KATMAI NATIONAL PARK AND PRESERVE
LAKE CAMP BOAT LAUNCH AND DAY USE FACILITIES

ENVIRONMENTAL ASSESSMENT

JUNE 2000

KATMAI NATIONAL PARK AND PRESERVE, ALASKA

United States Department of the Interior • National Park Service

Table of Contents

Tables

Figures

Following Page

Appendices

LAKE CAMP BOAT LAUNCH AND DAY USE FACILITIES ENVIRONMENTAL ASSESSMENT

1.0 PURPOSE AND NEED

1.1 Introduction

The National Park Service (NPS) is considering upgrading the Lake Camp boat launching area in Katmai National Park and Preserve to include an improved boat ramp, parking and turnaround area, two docks, picnic tables, a double-vault toilet, and a fuel containment pad. The purpose of these facilities is to provide better public access to the park in general and, specifically, to enhance opportunities for local residents, park visitors, and park staff to use the Naknek Lake drainage by providing a safe and convenient site for launching vessels. An additional purpose of this project is to implement, in part, the 1986 *Katmai National Park and Preserve General Management Plan* (GMP).

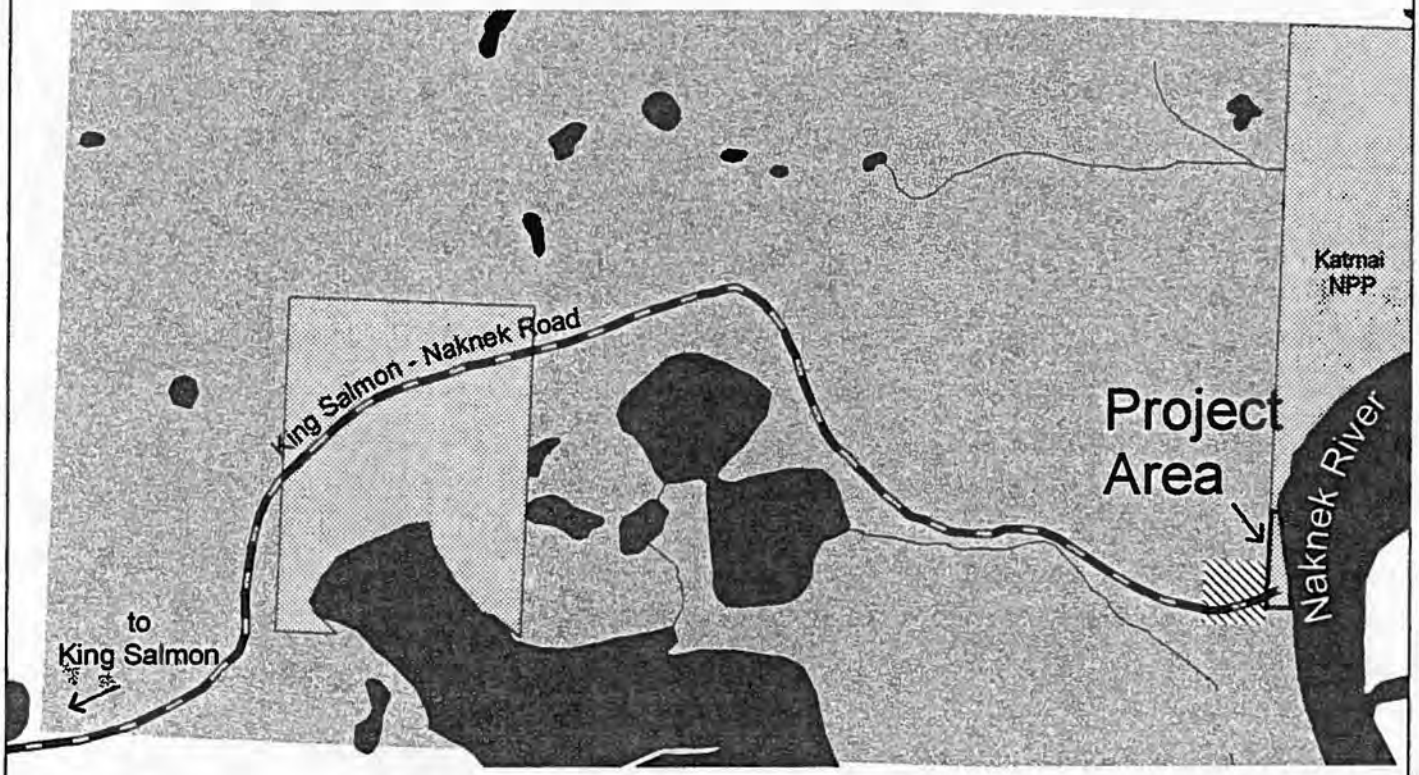
Lake Camp is on the west bank of Naknek River, near the outlet of Naknek Lake and approximately 10 miles east of the town of King Salmon, Alaska (see Figure 1). It is at the end of the only access road to the park and serves as a primary launch site for boats onto Naknek River northwest of King Salmon. (A privately owned boat launch exists downstream of Lake Camp, but this site is expected to be closed to public use no later than April 2002 – see "Background"). Most of the logistical support for Brooks Camp, a world-class bear viewing and fishing area on Naknek and Brooks Lakes in Katmai National Park and Preserve, originates at Lake Camp.

Public and NPS use of Lake Camp is limited by the lack of boat launching and related facilities. Access to the river is via a gravel road that terminates in a steep, 17-degree, slope to the river. The current "ramp" is simply the last section of the access road at the river. This situation makes it extremely difficult for vehicles to maneuver and maintain safe control while launching or retrieving boats at the river. This is particularly true for large boats such as the 52-foot NPS landing craft/tanker vessel, M/V *Ketivik*, which transports fuel and supplies to Brooks Camp. The access road's steep slope also promotes erosion of sediments into the Naknek River. Erosion is further aggravated when vehicle tires are spun in an attempt to gain traction on the steep gravel incline. The proposed access road and ramp improvements are needed to resolve these issues.

With the improved launching facilities, public use of Lake Camp is expected to increase. The proposed toilet, picnic tables, and larger parking area are needed to support this additional use.

Lake Camp Boat Launch and Day Use Facilities

Katmai National Park and Preserve



1000 0 1000 2000 3000 4000 Feet

1 : 24,498 1 inch = 2041.49 feet

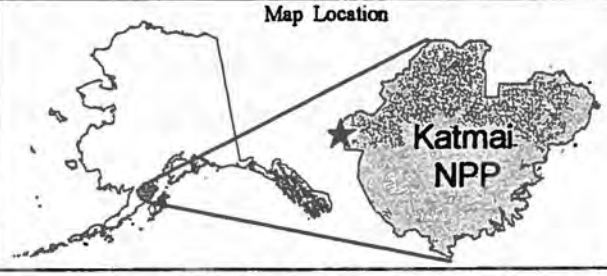
Figure 1

NPS

Private Land

US Air Force

Map Location



National Park Service
Alaska Support Office
Environmental Resources

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Under current average conditions, the existing parking area is full on most summer weekends. During heavy use periods, overflow parking occurs along the sides of the access road and in other unsuitable areas. This creates congestion and makes it difficult to turn vehicles around (especially those with boat trailers). Expanding the parking area as proposed would prevent congestion from becoming a season-long problem once the launching facilities were in place.

This environmental assessment presents and analyzes a no action alternative, a preferred action alternative, and a third action alternative, as well as the associated environmental consequences of each. It has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, and the regulations of the Council on Environmental Quality (40CFR 1508.9).

1.2 Background

From 1956 until 1977, Lake Camp was operated by the United States Air Force (USAF) as part of a recreation facility complex. The main structures of this complex were located on adjacent USAF property, but a dock was located on what is now NPS property at Lake Camp. All of these structures were demolished in the late 1970s.

Lake Camp has remained mostly unimproved since 1978. The existing site consists of a gravel access road leading to a small (50-foot by 180-foot), informal, gravel parking area with space for parking 4-5 vehicles. The road continues a short distance from the parking area down the steep incline to the river. In 1993 the NPS installed a 70-foot floating dock to serve the needs of the park and general public.

At this time, Lake Camp and a privately owned boat launch less than a mile downstream are the only easily accessible links for boaters to visit Katmai National Park. Because of the lack of adequate launching facilities at Lake Camp, a majority of the public uses the private site to launch their boats. The Bristol Bay Borough has a one-year lease on the private boat dock, allowing the public to continue to use this facility from April 4, 2000 through April 4, 2001. The Borough has the option of extending the lease for one additional year. When the lease expires, Lake Camp will be the only available boat launch in the general vicinity.

NPS Planning History for Lake Camp. The 1986 *Katmai National Park and Preserve General Management Plan* (GMP) is a comprehensive plan providing general guidance for all aspects of park management, including the need for and general locations of facilities. In the 1986 plan, the NPS noted the need to improve facilities at Lake Camp. Specifically, the plan called for the following:

- improved boat launching and docking facilities;
- a one-mile nature trail;
- two picnic shelters;
- expanded parking to accommodate ten vehicles plus four vehicles with boat trailers; and
- interpretive exhibits.

The 1996 *Final Brooks River Area Development Concept Plan/Environmental Impact Statement* (DCP/EIS) and related 1996 record of decision stated the NPS intention to cooperate with interested partners to plan and implement improvements to Lake Camp as identified in the GMP.

In the several years since approval of the GMP, the NPS has re-evaluated the need for the facilities described in the plan and has made some modifications. The NPS has determined that more parking would be needed at Lake Camp than the amount described in the GMP. This is because the current number of vehicles parked at Lake Camp on a summer weekend (10 to 15 vehicles on average), is already at the parking capacity proposed in the GMP, and use is expected to further increase if improvements to the launching facilities are made. Another modification the NPS made to the actions called for by the GMP was to substitute picnic tables for picnic shelters. Finally, the NPS decided not to build the one-mile nature trail and interpretive exhibits described in the GMP, as public interest was not considered great enough to warrant analysis and construction of these facilities at this time.

1.3 Issues and Impact Topics

To focus the environmental assessment, the National Park Service selected specific impact topics for more complete analysis and eliminated others from further evaluation. Subsequent discussions of the affected environment and environmental consequences related to each alternative focus primarily on these impact topics. A brief rationale for the selection of each topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Retained for Further Consideration

Soils and Vegetation. The NPS Organic Act and *NPS Management Policies* direct the NPS to maintain all the components and processes of naturally evolving park ecosystems. Soils and vegetation would be affected by construction of the facilities.

Fish and Wildlife. Legislation creating Katmai National Park and Preserve requires the protection of brown bear, moose, sockeye (red) salmon, and other wildlife, and their habitat. *NPS Management Policies* direct the NPS to maintain all the components and processes of naturally evolving park ecosystems, including the natural abundance, diversity, and ecological integrity of fish and wildlife populations. Fish and wildlife could be impacted by the proposed action.

Air Quality. The Clean Air Act, The National Environmental Policy Act, and *NPS Management Policies* require consideration of impacts on air quality. Construction of the facilities, as well as their use over the long-term, could impact local air quality.

Water Quality. The Clean Water Act, The National Environmental Policy Act, and *NPS Management Policies* require consideration of impacts on water resources. Some of the proposed facilities would be constructed within the Naknek River. Other facilities would be built within wetlands. Therefore, the proposed action could affect ground or surface water quality.

Wetlands. Consideration of impacts on wetlands is required by Executive Order 11990, "Protection of Wetlands." The proposed action would occur within and affect palustrine and riverine wetland, as defined by the U.S. Fish and Wildlife Service's *Classification of Wetlands and Deepwater Habitats of the United States* (USFWS 1979).

Visitor Experience. The NPS Organic Act and *NPS Management Policies* direct the NPS to provide for visitor use and enjoyment of park resources. The type and level of development, as well as other aspects of visitor use and enjoyment at Lake Camp, would be impacted by the proposed action.

Local Economy. Though not required by the National Environmental Policy Act, the National Park Service often analyzes project impacts on the local economy. Acquiring the materials and labor necessary to construct the proposed facilities could impact the local economy.

Park Management. Maintenance of the proposed facilities could affect the workload of park staff, as well as the park budget.

Cumulative Effects. The National Environmental Policy Act requires the NPS to analyze the cumulative impacts of a proposed action on the human environment. Cumulative impacts are defined as the *incremental impacts* on the environment resulting from adding the proposed action to other past, present,

and reasonably foreseeable future actions (also referred to as regional actions), including those taken by federal and nonfederal agencies and actions taken by individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time (CEQ Sec 1508.7).

Impact Topics Eliminated from Further Consideration

Threatened, Endangered, and Other Special Status Species. The Endangered Species Act requires an examination of impacts on all federally threatened or endangered species. *NPS Management Policies* also require examination of the impacts on these species, as well as federal candidate species, state-listed threatened or endangered species, or state-listed species of special concern. No such species are known in the project area, nor is there potential habitat for these species (See Appendix 3).

Floodplains. Consideration of impacts on floodplains is required by Executive Order 11988, "Floodplain Management." All of the proposed facilities are exempt from this Executive Order according to *National Park Service Floodplain Management Guidelines* which sets forth policies and procedures for use by the NPS in implementing Executive Order 11988.

Cultural Resources. The National Historic Preservation Act, the National Environmental Policy Act, NPS *Management Policies*, and NPS *Cultural Resource Management Guidelines* all require the NPS to consider effects of their actions on cultural resources. Previous archeological studies of the Lake Camp area have found no prehistoric resources (Vinson 2000). Historic resources were demolished by the U.S. Air Force and have, therefore, been determined to be ineligible for the National Register of Historic Places (Vinson 2000). NPS consultation with the Council of Katmai Descendents on March 27, 2000 identified no ethnographic resources. Legislation passed in 1996 (P.L. 104-333), stated that "local residents who are descendants of Katmai residents who lived in the Naknek Lake and River Drainage shall be permitted, subject to reasonable regulations... to continue their traditional fishery for redfish within Katmai National Park...." The proposed action would not interfere with these traditional redfishing activities. For all of the above reasons, the proposed action would have no impacts on known cultural resources.

Subsistence. The effects of the proposed action on subsistence uses and needs was dismissed from further analysis because (1) Katmai National Park (including the project area) is closed to subsistence uses, and (2) the proposed action would not affect regional subsistence resources or activities outside the

park. There would be no potential for significant subsistence restrictions. An ANILCA Section 810(a) summary evaluation and analysis is contained in Appendix 1.

Executive Order 12898, "Environmental Justice". Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations," requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project is not expected to result in significant changes in the socioeconomic environment of the project area, and, therefore, is expected to have no direct or indirect impacts to minority or low-income populations or communities.

2.0 DESCRIPTION OF ALTERNATIVES

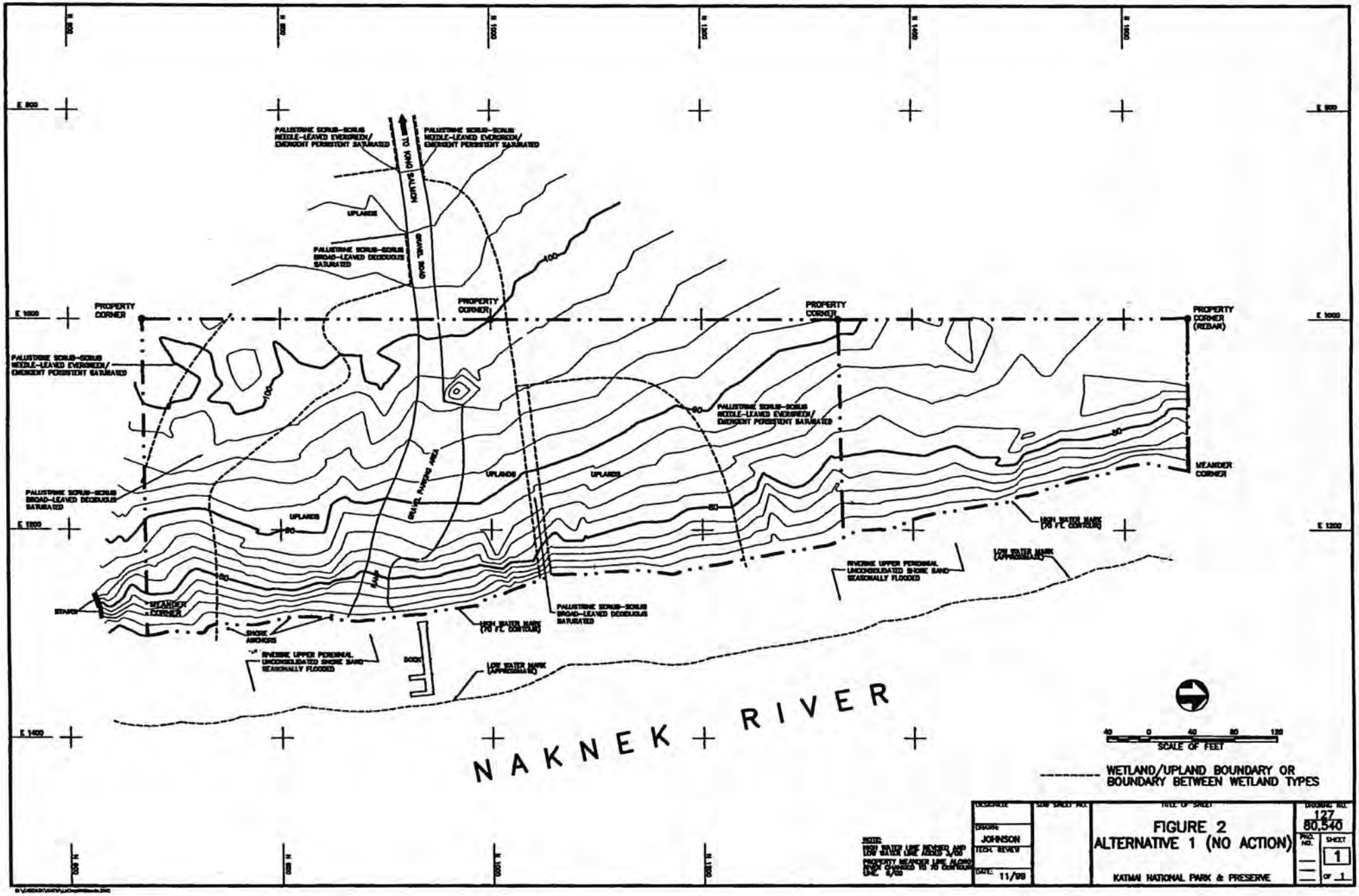
2.1 Alternative 1: No Action

The no-action alternative proposes no change from the current conditions at Lake Camp (see Figure 2). Facilities would continue to be fairly primitive: a short gravel road leading to an informal boat ramp at the river, a floating dock, and a small gravel parking area (see "Affected Environment" for more details). The NPS would continue to provide limited maintenance of the driving surfaces and dock.

2.2 Alternative 2 (Preferred): Boat Ramp Facilities, with Parking Separated from River

Alternative 2, or the preferred alternative, proposes the following actions for the Lake Camp boat launch and day use facility:

- Construct two parallel permanent floating boat docks approximately 70 feet long and 8 feet wide made of wood or metal and placed approximately 36 to 60 feet apart (one of the two docks would likely be the existing dock).
- Construct a concrete boat-launching ramp approximately 36 feet wide and 70 feet long. The ramp may be located between the docks or on the outside of them, the design team will determine the exact location of the ramp.
- Construct a gravel parking area to accommodate 20 vehicles with trailers (each space would be about 10 feet by 40 feet).
- Construct a gravel road connecting the parking spaces and the launch area.
- Construct a gravel maneuvering area adjacent to the ramp.
- Construct and install a double-vault toilet.
- Install two picnic tables.



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DRAWN: JOHNSON		FIGURE 2 ALTERNATIVE 1 (NO ACTION)	127 80,540
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NOTE:
HIGH WATER LINE SURVEYED AND LOW WATER LINE ADDED 1,400'
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- Construct and install an information kiosk.
- Install on-shore anchors downstream of the docks for the NPS vessel M/V *Ketivik* and other large vessels for fueling and loading operations.
- Equip the fuel transfer site with an impervious fuel containment pad (probably concrete).

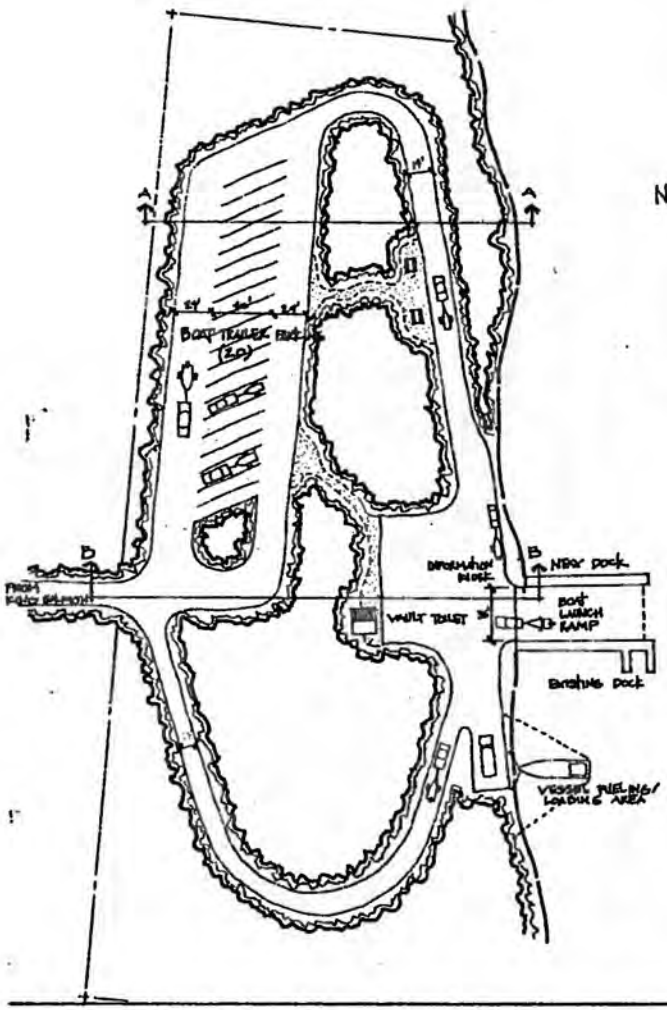
Under the preferred alternative, the access road would be a 14-foot wide one-way loop, as shown in Figure 3. The parking spaces would be located approximately 130 feet from the river. A foot trail, about 80 feet long, would connect the parking and the launch area, and another foot trail, about 60 feet long, would connect the picnic tables and the parking area. The maneuvering area in front of the boat ramp for launching and loading would be approximately 8,000 square feet. The boat launch ramp would have a low-angle slope into the river. The NPS would be responsible for maintenance of facilities and trash removal. The NPS would coordinate with the Bristol Bay Borough for pumping the vault toilet as needed and for occasional maintenance of the circulation area by road grader.

