
National Park Service
U.S. Department of the Interior



Wrangell-St. Elias National Park and Preserve
Alaska

Horsfeld Concession Camp Move Environmental Assessment

March 2010

Public Review Copy



Prepared by:
United States Department of the Interior
National Park Service
Wrangell-St. Elias National Park and Preserve

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Front Cover Photograph: National Park Service

PURPOSE AND NEED FOR ACTION

The National Park Service (NPS) is considering a request from NPS concessionaire Richard G. Petersen for permission to relocate and rebuild nine structures at his existing commercial guide operations facility within Wrangell-St. Elias National Preserve. The structures are situated near the confluence of Horsfeld and Beaver Creeks, north of Beaver Creek and within the active floodplains of Horsfeld and Beaver Creeks. The existing facility development footprint encompasses approximately ten acres in the Nabesna A-1 quadrangle at T 3N, R 23E, Sections 34 & 35, Copper River Meridian.

Horsfeld Creek is aggrading just above its confluence with Beaver Creek, forcing its main channel to move to the east. Associated flooding has damaged many of Petersen's structures, some of which may soon be destroyed. This flooding adversely affects the visitor experience, as well as the viability of his operation. Petersen has proposed to relocate and rebuild the affected structures on a terrace immediately to the east and partially overlapping his current camp.

This environmental assessment (EA) analyzes proposed actions, alternatives, and potential impacts to cultural and natural resource values that could result from the proposed action. It has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and regulations of the Council of Environmental Quality (40 CFR 1508.9).

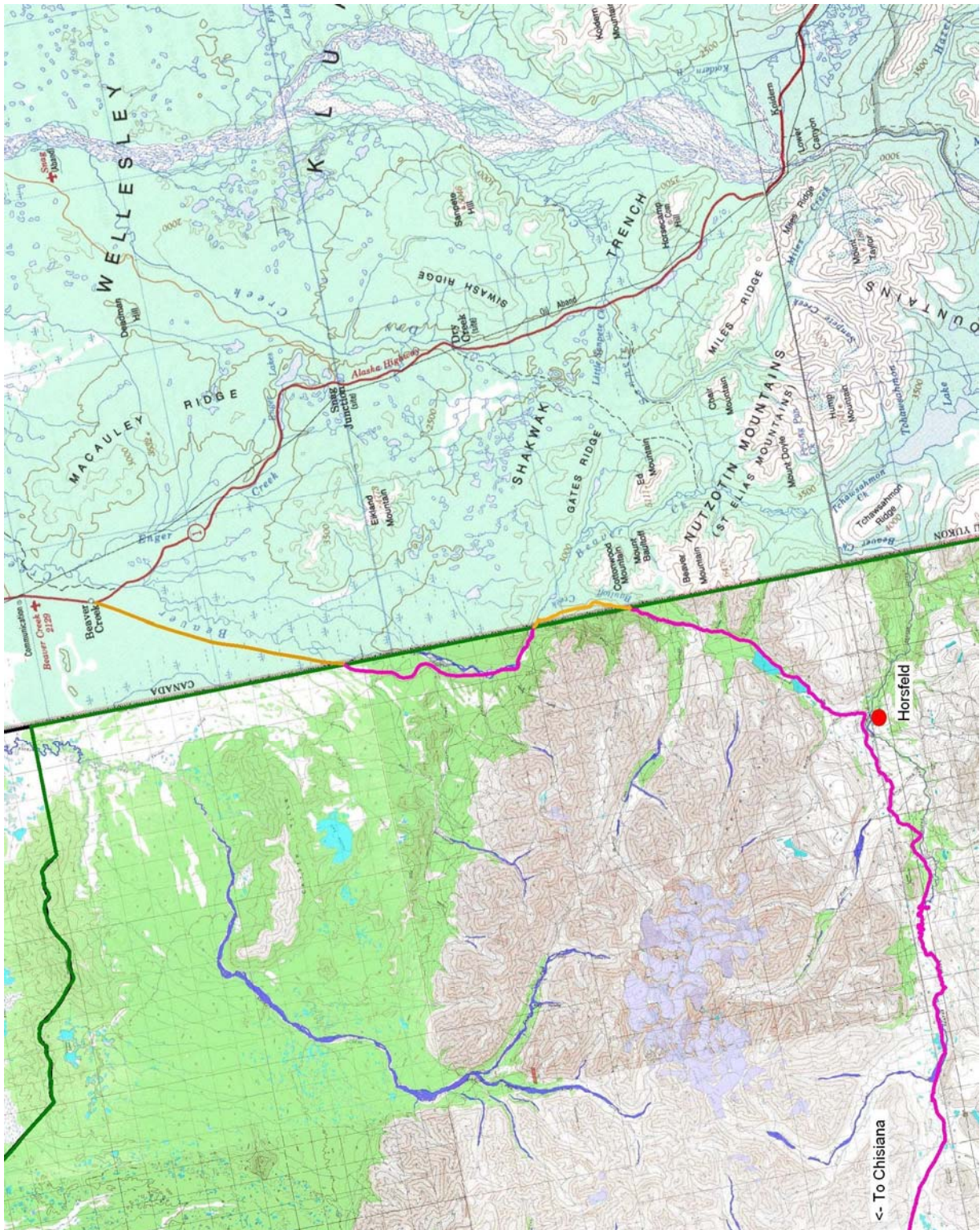
BACKGROUND

Recreational hunting has occurred in the area now encompassed by Wrangell-St. Elias National Preserve since the early 1900s. Local hunting guides, like Harry Boyden and Lou Anderton, began using the Horsfeld site in the late 1930s as a base for hunting operations in the Beaver Creek Valley. Similar use continued during the 1950s under Ken Folger, during the 1960s under Paul Jovick, and in 1970s and 1980s under Ray McNutt.

