

National Park Service
U.S. Department of the Interior

Wrangell-St. Elias National Park and Preserve
Alaska



Finding of No Significant Impact

Twin Lakes Campground Improvements

November 2005

Recommended: Vicki Smifler for Ted Davis 11/24/05
Superintendent, Wrangell-St. Elias National Park and Preserve Date

Approved: Marcia Blaszyk 12/21/05
Regional Director, Alaska Date

FINDING OF NO SIGNIFICANT IMPACT

Twin Lakes Campground Improvements

Wrangell-St. Elias National Park and Preserve, Alaska

April 2005

The National Park Service (NPS) prepared an environmental assessment (EA) on campground improvements for the Twin Lakes Campground at mile 27.8 Nabesna Road in Wrangell-St. Elias National Park and Preserve (WRST). NPS would develop 12 to 14 new campsites and restore the existing degraded campsites to a natural vegetated condition. Each campsite would have a parking spur, tent pad, table, fire grate, and campsite identification sign. The campground road would be widened and improved for one-way traffic on a new alignment to improve maneuvering and access to campsites. Other facility development and amenities would include a new vault toilet, drinking water well, bear-resistant food storage, open-air pavilion, small amphitheater, rustic canoe launch, elevated observation deck, elevated boardwalk, and day-use area with parking.

The NPS has selected Alternative C (NPS preferred alternative) with mitigation measures. The alternative was not modified during the public comment period.

No changes were made to the EA and three written comments were received during the public comment period. While the campground site and surrounding region are a mosaic of wetlands, none of the public comments received expressed concerns with project impacts on wetlands.

ALTERNATIVES

Three alternatives were evaluated in the EA.

Alternative A (No Action Alternative)

Under Alternative A (No Action), the NPS would not rehabilitate or expand the Twin Lakes Campground. The existing campground would remain in its current condition.

Alternative B (Minimal Action)

Under Alternative B, the NPS proposes to develop 10 to 12 RV campsites utilizing the existing campsites and disturbed areas of the campground. Each campsite would include a parking spur, tent pad, table, fire grate, and campsite identification sign. The existing campground road would be widened and improved for two-way traffic using the existing alignment. Facility development and amenities would include a new vault toilet, water well, bear-resistant food storage, open-air pavilion, rustic canoe launch, observation deck, and picnicking/day-use area. Existing social trails not required for use would be revegetated to discourage continued use.

The improved campground road would be designed for two-way traffic with turnaround loops at the far end of the road and in the day-use area. The road would be 24 feet wide, not including

shoulder and ditch profile, and between 1,400 and 1,500 feet long. All turning radii would be designed to allow for RVs up to 40 feet in length or vehicles pulling large trailer campers. The existing entrance to the campground would be utilized. A campground sign and kiosk would be installed at the entrance orientating visitors with a map of the campground, instructions for selecting a campsite, bear safety rules, and other helpful information.

Ten to 12 RV campsites would be constructed within the approximate footprint of the existing campsites and disturbed areas and would include the following:

- Parking spur measuring approximately 16 by 50 feet for a single vehicle and defined by timber edging slightly raised above the parking surface grade.
- Table and fire grate.
- Tent pad measuring approximately 12 by 16 feet. The pads would be leveled and defined by timbers with a soft compacted fill material. Any existing trees to remain would be root pruned to improve potential for survival. Where topography allows, one or more edges may be raised to seating height to promote universal accessibility.
- Bear-resistant food storage (one per campsite).

Alternative C (Preferred Alternative and Environmentally Preferred Alternative)

Under Alternative C (Preferred Alternative), the NPS proposes to develop 12 to 14 RV campsites and restore the existing campsites and disturbed areas to a natural condition. Figure 2-3 of the EA shows the proposed conceptual layout of the campground. Each campsite would include a parking spur, tent pad, table, fire grate, and campsite identification sign. The campground road would be widened and improved for one-way traffic using a new alignment to improve maneuvering and access to the campsites and other amenities. Facility development and amenities would include a new vault toilet, water well, bear-resistant food storage, open-air pavilion, rustic canoe launch, observation deck, elevated boardwalk, picnicking/day-use/group camping area, and day-use parking. Existing social trails not required for use would be revegetated to discourage continued use.

The improved campground road would be realigned further from the lakeshore and surfaced with gravel to minimize erosion and runoff to the lake. The road would be a one-way loop 14 feet wide and 1,850 to 2,000 feet long. All turning radii would be designed to allow for RVs up to 40 feet in length or vehicles pulling large trailer campers. The existing unimproved campground road is severely eroded and entrenched and would be restored to a natural landform and revegetated with native species. The new entrance to the campground would be aligned to improve maneuvering and sight distance for two-way traffic. A campground sign and kiosk would be installed at the entrance orientating visitors with a map of the campground, instructions for selecting a campsite, bear safety rules, and other helpful information.

Twelve to 14 new RV campsites would be constructed along the campground road and would include the same features as described under Alternative B. Existing campsites along the lakeshore would be closed and restored to a natural landform to facilitate revegetation with native species.

PUBLIC INVOLVEMENT

The EA was released for public review and comment from February 21 to March 22, 2005 on the NPS Planning, Environment, and Public Comment (PEPC) public website. The park issued a press release announcing the availability of the EA and the public comment period on February 16, 2005. The news release was aired by radio stations in Valdez and Glennallen, Alaska, during the public comment period. The park environmental coordinator participated in an interview on the project with Alaska National Public Radio that was aired live statewide on March 8, 2005. Copies of the EA were mailed to the Cheesh-na Tribal Council, Tanacross Village Council, and Mount Sanford Tribal Consortium. The EA was also sent by email to the Alaska Department of Natural Resources for coordinated review by the State of Alaska.

The proposed action would affect wetlands. Written notification of EA availability on the PEPC public website was provided to the reviewing agencies specified in the NPS procedural manual for wetland protection including the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Natural Resources Conservation Service, and the U.S. Geological Survey. The U.S. Army Corps of Engineers has provided authorization for the NPS to implement the proposed action pursuant to a Nationwide Permit and associated conditions applicable to discharge of fill material to the waters of the United States.

A public meeting was held by NPS at the Slana Ranger Station during the public comment period on March 18, 2005. Five local residents attended this meeting. Inquiry was made regarding the planned campground amenities; proposed construction schedule; local job opportunities at the campground; and local contracting opportunities during construction. In general, participants were pleased to hear that the campground road would be improved.

A public open house was held by NPS at the Slana Ranger Station on June 2, 2004 to present information on upcoming projects for the Nabesna District, including the Twin Lakes Campground Improvements. Ten local residents attended the public open house; none had any comments on the project beyond general inquiry seeking information on the scope of the proposed campground improvements. All of the individuals attending the open house were informed that the NPS would be releasing for public review and comment an EA on the proposed campground improvements.

Written comments were received from the State of Alaska, ANILCA Implementation Program (see errata for comments and NPS responses).

Two online comments using the PEPC public website were provided by the National Parks and Conservation Association, and one individual. Both parties expressed their support of the NPS proposed action, and did not require a formal NPS response.

None of the comments received expressed concerns regarding the impacts of the proposed action on wetlands. No other comments were received from any government agency, tribal entity, interest group, or individual.

The NPS believes that the conclusions in the EA regarding the environmental effects of the proposed action support its decision to issue this finding of no significant impact.

DECISION

The NPS decision is to select Alternative C (NPS Preferred Alternative and Environmentally Preferred Alternative) along with the mitigating measures. No modifications of Alternative were made during or after the public comment period.

Mitigating Measures

The following mitigation measures apply to Alternative C.

Topic	Mitigation Measures
Soils & Water Quality	<ul style="list-style-type: none">• Fill material for the canoe launch will consist of rock fill free from fines and suspendible material.• The improved campground road would be realigned further from the lakeshore and surfaced with gravel to minimize erosion and runoff to the lake.• The NPS would develop a Storm Water Pollution Prevention Plan to control overland flow and reduce the potential for sedimentation from the construction site as required by the Alaska DEC NPDES Storm Water General Permit for Large and Small Construction Activities.• Pursuant to Section 401 of the CWA, the NPS would obtain State water quality certification from ADEC.• Twin Lakes would be monitored for turbidity levels during and post construction to ensure water quality standards are met.• Measures would be taken to prevent or control accidental spills of fuels, lubricants, and chemicals from entering waterways and wetlands. Specifically, no fuels would be stored at the construction site, refueling would occur away from waterways and wetlands, and an emergency spill kit, containing absorption pads, absorbent material, a shovel or rake, and other cleanup items, would be readily available on-site in the event of an accidental spill.• Construction equipment would be staged on Nabesna Road, to minimize soil compaction.• Construction materials would be stockpiled within the Nabesna Road right-of-way, away from lakes• Construction would not be conducted when soils are saturated, such as during or immediately following rain events.
Aquatic Resources	<ul style="list-style-type: none">• Trees removed for construction would be placed in Twin Lakes along the shoreline to provide large woody debris for aquatic habitat.• Firewood harvest would not be allowed within 300 feet of the Twin Lakes shoreline.• Construction would occur outside the Arctic grayling spawning period in spring before June 15.
Vegetation	<ul style="list-style-type: none">• The existing unimproved campground road is severely eroded and entrenched and would be restored to a natural landform to facilitate revegetation with native species.• The project site would be surveyed by a park botanist prior to design for the presence of rare plant species as designated by the Alaska Natural Heritage Program. Where practicable, all efforts will be taken to mitigate effects on rare plants by impact avoidance.• All disturbed areas would be restored to a natural landform to facilitate revegetation by native plant species. Any storage of the vegetation mat would be limited to the minimum amount of time necessary to prevent loss of seed and root viability, loss of organic matter, and degradation of soil microbial activity.