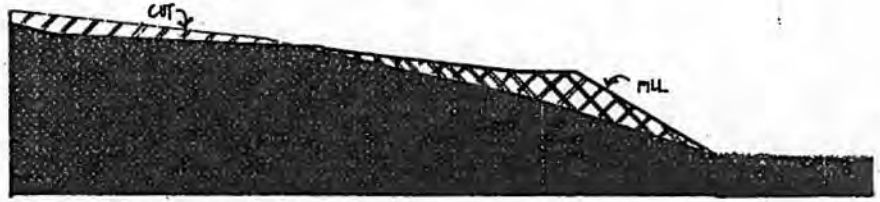
Construction Description

The estimated construction time for this project is 6-8 weeks. The project is slated to begin in early fall 2000, or as late as mid-spring 2001. Due to weather constraints, the project may be started in the fall of 2000 and completed in the spring of 2001. The site would be closed to the public during construction. During construction, the contractor would mobilize equipment on site, including earth-moving equipment, fuel trucks, graders, and dump trucks.

In general, it is expected that the site grading work would be completed in the fall of 2000 and that boat ramp and dock work would be completed in the spring of 2001, although the contractor would decide the final plan. The approximate construction sequence follows.

The site would be cleared. This would likely include all of the limits of construction, including the river's edge. Equipment would strip the top foot of organic type material and stockpile about 4,000 cubic yards (cy) of it on the northern end of the project site. The remainder, approximately 1,500 cy, would be hauled to an approved permitted disposal site outside of the park (site to be determined by the contractor). The construction site would be graded, and about 12,000 cy of silty clay soil would be excavated and hauled to the disposal site.





SECTION A-A
1" = 20'-0" HORIZONTAL 1" = 10'-0" VERTICAL

SECTION B-B
1" = 20'-0" HORIZONTAL 1" = 10'-0" VERTICAL

Figure 3

ALTERNATIVE 2

(Preferred Alternative)

DESIGNED: / DRAWN: / TECH. REVIEW: / DATE:	SUB SHEET NO.	TITLE OF SHEET: LAKE CAMP BOAT LAUNCH / DAY USE FACILITIES KATMAI NATIONAL PARK & PRESERVE	DRAWING NO. / PROJ. NO. / SHEET OF

Structural fill, including crushed aggregate and surface material amounting to about 4,400 cy, would be trucked in from an approved permitted material source outside of the park (site to be determined by the contractor). This would be used to construct the access road, parking and maneuvering areas, trails, and pads for the toilet and tables. The stockpiled organic material would be replaced on the non-driving surfaces to facilitate re-growth of vegetation. The two picnic tables, the information kiosk, and the vault toilet would be installed. Directly south of the boat docks several permanent shore anchors would be installed to provide tie-downs for large vessels.

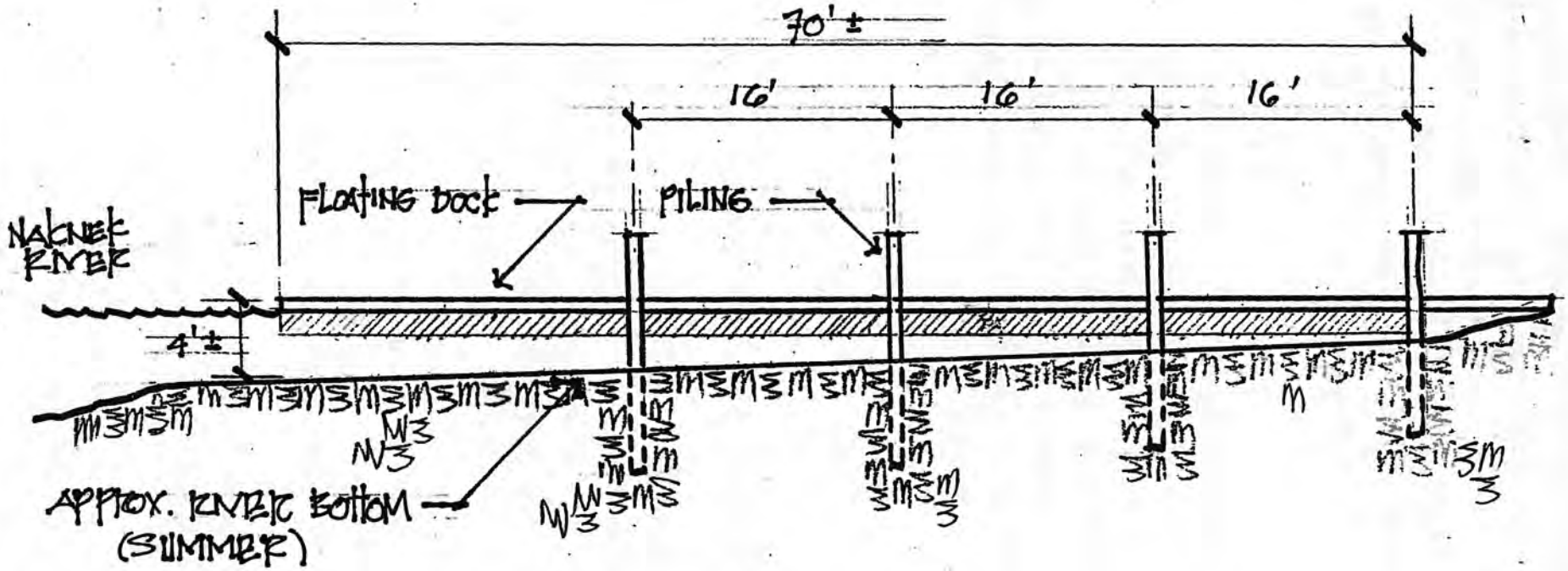
The boat ramp would be constructed by slightly excavating and grading the river bottom and installing a series of interlocking concrete planks placed side by side to extend into the river, resulting in a total of approximately 50 cy of concrete placed in the river. Steel pilings, less than 10 inches in diameter and similar to those of the existing dock, would be driven into the river bottom to secure the new dock or docks (see Figure 4). The fuel containment pad would be constructed directly south of the boat docks, and adjacent to the shore anchors. The fuel containment pad would likely be constructed of concrete, although final determination would be made during the design stage of this project.

Mitigation

Impact minimization and avoidance measures would be implemented as a part of Alternative 2.

Best management practices. Best management practices for watershed protection would include the following:

- Every effort would be made to construct the ramp and docks when the river levels were low and the site relatively dry to avoid impacts to juvenile salmon and rainbow trout from water turbidity and sedimentation. If this was not possible and the ramp and dock had to be constructed when river levels were high, the contractor would install a temporary cofferdam around the construction site. Water would be pumped out from inside the dam to create a relatively dry working environment and minimize sedimentation in the river.
- In general, the contractor would use bio-logs, silt fence, or similar measures as appropriate, to reduce the amount of sediment in runoff from reaching the river.
- Once construction was completed, remaining exposed soils would be actively revegetated where necessary to help anchor the soils and prevent erosion.
- In addition, no fuel would be stored on the site during construction.
- Following construction, the NPS would cordon off an area adjacent to the river to promote the establishment of a vegetative buffer.



SECTION (TYP.)
LAKE CAMP BOAT DOCK (EXIST.)

1" = 20'-0"

Figure 4

LAKE CAMP BOAT DOCK	
KATMAI NATIONAL PARK & PRES.	
KING SALMON, AK	
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Wetland compensation. A minimum of 2.1 acres of wetlands would be restored in the Dry Bay area of Glacier Bay National Preserve to compensate for wetlands impacted at Lake Camp (see attached "Wetlands Statement of Findings" in Appendix 2 for more information). Although vegetation would be cleared to ground-level within the 0.9 acres of wetland used for topsoil storage, the organic layer would remain intact. Heavy equipment would likely be used to deposit and remove the topsoil, but would not be stored or staged within this area. The topsoil would be stabilized with filtration bales, filter cloth, or other appropriate means to prevent re-entry into the waterway or wetland. Topsoil storage would be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community. Once stored topsoil were removed, this wetland area would be left at pre-existing elevations, and soil, hydrology, and native vegetation communities would be restored through natural processes.

Sanitation Facilities. A centrally located toilet and bear-proof trash containers would be placed at the site to reduce potential impacts of human waste and litter and prevent bears and other wildlife from obtaining discarded human food or garbage.

Educational information. Educational information would be provided at the on-site kiosks to inform visitors of appropriate behavior around wildlife and in sensitive environments such as riparian areas, to promote safe and environmentally responsible boating and use of the boat launch facilities, and to notify visitors of fishing regulations.

Construction scheduling. The contractor would be required to accommodate launching or retrieving of the M/V *Ketivik* by the NPS if the private ramp was determined to be unavailable or unusable for this purpose.

Cultural resources protection. There are no known prehistoric or historic resources in the project area. However, should unknown resources be uncovered during implementation, work would be stopped in the discovery area, and the NPS would consult the Alaska Department of Natural Resources State Historic Preservation Officer (SHPO) in accordance with 36 CFR 800.11 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1992, regarding the appropriate action to take. Any artifacts recovered from park property at Lake Camp would be managed in compliance with NPS-28. NPS archeologists would monitor construction on an opportunistic basis.

Hydrology. The contractor would study the hydrology of the river in an attempt to find the optimum placement of docks and boat ramp given the river current and the range of boat types expected to use the facilities.

2.3 Alternative 3: Boat Ramp Facilities, with Parking Near River

The components of the project under Alternative 3 would be identical to the components described under Alternative 2, but configured differently. The parking lot would be located within about 15 feet of the edge of the water and nearly at the same elevation as the river. The road would be 24 feet wide and would accommodate two-way traffic, as shown in Figure 5. It would descend to the north and make a switchback to the parking lot, which would be configured the same as Alternative 2. The picnic tables would be located next to the parking area and immediately adjacent to the river. There would be no trails. The maneuvering area in front of the boat ramp and the slope of the boat ramp would be configured as described for the proposed action.

Construction Description

The estimated construction time and the beginning and ending dates of construction would be the same as described in Alternative 2. Specific construction actions also would be virtually identical to the description for Alternative 2, with the exception of minor variations in quantities of materials. Under Alternative 3, approximately 16,000 cy of material would be excavated and trucked to an approved permitted disposal site. The construction of the parking area and any driving surfaces would require the import of about 4,500 cy of structural materials from an approved permitted material source outside of the park. Approximately 4,000 cy of the organic material would be stripped. About 2,400 cy of these organic materials would be trucked off-site and disposed of with other excavated material. The balance, about 3,600 cy, would be salvaged and stockpiled on-site for later redistribution over the graded, non-driving surfaces of the newly constructed site.

Mitigation

Mitigation measures for Alternative 3 would be the same as those noted for Alternative 2.

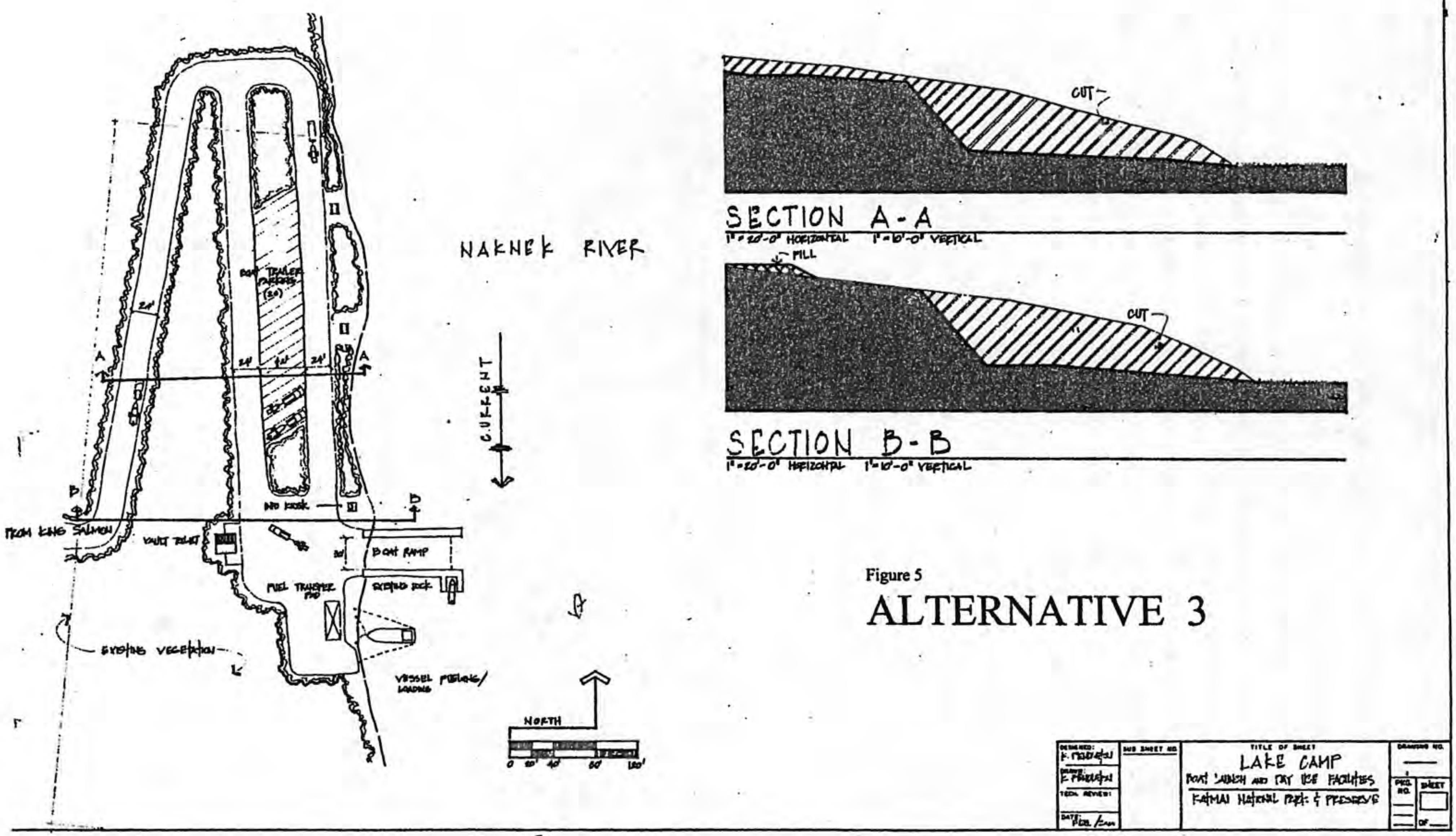

Figure 5
ALTERNATIVE 3

2.4 Alternatives Considered but Dismissed from Further Consideration

Bristol Bay Borough Acquisition of Private Dock

One alternative considered, but dismissed from further evaluation, would have required an action of the Bristol Bay Borough to obtain permanent public access to the existing private boat dock located downstream of Lake Camp. The Borough could acquire such access either by negotiating a long term lease agreement between with the private property owner or by acquiring the property, likely by exerting eminent domain. Based on borough reports of discussions with the landowner, both options would be a potentially costly and unpopular. The Borough has indicated it would be unwilling to undertake either, so borough action was not further examined.

Value Analysis Alternatives

The NPS examined the no-action alternative and three other alternatives (variations on the range of alternatives presented in this EA), as shown in Table 1. All construction alternatives included approximately the same components described in section 2.2, with picnic shelters in addition to picnic tables, parking for about 30 vehicles with trailers, and a 60-foot wide boat launch ramp.

Table 1
Value Analysis Alternatives Considered

Alternatives and Defining Features	Action
No-action alternative: Same as existing	Retained as required by law.
24-foot wide access road through parking area next to the river, leading to launch area.	Had some public support for ease of access between parking and launching. Modified and carried forward as Alternative 3
24-foot-wide access road leading directly to the launch area. Parking area at top of hill and split into two lots. Trails from parking lot to the picnic and launch area.	Rated highest. Had some public support. Modified as Alternative 2.
24-foot-wide loop access road leading through two parking areas at top of hill. Launch area separate from circulation loop road. Trails from the parking lots to the picnic and launch area.	Rated lowest. Dropped from further consideration

The modifications to the two alternatives carried forward including dropping picnic shelters and reducing parking capacity. Picnic shelters were dropped, because the area's bugs implied an enclosed or screened shelter and the area's bears and their attraction to food and ability to dismantle structures indicated high maintenance needs for enclosed shelters. The shelters and associated maintenance did not appear warranted for the assumed light demand for such facilities. The boat launch and one-way road widths were narrowed to provide cost savings without substantial loss of function. The parking area was reduced to a capacity of 20 (down from 30) as a further cost saving measure, based on the limited project funding and the reality that the lot could fit a mix of 30 or more vehicles, some of them with trailers and some without.

2.5 Comparison of Impacts

Table 2, below, compares impacts of the two alternatives. Further detail appears in the "Impacts" sections of Chapter 3.

2.6 Implementation Process

The project is proposed for implementation in a two-step contracting process known as "design-build," consisting of a design phase and a construction phase, both completed under the same contract. During the design stage, the contractor would use the preferred alternative (identified in this EA) as a basis for developing detailed construction plans and specifications for the project. If this preferred alternative were to change as a result of public comment, the design would be modified accordingly. Upon NPS approval of the final design, construction of the proposed facilities would begin only if a Finding of No Significant Impact (FONSI) were approved for the project and all necessary permits were obtained.

Table 2
Impacts of the Alternatives

Impact Topic	Alternative 1 (no action)	Alternative 2 (preferred)	Alternative 3
Soils	Continued soil compaction and soil erosion from boat launching at a steep, informal slope. Minor risk of soil contamination from the fueling operations of the NPS boat M/V *Ketivik*.	Approximately 12,000 cy of soil would be removed from the area and replaced with 4,400 cy of structural backfill and 4,000 cy of stockpiled organic material.	Approximately 16,000 cy of soil would be removed from the area and replaced with 4,500 cy of structural backfill and 3,600 cy of stockpiled organic material.
Vegetation	Continued minor effects to vegetation from human use, especially along shore.	About 3.4 acres of vegetation would be removed. Of this, about 1.2 acres would be permanently lost and about 2.2 acres would slowly re-grow.	Slightly greater removal of shoreline vegetation likely during construction, but permanent impacts expected to be the same as Alternative 2.
Fish and Essential Fish Habitat	Erosion would likely continue to deposit sediments into fish habitat but with negligible to minor impact.	Loss of approximately 2500 feet of habitat of rainbow trout and salmon, plus an additional 4200 feet depending on the location of the dock. Also a permanent loss of about 200 feet of riverbank rearing habitat for several species. Sedimentation of habitat likely minor and similar to existing.	Slightly greater removal of shoreline vegetation likely during construction, but all permanent impacts to fish expected to be the same as Alternative 2.
Wildlife	Wildlife in the Lake Camp area would not be further impacted.	Permanent loss of 1.2 acres of vegetated habitat and 0.1 acres of shoreline wildlife corridor would cause minor impacts.	Impacts to the wildlife from loss of habitat would be similar to Alternative 2.
Air Quality	Air quality would not be impacted	Temporary decrease in air quality likely during construction (dust, exhaust). Minimal change in permanent air quality.	Impacts are expected to be the same as Alternative 2.
Water Quality	Water quality would continue to be minimally impacted by sediment erosion from vehicles using the steep slope that leads directly to the river.	Temporary moderate decrease in the water quality possible during construction from erosion and disturbance of the river edge soils and work in the riverbed. Slightly greater risk of incidental fuel spills with more boating activity. Slightly reduced risk of spill when loading fuel as cargo.	The impacts are expected to be the similar to Alternative 2.
Wetlands	Wetlands in the Lake Camp area would not be further impacted.	2.0 acres of palustrine wetlands and 0.1 acres of riverine wetlands would be impacted. An estimated total of 1.2 acres would be permanently impacted and 0.9 acres would be temporarily impacted for on-site storage of organic materials.	1.9 acres of palustrine wetland and 0.1 acres of riverine wetlands would be impacted. An estimated total of 1.3 acres would be permanently impacted and 0.7 acres would be temporarily impacted for on-site storage of organic materials.

Continued...

