

**Environmental Assessment
on the
Walker Lake Retaining Wall
Removal Project
Gates of the Arctic National Park and Preserve**

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Gates of the Arctic National Park and Preserve

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PURPOSE AND NEED

The National Park Service (NPS) is considering the removal of about 25 meters of retaining wall located on the southeast side of Walker Lake within designated wilderness of Gates of the Arctic National Park and Preserve (Figures 1 & 2). The wall contains about 75 55-gallon drums filled with boulders and includes an outer wall of boulders and concrete around the drums. After dismantling, the metal drums would be transported via aircraft to Bettles, Alaska for disposal and the concrete material would be disposed of in Walker Lake. Lakeshore processes would return the shoreline site to natural conditions. Walker Lake was registered as a National Natural Landmark (NNL) in 1970, encompassing 181,236 acres, which includes the lake and its main tributary, the Koluluktok Creek.

The purpose of removing the retaining wall would be to restore the wilderness character of the Walker Lake area and allow for primitive and unconfined recreation without the sight of man's presence in designated wilderness. In accordance with the Wilderness Act the removal of the retaining structure is being pursued as a necessary step in the restoration of the area's wilderness character. Removing the retaining wall would allow natural processes to restore the shoreline function of Walker Lake and over time return the shoreline to natural conditions.

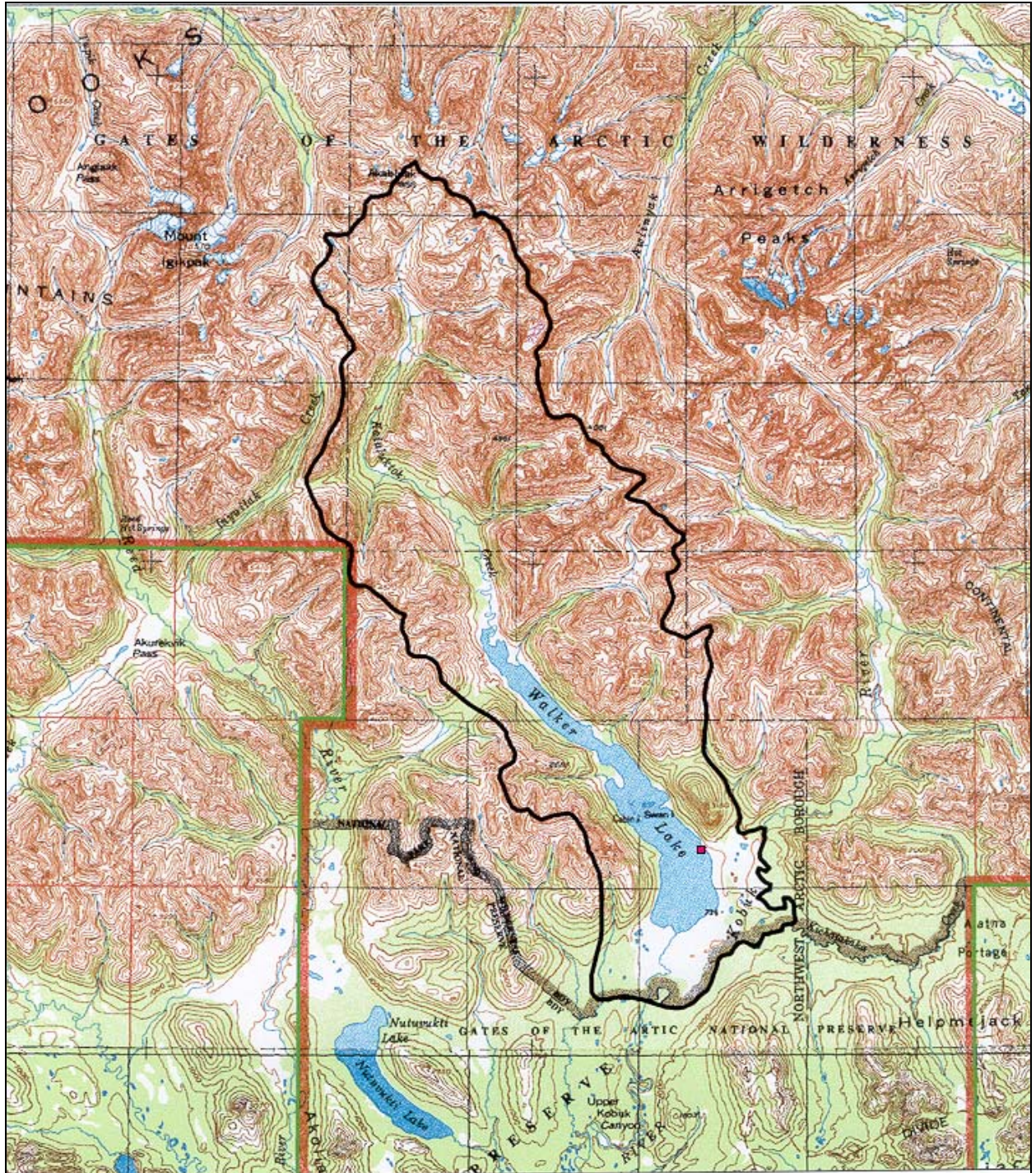
The NPS acquired the 5-acre Walker Lake property in 1988 and removed the lodge as per the purchase agreement. The retaining wall is one of two structures remaining on the site. The project is needed because the retaining wall, constructed in 1974, has adversely affected the wilderness values, natural lakeshore, and natural ecological processes along Walker Lake.

This environmental assessment (EA) evaluates the potential impacts to natural and cultural resources resulting from the NPS preferred alternative and three alternatives. This EA has been prepared in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9).

Background

History of the Project Site

The NPS acquired the Helmericks lodge plus five acres on Walker Lake in 1988. The Helmerick property consisted of four buildings: A main lodge, a cabin, and two outbuildings. These buildings and the retaining wall were constructed starting in 1974 for the operation of the Walker Lake Wilderness Lodge. After acquiring the property, the NPS proceeded to remove the main lodge as a part of the purchase agreement.

