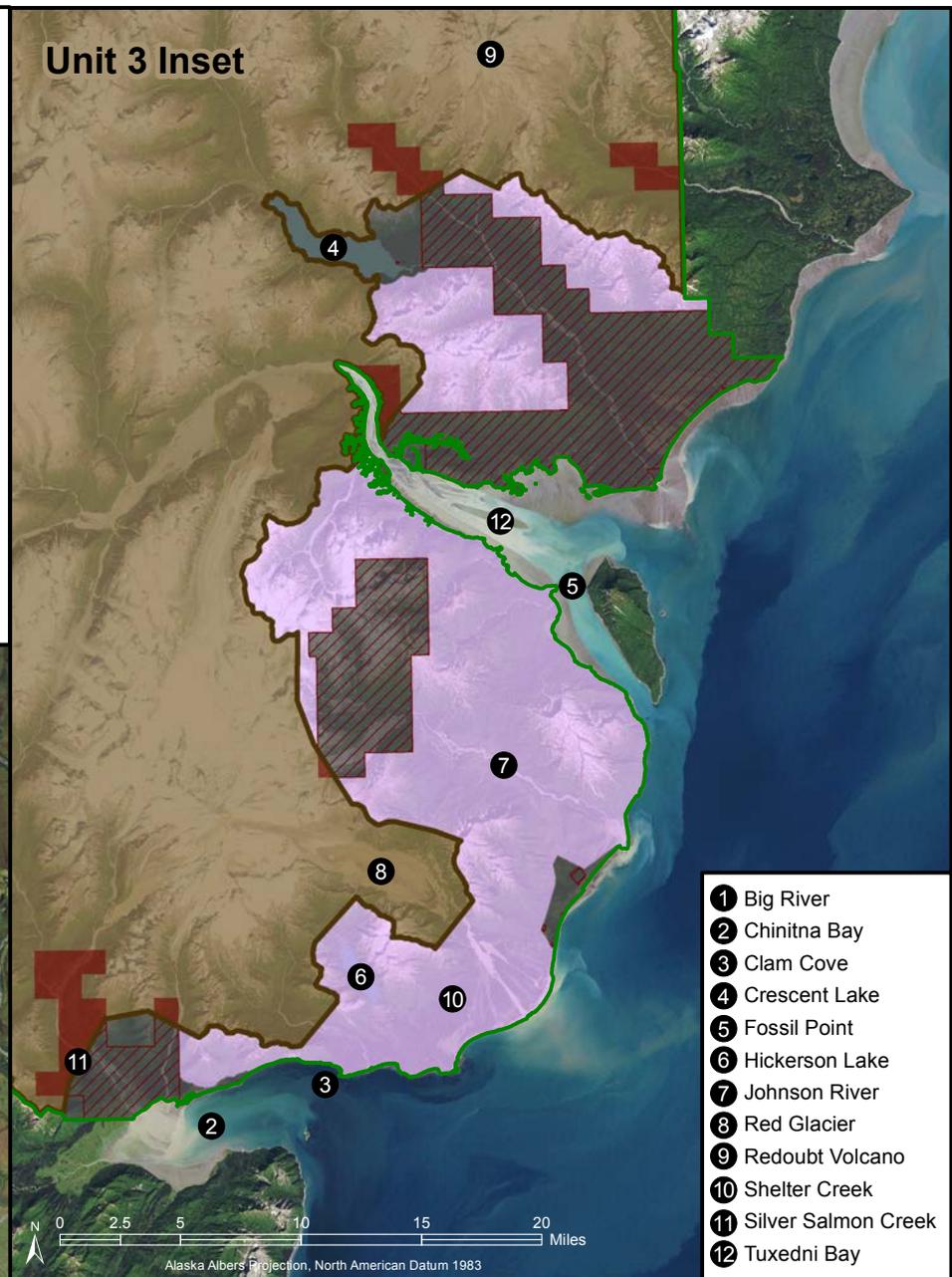
-  Limited or Non-NPS Land Interest within Designated Wilderness
-  Limited or Non-NPS Land Interest within Ineligible Wilderness
-  Designated Wilderness Boundary
-  Assessed as Eligible Wilderness 2013
-  Assessed as Ineligible Wilderness 2013
-  National Parkland Unit



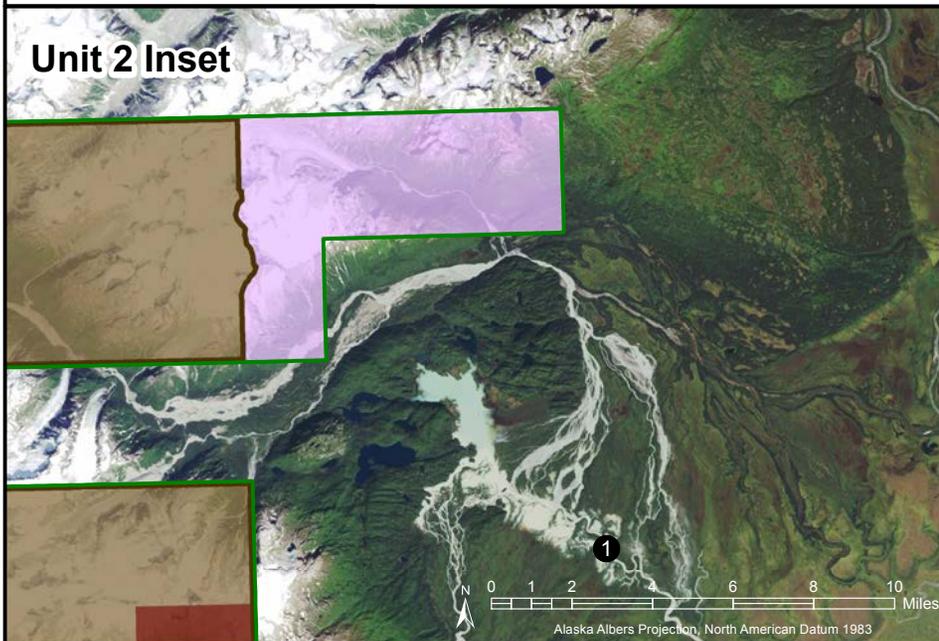
See Unit 2 Inset

See Unit 3 Inset

Unit 3 Inset



Unit 2 Inset



- 1** Big River
- 2** Chinitna Bay
- 3** Clam Cove
- 4** Crescent Lake
- 5** Fossil Point
- 6** Hickerson Lake
- 7** Johnson River
- 8** Red Glacier
- 9** Redoubt Volcano
- 10** Shelter Creek
- 11** Silver Salmon Creek
- 12** Tuxedni Bay

APPENDIX C: DESIRED CONDITIONS AND MANAGEMENT STRATEGIES

DESIRED CONDITIONS AND MANAGEMENT STRATEGIES

This appendix contains desired conditions for resources and management goals for program areas for Lake Clark National Park and Preserve. These conditions and strategies guide actions taken by NPS staff on such topics as natural and cultural resource management, visitor use management, and other management strategies. Each topic discussed below in table format has three key parts: (a) desired conditions for that topic, (b) a list of law or policy sources, and (c) broad management strategies that may be used to achieve those desired conditions.

Desired conditions articulate the ideal conditions the National Park Service is striving to attain. The term “desired conditions” is used interchangeably with goals. Desired conditions provide guidance for fulfilling the purpose of the park and for protecting its fundamental resources and values. Those desired conditions related to the park foundation statement are listed according to the fundamental resources and other important values.

The strategies describe actions that could be used by the National Park Service (and/or its partners) to achieve the desired conditions. Many of these strategies are already being implemented. Those not already being implemented are consistent with NPS policy, are not believed to be controversial, and require no analysis and documentation under the National Environmental Policy Act of 1969 (or analysis and documentation would be completed separately from this GMP Amendment. This is not an exhaustive list of management strategies. As new ideas, technologies, and opportunities arise, they would be considered if they further support the desired conditions.

MOUNTAIN LANDSCAPES	
Description	Policy/Laws/ANILCA
<p>This topic covers surface water and groundwater flowing in streams and rivers, floodplains and wetlands including shorelands, and submerged lands, management of the water column, water rights, and water quality. ANILCA (101 and 201), and 16 USC 1a-2(h) and 1c direct the National Park Service to manage all waters within the boundaries of Lake Clark. The State of Alaska has authority to manage water based on the Submerged Lands Act of 1953, the Alaska Statehood Act of 1958, and the Alaska State Constitution. Thus, water in the park is managed by both the State of Alaska and the National Park Service.</p>	<ul style="list-style-type: none"> • Clean Water Act • Alaska National Interest Lands Conservation Act (101 and 201) • Submerged Lands Act of 1953 • Alaska Statehood Act of 1958 • Rivers and Harbors Act • Executive Order 11514 “Protection and Enhancement of Environmental Quality” • Executive Order 12088, “Federal Compliance with Pollution Control Standards” • NPS <i>Management Policies 2006</i> • NPS-77, “Natural Resource Reference Manual #77” • Title 16 and other state statutes that apply • Executive Order 11990; “Protection of Wetlands” • Director’s Order 77-1, “Wetland Protection” • NPS “Procedural Manual #77-1: Wetland Protection” • Executive Order 11988 “Floodplain Management” • Director’s Order 77-2: <i>Floodplain Management</i>

MOUNTAIN LANDSCAPES	
	<ul style="list-style-type: none"> National Flood Insurance Program (44 CFR 60)
Desired Condition/Goals	
Fundamental Resources and Values	
<p><u>Mountain Vistas</u></p> <ul style="list-style-type: none"> The park protects spectacular mountain views including the heart of the Alaskan and Aleutian ranges, two active volcanoes, and hundreds of glaciers. <p><u>Watersheds</u></p> <ul style="list-style-type: none"> The park protects intact and unaltered alpine lakes, thousands of waterfalls, hundreds of miles of free-flowing rivers including three designated wild rivers, which contribute to the national wild and scenic river system. Surface water and groundwater are protected. The highest state water quality classifications are maintained for all the waters within the park and for all waters flowing into the park. Park water resources meet or exceed all state water quality standards for temperature, bacteria, total dissolved solids, dissolved oxygen, turbidity, toxic substances, pH, and nutrients. <p><u>Coastal Features</u></p> <ul style="list-style-type: none"> The park preserves a productive coastline of critical habitats for a variety of nearshore and terrestrial wildlife. 	
Other Important Resources and Values	
<ul style="list-style-type: none"> 	
Strategies	
<ul style="list-style-type: none"> The National Park Service will cooperate with neighboring landowners to protect views of volcanoes, glaciers, and scenic mountain vistas. Visitor activities will be managed to protect resource conditions and wilderness character. The National Park Service will inform visitors on Leave No Trace practices and the importance of preserving the wilderness character. Visitors will also be encouraged to help maintain the natural processes while enjoying of these same processes. The condition of the ecosystems within the park will be monitored and the distinct functions they perform will be identified. The National Park Service will work with the State of Alaska for the management of lands under navigable water bodies). Lake Clark would oppose any action outside the boundary of the park that would impact resources inside the park boundary. If management conflicts arise concerning the use of waterways the National Park Service will work with the state on a case-by-case basis to resolve individual issues. If case-by-case resolution is unacceptable then the National Park Service will pursue cooperative agreement for management uses. The National Park Service will work with the State of Alaska regarding matters of water use and water rights. For waters available under the reservation doctrine, unless the United States is a proper party to stream adjudication, the National Park Service will quantify and inform the State of Alaska of its existing water uses and those future water needs necessary to carry out the purposes of the reservation. When the reservation doctrine or other federal law is not applicable, water rights will be applied for in accordance with Alaska laws and regulations. Management intervention of natural river processes will not occur except in isolated instances where it's necessary to mitigate a localized and reversible human impact such as a spill of pollutants or hazardous material. The National Park Service will use pesticides, fertilizers, and other chemicals consistent with regional policy and guidance. The National Park Service will promote water conservation and will encourage concessioners, visitors, and park neighbors to do the same. 	

MOSAIC OF LANDFORMS AND ECOSYSTEMS	
Description	Policy/Laws/ANILCA
	<ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • NPS-77, "Natural Resource Reference Manual #77"
Desired Condition/Goals	
Fundamental Resources and Values	
<p><u>Glaciers and Glacial Landforms</u></p> <ul style="list-style-type: none"> • The park preserves large areas covered with glaciers and associated glacial landforms that record the history of glacial advances and retreats. <p><u>Mountains</u></p> <ul style="list-style-type: none"> • The park contains a vast, tectonically active landscape with glacially sculpted peaks, spires, knife-edge ridges, U-shaped valleys, and active volcanoes. <p><u>Ecosystem Diversity</u></p> <ul style="list-style-type: none"> • The park is the only Alaska park unit containing four bio-geographic provinces: subarctic, boreal, maritime, and alpine. <p><u>Weather and Climate</u></p> <ul style="list-style-type: none"> • The arctic and maritime weather systems collide at Lake Clark National Park and Preserve, resulting in ice fields, glaciers and complex hydrology. (See Climate Change desired condition.) <p><u>Science and Education Opportunities</u></p> <ul style="list-style-type: none"> • The park provides a unique geologic and ecological landscape for scientific study and long-term monitoring. 	
Other Important Resources and Values	
Strategies	
<ul style="list-style-type: none"> • Promote research on glaciers, landforms, ecosystem diversity, volcanoes, and weather to increase understanding of natural processes and their effects on NPS resources in a place with little human impact. • Increase understanding of the park's geologic history using the most current scientific information, technology and research techniques. • Monitor and survey current and historical glacial advances and retreats. • Study the effects of glacial advances and retreats on changes in terrestrial and aquatic systems. • Coordinate with the Alaska Volcano Observatory and other agencies on monitoring of active volcanoes in the park. Help disseminate information in the event of a high level threat. • Initiate or continue long-term monitoring of unique resources and visitor use, including visitor experience and resource protection. Inform visitors on the sensitivity of unique resources inside the park. • The National Park Service will update interpretive and educational media on notable geologic features and the importance of geological resources to park visitors. • The National Park Service will allow natural geologic processes to proceed unimpeded. • Monitoring and research programs assess conditions and trends in the park's landform and ecosystem processes, 	

MOSAIC OF LANDFORMS AND ECOSYSTEMS
<p>particularly those that are both important to park management, and subject to human influence (e.g., glaciers, groundwater chemistry, surficial deposits, stream flow, river and stream channel morphology, sediment load, slope failures, and erosion).</p> <ul style="list-style-type: none"> • Continue to inventory geologic resources through the geological resources division, and develop surficial geology maps and a geologic report for the park. • Partner with the U.S. Geological Survey and others to identify, address, and monitor ecosystem processes. • Monitor the effects of natural processes for the potential exposure of cultural and paleontological resources.

SALMON FISHERY	
Description	Policy/Laws/ANILCA
<p style="text-align: center;">Desired Condition/Goals</p>	<ul style="list-style-type: none"> • ANILCA • NPS <i>Management Policies 2006</i> • NPS-77, "Natural Resource Reference Manual #77" • 1982 Master Memorandum of Understanding Between the Alaska Department of Fish and Game and the National Park Service • "Department of the Interior, Fish and Wildlife Policy: State-Federal Relationships" (43 CFR 24)
Fundamental Resources and Values	
<p><u>Healthy Salmon Population</u></p> <ul style="list-style-type: none"> • The park protects necessary habitat that contributes to a healthy and sustainable population of red salmon. <p><u>High Degree of Water Quality</u></p> <ul style="list-style-type: none"> • The park preserves unimpaired the water quality of its lakes, rivers, streams, and marine resources. • The park makes preventing pollution and protecting water quality priorities for management to protect and preserve aquatic habitats and ecosystems. <p><u>Unaltered Watersheds</u></p> <ul style="list-style-type: none"> • The park preserves free flowing river systems that support the red salmon fisheries of global significance. <p><u>Nutrient Cycling</u></p> <ul style="list-style-type: none"> • Wild salmon provide a link between the ocean, freshwater, and land in supporting a complex food web that crosses the land-water interface. 	

SALMON FISHERY	
Other Important Resources and Values	
Strategies	
<ul style="list-style-type: none"> • NPS staff will continue to promote greater public understanding of the importance of water quality to the park. Public support will be encouraged in protecting park watersheds, wetlands and floodplains. • Minimize human impacts on the red salmon population, the ecosystems and the process that sustain them by monitoring the distribution, run strength and timing, and condition of the salmon. Maintain the established fish migration routes and spawning areas. • The National Park Service will not allow introduction of nonnative species or hatchery fish, lake fertilization, or erection of artificial passageways on NPS lands and waters. • Create opportunities for and encourage collaboration with state and local governments, as well as tribes, and Native corporations to preserve and promote sustainable harvestable levels of salmon. • Work with the state, tribes, the park subsistence resource commission and others to monitor escapement and limnological trends. • The National Park Service will update strategies for water resources management as needed to reflect changing resources and management issues. • The National Park Service will take an active role in reviewing permits for point source discharges and water use that may affect the quality and quantity of water resources within the park. • The National Park Service will work with the Environmental Protection Agency and the Alaska Department of Environmental Conservation to ensure compliance with state standards on water quality. • The National Park Service will participate in development planning that would affect water quality in the park. • Priority will be given to monitoring lakes, rivers, streams, wetlands, floodplains and other bodies of water of special concern or with higher levels of use. • Visitors will be encouraged to use proper equipment and to minimize discharges that would affect water quality. • To the extent possible discharges associated with park operations will be minimized through the use of best management practices and appropriate technology. The park will promote sustainable operations, use of clean fuels and pollution prevention methods by the park, visitors and communities. Sustainable practices and pollution prevention measures will be used in park operations. 	

SUBARCTIC FISH AND WILDLIFE POPULATIONS AND HABITATS	
Description	Policy/Laws/ANILCA
<p>The wildlife of Lake Clark National Park and Preserve is representative of four major ecosystems. Notable species are included in the enabling legislation and species of management concern. Specifically, caribou, Dall sheep, brown bear, bald eagles, and peregrine falcons. Additionally, nonnative species are considered in this discussion. Nonnative species, also referred to as nonnative or alien species, were introduced to North America from other continents by humans in the last few centuries.</p>	<ul style="list-style-type: none"> • ANILCA • The Endangered Species Act of 1973, as amended • NPS <i>Management Policies 2006</i> • NPS-77, "Natural Resource Reference Manual #77" • 1982 Master Memorandum of Understanding Between the Alaska Department of Fish and Game and the National Park Service • "Department of the Interior, Fish and Wildlife Policy: State-Federal Relationships" (43 CFR 24) • Executive Order 13112, "Invasive Species" • Alaska Region Invasive Plant Management Plan Environmental Assessment

SUBARCTIC FISH AND WILDLIFE POPULATIONS AND HABITATS	
Desired Condition/Goals	
Fundamental Resources and Values	
<p><u>Wildlife</u></p> <ul style="list-style-type: none"> • The park protects intact habitat for, and populations of, fish and wildlife, that includes bears, ungulates, furbearers, a variety of bird assemblages, and naturally functioning predator/prey relationships. • The park protects the southernmost range of Dall sheep. • The natural abundance and diversity of wildlife populations is maintained, including populations that support subsistence lifestyles of Federally-qualified rural residents eligible to engage in subsistence activities in the park and/or preserve. • Wilderness ecosystems and their species assemblages are allowed to adapt and evolve. <p><u>Intact Ecological Relationships</u></p> <ul style="list-style-type: none"> • Lake Clark protects salt marshes, intertidal flats, freshwater lakes and streams that are critical to the movement of marine nutrients to freshwater and terrestrial ecosystems. <p><u>Migratory Habitats</u></p> <ul style="list-style-type: none"> • Lake Clark provides important habitat for seasonal populations of migratory birds, waterfowl, caribou, and anadromous fish. <p><u>Coastal Environment</u></p> <ul style="list-style-type: none"> • Lake Clark protects approximately 123 miles of relatively unaltered coastline habitats that are among the most biologically productive in Cook Inlet. • The coastal environment provides particularly important habitat for resident and migratory bird species, brown bear, and a variety of other nearshore plants and animals. 	
Other Important Resources and Values	
<ul style="list-style-type: none"> • The park provides an opportunity for science-based studies that inform resources management. • Research and monitoring promote the long-term viability of the park's animal populations, including maintaining age-structures, abundance, density and distributions within normal ranges, and a full range of natural genetic variability. • Park ecosystems are free of nonnative animal species • Effects of native diseases and pests are within normal range of variation, and are not worsened by human-caused factors. • Adequate data are available to determine the presence and abundance of any nonnative species in the park and in potential infestation source areas. 	
Strategies	
<ul style="list-style-type: none"> • The park will preserve shoreline areas that provide spawning, feeding, and rearing habitats for fish. • Baseline inventories of wildlife in the park will be completed and maintained. The distribution and condition of selected vital sign species such as caribou, brown bear, wolves, eagles, and moose will be monitored. Habitats, population dynamics and ecosystem conditions will also be studied to establish baseline data. • Research will focus on natural conditions of wildlife species and habitats and declines caused by anthropogenic sources, such as recreation, climate change, resource development, and consumptive use. • If threatened and endangered species are found to occur in the park, these species and their habitats are maintained and protected. • Human-caused factors will be monitored so the normal range of effects of native diseases and pests is not worsened. • The National Park Service will preserve habitat and populations of wildlife species occurring in the park. • The National Park Service will recognize that preserving habitat for wildlife includes the range of unfettered 	

SUBARCTIC FISH AND WILDLIFE POPULATIONS AND HABITATS	
<p>ecological system responses to global change.</p> <ul style="list-style-type: none"> • The NPS will continue to cooperate with other public agencies, local communities and private landowners to seek protection of natural wildlife populations and to mitigate negative effects that future development may have on wildlife. • Information will be provided to visitors on how to avoid or minimize adverse impacts on wildlife. • The National Park Service will continue to cooperate with federal, state, and university partners in the collection, interpretation, and dissemination of fish and wildlife data. • All NPS management plans will be compatible with the purposes for which the park was established. • The park avoids wildlife manipulation, and wildlife habitat in the wilderness varies naturally based on complex interactions between recent physical (e.g., precipitation, temperature) and biological (e.g., insect outbreaks, plant disease) factors. • The National Park Service will cooperate with other state and federal agencies to ensure migratory routes of fish and wildlife populations are intact and maintained in a natural state. • Working with other state and federal agencies, local communities, and private landowners, NPS staff will, as feasible, inventory and monitor for the presence of nonnative plants on park lands. If nonnative species are found, their distribution and condition will be monitored. • Manage nonnative plant species in accordance with the Alaska Region Invasive Plant Management Plan. • The park will focus management and eradication of any nonnative plant species to those that are considered highly invasive. 	