Following the establishment of Wrangell-St. Elias National Preserve in 1980, the NPS issued Ray McNutt a series of concession permits authorizing him to continue utilizing the Horsfeld facility, much of which he built and maintained under permit from the U.S. Bureau of Land Management in the 1970s. An Addendum to McNutt's 1988 NPS Concession Permit (LP-WRST010-88) recognized his ownership of several modern buildings and structures at the site and assigned him the land upon which they stood. At the time of that assignment, the structures noted in the permit included a 14 ft x 16 ft log cabin, 8 ft x 10 ft log cabin, 10 ft x 12 ft log shed, 10 ft x 12 ft log barn, 8 ft x 10 ft log cache, 50-ft-diameter log corral, four tent frames, and one meat cache.

Richard Petersen purchased Ray McNutt's NPS guide concession in February 2002 and the NPS assigned Petersen all McNutt's "right, title and interest in and under Concession Permit No. LP-WRST-016-98," including all the structures in the modern Horsfeld facility.

Figure 1: Horsfeld vicinity showing Beaver Creek Winter Trail from Alaska Highway. The Canadian portion of the route is shown in gold, the Alaskan part in purple.



LEGAL CONTEXT

The NPS Organic Act and the General Authorities Act prohibit impairment of park resources and values. The NPS Management Policies and Director's Order No. 55 use the terms "resources and values" to indicate the full spectrum and intangible attributes for which the park was established and is managed, including the Organic Act's fundamental purpose and any additional purposes as stated in the park's enabling legislation. The impairment of park resources and values may not be allowed unless directly and specifically provided by statute. The primary responsibility of the NPS 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 to enjoy them.

The Alaska National Interest Lands Conservation Act of 1980 (ANILCA) Section 201(9) states that Wrangell-St. Elias National Park and Preserve will be managed for the following purposes, among others:

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.

ANILCA Section 203 authorized the continuation of hunting within Wrangell-St. Elias National Preserve. The State of Alaska Administrative Code requires that nonresident hunters who hunt brown/grizzly bear, Dall sheep, or mountain goats be accompanied by a professional guide/outfitter (5 ACC 92.990(31) and AS 16.05407). In order for the NPS to provide any interested visitors with an opportunity to hunt within Wrangell-St. Elias National Preserve, commercial guide services were deemed necessary and appropriate.

ANILCA Section 1307 promised that persons providing visitor services in any conservation unit established by the Act on or before January 1, 1979, would be permitted to continue providing such services. ANILCA Section 1316(a) provided that "on all public lands where the taking of fish and wildlife is permitted in accordance with the provisions of this Act or other applicable State and Federal law, the Secretary shall permit . . . the continuance of existing uses, and the future establishment, and use, of temporary campsites, tent platforms, shelters, and other temporary facilities and equipment directly and necessarily related to such activities." Many sport hunting guides operated in Wrangell-St. Elias National Preserve utilized cabins and tent frames there before that unit was established. The present system of providing cabin permits to the holders of commercial sport hunting concessions and the expansion of this concession facility, is supported by 36 CFR Section 13.130, which authorizes the Superintendent to "issue a permit for the construction, temporary use,