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Impact Topic	Alternative 1 (no action)	Alternative 2 (preferred)	Alternative 3
Visitor Experience	Visitor safety on the boat ramp would be compromised by the steepness of the ramp. Visitor opportunity and experience would continue to be limited by the lack of adequate parking, maneuvering space, toilet facilities, and interpretive material.	Visitor safety would be improved by creating gentler slopes for vehicle operation. The construction of parking, bathroom facility, and interpretive signs would improve visitor opportunity and experience. The resulting less natural appearance may diminish the visitor experience for some.	Impacts are expected to be the same as Alternative 2, with the possible increase in function and convenience from the ease of access due to the proximity of the boat ramp and docks to the parking area.
Local Community	The local economy would not be further impacted, although commercial growth that might benefit the community would be impeded by current conditions.	Minor positive long-term effects possible from providing easier access for residents and commercial operators. Construction would provide a short-term economic boost to the community and short-term inconvenience to local and commercial operators	Impacts are expected to be the same as Alternative 2.
Park Management	Limited park management to the area would continue. Difficult operations of the park boat, the M/V *Ketivik* including logistically challenging fueling operations, and the costly and difficult process of launching and removing.	Increased park management, including trash collection, maintenance of the bathroom and kiosk, and general patrol of the area. Easier, lower-risk access for fuel transfer operations. More cost effective launching/removal of the park vessel with the gradual grade.	Impacts are expected to be the same as Alternative 2.
Cumulative Effects	Delays and overcrowding are expected in the area with the closure of the boat launching area downstream	Minor incremental increase in habitat loss and general conversion of natural areas to developed areas. More boat launch activity under NPS management with closure of private launching area.	Impacts are expected to be the same as Alternative 2

3.0 AFFECTED ENVIRONMENT AND IMPACTS OF THE ALTERNATIVES

3.1 Soils

Affected Environment

There is no Natural Resources Conservation Service soil survey for this area. The NPS contracted for soil borings to examine the soil structure (Shannon and Wilson 2000). The NPS also contracted for wetland determinations (HDR Alaska 1999). These studies resulted in a characterization of the site's soil types.

The predominant subsurface soil layers in this area can be described as the following. The upper layer is silty sand with organic materials and roots, overlying a large lacustrine deposit of silt and clay, and under the lacustrine layer is a glacially deposited silt layer. The lacustrine layer is typically wet, and most likely remains moist year round, indicating frost susceptible soil (Shannon & Wilson 2000). The organic soil in the areas corresponding to the heath vegetation consists of a layer of sphagnum peat over clay. The range of the moss depth was 3 inches to 18 inches. The soil in the area corresponding to the alder vegetation was similar, although none had deep peat surfaces (HDR Alaska 1999).

Contaminated soils and groundwater have been detected on U.S. Air Force land immediately west of the NPS' Lake Camp property. According to a 1995 report, surface soil, subsurface soil, wetland, and groundwater samples were collected throughout the Air Force site, including at the former lodge, generator pad, landfill, and wetland areas (U.S. Air Force 1995). All study areas investigated were found to have high levels of chemical constituents above preliminary remediation goals. The primary contaminant of concern was identified as petroleum hydrocarbons. Asbestos was also identified as a contaminant. This information, as well as concerns expressed by NPS staff and the public that the soils and groundwater at the NPS' Lake Camp property also might be contaminated, prompted the NPS to conduct further investigations regarding the risk of encountering contaminated groundwater or soils during construction of the proposed facilities.

Due to the steep hydraulic gradient, the possibility exists that the contaminated groundwater plume on the Air Force site also flows under the NPS' Lake Camp property. However, geotechnical exploration borings conducted on the property in 1999 on behalf of the NPS, did not encounter groundwater at either 21.5 feet or at 26.5 feet (Shannon and Wilson, 2000). Based on the preliminary grading scheme developed for the property, the NPS does not expect to excavate more than 20 feet into the ground; therefore, it's unlikely that the proposed construction work would intercept the contaminated groundwater. In the event that the contaminated groundwater was intercepted, all construction work would be halted immediately until a determination of impacts and mitigation could be made.

The NPS also conducted an investigation to determine the extent of possible asbestos contamination at Lake Camp. Using aerial photographs from 1975 and site maps, a total of seven test pits were dug within the existing parking area at the site (see Figure 6). Most of the pits contained some amount of building debris and fill material, but there was no evidence of asbestos-containing material in any of the pits (Stromquist 2000).

Existing use of the area results in soil erosion along the informal and steep incline leading to river and in gullies along each side of this driving surface. Erosion is worsened when vehicle operators spin their tires to drive back up the steep incline after launching or loading their boats. Occasionally, during high use periods, people park their vehicles off the existing road or in other inappropriate areas, compacting soils and contributing to soil erosion. The area subject to greater-than-natural soil erosion is relatively small and suggests only very localized soils issues.

The fuel truck that supplies the park landing craft/tanker vessel M/V *Ketivik* is unable to maneuver down the steep gravel incline, so a 200-foot hose is stretched between the boat and the truck for fueling operations (Sherman April 2000). This poses a risk of soil contamination from fuel spills, however there have been no reported spills from the M/V *Ketivik* (Sherman May 2000). The NPS maintains fuel spill response equipment on board the M/V *Ketivik* to minimize the extent of a fuel spill if one were to occur.

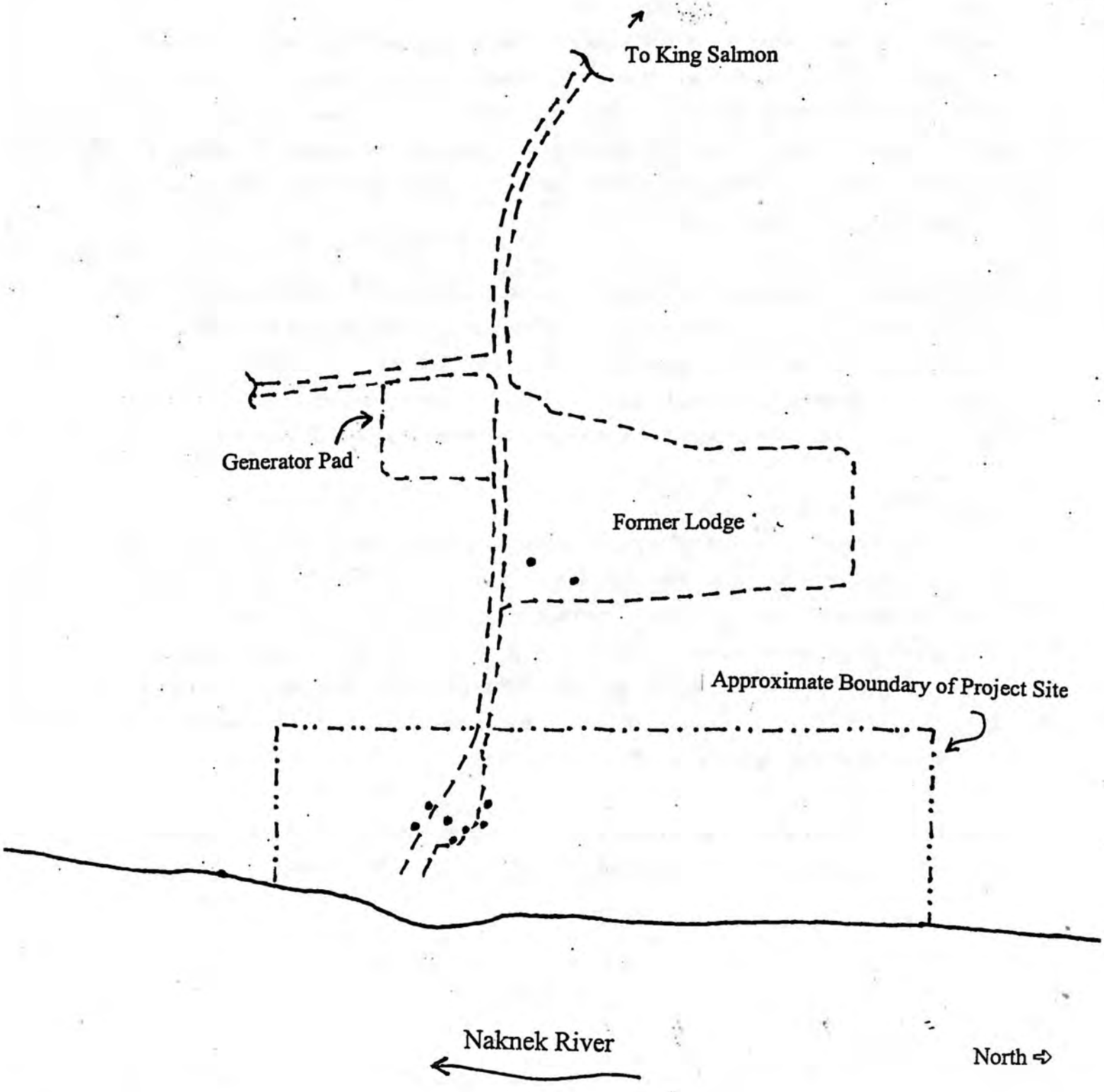
Impacts of Alternative 1 (No Action)

Boat launching on the steep incline and improper vehicle parking during peak use periods would continue to cause soil compaction and soil erosion indefinitely. These impacts would be minor, because they would be limited to the area surrounding the existing road and parking area, both of which are located on previously disturbed ground. Risk of soil contamination would continue to occur during the fueling operation of the M/V *Ketivik* (see also "Fish and Essential Fish Habitat" and "Park Management" discussions). Although the risk would continue to exist indefinitely, it would be minor to moderate because of safety measures taken by the NPS.

Conclusion. Continued soil compaction and soil erosion from boat launching at a steep, informal slope. Minor risk of soil contamination from fueling operations of the NPS boat M/V *Ketivik.*

Figure 6
LAKE CAMP ASBESTOS TESTS

- Test Pits



Impacts of Alternative 2 (Preferred)

The construction would permanently displace about 12,000 cy of soil, and replace it with about 4,400 cy of structural backfill, including the crushed aggregate necessary to produce the driving and parking surfaces and structural support for the other facilities. Therefore, there would be a permanent loss of about 7,600 cy of soils from the site.

Soil on the north end of the project area would be compacted as a result of storing the approximately 4,000 cy of stripped organic material. Soil compaction could decrease soil permeability and increase potential for soil erosion of the area. Active compaction of this northern portion of the site would last only during the 6-8 weeks of construction. Once the stored organic material was removed, the soil should be able to support the re-growth of natural vegetation within a few years, minimizing long-term impacts of soil erosion in this area.

Construction activities would expose and compact the soils within about a 3.4-acre area. Spreading organic material to encourage re-vegetation would encourage stability following construction. Although much of this area would be revegetated after construction, more area would be exposed after re-vegetation than is exposed today. While exposed soils are generally susceptible to erosion, the low angles and permeable soils used in construction should limit erosion so that there would likely be no more erosion than currently exists.

Overall, the above impacts to soils would be minor due to the relatively small area of soils disturbed compared to the miles of river and lake shoreline with similar soils in the area. Measures taken to reduce erosion and run-off would minimize erosion during and following construction.

Conclusion. About 7,600 cy of soil would be permanently lost due to the construction of the proposed alternative. Impacts related to soil erosion and compaction would be minor overall, lasting primarily during construction. The lower grade of constructed surfaces and greater permeability of exposed surfaces would minimize erosion of the finished facilities. Together, these would mean minor soil impacts.

Impacts of Alternative 3

The impacts to the soil would be similar to Alternative 2, but cutting into the slope to construct the parking area near the river level would increase the amount of native soil removed. Soil storage and replacement amounts would be slightly different. Construction would remove approximately 16,000 cy of soil from the area, and replace it with about 4,500 cy of structural backfill covered with crushed aggregate

to produce the driving and parking surface and structural support for the other facilities. Approximately 3,600 cy of organic material would be stored on-site to use in the final reclamation of the graded non-driving surface. There would be more area with relatively steep cut banks under Alternative 3 than Alternative 2, and these would tend to be more prone to erosion than flatter slopes. None would lead directly to water, and all would be stabilized with erosion protection measures and revegetation. Therefore, like Alternative 2, impacts to soil would be minor.

Conclusion. A total of about 11,500 cy of soils would be permanently lost. Erosion and compaction issues would be essentially the same as Alternative 2.

3.2 Vegetation

Affected Environment

The vegetation at the proposed site can be divided into the following categories: heath tundra, alder scrub drainageways, and alder on uplands.

There are approximately 2.1 acres of heath tundra vegetation, primarily located on the northern half and the southwestern corner of the property. The heath tundra area is primarily natural and is the dominant vegetation type in this eco-region. It can be described as dwarf scrub communities that grow on relatively well-drained mineral soil. The heath tundra vegetation is dominated by Labrador tea (*Ledum decumbens*), lowbush cranberry (*Vaccinium vitis-idaea*), crowberry (*Empetrum nigrum*), dwarf birch (*Betula nana*), low willows (*Salix* sp.), sedges (*Carex* sp.), and sphagnum moss (HDR Alaska 1999).

Alder scrub vegetation is located in drainageways and represents approximately 0.7 acres. This small wetland drainage is most likely the result of area clearing several decades ago. The alder scrub vegetation is dominated by alder (*Alnus* sp.), tall willows (*Salix* sp.), bluejoint reedgrass (*Calamagrotis canadensis*), woodland horsetail (*Equisetum sylvaticum*), field horsetail (*Equisetum arvense*), mosses, and paper birch (*Betula papyrifera*).

The upland alder area accounts for 2.1 acres, and is located primarily in the middle of the property surrounding the current parking area. The alders are a modification of the natural vegetation due to disturbance and clearing in the area several decades ago (HDR Alaska 1999). The current access road, and small parking area are located within this vegetated area.

Current visitor impacts to vegetation are minimal. Most of the vegetation around Lake Camp is located on wet surfaces that are difficult and wet for pedestrians to travel through.

Impacts of Alternative 1 (No Action)

Vegetation would not be removed or disturbed by construction activities, and no substantial new impacts would occur in the no-action alternative. Visitors would continue to impact riparian vegetation. The impacts would be minor and would last indefinitely.

Conclusion. Continued minor effects to vegetation from human use, especially along the shore.

Impacts of Alternative 2 (Preferred)

Stripping the organic layer off the site would remove all vegetation from about 3.4 acres of the property, including about 500 lineal feet of vegetation now growing along the riverbank (see also "Fish" section, below). However, the stripped organic materials would be stored and used to restore 2.2 acres of the denuded area once construction was complete. About 1.2 acres of the site as a whole would remain unvegetated over the long-term, including approximately 200 lineal feet of vegetated riverbank that would remain permanently unvegetated. The river edge would be cleared for construction and then encouraged to re-grow as a buffer strip between development and the river. Clearing would allow people ready access to the river at multiple points, and trampling could inhibit re-growth. However, this only applies while construction is ongoing; NPS would cordon off the area after construction (see "Mitigation").

Approximately 0.9 acre on the north end of the project would not have the organic layer removed. This area would be used for stockpiling the stripped organic layer, and would be impacted for up to eight weeks during construction by compaction and burial of plants, killing many of them. Once the stored organic material was removed from this area, it would take about one growing season for sedges to start growing and about three years for the vegetation to return to its natural state. The vegetation structure might permanently change, with the possibility of alder dominance (see "Wetland" discussion).

Overall, the permanent and temporary loss of existing vegetation would be a minor impact due to the relatively small area of vegetation disturbed compared to the miles of river and shoreline with similar vegetation in the Naknek drainage area. In addition, part of this site was previously disturbed, and revegetation work will be completed as part of the construction plan.

Conclusion. About 3.4 acres of existing vegetation would be removed; of this, about 1.2 acres would be permanently lost and about 2.2 acres would eventually be revegetated. These impacts would be minor overall, because similar vegetation exists in a vast area nearby.

Impacts of Alternative 3

In this alternative the parking area extends slightly farther along the riverbank than Alternative 2 resulting in about 600 lineal feet of existing riverbank vegetation to be cleared for construction. All but about 200 feet would be expected to regrow, resulting in the same minor impacts as Alternative 2. Although there would be more vegetation cleared in this alternative all impacts should be the same as the Alternative 2.

Conclusion. A slightly greater removal of shoreline vegetation likely during construction, but permanent impacts expected to be the same as Alternative 2.

3.3 Fish and Essential Fish Habitat

Affected Environment

Anadromous fishes in the Naknek River (ADF&G anadromous water body #324-20-10140) are coho (*Oncorhynchus kisutch*), chum (*O. keta*), pink (*O. gorbuscha*), chinook (*O. tshawytscha*), and sockeye salmon (*O. nerka*), and dolly varden (*Salvelinus malma*). The same anadromous fish inhabit Naknek Lake (ADF&G anadromous water body #324-20-10140-0010).

Sockeye salmon are the most abundant salmon in the Naknek River. They return to the river to spawn in July after spending one to four years in the ocean. Numerous sockeye spawn near the existing Lake Camp boat ramp (Dolezal 2000). Eggs hatch during the winter, and the young sac-fry remain in the gravel, living off the material stored in their yolk sacs, until early spring. Once sockeye emerge from the gravel as fry, they move into river and lake bank rearing areas where there is available food and adequate cover from predators. As the river and lake rise to summer levels, it is likely the rearing sockeye move with the water and rear near shore. Juvenile sockeye feed mainly upon zooplankton (such as ostracods, cladocerans, and copepods), benthic amphipods, and insects. Juveniles usually spend one to three years in Naknek Lake before migrating to the ocean in the spring (Alaska Dept. of Fish & Game 1994).

The largest commercial harvest of sockeye salmon in the world occurs in the Bristol Bay area where 10 million to 30 million sockeye salmon may be caught each year during a short, intensive fishery lasting

only a few weeks (Alaska Dept. of Fish & Game 1994). The Bristol Bay commercial fishery relies heavily on sockeye salmon returning to the Naknek River watershed. The Alaska Department of Fish and Game (ADF&G) manages the fishery with a goal that approximately 1.1 million sockeye salmon migrate past Lake Camp and into Naknek Lake each summer. Few people fish for sockeye in the Naknek River near Lake Camp. Sport fishing for chinook and coho salmon species is popular downriver of Lake Camp (Morstad 2000), and people fish for sport and for food from Naknek Lake.

Rainbow trout (*O. mykiss*) are the dominant resident species in the Naknek system and are an important sport fish. Rainbows spawn in the river adjacent to the Lake Camp in April and May (Morstad 2000). The female deposits 200-8,000 eggs in a redd, and a male fertilizes the eggs and covers the redd with gravel. Hatching normally takes place a few weeks to four months after spawning. Upon emergence, the small trout assemble in schools and seek shelter along the Naknek River margins or protected Naknek Lake shore and feed on crustaceans, plant material, and aquatic insects and their larvae. Rainbow trout remain in this habitat for the first two or three years before moving into deeper water (ADF&G 1994) and likely follow the rising and falling river water levels to seek the greatest vegetation cover possible.

Adult rainbow trout usually summer in Naknek Lake, return to the Naknek River near the ramp in the fall, and overwinter in the Lake (Morstad 2000). Adults maintain a diet of fish, including out-migrating salmon smolt, salmon carcasses, eggs, macroinvertebrates, and occasionally small mammals. The majority of males and females spawn between the ages 6 and 11 years. Spawning frequency ranges from annually to once each three years (ADF&G 1994). With fish up to 30 inches long, the Naknek area, and Lake Camp, supports a world-class rainbow sport fishery (Morstad 2000).

Several other resident fish exist in the Naknek River near Lake Camp, including arctic grayling (*Thymallus arcticus*), arctic char (*Salvelinus alpinus*), three-spine stickleback (*Gasterosteus aculeatus*), nine-spine stickleback (*Pungitius pungitius*), arctic lamprey (*Lampetra japonica*), long-nose sucker (*Catostomus catostomus*), slimy sculpin (*Cottus cognatus*), coast-range sculpin (*Cottus aleuticus*), boreal smelt, northern pike (*Esox lucius*), round whitefish (*Prosopium cylindraceum*), and humpback whitefish (*Coregonus clupeaformis*).

The use of Lake Camp for boat launching means that there is some erosion and vegetation loss at somewhat greater than natural levels. These activities at current levels are not thought to be a serious issue for fish species health or survival. Salmon and rainbow trout are stressed and displaced from a small

area of spawning habitat by outboard engine noise. The fish are also likely to be occasionally injured by the propeller of outboard motors, as boaters maneuver in the river waiting to trailer their boats

Impacts of Alternative 1 (No Action)

Because Lake Camp has an access road, parking area, and cleared access to the river, boaters would continue to launch boats without upgrades to the site. Gullies that parallel the boat launching area would continue to erode and carry sediment to the river. Sediment may create minor impacts to juvenile salmonids and incubating eggs by adding stress, altering behavior, and reducing the ability of egg membranes and gills to take oxygen from the water (Dolezal 2000).

Salmon and rainbow trout would continue to be stressed and displaced by outboard engine noise. Also the risk of injury to the fish by a boat propeller would continue. The existing minor-moderate risk of a fuel spill during NPS fuel transfer operations and fueling of outboard motors would continue to effect the spawning habitat of the salmon and rainbow trout (see "Park Management" below).

The impacts to fish described above would be minor, as they are today, and would last indefinitely.

Conclusion. Erosion would likely continue to deposit sediments into fish habitat and fish would continue to occasionally be injured by outboard motors, but with negligible to minor impact.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to fish of several different components of the project. The overall impact to fish is discussed at the end of this section.

Clearing the bank of the Naknek River of vegetation could result in the loss of up to 500 lineal feet of vegetation that is now growing along the shore (see "Vegetation" section above). About 200 feet of this loss (beyond what is unvegetated today) would be permanent, and the remainder would be expected to regrow over several years. Loss of vegetation along the river bank would eliminate this small area that functions as relatively high quality riverbank rearing habitat for juvenile salmonids and other fish (when the water level is near the vegetation) by eliminating shade, increasing sedimentation, reducing food availability (e.g., terrestrial insects), and decreasing protection from predators.

