FINAL

WETLANDS STATEMENT OF FINDINGS

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

August 2000

RECOMMENDED: _____ 8/25/2000
SUPERINTENDENT, KATMAI NATIONAL PARK AND PRESERVE DATE

CERTIFIED FOR TECHNICAL ADEQUACY AND SERVICEWIDE CONSISTENCY:

_____ 8/25/2000
CHIEF, WATER RESOURCES DIVISION, NPS DATE

APPROVED: _____ 8/28/00
REGIONAL DIRECTOR, ALASKA REGION DATE

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WETLANDS STATEMENT OF FINDINGS

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

August 2000

RECOMMENDED: _____ 8/23/2000
SUPERINTENDENT, KATMAI NATIONAL PARK AND PRESERVE DATE

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Dan B Kimball 8/25/2000
CHIEF, WATER RESOURCES DIVISION, NPS DATE

APPROVED: _____
REGIONAL DIRECTOR, ALASKA REGION DATE

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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 nonpervious 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 700 cubic yards of material; (2) import and placement of about 3,150 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 1,150 cubic yards of topsoils for later use as part of on-site revegetation efforts; and (5) placement of about 65 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 was 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, *MV 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 topsoils 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 greater to those under the proposed action. Based on initial early-design estimates, 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 topsoils. However, had this alternative been selected for implementation and further design work been done, the impacts to wetlands may have been reduced to an extent similar to the proposed action alternative.

WETLANDS WITHIN THE PROJECT AREA

On November 9, 1999, biologists from HDR, 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). Non-jurisdictional wetlands also were identified using Cowardin et al 1979. 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, Inc. and is available from the National Park Service's Alaska Support Office (1999 HDR, 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 sphaghum 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.) occur 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, 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, 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 shore, 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 0.8 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 0.4 acres of wetlands would be temporarily impacted to provide on-site storage of topsoils 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: 0.2 acres Temporary: 0.4 acres
Alder Scrub	Palustrine, broad-leafed deciduous shrub, saturated (PSS1B)	Permanent Loss: 0.6 acres
River Shoreline	Riverine, upper perennial, sandy unconsolidated sand, seasonally flooded (R2US2C)	Permanent Loss: 0.1 acres
Total Acreage		Permanent Loss: 0.8 acres Temporary: 0.4 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 (re: Lake Camp serves as a primary launch site for almost all boat traffic onto Naknek River northwest of King Salmon). Moreover, even if it was 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 topsoils 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 topsoils. 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 0.4 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 topsoils 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 scarified and 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 scrub-shrub, estuarine/riverine unconsolidated bottom, and estuarine 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 1.2 acres; therefore, at a 1:1 replacement ratio, a minimum of 1.2 acres of wetlands must be restored.