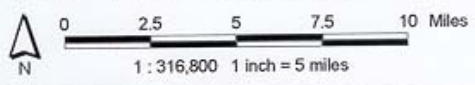


-  Landmark Boundary
-  Location of Walker Lake Retaining Wall



Walker Lake National Natural Landmark - Alaska

Figure 1 Location of Retaining Wall



Plot date: January 30, 2002

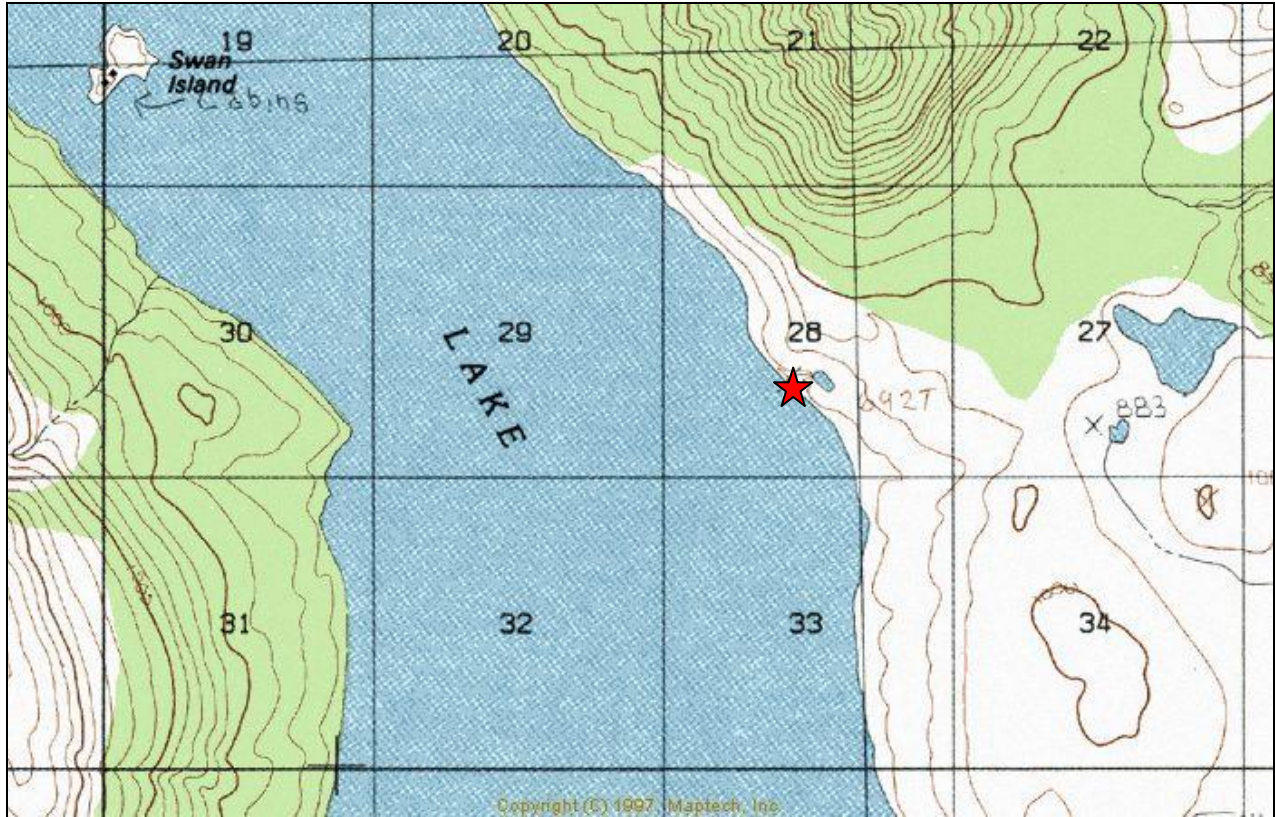


Figure 2: Walker Lake Retaining Wall Site

The construction of the two-story main lodge along the narrow Walker Lake beach required development of a level shelf and retaining wall that served as a barrier against lake surf erosion. The shelf, cut out of the slope, accommodated the platform for the structure. The level shelf is bordered along the lakeshore by the retaining wall formed from a double row of upright 55-gallon metal drums. The drums were filled with boulders and possibly concrete and included an outer wall of boulders and concrete around the perimeter of the drums (See Photographs 1 & 2).



Photograph 1: Walker Lake Retaining Wall



Photograph 2: Close-up of Retaining Wall

Thirty-nine drums form the outer wall, with an estimated total of 75 drums in the entire wall. Many of the drums have plants growing from them, to the extent that alder covers most of the inner row of drums. The wall is approximately 25 meters around the outside curve and .3 to .5

meters thick. This wall covers the drums from water level and is from one half to one meter high. It appears that the southernmost six drums may not have a concrete wall, thus making the concrete/rock wall about 21.5 meters. These dimensions calculate to an estimate of 20 to 25 thousand pounds. The retaining wall is located on the Southeast side of Walker Lake.

Walker Lake is an access point for river floaters of the Kobuk River. Recreation users often fly in to a point near the outlet of the lake on the south shore. This project is within 9.6 kilometers (3 miles) directly North of the access point. Some floaters are dropped off elsewhere on the lake and eventually boat down to the outlet to begin their Kobuk River float.

Related Legislation, Policy, and Plans

The NPS Organic Act of 1916 states that the purpose of the national parks is to "conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." (16 U.S.C. 1). The NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The NPS Management Policies and Director's Order #55 use the terms "resources and values" to mean the full spectrum and intangible attributes for which the park is established and are managed, including the Organic Act's fundamental purpose and any additional purposes as stated in the park's establishing legislation. The impairment of park resources and values may not be allowed unless directly and specifically provided by statute. The primary responsibility of the National Park Service is to ensure that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The Wilderness Act of 1964 directs that wilderness areas, even within national parks, "shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness".

All management decisions affecting wilderness must be consistent with the minimum requirement concept. This concept is a documented process used to determine if administrative activities effecting wilderness resources or the visitor experience are necessary. The minimum requirement concept will be applied as a two-step process that determines:

- Whether or not the proposed management action is appropriate or necessary for administration of the area as wilderness; and does not pose a significant impact to wilderness resources and character; and
- The techniques and type of equipment needed to ensure that impact to wilderness resources and character is minimized.

In accordance with this policy, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized short-term adverse impacts will be acceptable.

Gates of the Arctic National Park and Preserve containing 8.2 million acres was established in 1980 to maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude and the natural environmental integrity and scenic beauty of the area. The park was established to provide continued opportunities for mountain climbing, mountaineering, and other wilderness recreational activities and to protect habitat for and populations of fish and wildlife.

Walker Lake was registered as a National Natural Landmark in 1970. This National Natural Landmark includes all of Walker Lake and its principal tributary Kaluluktok Creek, with a total of about 141,000 acres. The lake is nearly 14 miles long and averages more than one mile in width. Elevations range from 600 feet above sea level at the lakeshore to over 4,000 feet on many of the surrounding peaks. This lake provides a striking example of the geological and biological relationships of a mountain lake at the northern limit of forest growth on the south slope of the Brooks Range.

According to the *General Management Plan for Gates of the Arctic National Park and Preserve* (NPS, 1986), one of the primary objectives of the park is to “maintain the wild and undeveloped character of the area” and to “maintain natural features, environmental integrity, and the dynamics of natural processes operating within the park.” The Walker Lake site, located in the designated wilderness, was identified as a property designated for non-historic clean-up.

Issues Considered for Further Evaluation

To focus the environmental assessment, the NPS selected specific issues for further analysis and eliminated others from evaluation. Subsequent environmental consequences related to each alternative focus on these issues. A brief rationale for the selection of each topic is given below.

Water Resources: The water quality of Walker Lake could be affected by increased turbidity and sedimentation associated with the dismantling of the retaining wall and disposal of concrete material into the lake.

Lakeshore Processes: The lakeshore of Walker Lake would be affected by removal of the retaining wall. Natural restoration could restore the lakeshore to the preexisting cobble beach environment.

Natural Soundscape: The natural soundscape of the area could be affected by noise generated by aircraft bringing workers to the project site and wall demolition activities during the summer season. Noise from snowmobiles bringing workers to the site and hauling concrete material onto the lake could affect the natural soundscape during the winter.

Vegetation: Willow and alder growing in and around the retaining wall would be affected by wall demolition activities

Fisheries Resources: Fisheries resources of Walker Lake could be affected by short-term increase turbidity and sedimentation associated with the dismantling of the retaining wall and disposal of

concrete material into the lake. Fisheries habitat could be affected by the placement of hardened concrete and rock in Walker Lake.

Wildlife: Aircraft and snowmachine activities associated with transporting workers and materials and wall demolition activities could temporarily displace resident wildlife from the project area.

Recreation/Visitor Use: Removal of the retaining wall could improve the wilderness experience for park visitors traveling along the shoreline of Walker Lake.

Visual Quality: The visual quality of the project area could be improved by removal of the retaining wall (barrels and concrete/rock wall) and the natural restoration of the shoreline of Walker Lake.

Wilderness: Retaining wall removal and natural restoration of the Walker Lake shoreline could improve the wilderness characteristics of the area by removing the sight of man's presence in the designated wilderness. Wilderness values (solitude) could be affected by noise generated by aircraft bringing workers to the project site and wall demolition activities during the summer season. Noise from snowmobiles bringing workers to the site and hauling concrete material onto the lake could affect wilderness values during the winter.

National Natural Landmark: The resources and values of the Walker Lake National Natural Landmark would be improved by removal of the retaining wall and natural restoration of the lake's shoreline.

Issues Eliminated from Further Consideration

A brief rationale dismissing specific topics from further consideration is included below.

Air Quality. Local air quality would not be affected because of the limited use of motorized mechanical tools to dismantle the retaining wall. Impacts to air quality from aircraft and snowmobile emissions would be minimal and of short duration.

Floodplains. There are no rivers or streams in the vicinity of the proposed project, thus no impacts to floodplains would occur.

Wetlands. There are no wetlands on the site of the proposed project, thus no impact to wetlands would occur.

Threatened and Endangered Species. There are no known federal or state listed threatened or endangered species, federal candidate species, or state-listed species of special concern within the project area

Park Operations and Management. The alternatives would not affect NPS operations or management.

Cultural Resources. The NPS and State Historic Preservation Officer have determined that removal of the retaining wall would have no effect on cultural resources within the project area (See Appendix A).

Subsistence: Subsistence activities in the Walker Lake area would not be affected by dismantling the retaining wall or disposal of concrete/rocks in the lake. See the ANILCA section 810 evaluation in Appendix B for further details.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations: This order requires all federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This project would not result in any changes in the socioeconomic environment of the project area, and, therefore, would not be expected to have any direct or indirect impacts to minority or low-income populations or communities. This project is distant from any minority local populations or communities.

Permits and Approvals Needed to Complete the Project

Table 2 outlines the permits and approvals needed to complete the retaining wall removal project.