The new boat ramp would eliminate approximately 2,500 square feet of sockeye salmon and rainbow trout rearing habitat. Depending on the exact location of the ramp (between or outside of the docks) an

additional amount of up to about 4,200 square feet of riverbank and in-water habitat could be degraded by boats and humans.

Once Lake Camp was reconstructed, the relative ease of use would likely induce more people to use the facility to access the Naknek River, and greater numbers of people could affect water quality (see the "Water Quality" section for further information). There is unlikely to be adverse impacts to fish populations from this minor additional effect.

During periods of low water, the boat ramp may not reach the river water, and boaters would have to back boats off the end of the ramp and across the riverbed to launch vessels. Tires, human feet, and boats could damage developing eggs of sockeye salmon and rainbow trout by damaging established redds that are located in shallower water. Although individual redds may be destroyed, overall impacts to the species populations would be minor due to the large number of redds and eggs produced each year.

If a coffer dam were determined to be necessary during construction, installation and removal of the dam, and pumping water from behind the dam, would release sediment into the stream, potentially creating temporary fish impacts either by displacing fish or stressing them and affecting their ability to use oxygen in the water. However, the cofferdam itself would be used to prevent much greater sedimentation impact. Also, to minimize the amount of erosion and sedimentation during construction, best management practices would be followed to ensure that impacts to fish would be minimal (see "Mitigation").

Overall, impacts to fish populations would be minor, because the area affected is small compared to spawning and rearing habitats elsewhere in the Naknek drainage and the number of fish in the system is large.

Conclusion. The preferred alternative would permanently eliminate approximately 2,500 square feet (sq. ft.) of rainbow trout and sockeye salmon spawning habitat and temporarily disturb up to another 4,200 sq. ft. Approximately 500 lineal feet of river bank rearing habitat for juvenile salmon, rainbow trout, and other fish species would be affected, with a permanent loss of about 200 feet. Best management practices would be followed during construction to decrease sedimentation impacts to juvenile salmonids and incubating eggs. Impacts would be minor because the entire construction area is small.

Impacts of Alternative 3

Impacts to fish from ramp and dock construction would be the same as Alternative 2. Under Alternative 3, about 600 lineal feet of existing riverbank vegetation would be cleared for construction. All but about 200 feet would be expected to regrow, resulting in the same minor impact to fish. Overall impacts to fish would be minor and similar to Alternative 2.

Conclusion. Although more riverbank vegetation would be removed the overall impacts to fish would be the similar to Alternative 2.

3.4 Wildlife

Affected Environment

The following wildlife species have been spotted in the area of the proposed boat launch: river otters (*Lutra canadensis*), wolves (*Canis lupus*), coyotes (*C. latrans*), foxes (*Vulpes fulva*), eagles (*Haliaeetus leucocephalus*), moose (*Alces alces*), caribou (*Rangifer tarandus*), and brown bear (*Ursus arctos*).

The North Alaska Peninsula Caribou Herd crosses the Naknek River and likely travels along the river margin near the Lake Camp area. The herd has approximately 9,200 caribou and is of one of 35 herds in Alaska. Caribou must keep moving to find adequate food. The animals often migrate long distances (up to 400 miles) between summer and winter ranges. In summer (May-September), caribou eat the leaves of willows, sedges, flowering tundra plants, and mushrooms. The animals switch to lichens (reindeer moss), dried sedges, and small shrubs (blueberry) in September (ADF&G 1999). There is little hunting pressure on the herd, especially since ADF&G requires a Tier II Subsistence Permit to hunt the species (Seller 2000).

Katmai National Park and Preserve is home to the world's largest protected population of brown bears. Brown bears commonly use the Lake Camp area. Lake Camp bears feed on sockeye salmon in the Naknek River. However, especially when the salmon are not in the river, bears also feed on berries, grasses, sedges, horsetails, cow parsnips, ground squirrels, roots, and newborn moose and caribou (ADF&G 1994a). The margins of the heath and alder scrub wetlands along the river provide cover to bears using riparian habitat. Bears likely forage in the willow, dwarf birch, sedge, and berry-bearing shrub habitat, and the shrub habitat probably provides resting, feeding, and rearing habitat (HDR 1999). Few problems with human-bear interactions have been recorded in the Lake Camp area (Seller 2000).

Other mammals likely use the riparian areas for traveling and feeding and the scrub shrub habitat for feeding, resting, and rearing young. Willows and birch that grow densely in the alder drainageways may serve as forage for mammals, and the shrubs provide dense cover for resting, feeding, and rearing (HDR 1999).

The Naknek River near Lake Camp becomes ice-free early in the spring. Many waterfowl rest and feed in this area of the river at that time. In the last three years, waterfowl surveys conducted in March and April at Lake Camp have recorded the following species (USFWS 1992-1999):

- Tundra swan (*Cygnus columbianus*)
- Canada goose (*Branta canadensis*)
- northern pintail (*A. acuta*)
- gadwall (*A. strepera*)
- American wigeon (*A. americana*)
- Greater scaup (*Aythya marila*)
- bufflehead (*Bucephala albeola*)
- Barrow's goldeneye (*B. islandica*)
- red-breasted merganser (*M. serrator*)
- Greater white-fronted goose (*Anser albifrons*)
- mallard (*Anas platyrhynchos*)
- northern shoveler (*A. clypeata*)
- Eurasian wigeon (*A. penelope*)
- Green-winged teal (*A. crecca*)
- black scoter (*Melanitta nigra*)
- common *goldeneye (B. clangula*)
- Common merganser (*Mergus merganser*)

The shrubby, heath tundra wetland habitat north of the road likely provides resting, feeding, and brood rearing habitat for several species of songbirds and shorebirds (HDR 1999).

Impacts of Alternative 1 (No Action)

Wildlife within the Lake Camp area would remain relatively unchanged under the no action alternative. The river corridor would continue to provide a passageway for terrestrial wildlife, especially bears, wolves, coyotes, foxes, caribou, and moose. Bird species that feed, nest, or breed on or near the riverbank could continue to be disturbed and displaced, and boaters trampling the area upstream and downstream of the existing ramp would damage their habitat. Without proper facilities, including bathrooms and trashcans, additional litter and debris could attract bears, gulls, and other wildlife to the area, and result in food conditioning. These would be minor to moderate impacts to individuals but would not be likely to have population-level effects.

Conclusion. There would be no further impact to the wildlife.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to wildlife of several different components of the project. The overall impact to wildlife is discussed at the end of this section.

Constructing the docks, maneuvering area, and roadway along the river would eliminate vegetative cover. It would also create new human activity and structures within an area of about 0.1 acre of unvegetated riverine wetland used by terrestrial wildlife, including caribou and bear, for travel when water levels are low. The wildlife would be forced to find a new route or negotiate the structures at Lake Camp. The impacts to the riverine wetland would decrease the value of waterfowl habitat, as well, when the water is high.

Human use of the shoreline could prevent full re-growth of vegetation and prevent the reestablishment of full habitat value for wildlife in a small area, however in a mitigation effort the NPS would cordon off an area to encourage regrowth after construction (see "Vegetation" and "Mitigation" for detail).

In general, caribou have not been adversely affected by human activities in Alaska (ADF&G 1999), and throughout Katmai National Park humans successfully share bear habitat without negatively impacting the bear population. Caribou and bear would likely adapt to the presence of people and the expanded Lake Camp facility (Seller 2000), and there would be negligible impact.

Approximately 1.2 acres of vegetation that serves as wildlife habitat used by mammals, songbirds, and some waterfowl for feeding, brood rearing, and resting would be permanently removed under Alternative 2 (see "Vegetation" section for greater detail on vegetation loss).

In addition to the above impacts, about 0.9 acres of heath tundra wetlands would be unavailable to wildlife for 6-8 weeks while the area was used to store organic material. Once the stored organic material was removed, it would take about one growing season for sedges to start growing in the wetlands and about three years for the wetland to return to its natural state and continue to provide habitat for wildlife similar to today's habitat.

During construction, heavy machinery and truck noise would likely displace wildlife. Work in the spring could displace staging birds. After the construction of a new boat ramp facility, traffic to Lake Camp would likely increase. Additional vehicles on the road could result in slightly greater vehicle collisions with wildlife. Additionally, increased noise from road traffic may cause wildlife to move from the area.

If fed by humans, waterfowl could remain at the site and become a nuisance. If necessary, education messages could be displayed on the information kiosk (see "Mitigation"). Wildlife would be attracted to food and trash left at picnic tables and around trashcans at Lake Camp. Additionally, if fish are cleaned at Lake Camp, wildlife, particularly bears may be attracted to fish waste and could habituate some bears to seek food at the area. However, informational kiosks placed on-site could display messages about proper waste disposal practices (see "Mitigation").

All of the wildlife impacts described above would be minor, either because they would be temporary construction impacts or because the amount of habitat permanently altered or lost would be very small in relation thousands of acres of similar surrounding habitat, much of it protected in the park.

Conclusion. The preferred alternative would result in the permanent loss 1.2 acres of vegetated wildlife habitat plus functional loss of about 0.1 acre of riverine wetland area sometimes used as a wildlife corridor. Impacts would be minor either because they would be temporary construction impacts or because the habitat permanently lost would be small in relation to surrounding habitat.

Impacts of Alternative 3

Alternative 3 would directly affect wildlife and wildlife feeding, resting, and rearing habitat in the same way as Alternative 2. The close proximity of the parking area to the river would mean slightly greater human activity near the wildlife travel corridor along the riverbank, but the difference may not be easily measurable and overall impacts would be minor under this alternative as under Alternative 2.

Conclusion. The overall impacts to the wildlife from the loss of habitat would be minor and similar to Alternative 2.

3.5 Air Quality

Affected Environment

Lake Camp air quality is considered good. There are no obvious sources of substantial air pollution in the area. Winds, with an average annual speed of 10.8 mph (Alaska Climate Research Center 2000), likely prevent any pollution that could be caused by vehicle and boat exhaust from accumulating. The areas adjacent to the gravel access road likely experience some localized and ephemeral degradation to air quality from vehicles stirring up dust.

Impacts of Alternative 1 (No Action)

Under the no build alternative, there would be no additional impact to air quality.

Conclusion. Air quality would not be impacted.

Impacts of Alternative 2 (Preferred)

Under the Alternative 2, increased traffic would likely cause minimal localized and ephemeral degradation to air quality from fugitive dust and engine exhaust from automobiles and boats in greater amounts than currently occur. However, this impact would not be detrimental over a long period or extensive area and would occur less during rainy periods and in the winter.

Construction of the new facility would result in minor and temporary impacts to air quality, because heavy machinery working almost continuously would increase the amount of dust and exhaust in the air at the site during construction. It should be noted that public use would not occur during construction, so construction impacts would not be additions to existing emissions.

Conclusion. Dust and engine exhaust from vehicles using the new Lake Camp facilities could minimally impact local air quality for short periods. During construction, heavy equipment could increase the amount of dust and vehicular exhaust, causing minor impacts to local air quality.

Impacts of Alternative 3

The impacts to air quality under Alternative 3 would be the same as those under Alternative 2.

Conclusion. Overall impacts to the air quality in the Lake Camp area would be minor and the same as Alternative 2.

3.6 Water Quality

Affected Environment

While the Alaska Department of Environmental Conservation lists the Naknek River near King Salmon on the 1998 Alaska water-quality-limited water bodies list, or the Section 303(d) list, the area near Lake Camp is not listed as impaired in any way. At Lake Camp, the Naknek River water quality is likely unimpaired by toxic substances. The listing downstream is for pollutants (petroleum hydrocarbons, toxic & other deleterious substances) coming from tributary waterways including Eskimo Creek, King Salmon Creek, and Red Fox Creek (ADEC 1998).

Along most of the Naknek River, root systems of riparian vegetation stabilize soil along the shoreline, minimize erosion damage caused by ice scouring and fast flowing flood waters, and filter soil particles from runoff water. However, as described under the "Purpose and Need" section of this document, the existing steep grade to the water at Lake Camp causes surface run-off and erosion of sediments into the river at greater than natural levels. An increased sediment load, beyond what is natural for the river, may degrade water quality of the Naknek River in a localized area immediately downstream of the Lake Camp boat put-in site (Dolezal 2000).

Impacts of Alternative 1 (No Action)

Sediment would continue to erode into the Naknek River from the existing Lake Camp boat put-in area. However, the impacts of such sediment loads would continue to be minor because the area affected would remain small.

Conclusion. Water quality would continue to be minimally impacted by sediment erosion from vehicles using the steep slope that leads directly to the river.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to water quality of several different components of the project. The overall impact to water quality is discussed at the end of this section.

Facility construction would require the removal of wetland and upland vegetation, exposing a large amount of ground to erosion for about one year. As a result, suspended sediment concentration in the Naknek River, where the Lake Camp area water drains, would be higher than that in water near undisturbed areas. Exposed soils would be actively revegetated or allowed to naturally revegetate, thus reducing the potential for erosion and surface run-off. Once plants were again growing on the site, the rates of erosion would fall dramatically, as would the related deposition of sediments into the river (North Carolina State University 1998). Overall, the impacts on water quality from sedimentation would be minor, especially given that erosion control measures would be implemented. These impacts also would in part be offset by the decreased potential for erosion and sedimentation resulting from the replacement of the existing 17-degree slope with low-angle driving and walking surfaces.

Once Lake Camp was reconstructed, more people likely would use the ramp to get their boats into the Naknek River. Incidental discharges of pollutants such as fuel, oil, human refuse, fish wastes, and discarded debris, which contribute to poor water quality, could increase due to the greater number of

people using the area. However, water moving downstream would likely provide adequate water exchange to maintain water quality. The risk of spills during NPS fuel transfers would be reduced, because the truck and boat operators would be close together and better able to communicate and respond to problems, hose length would be reduced, and the fuel truck would be parked on a containment pad. The likelihood of small spills from general fueling of outboard motors would increase as use increased. The result of this reduction on one hand and increase on the other would be that risk of a fuel spill contaminating the water (and fish habitat) would likely remain largely unchanged.

If it was determined that a coffer dam was needed to construct the boat ramp and docks, installing and removing the coffer dam would also introduce suspended sediment to the river and reduce water quality. However, the point of such a measure would be to reduce greater amounts of turbidity by eliminating the need to move riverbed material and operate heavy equipment directly in the river.

The overall effect on water quality would be minor, because the impacts during and shortly following construction would be temporary and mitigated, and because the area affected is small compared to the length of river, the size of the watershed, and volume of river flow.

Conclusion. Soil erosion resulting from removing vegetation and from construction activities would decrease water quality at minor levels during construction (no more than eight weeks). Incidental discharges of pollutants from Lake Camp users would continue, a minor and perpetual impact during the ice-free season. Best management practices used during construction would minimize erosion and sedimentation impacts to water quality.

Impacts of Alternative 3

Alternative 3 would affect water quality the same as Alternative 2. The minor separation between the river and the parking area would increase the possibility of vehicle contaminants draining into the river. However, it is likely that the bulk of any contamination would be trapped in the parking area pad. Therefore, impacts of this would be negligible.

Conclusion. The overall impacts to the water quality would be minor and the same as Alternative 2, with the increased possibility of vehicle contaminants draining into the river.

3.7 Wetlands

Affected Environment

Based on National Wetland Inventory maps and a field visit by a wetlands scientist, it was determined that 2.1 acres of heath tundra wetlands, 0.7 acres alder scrub wetlands, and 1.4 acres of river shoreline wetlands exist on the NPS Lake Camp property (Table 3) (HDR 1999).

Heath tundra wetlands, classified under the Cowardin system as palustrine, needle-leafed evergreen shrub/persistent emergent, saturated (PSS4/EM1B), are found on the northern half and southwest corner of Lake Camp property. These wetlands represent a small part of similar abundant wetlands throughout the surrounding area. The heath area serves as diffuse drainageways for water flowing from upslope, and provides some organic material, via water flow, to the river to support the downstream aquatic food web. Additionally, along the riverbank, these wetlands protect the riverbank from erosion and provide habitat for fish and wildlife.

The alder scrub wetlands, classified under the Cowardin system as palustrine, broad-leafed deciduous shrub, saturated (PSS1B), are located in two drainageways parallel to the existing Lake Camp parking area and roadway. These wetlands appear to be the result of clearing of the area, apparently during the demolition of the Air Force recreation camp, over two decades ago. The alder scrub wetlands likely slows draining water and provides some organic material to the Naknek River. The shrubs provide forage and dense cover for wildlife, and for fish at the river's edge.

River shoreline wetland or riverine wetland, along the fringe of the Naknek River, is classified under the Cowardin system as upper perennial riverine, sandy unconsolidated shore, seasonally flooded (R3US2C). The river shoreline area conveys water during high flows. The area provides shallow and slightly slower-flowing habitat for fish and a travel corridor, and feeding habitat, for terrestrial animals.

Current visitor impacts to the wetlands are minimal, and occur primarily from visitors walking along the beach (riverine wetlands). Visitors typically avoid traveling through the wetlands adjacent to the launch area due to wet ground conditions.

Table 3
Lake Camp Wetland Types and Acreage

Wetland Type	Cowardin Wetland Description	Acreage *	Artificial, Natural, or Modified
Heath tundra	Palustrine, needle-leafed evergreen shrub/persistent emergent, saturated (PSS4/EM1B)	2.1	Primarily natural, minor modification by fill and vegetation disturbance outside property north of road
Alder scrub	Palustrine, broad-leafed deciduous shrub, saturated (PSS1B)	0.7	Modified by clearing
River shoreline	Riverine, upper perennial, sandy unconsolidated sand, seasonally flooded (R2US2C)	1.4	Natural
Total area		4.2	

*within NPS property boundary

Impacts of Alternative 1 (No Action)

There would be no substantial impacts to the wetlands under the no-action alternative, because wetlands would not be excavated or filled. Continued use of the area could cause minor wetland destruction by trampling.

Conclusion. Wetlands in the Lake Camp area would not be further impacted.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to wetlands of several different components of the project. The overall impact to wetlands is discussed at the end of this section.

Alternative 2 would permanently impact a total of 1.2 acres of wetlands (Table 4). The construction of the new parking lot, maneuvering area, and boat launch would result in the permanent removal or filling of approximately 0.6, 0.5, and 0.1 acres of heath tundra, alder scrub, and riverine wetlands, respectively. Approximately 2,400 cy of these wetlands would be excavated, and approximately 1,400 cy of imported structural material would be placed in these wetlands at the site. The functions provided by these 1.2 acres of Lake Camp wetlands, including water diffusion, organic material supply and conveyance, and habitat contributions, would be permanently lost. Although these areas would no longer be classified as wetlands, the replacement of the top foot of organic soil (about 1,300 cy) on about 0.7 acres of these wetlands should encourage the return of indigenous plant species (the vegetation structure may permanently change, however, with the possibility of alder dominance).

Table 4
Wetland type and acreage impacted under Alternative 2

Wetland Type	Type of Impact	Area Impacted (acres)
Heath Tundra		
Cleared and restored	Temporary	0.9
Removed or filled	Permanent	0.6
Alder Scrub		
Removed or filled	Permanent	0.5
River Shoreline		
Removed or filled	Permanent	0.1
Total Acreage		
	Temporary	**0.9**
	Permanent	**1.2**
	Total	**2.1**

In addition to permanent wetland impacts, about 0.9 acres of heath tundra wetlands would be temporarily impacted to provide on-site storage of about 4,000 cy of organic materials during the 6-8 week construction period. Within these wetlands, vegetation would be cleared to ground level and construction equipment would be driven over the wetland surface, compacting soils and crushing remaining vegetation. However, because the organic layer would remain intact, these wetlands would be expected to fully recover once stored materials were removed and construction activities ceased. It would take several growing seasons for vegetation to return to today's levels, and alders could become dominant if the heavy equipment disturbs the underlying mineral soil. It is anticipated that the minimal disturbance to the wetland would occur, and the area would continue to function as it has in the past. As a result, there would be no permanent loss of this area's wetland functions or values.

Overall, the permanent loss of 1.2 acres of wetlands would be considered minor because of limited size of the impacted area compared to the hundreds of acres of wetlands in the surrounding area.

Conclusion. Under Alternative 2, approximately 1.2 acres would be permanently lost. Another 0.9 acres would be temporarily impacted during construction, but would be expected to naturally regain its wetland function following the completion of construction and the removal of stored organic material.

Impacts of Alternative 3

Permanent and temporary wetland impacts under Alternative 3 would be similar to those under Alternative 2. Construction activities would result in the permanent removal or filling of 0.1 acres of heath tundra, 1.1 acres of alder scrub, and 0.1 acres of river shoreline; for a permanent loss of about 1.3 acres of wetlands (Table 5). Approximately 3,600 cy of wetlands would be excavated, and approximately

1,700 cy of imported structural material would be placed in wetlands at the site. The functions that are provided by these 1.3 acres of Lake Camp wetlands would be permanently lost. Similar to Alternative 2, these areas would no longer be classified as wetlands, however the replacement of the top foot of organic soil (about 1,200 cy) on about 0.7 acres of these wetlands should encourage the return of indigenous plant species.

In addition to permanent wetland impacts, about 0.7 acres of heath tundra wetlands would be temporarily impacted to provide on-site storage of about 3,600 cy of organic materials during the 6-8 week construction period. The effects of this temporary impact on wetland functions and values would be the same as described under Alternative 2.

Table 5
Wetland type and acreage impacted under Alternative 3.

Wetland Type	Type of Impact	Area Impacted (acres)
Heath Tundra		
Cleared and restored	Permanent	0.1
Removed or filled	Temporary	0.7
Alder Scrub		
Removed or filled	Permanent:	1.1
River Shoreline		
Removed or filled	Permanent	0.1
Total Acreage		
	Temporary	0.7
	Permanent	1.3
	Total	**2.0 Acres**

Overall, the permanent loss of 1.3 acres of wetlands would be considered minor because of limited size of the impacted area compared to hundreds of acres of wetlands in the surrounding area.