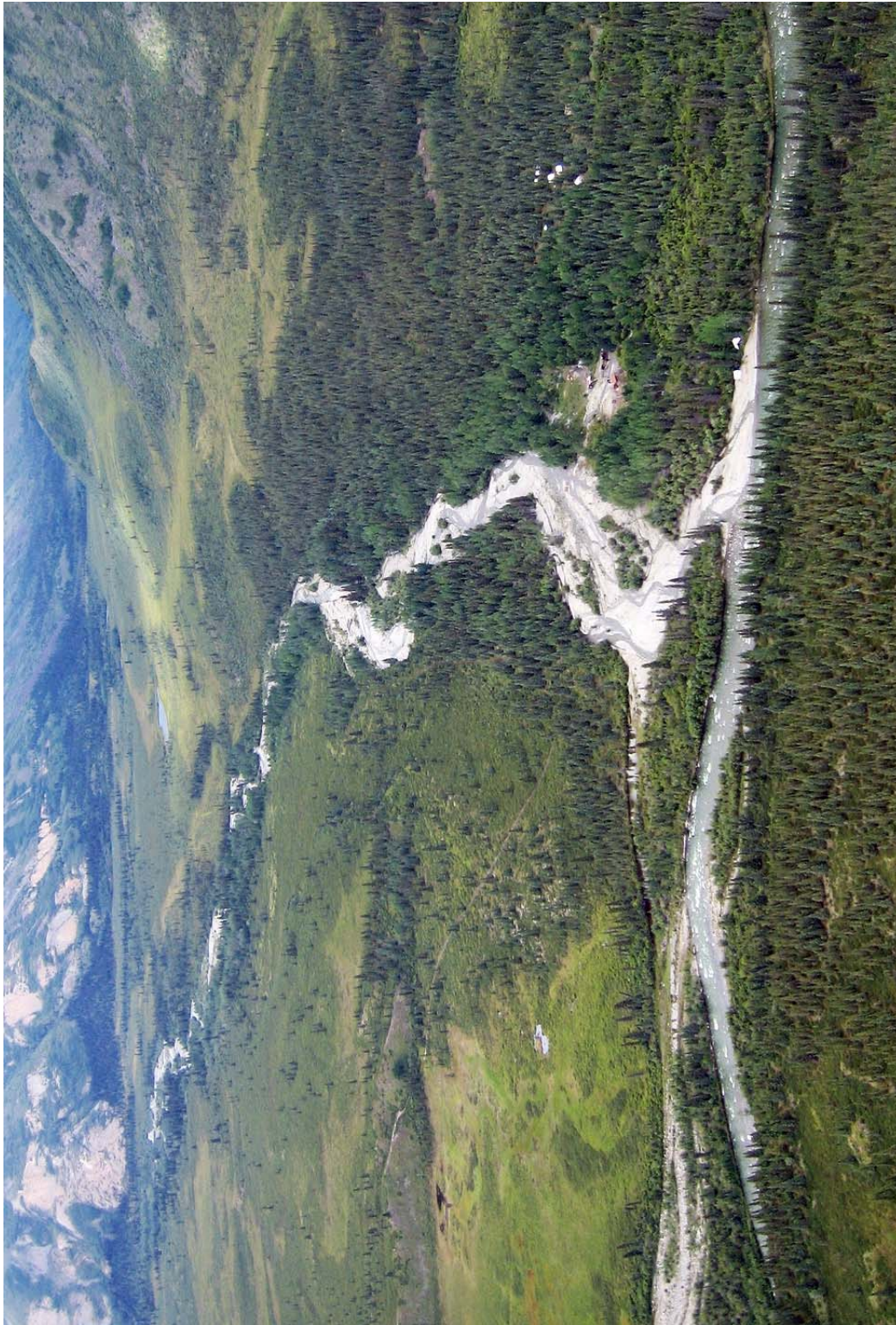


Figure 2: The Horsfeld Concession Facility is situated slightly right of center. The ORV Trail angles from near center upward to left. Beaver Creek flows across bottom of the photo from left to right. The Horsfeld Airstrip is situated just off the photo near center left. The view is to the northwest, looking up Horsfeld Creek.

occupancy, and maintenance of a cabin or other structure which is authorized by law but not governed by any other section in this subpart."

ISSUES AND IMPACT TOPICS

Issues Selection for Detailed Analysis

To focus the content of the EA, the NPS selected specific issues for further analysis and eliminated others from evaluation. Subsequent discussions of the affected environment and environmental consequences related to each alternative focus on those issues retained for further analysis. A brief rationale for the selection of each issue is provided below.

Natural Resources

Aquatic resources: Relocation of the Horsfeld facility would likely result in positive effects on the wetland resources while the continued use of the existing off-road vehicle (ORV) trail and associated ford could potentially result in adverse effects to aquatic habitat in Horsfeld Creek. The present concession agreement with Petersen authorizes him to continue using an ORV to transport materials and supplies over the trail linking the Horsfeld Airstrip and the Horsfeld Camp.

Vegetation: Relocating part of the Horsfeld facility to a new site east of Horsfeld Creek onto an upland terrace would affect relatively undisturbed natural vegetation.

Floodplains: Executive Order 11988, *Floodplain Management*, requires all Federal agencies to take action to reduce the risk of flood loss, to restore and preserve natural and beneficial values served by floodplains, and to minimize the impact of floods on human safety, health, and welfare. Parts of the existing Horsfeld headquarters facility are situated within active floodplains.

Cultural Resources

Recent cultural resource surveys within and around the Horsfeld area have recorded both archeological and historical features. Consideration of effects to cultural resources is required under the National Historic Preservation Act (NHPA) and NEPA.

Subsistence Resources

Title VIII, Section 810 of the ANILCA requires an evaluation of the effect of the proposed Federal actions 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. The subsistence analysis is provided in Appendix A, ANILCA Section 810(a) Summary Evaluation and Findings.

Visitor Use and Recreation

Relocating the facility, and particularly moving existing facilities out of the floodplains, would affect visitor use and recreational enjoyment of the Horsfeld site.

Impact Topics Dismissed from Further Analysis

Issues dismissed from detailed analysis are not addressed further in this EA. These include:

Air Quality: Although the Clean Air Act (CAA) and NPS Management Policies require consideration of air quality impacts from NPS projects, this action would only result in short-term, local, and negligible adverse impacts to air quality.

Wilderness: The proposed project is situated on land identified as unsuitable for wilderness designation by WRST's wilderness suitability review, contained in the Park's 1986 General Management Plan. Therefore, no impacts are expected to Wilderness from the proposed action or its alternatives.

Wetlands: Executive Order 11990, NPS Director's Order No. 77-1 and associated procedural manuals require protection of wetlands. The proposed project would have a small beneficial effect on wetlands by removing human structures and activities out of the wetland areas.

Wildlife: Relocating part of the Horsfeld facility to a new site east of Horsfeld Creek would not measurably affect wildlife habitat or populations.

Threatened, Endangered and Candidate Species, or Species of Concern: There are no known Federal or State-listed threatened or endangered species, Federal candidate species, or State-listed species of special concern within the area of potential effect.

Waste Management: Construction activities associated with this project would generate a small amount of solid, sanitary, and landscape/vegetative waste; no hazardous wastes would be generated. All construction wastes would be temporarily stored, transported, and disposed of in accordance with State and Federal laws and regulations and NPS policies in approved disposal facilities.

Environmental Justice: The lower Beaver Creek Valley has no permanent full-time residents, therefore Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, to identify and address any disproportionate adverse human health or environmental effects of its projects on minority or low-income populations, does not apply.

ALTERNATIVES

Alternative A: (No Action)

Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14) require the assessment of a No-Action Alternative in NEPA documents. The No-Action Alternative provides a baseline against which to measure the impacts of the other proposed alternative(s). Under this No-Action Alternative, Petersen would not move his Horsfeld facility, flooding would continue, and several key buildings would eventually be washed down Horsfeld Creek into Beaver Creek. Petersen would continue to access his facility by the existing ORV trail, which connects it to the Horsfeld Airstrip located about ½ mile to the northwest across Horsfeld Creek, as authorized in his existing concession contract.