WILDERNESS	
Description	Policy/Laws/ANILCA
<p>These desired conditions cover designated and eligible wilderness in the park (i.e., wilderness designated by Congress through law, and areas that have met the NPS initial screening assessment as to whether they meet the minimum criteria for inclusion in the national wilderness preservation system).</p>	<ul style="list-style-type: none"> • Wilderness Act of 1964 • ANILCA • NPS <i>Management Policies 2006</i> • Director's Order 41 <i>Wilderness Preservation and Management</i>
Desired Condition/Goals	
Fundamental Resources & Values	
<p>Wilderness Character</p> <ul style="list-style-type: none"> • The park maintains wilderness that is substantially free of the footprint of modern civilization, and with seemingly untouched ecosystems functioning in a natural state. • Wilderness ecosystems and their species assemblages are allowed to evolve and adapt to changes as they will. • Lake Clark wilderness provides a setting where visitors can leave behind societal constraints in search of solitude, primitive and unconfined recreation, challenge, discovery, and renewal. • Visitors will rarely find any sign of contemporary human civilization such as mechanized equipment, signs, unnatural noise aside from airplane noise, artificial light, and other modern artifacts. 	
Other Important Resources and Values	
<ul style="list-style-type: none"> • The Lake Clark wilderness encompasses precontact sites and cultural artifacts and the park continues to honor the cultural resources as integral to our contemporary idea of wilderness. 	

WILDERNESS	
Strategies	
<ul style="list-style-type: none"> • Management of wilderness will continue to follow a minimum requirements analysis including all scientific studies that occur within the wilderness boundary. Techniques and types of equipment will be chosen based on minimizing impacts to wilderness resources and character. • Research in the wilderness will be encouraged when consistent with the service’s responsibilities to preserve and manage wilderness. • The park will have a process in place for evaluating proposals for scientific activities that would occur in wilderness. • The park will have a process in place for evaluating whether commercial services in wilderness meet the necessary and appropriate criteria. • Current wilderness boundaries will be mapped and current acreage calculated. • Installations and administrative facilities will be mapped. • The park will monitor trends in wilderness character and report trends at least every five years to WASO and the park superintendent. • The park will avoid and prevent intervention in natural processes or manipulation of resources in wilderness. • The wilderness designation processes for the eligible, undesignated of Lake Clark National Park and Preserve will be carried out in accordance with NPS policies. • Visitor use activities will be monitored as needed and appropriate actions will be taken to address degradation to wilderness resources. • The park encourages self-reliant travel through the wilderness. Education and interpretation programs will emphasize Leave No Trace practices. • Cultural resources, cultural landscapes, archeological sites and other evidence of human use have been protected using methods consistent with preserving wilderness character. • Park operations are coordinated in the park to manage and protect natural and cultural resources in wilderness and preserve wilderness character. 	

WILD RIVERS	
Description	Policy/Laws/ANILCA
<p>These desired conditions and strategies apply to the three designated wild rivers in the park: the Chilikadrotna, Mulchatna, and the Tlikakila rivers.</p>	<ul style="list-style-type: none"> • Wild and Scenic Rivers Act (16 USC 1276(d)(1)) • ANILCA (section 601) • Director’s Order 46A: <i>Wild and Scenic Rivers within the National Park System</i> • <i>NPS Management Policies 2006</i>
Desired Condition/Goals	
<ul style="list-style-type: none"> • The park’s three wild rivers offer unparalleled scenic and recreational opportunities. • The park’s free flowing wild rivers support habitat, which sustains natural populations of fish and wildlife. • The National Park Service manages and protects the park’s wild rivers for their outstandingly remarkable values. • The rivers’ free-flowing condition and natural and cultural values are safeguarded. 	
Strategies	
<ul style="list-style-type: none"> • Monitor use on these rivers and if impacts are evident, develop more detailed management plans. • Section 7(a) determinations under the Wild and Scenic Rivers Act will be prepared on any proposed activities affecting the bed or banks of the wild and scenic rivers. 	

VEGETATION	
Description	Policy/Laws/ANILCA
Four out of five biotic communities are found in the park and preserve—tundra, boreal forest, coastal, and rivers/wetlands. Additionally, nonnative species are not considered in this discussion (see subarctic fish, wildlife populations, and habitat topics for a description of nonnative species).	<ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • NPS-77, "Natural Resource Reference Manual #77" • The Endangered Species Act of 1973, as amended
Desired Condition/Goals	
<ul style="list-style-type: none"> • The park provides naturally evolving examples of plant communities, encompassing flowering plants, ferns, mosses, lichens, algae, fungi, bacteria, etc. • The natural diversity, dynamics, and ecological integrity of the native plant mosaic are maintained throughout natural disturbance regimes such as insect and disease outbreaks, fire, and wind events, as components of intact ecosystems. • The full range of genetic types (genotypes) of native plant populations is protected by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity. • The park promotes long-term viability of native plant communities, including maintaining age-structures, abundance, density and distributions within normal ranges, and a full range of natural genetic variability. 	
Strategies	
<ul style="list-style-type: none"> • Long-term monitoring of vegetation plots in different vegetation communities will evaluate trends in succession and shifts in system types. • Vegetation landcover maps will be periodically updated to reflect current conditions within the park. • The effects of activities in the park, including hiking, camping, snowmachines, and subsistence harvests, may be monitored for their effects on park vegetation. • Develop and implement visitor education programs to avoid introduction of nonnative species. • The National Park Service will manage exclusively for native species. Native species with local provenance will be used in all revegetation programs. • Implement park management actions in a manner that minimizes the potential for introduction of nonnative species. • A vegetation management plan will be developed prior to re-establishment of any extirpated plant species. • Work in cooperation with agencies, local communities, and other adjacent landowners on nonnative species control. 	

FIRE MANAGEMENT	
Description	Policy/Laws/ANILCA
Fire management consists of a program of activities designed to meet management objectives for protection of resource values, life, and property and, where appropriate, for using naturally ignited and human-ignited wildland fires as management tools.	<ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • DO-18 and RM-18 <i>Wildland Fire Management</i> • DM 620, Chapter 2 1998 • Alaska Interagency Fire Management Plan 1998 • Alaska Master Cooperative Wildland Fire Management Agreement, 2010. • ANCSA

FIRE MANAGEMENT

Desired Condition/Goals

- Wild fire is recognized as a natural process, wildfires continue to occur in the park with minimal amount of suppression action. Natural fire regimes are maintained.
- Fires are suppressed only if they pose a threat to human lives or private property, or if they will enter another suppression zone. Fire suppression is conducted according to guidance provided by the interagency fire management plan, the Lake Clark fire management plan, and agency administrator.
- All wildland fires are effectively managed, considering resource values to be protected and firefighter and public safety, using the full range of strategic and tactical operations as described in an approved fire management plan.
- Park fire management programs are designed specifically to meet park resource management objectives—including allowing fire to perform its natural role as much as practicable—and ensure that firefighter and public safety are not compromised.
- The best available technology and scientific information are used to manage fire within the park, to conduct routine monitoring to determine if objectives are met, and to evaluate and improve the fire management program.
- Fire processes in fire dependent/adapted vegetation communities are managed to promote healthy, functional ecosystems. Vegetation succession reflects the natural range of variability.

Strategies

- Maintain a current fire management plan to reflect the most recent wildland fire policy, planning, and the body of knowledge on fire effect within the park's ecosystems.
- Maintain cooperative agreements for fire suppression with appropriate federal, tribal, state, and local agencies and organizations.
- Manage wildland fire incidents in accordance with accepted interagency standards and the achievement of maximum efficiency through interagency coordination and cooperation.
- All wildfires in the park will be monitored, according to the minimum required monitoring levels in RM-18 or higher levels as determine by the fire management officer and agency administrator.
- Hazard fuel reduction efforts may be conducted to protect structures, wildland-urban interface areas, and cultural resources where appropriate and necessary.
- Prescribed fires may be conducted in cooperation with landowners and the Alaska Fire Service to protect values at risk. Prescribed fires may be pile burning debris from manual treatment or larger scale broadcast burns (Any prescribed fire larger than 4,000 acres requires additional NEPA analysis.)
- During natural or prescribed ignitions, fire management operations are specifically designed to protect and/or enhance cultural resource integrity, scientific research potential, and interpretive value.
- Fire management staff collaborates with appropriate resource management staff to seek information and technical expertise for the purpose of identifying cultural resource preservation and protection needs.
- Communicate and inform visitors and the public on the role of fire, its importance in Alaska, the inevitability of smoke impacts in the short term, and the long-term ecosystem benefits.
- Allow for research and monitoring of naturally occurring fire, including plant and animal communities that are potentially affected by fire. Results will help NPS staff manage the wild and undeveloped character of the area, including plant and animal communities that are fire-adapted or fire-dependent. Long term monitoring of burn severity, successional pathways and active layer consumption are key to interpreting climate change effects on wildland fire in Lake Clark.

SOUNDSCAPES	
Description	Policy/Laws/ANILCA
<p>Natural sound is both a resource in its own right as well as an important aspect of park wilderness resource values. Soundscapes include both natural and human components. Natural soundscapes include all naturally occurring sounds (in the absence of human-caused sound) such as waves on the shoreline, running water, bird calls, wind blowing through trees, or thunder.</p>	<ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • Director's Order 47: "Soundscape Preservation and Noise Management" • Federal Aviation Regulation • 36 CFR 2.12
Desired Condition/Goals	
<ul style="list-style-type: none"> • The National Park Service preserves and restores the soundscape to the natural condition wherever possible and protects the natural soundscape from unacceptable impacts. • Noise from management or recreational uses is minimized to provide a high-quality visitor experience and protect biological resources and processes that involve natural sounds (for example species that use sound to attract mates, protect territories, locate prey, navigate, or avoid predators). • Noise-generating activities that could adversely affect park wildlife populations are prevented or minimized to the greatest extent possible. Ecological interactions that depend on or are affected by sound are protected. 	
Strategies	
<ul style="list-style-type: none"> • The park may monitor soundscape for trends in specific anthropogenic sources and potential impacts to the natural soundscape. • The National Park Service, as feasible, will inventory and monitor key locations for maintaining natural acoustic conditions. • NPS staff will consider and use best technologies and methods to minimize noise when procuring or using equipment. • The National Park Service will work with partners to mitigate and encourage noise reduction. • Visitors are encouraged to avoid making unnecessary noise. • NPS staff provides interpretive programs and materials to help visitors understand the role of natural sounds and the value of natural quiet. 	

AIR QUALITY	
Description	Policy/Laws/ANILCA
<p>The park and preserve is classified as a Class II airshed under provisions of the Clean Air Act amendments (42 USC 7401 et seq.). This air quality classification is the second most stringent and is designed to protect the majority of the country from air quality degradation.</p>	<ul style="list-style-type: none"> • Clean Air Act • NPS <i>Management Policies 2006</i> • NPS-77, "Natural Resource Reference Manual #77" • Wilderness Act
Desired Condition/Goals	
<ul style="list-style-type: none"> • The National Park Service strives to achieve the highest attainable air quality levels and visibility standards, consistent with both the EPA and the NPS Air Resources Division. • Scenic views of the landscape are protected from visibility degradation for the enjoyment of current and future visitors. • The National Park Service will work toward stabilizing or improving visibility, ozone and atmospheric deposition. The park will help visitors understand that some natural processes such as fire can have a negative impact on air quality. • Visitors will understand what affects air quality and how they contribute to it. 	
Strategies	
<ul style="list-style-type: none"> • The National Park Service, through the Air Resources Division, monitors air quality to establish current conditions and to assess long-term trends of air pollutants, using resultant data to ensure desired conditions are met. • The National Park Service will seek to participate in regional plans for development that might affect the air quality of the park and preserve, and in the review of the effects of wildfire smoke on regional air quality. [P.107] • To the extent possible emissions associated with park operations and visitor use will be minimized through timing and the use of feasible and affordable best management practices and appropriate equipment. Sustainable practices and pollution prevention measures will be used in park operations. The use of clean fuels will be promoted for use by the park, visitors, and communities. Best available practices and technologies will be used to provide healthful indoor air quality. • NPS staff will continue to educate and promote greater public understanding of the importance of air quality to the park. Information regarding air quality and related values, including threats of air pollution to park resources, will be provided to park visitors and regional residents. • NPS staff will review permit applications for new air pollution sources that could affect the park. 	

Night Skies	
Description	Policy/Law/ANILCA
<p>The naturally dark sky exists in the absence of human-caused light. It is a resource in its own right and an important aspect of Lake Clark's wilderness resource values. Lightscares are significant to natural resources, cultural resources, and visitor experience of the national park. Lightscares include natural physical processes that affect a broad range of species and ecosystems function as well as nighttime scenery, which is integral to visitor experience and cultural resources.</p>	<ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • Green Parks Plan, 2012
Desired Conditions/ Goals	
<ul style="list-style-type: none"> • The National Park Service preserves, protects, and restores naturally dark night skies and a natural photic environment. • Light-generating activities that could adversely affect park wildlife and the photic environment are prevented or 	

<p>minimized to the greatest extent possible.</p> <ul style="list-style-type: none"> The use of artificial light is minimized in order to provide a high quality visitor experience, protect biological resources and protect naturally dark skies.
<p>Strategies</p>
<ul style="list-style-type: none"> Restrict the use of artificial lighting in the park to those areas where it is deemed warranted. When artificial lighting is warranted, minimal impact lighting techniques will be used. The National Park Service inventories and monitors sky quality. The National Park Service will work with partners to reduce and mitigate impacts of artificial light. Visitors are encouraged to avoid generating unnecessary artificial light.

PALEONTOLOGICAL RESOURCES	
Description	Policy/Laws/ANILCA
<p>Paleontological resources include fossilized remains of vertebrate and invertebrate organisms, fossil tracks and trackways, and plant fossils. At Lake Clark, these resources include small fossils of invertebrates, shells, and corals, as well as a few plants.</p>	<ul style="list-style-type: none"> NPS Organic Act Preservation of American Antiquities, 43 CFR 3. NPS <i>Management Policies 2006</i> NPS-77, "Natural Resource Reference Manual #77" Paleontological Resources Preservation Act of 2009
Desired Condition/Goals	
<ul style="list-style-type: none"> The National Park Service has a comprehensive understanding of paleontological resources in the park. The park will work to ensure paleontological resources are protected and preserved. Opportunities are provided for public education, interpretation, and scientific research regarding the park's paleontological resources consistent with applicable statutes, regulations and management policies. 	
Strategies	
<ul style="list-style-type: none"> The park will continue to inventory and monitor for newly exposed fossils. Identified paleontological resources are cataloged and assessed to determine their extent and scientific significance, and to ensure that these nonrenewable resources are not lost. The National Park Service may issue permits to qualified researchers for collecting paleontological resources. The National Park Service will encourage scientific research and inventory of paleontological resources. The National Park Service will inform the public about the value of paleontological resources and the statutes, regulations, and management policies that apply to their protection. Research involving disturbance or collections of these resources will require a permit, in accordance with regulations concerning the "Paleontological Resources Preservation Act (PRPA) of 2009. NPS staff will take appropriate action to prevent damage to and unauthorized collection of paleontological resources. Interpretive and educational programs will be developed to inform visitors and the public about paleontology. Fossils will be prepared, exhibited, and stored according to NPS museum standards. 	