Conclusion. Under Alternative 3, approximately 1.3 acres would be permanently lost. Another 0.7 acres would be temporarily impacted during construction, but would be expected to naturally regain wetland function following the completion of construction and the removal of stored organic material.

3.8 Visitor Experience

Affected Environment

For discussion, visitors to Lake Camp can be divided into visitors from the local area and visitors from elsewhere. These groups are likely to experience the area differently.

Most non-local visitors do not see Lake Camp but access Katmai National Park (Brooks Camp) via air charter directly from King Salmon. Some visitors, however, do pass through Lake Camp on their way to Brooks Camp and other areas of Katmai National Park and Preserve. For example, from June through September 1999, over 1,000 visitors traveled from Lake Camp to Brooks Camp on the privately operated tourist boat, Katmai Lady II (see "Local Community" for more information on this operation). Other visitors access Katmai National Park and Preserve with fishing guides and pilots who occasionally use Lake Camp as a departure point. For these non-local visitors who do use Lake Camp, the experience is primarily as a functional waypoint between bus and boat. However, Lake Camp may be their first stop away from a community in Alaska, and the experience is of a remote and primitive nature. Lake Camp is frequently buggy, and the stop could be an introduction to this element of wild Alaska for some. At Lake Camp, there are no forests or substantial trees, and it could provide the first experience of tundra and brush landscape for some. The area is not noted for its visual or scenic qualities (brush blocks views except from the dock), and there are no public facilities except the dock, and no interpretive information. There is the potential of seeing wildlife along the shore and fish in the clear, shallow water, but this is not a major element of the usual visitor experience.

Local visitors potentially include the 1200 summer residents of King Salmon and Naknek, the two communities connected by road to Lake Camp, and their own personal guests (see "Local Community"). These are mostly recreationalists using the river and vast lake system for fishing and for transportation to hunting areas, berry picking areas, and a few cabins, lodges, and private parcels along the lake shore. Road system residents would be accustomed to the vegetation, scenery, insects, and wildlife of the area, and the experience at the site for them would focus more strongly on the function of the area. Guests of residents may experience Lake Camp more as other non-local visitors do.

In the summer, an average of 3-5 vehicles per weekday and 10-15 vehicles per weekend day use Lake Camp (primarily to launch boats). On holidays (e.g., Memorial Day and Labor Day), use increases, and more than 30 vehicles are parked in the area. About a third of these summer visitors are probably using Lake Camp to access Brooks Camp or the Bay of Islands; the rest are local fishermen. On Labor Day, most people are going to Bay of Islands. The existing parking and turnaround area can accommodate 4-5 vehicles. During times when the lot is full, most summer weekends, vehicles park along the sides of the access road and in other areas not suitable for parking. This creates congestion and makes it difficult to turn vehicles around, especially those with boat trailers. (Sherman April 2000)

Visitor safety is potentially a concern with boaters attempting to access the river off a steep, undeveloped slope in a constrained area. Such an area increases the risk of a vehicle or boat accident, vehicles becoming stuck at the bottom of the incline, or crowded parking that would not allow for vehicles to access the river. Currently the existing slope to the river is steeper than suggested by Americans with Disabilities Act (ADA) guidelines and may not be accessible to some aged, infirm, or disabled visitors.

Impacts of Alternative 1 (No Action)

Crowding and delays on land and in the water due to slow maneuvering up and down the steep incline would continue to adversely affect the visitors to the Lake Camp boat launch. Depending on the number of boaters, length of the delays, and the expectations of the visitors, the impacts could range from minor to substantial for individual visitors. Parking would continue to be congested on summer weekends. A crowded or hectic experience would detract from the function of the site that affects all visitors and would detract from the 'first glimpse of wild Alaska' for some non-local park visitors.

Visitor safety would continue to be a concern with boaters attempting to access the river off a steep, undeveloped ramp. Vehicle or boat accidents, crowding, or difficult uphill conditions would continue to be a risk with the current conditions. This could add a greater element of frustration and detract from the visitor experience. The slope of the ramp would continue to not meet the ADA guidelines.

Overall, these visitor experience issues are moderate but perpetual. When use of the area is highest, these could be substantial impacts to visitors and could make the site functionally unusable for visitors who experience excessive congestion, a stuck vehicle, or a boat or trailer accident caused by congestion or the steep slope.

Conclusion. Visitor safety on the boat ramp would be compromised by the steepness of the ramp. Visitor opportunity and experience would continue to be limited by the lack of adequate parking, maneuvering space, toilet facilities, and interpretive material.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to the visitor experience of several different components of the project. The overall impact to the visitor experience is discussed at the end of this section.

The construction of a gentle grade ramp, a maneuvering area, another dock, and additional parking spaces would greatly improve visitor access to the Naknek drainage, and all facilities would meet ADA guidelines. The increased maneuvering area and the gentler grade of the ramp would decrease the

potential for delayed access to the launch area (some potential for delays may still exist, depending on the number of boaters attempting to access the area at one time). The addition of another dock would provide more space for temporarily mooring boats, and possibly floatplanes, although overnight mooring of boats or planes to the docks generally would be prohibited except for administrative purposes. More parking would alleviate congestion. In addition, providing restrooms and picnic tables would increase opportunity to remain slightly longer in the area, and information signs would add a minor interpretive element that is absent today. All facilities would be designed to allow use of the area by the disabled. Better access and other visitor conveniences would be a substantial benefit to most visitors.

Although the new facilities would remain somewhat primitive (no pavement and minimal structures), some visitors may feel the changes to be aesthetically unpleasing regardless of the fact that they improve access and offer basic visitor conveniences. For such visitors, perhaps especially some of the visitors who are local, who use the area repeatedly, and who are accustomed to it as it is, the new facilities could have a moderate adverse affect on their experience. For example, the parking lot may be viewed as a distracting human element in an otherwise natural environment, and it, as well as the other facilities, may be viewed as an enticement that brings too many other people to the area.

Some visitors, particularly those from the local area, would feel the horizontal and vertical (elevation) separation of the parking and boat launching areas and the need to walk a trail between these areas, to be an inconvenience (as evidenced by public comment). Other visitors (also as evidenced by public comment) would prefer the parking area be separated from the riverbank for aesthetic reasons. These impacts could be substantial for some individuals but would ultimately depend on the attitude of the individual visitor. Any perceived inconvenience would be no worse than the existing facility.

Because of the limited area of the construction site, Lake Camp would be closed to public access during the 6-8 weeks of construction. The tourist season and the boating and fishing season would be partially but not entirely avoided. The private dock downstream would provide the public with an alternative launch site while the Lake Camp facilities were under construction (see "Park Management"). Therefore the closure of Lake Camp would have minor effect on boaters attempting to access the Naknek drainage.

Overall, the changes proposed under Alternative 2 would have moderate to major permanent positive effect on the experience of most visitors. The separation of the parking and launching areas would inconvenience some visitors, although the area would be more convenient than it is today. Some visitors who prefer a more primitive facility may not find the effect positive.

Conclusion. Visitor experience would be enhanced with the construction of the Lake Camp area. Visitors who want improved access and conveniences would benefit from decreased road grades, formalized parking area, restrooms, picnic table, informational kiosk, an additional dock, and ADA accessibility. Congestion and delays on land and in the river would be reduced, beneficially impacting the experience of boaters. Diminished wild character of the area would impact those visitors who prefer Lake Camp to remain as it is. The separation of the parking and launching areas would inconvenience some visitors but not more than visitors are inconvenienced today.

Impacts of Alternative 3

The general impacts to visitor experience would be the same as in Alternative 2, but the specific impacts due to the location of the parking area would be different. The proximity of the parking area to the launching area would provide easy access between launched boats and vehicles. A visitor's experience would be more convenient with the limited distance between the restroom facility, their vehicle, their boat, and the picnic tables. This would also provide easier opportunity for escapement to their vehicle or boat in the event of a threatening wildlife encounter. Closer proximity could provide quicker turn-around and less congestion during busy periods. These benefits would be minor and permanent. On the other hand, a parking lot on the river's edge and lack of a substantial buffer of native vegetation would degrade the area's natural appearance by making vehicles more visible from the river. The intensity of this impact on the visitor experience would vary from one individual to the next. Overall, the visitor experience would be substantially the same as Alternative 2 with somewhat greater convenience.

Conclusion. The overall visitor experience would be similar to Alternative 2, with the added convenience of accessing all facilities from immediately adjacent areas at the same elevation.

3.9 Local Community

Affected Environment

The town of King Salmon, with a year round population of 500 residents (1999 Alaska Department of Labor Estimate), is located about 10 miles west of the Lake Camp boat launch. In addition, 15 miles west of King Salmon is the town of Naknek, with the year round population of 624 residents (1999 Alaska Department of Labor Estimate). Regularly scheduled flights connect Anchorage and King Salmon, which is the main departure point for the Katmai National Park and Preserve. The park headquarters, along with visitor services such as air and boat tours, guided excursions, sleeping and eating establishments, and gift shops are also located in King Salmon. Fishing for rainbow trout and five species of salmon are the top visitor attraction of King Salmon and the associated road system, which leads west to Naknek and east to

Lake Camp. Approximately 30,000 visitors per year pass through King Salmon for wilderness and fishing adventures (ADCED 1999). Their lodging, transportation, and shopping activity are a substantial boost to the local and regional economy. The main transportation to the fishing and visitor areas is by floatplane and boat.

Near Lake Camp, there are several private parcels. One of these contains the private boat ramp used by the public over the last several decades. Other private parcels also have access to the river. There are a few homes and a lodge nearby. Currently Katmai Adventure Inc., based in Anchorage and King Salmon, uses Lake Camp as a departure point for the commercially operated tourist boat Katmai Lady II, under an NPS Incidental Business Permit (IBP). The boat stays in the water overnight at Lake Camp. Passengers are usually bussed from King Salmon and dropped off at the top of the steep bank. They typically walk down to access the front-loading boat from the shore. The boat operates from mid-June until mid-September, and can transport up to 30 passengers a day. In the summer of 1999, the boat transported 1,047 passengers to and from Brooks Camp mostly for day trips to the bear viewing location at the Brooks River (Conatsor 2000). Other charter boats, river and lake tour guides, and fishing guides operate within the park under Incidental Business Permits, but only Katmai Adventures currently uses Lake Camp regularly.

Impacts of Alternative 1 (No Action)

No new impacts on the local or commercial businesses or park concessionaires would be expected under the no-action alternative. However under this alternative opportunity for commercial use by charter boats, floatplanes, river or lake guided tours out of Lake Camp would continue to be impeded because the primitive site is not supportive of commercial operations.

Conclusion. The local economy would not be further impacted although commercial growth that might benefit the community would be impeded by current conditions.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to the local community of several different components of the project. The overall impacts are discussed at the end of this section.

Project construction would provide short term (eight weeks) positive economic effect to the towns of King Salmon and Naknek in ways such as the following. Non-local workers may need to be housed and would likely make purchases in the community. Local workers might have an opportunity for

employment. Local materials would be purchased and disposed of from within the King Salmon vicinity. Equipment would likely be rented locally.

The new boat launching facility at Lake Camp would provide an alternative for public use and would alleviate pressure on the Bristol Bay Borough to provide public access to the river.

The closure of Lake Camp during construction may temporarily affect the operation of the Katmai Lady II and other potential commercial operators. Depending on time of construction, the area may be closed during part of the period they normally operate. They presumably would be able to access the Naknek drainage from the private boat dock.

Improved facilities at Lake Camp would increase opportunities for local and commercial boaters to access the Naknek drainage and the Katmai National Park, potentially attracting more visitors to the park (see also "Park Management" below). While visitor numbers are subject to management actions, any increases would have an associated economic benefit to the town of King Salmon from which a majority of the visitors arrive. The enhanced accessibility via Lake Camp would provide a potential opportunity for increased locally operated commercial boats and floatplanes departing from this location although activities in the park are subject to NPS permit.

Overall, the beneficial economic impacts to the local community likely would be minor but perpetual. The changes in use patterns by citizens and businesses during construction would be minor to moderate adverse impacts. These would be temporary impacts, limited to the 6-8 weeks.

Conclusion. Alternative 2, when complete, would possibly offer minor positive long-term effects to the local community by providing easier access to Naknek Lake and River for residents and commercial operators and by inducing greater recreational and commercial opportunities. Construction would also offer short-term positive affect on the local economy by providing possible housing, job, and material opportunities for the surrounding area but could cause temporary inconvenience while the area was closed for 6-8 weeks.

Impacts of Alternative 3

The impacts on the local community of Alternative 3 would be the same as Alternative 2.

Conclusion. Overall impacts to the local economy would minor and the same as Alternative 2.

3.10 Park Management

Affected Environment

Most logistical support for NPS operations at Brooks Camp, and all transportation of large or heavy items including fuel, supplies, vehicles, and equipment, originates at Lake Camp. The park's landing craft/tanker vessel, M/V *Ketivik,* provides the main support to Brooks Camp. The Lake Camp site is primitive. It contains no structures except the dock, and little maintenance is required. Although the dock is removable, it remains in place year round, and only receives minor maintenance. NPS currently does minimal trash pickup and law enforcement in the area. There are no trash receptacles on-site. Occasionally trash left behind by visitors gets scattered by bears (Sherman May 2000). The NPS management uses the site to launch and tie down several boats; the main boat is the 13-foot-wide and 52-foot-long M/V *Ketivik*, which transports fuel and other supplies to Brooks Camp 10-12 times a year. The fuel truck that supplies the M/V *Ketivik* is unable to maneuver down the steep gravel incline, so a 200-foot hose is stretched between the boat and the truck for fueling operations. The NPS launches the M/V *Ketivik* in mid-June each year and pulls it out of the river by mid-October. This operation requires use of large, tracked equipment to provide traction to maneuver the steep incline, and is a costly park operation.

Impacts of Alternative 1 (No Action)

Under Alternative 1, there would be no change to the limited park management of Lake Camp. Unfavorable and logistically challenging conditions for transferring fuel and other cargo to the M/V *Ketivik* from the top of the steep incline would continue. The costly launching and removal of the NPS boat would continue twice a year. The operation is potentially dangerous due to the steep incline, large and heavy boat, and the use of several large pieces of equipment, and this would not change.

Conclusion. Limited Park management to the area would continue. Difficult operations of the park boat, the M/V *Ketivik* including logistically challenging fueling operations, and the costly and difficult process of launching and removing.

Impacts of Alternative 2 (Preferred)

The following paragraphs discuss the impacts to the park management of several different components of the project. The overall impacts are discussed at the end of this section.

Maintenance at Lake Camp would increase under Alternative 2. The new facility would require collection of garbage from the bear-proof garbage cans, maintenance of the kiosk and the restroom, and coordination with the Borough for pumping the vault toilet. Increased patrol of the area by the NPS would

also be required due to the increased public access and the addition of park facilities to be monitored. The addition of the picnic tables at Lake Camp may lead to the increase of food, litter, and fish debris, which would possibly attract bears to the area. It may become necessary for the park to become involved with bear interactions in the area.

Fuel transfers and access operations for the M/V *Ketivik* would become substantially easier and less costly. The design would allow the fuel truck to drive to the river edge and provide a separate area for the truck to park while transferring fuel to the boat, with a fuel containment pad to reduce NPS risk of contamination and cleanup in case of a spill. The cost of the launching and removal of the M/V *Ketivik* would decrease with use of a gentler slope, because the heavy equipment currently used would be eliminated.

The construction contract would stipulate that launch or removal of the M/V *Ketivik* by the NPS is accommodated, and the boat could also overwinter at Brooks Camp if necessary. Therefore, there would be no effect on the park's ability to provide supplies and support to Brooks Camp.

Overall, the increase in Park Management activities (e.g. maintenance) would be a minor adverse impact that would last indefinitely and that may increase slowly with an expansion of use of the area over time. The beneficial impact of improved launching and retrieval of the M/V *Ketivik* also would be moderate, because of logistical ease, increased safety, and decreased budget, and would last indefinitely. Economically, the increased maintenance and patrol costs may be greater than the cost savings of the boat operations, but is unlikely to be a large change to the park budget.

Conclusion. Park management efforts and costs would increase slightly with need for maintenance of the new facilities. The fueling, launching and removal operations of the park boat likely would be easier and more cost effective, a moderate benefit.

Impacts of Alternative 3

The impacts to park management of Alternative 3 would be the same as Alternative 2.

Conclusion. Overall impacts to the park management would be moderate and the same as Alternative 2.

3.11 Cumulative Effects

Cumulative impacts are defined as the *incremental impacts* on the environment resulting from adding the proposed action to other past, present, and reasonably foreseeable future actions (also referred to as regional actions), including those taken by federal and nonfederal agencies and individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time (CEQ Sec 1508.7). Past, present, and reasonable foreseeable future actions, and related impacts are described below.

Affected Environment

Past actions have had effects on the Naknek Lake and River area. Establishing Katmai National Park and Preserve protected the area in its natural state but also made it a visitor destination for sport fishing, bear viewing, scenery, and lodging. Visitor use has driven the development of Brooks Camp and the Valley of 10,000 Smokes Road in the park and several lodges on private lands in the area. This has increased boat and aircraft traffic and decreased the wild character of the area, even as the protections from hunting and trapping have increased the bear population and other protected species. Visitor use, along with historically strong fish runs, and investment by the U.S. military in air base infrastructure, has influenced the growth and development of King Salmon and Naknek. This has added to the development and support services in these communities, diversified the economy (when compared to many other remote Alaska communities), and provided greater employment opportunities. The Air Force use of the area resulted in the road and boat launch area at Lake Camp and allowed boat use of the lakes. The Lake Camp proposed action is part of the NPS overall plan for the Katmai National Park to serve the public while protecting the land.

Present and reasonably foreseeable future actions in the Lake Camp area include the following:

- The Alaska Department of Transportation and Public Facility (DOT&PF) is planning rehabilitation of the 10-mile gravel road from King Salmon to serve Lake Camp and Rapids Camp (about 4.5 miles southwest of Lake Camp, where a subdivision is developing) in 2004 and 2005 or sooner if funding permits. The 6 miles of road closest to King Salmon is planned to have a new gravel surface. The plan for the 6 miles closest to Lake Camp is to widen the road, improve drainage, and resurface the road. After the rehabilitation, the Bristol Bay Borough would maintain the road, which currently is unmaintained.
- Future actions projected by the *1986 Katmai National Park and Preserve General Management Plan*, include the development of a one-mile nature trail and interpretive exhibits at the Lake Camp area. These may be instituted in the future, although these actions are not currently programmed.

- Katmai Adventure Inc. currently owns two boats, Katmai Lady (15 passenger) and Katmai Lady II (30 passenger). Beginning in 2000, both boats are expected to be in operational condition, and the company anticipates using both boats under its existing incidental business permit (IBP) when there is sufficient visitor demand.
- Development of facilities at Brooks Camp, including the recent construction of a new elevated bear viewing platform and the planned relocation of the camp, could lead to increased visitor demand on the area (although the *Brooks Camp Development Concept Plan* call for limiting use at Brooks Camp). This, in conjunction with possible NPS actions to encourage more diverse use of other parts of the park, especially by boat, could possibly increase desire for boat transportation and offerings by commercial operators.
- Near Lake Camp, there are several private parcels. One of these, less than a mile downstream of Lake Camp, contains the privately owned boat ramp used by the public over the last several decades. Currently, the Bristol Bay Borough has a one-year lease on the private boat dock (see "Background" for dates), but does not expect to pursue further extensions beyond this as long as improvements to the Lake Camp facilities are made. If the Lake Camp facilities were not improved (i.e., the No Action Alternative was selected), the Borough may resume negotiations with the private dock owners to try to extend the lease. The results of these negotiations are difficult to predict. For the purposes of this analysis, it's assumed that the Bristol Bay Borough would be unable to negotiate an extension of the boat dock lease the current agreement. Given this assumption, after 2002, Lake Camp would be the only available boat launch in the general vicinity regardless of whether the facilities at Lake Camp were improved or not.
- New houses continue to be built on private lands around the Lake Camp area.

Closure of the private boat dock would redirect boaters to Lake Camp, subsequently increasing use levels there. In addition the planned improvements to the access road, the increased housing along the road, and the expanding popularity for fishing and tourism in the Naknek drainage (especially with the improvements to the bear viewing platform at Brooks Camp) would also increase accessibility to and use of Lake Camp. Increased use levels would have impacts on the park operations and visitor experience. The NPS operations could become more difficult with the influx of private boaters to the area. The limited area available at Lake Camp would result in congestion at the boat launch area, possibly impeding park operations, and effecting the visitor experience. The increased use at Lake Camp would also have impacts on the natural environment. The increase in boaters attempting to use the Lake Camp area could lead to more driving on and trampling on the wetlands effecting the soil and vegetation. Wildlife and fish habitat would also be impacted by the increased use of the area. For example, increased boat traffic could

result in more frequent and prolonged disturbance of sediments on the river bottom around the dock and ramp, leading to higher turbidity levels, and decreasing the quality of the fish habitat in this area. Also, increased use in general could result in more human-wildlife encounters.

Impacts of Alternative 1 (No Action)

The no-action alternative, when combined with other actions such as closure of the private boat launching area, road upgrades, and construction of new homes in the area, would lead to greater operational problems, resource impacts, and degraded visitor experience at Lake Camp. For example, there could be more traffic congestion and related delays, potential safety hazards, vegetation trampling, and wildlife-human encounters. This would likely happen because the NPS would not implement any mitigation measures to manage the greater number of visitors using the site. However, because these additional impacts would be confined to the Lake Camp site, an approximately 5-acre area, the overall cumulative impact of this no-action alternative would be minor.