Topic	Mitigation Measures
Cultural Resources	<ul style="list-style-type: none"> • Interpretive materials/exhibits at the campground site will include information about historic use of the site (e.g., as a spring fish camp) by an Upper Ahtna family. In preparing these materials, park staff will work in consultation with interested descendants of Daisy Nicolai, whose family lived and engaged in subsistence activities in the Twin Lakes and Jack Lake area during much of the 20th century. • Section 106 of the National Historic Preservation Act (16 USC 470) as amended and its regulations (36 CFR 800) shall be implemented to identify, evaluate and assess affect to historic properties that may be present in the project area. A reconnaissance level field survey shall be conducted using sub-surface testing within the campground development footprint. This survey will take place in advance of deployment of construction equipment and construction crew. • If previously unidentified archaeological features are encountered during construction, work shall cease immediately and the park superintendent shall be notified to ensure protection of cultural resources. • If human remains are inadvertently discovered during the course of this project, all activities in the area of the inadvertent discovery shall cease immediately, a reasonable effort will be made to protect the human remains, funerary objects, sacred objects, and/or objects of cultural patrimony. An immediate telephone notification of the inadvertent discovery along with written confirmation shall be provided to the superintendent. The superintendent shall follow notification guidelines and procedures as outlined in the statute, Native American Graves Protection and Repatriation Act (25 USC 3002) and its regulations (43 CFR 10).
Wetlands	<ul style="list-style-type: none"> • The NPS will acquire Department of the Army permit authorization under Section 404 of the CWA because the project requires placement of fill material into the waters of the U.S., including wetlands. Permit authorization will require compliance with applicable regional and special conditions. • Project limits will be clearly identified at the project site by methods such as flagging and staking prior to surface disturbance and site construction to ensure avoidance of impacts to waters of the U.S., including wetlands, beyond the limits of construction. • Wetland impacts would be mitigated under the Preferred Alternative by restoration of natural landforms to facilitate natural revegetation on 0.27 of wetlands. • Heavy equipment used in wetlands that are to remain or be restored would be placed on mats to minimize soil and vegetation disturbance. • Construction materials would not be stockpiled on wetlands, but within the Nabesna Road right-of-way.
Wildlife and Visitor Safety	<ul style="list-style-type: none"> • A bear resistant food storage cache would be installed at each campsite to prevent human-bear conflicts. • Bear safety instructions would be posted at the campground kiosk.

Rationale for the Decision

Alternative C (Preferred Alternative and Environmentally Preferred Alternative) will satisfy the purpose and need of the project better than the other two alternatives. Of the three alternatives analyzed, Alternative C best addresses the need for the development of a small primitive campground identified in the WRST General Management Plan for the upper segment of Nabesna Road. The purpose of the action is to: improve existing campground facilities; expand the number of campsites; accommodate both tent camping and recreational vehicles; and protect the aquatic resources of Twin Lakes.

Significance Criteria

The preferred alternative does not conflict with any of the following significance criteria (40 CFR Section 1508.27). Therefore, the preferred alternative will not have a significant effect on the human environment.

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. The EA evaluated the effects of the preferred alternative on soils, aquatic resources, surface water quality, wetlands,

vegetation, wildlife, visitor use and recreation, visitor safety, land use, and subsistence resources. The short-term impacts would be adverse. The maximum extent and intensity of short-term adverse impacts on any of these features would be moderate and localized adverse impacts on soils. The long-term impacts would be both beneficial and adverse. The maximum extent and intensity of long-term beneficial impacts on any of these features would be moderate and localized beneficial impacts on aquatic resources, surface water quality, wildlife (reduced human-bear conflict potential), visitor use and recreation, visitor safety, and land use. The maximum extent and intensity of long-term adverse impacts on any of these features would be minor and localized adverse impacts on wetlands, vegetation, and wildlife (habitat loss). There would be no significant restriction of subsistence uses.

(2) *The degree to which the proposed action affects public health or safety.* The proposed action would not have adverse effects on public health or safety. There would be long-term beneficial impacts to visitor safety from campground road improvements and reduced potential for human-bear conflicts.

(3) *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.* Known unique characteristics are wetlands. There would be long-term, minor adverse localized impacts to wetlands that would be offset by restoration and revegetation with native species. A wetland statement of findings (SOF) was prepared and attached to the EA for review during the 30-day public comment period. NPS Water Resources Division (WRD) staff internal review comments and consultation regarding the SOF indicate that there are no WRD concerns regarding the NPS preferred alternative. However, a revised SOF with additional mapped and descriptive information was prepared and is attached to this FONSI for WRD signature. Given that no individual, agency, or organization provided comments concerning wetland impacts at public meetings or during the public comment period, WRD is not recommending an additional public comment period for the revised SOF.

(4) *The degree to which effects on the quality of the human environment are likely to be highly controversial.* The effects on the quality of the human environment are not likely to be highly controversial. Public comments received during the 30-day public comment period did not indicate that a high level of controversy exists. A total of three public comments were received on the EA.

(5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.* The degree or possibility that the effects on the human environment would be highly uncertain or would involve unique or unknown risks is extremely remote.

(6) *The degree to which the action may establish a precedent of future actions with significant effects or represents a decision in principle about a future consideration.* The degree or possibility that the action may establish a precedent of future actions with significant effects or represents a decision in principle about future considerations is extremely remote.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts. The action would provide the public with an improved facility for primitive camping. The action is not related to other actions of individual insignificance that would amount to cumulatively significant impacts on the environment.

(8) Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. There are no features in the project area listed in the National Register of Historic Places. There are no known features in the project area eligible for listing in the National Register of Historic Places. The degree or possibility that the action may cause loss or destruction of known scientific, cultural, or historic resources is extremely remote.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973. Threatened or endangered species, and their critical habitat, were eliminated from further consideration in the EA because they are not known to be present in the project area.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The action would not cause a violation of any Federal, State, or local law or requirements for environmental protection.

FINDINGS

The levels of adverse impacts to park resources anticipated from the selected alternative will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the natural or cultural integrity of the park.

The selected alternative complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 11988 and 11990 for floodplains and wetlands. There will be no restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

The NPS has determined that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

Errata

March 24, 2005

NPS RESPONSE TO PUBLIC COMMENTS

A 30-day public comment period was provided for the EA from February 21 to March 22, 2005. One comment letter was received from the State of Alaska ANILCA Implementation Program on March 18, 2005.

The paraphrased comments and the NPS responses follow. Substantive comments are those that modify the existing alternatives, propose new alternatives not previously considered, supplement, improve, or modify the impact analysis, or make factual corrections. These comments did not change the EA conclusions about the effects of the proposed action or other alternatives.

Comment No. 1: Expansion and improvement of the Twin Lakes Campground has the potential to increase fishing pressure at Twin Lakes and Jack Lake. Angling effort at Twin Lakes and Jack Lake is currently low due to limited access. With improved facilities and access, however, it is likely that angling effort will increase. Several species at Twin Lakes and Jack Lake, such as Lake trout and burbot, are susceptible to fishing pressure. The decision document should consider that such increased pressure would likely lead the Alaska Department of Fish and Game and the Board of Fisheries to revise the regulations for those species to reduce take.

Response No. 1: *The National Park Service is supportive of revising the sport fishing regulations to reduce the take for fish species by the Alaska Department of Fish and Game, and the Alaska Board of Fisheries in the event that sport fish harvest increases above levels acceptable for sustaining natural and healthy populations of fish. We would suggest that consideration be given to including Arctic grayling in any revision of the sport fishing regulations governing Twin Lakes and Jack Lake that would reduce the take of native sport fish species. We are confident that with the support of the Alaska Department of Fish and Game, the Alaska Board of Fisheries possesses the necessary tools to successfully promulgate appropriate sport fishing regulations.*

Comment No. 2: Page 1-6, Subsistence Resources.