CULTURAL RESOURCES	
Description	Policy/Laws/ANILCA
<p>A primary responsibility of the National Park Service is to identify, protect and share the cultural resources under its jurisdiction through research, planning and stewardship. The National Park Service categorizes cultural resources as archeological resources, historic and precontact structures, ethnographic resources, cultural landscapes, and museum collections.</p>	<ul style="list-style-type: none"> • National Historic Preservation Act of 1966 as amended • American Indian Religious Freedom Act • Native American Graves Protection and Repatriation Act • NPS <i>Management Policies 2006</i> • Directors Order 28: <i>Cultural Resource Management Guideline</i> • 36 CFR 60 • Advisory Council on Historic Preservation’s implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800)
Historic Structures	Policies/Laws — Historic Structures
<p>The National Historic Preservation Act directs that federal agencies inventory and evaluate the eligibility of historic structures for listing in the National Register of Historic Places and, through formal consultation, assess the effects of possible federal actions on these properties. NPS <i>Management Policies 2006</i> (5.3.5.4) calls for the treatment of historic (and precontact) structures to be based on sound preservation practice and in accordance with the Secretary of the Interior’s Standards to enable the long-term preservation of a structure’s historic features, material, and qualities.</p> <p>Lake Clark National Park and Preserve’s historic structures include cabins, caches, outbuildings, a restored fishing boat, and structural ruins. There are no recorded precontact structures in the park with above-ground structural remains. Historic structures listed or eligible for listing in the National Register of Historic Places include the restored Dena’ina Fish Cache, Double Ender Boat, Richard L. Proenneke Historic Cabin Site, Snipe Lake Cabin, Joe Thompson Cabin, the Allen Woodward Cabin site at Priest Rock Creek, the Elmer Bly House, and the Earl Woodward Cabin on Hardenberg Bay.</p>	<ul style="list-style-type: none"> • Antiquities Act of 1906 • Historic Sites Act of 1935 • National Historic Preservation Act of 1966 as amended • Archaeological Resources Protection Act • Executive Order 11593, “Protection and Enhancement of the Cultural Environment” • <i>Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i> • Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) • NPS <i>Management Policies 2006</i> (5.3.5.1) • Director’s Order 28: <i>Cultural Resource Management Guideline</i> • <i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i>

Desired Conditions (Historic Structures)	
<ul style="list-style-type: none"> • Structures listed or eligible for listing in the National Register of Historic Places are managed to ensure their long-term preservation and protection, unless it is determined through formal section 106 consultation that disturbance or natural deterioration is unavoidable. • The qualities that contribute to the listing or eligibility for listing of historic structures in the national register are protected in accordance with the <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>, and section 5.3.5.4 of <i>NPS Management Policies 2006</i>. 	
Strategies (Historic Structures)	
<ul style="list-style-type: none"> • Historic structures identified by survey investigations will be inventoried and their significance and integrity evaluated under National Register of Historic Places criteria. Structures will be treated as national register-eligible pending formal determinations. • Historic structures will be routinely monitored to provide condition assessments and recommendations to guide and enable the long-term preservation of historic / architectural features, qualities, and materials. • Appropriate preservation treatments for historic structures (e.g., preservation maintenance, stabilization, rehabilitation, restoration) will be carried out in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i>. For properties lacking specific preservation plans, preservation actions would follow the Secretary's Standards and NPS policy and guidelines. • Historic structures will be managed in accordance with recommendations provided in historic structure reports and assessments, and existing reports will be amended as needed. Actions identified in historic structure reports will be prioritized and implemented, and records of treatment will be added to the reports. • Selected historic structures will be adaptively managed for visitor use to assist preservation objectives. • Furnishing plans will be completed for the Richard L. Proenneke Cabin, the Allen Woodward (Priest Rock) Cabin, the Earl Woodward (Hardenburg Bay) Cabin, and the Joe Thompson Cabin. • Design guidelines and/or historic structure / cultural landscape reports will be prepared for all developed areas including the Port Alsworth headquarters area and Tanalian Point to guide the preservation of architectural and cultural landscape features. Design review oversight will be conducted to help ensure the compatibility of new planning, design, and construction with historical and culturally important settings. • The management of historic structures and associated cultural landscapes will adhere to all relevant cultural resource protection and preservation policies and directives, including the minimum requirement concepts for preservation activities conducted in wilderness areas. • Actions potentially affecting the qualities contributing to the national register eligibility of historic structures will be carried out in accordance with section 106 consultation and compliance requirements. • Historic American Buildings Survey (HABS) documentation will be completed for the Proenneke site, and the national register site boundary amended to include additional contributing features (e.g., stone levees). • An up-to-date and comprehensive management plan for the Proenneke site will be completed. • PMIS statements for implementation of comprehensive and long-range cultural cyclic maintenance plans for the restored and rehabilitated historic structures will be developed. 	
Museum Collections	Policies/Laws — Museum Collections
<p>NPS <i>Management Policies 2006</i> (section 5.3.5.5) states that the National Park Service “. . . will collect, protect, preserve, provide access to, and use objects, specimens, and archival and manuscript collections. . . in the disciplines of archeology, ethnography, history, biology, geology, and paleontology to aid understanding among park visitors, and to advance knowledge in the humanities and sciences.”</p> <p>The LACL museum collection serves as a repository for artifacts, natural history specimens, oral histories, movies, images, ethnographic objects, and associated records resulting from park administration, community partnerships, systematic baseline investigations and other research studies. The museum collection supports interpretive and educational exhibits and</p>	<ul style="list-style-type: none"> • The Antiquities Act of 1906 • Historic Sites Act of 1935 • American Indian Religious Freedom Act • Native American Graves and Repatriation Act • Executive Order 11593, “Protection and Enhancement of the Cultural Environment” • <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i>

<p>programs, and informs management and other resource stewardship decisions.</p> <p>The interdisciplinary museum holdings exceed 220,000 items and the collections are actively used by park and regional staff for research and interpretation, as well as by outside researchers and the interested public. The primary storage facility for the Lake Clark collections is the multipark Alaska Regional Curatorial Center at the Alaska Regional Office in Anchorage.</p>	<ul style="list-style-type: none"> • Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) • <i>NPS Management Policies 2006</i> (5.3.5.3) • Director's Order 24: <i>NPS Museum Collection Management</i> and Handbook • 40 USC 483 [b], Federal Property and Administrative Services Act of 1949, as amended • 36 CFR 79, "Curation of Federally-Owned and Administered Archeological Collection"
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Desired Conditions (Museum Collections)

- All museum collections and archives and their component artifacts, objects, specimens, documents, photographs, maps, plans, and manuscripts, are properly inventoried, accessioned, catalogued, curated, documented, protected, and preserved. Appropriate provision is made for the access of the collections by NPS staff and other researchers and for their use in scientific and historical research, exhibits, and interpretation. The qualities that contribute to the significance of collections are protected and preserved in accordance with established NPS museum curatorial and storage standards.

Strategies (Museum Collections)

- Develop an official dedicated space at the field headquarters, with controlled access and adequate environmental protection for temporarily storing items requiring suitability assessments prior to incorporation into the primary museum facility.
- Develop and implement a policy to transfer resource management, planning, and other permanent records to the park museum collection archives in accordance with the NPS records schedule. A systematic records and archives program is required to preserve the administrative history of the park, document management actions, and provide access to archived information resources.
- Ensure research and development projects account for and include plans to properly curate collected objects and specimens.
- The park's approved archival processing plan will be followed to ensure proper archival management of collection items.
- Records management advisory and collections advisory committees will be established in accordance with the guidelines found in Director's Order 11D: *Records and Electronic Information Management* and the Museum Handbook.
- An interdisciplinary preservation, maintenance, and education plan for the Richard L. Proenneke Historic Site will be developed to coordinate long-term protection and preservation of site features and objects.
- Provide appropriate research access and interpretation of collection items to scientists, educators, and others. Showcase collections on the park's website using high-definition artifact and specimen photos or other means. Work with park staff to use collections in a variety of website features (e.g., programs documenting place names using audio and visual techniques, archeofauna and climate change, historic photos, and landscape change).
- Develop museum exhibits and interpret the collection to associated communities in coordination with park interpretive and resource staff and cooperating partners.
- Collections facilities would be upgraded, improved, and expanded as appropriate.

Archeological Resources	Policies/Laws – Archeological Resources
<p>NPS <i>Management Policies 2006</i> (5.3.5.1) requires the National Park Service to manage archeological resources in situ unless physical disturbance is justified and mitigated by data recovery or other means in consultation with the state and/or tribal historic preservation officer.</p> <p>Lake Clark National Park and Preserve contains hundreds of archeological sites documenting over 10,000 years of human history. The park’s precontact archeological resources include hunting camps, village sites, and resource use areas. The Kijik National Historic Landmark Archeological District includes an old village site, a Russian Orthodox cemetery, and more than a dozen other archeological sites associated with the inland Dena’ina Athabascan people. The park’s historic archeological resources include artifacts and material remains typically associated with 19th century and early 20th century trapping, hunting, and prospecting activities (e.g., the ca. 1906 Kasna Creek mining district).</p>	<ul style="list-style-type: none"> • The Antiquities Act of 1906 • Historic Sites Act of 1935 • National Historic Preservation Act of 1966 as amended • Archeological Resources Protection Act • Abandoned Shipwreck Act (1987) • Executive Order 11593, “Protection and Enhancement of the Cultural Environment” • <i>Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i> • Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) • NPS <i>Management Policies 2006</i> (5.3.5.1) • Director’s Order 28: <i>Cultural Resource Management</i> • Director’s Order 28A: <i>Archeology</i> • 36 CFR Part 79
<p>Desired Conditions (Archeological Resources)</p>	
<ul style="list-style-type: none"> • Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. Historic and precontact archeological sites are identified and inventoried, and their significance is determined and documented. Archeological investigations may also be authorized on a case-by-case basis to support research and cultural resource management objectives. 	
<p>Strategies (Archeological Resources)</p>	
<ul style="list-style-type: none"> • Treat all archeological resources as eligible for listing in the National Register of Historic Places pending formal determinations of eligibility. • Archeological resources threatened by project development activities, erosion and other environmental factors, and visitor use impacts are avoided to the extent possible by project redesign, trail rerouting, or other avoidance measures. Other preservation strategies such as data recovery are implemented if avoidance cannot be achieved. • Archeological site baseline data is established, and site conditions are monitored to record changes in resource conditions. • When disturbance or deterioration of a national register-eligible site is unavoidable, the site is professionally excavated and documented, and the resulting artifacts, materials, and records are curated and conserved in consultation with the Alaska state historic preservation office, traditionally associated tribes and other concerned parties. • Field data and geo-archeological data will be gathered to develop an accurate predictive model of precontact and historic site distribution and to address related research questions. • Monitor and conduct annual or biannual condition assessments at the Tuxedni Bay and Clam Cove pictograph sites 	

<p>and the Telaquana ice-patch sites. Monitor and conduct biannual condition assessments at threatened coastal sites in Chinitna Bay and monitor other sites as needed on a case-by-case basis.</p> <ul style="list-style-type: none"> • Educate visitors on regulations governing protection and conservation of archeological resources. Archeological sites that can be adequately protected may be interpreted to park visitors. • Document, track, and prosecute violations of cultural resource protection laws. • Maintain and update archeological site data in the Archeological Sites Management Information System and the cultural resources GIS database. • Determine significance of XLC-234, the oldest documented site on the Lake Clark coast, which will be conveyed to the Cook Inlet Regional Corporation (CIRI). • Consult with affiliated tribes and the CIRI about preservation of the Clam Cove pictograph site, the lower Telaquana Trail, and the Kijik Archeological District NHL (valid ANCSA 14(h)(1) selections eventually to be conveyed and removed from NPS protection). • Integrate archeological resources into climate change vulnerability assessments to identify resources at risk and propose protection strategies. 	
Ethnographic Resources	Policies/Laws – Ethnographic Resources
<p>NPS <i>Management Policies 2006</i> (5.3.5.3) calls for gathering ethnographic information through anthropological and collaborative community research that recognizes the sensitive nature of such cultural data and documents the meanings that traditionally associated groups assign to traditional natural and cultural resources and the landscapes they form.</p> <p>Ethnographic resources typically hold significance for traditionally associated groups whose sense of purpose, existence as a community, and identity as an ethnically distinctive people are closely linked to particular resources and places. Over 2,000 Dena’ina place names have been documented in Lake Clark National Park and Preserve indicating (along with archeological evidence) that the park and preserve are part of ancestral homelands of the Interior and Coastal Dena’ina. The Kijik Archeological District National Historic Landmark encompasses an area of particular cultural significance to the Dena’ina of Nondalton. In accordance with the National Historic Preservation Act, the NPS preserves, conserves, and encourages the continuation of the diverse traditional precontact, historic, ethnic, and folk cultural traditions.</p>	<ul style="list-style-type: none"> • The Antiquities Act of 1906 • American Indian Religious Freedom Act • Native American Graves and Repatriation Act • Executive Order 13007, “Indian Sacred Sites” • NPS <i>Management Policies 2006</i> (5.3.5.3) • Archeological Resources Protection Act • Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) • Director’s Order 28: <i>Cultural Resource Management</i>
Desired Condition (Ethnographic Resources)	
<ul style="list-style-type: none"> • All park ethnographic resources of cultural importance to traditionally associated peoples are protected. • To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the National Park Service accommodates traditional access to culturally important places, including ceremonial use of sacred sites (such as the historic Kijik cemetery and church site) and assists affiliated tribes in avoiding adverse effects to these places and sites. • Potentially sensitive natural and cultural resources and traditional cultural properties (ethnographic resources eligible for the National Register of Historic Places) are identified, recorded, and evaluated through consultation with associated tribes. The integrity of traditional cultural properties is preserved and protected. 	

Strategies (Ethnographic Resources)	
<ul style="list-style-type: none"> • NPS staff will continue to maintain cooperative relationships and consult on a government-to-government basis with each of the tribes traditionally associated with the park. The park will consult with tribal governments before taking actions that could potentially affect tribal interests. • In fulfillment of NAGPRA requirements, Alaskan Natives and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on park lands. • The park will continue to support and expand efforts to survey, identify, and document ethnographic resources (including traditional practices, beliefs, and languages) in cooperation with government, native, tribal, and other organizations and stakeholders. • The park will collaborate with affiliated tribes to share or interpret cultural information, materials, and demonstrations to the visiting public. • Treat all ethnographic resources as eligible for listing in the National Register of Historic Places pending a formal determination of eligibility. • All ethnographic resources determined eligible for listing or listed in the national register are protected. In accordance with section 106 requirements, the park will consult with the state historic preservation officer, affiliated tribes, other concerned parties and, as necessary, the Advisory Council on Historic Preservation regarding potential project effects on traditional cultural properties. • The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential according to protocols established in consultation with the affected tribal governments. • Continue to develop the Lake Clark village liaison program and recruit partners from affiliated tribes. • Continue to work with tribes and communities to record and document traditional knowledge, practices, and values and provide training opportunities at traditional subsistence camps in the park as appropriate. • Continue to work with the Nondalton Village Council to protect the Chulitna River watershed and Sixmile Lake by cooperating to complete an Integrated Resources Management Plan and an Ethnographic Landscape Inventory. Continue to work with the Nondalton Village Council and the Kijik Corporation to protect the historic Kijik village, church, and cemetery site and the Kijik Archeological District National Historic Landmark. • Maintain and update the Dena'ina Place Names database according to NPS data management standards. • Continue to work collaboratively with the tribes and communities when conducting research related to the resources they value. • Incorporate traditional knowledge in assessing climate change effects on cultural resources and developing adaptation strategies. 	
Cultural Landscapes	Policy/Laws – Cultural Landscapes
<p>NPS <i>Management Policies 2006</i> (5.3.5.2) requires the preservation of the physical attributes, biotic systems, and uses of cultural landscapes that contribute to historical significance. The treatment of cultural landscapes will consider both the natural and built characteristics and features of a landscape, the dynamics inherent in natural processes and continued use, and the concerns of traditionally associated peoples.</p> <p>Cultural landscapes reflect human adaptation and use of natural resources, and are often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of cultural landscapes is defined both by physical materials such as roads, buildings, vegetation and by use reflecting cultural values and traditions (NPS, DO 28, pg.87). The Kijik Archeological District National Historic Landmark has been evaluated as a cultural landscape as well as national register-listed Telaquana Trail. The entire park and preserve is also an ethnographic landscape, encompassing a significant part of the ancestral Coastal and Interior Dena'ina homelands. The park's inventoried cultural landscapes are often subsets of the larger ethnographic landscape and tier off of already designated national register-listed properties. The Chulitna ethnographic landscape inventory is underway.</p>	<ul style="list-style-type: none"> • The Antiquities Act of 1906 • Historic Sites Act of 1935 • National Historic Preservation Act as amended • <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes</i> • Archeological Resources Protection Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • <i>Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • Programmatic Agreement among the National Park Service, the Advisory

	<p>Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (5.3.5.1) • 36 CFR Part 79 • Director's Order 28: <i>Cultural Resource Management</i>
Desired Condition (Cultural Landscapes)	
<ul style="list-style-type: none"> • Character-defining features and attributes contributing to the national register significance of cultural landscapes are appropriately preserved. Surveys and inventories are conducted to identify landscapes potentially eligible for listing in the national register and to assist management decisions regarding the treatment of associated natural and cultural resources. 	
Strategies (Cultural Landscapes)	
<ul style="list-style-type: none"> • Cultural landscape inventories are undertaken to identify and document the historical and cultural significance of cultural landscapes and their character-defining features. • Identified and evaluated cultural landscapes are monitored, inspected, and managed to enable the long-term preservation of historic / cultural features, qualities, and materials. • Cultural landscape reports are completed for inventoried cultural landscapes and recommended actions are implemented. Treatment records documenting the actions undertaken are added to the reports. • Appropriate cultural landscape treatments (e.g., preservation, rehabilitation, restoration) are undertaken in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes</i>. • Treat all cultural landscapes as eligible for listing in the national register-eligible until formal determinations are made. • Comply with all cultural resource protection and preservation policies and directives to manage cultural landscapes and associated viewsheds, including the minimal requirements protocols for actions in wilderness areas. • Complete cultural landscape inventories for the Richard L. Proenneke Historic Site and the recently acquired Jim Kennedy-Rasmuson Historic Site. • Develop design guidelines and/or cultural landscape reports for all historic developed areas to ensure that character-defining features are preserved. Guidelines would include provisions for design review oversight to ensure the compatibility of new planning, design, and construction. • Complete the ethnographic landscape inventory for the Chulitna River watershed and formally determine its national register eligibility. 	

SUBSISTENCE	
Description	Policy/Laws/ANILCA
<p>Subsistence Use "means 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 nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption; and for customary trade"</p>	<ul style="list-style-type: none"> • ANILCA 203 • ANILCA Title VIII • Migratory Bird Treaty Act • 36 CFR 13.4 • "Subsistence. Alaska Strategic Plan 2009 to 2014" • Lake Clark National Park and Preserve

SUBSISTENCE	
<p>(ANILCA section 803). Subsistence use management is primarily addressed in 36 CFR Part 13 Subpart B and the "Lake Clark National Park and Preserve Subsistence Management Plan." The Lake Clark General Management Plan will not affect ANILCA Title VIII mandates for providing continued subsistence opportunity for federally qualified local rural residents or the priority of subsistence uses over the taking of fish and wildlife for other purposes whenever restrictions are necessary. Resident zone communities are communities where significant concentrations of qualified local residents have been identified who have customarily and traditionally engaged in subsistence uses of the park. These communities include Iliamna, Lime Village, Newhalen, Nondalton, Pedro Bay, and Port Alsworth. Individuals who live inside park boundaries but not in a named resident zone community and residents with 13.440 permits issued by the superintendent are also eligible to engage in subsistence uses of the park.</p>	<p>Subsistence Management Plan</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> • 512 DM 2 • Director's Order 75A • ANILCA 1301 (b)(8) • Executive Order 13007 • Executive Order 13175 • Memorandum of understanding among tribes, resident zone communities, Alaska State Troopers, state and local government agencies, and others.
Desired Condition/Goals	
Fundamental Resources and Values	
<p><u>Subsistence Resources</u></p> <ul style="list-style-type: none"> • The park's renewable resources, such as fish, wildlife, and plants, are an integral part of a traditional subsistence way of life. • Continued consumptive uses of fish and wildlife populations, and the collection of firewood, edible plants and other materials within the park do not disrupt the "natural balance." <p><u>Local and Traditional Knowledge</u></p> <ul style="list-style-type: none"> • The National Park Service collects and documents local and traditional knowledge of the ecology, plants, fish and wildlife; this knowledge assists in the management of the park's resources and landscapes. • Local rural residents who have personal knowledge of the park's resources, local conditions and subsistence requirements have a meaningful role in subsistence management through the Lake Clark Subsistence Resource Commission, Bristol Bay Federal Subsistence Regional Advisory Council, and the Federal Subsistence Board. <p><u>Preference for Subsistence Uses</u></p> <ul style="list-style-type: none"> • Subsistence is afforded priority over all consumptive uses. Local subsistence users are also ensured reasonable access to subsistence resources. • Consistent with sound management principles and the conservation of healthy populations of fish and wildlife, the use of park lands causes the least adverse impact possible on rural residents who rely on subsistence use of resources. 	
Other Important Resources and Values	
<p><u>Park Resident Zone and Tribes</u></p> <ul style="list-style-type: none"> • The National Park Service continues to maintain good relationships with neighboring tribes, communities, and park residents and fosters a sense of trust, goodwill, and mutual purpose. Local residents feel they have an important stake in the park and NPS staff feel they have a connection to the local communities and residents. • NPS managers and key staff members are familiar with local issues and concerns and actively engage residents to address problems and topics of shared interest. • The National Park Service works with these communities to achieve cooperative conservation between boundaries as well as cooperative planning efforts. • The National Park Service works to maintain relationships with those resident zone communities considered gateway communities to the park unit. Park staff helps to minimize user conflicts that may arise in areas of the 	

SUBSISTENCE

park and preserve frequently used for subsistence by resident zone community members and other qualified users.

- Park visitors understand and respect the unique connection local tribes and communities have with Lake Clark.
- Park visitors have an understanding and appreciation of subsistence use and its significance for local tribes and local rural residents.