Conclusion. Delays, overcrowding, and resource impacts would be expected in the Lake Camp area with the closure of the boat launch downstream and other past, present, and reasonably foreseeable actions listed above. However, cumulative impacts of implementing the no-action alternative in addition to these other actions within the Lake Camp area would be minor.

Impacts of Alternative 2 (Preferred)

Constructing a new boat launch and day use facilities at Lake Camp would be part of the overall pattern of modern development, changes to the natural environment, and increasing visitor use of the park and surroundings that has been underway for nearly a century.

Implementing this project would accommodate more boat use at Lake Camp and, when combined with the foreseeable permanent closure of the private boat launch, would ensure that still greater numbers of people would use Lake Camp for launching. The additional use expected would result in more of the same minor impacts already described for the Lake Camp site. These include a more 'human' and less 'wild' visitor experience, and increases in maintenance and patrol efforts for the park management, both on a minor scale. However, the project would allow for better management of the increase in users at Lake Camp by creating a facility designed to function without need for intervention to manage congestion and related problems. Because of the better management, the cumulative impacts of this alternative on park operations, natural resources, and the visitor experience at Lake Camp would be minor and beneficial.

In addition to increasing use at Lake Camp itself, the actions taken under this alternative would potentially increase use of the rest of the park and the popular Brooks River area (primarily its bears but also fish and vegetation). However, the NPS has already planned for such changes through time in its *General Management Plan* and *Brooks Camp Development Concept Plan* and would manage the change to reasonably protect park resources. These measures would ensure that the cumulative impacts on resources within the larger park and preserve area are minor, as well.

Conclusion. Cumulative effects of implementing Alternative 2 in addition to the past, present, and reasonably foreseeable future actions within the Lake Camp area would be minor additions of the same kinds of impacts described in other subsections of this chapter for all impact topics.

Impacts of Alternative 3

The cumulative impacts of Alternative 3 would be the same as those for Alternative 2.

Conclusion. The overall cumulative impacts would be the same as Alternative 2.

4.0 CONSULTATION AND COORDINATION

The following meetings were held to gather public response and concerns used in the preparation of this document:

- On December 14, 1999, NPS representatives met with the Planning and Zoning commission of the Bristol Bay Borough for an informal in-progress review of alternatives for development at Lake Camp. Approximately 30 people from the local community attended the meeting.
- An open-house meeting on the Lake Camp project was held in Naknek, Alaska, on January 19, 2000. Seventeen people from the community attended the meeting (excluding NPS representatives).

The following agencies, organizations, and individuals were consulted in the preparation of this document:

Federal Agencies

U.S. Army Corps of Engineers

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National Oceanic and Atmospheric Administration

National Marine Fisheries Service

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State Agencies

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Lake Camp Boat Launch and Day Use Facilities
Environmental Assessment

Appendix 1

ANILCA Section 810 Subsistence Evaluation

ANILCA Section 810 (a) Subsistence Evaluation

BACKGROUND

Subsistence uses, as defined by the Alaska National Interest Land Conservation Act (ANILCA), section 803, 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 non-edible 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." Subsistence activities include hunting, fishing, trapping, and collecting berries, edible plants, and wood or other materials.

Subsistence uses are not allowed within Katmai National Preserve in accordance titles II and VIII of ANILCA. Lands and waters within Katmai National Park are closed to subsistence uses.

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 from authorizing improvements to the Lake Camp boat launching area within Katmai National Park and Preserve. The *Lake Camp Boat Launch and Day Use Facilities, Katmai National Park and Preserve, Environmental Assessment* describes a no action alternative and two action alternatives for consideration.

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 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 needed for subsistence purposes. No such...use...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. Katmai National Park was created by ANILCA Section 202(2) for the following purposes (among others): "to protect habitats for, and populations of, fish and wildlife including, but not limited to, high concentrations of brown/grizzly bears and their denning areas; to maintain unimpaired the water habitat for significant salmon populations; and to protect scenic, geological, cultural and recreational features."

A proclamation by President Woodrow Wilson in 1918 created Katmai National Monument from a reservation of approximately 1,700 square miles. Three major purposes of the monument designation were: 1) to preserve an area important to the study of volcanism, 2) to preserve the Valley of Ten Thousand Smokes, and 3) to conserve an area potentially popular with persons seeking unique scenery and for those with scientific interest (ALASKA Travel Publications 1974). Increased in 1931 to include Lake Brooks, Grosvenor Lake, Lake Coville, and part of Naknek Lake; in 1942 to include offshore islands within five miles of the monument coastline; and again in 1969 to include the remainder of Naknek Lake, the monument grew to contain 4,361 square miles.

With the passage of ANILCA in 1980, the designation of 3.7 million acres of the monument was changed to a national park, and an additional 308,000 acres was included as a national preserve. In addition, 3.4 million acres of the park and preserve were designated as wilderness. The taking of fish and wildlife for subsistence uses is allowed by ANILCA within Katmai National Preserve, pursuant to Section 203, however, subsistence activities are not authorized within Katmai National Park.

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 National Park Service (NPS) is considering an alternative that would upgrade the Lake Camp boat launching area in Katmai National Park to include an improved boat ramp, parking and turn-around area, two docks, picnic tables, a double-vault toilet, and, possibly, a fuel containment pad. Lands and waters within Katmai National Park are closed to subsistence uses. A detailed discussion of the project and the alternatives is provided in the *Katmai National Park and Preserve, Lake Camp Boat Launch and Day Use Facilities, Environmental Assessment.* The environmental assessment is being prepared in accordance with the National Environmental Policy Act of 1969. Briefly, the environmental assessment proposes the following alternatives:

> No Action - The no-action alternative proposes no change from the current management direction. The following facilities would continue to be maintained: an informal gravel parking area, with accommodation for 4-5 vehicles; an access road leading to a steep (17-degree slope), informal, boat launching ramp; and a 70-foot, year-round floating dock.

Alternative 2 (Proposed Action) - Under this alternative, the Lake Camp boat launch and day use facility would be improved by:

- Constructing two permanent parallel floating boat docks, each about 70 feet long by 8 feet wide and placed approximately 36 to 60 feet apart (one of the two docks will probably be the existing dock);
- Constructing a concrete ramp approximately 36 feet wide and 70 feet long;
- Constructing a gravel parking area to accommodate 20 vehicles with trailers;
- Constructing a gravel access road connecting the parking spaces and the launch area;
- Constructing a gravel maneuvering area adjacent to the ramp;
- Constructing and installing a double-vault toilet and an information kiosk;
- Installing two picnic tables;
- Placing and installing on-shore anchors downstream of the docks for large vessels for fueling/loading operations; and
- Equipping the fuel transfer site with a impervious fuel containment pad (probably concrete) to reduce risk of environmental contamination

Under the proposed action, the access road would be a 14-foot wide one-way loop. The parking spaces would be located approximately 130 feet from the river. A foot-trail, about 80 feet long, would connect the parking and the launch area, and another foot-trail, about 60 feet long, would connect the picnic tables and the parking. The maneuvering area in front of the boat ramp for launching and loading would be approximately 8000 feet square. The boat launch ramp would be graded to a low slope into the river. The picnic tables would be located along the access road, about 60 feet from the parking lot.

Alternative 3 - The components of the project under Alternative 3 would be identical to the components described under Alternative 2, but they would be configured differently. The site would be the same. The parking lot would be located along the edge of the water (no more than about 15 feet away) and at the same elevation as the river, and this is the main configuration difference. The road would be 24-feet wide with two-way traffic. It would descend to the north and make a switchback to the parking spaces, which would be configured the same as Alternative 2. The picnic tables would be located next to the parking area and immediately adjacent to the river. There would be no trails. The maneuvering area in front of the boat ramp and the slope of the boat ramp would be configured as described for the proposed action.

AFFECTED ENVIRONMENT

A summary of the affected environment as it pertains to subsistence resources and uses is presented here. For a comprehensive description, the environment of Katmai National Park and Preserve see:

Katmai National Park and Preserve, Final General Management Plan, Alaska Regional Office, National Park Service, 1986.

Katmai National Park and Preserve, Final Environmental Impact Statement, Wilderness Recommendation, Alaska Planning Group, 1988,

Lands and waters within Katmai National Park are closed to subsistence uses. However, ANILCA authorized subsistence uses within Katmai National Preserve and on adjacent federal public lands managed by the Bureau of Land Management and the U.S. Fish and Wildlife Service. Becharof National Wildlife Refuge shares a common boundary with the park and is the closest Federal public land to the project site where Title VIII subsistence is allowed.

Regional subsistence activities that occur outside the park include hunting, fishing, trapping, berry picking and plant gathering. Caribou, moose, beaver, snowshoe hare, fox, lynx, mink, wolf, wolverine, river otter, ducks, geese, waterfowl, edible plants and berries, salmon, trout, pike, whitefish, and white spruce constitute the major subsistence resources used by local residents.

The area upland of the project site supports nesting habitat for ducks, geese, and swans, grouse, and ptarmigan. The area is used by large mammal species, particularly bear, moose, and to a limited extent caribou. Smaller mammals using the area include wolverine, wolf, red fox, lynx, porcupine, snowshoe hare, mink, marten, weasel, beaver, river otter, Arctic ground squirrel, and red squirrel.

The Brooks and Naknek rivers and lakes provide spawning and rearing habitat for salmon (primarily sockeye) which migrate from Bristol Bay to the Naknek River, to Naknek Lake and to the Brooks River. Subsistence harvest of salmon occurs in the Naknek River downstream of the park boundary. About 23,500 sockeye and 27,300 total salmon were harvested by subsistence users in the Naknek River system downstream of the Park boundary in 1994 (personal communication, Pippa Coiley, ADF&G Subsistence Resource Specialist). Subsistence harvest of sockeye in the Naknek-Kvichak district has been fairly stable over the last 20 years (ADF&G, 1991). Most salmon harvested in the Naknek River system have been produced within Katmai National Park.

The NPS recognizes that patterns of subsistence use vary from time to time and from place to place depending on the availability of wildlife and other renewable natural resources. A subsistence harvest in a given year may vary considerably from previous years because of weather, migration patterns, 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:

The primary focus of new development would be in the Lake Camp area. Some of the proposed facilities (e.g., the boat ramp and docks), would be constructed below the ordinary high water mark of the Naknek River. No actions under the alternatives presented in the environmental assessment are expected to significantly redistribute or significantly impact fish or wildlife populations.

Provisions of ANILCA and NPS regulations provide the tools for adequate protection of fish and wildlife populations within the park and preserve while ensuring a subsistence priority for local rural residents. 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.

2) Restriction of Access:

All rights of access for subsistence harvest on NPS lands are granted by Section 811 of ANILCA. The proposed development is not expected to significantly redistribute or significantly impact fish and wildlife populations. Provisions of ANILCA, Federal Subsistence Board, and NPS regulations provide the tools for adequate protection of fish and wildlife populations within the park and preserve while ensuring a subsistence priority for local rural residents. 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.

3) Increase in Competition:

Under the alternatives, competition for subsistence fish, wildlife or other resources is not expected to significantly restrict subsistence users. NPS regulations and provisions of ANILCA mandate that if and when it is necessary to restrict taking of fish or wildlife subsistence users are given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition concerns. 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 populations.

AVAILABILITY OF OTHER LANDS

Other lands outside the park and preserve have been considered. The proposed action is consistent with NPS mandates and would occur on federal lands which are not available for subsistence uses.

ALTERNATIVES CONSIDERED

The evaluation has described and analyzed the alternatives of this environmental assessment, with emphasis on the proposed action.

FINDINGS

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

REFERENCES CITED

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Lake Camp Boat Launch and Day Use Facilities
Environmental Assessment

Appendix 2

Wetlands Statement of Findings

DRAFT

WETLANDS STATEMENT OF FINDINGS

LAKE CAMP BOAT LAUNCH AND DAY USE FACILITIES
KATMAI NATIONAL PARK AND PRESERVE, ALASKA

June 2000

RECOMMENDED: _____
SUPERINTENDENT, KATMAI NATIONAL PARK AND PRESERVE DATE

CERTIFIED FOR TECHNICAL ADEQUACY AND SERVICEWIDE CONSISTENCY:

_____
CHIEF, WATER RESOURCES DIVISION, NPS DATE

APPROVED: _____
REGIONAL DIRECTOR, ALASKA REGION DATE

WETLANDS STATEMENT OF FINDINGS
Lake Camp Boat Launch and Day Use Facilities
Katmai National Park and Preserve, Alaska

INTRODUCTION

The National Park Service (NPS) is considering upgrading the Lake Camp boat launching area on Naknek River in Katmai National Park and Preserve. In accordance with regulations of the National Environmental Policy Act (NEPA) of 1969, the NPS has prepared and distributed an Environmental Assessment (EA) for this proposal.

Executive Order 11990 (Protection of Wetlands) requires all federal agencies to evaluate the likely impacts of proposed actions on wetlands. The objectives of Executive Order 11990 are to enhance and restore wetland values, avoid development in wetlands when practicable alternatives exist, and mitigate adverse impacts if a wetland will be occupied or modified.

The NPS has described agency policies for compliance with Executive Order 11990 in *Director's Order 77-1: Wetland Protection and Procedural Manual #77-1: Wetland Protection*. These policies and procedures stress exploring all practicable alternatives to building on or working in wetlands. NPS policies define a wetland as any area classified as wetland habitat according to the U.S. Fish and Wildlife Service's "Classification of Wetlands and Deepwater Habitats of the U.S." (1979 Cowardin et al.).

NPS guidelines require a "statement of findings" to be written justifying any unavoidable impacts to wetlands. In addition, National Park Service policy requires wetland impact compensation if the adverse impacts on wetlands from the entire project total 0.1 acre or more. Compensation in the form of restoration of degraded or former wetland habitat is preferred.

PROPOSED ACTION

The National Park Service proposes to upgrade the Lake Camp boat launching area on Naknek River in Katmai National Park and Preserve by:

- Constructing two permanent parallel floating boat docks, each about 70 feet long by 8 feet wide and placed approximately 36 to 60 feet apart (one of the two docks will probably be the existing dock);
- Constructing a concrete ramp approximately 36 feet wide and 70 feet long;
- Constructing a gravel parking area to accommodate 20 vehicles with trailers;
- Constructing a gravel access road connecting the parking spaces and the launch area;
- Constructing a gravel maneuvering area adjacent to the ramp;
- Constructing and installing a double-vault toilet and an information kiosk;
- Installing two picnic tables;
- Placing and installing on-shore anchors downstream of the docks for large vessels for fueling/loading operations; and
- Equipping the fuel transfer site with a non-pervious fuel containment pad (probably concrete) to reduce risk of environmental contamination

Under the proposed action, the access road would be a 14-foot wide one-way loop. The parking spaces would be located approximately 130 feet from the river. A foot-trail, about 80 feet long, would connect the parking and the launch area, and another foot-trail, about 60 feet long, would connect the picnic tables and the parking. The boat launch ramp would be graded to a low slope into the river. The picnic tables would be located along the access road, about 60 feet from the parking lot.
Excavation and fill within wetland areas would include: (1) excavation and off-site disposal of about 2,400 cubic yards of material; (2) import and placement of about 1,400 cubic yards of structural fill, including crushed aggregate and surface material (this material would be obtained from an approved permitted material source outside of the park); (3) redistribution of on-site materials; (4) temporary storage of about 4,000 cubic yards of topsoil for later use as part of on-site revegetation efforts; and (5) placement of about 50 cubic yards of concrete to construct a ramp.

The estimated construction time for this project is 6-8 weeks. Construction would start at some point between early fall 2000 and mid-spring 2001. If the ramp were constructed in the fall, a temporary coffer dam would likely be built around the site, and water would be pumped out from the area inside the dam to create a relatively dry working environment.

Purpose and Need for the Proposed Action

The purpose of these facilities is to provide better public access to the park in general and, specifically, to enhance opportunities for local residents, park visitors, and park staff to use the Naknek Lake drainage by providing a safe and convenient site for launching vessels. An additional purpose of this project is to implement, in part, the 1986 *Katmai National Park and Preserve General Management Plan* (GMP).

Lake Camp is on the west bank of Naknek River, near the outlet of Naknek Lake, and approximately 10 miles east of the town of King Salmon, Alaska (see Figure 1). It is at the end of the only access road to the park and serves as a primary launch site for boat traffic onto Naknek River northwest of King Salmon (a privately owned boat launch exists downstream of Lake Camp, but this site is expected to be closed to public use by April 2001 or April 2002). Most of the logistical support for Brooks Camp, a world-class bear viewing and fishing area on Naknek and Brooks Lakes in Katmai National Park and Preserve, originates at Lake Camp.

Public and NPS use of Lake Camp is limited by the lack of boat launching and related facilities. Access to the river is down a steep, 17-degree, gravel road. The current "ramp" is simply the last section of the access road that ends at the river. This situation makes it extremely difficult for vehicles to maneuver and maintain safe control while launching or retrieving boats at the river. This is particularly true for large boats such as the NPS' 52-foot park landing craft/tanker vessel, M/V *Ketivik*, which transports fuel and supplies to Brooks Camp. The access road's steep slope also promotes erosion of sediments into the Naknek River. Erosion is further aggravated when vehicle tires are spun in an attempt to gain traction on the steep gravel incline. The proposed access road and ramp improvements are needed to resolve these issues.

With the improved launching facilities, public use of Lake Camp is expected to increase. The proposed toilet, picnic tables, and larger parking area are needed to support this additional use. Under current average conditions, the existing parking area is full on most summer weekends. During heavy use periods, overflow parking occurs along the sides of the access road and in other unsuitable areas. This creates congestion and makes it difficult to turn vehicles around (especially

those with boat trailers). Expanding the parking area as proposed would prevent congestion from becoming a season-long problem once the launching facilities were in place.

OTHER ALTERNATIVES CONSIDERED IN THE ENVIRONMENTAL ASSESSMENT

Two other alternatives for upgrading the boat launching facilities at Lake Camp were analyzed in the EA: a No Action alternative and a second action alternative.

Alternative 1 (No Action Alternative)

The no-action alternative proposes no change from the current management direction. The following facilities would continue to be maintained on-site: an informal gravel parking area accommodating 4-5 vehicles; an access road leading to a steep (17-degree slope), informal, boat launching ramp; and a 70-foot, year-round floating dock.

There would be no substantial impacts to the wetlands under the no action alternative, because wetlands would not be excavated or filled. However, this alternative would not improve the visitor experience in the park nor would it improve park operations. The No Action alternative also would not be consistent with the park's 1986 *General Management Plan*.

Alternative 3 (Locate Parking on River Edge)

The components of the project under Alternative 3 would be identical to the components described under the proposed action, but they would be configured differently. The parking lot would be located along the edge of the water (no more than about 15 feet away) and at the same elevation as the river, and this is the main configuration difference. The road would be 24 feet wide with two-way traffic. It would descend to the north and make a switchback to the parking spaces, which would be configured the same as the proposed action. The picnic tables would be located next to the parking area and immediately adjacent to the river. There would be no trails. The slope of the boat ramp would be the same as described for the proposed action.

Excavation and fill within wetland areas would include: (1) excavation and off-site disposal of about 3,600 cubic yards of material; (2) import and placement of about 1,700 cubic yards of structural fill, including crushed aggregate and surface material (this material would be obtained from an approved permitted material source outside of the park); (3) redistribution of on-site materials; (4) temporary storage of about 3,600 cubic yards of topsoil for later use as part of on-site revegetation efforts; and (5) placement of about 50 cubic yards of concrete to construct a ramp.

Wetland impacts under this alternative would be similar to those under the proposed action. Vegetation clearing and grubbing (i.e., removal of the organic layer), excavation, fill, soil redistribution and grading would eliminate about 1.3 acres of wetlands. In addition to these permanent wetland impacts, about 0.7 acres of wetlands would be temporarily impacted to provide on-site storage of topsoil.

WETLANDS WITHIN THE PROJECT AREA

On November 9, 1999, biologists from HDR Alaska, Inc., delineated wetlands in the Lake Camp area on Naknek River in Katmai National Park and Preserve. Standard wetland delineation methods were generally used, as outlined in the U.S. Army Corps of Engineers' 1987 Wetland Delineation Manual (1987 COE). Existing information available in Anchorage was reviewed first, then a field trip was made to the site. The field trip was made outside the growing season; however despite the winter conditions, vegetation was easily observed because snow cover was light. Wetland data were collected at several sites along transects that included the major vegetation communities and topographic positions within the property. Wetland determinations were made at eight sites, then wetland boundaries were drawn based on correlation of the findings at those sites with more quickly observable vegetation, surface hydrology, and topographic indicators of wetland or upland status. Boundaries were sketched on site maps, and some were flagged for recording by surveyors. Wetlands were classified according to the system used by the U. S. Fish and Wildlife Service National Wetlands Inventory (1979 Cowardin et al.).

A report describing the methodology and findings of the wetlands delineation was prepared by HDR Alaska, Inc. and is available from the National Park Service's Alaska Support Office (1999 HDR Alaska, Inc.). The sections below summarize the information contained in this report.

General Site Description

The project area is located just east of the site of an Air Force recreation camp that was operated from 1956 to 1977. The central part of this property appears to have been partially cleared during that period, as evidenced by the dominance of alders that are prominent elsewhere only on the slope immediately adjacent to the Naknek River. Metal debris was found throughout the area now vegetated with alders, and that debris was likely put there using machinery, further indicating that the central part of the property was substantially disturbed. The underlying soil has not obviously been disturbed. The sizes of birches, willows, and alders indicate substantial disturbance was stopped over 20 years ago.