Alternative B (Proposed Action):

Under this Proposed Action Alternative, Petersen would remove nine structures from active floodplains, relocating and rebuilding five of them on higher ground situated just east of the current facility and one—the washroom—on a safer site just north of Beaver Creek. The total number of buildings would be reduced by three, as the proposal includes consolidating and converting six existing buildings—the Store Room (a) and Tack Room (b), the Cook Cabin and Pantry, and the Dry Sauna and Washroom—into three new ones. The footprint of the headquarters facility would consequently be reduced by 143 square feet.

All of the replacement buildings would employ timber/log construction—essentially log cabins with one rounded and three flattened sides (see photo in Appendix B). The timbers and most of the other building materials would be transported to the site during the winter by snowmachine over the Beaver Creek Trail from the Alaska Highway. Some lighter materials would be flown to the Horsfeld Airstrip and transported to the site by ORV. Petersen would continue to access his facility via the existing ORV trail, which connects it to the Horsfeld Airstrip across Horsfeld Creek.

The following list details each structure and its proposed replacement:

Store Room: The existing 16-ft x 15-ft Store Room is a single-story building, constructed of 10-12 inch-diameter, unpeeled logs, with metal roofing fabricated from recycled 55 gallon drums (see photo in Appendix B). It has no foundation.

*Removal: The existing Store Room would be removed from Horsfeld Creek floodplain and all materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Store Room and the Tack Room (see below) would be replaced by a single 20-ft x 20-ft, single-story, timber/log-constructed building, with a gambrel roof and black asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade.

Tack Room: The existing 18-ft x 16-ft Tack Room is a single-story building, constructed of 10-12-inch-diameter, unpeeled logs, with tin roofing fabricated from old fuel cans (see photo in Appendix B). It has no foundation

*Removal: The existing Tack Room would be removed from Horsfeld Creek floodplain and all materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Tack Room and the Store Room (see above) would be replaced by a single 20-ft x 20-ft, single-story, timber/log-constructed building, with a gambrel roof and black asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade.

Dry Sauna: The existing 10-ft x 10-ft Dry Sauna is constructed of plastic sheeting over an aluminum frame (see photo in Appendix B). It has no foundation.

*Removal: The existing Dry Sauna would be removed from its present location on the Beaver Creek floodplain and all materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Dry Sauna and Wash Room (see below) would be replaced by a single 12-ft x 15-ft, single-story, timber/log-constructed building, with a gable roof and black asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade. Unlike all the other buildings, which are situated within the Horsfeld Creek floodplain, the Washroom and Dry Sauna are located adjacent to Beaver Creek. Although its new location would remain within the Beaver Creek floodplain, it would be out of the active stream channel on a slightly higher terrace--a far safer location.

Wash Room: The existing 8-ft x 10-ft Wash Room consists of a canopy over a pole frame (see photo in Appendix B). It has no foundation.

*Removal: The existing Wash Room would be removed from its present location on the Beaver Creek floodplain and all materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Wash Room and Dry Sauna (see above) would be replaced by a single 12-ft x 20-ft, single-story, timber/log-constructed building, with a gable roof and black asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade. Unlike all the other buildings, which are situated within the Horsfeld Creek floodplain, the Washroom and Dry Sauna are located adjacent to Beaver Creek. Although its new location would remain within the Beaver Creek floodplain, it would be out of the active stream channel on a slightly higher terrace--a far safer location.