Strategies

- The Lake Clark National Park and Preserve Subsistence Resource Commission (SRC) will continue to meet biannually to discuss issues of subsistence management on parklands, provide subsistence management plan recommendations to the Secretary of Interior pursuant to section 808 of ANILCA, and provide input to the Bristol Bay Regional Advisory Council and the Federal Subsistence Board on regulatory proposals and issues affecting the Federal Subsistence Program.
- The park collaborates with tribes and community members on issues such as traditional use, access, and the protection and interpretation of natural and cultural resources. NPS staff develops interpretive and educational programs highlighting subsistence and living cultures in the park and promotes understanding of subsistence issues.
- NPS staff work closely and collaboratively with local subsistence users on issues concerning subsistence management and continue to consult and rely on the Subsistence Resource Commission for recommendations and suggestions for changing Federal Subsistence Program regulations; input on critical issues affecting subsistence resources and uses, and hunting plan recommendations.
- Neither habitat manipulation nor the reduction of one species to increase the abundance of another will be undertaken for the purpose of maintaining subsistence uses within the park and preserve.
- Pursuant to section 811 of ANILCA, subsistence use of snowmobiles, motorboats, and other means of surface transportation traditionally employed are allowed subject to reasonable regulation.
- If any of the Commission's hunting plan recommendations are accepted by the Secretary of the Interior and found to be in conflict with components of the general management plan, or other park planning documents, these planning documents will be amended or revised to incorporate the commission's recommendations.
- Permits may be issued for the temporary use, occupancy, construction, or maintenance of new or existing cabins and other structures, provided that such use is reasonably necessary to accommodate subsistence. Each request will be evaluated on a case-by-case basis.
- Air taxi operators and others operating fixed-wing aircraft will be requested to avoid flying below a specified altitude and disturbing local residents engaged in hunting, fishing, and other subsistence activities. NPS staff will similarly adhere to these standards and will not allow unnecessary or disruptive helicopter use.
- Conflicts among subsistence users and nonconsumptive users, such as hikers and boaters, will be addressed on a case-by-case basis.
- Closures of areas to subsistence use will occur only if necessary for reasons of public safety, administration, or to ensure the continued viability of fish or wildlife populations.
- The park's subsistence management plan will be regularly reviewed and updated as necessary. Copies will be available for public review.
- Local tribes and communities and the Alaska Department of Fish and Game will be regularly consulted to develop cooperative strategies to monitor subsistence harvest and needs.
- Studies will continue to be conducted to identify general subsistence use areas, primary resource sites, and subsistence customs and traditions.

Park Resident Zone

- The National Park Service will support opportunities for commercial and other services in resident zone communities compatible with the park's enabling language, mission, and General Management Plan.
- The National Park Service will support opportunities for local residents to participate in park programs such as research projects, interpreting cultural sites, and educational programs.
- NPS staff will continue to regularly consult and meet with local tribes and communities to identify problems and concerns and formulate actions that can be taken to address them. Local residents will continue to be kept informed of planning and other actions in the park that could affect local tribes and communities. Likewise, NPS managers will seek relationships with local residents that will keep NPS managers informed about activities that may affect the park. NPS staff will continue to work with the Alaska State Troopers, and local emergency services

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and community education programs.

- Where possible the National Park Service will establish formal partnerships that protect resources, leverage funding, provide in-kind services and provide mutual benefits to both parties.
- NPS staff will participate in regional planning and compliance processes as needed. Participation may include serving as a subject matter expert, preparing section 810 analyses, addressing specific comments and concerns related to the park or park operations, participating in public forums and reviewing draft documents.
- The park staff will help educate and inform visitors about logistics and cultural considerations for visiting local gateway communities.

COMMERCIAL SERVICES	
Description	Policy/Laws/ANILCA
<p>“Visitor Service” means accommodations, facilities, and services determined by the Director as necessary and appropriate for public use and enjoyment of a park area provided to park area visitors for a fee or charge by a person other than the (NPS) Director. (36 CFR 51.3)</p>	<ul style="list-style-type: none"> • ANILCA • National Park Service Concessions Management and Improvement Act of 1998 • 36 CFR 51 • The Wilderness Act of 1964 • NPS <i>Management Policies 2006</i> • NPS Interim Guidelines for Commercial Use Authorizations
Desired Condition/Goals	
<ul style="list-style-type: none"> • Commercial Service providers fill a vital role in helping the National Park Service perform its mission. Through the use of concession contracts or CUAs, the National Park Service provides for commercial visitor services that are necessary and appropriate for public use and enjoyment. • These commercial services are diverse and responsive to public needs. At Lake Clark National Park and Preserve, they include air-taxi operations, guided sportfishing, bear viewing, wildlife photography, and a host of other services. • Commercial service operators specialize in these operations and are thus able to provide quality services at reasonable prices. By welcoming the private sector as a partner in park operations, the National Park Service broadens the economic base of the region and encourages resource stewardship in communities surrounding the parks. • Commercial service operations are consistent to the highest practicable degree with the preservation and conservation of the fundamental resources and values of the park and preserve. Commercial service providers and the National Park Service will partner to demonstrate and practice sound environmental management and stewardship. Open communication with commercial entities will be sought and positive relations will be maintained in order to accomplish NPS goals, and for public benefit and enjoyment. 	
Strategies	
<ul style="list-style-type: none"> • All commercial service providers will continue to be required to meet specific minimum requirements to obtain a CUA or concession contract. These include but are not limited to: current general liability, aircraft, and watercraft insurance, a current State of Alaska business license, current hunting guide certifications and licensing, and appropriate FAA certifications. They will continue to be required to comply with all applicable state and federal regulations. • The National Park Service will annually evaluate concession contract holders to ensure high quality visitor services are being provided. Meetings or other regular communications will occur so the National Park Service can provide information to CUA holders, receive feedback, and good relationships between commercial service providers and NPS staff can be maintained. • CUA holders will continue to be required to provide information to clients concerning safety and environmental ethics, adherence to best practices, pay day-use fees, and to submit annual activity reports to document visitor use. • NPS staff will continue to value all types of visitor use as well as subsistence use. The National Park Service will proactively communicate with visitors, commercial operators, and subsistence users to minimize conflicts. • Concession contracts will be used to provide necessary and appropriate visitor services that enhance public enjoyment and safety and protect park resources. When the National Park Service solicits offers from qualified operators for concession contracts; the focus will be on ensuring high quality services and protecting park resources as outlined in 36 CFR 51.5. • The National Park Service will continue to administer guided hunting concession contracts in the preserve. No permanent facilities or land assignments for facilities would occur under these concession contracts. • The National Park Service encourages and provides a wide variety of visitor experiences and opportunities. These include visitor services that facilitate both guided and unguided trips into the park and preserve through a variety of transportation methods. 	

CLIMATE CHANGE	
Description	Policy/Laws/ANILCA
<p>There is increasing evidence from scientific and traditional knowledge that climate is rapidly changing in Alaska.</p>	<ul style="list-style-type: none"> • NPS Organic Act • Executive Order 13423 (includes requirements for the reduction of greenhouse gases and other energy and water conservation measures) • Department of the Interior Secretarial Order 3226 (ensure that climate change impacts be taken into account in connection with departmental planning and decision making) • NPS <i>Management Policies 2006</i> (including sections on environmental leadership [1.8], sustainable energy design [9.1.1.6], and energy management [9.1.7]) • NPS Environmental Quality Division <i>draft</i> Guidance on Considering Climate Change in NEPA • <i>Alaska Region Climate Change Response Strategy 2010 to 2014</i> • <i>National Park Service Climate Change Response Strategy 2010</i>
Desired Condition/Goals	
<ul style="list-style-type: none"> • The park is a leader in addressing climate change, reducing greenhouse gas emissions, increasing use of renewable energy, and other sustainable practices. • The park is a leader in the application of sustainable design and construction. • Using the best available science, park staff proactively monitor, plan, mitigate, communicate, and adapt to the effects of climate change on cultural and natural resources and visitor services. Education and interpretive programs help visitors understand climate change impacts in the park, Alaska, and beyond, and how they can respond to climate change. • The National Park Service and its stakeholders recognize the special value of the undisturbed ecosystems of the park and their role in understanding the cumulative effects of human developments and climate change in the Bristol Bay and lower Cook Inlet regions. • In order to realize its maximum value as a control area, the park’s undisturbed, and unmanipulated nature must be maintained. Scientific activities conducted in the park must, to the greatest extent possible, remain unobtrusive to avoid disturbance of wildlife. • Recognizing that the NPS servicewide response to climate change will include an entire spectrum of responses from continual and intense intervention to a hands-off approach, the park staff understands that large wild Alaska parks are the best candidates for the latter approach due to their existing high degree of wildness, the social values associated with wildness, the size of the parks, the small sign of pre-settlement influence, and the scale of the stressor (climate change would affect huge acreages that would be too challenging to hold to some historical period of time). • Park staff promotes innovation, best practices, and adaptive management to respond to the challenges of climate change and its effects on park resources and visitor experience. 	
Strategies	
<ul style="list-style-type: none"> • Inventory and monitor key natural and cultural resources and visitor amenities that are at risk from climate change. Establish baseline resource conditions, identify natural variation, and monitor for change. • Assess, plan, and manage resources at multiple scales, from site-specific to international for effective management actions to climate change. • Identify key resources in management zones/areas that may require different management responses to climate change impacts. 	

CLIMATE CHANGE

- Collaborate with partners to identify and monitor climate change effects in parks and apply accurate and relevant science to management and policy decisions.
- Park will contribute to the scientific understanding of climate change and its effects.
- Partnerships are formed with other resource management entities to maintain regional habitat connectivity and refugia that allow species dependent on park resources to better adapt to changing conditions. NPS staff use best management practices to reduce human-caused stresses (e.g., park operations and visitor-related disturbances) that hinder the ability of species or ecosystems to withstand the impacts of climate change.
- Use adaptive management to minimize risks to park resources.
- Develop feasible and actionable scenarios of climate change effects and create a flexible framework for dealing with impacts.
- Use the dynamic environment of the Lake Clark region as a teaching opportunity about climate change. Educate visitors (both on-site and virtual visitors) about climate change and related research at the park, and climate change impacts on park resources. Inspire visitors and promote an ethic of stewardship through leadership, education, and opportunities for citizen science.
- Protect key natural and cultural resources to increase their resiliency to climate change. By reducing other types of impacts on resources, the overall condition of the resources may stabilize or improve, increasing the likelihood of recovery or resistance to the impacts of climate change.
- The park will become a member of the Climate Friendly Parks program, measuring park-based greenhouse emissions, developing sustainable strategies to mitigate these emissions and adapt to climate change impacts, educating the public about these efforts, and developing future action plans.

**APPENDIX D: SCIENTIFIC NAMES OF
PLANT SPECIES REFERENCED IN THE TEXT**

SCIENTIFIC NAMES OF PLANT SPECIES REFERENCED IN THE TEXT

Common Name	Scientific Name
alder (green alder)	<i>Alnus viridis</i>
annual bluegrass	<i>Poa annua</i>
aslike clover	<i>Trifolium hybridum</i>
balsam poplar, black cottonwood	<i>Populus balsamifera</i>
black spruce	<i>Picea mariana</i>
blueberry	<i>Vaccinium uliginosum</i>
bluejoint reedgrass	<i>Calamagrostis canadensis</i>
capitate valerian	<i>Valeriana capitata</i>
blueberry	<i>Vaccinium uliginosum</i>
common chickweed	<i>Stellaria media</i>
common dandelion	<i>Taraxacum officinale</i> ssp. <i>officinale</i>
common plantain	<i>Plantago major</i>
common strawberry	<i>Fragaria virginiana</i>
common tansy	<i>Tanacetum vulgare</i>
corn spurry	<i>Spergula arvense</i>
crowberry	<i>Empetrum nigrum</i>
curlytop knotweed	<i>Persicaria lapathifolia</i>
devil's club	<i>Oplopanax horridus</i>
dryas	<i>Dryas</i> spp.
European bird cherry	<i>Prunus padus</i>
fireweed	<i>Epilobium angustifolium</i>
dwarf birch	<i>Betula nana</i>
green false hellebore	<i>Veratrum viride</i>
Kenai birch	<i>Betula kenaica</i>
Labrador tea	<i>Ledum</i> spp.
lowbrush cranberry	<i>Vaccinium vitis-idaea</i> ssp. <i>minus</i>
larkspurleaf monkshood	<i>Aconitum delphiniifolium</i>
marsh-meadow foxtail	<i>Alopecurus geniculatus</i>
narrowleaf hawksbeard	<i>Crepis tectorum</i>
orange hawkweed	<i>Hieracium auranticum</i>
oxeye daisy	<i>Leucanthemum vulgare</i>
paper birch	<i>Betula papyrifera</i>
partridgefoot	<i>Luetkea pectinata</i>
pineapple weed	<i>Matricaria discoidea</i>
prickly rose	<i>Rosa acicularis</i>
prostrate knotweed	<i>Polygonum aviculare</i>
reed canarygrass	<i>Phalaris arundinacea</i>

APPENDIXES, REFERENCES, PREPARERS, AND CONSULTANTS

Common Name	Scientific Name
salmonberry	<i>Rubus spectabilis</i>
Sitka spruce	<i>Picea sitchensis</i>
smooth brome grass	<i>Bromus inermis</i> ssp. <i>inermis</i>
thyme-leaf speedwell	<i>Veronica serpyllifolia</i>
white clover	<i>Trifolium repens</i>
white spruce	<i>Picea glauca</i>
willow	<i>Salix</i> spp.

APPENDIX E: CONSULTATION CORRESPONDENCE



United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

Admin/HQ Office

240 W. 5th Avenue, Suite 236, Anchorage, AK 99501

Phone (907) 644-3634 Fax (907) 644-3810

Field Office

General Delivery, Port Alsworth, AK 99653

Phone (907) 781-2218 Fax (907) 781-2119



H4217 (LACL-CR)

May 24, 2011

Native Village of Tyonek
Frank Standifer III, President
P.O. Box 82009
Tyonek, AK 99682

Dear Mr. Standifer:

Lake Clark National Park and Preserve is preparing to publish a Notice of Intent in the Federal Register to prepare an Environmental Impact Statement for an amendment to the park's 26-year-old general management plan. This plan will guide management decisions and provide an overarching vision for resource preservation and visitor use that will best achieve the National Park Service's mandate to preserve resources unimpaired for the enjoyment of future generations.

Recognizing the government-to-government relationship which the NPS has with tribes, your role is key in this undertaking. Your participation is very important to us in providing meaningful input for determining the range of alternatives to be considered. We would like consultation to address, among other things, cultural and historic resource issues, pursuant to Section 106 of the National Historic Preservation Act. We will depend on your participation in meetings and reviews, and on your written or verbal comments on pre-draft or pre-final environmental documents to reflect the views and concerns of your tribe on the adequacy of the document, alternatives considered, and the anticipated impacts and mitigation.

We would very much appreciate the opportunity to meet with you and your designated representative(s) in order to continue government-to-government consultation on the planning for the amendment of our general management plan. The goal of the consultation is to identify any concerns in the environmental review process and reach mutually agreeable decisions while taking into account the interests of both the Tribal and Federal governments.

Thank you for taking the time to work with us. I will be in touch with your office in the coming weeks to inquire about scheduling meetings to discuss these matters further. We will also be sending a newsletter about the project soon. In the meantime, if you have any questions, please contact me at the address above, or call me directly at 907/644-3627.

Sincerely,

Superintendent
Lake Clark National Park and Preserve



Cc
Bristol Bay Native Corporation
Calista Corporation
Cook Inlet Regional Corporation

Duplicate letters sent to:

Native Village of Tyonek
ATTN: Frank Standifer III
P.O. Box 82009
Tyonek, AK 99682
Phone: (907) 583-2201 Fax: (907) 583-2242
Email: tyonek@aitc.org

Native Village of Tyonek
ATTN: Tribal Administrator
P.O. Box 82009
Tyonek, AK 99682

Kenaitze Indian Tribe
Rosalie A. Tepp, Chairperson
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Kenai, AK 99611-0988
Phone: (907) 283-3633 Fax: (907) 283-3052
Email: exec@kenaitze.org

Lime Village Traditional Council
ATTN: Jennifer John, President
P.O. Box LVD, Lime Village VIA
McGrath, AK 99627
Phone: (907) 526-5236 Fax: (907) 526-5235
Email: limevillage@gmail.com

Lime Village Traditional Council
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P.O. Box LVD, Lime Village VIA
McGrath, AK 99627

Newhalen Village Council
ATTN: Raymond Wassillie, President
P. O. Box 207
Newhalen, AK 99606
Phone: (907) 571-1410 Fax: (907) 571-1537

Newhalen Village Council
ATTN: Tribal Administrator
P.O. Box 207
Newhalen, AK 99606

Ninilchik Traditional Council
ATTN: Richard Encelewski, President
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Ninilchik, AK 99639
Phone: (907) 567-3313 Fax: (907) 567-3308
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Ninilchik Traditional Council
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P.O. Box 39070
Ninilchik, AK 99639

Nondalton Village Council
ATTN: Jack Hobson, President
P.O. Box 49
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Phone: (907) 294-2252 Fax: (907) 294-2234
Email: nondaltontribe@starband.net

Nondalton Village Council
ATTN: Tribal Administrator
P.O. Box 49
Nondalton, AK 99640

Pedro Bay Village Council
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P.O. Box 47020
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Pedro Bay Village Council
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P.O. Box 47020
Pedro Bay, AK 99647

Seldovia Village Tribe
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Seldovia Village Tribe
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Drawer L
Seldovia, AK 99663

Village of Iliamna
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Email: ilive@aol.com

Village of Iliamna
ATTN: Tribal Administrator
P.O. Box 286
Iliamna, AK 99606



CC to:

Bristol Bay Native Corporation
111 West 16th Avenue, Suite 400
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Phone 907-278-3602
Fax 907-276-3924, E-mail: adebruhle@bbnc.net

Calista Corporation,
301 Calista Court, Suite A,
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Cook Inlet Regional Corporation
P.O. Box 93330;
Anchorage, Alaska 99509-3330;
phone (907) 274- 8638 Web: www.ciri.com





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
ALASKA OPERATIONS OFFICE
Room 537, Federal Building
222 West 7th Avenue, #19
Anchorage, AK 99513-7588

David, usps
8/2/11
[Signature]

August 1, 2011

Joel Hard, Superintendent
Lake Clark National Park and Preserve
240 West 5th Avenue, Suite 236
Anchorage, Alaska 99501

Re: EPA scoping comments on the Lake Clark National Park and Preserve General Management Plan/Wilderness Study Environmental Impact Study. EPA Project #11-021-NPS

Dear Mr. Hard:

The U.S. Environmental Protection Agency (EPA) has reviewed the Notice of Intent (NOI) to prepare an EIS for the **Lake Clark National Park and Preserve General Management Plan/Wilderness Study**. Our review was conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

Section 309 requires EPA to review and comment in writing on environmental impacts associated with all major federal actions. Our review of the EIS prepared for the proposed plan will consider not only the expected environmental impacts of the project, but also the adequacy of the EIS in meeting the public disclosure requirements of NEPA. We have enclosed a copy of *EPA's Section 309 Review: The Clean Air Act and NEPA* (Enclosure 2) which provides further elaboration of our EIS review responsibilities.

According to the NOI, the National Park Service (Service) intends to develop and implement a plan to establish overall direction and broad management goals for park management over the next 15-20 years. The plan will also prescribe desired resource conditions and visitor experiences based on the park's purpose and mandates.

We applaud the efforts of the Service to develop and implement a comprehensive, long-term plan to manage resources and visitors to the Park, and we support alternatives that will improve user service and experience, while providing more efficient travel and reducing impacts. We offer the attached detailed scoping comments to inform the Service of issues that EPA believes should be considered as the NEPA process moves forward (Enclosure 1).

Thank you for the opportunity to provide comments on the NOI. Please feel free to contact me at (907) 271-6324 or by electronic mail at curtis.jennifer@epa.gov , if you have questions or would like additional information regarding these comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'JJC', with a horizontal line extending to the right.

Jennifer J. Curtis, NEPA Reviewer
Environmental Review and Sediments Management Unit

Enclosures

ENCLOSURE 1

EPA DETAILED SCOPING COMMENTS FOR THE LAKE CLARK NATIONAL PARK AND PRESERVE GENERAL MANAGEMENT PLAN AMENDMENT/WILDERNESS STUDY ENVIRONMENTAL IMPACT STUDY

Purpose and Need

The EIS should clearly identify the underlying purpose and need to which the Service is responding to in proposing the alternatives, including the broader public interest and need. The purpose of the proposed action would typically be the specific objectives of the amended plan, while the need for the plan may be to eliminate a broader underlying problem or take advantage of an opportunity. Thus, the purpose and need should be a clear, objective statement of the rationale for the proposed project, as it provides the framework for identifying project alternatives.

Range of Alternatives

The alternatives identified for the EIS should address the purpose and need for the proposed management direction; resource and environmental conditions that will result from application of proposed management direction; and estimated outputs of goods and services, timing and flow of outputs, costs and benefits, and resource management and protection standards. The EIS should include a range of reasonable alternatives that meet the stated purpose and need for the plan and that are responsive to the issues identified during the scoping process. The Council on Environmental Quality (CEQ) recommends that all reasonable alternatives be considered, even if some of them could be outside the jurisdiction of the agency. Also, the environmental impacts of the proposal and alternatives should be presented in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. The potential impacts of each alternative should be quantified to the greatest extent possible. It would also be useful to list each alternative action's impacts and corresponding mitigation measures. We encourage selection of an alternative that will minimize environmental degradation.