The 9 acres of wetlands restored in Dry Bay will cover compensation requirements for the 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 a 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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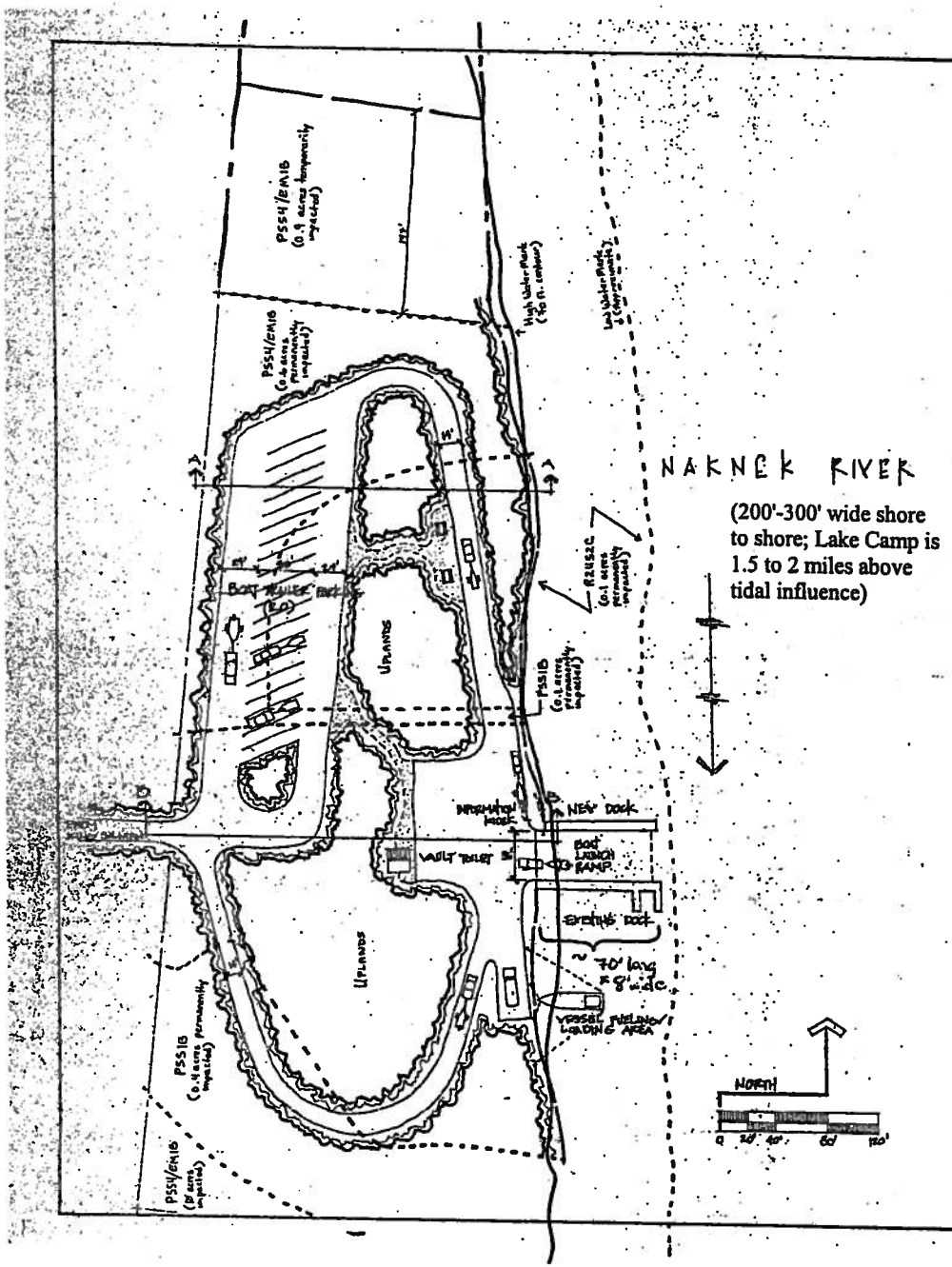

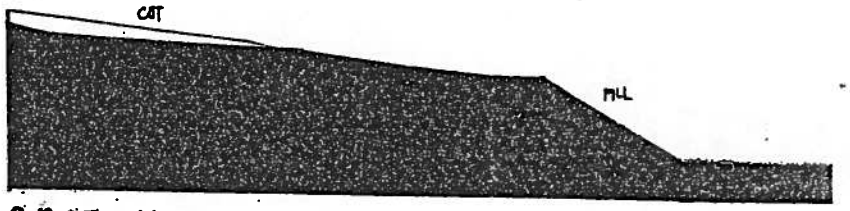

SECTION A-A
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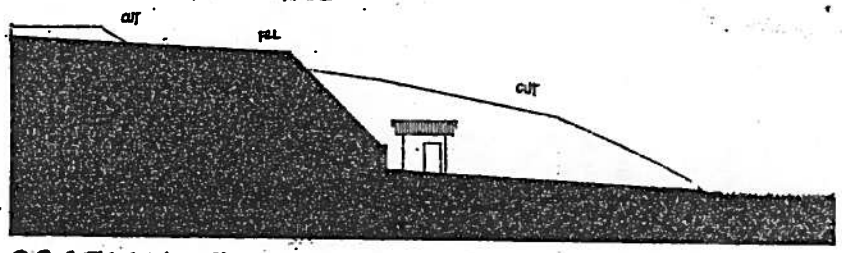