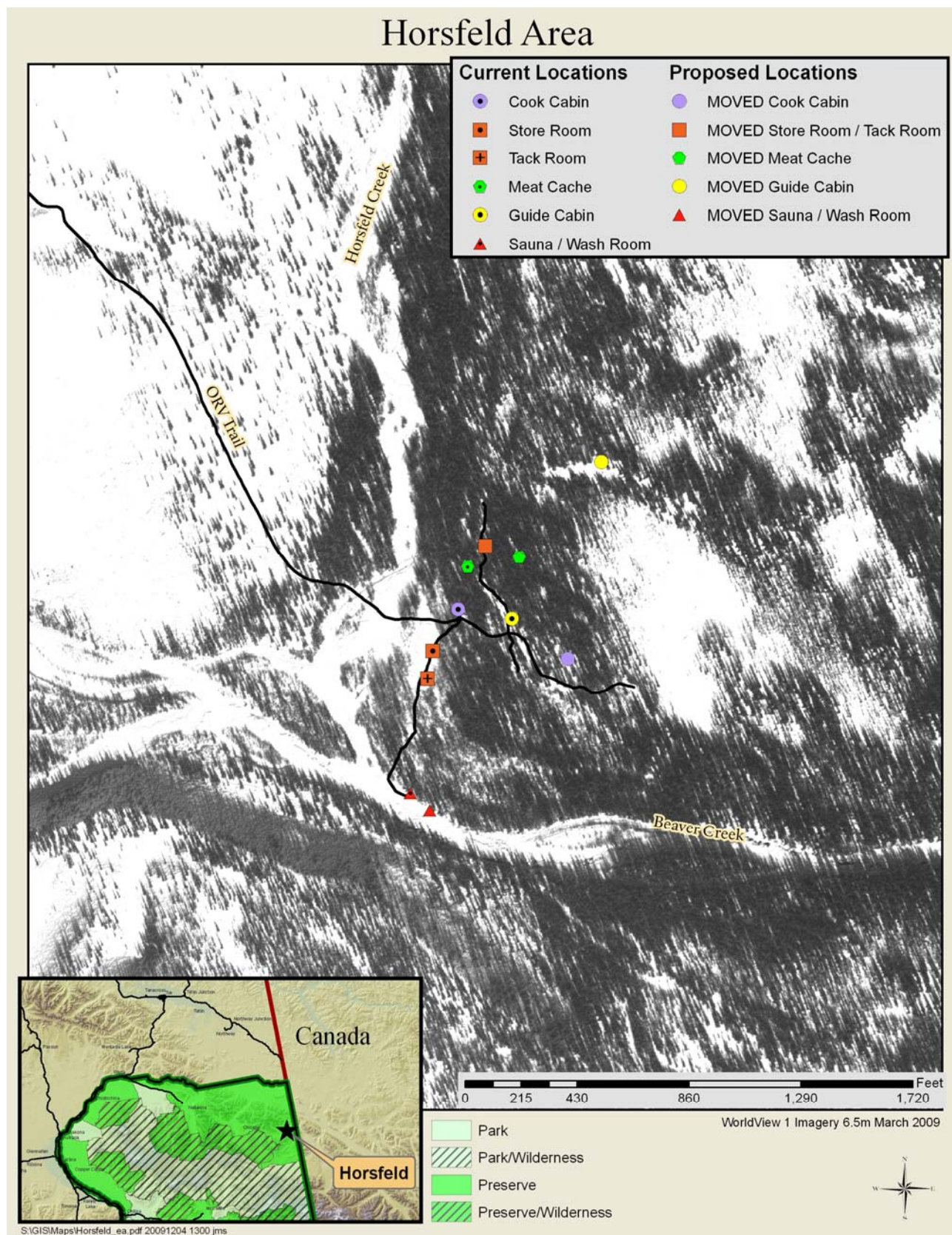


Figure 3: Horsfeld Concession Facility Site Map

Corral: The existing 85-ft x 60-ft Corral is constructed of 8-10 inch diameter log support posts, spaced 8-10 feet apart, supporting 3–4 inch-diameter pole rails. Not shown on the attached Horsfeld Concession Facility Site Map, the corral is located adjacent to and immediately south of the tack room (see photo in Appendix B).

*Removal: The existing Corral would be removed from the Horsfeld Creek floodplain and all materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The Corral would be replaced with one of similar size and design.

Cook Cabin: The existing 17-ft x 22-ft Cook Cabin is constructed of 10-12-inch-diameter, peeled logs, with asphalt rolled-roofing, and includes a 6-ft-wide porch & second story loft (see photo in Appendix B). It has no foundation.

*Removal: The existing Cook Cabin would be removed from the Horsfeld Creek floodplain and its materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Cook Cabin and Pantry (see below) would be replaced with a single 20-ft x 30-ft, single-story timber/log-constructed building, with a gable roof and black asphalt rolled-roofing. Its foundation would pressure-treated wood on-grade.

Pantry: The existing 10-ft x 14-ft Pantry is constructed of 2-inch x 4-inch dimensional lumber with OSB sheathing and asphalt rolled-roofing. Its foundation consists of nine concrete pillars made from five-gallon fuel drums. Not shown on the attached Horsfeld Concession Facility Site Map, the existing pantry is located about thirty feet east of the Cook Cabin (see photo in Appendix B).

*Removal: The existing Pantry would be disassembled and all materials used in the new construction. The foundation pillars would be removed from the Horsfeld Creek floodplain and transported out of the preserve.

*Replacement: The existing Pantry and Cook Cabin (see above) would be replaced with a single 20-ft x 30-ft, single-story timber/log-constructed building, with a gable roof and black asphalt rolled-roofing. Its foundation would be pressure-treated wood on-grade.

Master Guide Cabin: The existing 8-ft x 10-ft Master Guide Cabin is constructed of 1-inch x 6-inch dimensional lumber over a 2-inch x 4-inch lumber frame, with a sheet metal roof (see photo in Appendix B). It has no foundation.

*Removal: The existing Master Guide Cabin would be removed from the Horsfeld Creek floodplain and its materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Master Guide Cabin would be replaced with an 8-ft x 10-ft, single-story, timber/log-constructed building, with a gable roof and black and asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade.

Meat Cache: The existing 8-ft x 10-ft Meat Cache is constructed of 1-inch x 6-inch dimensional lumber over a 2-inch x 4-inch lumber frame. The lower three feet of its perimeter walls are covered with metal siding fabricated from recycled fuel cans. The upper walls are open and covered with window screening for ventilation. It presently rests on eight 6-inch-diameter logs, placed approximately 2-3 feet in the ground (see photo in Appendix B).

*Removal: The existing Meat Cache would be removed from the Horsfeld Creek floodplain and its materials recycled, burned in place, or transported out of the Preserve.

*Replacement: The existing Meat Cache would be replaced with a 8-ft x 10-ft, single-story, timber/log-constructed building, with a gable roof and black asphalt rolled-roofing. Its new foundation would be pressure-treated wood on-grade. Its construction would be similar to the existing structure with window screening used on the upper wall perimeter for ventilation.

In addition to removing, rebuilding, and relocating the nine structures, Petersen also proposes to remove the debris from an unauthorized dump site, abandoned by the Horsfeld Camp's previous operator (see photo in Appendix B).

Petersen proposes to haul all necessary materials into and out of Horsfeld during the winter months using a snowmachine and sled.

Alternatives Considered but Dismissed from Further Consideration:

WRST considered and rejected an alternative which would have permitted the applicant to move part or all of his concession facility to a new location west of Horsfeld Creek and north of the ORV trail. NPS personnel determined that that location could substantially increase foot traffic on and around the area's most significant cultural sites, potentially affecting them adversely.