Alternatives Analysis

EPA recommends that tables, maps, figures, charts, photos, etc., be used as much as possible and wherever appropriate to present and display information and specific features of alternatives so that the various alternatives can be clearly understood. We believe that an alternatives matrix table that summarizes major features and significant environmental impacts of alternatives should be provided to facilitate understanding of the alternatives, particularly distinctions between alternatives, and to provide a comparative evaluation of alternatives in a manner that sharply defines issues for the decision maker and the public to make in regard to a reasoned choice among alternatives (40 CFR 1502.14). Additionally, more specific measures are often developed for individual alternatives to mitigate particular impacts. Such measures, as well as their anticipated effectiveness in accomplishing the planned purpose should be disclosed.

The following is a list of suggested topics for inclusion in the alternative analysis:

- Definitions used;
- Desired condition, goals, objectives, and standards;
- Revisions to rehabilitation/restoration programs, level of effort and likely success;

- Process used to update the plan as conditions, regulations and standards change or revise or waive standards or guidelines;
- Process to ensure that ecosystem health is restored and sustained, and rationale of why the selected process is expected to maintain ecosystem health, and/or improve the health of the ecosystem (include "indicators" or "criteria" used to judge the health of the ecosystem and rationale of why they are considered to be representative of the health of the ecosystems);
- Identification of issues which cross political or other authority boundaries (i.e. cross-political, agency, administrative, ownership, etc.) and thus require coordination with other entities. Cultural boundaries (i.e. political, administrative, economic, societal, etc.) should not override scientific analysis of ecosystems;
- Identification of characteristics and species which need to be separately tracked to ensure protection (e.g., threatened, endangered and sensitive species and their habitat);
- Identification and protection of the unique, small but ecologically important sites that function as key elements of the ecosystem (i.e., springs, seeps, wetlands);
- Revised monitoring program and its objectives (what, how much, how often, data and analysis needs, level of data and analysis required/analyzed, including how is monitoring improved compared to current plans);
- Adaptive management (process to measuring effects and detect problems and feedback monitoring results to make changes/corrections to protect, restore and sustain resources); and
- Expected effectiveness of the new plan.

Existing Environment and Environmental Effects

The EIS should include discussion of environmental effects and mitigation measures. This would involve delineation and description of the affected environment, indication of resources that would be impacted, the nature of the impacts, and a listing of mitigation measures for the impacts. The EIS should analyze and disclose the environmental impacts of the management alternatives, including the effect of implementing the alternative on the physical, chemical and biological resources such as air and water quality, biologic components or ecosystems, and the likelihood of success of mitigation measures. The discussion should consider the issues discussed below as well as unavoidable adverse environmental effects, short-term and long-term environmental considerations, and any irreversible or irretrievable commitments of resources involved with the alternatives should they be implemented.

In accordance with 40 CFR 1502.16 this section should address:

- Direct effects and their significance.
- Indirect effects and their significance.
- Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned.
- The environmental effects of alternatives including the proposed action.
- Energy requirements and conservation potential of various alternatives and mitigation measures.
- Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- Means to mitigate adverse environmental impacts.

Statements made in the assessment should be substantiated either by data and analysis included in the document, or by reference to readily available supporting documents. When referencing documents or data not included in the NEPA document, information should be included to ensure the reader understands the quality and type of analysis actually completed. Environmental analysis documents should reflect the level of analysis and data compilation actually completed. Unless clearly documented, the reviewer may be unable to establish whether data exists to support conclusions within the analysis. Public accessibility to supporting documents is also important.

Analysis of the following environmental resources is of particular interest to the EPA:

Water Resources

Water quality degradation is one of the EPA's primary concerns. The EIS should disclose which waters may be impacted by management activities, the nature of potential impacts, and specific pollutants likely to impact those waters. It should also report those waterbodies potentially affected by proposed activities that are listed on the State's most current EPA-approved 303(d) lists. The EIS document should describe existing restoration and enhancement efforts for those waters, how the plan will coordinate with on-going protection efforts, and any mitigation measures that will be implemented to avoid further degradation of water quality within impaired waters. Antidegradation provisions of the Clean Water Act (CWA) apply to those waterbodies where water quality standards are currently being met. This provision prohibits degrading the water quality unless an analysis shows that important economic and social development necessitates some degradation of water quality. The EIS evaluation should determine how the antidegradation provisions would be met.

Public Drinking Water

Public drinking water supplies and/or their source areas often exist in many watersheds. It is possible that source water areas may exist within the park. Source water is water from streams, rivers, lakes, springs, and aquifers that is used as a supply of drinking water. The 1996 amendments to the Safe Drinking Water Act (SDWA) require federal agencies to protect sources of drinking water for communities. State agencies have been delegated responsibility to delineate and map each federally-regulated public water system, to conduct source water assessments and provide a database of information about the watersheds and aquifers that supply public water systems. If activities under the plan may impact sources of drinking water, EPA recommends that the Service contact the Alaska Department of Environmental Conservation to help identify source water protection areas within the planning area. The EIS should:

- Identify all source water protection areas within the project area;
- Identify all activities and potential contaminants caused by those activities that could potentially affect source water areas; and
- Identify all measures that would be taken to protect the source water protection areas in the EIS.

Wetlands and Riparian Areas

The EIS should describe all waters of the U.S. that could be affected by the project alternatives, and include maps that clearly identify all waters within the project area. The document should include data on acreages and channel lengths, habitat types, values, and functions of these waters. Projects affecting waters of the U.S. would need to comply with CWA Section 404 requirements. Section 404 regulates the discharge of dredged or fill material into waters of the U.S., including wetlands and other special aquatic sites. The U.S. Army Corps of Engineers issues Section 404 permits.

If anticipated projects under the plan would involve discharge of dredged or fill material into waters of the U.S., the EIS should include information regarding alternatives to avoid the discharges or how potential impacts caused by the discharges would be minimized and mitigated. This discussion would include the following elements:

- acreage and habitat type of waters of the U.S. that would be created or restored;
- water sources to maintain the mitigation area;
- re-vegetation plans, including the numbers and age of each species to be planted, as well as special techniques that may be necessary for planting;
- maintenance and monitoring plans, including performance standards to determine mitigation success;
- size and location of mitigation zones;
- parties that would be ultimately responsible for the plan's success; and
- contingency plans that would be enacted if the original plan fails.

Mitigation should be implemented in advance of the impacts to avoid habitat losses due to the lag time between the occurrence of the impact and successful mitigation.

Roads and Facilities

The EPA recommends that the Service evaluate the impacts that any proposed roads, facilities and other infrastructure would have on waterbodies, air quality and wildlife resources in the project area. In particular, roads contribute more sediment to streams; interrupt the subsurface flow of water, especially where roads cut into steep slopes; may fragment habitats and disturb wildlife; and accelerate noxious weed infestations. The EIS should include data about existing road networks and evaluate the change in road miles and density that will occur as a result of plan activities and predicted impacts to water quality by roads. The EIS should note that, under the CWA, any construction project disturbing a land area of one or more acres requires coverage under the Construction Stormwater General Permit, now administered by the State of Alaska. The EIS should document the plan's consistency with applicable storm water permitting requirements and should discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality.

Plan projects that would involve construction of facilities and access roads may also compact the soil, thus changing hydrology, runoff characteristics, and affecting flows and delivery of pollutants to water bodies and ecological function of the area. Therefore, the EIS should include a detailed discussion of the cumulative effects from this and other projects on the hydrologic conditions within the project area. The document should clearly depict reasonably foreseeable direct, indirect, and cumulative impacts to groundwater and surface water resources. For groundwater, the potentially affected groundwater basin(s) should be identified and any potential for impacts to springs or other open water bodies and biologic resources should be analyzed.

Protected Species

Management activities may impact species listed (or proposed for listing) under the Endangered Species Act (ESA) or other protected species laws. The EIS should identify the protected species under ESA and other laws, and other sensitive species within the park and surrounding areas. The EIS also should describe the critical habitat for the species, if applicable; identify any impacts the plan will have on the species and their critical habitats; and how management activities will meet all requirements under ESA

and other laws, including consultation with the US Fish and Wildlife Service (FWS) and National Oceanographic Atmospheric Administration (NOAA). The EIS may need to include a biological assessment and a description of the outcome of consultation with the FWS and NOAA under Section 7 of the ESA. The Service's actions should promote the recovery of declining populations of species.

The EIS should insure that management activities alternatives will not threaten the viability of populations. ESA requires the lead agency to consult with the Services in cases where proposed projects could potentially impact listed species or critical habitat(s). Resulting biological assessments should be developed prior to the EIS and their results summarized and disclosed in the document (40 CFR 1502.25(a)). By doing this, the EIS would demonstrate that ESA procedures are being followed and that listed species and their habitats are being protected.

Invasive Species

The EIS should contain measures that are consistent with Executive Order 13112 on Invasive Species. We suggest including any existing Service direction for noxious weed management, a description of current conditions, and best management practices that will be utilized to prevent, detect, and control invasives in the EIS. The EIS should also discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species with the proposed management activities. EPA encourages the Service to promote integrated invasive management, with prioritization of management techniques that focus on non-chemical treatments first, and mitigation to avoid herbicide transport to surface or ground waters, in the plan. Early recognition and control of new infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts on biodiversity, water quality and fisheries.

While EPA fully supports control of noxious weed infestations, we note that weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. It is important that management direction assures that water contamination concerns of herbicide usage be fully evaluated and mitigated. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. All efforts should be made to avoid movement or transport of herbicides into surface waters that could adversely affect fisheries or other water uses (i.e., use mitigation measures avoid herbicide drift to streams and wetlands, during ground and aerial applications of herbicide such as adequate streamside buffers, mechanical weed removal adjacent to streams, flagging aquatic areas on the ground, spray nozzles that produce larger droplets to reduce drift, use of photodegradable dyes in herbicides, use of GPS technology, use of spray detection cards, wind monitoring, herbicide monitoring, etc.).

Plant seeds can be carried from a source area by the wind or migrating animals, on equipment tires and tracks, by water, and on the boots of workers and area users, so care should be taken to implement control procedures in all source areas to avoid spread to unaffected areas. For your information, measures we often recommend at the project level for preventing spread from source areas to uninfested areas include:

- ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site;
- focus control efforts at trail heads and transportation corridors to prevent tracking of seed into uninfested areas;
- attempt to control the spread from one watershed to another to reduce water as a transport vector;

- reroute trails/roads around the infestation to reduce available vectors for spread if a localized infestation exists and control is not a viable option;
- establish an education program for workers and users and encourage voluntary assistance in both prevention and control activities; and
- reseed disturbed sites as soon as possible following disturbance.

The Service may want to consider some restrictions on vehicles to reduce potential for reinfestation of the area by noxious weeds after treatment. Also, if sufficient vegetation is killed during ground disturbing activities (e.g., by prescribed burning) it may warrant revegetation efforts. We believe that revegetation (reseeding with native grass mix) should be expanded to seed any site within the control area where the vegetation density is low enough to allow reinfestation or introduction of other noxious weeds, or erosion. The goal of the seeding program should be to establish the sustainability of the area. Where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses, thereby allowing native species to eventually prevail.

We also note that hay can be a source of noxious weed seed. Hay is often used as mulch to slow erosion and encourage seed germination. The Federal Noxious Weed Act of 1974 prohibits the interstate transport of noxious weeds or weed parts, such as seed. The Service may want to discuss the option of requiring use of certified weed free hay in permits or projects.

Biodiversity

Maintaining and strengthening biodiversity is a critical consideration in land and resource management plans, especially since special habitats (i.e., wetlands, threatened and endangered species habitat) may be affected. The state of the art for this issue is changing rapidly. CEQ prepared guidance entitled, *Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act*, which can be found at http://ceq.hss.doe.gov/nepa/regs/guidances/Incorporating_Biodiversity_1993.pdf.

Recreation, Subsistence Activities and Access

Impacts from recreation, subsistence activities, and access should be analyzed and reported in the EIS, particularly those impacts associated with vehicle usage. Impacts from off road vehicle (ORVs) and snowmachine use can result in habitat destruction, increased sedimentation to water bodies, noise and air pollution. The EIS should disclose all impacts associated with such activities and describe what actions will be taken to manage recreational, subsistence and access opportunities in the project area. EPA specifically encourages the Service to control and direct ORV and snowmachine use to protect resources (i.e., wildlife habitat and security) and prevent erosion, through adequate policing and enforcement.

Indirect Impacts

The CEQ regulations for implementing the procedural provisions of NEPA state that the environmental consequences section of an EIS should include: "Indirect effects and their significance (40 CFR 1502.16(b))." Indirect effects are defined as "...caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth- or development-inducing effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.9(b)). The CEQ regulations also indicate that the EIS should include the "means to mitigate adverse environmental effects," which applies to indirect effects as well as direct effects.

Cumulative Impacts

NEPA requires that cumulative impacts be addressed as a summary of the individual impacts of the proposed action and all other past, present, and "reasonably foreseeable" future actions, including evaluation of direct and indirect effects of these projects on all resource categories, including water quality, aquatic habitat, fisheries, wetlands, air quality and wildlife habitat. This may include analysis and disclosure of activities on land adjacent to the park irrespective of what entity has decision-making authority or analysis responsibility. We believe cumulative impacts analysis and disclosure is most relevant and important for long-term plans because resources must be examined at many different geographic, temporal and cross-cutting scales, and are well suited to evaluation of long term trends and sustainability.

In January, 1997, CEQ published, *Considering Cumulative Effects under the National Environmental Policy Act*. This guidance provides a framework for analyzing cumulative effects. In May, 1997, EPA published a document entitled, "*Consideration of Cumulative Effects in EPA Review of NEPA Documents*".

This document is available at <http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>.

EPA considers five key areas of information in reviewing cumulative effects analyses:

- clear identification of resources being cumulatively impacted and the geographic area where impacts occur;
- use of appropriate analysis area boundaries for the resource and time period over which the cumulative effects have occurred or will occur;
- identification of impacts to resources of concern in each area through analysis of cause-and-effects relationships (include scientifically defensible threshold levels);
- adequate evaluation of all past, present, and reasonable foreseeable future actions that have affected, are affecting, or would affect resources of concern (include adequate evaluation vs. benchmark or baseline conditions); and
- disclosure of the overall cumulative impacts expected if the individual impacts are allowed to accumulate, including exceedances of any of the established threshold levels in comparison to baseline conditions. Provide comparisons of cumulative impacts for the proposed management direction and the reasonable alternatives in relation to the no action alternative and/or an environmental reference point.

While a broad consideration of resources is necessary for adequate assessment of cumulative impacts, the analysis should be focused on those resources that could be significantly impacted. The EIS should identify the resources of concern or ecosystem components that might be affected by the proposed action and its alternatives. The ecological requirements necessary to sustain the resources of concern should be considered when assessing how the project and the other past, present and reasonably foreseeable future actions may cumulatively affect the resources of concern. Often these ecological requirements may extend beyond the boundaries of the project area, but reasonable limits should be made to the scope of the analysis.

A common inadequacy of environmental analyses is the lack of analysis or disclosure of the sum of individual effects of all projects on the local environment. A summary listing of other projects occurring in the vicinity without the accompanying analysis is insufficient. Another frequent oversight is that Agencies often tend to limit the scope of their analyses to those areas over which they have direct

authority or to the boundary of the relevant management area or project area. This may not cover the effects to the area or resources of concern.

Mitigation and Monitoring

A comprehensive discussion of proposed mitigation for direct, indirect and cumulative impacts is required by the CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Part 1500). The CEQ regulations state that an EIS should include the means to mitigate adverse environmental effects and disclose the effectiveness of mitigation measures in minimizing adverse effects (40 CFR 1508.7). Simply listing the mitigation measures is insufficient to qualify as the reasoned discussion and “hard look” required by NEPA. Mitigation measures must be discussed in sufficient detail to ensure that potential detrimental environmental effects and measures to mitigate those effects have been fairly evaluated. Monitoring plans are also needed for measuring the effectiveness of the mitigation measures (quantitatively-if possible, and/or a qualitatively), and determining the need for modifying mitigation. The EIS should also address coordination efforts and funding or budget needs required to undertake or implement monitoring and mitigation measures. CEQ recently finalized guidance on monitoring and mitigation, which can be viewed at:

http://ceq.hss.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.

Climate Change

Climate responses vary at different locations on the earth, but observed changes are being documented in the Arctic, including Alaska. Effects of climate change may include changes in hydrology, weather patterns, precipitation rates, and chemical reaction rates. The EIS should therefore consider how resources affected by climate change could potentially influence management strategies and vice versa, especially within sensitive areas.

Coordination with Federally-Recognized Tribal Governments

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and to strengthen the U.S. government-to-government relationships with federally-recognized tribal governments. If this plan could affect resources of use or concern to tribal governments and their members, the EIS should describe the process and outcome of government-to-government consultation between the Service and each tribal government involved, the issues that were raised, if any, and how those issues were addressed. In addition, tribal governments should be offered the opportunity to serve as cooperating agencies on the EIS in accordance with the July 25, 1999, CEQ Memorandum for Heads of Federal Agencies:

<http://ceq.hss.doe.gov/nepa/regs/ceqcoop.pdf>.

Public Participation and Environmental Justice

The EIS should disclose what efforts were taken to ensure effective public participation. Since low income or people of color communities will be impacted by the proposed plan, the EIS should disclose what efforts were taken to meet environmental justice requirements consistent with Executive Order (EO) 12898 (*Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*).

EO 12898 requires that Federal agencies make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.

Environmental justice encompasses a broad range of impacts covered by NEPA, including impacts on the natural or physical environment and interrelated social, cultural, and economic impacts. If applicable, we recommend that the Service develop a strategy for effective public involvement of minority (e.g., Alaskan Native) and low-income populations in the plan considerations, analyzing environmental, social, cultural and economic effects, and developing mitigation measures. Detailed guidance on addressing Executive Order 12898 in NEPA documents is available from CEQ at <http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf>.

ENCLOSURE 2

EPA's Section 309 Review: The Clean Air Act and NEPA

Office of Federal Activities (2251A)

Quick Reference Brochure

ENVIRONMENTAL REVIEW AND THE CLEAN AIR ACT

The Clean Air Act, a law to prevent pollution of a single environmental medium, contains an unusual provision. That provision is Section 309, which authorizes the Environmental Protection Agency (EPA) to review certain proposed actions of other federal agencies in accordance with the National Environmental Policy Act (NEPA) and to make those reviews public. If the proposing agency (the "lead" agency) does not make sufficient revisions and the project remains environmentally unsatisfactory, EPA may refer the matter to the President's Council on Environmental Quality for mediation. (See **Highlight A.**)

HIGHLIGHT A: Section 309 of the Clean Air Act

(a) The Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this Act or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any Federal department or agency, (2) newly authorized Federal projects for construction and any major Federal agency action (other than a project for construction) to which Section 102(2)(C) of Public Law 91-190 [*] applies, and (3) proposed regulations published by any department or agency of the Federal government. Such written comment shall be made public at the conclusion of any such review.

(b) In the event the Administrator determines that any such legislation, action, or regulation is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.

[*] NEPA (42 USC 4332(2)(C) et seq.)

Section 309 originated in 1970, the year in which landmark national legislation created new agencies and new requirements for restoring and protecting the environment. Besides NEPA and its creation of CEQ, the National Oceanic and Atmospheric Administration (NOAA) and EPA were established, and, at the end of 1970, the Clean Air Act was passed. At that time, many issues of environmental consequence were brewing (see **Highlight B**), one of which--the proposed supersonic transport aircraft (SST)--became a crucial test of NEPA. (See **The National Environmental Policy Act** section, below.)

The lead agency for the SST project, the Department of Transportation (DOT), chose not to disclose EPA's comments on the NEPA-required environmental impact statement (EIS) before having issued its final decision, construing NEPA to contain no explicit public disclosure requirements. Although later CEQ regulations under the Act would clarify this ambiguity, the Congress had a vehicle at hand in which to make its point: the draft Clean Air Act. Senator Edmund Muskie, sponsor of Section 309, said to the Senate when submitting the conference report, that as soon as EPA has completed its review of a proposed action, it must make its written comments public, and "not when the environmental impact agency decides the public should be informed." (116 *Cong. Rec.* S-20602, Dec. 18, 1970)

HIGHLIGHT B: When NEPA Was New: 1970-1971 Issues

- o Trans-Alaska oil pipeline and the North Slope-Valdez route
- o Supersonic transport aircraft
- o Cross-Florida Barge Canal
- o Clearcutting "areas of scenic beauty" in national forests
- o Tennessee-Tombigbee Waterway
- o Dredging and filling in wetlands
- o Calvert Cliffs (MD) nuclear power plant

To correct another ambiguity of NEPA, Section 309 places the requirement to review EISs upon EPA because NEPA "does not assure that Federal environmental agencies will effectively participate in the decision-making process. It is essential that mission-oriented Federal agencies have access to environmental expertise in order to give adequate consideration to environmental factors." (*Sen. Rept.* No. 91-1196, 91st Cong., 2d Sess. 43, 1970) Consequently, EPA has reviewed most of the approximately 25,000 draft and final EISs produced since the passage of NEPA.