Table 2: Environmental Permits and Approvals for Project Completion

Required Permit/Approval	Regulatory Agency	Authority	Description
Discharge of dredged or fill material into U.S. waters (U.S. ACE Fill Permit)	U.S. Army Corps of Engineers	Section 404, Federal Water Pollution Control Act of 1972, as amended in 1977 (Clean Water Act)	The U.S. ACE must authorize the discharge of fill in U.S. waters. A U.S. ACE Nationwide Permit #18 applies.
Development affecting threatened and endangered plant & animal species	U.S. Fish & Wildlife Service	Section 7, Endangered Species Act of 1973	The FWS has determined that no threatened or endangered species would be affected.
Development possibly affecting historical or archeological sites (Cultural Resource Concurrence)	State Historic Preservation Officer (SHPO)	National Historic Preservation Act of 1966	For any federal project the SHPO must concur that cultural resources would not be adversely affected. The SHPO concurred that cultural resources would not be affected.

ALTERNATIVES

Alternative 1: No Action. The retaining wall would not be dismantled and would be allowed to degrade naturally. The wall structure would likely take a long period of time (several hundred years) to be reclaimed by natural processes.

Alternative 2: Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake (NPS Preferred Alternative). This alternative includes breaking up the rock wall barrier and drums with hand tools, and where necessary motorized tools. All concrete material would be stockpiled for later disposal in the lake. Metal drums would be transported to Bettles for disposal. This alternative would require three phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area containing approximately .5 meter by 15 meters of vegetation (7.5 m²) would be removed from the top of the rock wall. About 28,000 pounds of material would be stockpiled on pallets or plywood lined with a heavy tarp or plywood on the cut slope above the high water mark. This would facilitate easy removal during the phase III of this project. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 75 drums would be transported to Bettles via aircraft (Beaver) for disposal. Four round trips would be required to transport all metal drum pieces.

A crew of six people would work 10-12 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Phase II (Natural Reclamation of the Site). After removal of the retaining wall, rocks will be moved strategically to approximate the natural contour of the shoreline. Large rocks and boulders will be placed on site to help stabilize the shoreline from surf erosion. The site would be allowed to be reclaimed by natural processes.

Phase III (Transport Material onto Lake for Disposal): Phase III would begin in mid-March. Two snowmobiles with sleds would transport the stockpiled material about 1/8th of a mile out on the lake, where the lake drops to a depth of 390 feet. At approximately 600 lbs. per load with two sleds, a total of 47 trips (24 trips per sled) would be required. The material would drop into the lake when the lake ice thaws.

Four personnel would help in the spring project. It would take 6 to 7 days to finish this phase, which includes snowmobile transport from Bettles to Walker Lake, site setup, wrap up and transport back to Bettles.

Alternative 3: Partially Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake. This alternative requires removing the rock wall barrier and first row of drums with hand tools, and where necessary motorized tools. The rock wall would be replaced to cover the second row

of drums. All concrete material would be stockpiled for later disposal in the lake. This alternative requires three phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area containing approximately .25 meter by 12 meters of vegetation (3.0 m²) would be removed from the top of the rock wall. About 14,000 pounds of material would be stockpiled on pallets or plywood lined with a heavy tarp or plywood on the cut slope above the high water mark. This would facilitate easy removal during the phase III of this project. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 39 drums would be transported to Bettles via aircraft (Beaver) for disposal. Two round trips would be required to transport all metal drum pieces.

Phase II (Natural Reclamation of the Site). After removal of the first row of drums, rocks will be replaced to cover the second row of drums. This would maintain the rock barrier against further surf erosion and cover up the second row of unsightly drums.

A crew of six people would work 5-7 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Phase III (Transport Material onto Lake for Disposal): Phase III would begin in mid-March. Two snowmobiles with sleds would transport the stockpiled material about 1/8th of a mile out on the lake, where the lake drops to a depth of 390 feet. At approximately 600 lbs. per load with two sleds, a total of 24 trips (12 trips per sled) would be required. The material would drop into the lake when the lake ice thaws.

Four personnel would help in the spring project. It would take 4 to 5 days to finish this phase, which includes snowmobile transport from Bettles to Walker Lake, site setup, wrap up and transport back to Bettles.

Alternative 4: Dismantle Retaining Wall & Dispose of Concrete/Rocks on Land.

This alternative would involve breaking up the rock wall barrier and drums with hand tools, and where necessary motorized tools. All concrete material would be placed on the cut slope behind the retaining wall. Metal drums would be transported to Bettles for disposal. This alternative would require two phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area of approximately .5 meter by 15 meters of vegetation (7.5 m²) would be removed from the top of the rock wall. About 28,000 pounds of material would be placed on the cut slope above the high water mark. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 75 drums would be transported to Bettles via aircraft (Beaver) for disposal. Four round trips would be required to transport all metal drum pieces.

A crew of six people would work 10-12 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Phase II (Natural Reclamation of the Site). After removal of the retaining wall, rocks would be moved strategically to approximate the natural contour of the shoreline. Large rocks and boulders would be placed on site to help stabilize the shoreline from surf erosion. The site would be allowed to be reclaimed by natural processes.

Environmentally Preferred Alternative

Alternatives 2 and 4 are both environmentally preferable alternatives. Each alternative would remove the concrete/rock wall and drum barrier to restore the wilderness character of the Walker Lake area and allow for primitive and unconfined recreation without the sight of man's presence in designated wilderness. Removing the retaining wall under both alternatives would allow natural processes to restore the shoreline function of Walker Lake and over time return the shoreline to natural conditions. Each alternative would store the concrete material in different locations in the area. The placement of the concrete material in the lake or on land above the high water line would have little impact on resources in the area.

Alternatives Considered but Eliminated from Further Consideration

A. Dismantle Retaining Wall and Fly Out Drums and Concrete Material: This alternative includes breaking up the rock wall barrier and drums with hand tools and motorized tools. All material (concrete and drums) would be transported to Bettles for disposal. Phase I (Dismantle Retaining Wall) and Phase II (Natural Reclamation of the Site) would be the same as identified in Alternative 2.

Under Phase III all material would be flown to Bettles for disposal using Beaver aircraft or helicopter. All transport could be done in either June (the low-visitor use period) or in September at the end of the visitor-use season. Using a beaver, it would take 31 round trips (900 lbs. per load) to remove 28,000 lbs. of material. A Beaver chartered from Bettles (@ \$450/hour) for the two-hour round trip to Walker Lake would cost \$900. All 31 loads would cost a total of \$27,900.

This alternative was rejected because of the prohibitive high cost (\$27,900) required to transport about 28,000 lbs. of debris material to Bettles for disposal. Also disposal of the debris at Bettles would be a problem, as this rock and concrete is considered waste for disposal in the City of Bettles dump.

Options for helicopter transport of this material was also eliminated from consideration because of logistics and the high cost to transport material from Walker Lake to Bettles. There is no landing zone at the project site, so one would have to be cleared to accommodate the radius of the helicopter blades.

An NPS Contract Hughes 500D helicopter could sling load 600 pounds per load. It would take 47 loads (\$425 per hour) for a total cost of \$19,925. Fuel consumption would be 30 gallons per load for 47 loads for a total of 1410 gallons. At \$4 per gallon for 1410 gallons of Jet B fuel delivered to Beetles, it would cost an additional \$5640. This does not include crew wages, transport, and housing accommodations in Beetles. This would add \$8,000 to \$10,000 to the project, for a total of \$33,000 to \$35,000 to complete this project.

- B. Landscape Retaining Wall with Rock: This alternative would involve covering the retaining wall drums with additional rocks to hide the drums from view. This would require excavating and transporting material from nearby rock outcroppings. Depending on the composition of rock and soil, approximately 2.5-meter by 3-meter area would be quarried to a depth of 2 meters. Approximately 14 cubic meters of rock would be required to landscape the wall. The quarry site would be uphill on a ridge where rock outcroppings are exposed. Transportation of the rock from the excavation site to the retaining wall site would also require building a trail system to meet with an old existing trail to the south of the site.

This alternative was rejected because about 14 cubic meters of rock would be required to cover up the existing retaining wall. The quarry for the source rock would result in additional degradation of the wilderness character of Walker Lake. Also it is possible that archaeological resources would be impacted with this action.

Summary and Comparison of Effects of Alternatives

Table 2 presents a summary and comparison of potential effects for Alternatives 1, 2, 3, and 4.

Table 2: Summary and Comparison of Effects for Alternatives 1, 2, 3, and 4.