This section presents some information about occupancy and past use of the Twin Lakes – Jack Lake area for subsistence uses by one local family, but defers discussion of current subsistence uses to the ANILCA Section 810 Analysis. The presentation is confusing, as it mixes a discussion of current occupancy of the campground with a description of past uses of the area. It also states that because ANILCA provides for the continued opportunity for local rural residents to conduct subsistence activities in the park and preserve, the proposed action “should have no adverse impacts on the site as an ethnographic resource.” We cannot ascertain what constitutes an “ethnographic resource” in this context and what its connection might be to subsistence uses. The second paragraph further confuses the discussion by noting that rehabilitation and expansion of the campground is said to be a potential restriction to subsistence activities, which contradicts the conclusion made later in the Section 810 analysis. We request the Service revise the documentation to clarify these points.

Response No. 2: *We apologize for the lack of clarity. The information you noted about occupancy and use of the Twin Lakes – Jack Lake area is misplaced in the public draft environmental assessment. The same information also appears with subsistence resources in section 3.4 of the affected environment chapter on page 3-7. It would have been more appropriate to have presented this information as a separate topic of discussion in the public draft environmental assessment.*

Comment No. 3: Appendix A, ANILCA Section 810(a) Summary Evaluation and Findings. The Section 810 analysis of subsistence uses and potential is weak, appears to be contradictory, and does not make a convincing case that subsistence uses will not be impacted. We request the Service revise the Section 810 analysis to properly reflect subsistence impacts.

Contemporary subsistence activities in the vicinity of the Twin Lakes campground are described in general terms on pages A-5 and A-6, with no distinction between activities occurring in the park (open only to local rural residents in the park resident zone under the federal subsistence regulations) and in the preserve (open to harvest under the state regulations). The analysis on page A-7 indicates that increased public use of the existing campground led the local family that had traditionally used the area for subsistence purposes to stop using that area. It is unclear if the family stopped using only the campground site or the surrounding area as well. However, the Service states that a project that will improve and expand the campground, which presumably will attract visitors in the summer and hunters in the fall, is not expected to increase competition for subsistence resources. This assertion seems to contradict what the local family already has experienced. The analysis does correctly acknowledge that completing construction activities outside of the hunting season could minimize impacts to subsistence hunting. However, nothing is said about the potential for increasing public use of the improved and expanded campground facilities during the fall hunting season, which could increase competition in the preserve and impact local subsistence users. The analysis should address this issue.

Response No. 3: *Thank you for bringing this to our attention. After careful review, the NPS stands by its finding that the proposed action would not result in a significant restriction of subsistence uses regardless of the family's choice to stop using the area for subsistence, or the potential for increased public use of the campground during the fall hunting season. As stated in the ANILCA Section 810(a) Summary Evaluation and Findings: the action alternatives are not expected to significantly alter wildlife movements or reduce populations of important subsistence resources; subsistence access is not restricted at the campground now, nor will it be in the future; and competition for wildlife or other resources is not expected to significantly impact subsistence users as a result of the proposed action. Finally, the campground site is used annually to host subsistence day camps for local youth, and this use will continue in future years.*

**STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)
Twin Lakes Campground Rehabilitation and Expansion
Wrangell-St. Elias National Park and Preserve**

RECOMMENDED:

Vicki Sniffler for Ted Davis
SUPERINTENDENT, WRANGELL-ST. ELIAS NATIONAL PARK AND PRESERVE

DATE: 11/29/05

CERTIFIED FOR TECHNICAL ADEQUACY AND SERVICEWIDE CONSISTENCY:

Mark O'Shea BY DIRECTION FOR
CHIEF, NPS WATER RESOURCES DIVISION
Bill Jackson 12/6/05

DATE:

APPROVED:

Marcia Blaszyk
REGIONAL DIRECTOR

DATE: 12/21/05

**STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)
Twin Lakes Campground Rehabilitation and Expansion
Wrangell-St. Elias National Park and Preserve**

INTRODUCTION

Wrangell-St. Elias National Park (WRST) and Preserve was established by the Alaska National Interest and Lands Conservation Act (ANILCA) on December 2, 1980. Section 201(9) of ANILCA states that WRST will be managed "to maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, lakes and streams, valleys, and coastal landscapes in their natural state; to protect habitat for, and populations of, fish and wildlife including but not limited to caribou, brown/grizzly bears, Dall's sheep, moose, wolves, trumpeter swans and other waterfowl, and marine mammals; to provide continued opportunities, including reasonable access for mountain climbing, mountaineering, and other wilderness recreational activities. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional, in accordance with the provisions of title VIII". WRST is the largest unit of the national park system. The Wrangell-St. Elias Wilderness is the largest unit of the national wilderness preservation system.

The proposed action under consideration by the National Park Service (NPS) is rehabilitation and expansion of the existing Twin Lakes campground located at mile 27.8 on Nabesna Road in WRST. The NPS Preferred Alternative would develop 12 to 14 new campsites and restore existing use areas to a natural vegetated landform. Each campsite would include a parking spur, tent pad, table, fire grate, and campsite identification sign. The campground road would be widened and improved for one-way traffic using a new alignment to improve maneuvering and access to the campsites and other amenities. The existing campground road is severely eroded and entrenched and would be restored to a natural landform and revegetated. Facility development and amenities would include a new vault toilet, water well, bear-resistant food storage, open-air pavilion, small amphitheater, rustic canoe launch, elevated observation deck, elevated boardwalk, and day-use area and parking. Existing social trails not required for use would be revegetated to discourage continued use.

The purpose of the action is to: (1) improve campground facilities to enhance the recreational experience of the visiting public; (2) expand the number of campsites to meet current and projected demands; (3) develop facilities to accommodate tent camping and recreational vehicles (RVs); and (4) protect the aquatic resources of Twin Lakes.

The need for the action is that the existing campground site has become considerably degraded from increased use, resulting in adverse impacts to natural resources and visitor experience. The eight existing undeveloped campsites are primarily located along the lakeshore, causing trampling of shoreline vegetation and shoreline erosion. The existing campground road is unsurfaced and has become deeply entrenched, channelizing storm water runoff to the lake. Continued erosion threatens the water quality and aquatic resources of Twin Lakes from

increased sediment runoff. The degraded facilities and shoreline diminish the camping experience of the visitor.

The General Management Plan (GMP) for WRST (1986) states "A campground between mile 25 and the end of Nabesna Road will provide a central location for the hikers, hunters, and other recreationists using the Slana-Nabesna area of the park/preserve...the Park Service will develop a small primitive campground and information/orientation wayside in the area." The NPS Preferred Alternative is fully consistent with the type of campground envisioned by the GMP within the Slana-Nabesna area.

As required by the National Environmental Policy Act, the National Park Service (NPS) prepared an environmental assessment for the project which will be made available for public review and comment. The environmental assessment documented the alternatives and associated environmental impacts. The alternatives are:

1. Alternative A: No Action
2. Alternative B: Minimal Action
3. Alternative C: Road Day Use (Preferred Alternative)

ALTERNATIVE A: NO ACTION ALTERNATIVE

CEQ regulations (40 CFR 1502.14) require the assessment of the No Action alternative in NEPA documents. The No Action alternative provides a baseline against which to measure the impacts of the other proposed alternatives.

Under Alternative A (No Action), the NPS would not rehabilitate or expand the Twin Lakes Campground. The existing campground would remain in its current condition as shown in Figure 2-1 of the EA.

ALTERNATIVE B: MINIMAL ACTION

Under Alternative B, the NPS proposes to develop 10 to 12 RV campsites utilizing the existing campsites and disturbed areas of the campground. Figure 2-2 of the EA shows the proposed conceptual layout of the campground. Each campsite would include a parking spur, tent pad, table, fire grate, and campsite identification sign. The existing campground road would be widened and improved for two-way traffic using the existing alignment. Facility development and amenities would include a new vault toilet, water well, bear-resistant food storage, open-air pavilion, rustic canoe launch, observation deck, and picnicking/day-use area. Existing social trails not required for use would be revegetated to discourage continued use.

The improved campground road would be designed for two-way traffic with turnaround loops at the far end of the road and in the day-use area. The road would be 24 feet wide, not including shoulder and ditch profile, and between 1,400 and 1,500 feet long. All turning radii would be designed to allow for RVs up to 40 feet in length or vehicles pulling large trailer campers. The

existing entrance to the campground would be utilized. A campground sign and kiosk would be installed at the entrance orientating visitors with a map of the campground, instructions for selecting a campsite, bear safety rules, and other helpful information.

Ten to 12 RV campsites would be constructed within the approximate footprint of the existing campsites and disturbed areas and would include the following:

- Parking spur measuring approximately 16 by 50 feet for a single vehicle and defined by timber edging slightly raised above the parking surface grade.
- Table and fire grate.
- Tent pad measuring approximately 12 by 16 feet. The pads would be leveled and defined by timbers with a soft compacted fill material. Any existing trees to remain would be root pruned to improve potential for survival. Where topography allows, one or more edges may be raised to seating height to promote universal accessibility.
- Bear-resistant food storage (one per campsite).