Section 309 confers upon EPA broad review responsibilities for proposed federal actions. (See **Highlight C.**) The EPA Administrator has delegated responsibility of national program manager to the Office of Federal Activities (OFA), and to the ten EPA Regional Administrators for review of regional specific actions. OFA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft. If improvements are not made in the final EIS, EPA may refer the final EIS to CEQ. (See sections on **The National Environmental Policy Act and Referrals**, below.)

HIGHLIGHT C: Materials Which EPA Reviews Under Section 309 Authority

- o Proposed legislation
- o Proposed regulation
- o Environmental assessment (EA)
- o Environmental impact statement (EIS), draft and final
- o Any proposal that the lead agency maintains does not require an EIS but that EPA believes constitutes a major federal action significantly affecting the environment so as to require an EIS.

Figure 1: EPA's Criteria for Sec. 309 Review of Impact Statements

Rating Environmental Impacts:

LO--Lack of Objections

EC--Environmental Concerns--Impacts identified that should be avoided. Mitigation measures may be required.

EO--Environmental Objections--Significant impacts identified. Corrective measures may require substantial changes to the proposed action or consideration of another alternative, including any that was either previously unaddressed or eliminated from the study, or the no-action alternative).

Reasons can include:

- o violation of a federal environmental standard;
- o violation of the federal agency's own environmental standard;
- o violation of an EPA policy declaration;
- o potential for significant environmental degradation; or,
- o precedent-setting for future actions that collectively could result in significant environmental impacts.

EU--Environmentally Unsatisfactory--Impacts identified are so severe that the action must not proceed as proposed. If these deficiencies are not corrected in the final EIS, EPA may refer the EIS to CEQ

Reasons, in addition to impacts identified, can include:

- o substantial violation of a federal environmental standard;
- o severity, duration, or geographical extent of impacts that warrants special attention; or,
- o national importance, due to threat to national environmental resources or policies.

Rating Adequacy of the Impact Statement:

- 1 (Adequate)--No further information is required for review.
- 2 (Insufficient Information)--Either more information is needed for review, or other alternatives should be evaluated. The identified additional information or analysis should be included in the final EIS.
- 3 (Inadequate)--Seriously lacking in information or analysis to address potentially significant environmental impacts. The draft EIS does not meet NEPA and/or Section 309 requirements. If not revised or supplemented and provided again as a draft EIS for public comment, EPA may refer the EIS to CEQ.

(See Selected Publications, below: EPA's Policy and Procedures for the Review of Federal Actions Impacting the Environment.)

Annually, OFA and its regional counterparts review about 500 EISs and some 2000 other actions (see Figures 1 and 2). Among the variety of proposed actions that may be reviewed, besides that for which an agency provides an impact statement, are: legislation proposed by a federal agency; a proposed agency regulation; the renewal of an action originally approved before the enactment of NEPA; a proposal for which an agency has determined that no impact statement is needed, whether or not the agency has published a Finding of No Significant Impact (FONSI); and, an action that is actually a segment of either a program or a reasonably expected succession of actions that could result in a cumulative negative impact on human health or welfare or the environment.

In addition to conducting environmental reviews, OFA develops guidance materials and provides training courses on NEPA and Section 309 requirements for EPA regional staff, and promotes coordination between EPA offices and other federal agencies.

THE NATIONAL ENVIRONMENTAL POLICY ACT AND CEQ

The National Environmental Policy Act (NEPA, 42 *USC* 4321 et seq.) was enacted on January 1, 1970 in recognition of the widening influence on the human and natural environment that individual federal agency actions can exert. With its stated purpose (see **Highlight D**) and with heightened public awareness of environmental quality questions, NEPA makes its goals and policies "supplemental to those set forth in existing authorities of Federal agencies" (NEPA, Section 105). In this way, the agencies' authorizing statutes were amended to include NEPA requirements.

Title I of NEPA requires the federal government to use all practicable means to preserve and maintain conditions under which human beings can coexist with the natural world in productive harmony. Section 102 directs federal agencies to lend appropriate support to initiatives and programs meant to anticipate and prevent degradation of world environmental quality. Further, this section requires federal agencies to incorporate environmental considerations in their decision-making, using a systematic, interdisciplinary approach.

Title II of NEPA establishes the Council on Environmental Quality (CEQ, or the Council). Two months after enactment of NEPA, the President issued Executive Order 11514 authorizing CEQ to guide the Sec. 102 process. Under this order, the Council immediately published guidelines, followed in 1978 by regulations (40 *CFR* Parts 1500-1508) requiring all Federal agencies to issue NEPA regulations consistent with CEQ's. Advisory to the President, CEQ conducts studies, prepares the annual Environmental Quality Report to Congress, and reviews EISs. Moreover, CEQ mediates interagency disputes concerning environmental analyses of matters of national importance. (See Referrals section, below.)

As evidence of compliance with the NEPA Section 102 provisions for a proposed major action that could significantly affect the environment, CEQ requires the lead agency to prepare a detailed written statement addressing NEPA concerns, i.e., an EIS (40 *CFR* Part 1501). The lead agency may first prepare an environmental assessment (EA), which is a concise public document (40 *CFR* Part 1501.3) that determines whether an EIS or a FONSI (40 *CFR* Part 1501.4(e)) should be prepared. An EA is not necessary, however, if the agency has decided at the outset to prepare an EIS.

For review, the lead agency provides the EIS to those federal agencies having statutory jurisdiction or special expertise, as well as to appropriate other federal, state, and local agencies; Indian tribes, when the proposed action might impact tribal lands; and, the interested or affected public (40 *CFR* Part 1503.1). Once the EIS is final, the lead agency must file it formally, simultaneously making it available to the public, together with the reviewers' comments and the lead agency's responses to those comments (40 *CFR* Part 1506.9). The CEQ regulations designate EPA the official recipient of all final EISs, which responsibility the EPA Administrator delegates to OFA.

HIGHLIGHT D: The Purposes of NEPA

The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

(PL 91-190, 42 *USC* 4321 et seq.)

REFERRALS TO THE COUNCIL ON ENVIRONMENTAL QUALITY

The "predecision referrals" provision (40 *CFR* Part 1504) enables any federal agency under NEPA to refer another agency's final EIS to CEQ during the 30-day waiting period before a lead agency can proceed with the action. On the other hand, Section 309 authorizes EPA to refer to CEQ a broader range of federal activities, not only actions for which EISs are prepared. The CEQ regulations (40 *CFR* 1504.1(b)) implement Section 309 of the Clean Air Act, acknowledging that EPA has been assigned more extensive review and referral authority than the other agencies (see **Highlight C**).

Within 25 days after the lead agency has made the final EIS available to the public, the referring agency must provide early notification to that agency about its intention, and make its referral in writing to CEQ. The lead agency, once it has received written notification from CEQ, is to respond in writing within 25 days. During that same period, other agencies and the public may submit written comments to CEQ. Then CEQ may publish Findings and Recommendations; mediate between the disputing agencies; hold public meetings or hearings; refer irreconcilable disputes to the Executive Office of the President for action; or, conclude either that the issue is not of national importance or that insufficient information has been submitted upon which to base a decision.

In the time since the referral process was formally established in 1973, agencies have referred a total of 24 proposed federal actions to CEQ. Of these, EPA was responsible for 15, of which one was referred jointly with the Department of the Interior (DOI). (See **Figure 2** for EPA regional environmental review offices.) So far, in no case has CEQ made a formal referral to the Office of the President. Most often, CEQ has issued Findings and Recommendations. In a few cases the lead agency has withdrawn the proposal, and in three cases CEQ determined that the issue was not a matter of national importance.

In 1989, CEQ upheld EPA's Section 309 referral authority. At issue was a DOI Bureau of Reclamation proposal to renew longterm water contracts for irrigation operations of the Friant Unit in the Central Valley Project of California. The reason for referral was that no EIS had been prepared on the contract renewals, which individually and in the aggregate were likely to result in unsatisfactory environmental effects. In response, DOI questioned EPA's right to challenge the agency's decision that no EIS was needed. In rejecting that argument, CEQ established a precedent, that is, affirmed that EPA may identify a major federal action significantly affecting the environment, even though the lead agency disagrees.

Figure 2: EPA'S REGIONAL SECTION 309 REVIEWERS

REGION 1 : (617) 918-1051
Office of Environmental Review
JFK Federal Bldg.
Boston, MA 02203-0001

REGION 2 : (212) 637-3504
Envir. Planning & Protection
290 Broadway
New York, NY 10007-1866

REGION 3 : (215) 814-2705
Envir. Programs Branch
1650 Arch Street
Philadelphia, PA 19106

REGION 4 : (404) 562-9611
Office of Envir. Assessment
61 Forsyth Street
Atlanta, GA 30303

REGION 5 : (312) 886-9750
Federal Activities program
77 West Jackson Blvd.
Chicago, IL 60604-3507

REGION 6 : (214) 665-7451
Office - Planning & Coordination
1445 Ross Avenue, Suite 1200
Dallas, TX 75270-2733

REGION 7 : (913) 551-7148
Environmental Review
726 Minnesota Avenue
Kansas City, KS 66101

REGION 8 : (303) 312-6228
Ecosystem Protection Program
999 18th Street, Suite 500
Denver, CO 80202-2466

REGION 9 : (415) 744-1584
Office of Federal Activities
75 Hawthorne Street
San Francisco, CA 94105

REGION 10 : (206) 553-8574
Ecosystems & Communities
1200 Sixth Avenue
Seattle, WA 98101

SELECTED PUBLICATIONS

Caldwell, Lynton K., *Science and the National Environmental Policy Act; Redirecting Policy Through Procedural Reform*. University of Alabama Press, c1982.

Congressional Record, vol. 166, p. S-20602 (Dec. 18, 1970).

Healy, Martin, "The Environmental Protection Agency's Duty to Oversee NEPA's Implementation: Section 309 of the Clean Air Act," *Environmental Law Reporter*, 3 ELR 50071 (1973).

Liroff, Richard, "The Council on Environmental Quality," *Environmental Law Reporter*, 3 ELR 50051 (1973).

Policies and Procedures for the Review of Federal Actions Impacting the Environment. U. S. Environmental Protection Agency, Office of Enforcement, Office of Federal Activities, Pub. No. 1640 (rev. 1984).

Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act. U. S. Environmental Protection Agency, 40 *CFR* Part 6.

Rand, Sally and Tawater, Mark Steven, *Environmental Referrals and the Council on Environmental Quality*. Washington, D. C., Environmental Law Institute, 1986.

Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act. U. S. Executive Office of the President, Council on Environmental Quality, 40 *CFR* Parts 1500-1508 (reprint, as of July 1, 1986). Contents include: the National Environmental Policy Act of 1969, as amended in 1975; the Clean Air Act, Section 309; and, Executive Order 11514, as amended by Executive Order 11991.

Senate Report No. 91-1196, 91st Congress, 2nd Session, p. 43 (1970).

STATE OF ALASKA

SEAN PARNELL, Governor

ANILCA IMPLEMENTATION PROGRAM OFFICE OF PROJECT MANAGEMENT AND PERMITTING

550 W. 7TH AVENUE, SUITE 1430
ANCHORAGE, ALASKA 99501
PH: (907) 334-2563 / FAX: (907) 269-5673
nina.brudie@alaska.gov

September 1, 2011

Mr. Joel L. Hard, Superintendent
Lake Clark National Park and Preserve
National Park Service
Alaska Regional Office
240 W. 5th Avenue, Suite 236
Anchorage, AK 99501

Dear Mr. Hard,

The State of Alaska reviewed the Notice of Intent to prepare an Environmental Impact Statement (EIS) for a General Management Plan (GMP) Amendment/Wilderness Study for Lake Clark National Park and Preserve. We appreciate the Service's efforts to meet with the State during the initial phase of the planning process. The following comments represent the consolidated views of the State's resource agencies.

Wilderness Recommendations

The State strongly opposes including a wilderness review in this planning process. The review of lands not already designated in the Park and Preserve, pursuant to ANILCA Section 1317(a), was completed in 1986 and the conclusion to not recommend additional wilderness remains valid. The State does not support recommending additional wilderness in Lake Clark National Park and Preserve.

Wild Rivers

We are aware the Service is proposing to identify outstandingly remarkable values (ORVs) in the Park and Preserve's three designated wild rivers. Since ORVs will be used as the basis for future management direction, it is essential they meet the high standards defined by the Interagency Wild and Scenic Rivers Coordinating Council. According to Council direction, in order for a value to be identified as an outstandingly remarkable value, it must be:

- 1) river-related, and
- 2) a rare, unique, or exemplary feature that is significant at a comparative regional or national scale

We request the Service make the supporting materials, which clearly document how new proposed ORVs meet these criteria, available for public review.

In addition, we support the original GMP's direction to only impose management prescriptions on the public "*when voluntary cooperation among river users is not sufficient to prevent degradation of the riverine ecosystems, their pristine appearance, or the quality of the wild river experience.*"

Local Access

We appreciate the steps already taken by the Service in responding to the needs of local residents by authorizing subsistence, recreational, and in-holder access within the Park and Preserve. We request the planning process identify and take into consideration other areas where further action may be needed to address local access issues. We further request the plan recognize the Service's commitment to addressing the future needs of local residents, consistent with ANILCA and other relevant laws and regulations.

Visitor Access and Park Use

National Parks are important economic drivers for local communities, and we encourage the Service use this planning process to consider how improved access to the Park and Preserve can responsibly accommodate visitor use. Access to the Park and Preserve is primarily by small aircraft, and we support the vital role that commercial air transporters play in providing the vast majority of public access. When addressing management concerns, we request the Service first use the least restrictive management tool to minimize the effects on visitors while protecting park resources.

Cabins

We commend the Service for restoring three historic cabins this past year and request the plan consider the restoration of other cabins within the Park and Preserve. The original 1982 GMP inventoried 149 cabins. We recommend the revised GMP include the current status of these cabins and address any related management issues.

Continued Cooperation

We appreciate the Service's continued cooperation and coordination with regard to our mutual responsibilities of conserving wildlife and their habitats, and request the revised GMP reference the Master Memorandum of Understanding between the Alaska Department of Fish and Game (ADF&G) and the Service to acknowledge this cooperative relationship.

As intended by Section 1301(d)(2) of ANILCA, the State is available to serve as an active participant in the development of the revised GMP and looks forward to working with the Service throughout this planning process to develop cooperative monitoring and inventory projects that will help to fulfill our respective responsibilities.

Thank you for your consideration of these comments. If you have questions, please contact me at (907) 334-2563.

Sincerely,



Nina Brudie
ANILCA Project Coordinator

cc: Susan Magee, ANILCA Program Coordinator



United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

Admin/HQ Office

240 W. 5th Avenue, Suite 236, Anchorage, AK 99501

Phone (907) 644-3634 Fax (907) 644-3810

Field Office

General Delivery, Port Alsworth, AK 99653

Phone (907) 781-2218 Fax (907) 781-2119



H4217 (LACL-CR)

October 25, 2011

Cook Inlet Regional Corporation

ATTN: Ms. Westcoast

P.O. Box 93330

Anchorage, AK 99509-3330

Dear Ms. Westcoast:

This is our second letter to you inviting your participation in Lake Clark National Park and Preserve's effort to amend our 26-year-old general management plan. A letter was sent to you dated May 24, 2011, prior to publishing a Notice of Intent in the Federal Register regarding our plan to prepare an Environmental Impact Statement (EIS) for the amendment. A copy of the May letter and a newsletter about the project are attached for your reference.

Five meetings were held in the Park's resident zone communities this past summer to discuss the planning effort. A meeting was held in Nondalton on July 26 and is referenced in the attached record of public comments from those meetings. Our next step in this process is to set up a meeting for more input from you for developing the alternatives for the EIS, if you wish to participate. We will follow up with a phone call to answer any questions and provide any information you may need.

Your participation in this planning process will bring valuable information and knowledge to the table, helping us develop a long range plan for preserving the Park's cultural and natural resources. Please let me know if you are interested in scheduling a meeting to work with us in this planning effort. I look forward to hearing from you. In the meantime, if you have any questions, please contact me at the address above, or call me directly at 907/644-3627.

Sincerely,

Superintendent

Lake Clark National Park and Preserve



Ccw/enc
Alaska Peninsula Corporation
Bristol Bay Native Corporation
Calista Corporation
Cook Inlet Regional Corporation
Iliamna Development Corporation
Kenaitze Indian Tribe
Kijik Corporation
Kokhanok Village Council
Lake and Peninsula Corporation
Lime Village Traditional Council
Native Village of Tyonek
Newhalen Village Council
Ninilchik Traditional Council
Nondalton Village Council
Pedro Bay Corporation
Pedro Bay Village Council
Seldovia Village Tribe
Tanalian Incorporated
Village of Iliamna





United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

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H4217 (LACL-CR)

January 25, 2012

Native Village of Tyonek
Frank Standifer III, President
P.O. Box 82009
Tyonek, AK 99682

Dear Mr. Standifer:

As you know from our previous letters, community meetings and newsletters, Lake Clark National Park and Preserve is continuing to work on the amendment of our General Management Plan. We are now developing alternatives and zones that will define visitor use levels in the park and preserve. This plan will not affect subsistence rights and uses, but will guide our management of places like Tuxedni Bay, the Kijik National Historic Landmark Archeological District, the Telaquana trail and other places of traditional and continued importance to the Dena'ina people.

I would like to meet with you at your convenience to discuss the alternatives that we have drafted and to understand any views and concerns you might have about the range of alternatives, the visitor use-level zones, and any cultural and historic resource issues. Please let me know if you would like to meet with me and what meeting dates would work for you.

Again, thank you for taking the time to work with us. If you have any questions, please contact me at the address above, call me directly at 907/644-3627, or contact me by email at joel_hard@nps.gov.

Sincerely,

Superintendent
Lake Clark National Park and Preserve

Cc

State Historic Preservation Officer
NPS Alaska Regional Native Liaison
Alaska Peninsula Corporation
Bristol Bay Native Corporation
Calista Corporation
Cook Inlet Regional Corporation

Duplicate letters sent to:

Kenaitze Indian Tribe
Kokhanok Village Council
Lime Village Traditional Council
Native Village of Tyonek
Newhalen Village Council
Ninilchik Traditional Council
Pedro Bay Village Council
Seldovia Village Tribe
Village of Iliamna





United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

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H4217 (LACL-CR)

January 25, 2012

Nondalton Village Council
Rick Delkettie, President
P.O. Box 49
Nondalton, AK 99640

Dear Mr. Delkettie:

As you know from our previous letters, community meetings and newsletters, Lake Clark National Park and Preserve is continuing to work on the amendment of our General Management Plan. We are now developing alternatives and zones that will define visitor use levels in the park and preserve. This plan will not affect subsistence rights and uses, but will guide our management of places like the Kijik National Historic Landmark Archeological District, the Telaquana trail and other places of traditional and continued importance to the Nondalton Village Council and the Dena'ina people.

I would like to meet with you at your convenience to discuss the alternatives that we have drafted and to understand any views and concerns you might have about the range of alternatives, the visitor use-level zones, and any cultural and historic resource issues.

I will be in the Nondalton area February 21 and am wondering if that would be a convenient time for me to meet with you in your community. Please let me know if you would like to meet with me and what meeting dates would work for you.

Again, thank you for taking the time to work with us. If you have any questions, please contact me at the address above, call me directly at 907/644-3627, or contact me by email at joel_hard@nps.gov.