SECTION B-B'
1" = 20'-0" HORIZONTAL 1" = 10'-0" VERTICAL

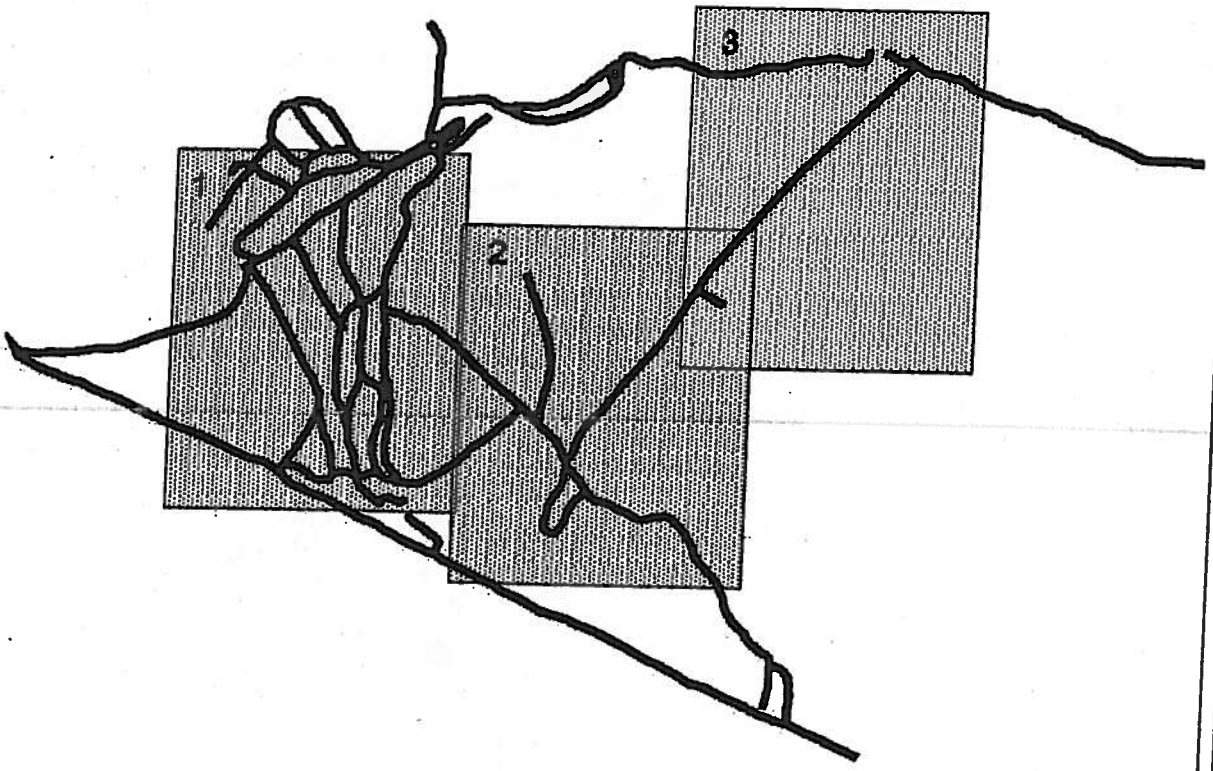
Figure 1

PREFERRED ALTERNATIVE

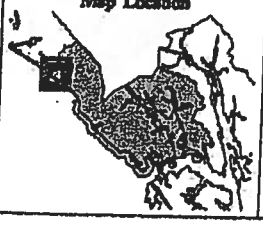
Name: Katmai National Park and Preserve
Project: Lake Camp Development
Location: King Salmon, AK (T. 17 S., R. 43 W., S. 30, and T. 17 S., R. 44 W., S. 25, Seward Meridian)
Waterbody: Naknek River
Sheet:
Date:

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



Map Location



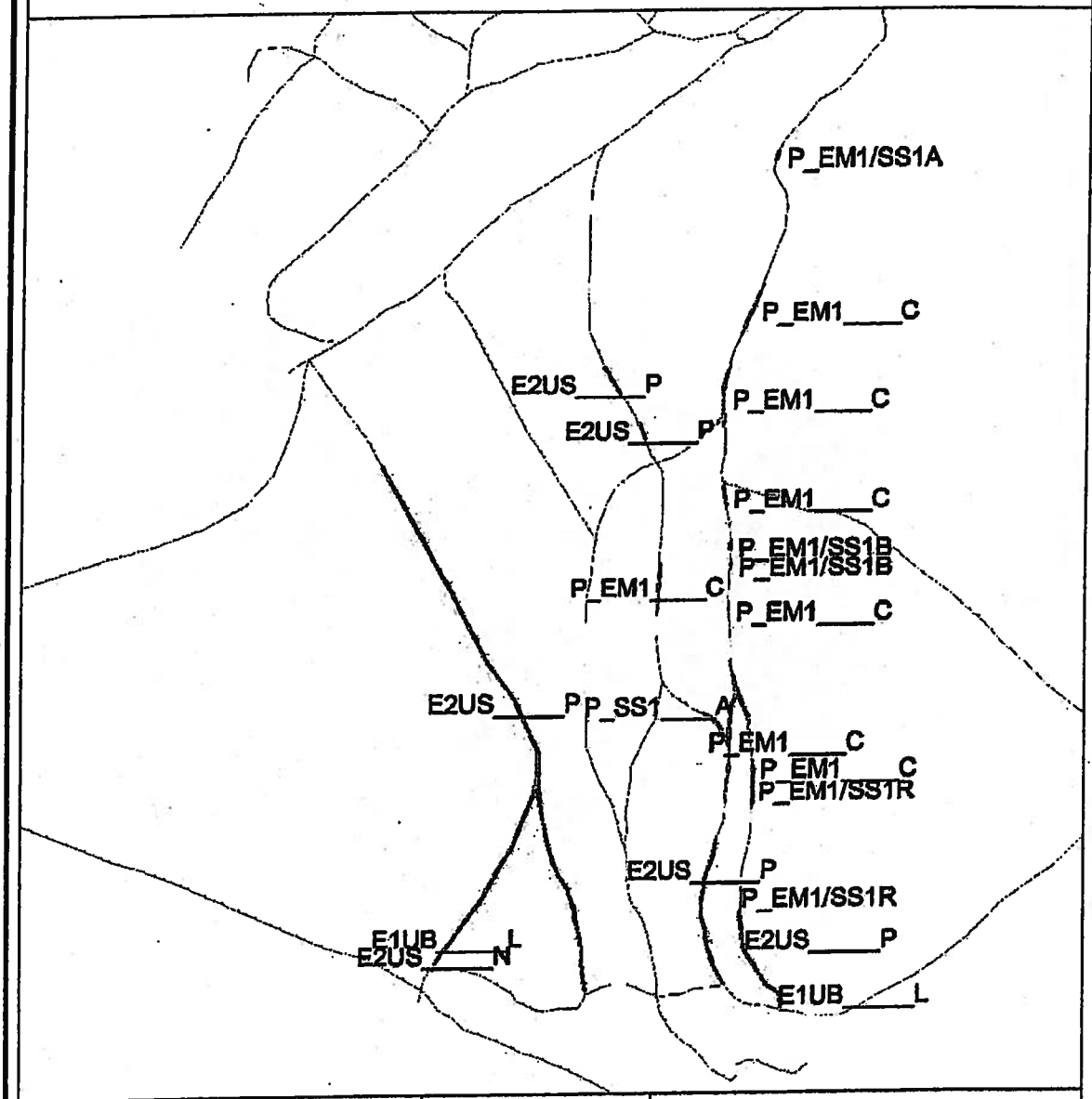
National Park Service
Glacier Bay National Park and Preserve
Natural Resources

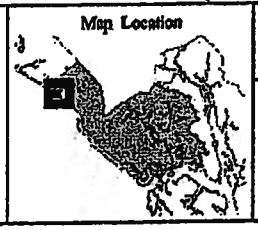
1 0 1 2 3 4 Miles

Figure 2

Plot date: April 24, 2000 k:\ec-o_data\data\gis\dry\bay\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 : 36,520 1 inch = 0.58 miles