SUMMARY IMPACTS OF ALTERNATIVES

Impact Topics	Alternative 1: (No Action)	Alternative 2: (Proposed Action)
Visitor Use	Minor adverse effect	Minor beneficial effect
Cultural Resources	Minor adverse effect	Minor adverse effect
Aquatic Resources/ Floodplains	Negligible adverse effect	Negligible beneficial effect
Vegetation	Negligible adverse effect	Minor adverse effect
Wetlands	Minor adverse effect	Minor beneficial effect

AFFECTED ENVIRONMENT

Natural Resources

Aquatic Resources/Floodplains

The project area includes portions of both Horsfeld Creek and Beaver Creek. An ORV trail crosses Horsfeld Creek, but there is no evidence of bank erosion at either end of the crossing, and no sedimentation or other adverse effects were observed at site. The site is well armored by large cobble-sized rocks and does not appear to support spawning for any of the local fish species, primarily due to its high velocity. Existing structures are located within the floodplain and/or active channel of Horsfeld Creek. The dynamic nature of the stream threatens the integrity of the structures. One of the structures is a horse corral that is regularly flooded when the stream occupies that portion of the floodplain.

Arctic grayling and slimy sculpin were observed in Horsfeld Creek and these fish species also occur in Beaver Creek. Longnose sucker and northern pike potentially occur in Beaver Creek, but these species have not been documented there.

The water quality in Horsfeld Creek is excellent. Water chemistry measurements taken by park staff in August 2008 are displayed in the following table:

Temperature	7.22°C
Specific conductivity	133 µS/cm
Dissolved oxygen	11.8 mg/L (98.3% saturation)
pH	7.95

The density of macroinvertebrates in August 2008 was moderate to low at 1,530 individuals/m². Average density for all streams sampled in WRST from 2006 to 2008 was 3,311 individuals/m². Taxa richness was slightly above average at 20 unique taxa, as compared with a mean richness of 19 taxa for all park streams. Chironomid midges constituted 30 percent of total richness and 92 percent of individuals. Chironomids typically constitute a substantial fraction of both richness and individuals in subarctic and arctic streams. Remarkably, 77 percent of all individuals collected belonged to a single chironomid genus, *Diamesa*, which are generally cold-adapted organisms and often dominate glacial streams, such as lower Beaver Creek. Also of note are the first reported collections in WRST of the aquatic beetle genus *Helophorus* and of the aquatic lepidopteran family *Crambidae*.

Benthic diatom richness was also moderately low at 32 unique species (compared to a mean value of 38 for all sampled streams in the park). The estimated cell density ($3.5 \times 10^5/\text{cm}^2$), although not remarkable, is on the high side for a runoff-dominated system. This may indicate a lack of recent high-flow events preceding sampling or reflect the nutrient dynamics of the system (or both). The diatom community was dominated by *Hannaea arcus* (48 percent of total abundance), a firmly-attached diatom characteristic of high-velocity systems.

Vegetation

The facilities in the floodplains and river terraces of Beaver and Horsfeld Creeks are located in open dwarf shrub (50 percent); dwarf shrub sedge bog (25 percent); and woodland needle leaf forest (25 percent). Field surveys of the existing facility and the proposed relocation sites were performed in July of 2008 by Fleur Nicklen and two botany technicians associated with the NPS Central Alaska Network, under the supervision of WRST Chief of Resources Eric Veach. No rare, sensitive or exotic plants were observed during that survey, despite the fact that horses are kept there. However, this is not entirely surprising as past concessionaires only kept horses at the facility during the late summer and early fall, and the current concessionaire is extremely cognizant of the dangers posed by invasive weeds. If invasives were ever introduced to the area, they would most likely become established downstream on Beaver Creek due to the present location of the corral. Moving the corral out of the floodplain would restore wetland function, protect wetland plants, and prevent invasives from using the stream to spread.

Transporting construction materials from the Alaska Highway to Horsfeld Camp and its new sites would result in little or no vegetation damage, as most of that activity would occur over the winter when deep snow covers and protects the vegetation. Some trees would have to be cut to place the new buildings, but such targeted hand-clearing would only produce a minor negative effect. As there are no documented invasives in the area and the abandoned site is situated within an active floodplain, natural regeneration should occur quickly once the existing structures are removed.

Cultural Resources

The Horsfeld Camp is situated about four miles north of Wiki Peak, a primary source of obsidian transported and traded throughout interior Alaska for the past 5,000 years. An archaeological survey conducted by K. Greg Biddle and Geoffrey Bleakley at Horsfeld in July 2008 recorded lithic scatters on a nearby terrace, within and around the footprint of the ORV trail linking Petersen's headquarters facility with the Horsfeld Airstrip. Located about 0.3 miles west of Petersen's facility, the terrace enjoys a commanding view of the Beaver Creek Valley, suggesting that it was regularly used by early human hunters as a game overlook. One lithic site, containing two major loci, has been determined eligible for listing on the National Register of Historic Places (see K. Greg Biddle, "Determination of Eligibility: 49NAB-426," February 2009).

A Canadian prospector named Jack Horsfeld (sometimes spelled Hosfeld) discovered gold on a tributary of Beaver Creek in 1903 and local prospectors probably named the stream in his honor. A roadhouse was established at the mouth of Horsfeld Creek in late 1913 at the beginning of the Chisana Rush and apparently operated until around 1920. Horsfeld also served as a center of local mining activity in the 1930s, when its airstrip was constructed by Sam Gamblin.

Although the modern Horsfeld Concession Camp is located near the historic Horsfeld Roadhouse site, no historic structures remain. The present barn and shed were probably

erected about 1965, utilizing historic logs salvaged from one or more of the historic buildings. Their gable ends appear much more recent, and were probably cut and added when the wall logs were moved. Neither the barn nor the shed appear in photos taken in 1940 by USGS geologists Fred Moffit and R. Wayland, providing conclusive evidence that neither retain their integrity of place.

The current meat cache appears to have been constructed from new materials about 1970. The cookhouse is also modern and was built about 1980. The rest of the features—all modern and mostly tent frames—are distributed along several higher benches. The archaeological survey team identified only one historic site in 2008: a scatter of mining assay-related objects, just west of Horsfeld Creek and about 100 yards north of the ORV trail.