Impact Topics	<u>Alternative 1</u> No-Action	<u>Alternative 2</u> Dismantle Retaining Wall & Dispose of Concrete/Rocks in Lake	<u>Alternative 3</u> Partially Dismantle Retaining Wall & Dispose of Concrete/Rocks in Lake	<u>Alternative 4</u> Dismantle Retaining Wall & Dispose of Concrete/Rocks on Land
Water Resources	No impact.	Short-term localized increases in turbidity & sedimentation would occur at the demolition site & material disposal area in lake. Water quality would return to normal when the beach stabilized.	Short-term localized increases in turbidity & sedimentation would occur at the demolition site & material disposal area in lake. Water quality would return to normal when the beach stabilized.	Short-term localized increases in turbidity & sedimentation would occur at the demolition site. Water quality would return to normal when the beach stabilized.
Lakeshore Processes	Natural lakeshore processes would not be able to form a stable cobble beach environment.	Restoration of a natural cobble beach environment would occur after retaining wall removal.	Partial restoration of a natural cobble beach environment would occur after partial removal of wall.	Restoration of a natural cobble beach environment would occur after retaining wall removal.
Natural Soundscape	No impact.	Short-term impacts from noise associated with wall demolition, aircraft & snowmobiles would occur for about 19 days.	Short-term impact from noise associated with wall demolition, aircraft & snowmobiles.	Short-term impact from noise associated with wall demolition & aircraft would occur for about 12 days.
Vegetation	No impact. Natural revegetation could eventually cover up the drum & rocks on the wall.	Negligible impacts to vegetation from removal of 7.5 m ² of alder & willow.	Negligible impacts to vegetation from removal of 3 m ² of alder & willow.	Negligible impacts to vegetation from removal of 7.5 m ² of alder & willow.
Fishery Resources	No impact.	Negligible effect on fish from short-term increase in turbidity.	Negligible effect on fish from short-term increase in turbidity.	Negligible effect on fish from short-term increase in turbidity.
Wildlife	No Impact.	Negligible impacts from temporary displacement of wildlife from site.	Negligible impacts from temporary displacement of wildlife from site.	Negligible impacts from temporary displacement of wildlife from site.
Visual Quality	The wall's barrels & concrete/rock structure would continue to degrade the visual quality of a small segment of the Walker Lake shoreline. Over time the visual quality would improve as wall slowly deteriorates.	Short-term degradation of visual resources from camp and wall removal activities. Long-term positive from removal of structure and natural restoration of site.	Short-term degradation of visual resources from camp and wall removal activities. Over time the visual quality would improve as wall slowly deteriorates.	Short-term degradation of visual resources from camp & wall removal activities. Material storage in cut would be visible until over grown. Long-term positive from removal of structure and natural site restoration.
Recreation & Visitor Use	Visitor use in the area would not be affected. Visitor experience could be diminished by sight of wall.	Visitor's experience could be diminished by project for about 19 days during low visitor use season.	Visitor's experience could be diminished by project for about 12 days during low visitor use season	Visitor's experience could be diminished by project for about 12 days during low visitor use season.
Wilderness	Visual effects of retaining wall would diminish the aesthetic quality of wilderness. Long-term improvement as wall naturally degrades.	Long-term positive effect on the wilderness characteristics from wall removal. Some short-term loss of wilderness characteristics.	Visual effects of retaining wall would diminish the aesthetic quality of wilderness. Long-term improvement as wall naturally degrades.	Long-term positive effect on the wilderness characteristics from wall removal. Some short-term loss of wilderness characteristics.
National Natural Landmark	The natural features of a small portion of the shoreline would continue to be affected until natural reclamation removes traces of wall.	The natural features of the NNL would be improved with wall removal and natural reclamation of the site.	The natural features of a small portion of the shoreline would continue to be affected until natural reclamation removes traces of wall.	The natural features of the NNL would be improved with wall removal and natural reclamation of the site.

ENVIRONMENTAL ANALYSIS

Alternative 1: No Action.

This alternative would impact the aesthetic quality and character of the wilderness resource. This action would not cause significant impacts to cultural and natural resources in the area.

Water Resources: Water resources of Walker Lake in the vicinity of the retaining wall would not be affected. The retaining wall structure is stable and is not causing a release of sediment into the lake.

Lakeshore Processes: Leaving the retaining wall at its current location would not allow natural lakeshore processes to form a stable cobble beach environment.

Natural Soundscape: The natural soundscape of the area would not be affected because noise-producing activities associated with demolition of the retaining wall would not occur.

Vegetation: The no-action alternative would have no effect on the vegetation of the area. Willow and alder would continue to invade the retaining wall structure. Natural re-vegetation could eventually cover up the drum and rocks of the wall.

Fisheries Resources: Fisheries resources would not be affected.

Wildlife: Wildlife in the area would not be affected because activities associated with demolition of the retaining wall that could affect wildlife would not occur.

Recreation/Visitor Use: Visitor use in the area would not be affected. The effects on visitor's experience from viewing the retaining wall would be slight.

Visual Quality: Under the no-action alternative the retaining wall would remain visible with the rusting barrels and concrete/rock structure continuing to degrade the visual quality of a small segment of the Walker Lake shoreline. Over time the retaining wall would slowly deteriorate. The metal drums would rust slowly, and the concrete/rock wall structure would likely break up. Natural re-vegetation could eventually cover up the drum and rocks of the wall structure. The retaining structure would likely take several generations for natural processes to returning the area to natural conditions.

Wilderness: The continued presence of the retaining wall in the no-action alternative would affect the wilderness characteristics of the area. The visibility of the retaining wall along the shore of Walker Lake would intrude on the naturalness of the area and remind visitors of the presence of man. Wilderness values would improve in the long term as natural processes return the area to natural conditions.

National Natural Landmark: Walker Lake was registered as a National Natural Landmark (NNL) in 1970, encompassing 181,236 acres, which includes the lake and its main tributary, the Koluluktok Creek. The natural features of a small portion of the Walker Lake shoreline would

continue to be affected until natural reclamation removes all traces of the retaining wall. Natural processes would likely take several generations to returning the area to natural conditions.

Cumulative Effects: The cumulative effects analysis includes impacts from past, present, and reasonably foreseeable future actions in the area. This analysis includes the previous effects of the lodge and natural degradation of the retaining wall.

In 1991 the main lodge and three small outbuildings were removed from the five-acre site. Approximately two acres of the parcel were affected by the original construction of the lodge and support buildings for recreational use of the area. The restoration of the original privately owned site left only the remaining cabin and the cut bank on the upslope of the original retaining wall on the site. The future removal of the cabin would improve the aesthetic quality of the wilderness experience for those visiting Walker Lake. When the site is cleared of all structures the only remaining evidence of human activity on the site would be the cut bank and the retaining wall. Over time natural reclamation would diminish the traces of both these structures. Natural revegetation of the site would be allowed to occur along the shoreline. The visibility of the retaining wall along the shore of Walker Lake would be the primary component intruding on the visual quality and naturalness of the area that would remind visitors of the presence of man. Wilderness values would improve in the long term as natural processes diminish evidence of the retaining wall and return the area to natural conditions.

Alternative 2: Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake (NPS Preferred Alternative)

This alternative requires the removal of the retaining wall. The remaining material would be taken out on the lake ice in late winter or early spring. The spring ice thaw would eventually drop the materials into the lake. Snowmobiles would be used to transport the concrete material out to the ice. The remaining drums would be cut up, packaged and sent to Bettles for proper disposal. Re-contouring of the shoreline would be done to stabilize the exposed beach from lake surf erosion.

Water Resources: While the retaining wall is being dismantled (10 to 12 days) a small amount of localized turbidity would be expected to occur in Walker Lake around the project site. Localized increases in turbidity and sedimentation caused by runoff of disturbed mineral soil during rainy periods would also be expected events. As the exposed beach environment stabilized sedimentation and turbidity would cease.

The disposal of 28,000 pounds of concrete/rock in Walker Lake could cause a small short-term increase in turbidity when the material drops to the lake bottom when the ice thaws. Any soil clinging to the material would create a small turbidity plume on its decent to the lake bottom. This plume would be expected to dissipate quickly.

Conclusion: Localized short-term effects on water quality would be expected from dismantling the retaining wall and disposing of concrete material in lake. The level of impacts to water resources anticipated from this alternative would not result in an impairment of park resources

that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Lakeshore Processes: The removal of the retaining wall would allow natural lakeshore processes to be reestablished. Wave action would gradually displace and sort the sand and fine gravel to approximate the natural contour of the beach along the rest of the lakeshore. The replacement of rocks and boulders along the lake shoreline would assist in the formation of a cobble beach environment.