Figure 3

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Dry Bay Wetlands Restoration

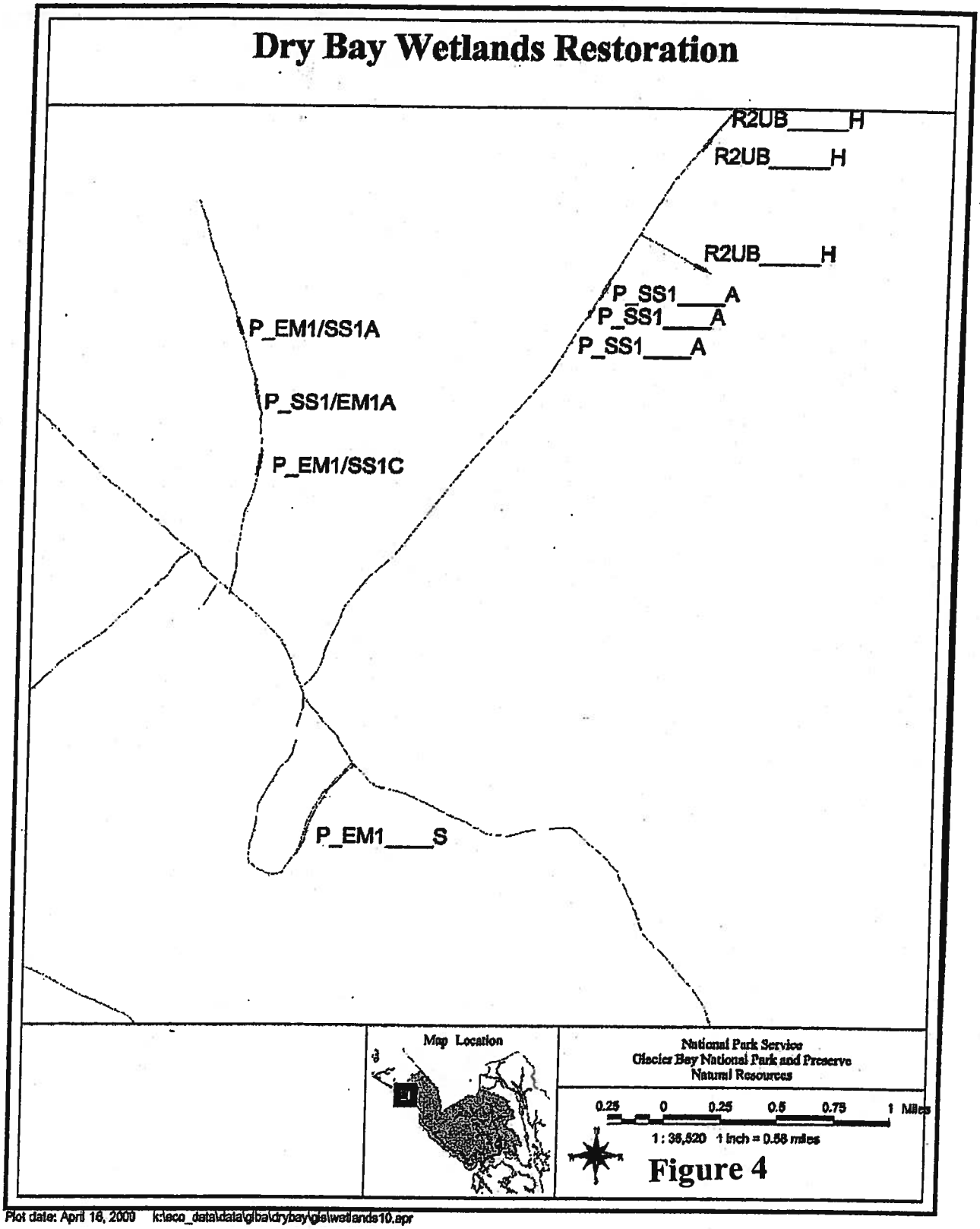

Figure 4

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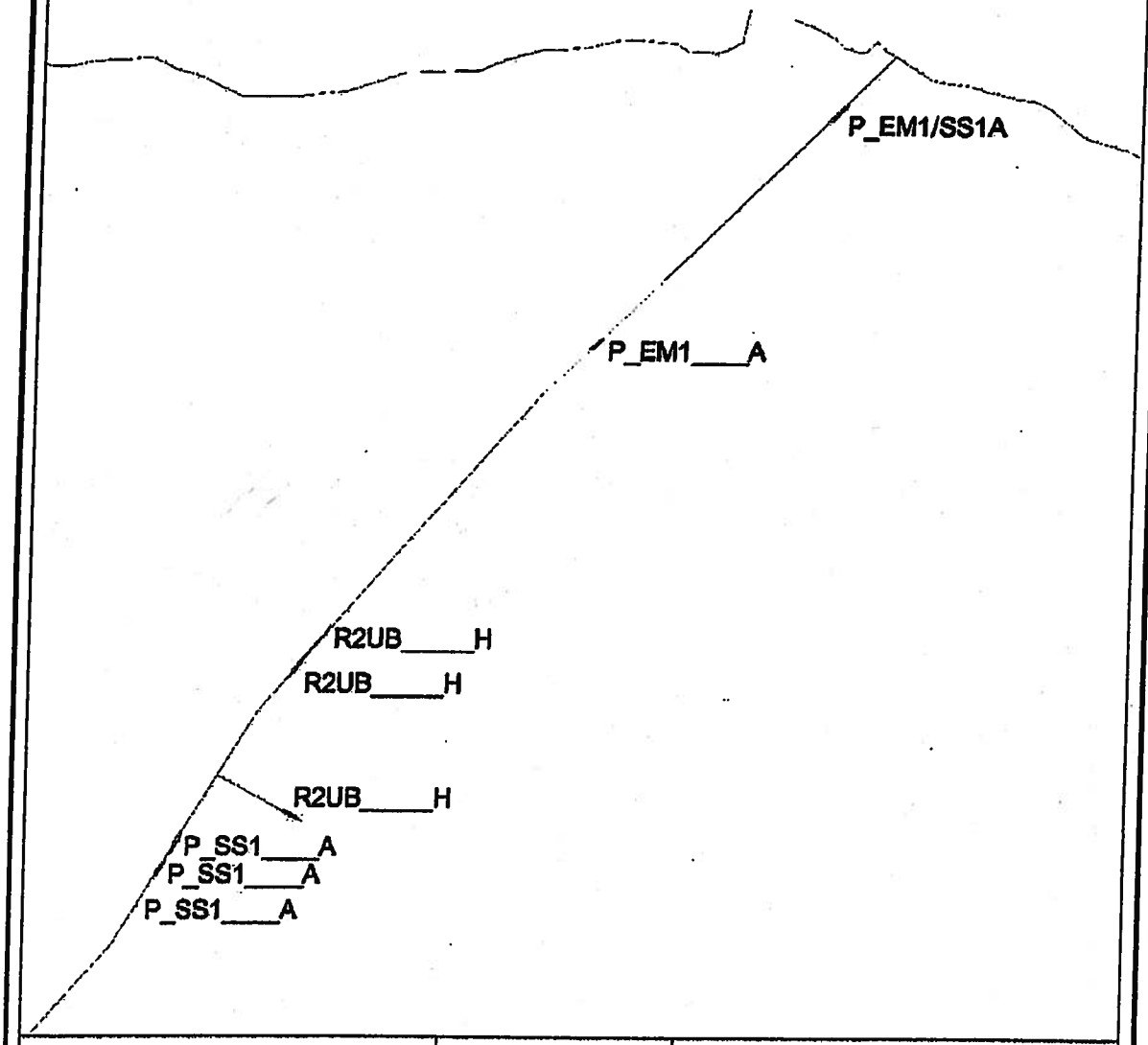
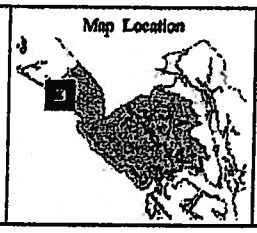
Dry Bay Wetlands Restoration





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 5

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