Subsistence Resources

The Horsfeld Creek area's main subsistence resources are moose, Dall sheep, ptarmigan, grouse, snowshoe hare, arctic grayling, furbearing animals, berries, mushrooms, and dead and green logs for construction and firewood. Although Federal subsistence use is permitted in the area, very little occurs due to the area's remote location and lack of any full-time local human population.

Visitor Use and Recreation

Petersen's Horsfeld facility is a sport hunting destination. The lodge serves as a staging area for guided moose, Dall sheep and bear hunts. The visitation is seasonal, with most occurring between August and October.

ENVIRONMENTAL CONSEQUENCES

Alternative 1: (No Action)

Natural Resources

Aquatic Resources/Floodplains

Continued occupation of the floodplain and active stream channel may result in negligible additional adverse effects to aquatic resources and floodplains. Animal waste contains many other pollutants of concern that affect humans and water quality. Such pollutants include oxygen-demanding substances that can lead to fish kills and degraded water quality. Solids from animal waste can increase turbidity and adversely affect the taste and odor of waters. Maintaining a horse corral in the active channel could eventually introduce enough horse waste to the aquatic system to cause measureable effects to water quality.

Vegetation

Under this No-Action Alternative, use and access would continue, resulting in minor new negative impacts due to erosion and the gradual widening of the existing trail footprints.

Continued occupation at present levels would also have a minor but negative impact on wetland function. Fleur Nicklen and two botany technicians associated with the NPS Central Alaska Network surveyed the affected area in 2008 and located no sensitive, rare or exotic plants. While risk of invasive plant introduction would continue, the No-Action alternative would not significantly increase the existing risk. However, that risk is greater than if the structures were to be moved, given the tendency of many invasive species in Alaska to use water ways to spread. And if the structures remain in the floodplain during a major flood event they might wash downstream, adversely affecting the bank and its associated riparian communities.

Cultural Resources

No historic features are located within Petersen's present facility and its continued occupation at present levels would have no material effect on cultural resources. Use of the Horsfeld ORV trail from the airstrip to Petersen's facility presently results in minor negative impacts to 49NAB-426. Under this No-Action Alternative, such use and access would continue, resulting in minor additional negative impacts due to erosion and the gradual widening of the existing trail footprint.

Subsistence Resources

There would be no direct, indirect, or cumulative effects on subsistence resources. See Appendix A.

Visitor Use and Recreation

Annual flooding would continue to damage camp infrastructure, resulting in minor negative effects to visitor use and recreation.

Cumulative Effects

The 30-mile-long Alaskan portion of the Beaver Creek Valley contains no permanently occupied buildings and only one subsistence cabin, situated on Beaver Lake about 20 miles to the west. The Horsfeld Concession Camp is Beaver Creek's only commercially operated facility. The nearest other commercial facilities are a privately-owned hunting camp located on Ptarmigan Lake, approximately ten air miles to the south, and a seasonal hunting camp on Snag Creek, about 15 miles to the north.

Under the No-Action Alternative, these facilities would continue exerting a cumulative negligible to minor negative effect on surrounding resources values and a minor negative effect on visitor experience/recreational opportunities, due to the on-going deterioration of the facilities at the Horsfeld Concession Camp. Predicted climate change would result in greater stream flow, further aggradations, and more frequent and more extensive flooding, further expanding and hastening that process.

Conclusion

The level of impacts to the affected environment anticipated from the No-Action Alternative would not result in an impairment of park resources that fulfill specific purposes identified in WRST enabling legislation or are key to the natural or cultural integrity of the Preserve.

Alternative 2: (Proposed Action)

Natural Resources

Aquatic Resources/Floodplains

The Proposed Action would remove nine structures from the floodplains and/or active channels of Horsfeld and Beaver Creeks. In particular, relocating the corral would reduce the potential for horse waste entering the aquatic system. The direct and indirect effects of the Proposed Action would move the aquatic system to a slightly more naturally functioning state. In comparison to No Action Alternative, the Proposed Action would have a negligible beneficial effect to aquatic resources and floodplains.

Vegetation

The Proposed Action would result in some additional disturbance to an estimated four acres of upland forested vegetation. The permittee would need to brush and remove a minimal number (<100) of trees to relocate the existing structures. These trees consist of very small diameter spruce and willow and would be used as firewood by the concessionaire. Vegetation in previously disturbed areas would recover naturally following the relocation and/or removal of existing structures. The proposed action would have the same risk of introducing invasive exotic plant populations as the No-Action Alternative as there are no invasive weeds currently present and this location is quite remote. The Proposed Action would not affect rare or sensitive plant species and would likely have a minor beneficial effect on local wetland plants and function.

Cultural Resources

As no historic features are located within the planned new footprint east of Petersen's present facility, its occupation would produce no new effects. Use of the Horsfeld ORV trail from the airstrip to the facility would continue to result in minor negative effects to 49NAB-426, as this linear lithic site occupies the edge of the terrace upon which the airstrip is situated, and cannot reasonably be avoided.

Subsistence Resources

There would be no direct, indirect, or cumulative effects on subsistence resources. See Appendix A.

Visitor Use and Recreation

By eliminating flood danger, this action would improve visitors comfort and safety and therefore help provide a better recreational experience. This would result in a minor beneficial effect to visitor use and recreation.

Cumulative Effects

The 30-mile-long Alaskan portion of the Beaver Creek Valley contains no permanently occupied buildings and only one subsistence cabin, situated on Beaver Lake about 20 miles to the west. The Horsfeld Concession Camp is Beaver Creek's only commercially operated facility. The nearest other commercial facilities are a privately-owned hunting camp located on Ptarmigan Lake, approximately ten air miles to the south, and a seasonal hunting camp on Snag Creek, about 15 miles to the north.