Conclusion: The removal of the retaining wall would have a positive effect on lake shore process by allowing the formation of a naturally contoured cobble beach. The level of impacts to park resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Natural Soundscape: The natural soundscape of the area would be affected by noise associated with dismantling the retaining wall and sounds generated from aircraft and snowmobiles. During late June noise from dismantling the wall would be heard for up to 12 days. Noise would emanate from breaking up the concrete/rockwall/ drum barrier and activities associated with the field camp. Aircraft noise from the transport of metal drums to Bettles would also occur. These noises would be expected to carry across the lake.

The natural soundscape would be altered in mid-March when snowmobiles would be used to transport material on to the lake for disposal and transport to and from the site. Material transport would take up to 7 days.

Conclusion: The natural soundscape of the area would be altered for about 19 days from noise resulting from wall demolition, aircraft, and snowmobiles. The level of impacts to the natural soundscape anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Vegetation: Retaining wall demolition would remove about 7.5 square meters of vegetation (alders and willow) growing on the top of the wall. Removal of this small amount of vegetation would have a negligible effect on this plant community since alder and willow are common in the area.

Conclusion: This alternative would have a negligible effect on vegetation. The level of impacts to vegetation anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Fishery Resources: Fishery surveys have been completed at Walker Lake. The lake contains Arctic Grayling (*Thymallus arcticus*), Lake Trout (*Salvelinus namaycush*), Arctic Char (*S. alpinus*). Other less common fish include northern pike (*Esox lucius*) and burbot (*Lota lota*). Round whitefish (*Prosopium cylindraceum*), slimy sculpin (*Cottus cognatus*), and least cisco

(*Coregonus sardinella*) have also been observed (Johnson & Troyer 1987). The lake has fairly homogenous fish habitat.

Short-term localized increases in turbidity adjacent to the project site and in the water column at the material disposal site would have negligible effect on fish in the lake. Individual fish in the area would be able to temporarily relocate into other parts of the lake since the lake has fairly homogenous fish habitat. Turbidity plumes would be expected to quickly dissipate.

Conclusion: Short-term localized increases in turbidity would have negligible effects on fishery resources. The level of impacts to fisheries resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wildlife: Retaining wall demolition and camp activities within this area would temporarily displace resident wildlife. Resident wildlife could include caribou, moose, brown bear, ravens, falcons, eagles, songbirds, snowshoe hares, fox, voles, and shrews. The area of disturbance would be small and the expected number of animals potentially affected would be low. Wildlife would be disturbed and most likely move out of the area temporarily. Disturbance would be expected for about 12 days in June and 7 days in March. It is expected that any displaced wildlife would be able to find similar habitat in the near vicinity until they return after the work is completed area. Adequate habitat is available in the area for displaced wildlife.

Conclusion: The temporary displacement of resident wildlife resulting from this alternative would have negligible effects of wildlife. The level of impacts to wildlife anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Visual Quality: Initially, the presence of the work camp, actual removal of the retaining wall, and stockpile of concrete material in cut area would degrade the visual quality of the area in the short term. Removal of the rusting barrels and concrete/rock barrier would improve the shoreline landscape creating a more natural setting. The placement of rocks and boulders to recreate the natural contour of the shoreline and the natural reclamation of the site would greatly improve the visual quality of the area.

Conclusion: This alternative would have a long-term positive impact on the visual quality of the area. The level of impacts to the area's visual quality anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Recreation/Visitor Use: The retaining wall site is 9.6 kilometers (3 miles) from the main access point near the outlet of Walker Lake. Floaters of the Kobuk River, often start their trips at the outlet stream of Walker Lake. The activities associated with the removal of the retaining wall would not affect visitor use of the area. However, visitors would clearly be able to see and hear the sounds of wall demolition and aircraft activity. On clear sunny days, sound can carry across the lake so visitors could easily hear activity at the site. The sights and sounds of the project could diminish the quality of a visitor's experience. The number of visitors affected would be

limited since wall removal would be scheduled for 12 days in June, which is the low visitor-use season. The transport of material by snowmobile in March would have little effect on recreation/visitor use since very few people visit the area at this time.

Conclusion: This alternative would not effect visitor use levels in the area but the sights and sounds of project could diminish a visitor experience during the low visitor use season. The level of impacts to recreation/visitor use anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wilderness: The lake is within the nationally designated wilderness. The removal of the retaining wall would temporarily disturb the wilderness experience of visitors to the park, detracting from the overall wilderness value. The sights and sounds of man would be readily apparent to visitors during demolition activities. Restoration of the site would allow the natural features and natural processes to occur within the project area. Wilderness characteristics of the area would be improved with the removal of the wall and restoration of the site.

Conclusion: This alternative would have a long-term positive effect on the wilderness characteristics of the area. Some short-term degradation of wilderness characteristics would occur during wall demolition. The level of impacts to wilderness anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

National Natural Landmark: The natural features of a small portion of the Walker Lake shoreline would be improved by removal of the retaining wall. The placement of rocks and boulders to recreate the natural contour of the shoreline and the natural reclamation of the site would greatly improve the visual and wilderness quality of the area.

Conclusion: The natural features of the NNL would be improved with wall removal and natural reclamation of the site.

Cumulative Effects: The cumulative effects analysis includes impacts from past, present, and reasonably foreseeable future actions in the area. This analysis includes previous effects of the lodge and removal of the retaining wall.

In 1991 the main lodge and three small outbuildings were removed from the five-acre site. Approximately two acres of the parcel were affected by the original construction of the lodge and support buildings for recreational use of the area. The restoration of the original privately owned site left only the remaining cabin and the cut bank on the upslope of the original retaining wall on the site. The future removal of the cabin would improve the aesthetic quality of the wilderness experience for those visiting Walker Lake. The removal of the retaining wall would improve the visual quality and naturalness of the area. The positive effect would be long lasting, as this project will bring back the natural shoreline by removing this barrier. Wilderness values would improve in the long term as natural processes return the area to natural conditions.

Alternative 3: Partially Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake

This alternative requires the removal of the first row of drums. The concrete material from the retaining wall would be taken out on the lake ice in late winter or early spring. Spring ice thaw would eventually drop the materials into the lake. Snowmobiles would be used to transport the concrete material out to the ice. The remaining rocks would be placed to cover up the second row of drums to alleviate the unsightly view of drums. The drums would be cut up, packaged and sent to Bettles for proper disposal.

Water Resources: While the retaining wall is being dismantled (5 to 7 days) a small amount of localized turbidity would be expected to occur in Walker Lake around the project site. Localized increases in turbidity and sedimentation caused by runoff of disturbed mineral soil during rainy periods would also be expected events. As the exposed beach environment stabilized sedimentation and turbidity would cease.

The disposal of 14,000 pounds of concrete/rock in Walker Lake could cause a small short-term increase in turbidity when the material drops to the lake bottom when the ice thaws. Any soil clinging to the material would create a small turbidity plume on its decent to the lake bottom. This plume would be expected to dissipate quickly.

Conclusion: Localized short-term effects on water quality would be expected from dismantling the retaining wall and disposing of concrete material in lake. The level of impacts to water resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Lakeshore Processes: Removal of the first row of drums and replacement of rocks to cover up the second row of drums would continue to disrupt the natural shoreline. A stable cobble beach environment would not form

Conclusion: Removing only the first row of drum would not allow natural lakeshore processes to form a stable cobble beach environment. The level of impacts to water resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Natural Soundscape: The natural soundscape of the area would be affected by noise associated with the partial dismantling of the retaining wall and sounds generated from aircraft and snowmobiles. During late June noise from dismantling the wall would be heard for up to 7 days. Noise would emanate from breaking up the concrete/rockwall/ drum barrier and activities associated with the field camp. Aircraft noise from the transport of metal drums to Bettles would also occur. These noises would be expected to carry across the lake.

The natural soundscape would be altered in mid-March when snowmobiles would be used to transport material on to the lake for disposal and transport to and from the site. Material transport would take up to 5 days.

Conclusion: The natural soundscape of the area would be altered for about 12 days from noise resulting from wall demolition, aircraft, and snowmobiles. The level of impacts to the natural soundscape anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Vegetation: Partial demolition of the retaining wall would remove about 3 square meters of vegetation (alders and willow) growing on the top of the wall. Removal of this small amount of vegetation would have a negligible effect on this plant community since alder and willow are common in the area.