Currently, one single vault toilet serves the campground. An additional double vault toilet would be installed to accommodate the additional campers. The new unit combined with the existing unit would serve approximately 15 campsites with a seat ratio of 1 per 12 persons, which meets the standards for day program campgrounds specified by American Camping Association (ACA) Standard A-13. A water well would be drilled to provide potable water. The well would conform to all Alaska DEC requirements, including a 200-foot radius separation from the vault toilets.

An observation deck measuring approximately 500 to 1,000 square feet would be constructed and elevated to afford better views and to minimize shoreline erosion and impacts to wetland vegetation. Interpretive signs would be installed on the observation deck describing the types of wildlife habitat and species found at the lake and surrounding area. To minimize impacts during construction, some portions of the observation deck could be of a modular design to allow for offsite assemblage.

A rustic canoe launch would be developed in proximity to the observation deck. The launch would be constructed to minimize erosion, provide long-term, low maintenance access, and conform to the design standards suggested by the non-profit organization, States Organizations for Boat Access.

The picnicking/day use area would be located near the campground entrance in an existing open area. Trees would buffer the day use area from a grass airstrip that runs parallel to Nabesna Road. A centralized food preparation and storage structure would be installed to minimize bear attractants. A foot trail approximately 1,000 to 1,200 feet long would be developed connecting the day use area to the observation deck.

During expansion and rehabilitation of the campground, the campground would be closed to public use. The period of closure would be minimized to one temperate season from early June to late August. Campground site development would disturb approximately 5 to 10 acres. Every effort would be made to preserve or conserve existing vegetation. If damage or destruction to

vegetation is unavoidable, then mitigation in the form of root pruning/feeding, transplanting, or importation of native plants would be included.

Specific information on campground facility maintenance operations and logistics are as follows.

Litter control and trash collection. NPS or contracted employees would conduct trash collection and litter control. Bear-resistant trash receptacles would be used. Collected trash would be transported to a landfill in Glennallen.

Maintenance of vault toilets. Pumping of vault toilets by a vacuum truck would occur in the fall season. Pumped waste would be transported for disposal and treatment in sewage lagoons in Glennallen. The waste lagoons have Alaska DEC approval.

Inspection of food storage and preparation area. Regular inspections and cleaning of food storage and preparation facilities would be performed by NPS or contractors to minimize the occurrence and availability of unsecured bear attractants.

Operation and maintenance of well and drinking water treatment. Water treatment operations would be performed by an NPS or contracted employee having the requisite Alaska DEC certification for drinking water system treatment and management. The water would be either chlorinated or iodinated. Water well and treatment operations would be evaluated by a certified individual daily and process adjustments would be made as needed. Other tests would be prescribed and conducted as recommended by U.S. Public Health Service (USPHS) recommendations. USPHS consultants to the NPS would conduct either annual or biannual inspections of the well and treatment systems.

Cost of construction for Alternative B is estimated at \$700,000 to \$900,000, including site preparation, earthwork, water service, storm sewer, concrete paving, site amenities, structures, landscaping, site administration, and contingencies. Annual operation and maintenance costs are estimated to be approximately \$30,000 (Tipton, 2004).

ALTERNATIVE C: PREFERRED ALTERNATIVE AND ENVIRONMENTALLY PREFERRED ALTERNATIVE

Under Alternative C (Preferred Alternative), the NPS proposes to develop 12 to 14 RV campsites and restore the existing campsites and disturbed areas to a natural condition. Figure 1 of this statement of findings shows the limit of construction, existing use areas and road, and proposed construction and new road for the campground. Each campsite would include a parking spur, tent pad, table, fire grate, and campsite identification sign. The new campground road would be widened and improved for one-way traffic using a new alignment to improve maneuvering and access to the campsites and other amenities. Facility development and amenities would include a new vault toilet; water well; bear-resistant food storage; open-air pavilion; rustic canoe launch; observation deck; elevated boardwalk; picnicking, day-use, and group camping area, and day-use parking.

The improved campground road would be realigned further from the lakeshore and surfaced with gravel to minimize erosion and runoff to the lake. The road would be a one-way loop 14 feet wide and 1,850 to 2,000 feet long. All turning radii would be designed to allow for RVs up to 40 feet in length or vehicles pulling large trailer campers. The existing unimproved campground road is severely eroded and entrenched and would be restored to a natural landform and revegetated with native species. The new entrance to the campground would be aligned to improve maneuvering and sight distance for two-way traffic. A campground sign and kiosk would be installed at the entrance orientating visitors with a map of the campground, instructions for selecting a campsite, bear safety rules, and other helpful information.

Twelve to 14 new RV campsites would be constructed along the campground road and would include the same features as described under Alternative B. Existing campsites along the lakeshore would be closed and restored to a natural landform to allow natural revegetation.

Currently, one single vault toilet serves the campground. An additional double vault toilet would be installed to accommodate the additional campers. The new toilet combined with the existing unit would serve approximately 15 campsites with a seat ratio of 1 per 12 persons, which meets the standards for day program campgrounds specified by ACA Standard A-13. A water well would be drilled to provide potable water. The well would conform to all Alaska DEC requirements including a 200-foot radius separation from the vault toilets.

An observation deck measuring approximately 5,000 to 5,500 square feet would be constructed on the lakeshore at a location that provides undeveloped views of the lake. The platform would be elevated to afford better views and to minimize shoreline erosion and impacts to wetland vegetation. Interpretive signs would be installed on the observation deck describing the types of wildlife habitat and species found at the lake and surrounding area. An elevated boardwalk would be constructed connecting the observation deck to the canoe launch. The alignment proposed for the boardwalk is an existing social trail that is not vegetated. Elevating the boardwalk would allow vegetation to reestablish. To minimize impacts during construction, some portions of the observation deck and boardwalk could be of a modular design to allow for offsite assemblage. A small amphitheater would be constructed in proximity to the observation deck and would be accessible from the boardwalk. It would provide seating for approximately 25 people and would serve as a meeting area for formal evening "campfire talks" by Park Rangers and for other educational purposes.

A rustic canoe launch with parking for two vehicles would be provided for easy access to the lake. The launch would be constructed to minimize erosion, provide long-term, low maintenance access, and conform to the design standards suggested by the non-profit organization, States Organizations for Boat Access. Fill material for the canoe launch will consist of rock fill free from fines and suspendible material.

The day use area would be located to the southeast of the campground entrance in an existing open area comprising approximately 0.5 acres. Trees would buffer the day use area from a grass airstrip that runs parallel to Nabesna Road. An open-air pavilion would be constructed to provide shelter and tables for picnicking and other activities for up to 24 persons. The pavilion would be a pre-fabricated structure consistent with the roaded natural character of the area. A

centralized food preparation and storage structure would be installed to minimize bear attractants. Day use parking for 10 to 12 vehicles would be provided along the entrance road adjacent to the day use area. The day use area would also serve as a group camping area for tents only. A foot trail approximately 1,400 to 1,600 feet long would be developed connecting the day use area to the boardwalk, observation deck, or canoe launch.

During expansion and rehabilitation of the campground, the campground would be closed to public use. The period of closure would be minimized to one temperate season from early June to late August. Campground site development would disturb approximately 1.72 acres, and existing vegetation would be retained to the fullest extent possible to allow natural revegetation of site disturbance by native species.

Campground facility maintenance operations would be the same as those described under Alternative B.

Cost of construction for Alternative C is estimated between \$1.3 and \$1.5 million, including site preparation, earthwork, water service, storm sewer, concrete paving, site amenities, structures, landscaping, site administration, and contingencies. Annual operation and maintenance costs are estimated to be approximately \$30,000 (Tipton, 2004).