Two main vegetation types occur within the project area: heath areas and alder. The following is a description of this vegetation, as well as related soils and hydrology.

Heath Areas. The southwest corner of the project area and most of the north half of the parcel support a low heath tundra plant community. This community is dominated by Labrador tea (*Ledum decumbens*; FACW), lowbush cranberry (*Vaccinium vitis-idaea*; FAC), crowberry (*Empetrum nigrum*; FAC), dwarf birch (*Betula nana*; FAC), low willows (*Salix* sp.), sedges (*Carex* sp.), and sphagnum moss. Associated species include bog cranberry (*Oxycoccus microcarpus*; OBL), leatherleaf (*Chamaedaphne calyculata*; FACW), bluejoint reedgrass (*Calamagrostis canadensis*; FAC), cloudberry (*Rubus chamaemorus*; FACW), woodland horsetail (*Equisetum sylvaticum*; FACU), field horsetail (*Equisetum arvense*; FAC), and feather mosses. In a few areas, cottongrass (*Eriophorum* sp.) occurs and more robust sedges (*Carex* sp.) characteristic of flooded sites are found in one or two ponded areas. This vegetation type is hydrophytic and is similar to the vegetation described on the wetland soils in the King Salmon-Naknek soil survey.

On the north half of the project area and in the southwest corner, corresponding with areas of heath vegetation, a layer of sphagnum peat occurred over clay. This peat ranged from 3" to 18" thick. As described in the wetland delineation report, the clay matrix color was brown (10YR4/3 or 10YR3/3), with moderately abundant red streaks and mottles (7.5YR4/6), and a few areas of

redox depletions (10YR4/1). In two of the soil pits dug by HDR Alaska, Inc., a sulfidic odor was detected, indicating reducing conditions. In one of the holes, gleyed (4/10Y) clay with red mottles (7.5YR4/6) was observed at 10 to 14 inches.

Small frozen ponded sites were observed within the heath vegetation areas, and larger vegetated ponds near the southwest and northwest corners. Within the heath areas, frozen water was observed within the soil profile (at 6") in one soil pit, and soils were saturated below the frozen surface layer in two holes. In a soil pit in a heath area within the alder thicket, no water was observed, but the clay was gleyed and had a sulfidic odor.

Alder Areas. The central part of the property and the steep banks leading down to the Naknek River are dominated by alder (*Alnus* sp.; FAC), tall willow, bluejoint reedgrass, woodland horsetail, field horsetail, and mosses. Paper birch (*Betula papyrifera*; FACU), growing in a tall shrub form, is also common. Less common are fireweed (*Epilobium angustifolium*; FACU) and wood fern (*Dryopteris dilitata*; FACU). This vegetation qualifies as hydrophytic, but not strongly so.

Within the alder areas, soils similar to the heath areas were observed, though none had deep peat surfaces. The surface peat horizon was generally 4 inches. Below that was brown clay (10YR4/3 or 10YR4/2 over 2/5Y4/2). In some soil pits, abundant redox concentrations of red (10YR4/6) occurred within the clay, as well as a few areas of grey (10YR4/2). Other prominent matrix colors in the clay included 2.5Y5/2, 10YR4/2, and 2.5Y5/3.

Within the alder-dominated areas, frozen surface water was observed near the property's southwest corner and in two drainageways running eastward across the property. In two soil pits within the alder-dominated area, a layer of frozen water was observed within the soils; both of these sites were within slight topographic depressions that seemed to be drainageways where frozen surface water was also observed. In the other alder-dominated areas, no frozen surface water was observed, no hard-frozen ice was observed within soil profiles, and no soil saturation was observed. Two of these three apparently better-drained sites were located relatively higher than most of the property (near the road).

Wetland Types

Heath Tundra (PSS4/EM1B). The areas dominated by heath vegetation are wetlands based on strongly hydrophytic vegetation, observations of current soil saturation or frozen water layers within the soil, observations of frozen surface water, sulfidic odor, and soils indicating reducing conditions. The Cowardin classification of these wetlands is PSS4/EM1B (palustrine, needle-leafed evergreen shrub/persistent emergent, saturated). These wetlands also meet the U.S. Army Corps of Engineer's regulatory definition of jurisdictional wetlands. These areas appear to exist in their natural state except for some small areas where fill was placed, apparently decades ago.

Alder Scrub (PSS1B). The two drainageways within the alder thicket are wetlands based on observations of frozen surface water or frozen water observed within the soil profile, or both; vegetation that meets the criterion for hydrophytic vegetation; and soils that weakly indicate at least intermittent reducing conditions. Their topography indicates they would tend to collect water. The Cowardin classification of these wetlands is PSS1B (palustrine, broad-leafed deciduous shrub, saturated). These wetlands also meet the U.S. Army Corps of Engineer's regulatory definition of jurisdictional wetlands. These wetlands, within the alder habitat, appear to have been disturbed by clearing more than two decades ago. (Note: HDR Alaska, Inc. did not find sufficient evidence within the remainder of the alder thicket to indicate it is wetland.)

River Shoreline (R3US2C). The beach along the river is not a wetland according to the Corps of Engineers' regulatory definition or a jurisdictional wetland, because it lacks vegetation and soils. It is, however, "waters of the U.S." It also is a wetland within the Cowardin classification system: R3US2C (upper perennial riverine, sandy unconsolidated shore, seasonally flooded). The beach exists in its natural state, with the exception of the NPS dock and some small structures installed there for boat tie-up.

Table 1 shows the acreage of each wetland type on the property.

Table 1. Wetland Types and Wetland and Upland Acreage within Property Boundary

Wetland Type	Cowardin Wetland Description	Acreage within property boundary	Artificial, Natural, or Modified
Heath Tundra	Palustrine, needle-leafed evergreen shrub/persistent emergent, saturated (PSS4/EM1B)	2.1 acres	primarily natural, minor modification by fill and vegetation disturbance outside property north of road
Alder Scrub	Palustrine, broad-leafed deciduous shrub, saturated (PSS1B)	0.7 acres	modified by clearing
River Shoreline	Riverine, upper perennial, sandy unconsolidated sand, seasonally flooded (R2US2C)	1.4 acres	Natural
Total Area		4.2 acres	

Wetland Functions and Values

Functions and values of wetlands were subjectively determined, generally following a descriptive method developed by the U.S. Army Corps of Engineers (1995 COE). This method entails qualitative observation of site features like topography, vegetation type, and water flow patterns; then, based on those indicators, a judgement is made regarding likelihood that a certain function occurs at the site.

Heath Tundra (PSS4/EM1B). The heath areas serve as diffuse drainageways for water flowing from upslope, though the watershed that feeds these areas is small. If upslope sites were developed, the heath wetlands would potentially receive more water, which it would effectively diffuse through the dense vegetation and uneven ground surface. Similarly, these wetlands would retain within their organic soils pollutants that might be discharged from upslope developments.

To the small extent that water runs off these wetlands, the water may carry organic material that supports downstream aquatic food webs. Where this wetland abuts the river, plant material that is eroded at high flows and the overhanging vegetation provide organic material that supports downstream ecosystems. Also at this interface, the dense grass and shrub roots and stems bind the soil against erosive forces of river water and ice and potentially boat wakes.

The heath tundra provides a small area of wildlife habitat amidst an extensive, relatively undisturbed landscape of tundra and taller shrub areas. The importance of this habitat is enhanced because of its location along the Naknek River. While the heath tundra is expected to be acidic

and have relatively low primary productivity, its willow, dwarf birch, sedges, and berry-bearing shrubs are probably important to some birds and mammals. Berry-filled bear scat was observed on the property. The shrubby habitat probably provides resting, feeding, and brood-rearing habitat for several species of mammals and birds, particularly certain shorebirds and songbirds. Two small ponded areas, adjacent upland shrub areas, tall shrub riparian areas, and the river shoreline and river itself contribute to moderate habitat diversity. Wood frogs may use the heath areas, particularly the small ponded sites. The margins of the wetlands along the river provide cover to fish at the highest flows, and to other animals using riparian habitat throughout the year. No threatened or endangered species are expected to use this area.

These wetlands have moderate recreational potential, enhanced greatly by their status as designated National Park Service land and their location adjacent to the road and parking area. Interpretive opportunities exist at the site. These wetlands support an undisturbed, low vegetation type that allows for expansive views and that would be distinctive to many out-of-state visitors to the site, though not to local residents. The site is probably too wet for most hikers. Its abundant cranberries could be used by recreationists and subsistence users. These wetlands have low research value relative to other expanses of wetlands that are potentially less affected by past and present human development.

Alder Scrub (PSS1B). These wetland drainageways are similar to the adjacent upland alder habitats. They probably convey a very small amount of water. The dense understory vegetation likely slows water draining through it, and the water might carry away with it some organic material that supports the downstream aquatic food web. The willows and birch that grow densely in these drainageways may serve as forage for animals including moose, caribou, and hare. The shrubs would provide dense cover for resting, feeding, and brood rearing of some mammal and bird species, particularly songbirds. Two songbird nests were observed in the alder/willow thickets. The importance of this habitat is enhanced by its proximity to the river and to the lower shrub vegetation types. These wet drainageways have little recreational, cultural, or educational value as wetlands.

River Shoreline (R2US2C). The river shoreline area conveys water during high flows. It provides shallow and slightly quieter habitat for fish when it is flooded. During periods of lower flows, the shoreline is exposed. The shoreline serves as a travel corridor, and probably feeding habitat, for terrestrial animals. Bear and fox tracks were observed there, as were salmon carcasses. Animals using this shoreline, both aquatic and terrestrial, likely benefit from the cover provided by the adjacent tall shrub habitats. No threatened or endangered species are expected to use this area.

Waterfowl surveys have been conducted in March and April at Lake Camp at the Naknek River since 1991 (1999 HDR, Inc.). This segment of the river opens up early in the spring and great numbers of waterfowl rest and feed in the river at that time. Birds observed there in the last three years include: Tundra Swan, Greater White-Fronted Goose, Canada Goose, Mallard, Northern Pintail, Northern Shoveler, Gadwall, Eurasian Wigeon, American Wigeon, Green-Winged Teal, Greater Scaup, Black Scoter, Bufflehead, Common Goldeneye, Barrow's Goldeneye, Common Merganser, and Red-Breasted Merganser. The waterfowl observed at this site have numbered in the hundreds, even over a thousand.

This shoreline provides an important human transportation link because of its location on the road system and its developed car parking, dock, and boat tie-ups. These facilities likely support local residents and visitors using the river for hunting, fishing, boating, sightseeing, travel, and

subsistence access. There may be fishing from the shoreline. Interpretive opportunity exists at the shoreline.

General Lake Camp Area. Breeding bird surveys have been conducted at the Lake Camp parking lot since 1994 (1999 USFWS). These surveys are designed to detect birds within ¼ mile, but the dense shrub cover may reduce the detection radius for songbirds to about 100 meters. The following species have been detected from the parking lot area, so they may be using the upland or wetland alder, heath tundra, shoreline, or river habitat: Red-Throated Loon, Common Loon, American Wigeon, Northern Pintail, Green-Winged Teal, Common Goldeneye, Willow Ptarmigan, Sandhill Crane, Greater Yellowlegs, Common Snipe, Bonaparte's Gull, Mew Gull, Glaucous-Winged Gull, Tundra Swan, Tree Swallow, Gray-Cheeked Thrush, Varied Thrush, American Robin, Orange-Crowned Warbler, Yellow Warbler, Blackpoll Warbler, Wilson's Warbler, Northern Water Thrush, American Tree Sparrow, Fox Sparrow, White-Crowned Sparrow, Golden-Crowned Sparrow, and Common Redpoll.

THE PROPOSAL'S IMPACT ON WETLANDS

Vegetation clearing and grubbing (i.e., removal of the organic layer), excavation, fill, soil redistribution and grading would eliminate about 1.2 acres of wetlands, with individual acreage per wetland type ranging from 0.1 to 0.6 acres (see Table 2). The functions provided by these wetlands, including water diffusion, organic material supply and conveyance, habitat contributions, would be permanently lost. In addition to these permanent wetland impacts, about 0.9 acres of wetlands would be temporarily impacted to provide on-site storage of topsoil during the 6 to 8 week construction period. Within these wetlands, vegetation would be cleared to ground-level and construction equipment would be driven over the wetland surface, compacting soils and crushing remaining vegetation. However, because the organic layer would remain intact, these wetlands would be expected to fully recover within a few years of construction; thus, there would be no permanent loss of their wetland functions or values.

Discharge of dredged or fill material into special aquatic sites such as wetlands is regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Prior to undertaking the above work, the NPS will have acquired an individual permit from the Corps of Engineers.

Table 2. Impacts to Each Wetland Type at Lake Camp

Wetland Type	Cowardin et al. (1979) Wetland Type	Area Impacted (acres)
Heath Tundra	Palustrine, needle-leafed evergreen shrub/persistent emergent, saturated (PSS4/EM1B)	Permanent Loss: 0.6 acres Temporary: 0.9 acres
Alder Scrub	Palustrine, broad-leafed deciduous shrub, saturated (PSS1B)	Permanent Loss: 0.5 acres
River Shoreline	Riverine, upper perennial, sandy unconsolidated sand, seasonally flooded (R2US2C)	Permanent Loss: 0.1 acres
Total Acreage		Permanent Loss: 1.2 acres Temporary: 0.9 acres

WETLAND IMPACT MITIGATION MEASURES

Avoidance Efforts

There are no practicable alternatives that would avoid wetland impacts entirely. About half of the 4.05 acres project site has been delineated as wetland habitat. Although the central portion of the site is primarily upland, it is not possible to design the proposed parking area to fit within this area yet still be large enough (20 spaces) to accommodate the number of people that are expected to use the new boat launching facilities at Lake Camp (Lake Camp serves as a primary launch site for almost all boat traffic onto Naknek River northwest of King Salmon). Moreover, even if it were possible to confine the parking area to the upland portion of the project site, the new access road would have to extend beyond the upland area in order to maintain an appropriate grade; to do this, at least some wetlands must be impacted.

No upland alternatives are available for storing the topsoil prior to their use in on-site revegetation efforts. The central part of the property is composed primarily of uplands; however, because this area would be excavated and otherwise impacted by construction activities, it would not be a practical place to store the topsoil. U.S. Air Force land adjacent to the NPS' Lake Camp property includes several existing disturbed areas that might have been used for topsoil storage were it not for the fact that these areas have contaminated soils.

Design Measures to Minimize Impacts

Topsoil Storage Area. Though vegetation would be cleared to ground-level within the 0.9 acres of wetland used for topsoil storage, the organic layer would remain intact. Heavy equipment may be used to deposit and remove the topsoil, but would not be stored or staged within this area. The topsoil would be stabilized with straw bales, filter cloth, or other appropriate means to prevent re-entry into the waterway or wetland. Topsoil storage would be for as short a time as possible to prevent loss of seed and root viability, loss of organic matter, and degradation of the soil microbial community. Once stored topsoil were removed, this wetland area would be returned to pre-existing elevations, and soil, hydrology, and native vegetation communities would be restored through natural processes.

Best management practices. Best management practices for watershed protection would include the following:

- Every effort would be made to construct the ramp and docks in the spring when the site would be relatively dry in order to avoid stirring up river sediments. If this were not possible, the contractor would install a temporary cofferdam around the site to de-water the work area.
- In general, the contractor would use bio-logs, silt fence, or similar measures, as appropriate, to reduce the amount of sediment in runoff from reaching the river.
- Once construction was completed, remaining exposed soils would be actively revegetated or allowed to naturally revegetate.

Educational Information. Educational information would be provided at the on-site kiosks to inform visitors of appropriate behavior around wildlife and in sensitive environments such as riparian areas, to promote safe and environmentally responsible boating, and to notify visitors of fishing regulations.

COMPENSATION PROPOSAL: DRY BAY WETLAND RESTORATION PROJECT

Introduction

Wetland restoration has been proposed to compensate for wetland impacts associated with the Lake Camp improvements in Katmai National Park and Preserve (NPP). No existing or potential opportunities for wetland restoration are available in either Katmai NPP or neighboring Lake Clark NPP. Therefore, compensation for wetland losses will occur within Glacier Bay National Preserve. Specifically, the NPS has identified suitable palustrine wetland habitat at Dry Bay in Glacier Bay National Preserve as the project area for wetland restoration.

Dry Bay is located within the 55,000 acre Glacier Bay National Preserve which was designated as "Preserve" under the 1980 Alaska National Interest Land Conservation Act (ANILCA). The Preserve sustains extremely concentrated human use, including year-round recreational, commercial, subsistence activities, and other uses. Motorized vehicle use in support of these activities occurs extensively in the Preserve. Routes and areas for off-road motor vehicle (ORMV) use have not been formally designated because the NPS wishes to base such decisions on accurate information regarding existing routes, sensitive wetland habitats, and natural hydrological processes.

Dry Bay Project Description and Wetland Restoration

In the initial stages of this project, the National Park Service will create a Geographic Information System (GIS) inventory of undesignated ORMV routes and areas in Dry Bay in summer 2001. The GIS inventory will include maps and a description of route characteristics. Existing routes will be classified based on level of use, type and degree of damage, and hydrological impacts. Ultimately, the NPS will use this information to formally designate ORMV routes in Dry Bay. (Note: formal designation will require additional NEPA documentation and public involvement [see NPS motor vehicle regulations in 36 CFR 4.10 (b)].)

According to 36 CFR 4.10 (a), operating a motor vehicle is prohibited except on park roads, in parking areas, and on routes and areas designated for OMRV use. (The 1984 *Glacier Bay National Park and Preserve General Management Plan* contains a description of the park roads in Dry Bay, but there are currently no designated OMRV routes or areas in Dry Bay.) As part of a data-gathering phase prior to formal designation of OMRV routes, the NPS will begin enforcement of the existing motor vehicle regulations on selected routes in Dry Bay that are not likely to be formally designated as OMRV routes. The routes selected for enforcement will be monitored to determine their effectiveness in terms of wetland restoration, as well as to understand the effects of rerouting on motor vehicle users. Field work for this phase will take place during the summer of 2001. Vegetation plots will be established and maintained for future reference during monitoring efforts in 2001. Additional monitoring beyond Fiscal Year 2001 will take place if funding is available.

The routes highlighted on Figures 2 through 5 are the most likely candidates for enforcement. About 9 acres of wetlands will be restored (see Table 3). Wetland types that will be allowed to recover naturally are palustrine emergent, palustrine forested, palustrine scrub-shrub, palustrine/riverine unconsolidated bottom and palustrine/riverine unconsolidated shore. Restoration of the Dry Bay wetlands will reduce existing impacts to wetland hydrology by eliminating motor vehicle activity that causes ruts and channeling of flows. The restoration project area and adjacent shoreline are known to support a high density of nesting shorebirds and

seabirds and serve as a major migratory stopover for waterfowl and shorebirds; therefore, restoring wetlands will restore waterfowl and shorebird habitat also.

The 9 acre total was calculated assuming 3-meter wide route corridors (coastal aerial photographs clearly show that many of the existing routes are this wide or wider) and counted only those wetland acres directly affected by the enforcement activities. This amount does not include the several hundred acres of wetlands that could indirectly benefit from enforcement of motor vehicle regulations in Dry Bay, nor does it account for the fact that, ultimately, designating formal ORMV routes will prevent the indiscriminate creation of new ORMV use routes and areas through wetlands in Dry Bay.

Table 3. Restored Wetland Types and Acreages in Dry Bay, Glacier Bay National Park and Preserve

Wetland Type (Cowardin Classification)	Amount (Acres)
E1UB___L (estuarine, subtidal, unconsolidated bottom, subtidal)	0.246 acres
E2US___N (estuarine, intertidal, unconsolidated shore, regularly flooded)	0.083 acres
E2US___P (estuarine, intertidal, unconsolidated shore, irregularly flooded)	4.982 acres
P_EM1/SS1A (palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, temporarily flooded)	0.250 acres
P_EM1/SS1B (palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, saturated)	0.056 acres
P_EM1/SS1C (palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, seasonally flooded)	0.111 acres
P_EM1/SS1R (palustrine, emergent, persistent/scrub-shrub, broad-leaved deciduous, seasonal tidal)	0.203 acres
P_EM1___A (palustrine, emergent, persistent, temporarily flooded)	0.062 acres
P_EM1___C (palustrine, emergent, persistent, seasonally flooded)	1.660 acres
P_EM1___S (palustrine, emergent, persistent, temporary tidal)	0.508 acres
P_SS1/EM1A (palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, temporarily flooded)	0.153 acres
P_SS1___A (palustrine, scrub-shrub, broad-leaved deciduous, temporarily flooded)	0.227 acres
R2UB___H (riverine, lower perennial, unconsolidated bottom, permanently flooded)	0.215 acres
Total Acreage	**8.76 acres**

Wetland Compensation

A typical minimum compensation ratio for replacing a loss of wetland functions with restoration of degraded wetlands is 1:1 (NPS 1998). Wetland loss as a result of the proposed Lake Camp improvement project totals 2.1 acres; therefore, at a 1:1 replacement ratio, a minimum of 2.1 acres of wetlands must be restored.

The 9 acres of wetlands restored in Dry Bay will cover compensation requirements for a road project in Glacier Bay NPP, as well as the Lake Camp improvement project in Katmai NPP. After subtracting the amount required to compensate for both these projects, the remaining restored wetland acres will be used to create an internal wetland mitigation bank for future projects.

The Dry Bay restoration project will be funded by the Federal Highway Administration (FHWA) as part of the road rehabilitation/realignment project at Glacier Bay NPP. The Lake Camp project

account will be debited a specified amount of money to cover part of the cost of other future wetland restoration efforts.