Conclusion: This alternative would have a negligible effect on vegetation. The level of impacts to vegetation anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Fishery Resources: Fishery surveys have been completed at Walker Lake. The lake contains Arctic Grayling (*Thymallus arcticus*), Lake Trout (*Salvelinus namaycush*), and Arctic Char (*S. alpinus*). Other less common fish include northern pike (*Esox lucius*) and burbot (*Lota lota*). Round whitefish (*Prosopium cylindraceum*), slimy sculpin (*Cottus cognatus*), and least cisco (*Coregonus sardinella*) have also been observed (Johnson & Troyer 1987). The lake has fairly homogenous fish habitat.

Short-term localized increases in turbidity adjacent to the project site and in the water column at the material disposal site would have negligible effect on fish in the lake. Individual fish in the area would be able to temporarily relocate into other parts of the lake since the lake has fairly homogenous fish habitat. Turbidity plumes would be expected to quickly dissipate.

Conclusion: Short-term localized increases in turbidity would have negligible effects on fishery resources. The level of impacts to fisheries resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wildlife: Partial demolition of the retaining wall and camp activities within this area would temporarily displace resident wildlife. Resident wildlife could include caribou, moose, brown bear, ravens, falcons, eagles, songbirds, snowshoe hares, fox, voles, and shrews. The area of disturbance would be small and the expected number of animals potentially affected would be low. Wildlife would be disturbed and most likely move out of the area temporarily. Disturbance would be expected for about 7 days in June and 5 days in March. It is expected that any displaced wildlife would be able to find similar habitat in the near vicinity until they return after the work is completed area. Adequate habitat is available in the area for displaced wildlife.

Conclusion: The temporary displacement of resident wildlife resulting from this alternative would have negligible effects of wildlife. The level of impacts to wildlife anticipated from this

alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Visual Quality: Initially, the presence of the work camp, partial removal of the retaining wall, and stockpile of concrete material in cut area would degrade the visual quality of the area in the short term. The placement of rocks and boulders to cover the second row of drums would alleviate the unsightly view of the rusting drums.

Conclusion: This alternative would continue to have a long-term positive impact on the visual quality of the area. The level of impacts to the area's visual quality anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Recreation/Visitor Use: The retaining wall site is 9.6 kilometers (3 miles) from the main access point near the outlet of Walker Lake. Floaters of the Kobuk River, often start their trips at the outlet stream of Walker Lake. The activities associated with the partial removal of the retaining wall would not affect visitor use of the area. However, visitors would clearly be able to see and hear the sounds of wall demolition and aircraft activity. On clear sunny days, sound can carry across the lake so visitors could easily hear activity at the site. The sights and sounds of the project could diminish the quality of a visitor's experience. The number of visitors affected would be limited since wall removal would be scheduled for 7 days in June, which is the low visitor-use season. The transport of material by snowmobile in March would have little effect on recreation/visitor use since very few people visit the area at this time.

Conclusion: This alternative would not effect visitor use levels in the area but the sights and sounds of project could diminish a visitor experience during the low visitor use season. The level of impacts to recreation/visitor use anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wilderness: The lake is within the nationally designated wilderness. The partial removal of the retaining wall would temporarily disturb the wilderness experience of visitors to the park, detracting from the overall wilderness value. The sights and sounds of man would be readily apparent to visitors during demolition activities. Partial removal of the retaining wall would not allow the natural features and natural processes to occur within the project area. Wilderness characteristics of the area would not be improved with the partial removal of the wall.

Conclusion: This alternative would have a long-term negative effect on the wilderness characteristics of the area. Some short-term degradation of wilderness characteristics would occur during site work. The level of impacts to wilderness anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

National Natural Landmark: The retaining wall would continue to disrupt the natural process of the Walker Lake shoreline. The placement of rocks and boulders to cover up the second row of drums would only remove the unsightly view of the rusting drums.

Conclusion: The natural features of the NNL would not be improved with the partial removal of the wall.

Cumulative Effects: The cumulative effects analysis includes impacts from past, present, and reasonably foreseeable future actions in the area. This analysis includes previous effects of the lodge and removal of the retaining wall.

In 1991 the main lodge and three small outbuildings were removed from the five-acre site. Approximately two acres of the parcel were affected by the original construction of the lodge and support buildings for recreational use of the area. The restoration of the original privately owned site left only the remaining cabin and the cut bank on the upslope of the original retaining wall on the site. The future removal of the cabin would improve the aesthetic quality of the wilderness experience for those visiting Walker Lake. The partial removal of the retaining wall would improve the visual quality and but would continue to degrade the naturalness of the area. The negative effect of leaving the rest of the retaining wall would be long lasting, as this project would not bring back the natural shoreline. The disruption of natural lakeshore processes would continue to degrade the areas' wilderness values.

Alternative 4: Dismantle Retaining Wall and Dispose of Concrete/Rocks on Land

This alternative requires the removal of the retaining wall. The remaining material would be placed on the cut slope above the high water mark. The drums would be cut up, packaged and sent to Bettles for proper disposal. Re-contouring of the shoreline would be done to stabilize the exposed beach from lake surf erosion.

Water Resources: While the retaining wall is being dismantled (10 to 12 days) a small amount of localized turbidity would be expected to occur in Walker Lake around the project site. Localized increases in turbidity and sedimentation caused by runoff of disturbed mineral soil during rainy periods would also be expected events. As the exposed beach environment stabilized sedimentation and turbidity would cease.

Conclusion: Localized short-term effects on water quality would be expected from dismantling the retaining wall. The level of impacts to water resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Lakeshore Processes: The removal of the retaining wall would allow natural lakeshore processes to be reestablished. Wave action would gradually displace and sort the sand and fine gravel to approximate the natural contour of the beach along the rest of the lakeshore. The replacement of rocks and boulders along the lake shoreline would assist in the formation of a cobble beach environment.

Conclusion: The removal of the retaining wall would have a positive effect on lake shore process by allowing the formation of a naturally contoured cobble beach. The level of impacts to park resources anticipated from this alternative would not result in an impairment of park

resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Natural Soundscape: The natural soundscape of the area would be affected by noise associated with dismantling the retaining wall and sounds generated from aircraft. During late June noise from dismantling the wall would be heard for up to 12 days. Noise would emanate from breaking up the concrete/rockwall/ drum barrier and activities associated with the field camp. Aircraft noise from the transport of metal drums to Bettles would also occur. These noises would be expected to carry across the lake.

Conclusion: The natural soundscape of the area would be altered for about 19 days from noise resulting from wall demolition and aircraft. The level of impacts to the natural soundscape anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Vegetation: Retaining wall demolition would remove about 7.5 square meters of vegetation (alders and willow) growing on the top of the wall. Placing concrete/rock material on the cut slope above the high water mark would effect a small amount of vegetation. Vegetation would be expected to overgrow this material in time. Removal of this small amount of vegetation would have a negligible effect on this plant community since alder and willow are common in the area.

Conclusion: This alternative would have a negligible effect on vegetation. The level of impacts to vegetation anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Fishery Resources: Fishery surveys have been completed at Walker Lake. The lake contains Arctic Grayling (*Thymallus arcticus*), Lake Trout (*Salvelinus namaycush*), Arctic Char (*S. alpinus*). Other less common fish include northern pike (*Esox lucius*) and burbot (*Lota lota*). Round whitefish (*Prosopium cylindraceum*), slimy sculpin (*Cottus cognatus*), and least cisco (*Coregonus sardinella*) have also been observed (Johnson & Troyer 1987). The lake has fairly homogenous fish habitat.

Short-term localized increases in turbidity adjacent to the project site would have negligible effect on fish in the lake. Individual fish in the area would be able to temporarily relocate into other parts of the lake since the lake has fairly homogenous fish habitat. Turbidity plumes would be expected to quickly dissipate.

Conclusion: Short-term localized increases in turbidity would have negligible effects on fishery resources. The level of impacts to fisheries resources anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wildlife: Retaining wall demolition and camp activities within this area would temporarily displace resident wildlife. Resident wildlife could include caribou, moose, brown bear, ravens, falcons, eagles, songbirds, snowshoe hares, fox, voles, and shrews. The area of disturbance would be small and the expected number of animals potentially affected would be low. Wildlife would be disturbed and most likely move out of the area temporarily. Disturbance would be expected for about 12 days in June. It is expected that any displaced wildlife would be able to find similar habitat in the near vicinity until they return after the work is completed area. Adequate habitat is available in the area for displaced wildlife.

Conclusion: The temporary displacement of resident wildlife resulting from this alternative would have negligible effects of wildlife. The level of impacts to wildlife anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Visual Quality: Initially, the presence of the work camp, actual removal of the retaining wall would degrade the visual quality of the area in the short term. Permanent placement of the concrete material in cut area would detract from the areas visual qualities until vegetation overgrows the material. Removal of the rusting barrels and concrete/rock barrier would improve the shoreline landscape creating a more natural setting. The placement of rocks and boulders to recreate the natural contour of the shoreline and the natural reclamation of the site would greatly improve the visual quality of the area.