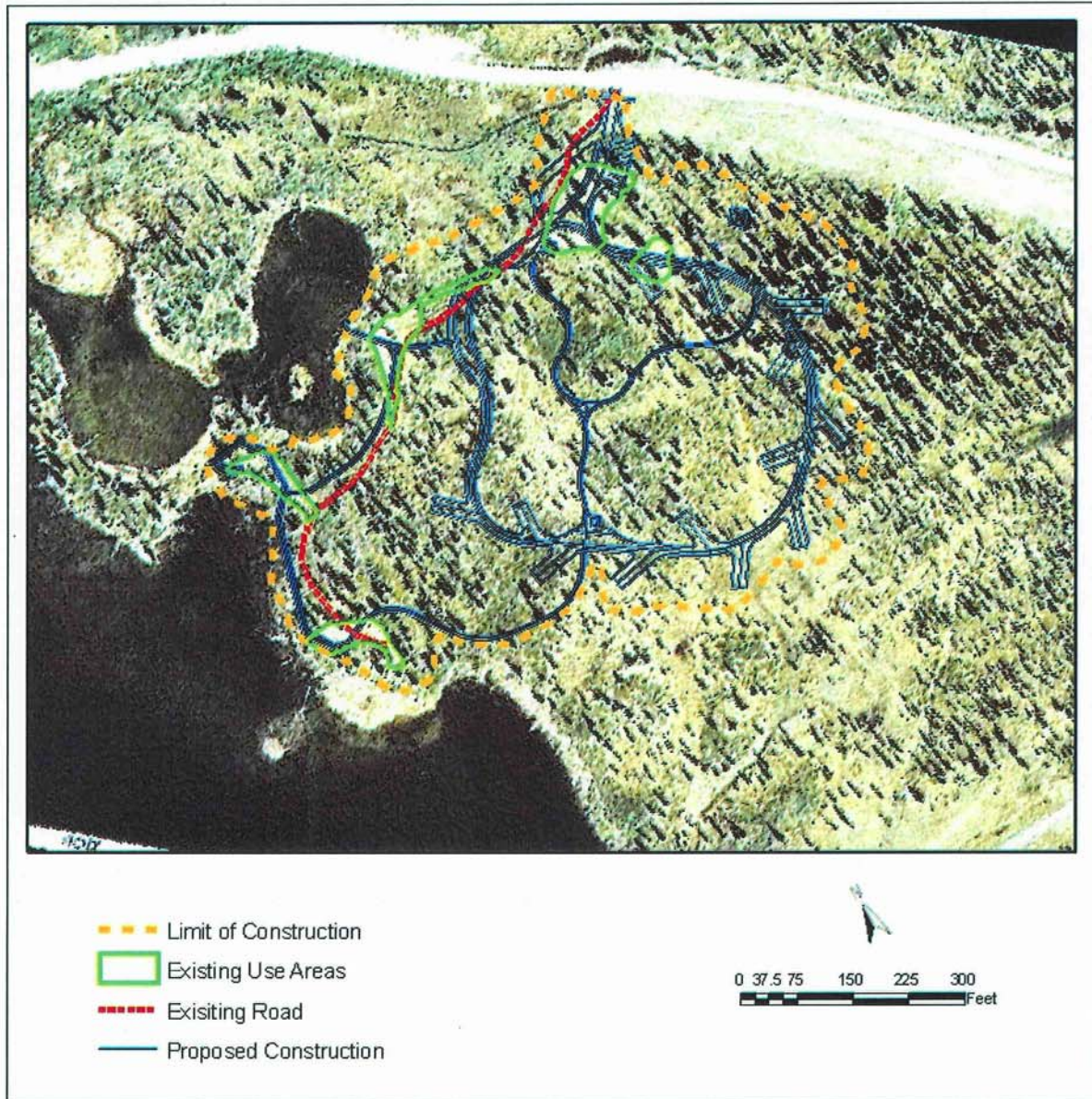


Figure 1. Twin Lakes Campground proposed improvements, limit of construction, existing road and campsites.

WETLANDS AFFECTED BY THE PROPOSED ACTION

Field work was conducted on August 4 and August 30, 2005, and in August 2004. Project boundaries were delineated; major vegetation types mapped on an infra-red aerial photograph (2004 series, frame 05-12, Figure 2); inventory of the plant species conducted; specimens of unknowns collected; photos taken of the proposed campground road and plant communities; and wetlands were delineated. The 27 points identified on the aerial photograph were surveyed using the Army Corp of Engineers routine wetland determination method for greater than five acres (U.S. Army Corp of Engineers 1987) and the National Park Service Procedural Manual #77-1 for Wetland Protection. Wetland determinations were made for each point, and vegetation boundaries refined. Vegetation, wetland and existing campsite polygons were digitized using ArcGIS and acreages estimated. An Autocad file prepared by NPS Alaska Regional Office staff was imported into ArcGIS to use for estimating the acreage of the project area and affected wetlands.

The limits of construction for the proposed improvements at the Twin Lakes campground encompass approximately 9.52 acres (Figure 1, Table 1). The project site classifies as wetland with exception to the existing use area nearest the entrance and the existing use area at the terminus of the existing road. Wetlands within the project site total 9.24 acres, of which 1.72 acres will be directly affected by proposed action development footprint for the road, campsites, trails, boardwalk, viewing platform, pavilion, well, outhouse, and day-use area.

Vegetation classification follows Viereck et. al. (1992). Wetland classification follows Cowardin et. al. (1979) and plant nomenclature primarily follows Hulten (1968), and Cody (1996). Data summaries, field notes, plant specimens and aerial photographs are on file at park headquarters.

The predominate vegetation types at the project site are: (1) open white spruce forest (2.00 acres); (2) white spruce woodland (5.76 acres); (3) open low mixed shrub-sedge tussock bog (1.21 acres); (4) subarctic lowland sedge wet meadow (0.14 acres), and (5) subarctic lowland sedge-moss bog meadow – fen (0.13 acres). Associated *wetland functions and values* of project site wetlands are *biotic* (wildlife habitat, biological productivity, species and habitat diversity); *hydrologic* (water quality and quantity); and *cultural* (aesthetics, recreation, interpretation).

Wildlife species of common occurrence in the Twin Lakes and surrounding vicinity are black bear, brown bear, wolf, lynx, waterfowl, and moose. Nabesna Road is a popular moose hunting area, and this is the major subsistence wildlife resource commonly found at the site of the proposed action. Other subsistence wildlife resources in the area include grizzly and black bear, furbearers, and waterfowl; during the 1970s, caribou were harvested in the area. The only fish species documented in Twin Lakes during the park's recent freshwater fish inventory was Arctic grayling. However, fish species found in other lakes and streams in the area include burbot, lake trout, whitefish, and slimy sculpin; these species could potentially occur in Twin Lakes as well. Currently, subsistence harvest of freshwater fish in Twin Lakes and nearby streams is relatively limited, but the lake historically provided a relatively productive fishery, with grayling being the most significant species. An Ahtna family maintained a residence in the Twin Lakes area beginning in the early to mid-20th century, and one member of that family still lives on a native

allotment in the area. Conversations with members of that family indicate subsistence harvest of grayling using fish traps. In addition to subsistence hunting and fishing, subsistence gathering includes blueberries and low-bush cranberries (also known as lingonberries) that are harvested in the late summer and fall.

Wetland Vegetation Types	Acres	Proportion of Site
Open White Spruce Forest	2.0	23%
White Spruce Woodland	5.76	61%
Open Low Mixed Shrub-Scrub Tussock	1.21	13%
Subarctic Lowland Sedge Wet Meadow	0.14	1.5%
Subarctic Lowland Sedge-Moss Bog Meadow-Fen	0.13	1.5%
Approximate Total Wetland Area	9.24	100%

White spruce woodland and open white spruce forest are palustrine forested wetlands that comprise a total of 7.76 acres. Open low mixed shrub-sedge tussock bog constitute a total of 1.21 acres of scrub-shrub wetland. There is 0.27 acre of emergent wetland (subarctic lowland sedge wet meadow and subarctic lowland sedge-moss bog meadow (fen).

National Wetland Inventory mapping does not exist for the Nabesna C5 quadrangle. Only 22 of the 100 USGS quadrangles for the park have wetlands inventories; consequently it is difficult to estimate the type of each of these wetlands in the park. However, the Land Cover Map of Wrangell St. Elias Park and Preserve (Pacific Meridian Resources, 1997) indicates that the forested and scrub-shrub wetland types are considered common in the park; these wetland types constitute 97 percent of the project site's predominant wetlands. Inventories of the park's flora conducted from 1994-1997 and 2003 indicate that fens and springs are uncommon in the park (Cook and Roland 2001, Cook et. al 2005); these are emergent wetlands that constitute 3 percent of the project site's predominate wetlands.

Open white spruce forest (Polygon 1, 2.19 acres, 2.00 acres wetland). Open white spruce forest (*Picea glauca*) occurs on the east side of the campground access road adjacent to the Nabesna Road. This is the southwest extent of the Lost and Trail Creek floodplain forests found to the east of Twin Lakes. Canopy cover ranges from 30% in the eastern portion of the polygon to 25% on the western section near the access road where the forest type approaches woodland. The dominant understory shrubs in the wetland delineation were mountain cranberry (*Vaccinium vitis-idaea*), crowberry (*Empetrum nigrum*), marsh labrador-tea (*Ledum palustre*) and bog blueberry (*Vaccinium uliginosum*). The dominant graminoid was Bigelow's sedge (*Carex bigelowi*). Based on vegetation, most of this polygon classifies as wetland since more than half of the dominant species are facultative (FAC), facultative wetland (FACW) or obligate (OBL) wetland species (Table 2). Standing water and ponding were found primarily at the southern edge of polygon 1 adjacent to polygon 5 (the fen), and in vehicular trails throughout polygon 1. The function of this wetland community is most likely as a holding source of run-off from Lost and Trail Creek floodplains since it is at the margin of the floodplain and the more saturated soils

surrounding Twin Lakes. Improvements proposed for this polygon include: day use parking, the well, the outhouse, a pavilion, the access road, four campsites and a foot trail (Figure 3).