CONCLUSIONS

The National Park Service has identified Alternative 2 as the proposed action for improving the boat launching facilities at Lake Camp in Katmai National Park and Preserve. Wetland impact has been minimized to the practicable extent allowed by sound engineering of the improvements. The Dry Bay project will adequately compensate for wetland loss caused by the proposed improvements. Therefore, this project is consistent with E.O. 11990 and NPS Director's Order #77-1, including the NPS no-net-loss of wetlands policy.

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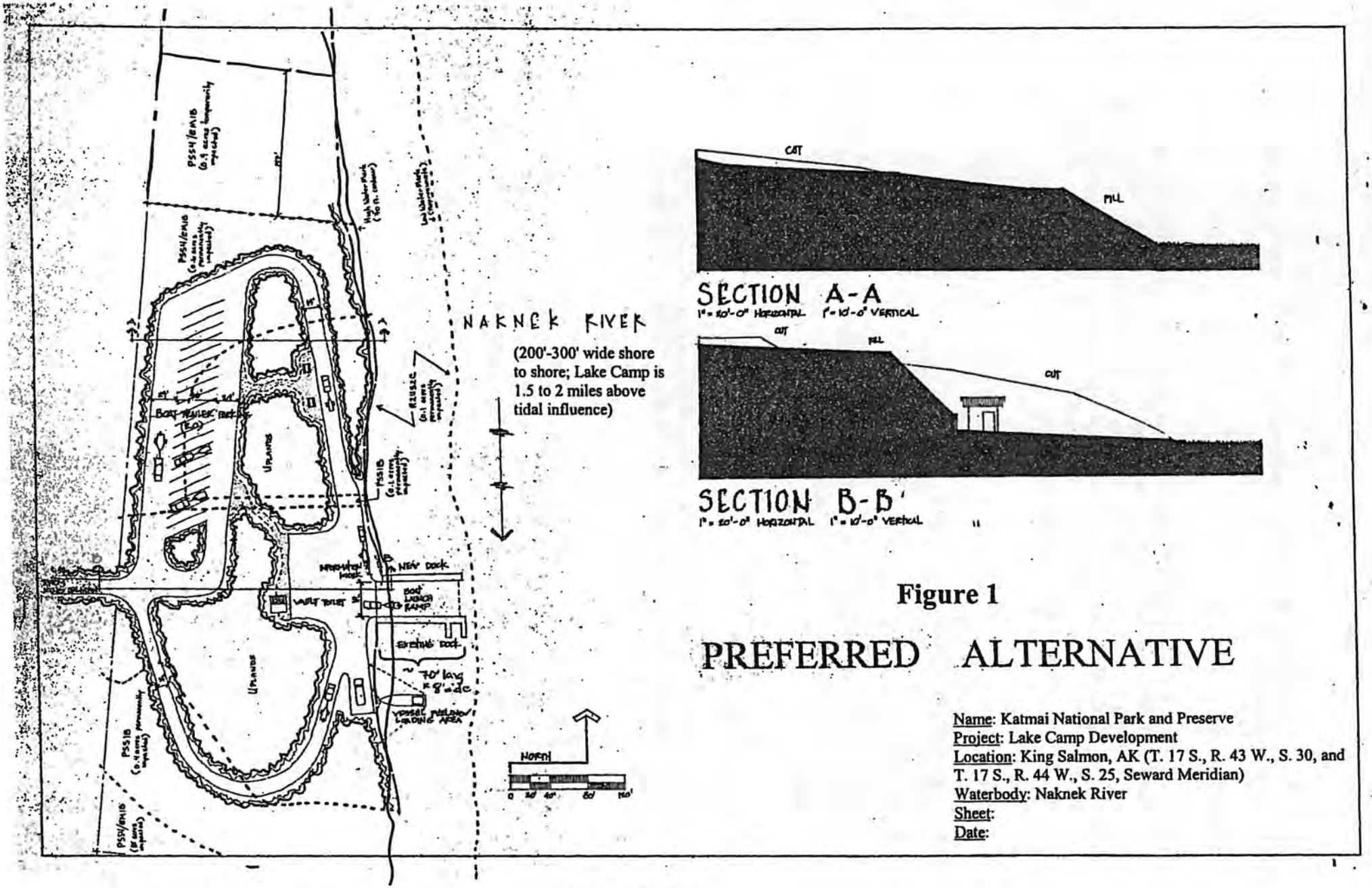


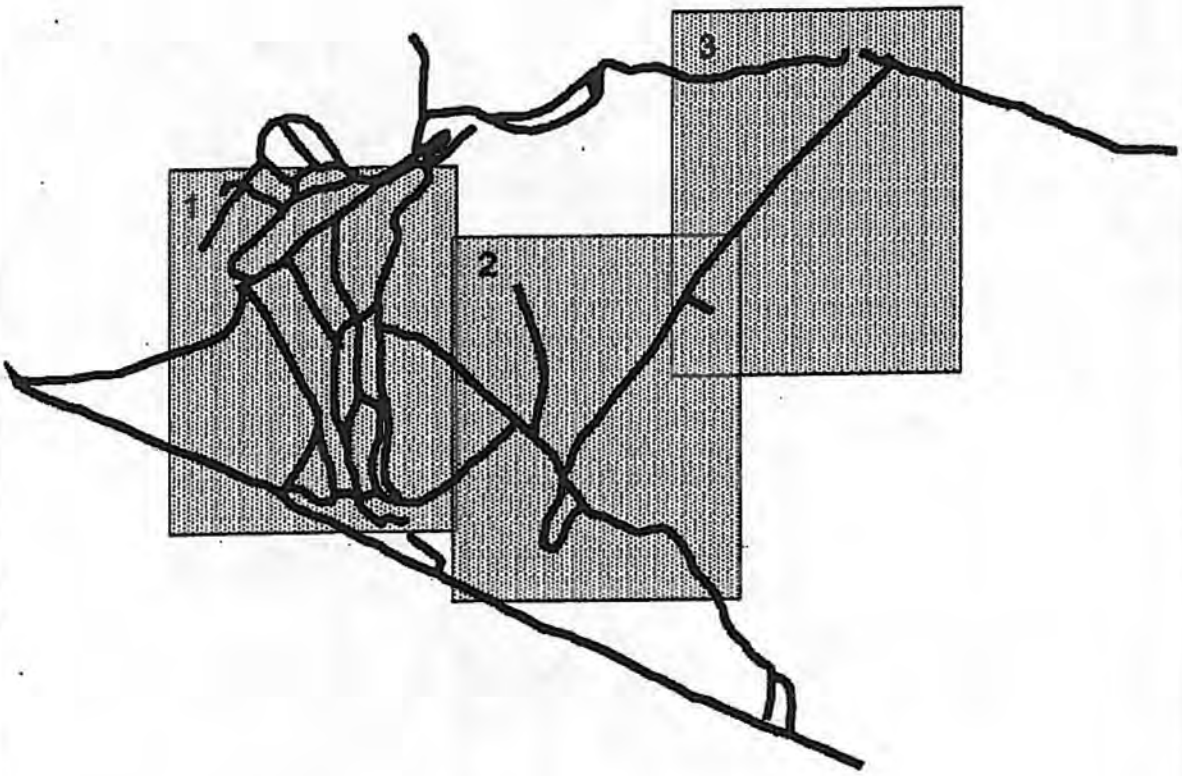
Figure 1

PREFERRED ALTERNATIVE

Name: Katmai National Park and Preserve
Project: Lake Camp Development
Location: King Salmon, AK (T. 17 S., R. 43 W., S. 30, and T. 17 S., R. 44 W., S. 25, Seward Meridian)
Waterbody: Naknek River
Sheet:
Date:

Permanently Impacted = vegetation clearing & grubbing; excavation; fill; grading
Temporarily Impacted = vegetation clearing to ground-level (organic layer remains intact); area used for topsoil storage

Dry Bay Wetlands Restoration



National Park Service
Glacier Bay National Park and Preserve
Natural Resources

1 0 1 2 3 4 Miles

Figure 2

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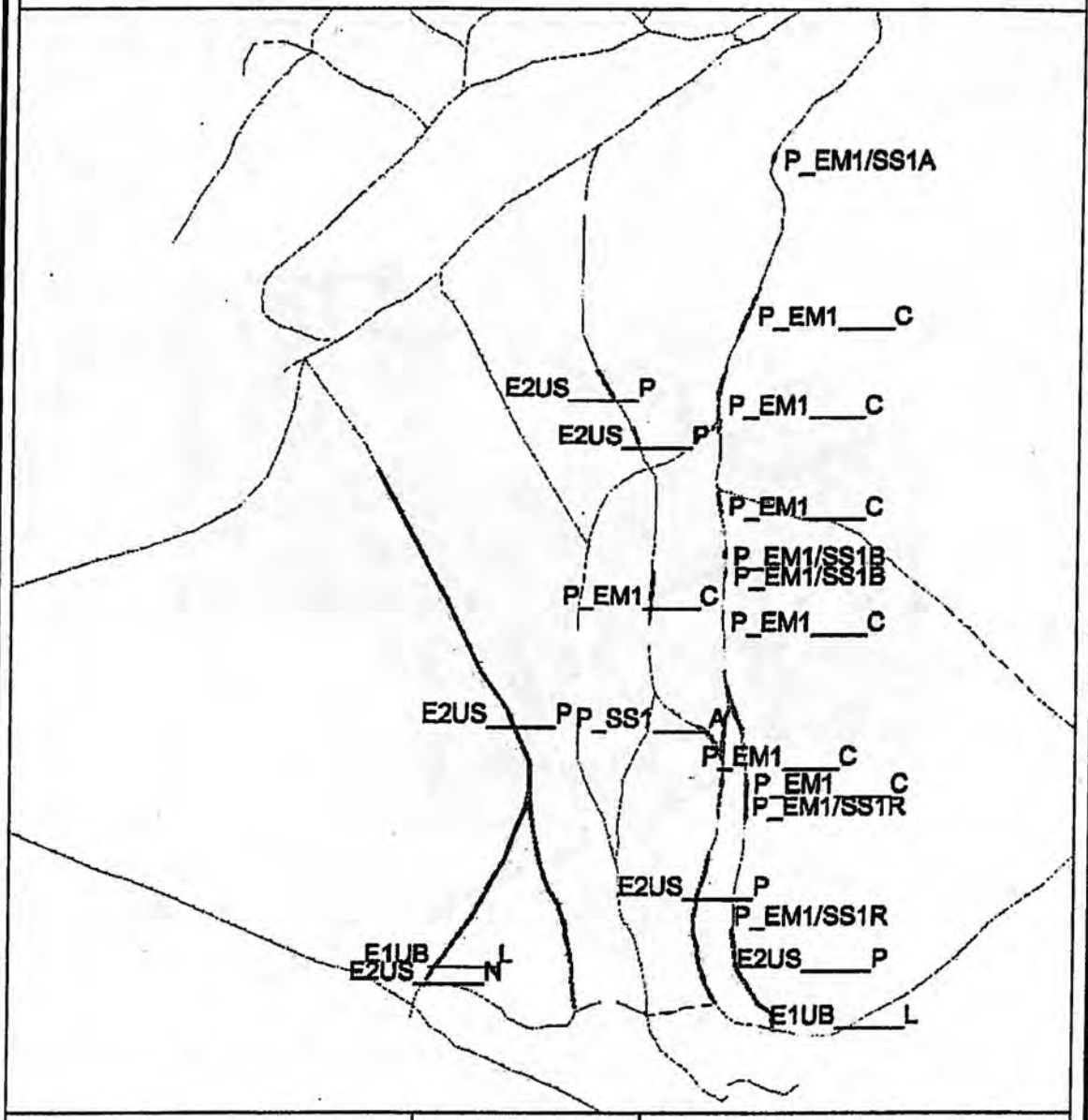
Dry Bay Wetlands Restoration



National Park Service
Glacier Bay National Park and Preserve
Natural Resources

0.25 0 0.25 0.5 0.75 1 Miles

1 : 36,520 1 inch = 0.58 miles

Figure 3

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Dry Bay Wetlands Restoration

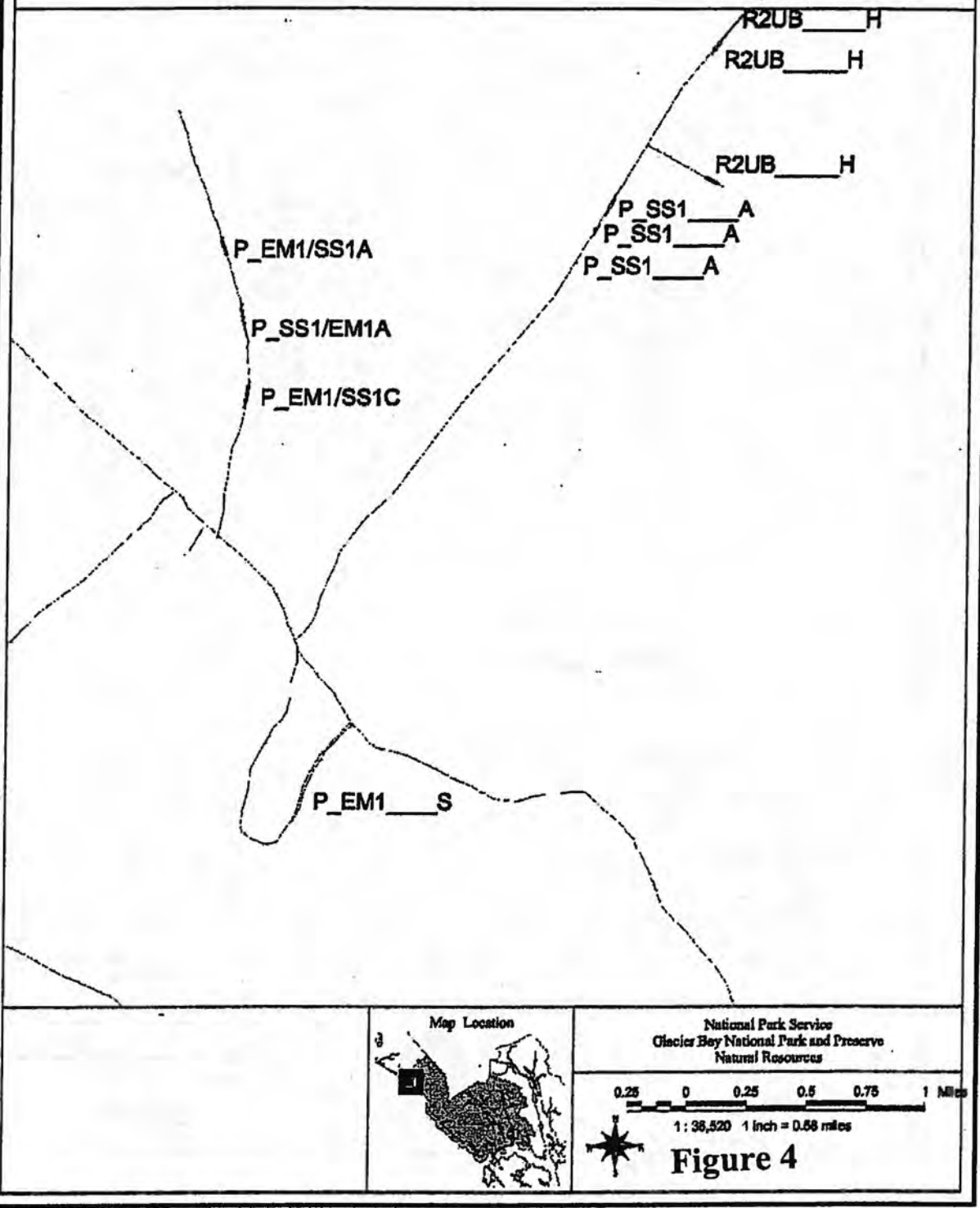
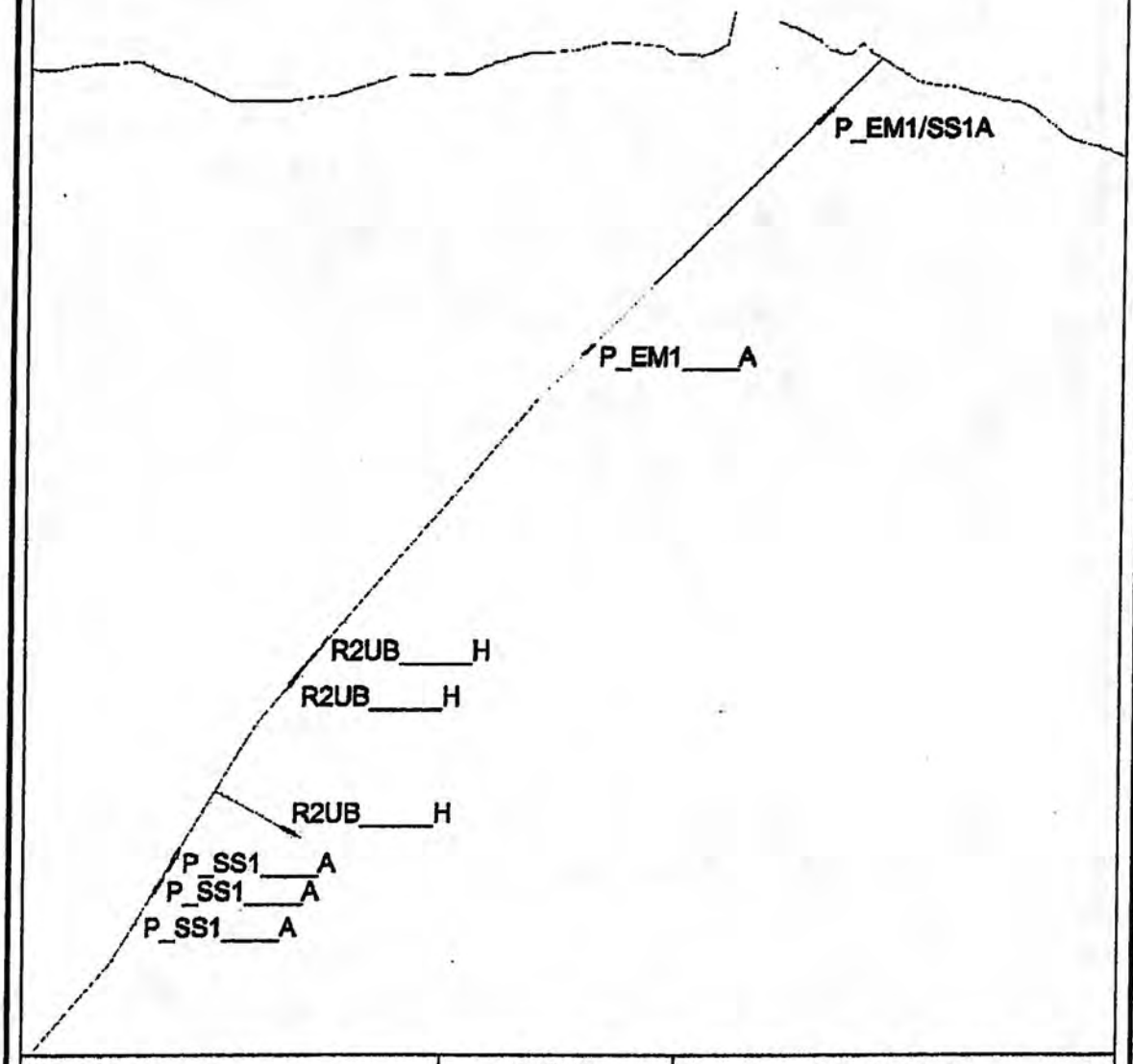


Figure 4

Plot date: April 18, 2000 k:\eco_data\data\giba\drybay\gis\wetlands10.apr

Dry Bay Wetlands Restoration



National Park Service
Glacier Bay National Park and Preserve
Natural Resources

0.25 0 0.25 0.5 0.75 1 Miles

1 : 36,820 1 inch = 0.58 miles

Figure 5

Plot date: April 16, 2000 k:\eco_data\data\gba\drybay\gis\wetlands10.apr

Lake Camp Boat Launch and Day Use Facilities
Environmental Assessment

Appendix 3

Department of the Interior, Fish and Wildlife Service
Letter dated April 21, 2000

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services Anchorage
605 West 4th Avenue, Room 62
Anchorage, Alaska 99501-2249

RECEIVED
Environmental Quality
APR 2 6 2000

WAES

April 21, 2000

Heather Todd Rice
National Park Service
2525 Gambell Street, Room 107
Anchorage, Alaska 99503-2892

RE: Request for Threatened and Endangered Species List, Lake Camp Boat Launch, Katmai Park and Preserve, Alaska

Dear Ms Rice:

On April 20, 2000, we received your request for a list of Federal threatened and endangered species that may occur at the Lake Camp Boat Launch, Katmai Park and Preserve, Alaska. Based on information contained in your letter the proposed project includes the development of a new improved boat ramp, parking and turn-around area, two docks, picnic tables, a double-vault toilet, and, possibly, a fuel containment pad.

Based on our review of the occurrence and distribution of listed species, no listed species are anticipated to occur within the action area of the proposed project. As such, further consultation per section 7 of the Endangered Species Act of 1973, as amended, does not appear to be warranted for this project.

It is important to note that this letter relates only to endangered species under our jurisdiction. It does not address species under the jurisdiction of the National Marine Fisheries Service, or other legislation or responsibilities under the Fish and Wildlife Coordination Act, Clean Water Act, or National Environmental Policy Act. Therefore, compliance with other environmental regulations may be appropriate.

If you have any questions regarding this letter please contact me at (907) 271-2781; Fax: (907) 271-2786; e-mail: arthur_davenport@fws.gov.

Sincerely,

Arthur E. Davenport

Arthur E. Davenport
Endangered Species Biologist