Sincerely,

Superintendent
Lake Clark National Park and Preserve

Cc

Nondalton Village Council Tribal Administrator
State Historic Preservation Officer
NPS Alaska Regional Native Liaison
Kijik Corporation





Ninilchik Traditional Council

P.O. Box 39070

Ninilchik, Alaska 99639

Ph: 907 567-3313 / Fx: 907 567-3308

E-mail: ntc@ninilchiktribe-nsn.gov

Web Site: www.ninilchiktribe-nsn.gov

January 31, 2012

United States Department of the Interior
National Park Service
Lake Clark National Park & Preserve
240 W. 5th Avenue, Suite 236
Anchorage, AK 99501

Joel Hard, Superintendant

RE: Letter regarding invitation to discuss amendment of the General Management Plan.

Mr. Hard,

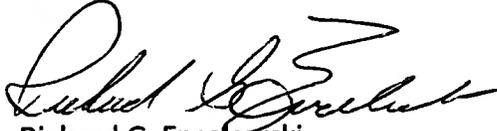
Thank you for contacting the Ninilchik Traditional Council (NTC) and the Ninilchik Village Tribe in this opportunity to update one of the nation's most valued parks. I would like to confirm that I am interested in discussing visitor use and cultural issues regarding the area as much of the park & preserve is a part of the Ninilchik Village Tribe's boundaries. Tuxedni Bay is completely included in our traditional boundaries as well as a larger portion of Lake Clark itself beginning at its eastern point.

I would like to ask that our local Alaska Native Claims Settlement Act (ANCSA) Village Corporation, the Ninilchik Native Association, Inc. (NNAI), be involved in this process as well. This village corporation, like other village corporations within the Cook Inlet region, holds land interests in the area and any change in management, usage, and accessibility directly impacts village corporation affairs. This is vital to the cultural and economic self-determination of the traditional people of Ninilchik because many are both tribal members as well as shareholders of NNAI. Please contact NNAI Land & Resource Manager Bruce Oskolkoff at the following address for more information:

Ninilchik Native Association, Inc.
Bruce Oskolkoff, Land & Resource Manager
P.O. Box 39130
Ninilchik, AK 99639

Any follow up information on details of the park & preserve's management plans or meeting arrangements may be forwarded to the NTC main office via mail, fax, or e-mail at ntc@niniichiktribe-nsn.gov. At this time it is difficult to suggest possible meeting dates or locations without a tentative agenda and corresponding materials concerning the current status of and proposals for the park & preserve to consider ahead of time.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard G. Encefewski". The signature is fluid and cursive, with a large initial "R" and "E".

Richard G. Encefewski
President



United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

Admin/HQ Office

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H4217 (LACL-CR)

February 3, 2012

Ninilchik Traditional Council
Richard G. Encelewski, President
P.O. Box 39070
Ninilchik, AK 99639

Dear Mr. Encelewski:

Thank you for your response letter. I have sent a letter to the Ninilchik Native Association, Inc. inviting them to participate early in this planning process. I would be happy to meet with the Ninilchik Traditional Council, the Ninilchik Village Tribe, and the Ninilchik Native Association, Inc. to discuss this plan.

We anticipate having the draft alternatives and zones for visitor use management finalized by the middle of February. We will email you copies of the alternatives for your review early the week of February 20th. Near the end of the week we will follow up to ask if the council is interested in meeting to discuss any questions or comments you may have. A newsletter about the alternatives and zones is scheduled to be mailed to the broader public at the end of March. When the newsletter is sent to the public for review it will include a 30-day comment period and we will schedule public meetings in Homer and Soldotna in April. Comments from the council would be welcome through the open comment period, but we wanted to give the council opportunity for input before the public sees the alternatives.

Again, thank you for taking the time to work with us. If you have any questions, please contact me at the address above, call me directly at 907/644-3627, or contact me by email at joel_hard@nps.gov.

Sincerely,

Superintendent
Lake Clark National Park and Preserve



STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS & OUTDOOR RECREATION OFFICE OF HISTORY AND ARCHAEOLOGY

550 WEST 7TH AVENUE, SUITE 1310
ANCHORAGE, ALASKA 99501-3565

PHONE: (907) 269-8721
FAX: (907) 269-8908

April 13, 2012

File No.: 3130-1R NPS

Joel Hard, Superintendent
Lake Clark National Park and Preserve
GMP Amendment
240 W. 5th Ave., Suite 236
Anchorage, AK 99501

Subject: Lake Clark National Park and Preserve General Management Plan (GMP) Revision

Dear Mr. Hard:

We appreciate the opportunity we recently had on April 9 to meet with National Park Service (NPS) staff to discuss and learn more about the Lake Clark National Park and Preserve GMP Revision. The meeting provided our staff with a better understanding of the alternatives currently being considered in the plan.

As one of the 'keystone' attractions at Lake Clark National Park and Preserve, we appreciate and support the consideration that is being given to the future management of the Richard Proenneke Site. We look forward to continuing to work with NPS in an effort to protect, manage, and interpret this site.

As each of the GMP action alternatives (Alternative B in particular) propose to establish varying levels of new visitor facilities, including trails, campsites/campgrounds, and public use cabins, we encourage NPS to allocate the appropriate resources toward the early identification of archaeological sites that may be eligible for the National Register within the planning area. Cultural resource inventory within areas that are seriously being considered for campgrounds and other infrastructure is warranted now, while the GMP alternatives are being considered. The early identification and evaluation of sites within the planning area – in accordance with Sections 106 and 110 of the National Historic Preservation Act – will ultimately serve to inform your alternative screening process and will allow NPS to take measures to avoid and minimize effects on historic properties. A better understanding of the location and nature of the archaeological resources within the planning area will allow NPS to modify, as appropriate, the location of new infrastructure that may otherwise result in adverse effects, which would necessitate mitigation in accordance with 36 CFR 800.6.

Thank you for the opportunity to comment. We look forward to continued consultation with NPS on this and other planning initiatives. Please contact Shina duVall at 269-8720 or shina.duvall@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,



Judith E. Bittner
State Historic Preservation Officer

JEB:sad

STATE OF ALASKA

SEAN PARNELL, Governor

ANILCA IMPLEMENTATION PROGRAM Office of Project Management and Permitting

550 W. 7TH AVENUE, SUITE 1430
ANCHORAGE, ALASKA 99501
PH: (907) 269-7529 / FAX: (907) 269-5673
susan.magee@alaska.gov

May 7, 2012

Mr. Lee Fink, Acting Superintendent
Lake Clark National Park and Preserve
240 W. 5th Avenue, Suite 236
Anchorage, AK 99501

Dear Mr. Fink:

The State of Alaska reviewed the Lake Clark National Park and Preserve General Management Plan (GMP) April 2012 Newsletter. The following comments represent the consolidated views of the State's resource agencies.

The State supports the intention to provide increased opportunities for recreational activities within the park and preserve, including commercial services and visitor facilities, in response to the scoping comments received from the public. This approach is consistent with the Alaska National Interest Lands Conservation Act (ANILCA) and the National Park Service Organic Act, which calls for the enjoyment of the scenery, wildlife, and natural and historic objects within park lands.

While we understand the plan must provide a range of alternatives, we are concerned that Alternative D is too extreme, and appears to propose the park and preserve be managed as if it was entirely designated wilderness. In and of itself, the Wild Zone, which according to the newsletter preserves "*wilderness character to the highest degree, providing unconfined recreation and opportunities for solitude*" and, with regard to administrative facilities and Service presence, "*a minimalist approach, providing new facilities only when necessary to protect wilderness character and/or address resource impacts,*" inappropriately blurs the strong line between designated and non-designated wilderness, and blatantly ignores Congressional intent for the park and preserve.

This is further evidenced where the newsletter indicates the Wild Zone will only allow new recreational improvements provided for under ANILCA Sections 1315(d) and 1316(a). However, ANILCA Section 1315(d) provides specific direction for *designated Wilderness*. Implementing management that mimics the Wilderness Act and applies to non-designated wilderness is reminiscent of the vastly unpopular Secretary of Interior Wild Lands Order 3310, which required the Bureau of Land Management to administratively designate "Wild Lands" to protect wilderness character in non-designated wilderness. Implementation of Secretarial Order 3310 was blocked by an appropriations bill within months after its release because of concerns that it undermined congressional authority. Application of the Wild Zone to non-designated wilderness on Service lands is equally unacceptable.

We are also concerned that this alternative unnecessarily restricts visitor use in general, despite the Service's mandate to provide for the enjoyment of the area. For example, areas such as Lower Twin

Lake and the Chilikadrotna and Mulchatna Rivers, which are popular recreational locations and receive relatively higher levels of use, are not located within designated wilderness and would be incompatible with the Wild Zone as described. We therefore strongly recommend the Service either remove Alternative D or revise the range of alternatives to reflect a more balanced approach *and* eliminate the overlap of the Wild Zone onto non-designated wilderness areas in all three action alternatives.

Lastly, the “*Wild Experiences*” section fails to capture the State’s express objection to the Service’s intent to conduct a wilderness study in conjunction with this plan amendment. The newsletter indicates that instead of a full wilderness study, the Service will now be re-evaluating the wilderness eligibility assessment, which was conducted in 1986 as the first phase of the ANILCA Section 1317 wilderness study. We reiterate our strong opposition to conducting any phase of a wilderness study. ANILCA Section 1317 is clear that the “one-time” opportunity to conduct a wilderness study has long passed.

Within five years from the date of enactment of this Act, the Secretary shall, in accordance with the provisions of section 3(d) of the Wilderness Act...[Emphasis added]

In addition, ANILCA Section 1326(b) prevents further studies without the express consent of Congress.

No further studies of Federal lands in the State of Alaska for the single purpose of considering the establishment of a conservation system unit...or for related or similar purposes shall be conducted unless authorized by this Act or further Act of Congress. [Emphasis added]

The newsletter indicates this re-assessment is required by the NPS 2006 Management Policies, Director’s Order 41, and the Wilderness Act; however, Service policy does not supersede ANILCA and the Wilderness Act was modified by ANILCA in Alaska. The re-evaluation of the 1986 eligibility assessment ignores this explicit direction in ANILCA and only serves to expand areas, which according to the NPS 2006 Management Policies, must be managed to protect wilderness character. This also violates Congressional intent to reserve for itself the authority to designate lands which are to be managed under the provisions of the Wilderness Act.

Thank you for this opportunity to comment. Please contact me at (907) 269-7529 if you have any questions.

Sincerely,



Susan Magee
ANILCA Program Coordinator

cc: Joan Darnell, Planning Team Manager
Joel Hard, Deputy Regional Director

Lake Clark National Park and Preserve GMP Revision
National Park Service
240 W. 5th Avenue, Suite 236
Anchorage, AK 99501

Re: GMP Alternatives Newsletter April 2012

The Alaska Chapter of the Sierra Club appreciates the invitation to comment on the preliminary alternative concepts and draft management zones as outlined in the April 2012 General Management Plan Alternatives Newsletter. In November 2011 the Chapter submitted detailed comments on the scope of the revised GMP.

We recommend that the NPS offer the public a comprehensive revision of the existing outdated and inadequate GMP dated December 1982. The Newsletter refers to revising and to amending the existing GMP, leaving the reader to wonder whether the agency intends to offer a comprehensive revision of the existing GMP--in effect a new GMP--or merely amend selected sections of the existing plan.

Preliminary Alternative D

Alternative D would zone as Wild nearly all of the non-wilderness areas of the park and preserve. (It would also zone the existing designated wilderness as Wild, but this is superfluous since wilderness designation is sufficient.) As defined in the Newsletter,

The purpose of this [Wild] zone would be to provide the most wild, unmanipulated, and natural setting that supports wilderness-oriented visitor experiences. This zone would preserve wilderness character to the highest degree, providing unconfined recreation and opportunities for solitude.

We regard Wild zoning of the non-wilderness areas of the park as critically important for the interim protection of existing intact natural values of the park's landscapes, wild rivers, and lakes pending the completion of three required fundamental tasks Congress gave to the Secretary and the President:

- (a) The Secretary's review of the suitability or unsuitability for preservation as wilderness of the nonwilderness areas of the park, followed by the Secretary's report of his findings to the President, who in turn is to advise Congress of his or her recommendations (ANILCA Sec.1317);
- (b) A finding of the eligibility and suitability or unsuitability of potential additions to the Wild and Scenic Rivers System. Under the W&SRs Act, whenever a federal land management agency revises its general land management plans, it must also evaluate potential additions to the system; and
- (c) A determination of where subsistence uses by local residents was traditional when ANILCA was enacted on December 2, 1980.

With respect to the Sec. 1317 wilderness review, the 1982 GMP (1984 according to the Newsletter) “found approximately 1.03 million acres [of non-wilderness] (about 28% of the park/preserve) eligible for wilderness designation.” In 1988 the NPS-ARO submitted a Final EIS on its wilderness recommendation to the Secretary, but the Secretary and the President took no further action.

Because the 1988 wilderness review was buried by an administration notably hostile to not only wilderness but to ANILCA in general, a new review is needed to comply with Sec.1317. We recommend that the proposed wilderness eligibility re-assessment for the two relatively small units of non-wilderness park land (Unit 2 -19,000 acres) and Unit 3- 265,000 acres) be expanded to include all non-wilderness lands in the park/preserve.

Also long overdue--31 years at last count-- is the required determination of where subsistence uses were traditional in the park at the time of the park’s establishment. Lake Clark NP is one of four national parks and one national monument that Congress in ANILCA found to have potential traditional subsistence use zones and traditional national park zones, the latter closed to all forms of the consumption of wildlife, in other words new traditional national park areas.

Yet despite this requirement, for over three decades the NPS has carefully ignored Congress’s directive. We recommend that the NPS include a “where traditional” determination as a major feature of the revised GMP.

As noted above, Alternative D provides interim protection for most of the unit’s non-wilderness, an effort we strongly support. We also support strengthening the alternative at the Cook Inlet coast, Telaquana Lake and Twin Lakes.

a. Cook Inlet coast. This part of the park is proposed for Backcountry status under Alternative D. We recommend that most of this area be zoned Wild.

This wildlife-rich and exceptionally scenic area is undeveloped and pristine with the exception of the fishing lodges and private inholdings clustered near Silver Salmon Creek, and the privately owned and undeveloped Crescent River and Johnson River tracts. When re-assessed for wilderness eligibility as called for under all alternatives, it is very likely to be found eligible and suitable for wilderness designation. Wild designation would best protect this area’s natural values pending congressional consideration of wilderness proposals.

Should the owners of the Crescent River and Johnson River properties eventually develop their lands and seek access to their acreage across the park’s coastline, they can seek that access pursuant to the transportation process of ANILCA (Title 11). The existence of these inland tracts does not justify Backcountry zoning for the far larger coastal area.

b. Telaquana Lake. In Alternative D the entire shoreline is zoned backcountry. This is excessive; it leaves the entire shoreline vulnerable to future public use cabins and NPS

"administrative facilities and infrastructure" at the discretion of park managers. We recommend that the lake and adjacent uplands line be zoned Wild. This would protect Congress's options when it considers potential additions to the existing nearby designated Lake Clark Wilderness.

c. Twin Lakes. Upper Twin Lake is proposed for Backcountry status in Alternative D. Because this upper lake is within the existing designated wilderness, Backcountry designation is not applicable here because it would allow uses not authorized in designated wilderness. Hence the upper lake area need not be zoned, except perhaps for the Proenneke cabin and associated structures.

Lower Twin Lake, which is outside the designated wilderness, is also proposed for Backcountry status in Alternative D. We recommend Wild designation in the final version of this alternative. This would provide the same level of protection for the two lakes, which are in effect one long lake, and maintain their existing undeveloped character pending congressional consideration of potential wilderness designation.

Thank you for considering our comments.

Jack Hession
Executive Committee
Alaska Chapter Sierra Club



United States Department of the Interior

National Park Service

Lake Clark National Park and Preserve

Admin/HQ Office

240 W. 5th Avenue, Suite 236, Anchorage, AK 99501

Phone (907) 644-3634 Fax (907) 644-3810

Field Office

General Delivery, Port Alsworth, AK 99653

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H4217 (LACL-CR)

February 19, 2013

Village of Iliamna
Lorene Anelon, President
P.O. Box 286
Iliamna, AK 99606

Dear Ms. Anelon:

I am honored to write to you as the new Superintendent for Lake Clark National Park and Preserve. I am at home outdoors and have worked as a ranger in many national parks across the country. Most recently I directed a large field office for the Bureau of Land Management in southern California, where I worked on a regular basis with several tribes. I know that Lake Clark National Park and Preserve lies in the heart of traditional Dena'ina territory with Central Yupik territory just at our southern border and I am excited to begin working closely with you.

I would like to meet with you at your earliest convenience this month or next, to get to know each other and to discuss with you a process for maintaining regular communication. I would also like to talk with you about our continuing work on the amendment of our General Management Plan. We have developed a new preferred alternative which I have enclosed and I would like to discuss it with you. My staff, Karen Evanoff, will also be contacting you by phone to facilitate setting up a meeting. She can be reached by phone at 907/644-3638 or by email; Karen_evanoff@nps.gov).

It is a great feeling to be back home in Alaska and I look very forward to meeting you. Please feel free contact me at the address above, call me directly at 907/644-3627, or contact me by email at Margaret_goodro@nps.gov.

Sincerely,

Margaret L. Goodro
Superintendent
Lake Clark National Park and Preserve

Ccw/enc.

Village of Iliamna Tribal Administrator



Duplicate letters sent to:

Kenaitze Indian Tribe

Lime Village Traditional Council

Newhalen Village Council

Ninilchik Traditional Council

Nondalton Village Council

Native Village of Tyonek

Pedro Bay Village Council

Seldovia Village Tribe



United States Department of the Interior

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H4217 (LACL-CR)

March 8, 2013

Knik Tribal Council
Deborah Call, President
P.O. Box 871565
Wasilla, AK 99611

Dear Ms. Call:

I am honored to write to you as the new Superintendent for Lake Clark National Park and Preserve. I am at home outdoors and have worked as a ranger in many national parks across the country. Most recently I directed a large field office for the Bureau of Land Management in southern California, where I worked on a regular basis with several tribes. I know that Lake Clark National Park and Preserve lies in the heart of traditional Dena'ina territory with coastal connections across Cook Inlet and I am excited to begin working closely with you.

I would like to meet with you at your earliest convenience this month or next, to get to know each other and to discuss with you a process for maintaining regular communication. I would also like to talk with you about our continuing work on the amendment of our General Management Plan. We have developed a new preferred alternative which I have enclosed and I would like to discuss it with you. My staff, Karen Evanoff, will also be contacting you by phone to facilitate setting up a meeting. She can be reached by phone at 907/644-3638 or by email; Karen_evanoff@nps.gov).

It is a great feeling to be back home in Alaska and I look very forward to meeting you. Please feel free contact me at the address above, call me directly at 907/644-3627, or contact me by email at Margaret_goodro@nps.gov.

Sincerely,

Margaret L. Goodro
Superintendent
Lake Clark National Park and Preserve

Ccw/enc.

Knik Tribal Administrator



Duplicate letters sent to:

Tribal Council of Salamatof

Chickaloon Native Village



United States Department of the Interior
National Park Service

Lake Clark National Park and Preserve

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March 13, 2013

Bristol Bay Native Corporation
Francisca Demoski, Land Manager
111 West 16th Avenue, Suite 400
Anchorage, AK 99501

Dear Ms. Demoski:

I am honored to write to you as the new Superintendent for Lake Clark National Park and Preserve. I am at home outdoors and have worked as a ranger in many national parks across the country. Most recently I directed a large field office for the Bureau of Land Management in southern California, where I worked on a regular basis with several tribes. I know that Lake Clark National Park and Preserve lies in the heart of traditional Dena'ina territory and that our management of the Park's land and resources is of interest to your shareholders.

Enclosed is our General Management Plan (GMP) Preferred Alternative Newsletter, which includes new direction for managing the park for the next 15 to 20 years. Pursuant to Department of Interior Policy on Consultation with Alaska Native Claims Settlement Act Corporations, I am continuing the previous superintendent's efforts to seek your input for this GMP amendment. We do not think that our preferred alternative will have a substantial effect on ANCSA Corporation land, water areas or resources but we are interested in hearing from you because our planning would benefit from your participation in this process.

I would very much like to meet with you at your convenience. Also, please feel free to send comments to me at the address above, or call me directly at 907/644-3627, or contact me by email at Margaret_goodro@nps.gov.

Sincerely,

Margaret L. Goodro
Superintendent
Lake Clark National Park and Preserve

enclosure

Duplicate letters sent to:

Cook Inlet Region, Inc.

Calista Corporation

Tyonek Native Corporation

Alaska Peninsula Corporation

Iliamna Natives Limited

Lime Village Company

Kenai Natives Association, Inc.