White spruce woodland (Polygon 2, 5.85 acres, 5.76 acres wetland). White spruce woodland is the dominant vegetation type found at the project site. It extends south and east of the white spruce forest to the lake margin with less than 25% canopy cover throughout. The dominant vascular plant species in the wetland delineation were shrub birch (*Betula glandulosa*), marsh Labrador-tea, bog blueberry, crowberry, mountain cranberry, Bigelow's sedge, Altai fescue (*Festuca altaica*), arctic lupine (*Lupinus arcticus*) and Eskimo Potato (*Hedysarum alpinum*). Tussocks, primarily of tall cotton-grass, (*Eriophorum angustifolium*) occur throughout the polygon. Diamondleaf willow (*Salix pulchra*) and park willow (*Salix pseudomonticola*) are scattered throughout the woodland. In the lower lying areas, round sedge (*Carex rotundata*) and fewseeded bog sedge (*Carex microglochin*) are common. Adjacent to the lake, low blueberry willow (*Salix myrtillofolia*), Alaska bog willow (*Salix fuscescens*), polargrass (*Arctagrostis latifolia*), hair-like sedge (*Carex capillaris*) and chestnut rush (*Juncus castaneus*) are found. The campsite at the end of the existing road is on a raised, better drained hill than most of the rest of the polygon. The ground vegetation has been removed by use, but it does not appear to have been a wetland. Bebb willow (*Salix bebbiana*) is the dominant shrub at the campsite. Adjacent to the shore at this campsite the dominant shrubs are soapberry (*Shepherdia canadensis*) and kinnikinnick (*Arctostaphylos uva-ursi*). The hydrology throughout most of this polygon is characterized by the tussock forming vegetation, a saturated moss layer, ponding, and low lying drainage areas between the shrub birch covered hills. Proposed improvements in this polygon include the access road, viewing platform, boardwalk, foot trails and six campsites. All of the restoration to wetlands will occur within this polygon (along the existing road and two of the existing use areas).

Open low mixed shrub-sedge tussock bog (Polygon 3, 1.21 acres wetland). This community occurs in the central portion of the white spruce woodland. The dominant species in this polygon in the wetland delineation were shrub birch, marsh Labrador-tea, crowberry, tall cotton-grass, water sedge (*Carex aquatilis*) and narrowleaved saussurea (*Saussurea angustifolia*). Other species common throughout the community were park willow, bog rosemary (*Andromeda polifolia*), Lapland rosebay (*Rhododendron lapponicum*), shore sedge (*Carex limosa*), round sedge, Bigelow's sedge, and chestnut rush. The hydrology throughout this polygon is characterized by the tussock forming vegetation, a saturated moss layer and ponding. Improvements in this polygon include a small portion of the access road, three campsites and a portion of one foot trail.

Subarctic lowland sedge wet meadow (Polygon 4, 0.14 acre wetland). This polygon encompasses the spring which is on the west side of the entrance. There is a road culvert here and the spring flows through polygon 6 (an ericaceous shrub bog) and polygon 2 (white spruce woodland) into the lake. There is standing water at the entrance which extends to the east side of the entrance and has been there long enough for there to have developed a suite of wetland species. The dominant species in the wetland delineation were: littletree willow (*Salix arbusculoides*), low blueberry willow, water sedge, hair-like sedge (*Carex capillaris*), simple bog sedge (*Kobresia simpliciuscula*), Alaska bentgrass (*Agrostis alaskana*) and short-ray fleabane (*Erigeron lonchophyllus*). The entrance road is the only improvement in this polygon.

Subarctic lowland sedge-moss bog meadow-fen (Polygon 5, 0.13 acre wetland). This polygon occurs just south of the existing outhouse primarily on the west side of the access road, but a portion extends to the east side of the access road as well. Most of this community lies outside of the proposed improvements. Adjacent to the road on the west side of the access road but within the limits of construction, there is standing water up to 1.0 m. Water flows through this fen to the lake. The vegetation on the west side of the access road is dominated by water sedge, rock sedge (*Carex saxatilis*) and lesser panicled sedge (*Carex diandra*) with sphagnum moss in the areas that are not submerged. Dominant shrubs are Alaska bog willow, low blueberry willow and park willow. Scattered forbs occurring here are hairy butterwort (*Pinguicula villosa*) and marsh willowherb (*Epilobium palustre*). The polygon on the east side of the road is dominated by rock sedge, lesser panicled sedge, chestnut rush and marsh horsetail (*Equisetum palustre*). The drainage pattern here indicates that flow occurs across the road into the fen which then empties into the lake. Proposed improvements in this polygon include the access road and a small portion of a foot trail.

Existing use areas will be restored on the west side of the existing road and where the viewing platform is proposed. The existing road from where it departs the new proposed loop road to its terminus will also be restored. The restoration area will encompass 0.27 acre; thus the net amount of wetlands directly affected will be 1.45 acres. Existing use areas planned for restoration are shown on Figure 1 with tabulations in Table 1. Natural landforms will be restored in the existing use areas to enable natural revegetation with native plant species.

Based on NPS policies, requirements, and standards for wetland protection; color infrared photography of the campground flown on August 3, 2004; field observations; and documentation of vegetation at the project site, the preferred alternative has the potential to affect approximately 1.72 acres of wetlands. The 1.72 acres of directly impacted wetlands are estimated to be 90% palustrine forested wetlands, 7% scrub-shrub wetland, and 3% emergent wetland. The restored area (0.27 acre) will be in palustrine forested wetland. According to the Land Cover Map of Wrangell St. Elias Park and Preserve (Pacific Meridian Resources, 1997), the palustrine forested and scrub-shrub wetland communities are common within the park in the Nabesna District.

Certain elements of proposed facility development and amenities, on their own merit, may actually qualify as actions excepted from the Wetland Statement of Findings requirements described in National Park Service Procedural Manual #77-1: Wetland Protection (*Section 4.2 Excepted Actions*). Excepted elements of the proposed action alternative could include the elevated boardwalk, observation deck, and canoe launch that would be sited in palustrine forested wetland.

Vegetation Polygon #	Feature	Acres	Acres Wetland	Acres Restored
0	Restored road	0.059	0.059	0.059
0	Existing use area - 1st area by entrance	0.201	0.000	0
0	Existing use area - 2nd area by entrance	0.049	0.049	0
0	Existing use area - E shore of lake	0.131	0.131	0.131
0	Existing use area - viewing platform area	0.078	0.078	0.078
0	Existing use area - end of existing road	0.084	0.000	0
1	Open white spruce forest (within construction area)	2.197	1.996	0
2	White spruce woodland (within construction area)	5.372	5.288	0
2	White spruce woodland (within construction area)	0.474	0.474	0
3	Open low mixed shrub-sedge tussock bog (within construction area)	1.205	1.205	0
4	Subarctic lowland sedge wet meadow (within construction area)	0.141	0.141	0
5	Subarctic lowland sedge-moss bog meadow (fen) (within construction area)	0.133	0.133	0
2	White spruce woodland (outside construction area)	0.361	0.361	NA
5	Subarctic lowland sedge-moss bog meadow (fen) (outside construction area)	0.235	0.235	NA
6	Ericaceous shrub bog (outside construction area)	0.631	0.631	NA
0	Limits of construction	9.522	9.237	0.268

Table 1. Acreages of vegetation polygons, existing use areas, section of road to be restored and wetlands within the construction area.