Conclusion: This alternative would have a long-term positive impact on the visual quality of the area. The level of impacts to the area's visual quality anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Recreation/Visitor Use: The retaining wall site is 9.6 kilometers (3 miles) from the main access point near the outlet of Walker Lake. Floaters of the Kobuk River, often start their trips at the outlet stream of Walker Lake. The activities associated with the removal of the retaining wall would not affect visitor use of the area. However, visitors would clearly be able to see and hear the sounds of wall demolition and aircraft activity. On clear sunny days, sound can carry across the lake so visitors could easily hear activity at the site. The sights and sounds of the project could diminish the quality of a visitor's experience. The number of visitors affected would be limited since wall removal would be scheduled for 12 days in June, which is the low visitor-use season.

Conclusion: This alternative would not effect visitor use levels in the area but the sights and sounds of project could diminish a visitor experience during the low visitor use season. The level of impacts to recreation/visitor use anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

Wilderness: The lake is within the nationally designated wilderness. The removal of the retaining wall would temporarily disturb the wilderness experience of visitors to the park, detracting from the overall wilderness value. The sights and sounds of man would be readily

apparent to visitors during demolition activities. The concrete/rock material placed on the cut slope above the high water mark would remain visible until vegetation overgrows the area. Restoration of the site would allow the natural features and natural processes to occur within the project area. Wilderness characteristics of the area would be improved with the removal of the wall and restoration of the site.

Conclusion: This alternative would have a long-term positive effect on the wilderness characteristics of the area. Some short-term degradation of wilderness characteristics would occur during wall demolition. The level of impacts to wilderness anticipated from this alternative would not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or key to the natural or cultural integrity of the park.

National Natural Landmark: The natural features of a small portion of the Walker Lake shoreline would be improved by removal of the retaining wall. The placement of rocks and boulders to recreate the natural contour of the shoreline and the natural reclamation of the site would greatly improve the visual and wilderness quality of the area.

Conclusion: The natural features of the NNL would be improved with wall removal and natural reclamation of the site.

Cumulative Effects: The cumulative effects analysis includes impacts from past, present, and reasonably foreseeable future actions in the area. This analysis includes previous effects of the lodge and removal of the retaining wall.

In 1991 the main lodge and three small outbuildings were removed from the five-acre site. Approximately two acres of the parcel were affected by the original construction of the lodge and support buildings for recreational use of the area. The restoration of the original privately owned site left only the remaining cabin and the cut bank on the upslope of the original retaining wall on the site. The future removal of the cabin would improve the aesthetic quality of the wilderness experience for those visiting Walker Lake. The removal of the retaining wall would improve the visual quality and naturalness of the area. The positive effect would be long lasting, as this project will bring back the natural shoreline by removing this barrier. Wilderness values would improve in the long term as natural processes return the area to natural conditions.

Coordination and Consultation

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APPENDIX A:
CULTURAL RESOURCE REVIEW
NATIONAL HISTORIC PRESERVATION ACT
SECTION 106 COMPLIANCE





United States Department of the Interior

NATIONAL PARK SERVICE

ALASKA REGIONAL OFFICE
2525 Gambell Street, Room 107
Anchorage, Alaska 99503-2892

IN REPLY REFER TO:

13 FEB 1991

H4217 (ARO-RCR)

Memorandum

To: Superintendent, GAAR
From: Regional Historic Preservation Officer, Alaska Region
Subject: Assessment of Effect (XXX) Form ARO-91-001

The action documented in the enclosed form has been reviewed by the Regional Director and, with the addition of requirements stated below, certified as meeting the standards for compliance with Section 106 of the National Historic Preservation Act (amended 1981) as outlined in NPS-28.

Given the level of existing development and disturbance, razing/burning the buildings should not pose a threat to any archeological resources, nor should cleanup activities using a rake and shovel. If greater disturbance is planned, the lodge area should be surveyed for archeological sites.

Under the criteria for determining effect, we find that this undertaking will have no effect on cultural resources if implemented with the additional requirements stated above.

We are notifying the SHPO of our finding. They now have fifteen days to comment on the project.

The original Assessment of Effect form will be kept in the Central Compliance File, Alaska Regional Office. If you have any questions please contact Paul Gleeson at 257-2665.

Enclosure

cc:
Alaska State Historic Preservation Officer
Paul Gleeson

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS AND OUTDOOR RECREATION

3601 C STREET, SUITE 1200
ANCHORAGE, ALASKA 99503
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ANCHORAGE, ALASKA 99510-7001

March 1, 1991

File No: 3130-1R NPS

Subject: XXXX Forms ARO-91-001 NPS

Ms. Kathleen Lidfors
Regional Historic Preservation Officer
Alaska Regional Office, NPS
2525 Gambell St., Rm. 107
Anchorage, AK 99508-2892

Dear Ms. Lidfors;

We have received and reviewed the Assessment of Effect (XXX) form for removal of the non-historic lodge from Walker Lake in Gates of the Arctic National Park and Preserve.

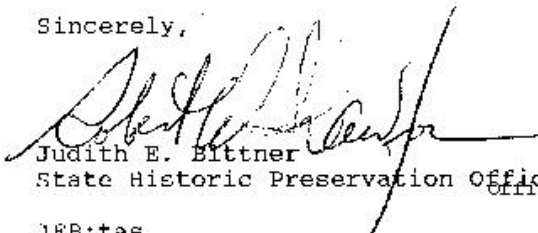
We agree that removal will not further disturb any archaeological material which may be present and that the lodge is intrusive in wilderness lands.

We concur with your finding of "No Effect" for the undertaking.

However, there is a minor point that needs to be made. Because there are no historic properties in the project area, there is nothing on which to make a determination of effect. It appears that a finding of "no properties" is more appropriate per 36 CFR 800.4(d). Determining effect requires that there is a historic property to effect. This malapropism is common to virtually all consulting agencies and we intend to be sending similar missives over the coming months. We will not be able to continue considering findings of effect for undertakings which involve no historic properties.

Please contact Tim Smith at 762-2625 if there are any questions.

Sincerely,



Judith E. Bittner
State Historic Preservation Officer

JEB:tas

**APPENDIX B:
ANILCA Section 810 (a) Evaluation and Findings**

I. INTRODUCTION

This section was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It summarizes the evaluations of potential restrictions to subsistence activities which could result from the removal of a shoreline retaining wall (structure) located on Walker Lake within Gates of the Arctic National Park and Preserve.

II. EVALUATION PROCESS

Section 810(a) ANILCA states:

In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the federal agency...over such lands...shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy or disposition of public lands needed for subsistence purposes. No such withdrawal, reservation, lease permit, or other use, occupancy or disposition of such lands which would significantly restrict subsistence uses shall be effected until the head of such Federal agency –

- (1) gives notice to the appropriate State agency and the appropriate local committees and regional councils established pursuant to section 805;
- (2) gives notice, and holds, a hearing in the vicinity of the area involved; and
- (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

ANILCA created new units and additions to existing units of the national park system in Alaska. Gates of the Arctic National Park & Preserve was established by ANILCA section 201 (4)(a) for the purposes among others:

“ To maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers and lakes, and other natural features; to provide continued opportunities, including reasonable access for mountain climbing, mountaineering, and other wilderness recreational activities; and to protect habitat for and the populations of, fish and wildlife, including, but not limited to caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional, in accordance with the provisions of title VIII.”

The potential for significant restriction must be evaluated for the proposed action's effect upon "...subsistence uses and needs, the availability of other lands for the purposes sought to be achieved and other alternatives that would reduce or eliminate the use."

III. PROPOSED ACTION ON FEDERAL LANDS

Alternative 1 (No Action). Allow the retaining wall to deteriorate slowly. The retaining structure will likely take several hundred years to reclaim on its own. The metal drums may rust slowly, and the concrete will not likely break up. Natural re-vegetation may eventually cover up the drum and rocks of the wall structure.

Alternative 2: Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake (NPS Preferred Alternative). This alternative includes breaking up the rock wall barrier and drums with hand tools, and where necessary motorized tools. All concrete material would be stockpiled for later disposal in the lake. Metal drums would be transported to Bettles for disposal. This alternative would require three phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area containing approximately .5 meter by 15 meters of vegetation (7.5 m²) would be removed from the top of the rock wall. About 28,000 pounds of material would be stockpiled on pallets or plywood lined with a heavy tarp or plywood on the cut slope above the high water mark. This would facilitate easy removal during the phase III of this project. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 75 drums would be transported to Bettles via aircraft (Beaver) for disposal. Four round trips would be required to transport all metal drum pieces.