Knikatu, Inc.

Salamatof Native Association

Ninilchik Natives Association, Inc.

Chickaloon Moose Creek Native Association, Inc.

Pedro Bay Corporation

Kijik Corporation

Seldovia Native Assosication, Inc.



1577 C. Street, Suite 302
Anchorage, Alaska 99501

phone: 907-561-4487
fax: 907-562-4945
toll-free: 800-478-4487

March 27, 2013

Margaret L. Goodro, Superintendent
Lake Clark National Park & Preserve
National Park Service
240 W. 5th Avenue, Suite 236
Anchorage, AK 99652

Re: LCNP&P GMP Amendment – Preferred Alternative

Dear Superintendent:

Kijik Corporation, the ANCSA village corporation for the community of Nondalton, congratulates you on your recent appointment to the position of Superintendent of Lake Clark National Park & Preserve (LCNP&P). We look forward to working with you and are hopeful of a mutually beneficial relationship.

Under the terms of ANCSA, Kijik received title to approximately 126,000 acres of surface estate in the Lake Clark area. As you are by now aware, nearly all of Kijik's land holdings are within the boundaries of the LCNP&P. As such, Kijik has a high level of interest in the land management initiatives of the National Park Service (NPS) relating to the LCNP&P.

Recently, Kijik representatives met with representatives of the Bristol Bay Native Corporation (BBNC) to review the "preferred alternative" of the now pending Lake Clark GMP amendment. As you may be aware, BBNC owns the subsurface of Kijik's surface estate. While Kijik does not speak for BBNC, our review of the preferred alternative map uncovered some concerns.

First and heretofore we note that most NPS maps of Lake Clark refer to Kijik land as simply "Village Corporation Lands." The preferred alternative map refers to Kijik land as "Non-NPS Land Interest." What does that mean and in what manner did the NPS establish an interest? While seemingly innocuous, the designation of "Non-NPS Land Interest" introduces an element of uncertainty to Kijik's development prerogatives. In the worst case, it portends challenges to any aggressive development considerations undertaken by Kijik. As such, Kijik seeks an in-depth explanation of the "Non-NPS Land Interest" classification.

We thank you for considering our concerns and look forward to your response.

Yours truly,

Ventura Samaniego, President & CEO
Kijik Corporation

cc. Tiel Smith, BBNC



April 11, 2013

Margaret L. Goodro, Superintendent
Lake Clark National Park & Preserve
240 W. 5th Avenue, Suite 236
Anchorage, AK 99652

Re: Proposed General Management Plan Amendment

Dear Ms. Goodro,

The Bristol Bay Native Corporation (BBNC) would like to congratulate you on your new position as superintendent of the Lake Clark National Park & Preserve (LCNP&P) and look forward to working with you.

BBNC has over 9,200 Eskimo, Aleut and Indian shareholders with ancestral ties to the Bristol Bay region. BBNC is also the largest private land owner in the Bristol Bay region, and is the subsurface estate owner and manager of over 3 million acres of land.

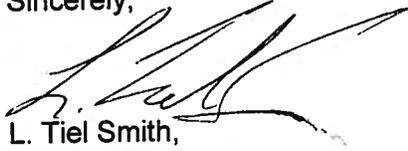
BBNC supports responsible resource development, defined as development that is fiscally, environmentally and socially sustainable, serving the long-term interests of our people, our region and our businesses.

An initial review of the proposed General Management Plan (GMP) preferred alternative provided by LCNP&P prompted a concern of whether or not the GMP will impact the traditional use trails used by indigenous people in the Bristol Bay region with relation to the subsistence lifestyle. Please provide BBNC with clarification as to how this may affect the ANCSA lands.

Lastly, the proposed amendment to the GMP contains a map with a legend entry that displays the Non-NPS land interest. These ANCSA lands are located within the LCNP&P boundary. Would you please provide an explanation as to what that means?

We appreciate your consideration and look forward to your response. If you have any questions, please give the BBNC land department a call at (907) 278-3602.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Tiel Smith', with a stylized flourish at the end.

L. Tiel Smith,

VP Land & Regional Operations

cc. Kijik Corporation

SELECTED REFERENCES

- ABR, Inc.
2012 "Ecological Land Survey and Soil Landscapes Map for Lake Clark National Park and Preserve, Alaska, 2011." Draft report. Prepared by A. Wells, M. Macander, T. Jorgenson, T. Christopherson, B. Baird, and E. Trainor." Prepared for NPS AK Region. Fairbanks, AK.
- 2006 "Photographic Monitoring of Landscape Change in the Southwest Alaska Network of National Parklands." Environmental Research & Services, and Southwest Alaska Network Inventory and Monitoring Program 2006. Prepared by M. T. Jorgenson, G. V. Frost, W. E. Lentz, and A. J. Bennett. Report No. NPS/AKRSWAN/NRTR-2006/03. Prepared for NPS, Southwest Alaska Network Inventory and Monitoring Program. Anchorage, AK.
- Ballard, W. B., L. A. Ayres, D. J. Reed, S. G. Fancy, and K. E. Roney
1993 "Demography of Noatak Grizzly Bears in Relation to Hunting and Mining Development in Northwestern Alaska." National Park Service Monograph 23. National Park Service, Denver, CO.
- Bennett, A. J.
1996 "Physical & Biological Resource Inventory of the Lake Clark National Park-Cook Inlet Coastline, 1994-96." Lake Clark National Park and Preserve, Kenai Coastal Office.
- Chamberlain, D. M.
1989 "Physical and Biological Characteristics and Nutrients Limiting Primary Productivity Lake Clark Alaska." Unpublished master's thesis, Michigan Technological University Houghton, MI.
- Gilbert, B. K.
1989 "Behaviourial Plasticity and Bear-Human Conflicts." NWT Department of Renewable Resources, Bear-People Conflicts: Proceedings of a Symposium on Management Strategies, Yellowknife, N.W.T., 1-8.
- Gunther, K. A.
1994 "Bear Management in Yellowstone National Park, 1960-1993." International Conference on Bear Research and Management 9:549-560.
- Hammitt, W. E., and D. N. Cole
1998 *Wildland Recreation—Ecology and Management*. 2nd edition. John Wiley & Sons. New York, NY.
- Haas G, T. Wakefield
1998 "National Parks and the American Public: A National Public Opinion Survey on the National Park System." Washington D.C. and Fort Collins, CO: National Parks and Conservation Association and Colorado State University.
- Herrero, S.
1985 *Bear Attacks: Their Causes and Avoidance*, Lyons and Burford, New York.

- Herrero, S and S. Fleck
 1990 "Injury to Humans Inflicted by Black, Grizzly bears, or Polar Bears: Recent Trends and New Insights." International Conference on Bear Research and Management, 8:25–32.
- International Panel on Climate Change (IPCC)
 2007 *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Avery, M. Tignor, and H. L. Miller. Cambridge University Press, Cambridge, United Kingdom and New York, NY.
- Johnson, D., E. Hunn, P. Russell, M. Vande Kamp, and E. Searles
 1998 "Subsistence Uses of Vegetal Resources in and Around Lake Clark National Park and Preserve." Prepared for the National Park Service. Technical Report NPS/CCSOUW/NRTR-98-16 NPS D-19. Seattle: Univ. of Washington Field Station, College of Forest Resources.
- Kari, Priscilla Russell
 1995 *Tanaina Plantlore An Ethnobotany of the Dena'ina Indians of Southcentral Alaska.* 4th edition. Alaska Geographic. Anchorage, AK.
- Keith, Sam
 1973 *One Man's Wilderness: An Alaskan Odyssey,* (from the journals and photographs of Richard Proenneke). Anchorage: Alaska Northwest Publishing Co., 1973. 26th Anniversary Edition: Alaska Northwest Books, 1999.
- Kuss, F. R., A. R. Grafe, and J. J. Vaske
 1990 *Visitor Impact Management. A Review of Research.* Vol. 1. Washington D.C., National Parks & Conservation Association.
- Loya, W.
 2008 "Climate Change Implications for Lake Clark National Park." Available on the Internet at: http://www.snap.uaf.edu/attachments/LakeClark_ClimSum.pdf.
- Lipkin, R.
 2002 "Lake Clark National Park and Preserve Vascular Plant Inventory 2001 Field Season Annual Progress Report." Alaska Natural Heritage Program. Prepared for the Southwest Alaska Network Inventory and Monitoring Program. Anchorage, AK.
- MacHutchon, G.
 2000 "Risk Assessment of Bear-Human Interaction at Campsites on the Tatshenshini River and Lower Alsek River, Yukon, B.C., and Alaska." BC Parks. Comox, B.C., Canada.
- Manning, R. E.
 2007 *Studies in Outdoor Recreation: Search and Research for Satisfaction,* 3rd Ed. Corvallis, OR: Oregon State University Press.
- McCullough, D. R.
 1982 "Behaviour, Bears, and Humans." *Wildlife Society Bulletin* 10:27-33.

- McDonald C, R. Baumgartner, R. Iachan
1995 "National Park Service Aircraft Management Studies." USDI Rep. No. 94-2. Denver, CO: National Park Service.
- Monti, P., and E. E. MacKintosh
1979 "Effects of Camping on Surface Soil Properties in the Boreal Forest Region of Northwestern Ontario, Canada." *Soil Science Society of American Journal* 43(5), 1024–1029.
- National Parks Conservation Association (NPCA)
2009 "State of the Parks. Lake Clark National Park and Preserve. A Resource Assessment." Available on the Internet at: http://www.npca.org/about-us/center-for-park-research/stateoftheparks/lake_clark/
- National Park Service (NPS)
1975 *Final Environmental Statement—Proposed Lake Clark National Park Alaska*. Prepared by Alaska Planning Group, U.S. Dept. of the Interior. FES 35-72. Anchorage, AK.
1988 *Final Environmental Impact Statement—Wilderness Recommendation*. FES 88-24. Anchorage, AK.
1994 *Historic Resource Study—Lake Clark National Park and Preserve Alaska*. Prepared by Harlan D. Unrau, NPS Denver Service Center. Alaska Regional Office, Anchorage, AK.
1998 "Lake Clark National Park and Preserve Land Cover Mapping Project User's Guide." Natural Resource Report NPS/LACL/NRTR-1998/001. Fort Collins, CO: Natural Resource Program Center.
- 2001 "Lake Clark National Park and Preserve, Alaska—Water Resources Scoping Report." Prepared by D. P. Weeks. Technical Report NPS/NRWRD/NRTR-2001/292. Fort Collins, CO: Water Resources Division.
- 2002 *Proenneke Preservation Plan* (Proenneke Site Management Issues 2002 and Beyond).
- 2003 "Cabins of Lake Clark National Park and Preserve." Vol. 1—Cabins Eligible for the National Register of Historic Places with Special Section: Fire Management Cabin Database and Vol. 2—Cabins Not Eligible for the National Register of Historic Places with Special Section on Trespass Cabins. Prepared by Jennifer A. Tobey. Anchorage, AK: Lake Clark Katmai Studies Center.
- 2005a "Southwest Alaska Network Vascular Plant Inventory, Final Summary Report." Prepared by M. L. Carlson, R. Likpkin, and J. A. Michaelson. NPS/AKR/SWAN/NRTR-2005/06. Anchorage, AK: Southwest Alaska Network.
- 2005b "Invasive Plant Survey of Lake Clark National Park and Preserve: Summer 2005 Field Season Report." Prepared by P. Bauder and J. Heys. On file at Park Headquarters.
- 2005c *Denali National Park and Preserve. Revised Draft Backcountry Management Plan, General Management Plan Amendment, and Environmental Impact Statement*. Denali National Park, AK.

- 2005d “Kijik Archeological District National Historic Landmark – Cultural Landscape Inventory.” Anchorage, AK: Lake Clark National Park and Preserve. Prepared by T. L. Olson and J. A. Putera. Anchorage, AK.
- 2006a *NPS Management Policies 2006*. Available online at: <http://www.nps.gov/policy/MP2006.pdf>. 2008a “Strategic Plan for Lake Clark National Park and Preserve (October 1, 2008–September 30, 2012).”
- 2006b “Vital Signs Monitoring Plan. Southwest Alaska Network Inventory. Inventory and Monitoring Program.” Appendix II—Network Park Ecological Profiles. Prepared by A. J. Bennett, W. L. Thompson and D. C. Mortenson. Anchorage, AK: Southwest Alaska Network. 2008b “Where We Found a Whale – A History of Lake Clark National Park and Preserve.” By Brian Fagan. Anchorage, AK: Lake Clark National Park and Preserve.
- 2006c “Lake Clark National Park and Preserve—Cabin Management Plan (outline).” Submitted by Jennifer Tobey. Anchorage, AK: Lake Clark Katmai Studies Center. 2008c “Lake Clark National Park and Preserve Superintendent’s Annual Report, 2008.”
- 2007a “Richard L. Proenneke Site—National Register of Historic Places Registration Form.” Prepared by John B. Branson, Lake Clark National Park and Preserve, Port Alsworth, AK. 2009a “Lake Clark National Park and Preserve—Foundation Statement.” On file at Park Headquarters, or online at <http://www.nps.gov/lacl/parkmgmt/index.htm>.
- 2007b *NANUTSET ch’u Q’udi Gu (Before Our Time and Now)—An Ethnohistory of Lake Clark National Park and Preserve*. Anchorage, AK: Lake Clark National Park and Preserve. 2009b “Invasive Species Summary for the Southwest Alaska Inventory and Monitoring Network.” Prepared by W. Rapp. Natural Resource Report NPS/SWAN/NRR-2009/152. Fort Collins, CO: Natural Resource Program Center.
- 2007c “Refining Monitoring Protocols to Survey Brown Bear Populations in Katmai National Park and Preserve and Lake Clark National Park and Preserve. AK Region National Resources Technical Report NPS/AR/NRTR/2007-66. 2009c “National Park Service Cultural Landscapes Inventory Professional Procedures Guide.” Prepared by Robert R. Page, Olmsted Center for Landscape Preservation.
- 2009d “Historic Properties Associated with the Postwar Settlers in Lake Clark National Park and Preserve.” National Register of Historic Places Multiple Property Documentation Form. Prepared by Katherine J. Ringsmuth, Lake Clark National

- Park and Preserve, Anchorage, AK.
- AK: Alaska Regional Office, Cultural Landscapes Program.
- 2010a “Management of Off-Road Vehicles at Silver Salmon Creek in Lake Clark National Park. Environmental Assessment.” Available on the Internet at: <http://parkplanning.nps.gov/documentsList.cfm?projectID=20467>.
- 2010b “Understanding the Science of Climate Change. Talking Points — Impacts to Alaska Maritime and Transitional Bioregions.” Prepared by C. Jezierski, R. Loehman, and A. Schramm. Natural Resource Report NPS/NRPC/NRR-2010/223. Fort Collins, CO: Natural Resource Program Center.
- 2010c Lake Clark National Park and Preserve Superintendent’s Annual Report 2010.
- 2010d “Long-Range Interpretive Plan.” October 2010.
- 2010e “Alaska Regional Climate Change Response Strategy 2010-2014.” Anchorage, AK.
- 2010f “NPS Climate Change Scenario Planning (CCSP) Workshop. Anchorage, Alaska 17-19 August 2010.” On file at the NPS regional office.
- 2011a “Lake Clark National Park and Preserve—Scope of Collection Statement (preliminary review draft).”
- 2011b “Cultural Landscape Inventory—Richard L. Proenneke Cabin Complex, Lake Clark National Park and Preserve (draft).” Anchorage,
- 2011c “Brown Bears.” Resource Brief. NPS Southwest Alaska Network Inventory & Monitoring Program. Available on the Internet at: http://science.nature.nps.gov/im/units/swan/index.cfm?theme=brown_bear
- 2012a “Museum Management Plan.” Lake Clark National Park and Preserve.
- 2012b NPS Public Use Statistics Office, accessed July 2012. <http://www.nature.nps.gov/stats/>
- 2012c “Joe Thompson Cabin – National Register of Historic Places Registration Form (draft).” Prepared by John Branson, Lake Clark National Park and Preserve, Port Alsworth, AK.
- 2012d Park Atlas for Lake Clark National Park and Preserve. On file at Park Headquarters.
- 2012e 2012 Call to Action Plan, accessed January 2013. <http://www.nps.gov/calltoaction/>.
- 2012f “Lake Clark National Park and Preserve Superintendent’s Annual Report 2012.”
- 2012g “Snipe Lake Archeological District.” National Register of Historic Places Registration Form. Prepared by David Tennessen. Anchorage, AK: Lake Clark National Park and Preserve.
- 2012h “Chilikadrotna Headwaters Archeological District.” National Register of Historic

	Places Registration Form. Prepared by David Tennessen. Anchorage, AK: Lake Clark National Park and Preserve.	n.d.	“Alaska Region Climate Change Response Strategy 2010-2014.” Anchorage, AK.
2012i	“Chinitna Bay Archeological District.” National Register of Historic Places summary. Anchorage, AK: Lake Clark National Park and Preserve.	n.d.	“Telaquana Trail.” Lake Clark National Park and Preserve website article accessed on 3/12/13.
2012j	“Two Lakes Archeological District.” National Register of Historic Places Registration Form. Prepared by David Tennessen. Anchorage, AK: Lake Clark National Park and Preserve.	n.d.	“Ice Patch Archeology.” Denali National Park and Preserve.
		Olson, T.	
		2007	“Refining Techniques to Survey Harvested Brown Bear Populations in Katmai National Park and Preserve and Lake Clark National Park and Preserve.” Final Report. PMIS 4518. On file, Katmai National Park and Preserve. King Salmon, AK.
2013	“NPS Alaska Regional Management Guidelines.” On file in the Alaska Regional Office, Anchorage, AK.		
		Racine C. H., and S. B. Young	
2014	Land Protection Plan for Lake Clark National Park and Preserve. On file at Park Headquarters.	1976	“Ecosystems of the Proposed Lake Clark National Park Alaska.” Wolcott, VT: Contributions from the Center for Northern Studies No. 16.
n.d.	“Proenneke’s Cabin.” Lake Clark National Park and Preserve website article accessed on 1/10/2011.	Sherriff, R., and E. Berg	
		2011	“Tree-ring Reconstruction of Historic Insect Outbreaks in Lake Clark and Katmai National Parks and Preserves. Final Report.” Natural Resource Technical Report NPS/SWAN/NRTR-2011/482. Fort Collins, CO: NPS Natural Resource Stewardship and Science.
n.d.	“Proenneke Complex Preservation Plan II.”		
n.d.	“List of Classified Structures.” (Online LCS file data for the Proenneke Cabin, cache, woodshed / outhouse; Earl Woodward Cabin (Hardenburg Bay); Allen Woodward Cabin (Priest Rock); Snipe Lake Cabin; Bly House; Red River Trapping Cabin; Spring Lakes Trapping Cabin; Igitna River / Kenibuna Lake Cabin; Libby’s No. 23).	The Wilderness Society	
		2008	“Climate Change Implications for Lake Clark National Park.” Available online at: http://www.snap.uaf.edu/

- U.S. Department of the Interior (USDI)
1975 *Final Environmental Impact Statement*. Proposed Lake Clark National Park. Prepared by Alaska Planning Group, U.S. Department of the Interior.
- U.S. Forest Service (USFS)
2008 "Keeping it Wild. An Interagency Strategy to Monitor Trends in Wilderness Character across the National Wilderness Preservation System." Prepared by P. Landres, C. Barns, J. G. Dennis, T. Devine, P. Geissler, C. S. McCasland, L. Merigliano, J. Seastrand, and R. Swain. General Technical Report RMRS GTR-212. Fort Collins, CO: Rocky Mountain Research Station.
- Wilder, J. M., T. D. DeBruyn, T. S. Smith, and A. Southwold
2007 "Systematic Collection of Bear-human Interaction Information for Alaska's National Parks." *Ursus* 18(2): 209-216.
- Winfree, R., B. Rice, N. Fresco, L. Krutikov, J. Morris, D. Callaway, J. Mow, D. Weeks, and N. Swanton.
2013 DRAFT Climate Change Scenario Planning for Southwest Alaska Parks; Aniakchak National Monument and Preserve, Kenai Fjords National Park, Lake Clark National Park and Preserve, Katmai National Park and Preserve, and Alagnak Wild River. National Resource Report NPS/CCRP/NRR-2013/xxx. National Park Service. Fort Collins, CO.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

Lake Clark National Park and Preserve
General Management Plan Amendment / Environmental Assessment