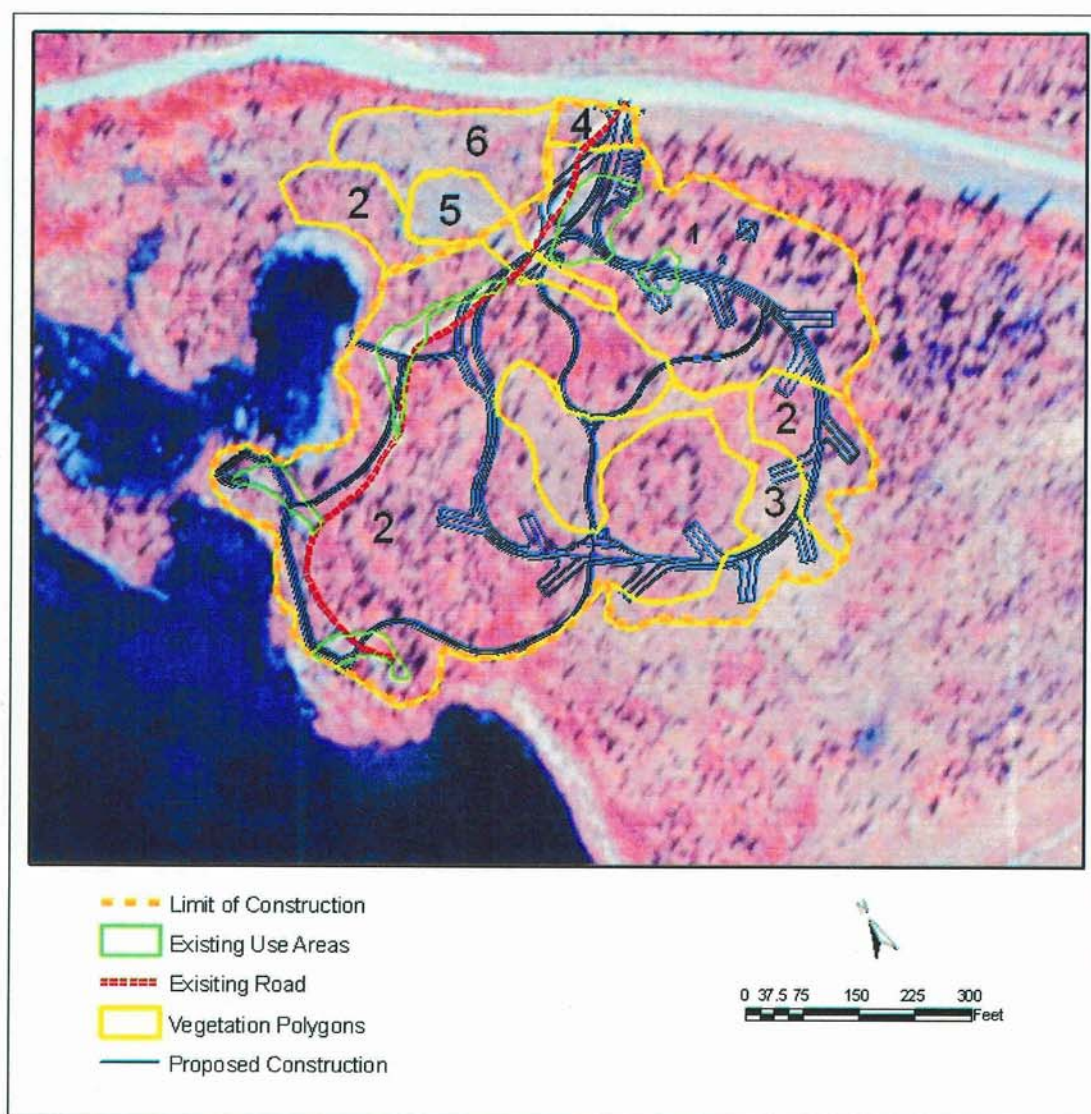
Table 2

A provisional list of vascular plant species and their wetland status (Reed 1988) occurring at the Twin Lakes campground project site.

<i>TAXON</i>	<i>COMMON NAME</i>	<i>WETLAND STATUS</i>
Trees		
PICEA GLAUCA (Moench) Voss	White Spruce	FACU
Shrubs		
BETULA GLANDULOSA Michx.	Shrub Birch	FAC
LEDUM PALUSTRE L. (Ait.) Hult.	Marsh Labrador-Tea	FACW
POTENTILLA FRUTICOSA L.	Shrubby Cinquefoil	FAC
RHODODENDRON LAPPONICUM (L.) Wahlenb.	Lapland Rosebay	FAC
SALIX ALAXENSIS (Anderss.) Cov.	Alaska Willow	FAC
SALIX ARBUSCULOIDES Anderss.	Littletree Willow	FACW
SALIX BEBBIANA Sarg.	Bebb Willow	FAC
SALIX COMMUTATA Bebb	Undergreen Willow	FAC
SALIX FUSCESCENS Anderss.	Alaska Bog Willow	FACW
SALIX GLAUCA L.	Gray-leaf Willow	FAC
SALIX MYRTILLIFOLIA Anders.	Low Blueberry Willow	FACW
SALIX PSEUDOMONTICOLA C.R. Ball	Park Willow	FACW
SALIX PSEUDOMYRSINITES Andersson	Tall Blueberry Willow	FACW
SALIX PULCHRA Cham.	Diamondleaf Willow	FACW
SHERPERDIA CANADENSIS (L.) Nutt.	Soapberry	NI
VACCINIUM ULIGINOSUM L.	Bog Blueberry	FAC
Dwarf Shrubs		
ANDROMEDA POLIFOLIA L.	Bog Rosemary	OBL
ARCTOSTAPHYLOS RUBRA (Rehd. & Wilson) Fern.	Red Fruit Bearberry	FAC
ARCTOSTAPHYLOS UVA-URSI (L.) Spreng.	Kinnikinnick	ND
DRYAS OCTOPETALA L.	White Dryas	ND
EMPETRUM NIGRUM L.	Crowberry	FAC
SALIX RETICULATA L.	Netleaf Willow	FAC
VACCINIUM VITIS-IDAEA L.	Mountain Cranberry	FAC
Forbs		
ACHILLEA LANULOSA Nutt.	Common Yarrow	ND
ASTER SIBIRICUS L.	Siberian Aster	ND
ASTRAGALUS ALPINUS L.	Alpine milk-vetch	FAC
EPILOBIUM ANGUSTIFOLIUM L.	Narrow-Leaf Fireweed	FACU
EPILOBIUM PALUSTRE	Marsh Willow herb	OBL
ERIGERON LONCHOPHYLLUS Hook.	Short-Ray Fleabane	FACW
EUPHRASIA SUBARCTICA Raup.	Arctic Eyebright	ND
GENTIANELLA PROPINQUA (Richards.) J.M. Gillett	Arctic Gentian	FACU
GEOCAULON LIVIDUM (Richards.) Fern.	False Toadflax	FACU
HEDYSARUM ALPINUM L.	Eskimo Potato	FACU

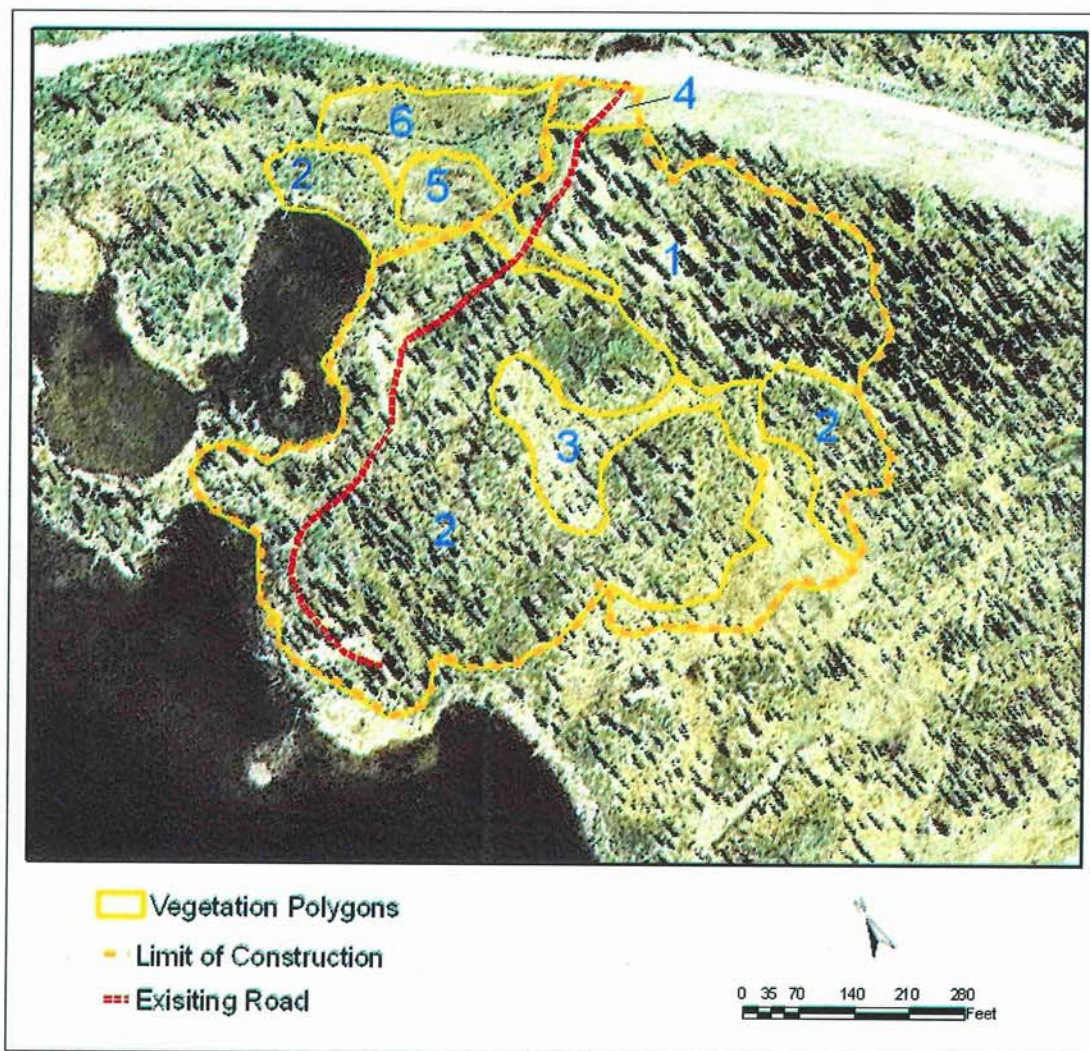
TAXON	COMMON NAME	WETLAND STATUS
LOMATOGONIUM ROTATUM (L.) E. Fries	Marsh Felwort	FAC
LUPINUS ARCTICUS S. Wats.	Arctic Lupine	ND
	Cold Mountain	
OXYTROPIS CAMPESTRIS (L.) DC.	Crazyweed	ND
PARNASSIA PALUSTRIS L.	Bog Star	FACW
PEDICULARIS SUDETICA Willd. sensu lat.	Sudetic Lousewort	FACW
PETASITES FRIGIDUS (L.) Franch.	Arctic Sweet Coltsfoot	FACW
PINGUICULA VILLOSA L.	Hairy Butterwort	OBL
POLYGONUM ALASKANUM (Small) Wight	Alaska Wiold Ruhbarb	FAC
POLYGONUM VIVIPARA L.	Alpine Bistort	FAC
POTAMOGETON PUSILLUS L. ssp.		
TENUISSIMUS (Mert. & Koch) Haynes & C.B. Hellquist	Small Pondweed	OBL
PYROLA ASARIFOLIA Michx.	Liverleaf Wintergreen	FAC
SAUSSUREA ANGUSTIFOLIA (Willd.) DC.	Narrowleaved Saussurea	FAC
TOFIELDIA GLUTINOSA (Michx.) Pers.	Glutin Tofieldia	FACW
TOFIELDIA PUSILLA (Michx.) Pers.	Scotch Featherling	FAC
Graminoids		
AGROSTIS ALASKANA Hult.	Alaska Bentgrass	OBL
AGROSTIS SCABRA Willd.	Rough Bent	FAC
ARCTAGROSTIS LATIFOLIA (R. Br.) Griseb.	Polargrass	FACW
BECKMANNIA SYZIGACHNE (Steud.) Fernald	American Slough Grass	OBL
CALAMAGROSTIS CANADENSIS (Michx.) Beauv.	Bluejoint	FAC
CAREX AQUATILIS Wahlenb.	Water Sedge	OBL
CAREX BIGELOWII Torr.	Bigelow's Sedge	FAC
CAREX CAPILLARIS L.	Hair-like sedge	FACW
CAREX CAPITATA Soland. in L.	Capitate sedge	OBL
CAREX CONCINNA R. Br.	Low Northern Sedge	FAC
CAREX DIANDRA Schrank	Lesser Panicked Sedge	OBL
CAREX GYNOCRATES Wormskjöld ex Drejer	Northern Bog Sedge	OBL
CAREX LIMOSA L.	Shore sedge	OBL
CAREX MAGELLANICA Lam. ssp.		
IRRIGUA (Wahlenb.) Hultén	Boreal Bog Sedge	
CAREX MEMBRANACEA Hook.	Fragile Sedge	FACW
CAREX MICROGLOCHIN Wahlenb.	Fewseeded Bog Sedge	OBL
CAREX PRATICOLA Rydb.	Meadow sedge	FAC
CAREX ROTUNDATA Wahlenb.	Round Sedge	OBL
CAREX SAXATILIS L.	Rock Sedge	FACW
CAREX TENUIFLORA Wahlenb.	Sparseflower Sedge	OBL