A crew of six people would work 10-12 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Phase II (Natural Reclamation of the Site). After removal of the retaining wall, rocks will be moved strategically to approximate the natural contour of the shoreline. Large rocks and boulders will be placed on site to help stabilize the shoreline from surf erosion. The site would be allowed to be reclaimed by natural processes.

Phase III (Transport Material onto Lake for Disposal): Phase III would begin in mid-March. Two snowmobiles with sleds would transport the stockpiled material about 1/8th of a mile out on the lake, where the lake drops to a depth of 390 feet. At approximately 600 lbs. per load with two sleds, a total of 47 trips (24 trips per sled) would be required. The material would drop into the lake when the lake ice thaws.

Four personnel would help in the spring project. It would take 6 to 7 days to finish this phase, which includes snowmobile transport from Bettles to Walker Lake, site setup, wrap up and transport back to Bettles.

Alternative 3: Partially Dismantle Retaining Wall and Dispose of Concrete/Rocks in Lake.

This alternative requires removing the rock wall barrier and first row of drums with hand tools, and where necessary motorized tools. The rock wall would be replaced to cover the second row of drums. All concrete material would be stockpiled for later disposal in the lake. This alternative requires three phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area containing approximately .25 meter by 12 meters of vegetation (3.0 m^2) would be removed from the top of the rock wall. About 14,000 pounds of material would be stockpiled on pallets or plywood lined with a heavy tarp or plywood on the cut slope above the high water mark. This would facilitate easy removal during the phase III of this project. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 39 drums would be transported to Bettles via aircraft (Beaver) for disposal. Two round trips would be required to transport all metal drum pieces.

Phase II (Natural Reclamation of the Site). After removal of the first row of drums, rocks will be replaced to cover the second row of drums. This would maintain the rock barrier against further surf erosion and cover up the second row of unsightly drums.

A crew of six people would work 5-7 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Alternative 4: Dismantle Retaining Wall & Dispose of Concrete/Rocks on Land.

This alternative would involve breaking up the rock wall barrier and drums with hand tools, and where necessary motorized tools. All concrete material would be placed on the cut slope behind the retaining wall. Metal drums would be transported to Bettles for disposal. This alternative would require two phases.

Phase I (Dismantle Retaining Wall): The concrete/rock wall and drum barrier would be broken up with a combination of hand (sledge hammers and pry bars) and motorized tools. An area of approximately .5 meter by 15 meters of vegetation (7.5 m^2) would be removed from the top of the rock wall. About 28,000 pounds of material would be placed on the cut slope above the high water mark. The drums would be cut to smaller pieces, flattened with hammers and banded together for easier handling. A total of 75 drums would be transported to Bettles via aircraft (Beaver) for disposal. Four round trips would be required to transport all metal drum pieces.

A crew of six people would work 10-12 days, in late June during Phase 1. A field camp with two or three tents would be set up on the level pad once occupied by an outbuilding above the

existing cabin. Two or three staff could stay in the existing cabin, which would also serve as the mess hall for the whole crew.

Phase II (Natural Reclamation of the Site). After removal of the retaining wall, rocks would be moved strategically to approximate the natural contour of the shoreline. Large rocks and boulders would be placed on site to help stabilize the shoreline from surf erosion. The site would be allowed to be reclaimed by natural processes.

IV. AFFECTED ENVIRONMENT

A summary of the affected environment pertinent to subsistence uses is presented here. For a comprehensive description, see the Gates of the Arctic National Park and Preserve, Final General Management Plan (NPS 1986) and the Gates of the Arctic National Park and Preserve Final Wilderness Environmental Impact Statement EIS (NPS 1988).

The retaining wall is located on the Southeast side of Walker Lake within Gates of the Arctic National Park. The park and preserve boundaries include 8,229,946 acres of federal land of which approximately 7,052,000 acres are designated wilderness and 242,136 acres are private land. The park and preserve lie in the central Brooks Range and occupy lands on either side of the continental divide from the eastern boundary at the Trans-Alaska Pipeline Utility Corridor and the Dalton Highway to the Noatak National Preserve boundary on the west. The northern boundary runs along the range front; the North Slope stretches beyond to the Arctic Ocean. The southern boundary runs through the taiga forest including some of the southern foothills within the park.

Nomadic peoples have used and occupied the area for thousands of years, following caribou herds and traveling to regional trading areas to meet with other Native groups. These peoples were from at least three distinct Alaska Native cultures: Koyukon Athapaskan Indians, Kobuk Eskimo, and Nunamiut Eskimo. Archeological sites found today trace their history and use, and may give clues to the earliest human inhabitants of northern Alaska. The temporal range of known sites in the park/preserve covers at least the last ten millennia. The variety of known archeological sites includes seasonal villages, long- and short-term camps, hunting and butchering locales, caribou fences, lookout sites, fish camps, trapping camps, and resource harvesting locations such as birch bark gathering. Local rural residents still depend upon resources in the park to sustain a subsistence way of life.

Subsistence harvest of fish and wildlife is allowed in Gates of the Arctic National Park and Preserve by qualified subsistence users subject to Federal subsistence management regulations and park-specific regulations and policies. ANICLA protects subsistence uses by local rural residents as a priority consumptive use over other non-subsistence consumptive uses.

Hunting, fishing, trapping and gathering remain a vital part of a subsistence way of life for local residents that continue to evolve in this region. Major subsistence resources include sheefish, lake trout, grayling, Arctic char, fur bearers, waterfowl, black and brown bears, moose, wolves, Dall sheep, musk ox, and caribou. Occasionally subsistence users will make special trips into specific areas such as the Kobuk River to fish for sheefish or into large lakes looking for char

and lake trout. Winter trapping efforts concentrate on the harvest of lynx, wolverine, wolves, marten and fox. These and other subsistence activities occur throughout the year and are usually concentrated in the northern and eastern portions of the park and preserve.

The NPS recognizes that patterns of subsistence use vary from time to time and from place to place depending on the availability of wildlife, other renewable natural resources, and regulatory openings and closings of areas. A subsistence harvest in a given year may vary considerably from previous years because of such factors as weather, surface snow conditions for traveling, wildlife migration patterns, natural population cycles, wildlife conservation practices such as leaving a trapline fallow periodically, and regulatory changes.

V. SUBSISTENCE USES AND NEEDS EVALUATION

To determine the potential impact on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources that could be impacted. The evaluation criteria were:

- The potential to reduce important subsistence wildlife populations by a) reductions in numbers, b) redistribution of subsistence resources, or c) habitat losses;
- What effect the action might have on subsistence hunter access;
- The potential for the action to increase competition.

1) The potential to reduce populations:

The proposed actions are not expected to have any significant effect on subsistence species or habitats. Wildlife and habitats would be subjected to minimal potential impacts and disturbances. However, provisions of ANILCA and Federal regulations provide the tools for adequate protection of fish and wildlife populations on federal public lands. In addition, NPS regulations allow the superintendent to enact closures and/or restrictions if necessary to protect subsistence opportunities and ensure the continued viability of a particular fish or wildlife populations.

2) Restriction of Access:

All rights of access for subsistence harvest on NPS lands are granted by Section 811 of ANILCA. Gates of the Arctic National Park and Preserve are managed according to legislative mandates, NPS management policies and guidelines within the approved General Management Plan. The proposed actions are not expected to limit or restrict the access or subsistence users to natural resources within the park or preserve. The superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

3) Increase in Competition:

Competition for wildlife or resources is not expected to significantly impact subsistence users as a result of the proposed actions. NPS regulations and provisions of ANILCA mandate that if and when it is necessary to restrict taking of fish or wildlife subsistence users are given a priority over other user groups. Continued implementation of the ANILCA provisions should mitigate any increased competition from resource users other than subsistence users. The superintendent may enact closures and/or restrictions if necessary to protect subsistence opportunities or to assure the continued viability of a particular fish or wildlife population.

VI. AVAILABILITY OF OTHER LANDS

Subsistence users utilize other Federal public lands within the region. The proposed actions do not affect the availability of Federal lands for subsistence uses. The proposed actions are consistent with NPS mandates and the park/preserve General Management Plan.

VII. ALTERNATIVES CONSIDERED

The EA and this evaluation have described and analyzed the proposed alternatives. The proposed actions are consistent with NPS mandates and the park/preserve General Management Plan.

VII. FINDINGS

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