CAREX VAGINATA Tausch	Sheathed Sedge	OBL
ERIOPHORUM ANGUSTIFOLIUM Honck.	Tall Cotton-Grass	OBL
FESTUCA ALTAICA Trin.	Altai Fescue	FAC
FESTUCA RUBRA L.	Red Fescue	ND
JUNCUS ALPINOARTICULATUS Chaix in D. Villars	Northern Green Rush	OBL
JUNCUS CASTANEUS Sm.	Chestnut Rush	FACW
KOBRESIA SIMPLICIUSCULA (Wahlenb.) Mack.	Simple Bog Sedge	FACW
POA ARCTICA R. Br.	Arctic Bluegrass	FAC
POA GLAUCA M. Vahl.	Glaucous Bluegrass	ND
TRisetum SPICATUM (L.) Richter	Spike Trisetum	FAC
Lower Vasculars		
EQUISETUM ARVENSE L.	Field Horsetail	FACU
EQUISETUM FLUVIATILE L. ampl. Ehrh.	Water Horsetail	OBL
EQUISETUM PALUSTRE L.	Marsh Horsetail	FACW
EQUISETUM SCIRPOIDES Michx.	Dwarf Scouring-Rush	FACU
EQUISETUM VARIEGATUM Schleich.	Variegated Horsetail	FACW



Polygon #	Vegetation Type	Wetland Types
1	Open white spruce forest	Palustrine forested wetland
2	White spruce woodland	Palustrine forested wetland
3	Open low mixed shrub-sedge tussock bog	Scrub-shrub wetland
4	Subarctic lowland sedge wet meadow	Emergent wetland
5	Subarctic lowland sedge-moss bog meadow (fen)	Emergent wetland
6	Ericaceous shrub bog	Scrub-shrub wetland

Figure 2. Campground limits of construction, existing uses areas, existing road, vegetation polygons, and proposed construction mapped on August 2004infrared aerial photograph of Twin Lakes campground.



Polygon #	Vegetation Type	Wetland Types
1	Open white spruce forest	Palustrine forested wetland
2	White spruce woodland	Palustrine forested wetland
3	Open low mixed shrub-sedge tussock bog	Scrub-shrub wetland
4	Subarctic lowland sedge wet meadow	Emergent wetland
5	Subarctic lowland sedge-moss bog meadow (fen)	Emergent wetland
6	Ericaceous shrub bog	Scrub-shrub wetland

Figure 3. Vegetation polygons, limits of construction, and existing road at Twin Lakes campground.

ALTERNATIVES NOT AFFECTING WETLANDS

There are no practicable alternatives that would facilitate rehabilitation and expansion of the Twin Lakes campground without affecting wetlands; *the campground site and surrounding area are within an extensive regional mosaic of wetlands*. The no action alternative would perpetuate existing conditions and unmanaged use of the campground with their attendant adverse impacts to natural resources and visitor experience. Alternative B would directly affect a lesser amount of wetlands than the proposed action alternative, but involves development in closer proximity to the lake that could be potentially more damaging to the environment than the proposed action alternative. The proposed action alternative is fully consistent with the park GMP which articulates the need for a campground along Nabesna Road that can provide this type of recreational opportunity for hikers, hunters, and other recreationists in the Slana-Nabesna area of the park.

PROJECT IMPACT ON WETLANDS

Approximately 1.72 acres of wetlands would be directly affected by rehabilitation and expansion of the Twin Lakes campground; 1.55 acres (90%) are palustrine forested wetland; 0.12 acre is scrub-shrub wetland; and 0.05 acre is emergent wetland. Impacts would occur from fill for road construction, campsite pads, and concrete pads for structural support of a pavilion, amphitheater, and vault toilet. Temporary disturbance to wetlands from construction may also occur. About 0.27 acre of restoration would occur in palustrine forested wetland. Natural landforms would be restored to pre-existing surface contours and allowed to regenerate naturally with native plant species. The net direct effects on wetlands would amount to 1.45 acres.

WETLAND MINIMIZATION AND MITIGATION

Although the campground site and surrounding area are within an extensive regional mosaic of wetlands, all possible wetland avoidance and mitigation measures were incorporated into the project design, including elevation of the observation deck and boardwalk. The project is subject to Department of the Army permitting by the Anchorage District of the USACE under Section 404 of the CWA, and will be subject to applicable permit regional and special conditions. Fill material for the canoe launch will consist of rock fill free from fines and suspendible material. Heavy equipment used in wetlands will be placed on mats to minimize soil and vegetation disturbance. Restoration of natural landforms and natural revegetation with native plant species on 0.27 acre of palustrine forested wetland will partially offset the 1.72 acres of wetland impacts. In addition, the park has a net positive balance of 4.6 acres of wetlands available at a nearby wetland compensation site (about 1.5 miles west of the campground) associated with the Ellis Special Use Permit for Inholding Access Route Realignment to Jack Lake (NPS, WRST, 2003) that will be applied as mitigation for the campground project. The nearby wetland compensation site is on lands managed by the NPS; has similar wetland systems as the impacted wetlands; and is in the same watershed as the Twin Lakes Campground. Therefore, the project would result in no net loss of wetlands.

CONCLUSION

The National Park finds that there are no practicable alternatives to net direct impacts on 1.45 acres of wetlands within the project area. *Although the campground site and surrounding area are within an extensive regional mosaic of wetlands*, care was taken to select an alternative that would minimize impacts to natural resources, including wetlands, while still meeting project objectives. Wetlands have been avoided to the maximum extent practicable and the wetland impacts that could not be avoided will be minimized. Compensatory mitigation for this project is 0.27 acre of direct wetland restoration plus an additional 4.6 acres of improvement of wetland and stream habitat function associated with the Jack Lake inholding access realignment project approved in 2003. Proposed mitigation for this project is greater than a 1:1 ratio. This project is consistent with the NPS no-net-loss of wetlands policy. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11990: Protection of Wetlands.