Under the Proposed Action, these facilities would have a cumulative negligible to minor negative effect on surrounding resource values and a minor beneficial effect on visitor experience/recreational opportunities due to the improved condition of visitor facilities at the Horsfeld Concession Camp. Predicted climate change and its associated increased stream flow would result in additional aggradation and more frequent and extensive flooding throughout the area. However, this should not negatively effect the Horsfeld Camp due to its higher and safer location.

Conclusion

The level of impacts to the affected environment anticipated from the proposed action alternative would not result in an impairment of park resources that fulfill specific purposes identified in WRST's enabling legislation or that are key to the natural or cultural integrity of the Preserve.

REFERENCES CITED

- Biddle, K Greg. "Determination of Eligibility: 49NAB-426," February 2009. Unpublished report.
- Bleakley, Geoffrey T. A History of the Chisana Mining District, Alaska, 1890-1990 (Anchorage: NPS, 1996).
- _____. *Contested Ground: An Administrative History of Wrangell-St. Elias National Park and Preserve* (Anchorage: NPS, 2002).
- _____. "Cultural Resource Survey, Horsfeld and Vicinity, July 29-August 1, 2008." Unpublished report.
- Cairnes, DeLorme D. *Upper White River District, Yukon*. Geological Survey Memoir 50. Ottawa: Canada Department of Mines, 1915.
- Capps, Stephen R. "Mineral Resources of the Chisana-White River District." In Alfred H. Brooks, et al., eds., *Mineral Resources of Alaska: Report on Progress of Investigations in 1914*, 189-228. USGS Bulletin No. 622. Washington: GPO, 1915.
- _____. *The Chisana-White River District, Alaska*. USGS Bulletin No. 630. Washington: GPO, 1916.

Hunt, William H. Mountain Wilderness: Historic Resource Study for Wrangell-St. Elias National Park and Preserve (Anchorage: NPS, 1991).

NPS, *Archaeological Resources in Wrangell-St. Elias National Park and Preserve, Alaska: An Overview and Assessment*, Resources Report NPS/ARRCR/CRR-98/31 (Anchorage: NPS, 1998).

Wrangell-St. Elias National Park and Preserve. *General Management Plan, Land Protection Plan and Wilderness Suitability Review* (Anchorage: NPS, 1986).

_____. "Established and Maintainable Access to Inholdings Programmatic Plan and Environmental Assessment, November 2007."

_____. Concession Permit Files.

_____. Cultural Resource Management Files.

_____. Historic Files.

_____. Lands Management Files.

_____. Subsistence Files.

_____. Wildlife Management Files.

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Appendix A: ANILCA Section 810(a) Summary 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 proposed action by the National Park Service (NPS) to issue a permit for relocation of a commercial hunting guide operations facility, including the replacement construction of eight structures, near Horsfeld Creek in Wrangell-St. Elias National Preserve, Alaska.

II. THE EVALUATION PROCESS

Section 810(a) of ANILCA states:

"In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands ... the head of the federal agency ... over such lands ... shall evaluate the effect of such use, occupancy, or disposition on subsistence uses and needs, the availability of other lands for the purposes sought to be achieved, and other alternatives which would reduce or eliminate the use, occupancy, or disposition of 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 of, and holds, a hearing in the vicinity of the area involved; and
- (3) determines that (A) such a significant restriction of subsistence uses is necessary, consistent with sound management principles for the utilization of the public lands, (B) the proposed activity would involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps would 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. Wrangell-St. Elias National Park, containing approximately eight million one hundred and forty-seven thousand acres of public lands, and Wrangell-St. Elias National Preserve containing approximately four million one hundred and seventeen thousand acres of public lands, was created by ANILCA, section 201(9), for the following purposes:

“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 sheep, moose, wolves, trumpeter swans and other waterfowl, and marine mammals; and 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.”

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 which would reduce or eliminate the use."

III. PROPOSED ACTION ON FEDERAL LANDS

The National Park Service is considering two alternatives in response to a request from a hunting guide-outfitter concessioner to relocate and/or replace structures associated with his operations headquarters facility near the confluence of Horsfeld and Beaver creeks in the northeast corner of Wrangell-St. Elias National Preserve. A full discussion of the alternatives and their anticipated effects is presented in the EA. The alternatives are summarized briefly below with particular attention to subsistence resources.

Alternative A (No Action Alternative): The concessioner would not move his Horsfeld headquarters facility, flooding of the facility would continue, and several key buildings could eventually be washed down Horsfeld Creek into Beaver Creek.

Alternative B (Proposed Action Alternative): The NPS would issue a permit to allow the concessioner to relocate portions of his facility out of the active floodplain and onto higher ground alongside Horsfeld Creek. The relocated facility would be of the same size and general configuration as that at the current location. No change in client numbers or level of use is anticipated at the site. The facility would be accessed via the existing off-road vehicle (ORV) trail from the Horsfeld airstrip.

IV. AFFECTED ENVIRONMENT

A summary of the affected environment pertinent to subsistence use is presented here. The following documents contain additional descriptions of subsistence uses within Wrangell-St. Elias National Park and Preserve:

Bleakley, Geoffrey T. 2002. *Contested Ground, An Administrative History of Wrangell-St. Elias National Park and Preserve, Alaska, 1978-2001*, NPS Alaska Region.

Final Environmental Impact Statement, Wilderness Recommendation, NPS Alaska Region, 1988.

Haynes, Terry L., Martha Case, James A. Fall, Libby Halpin, and Michelle Robert. 1984. *The use of Copper River salmon and other wild resources by Upper Tanana communities, 1983-1984*. ADF&G Division of Subsistence, Technical Paper No. 115.

Marcotte, James R. 1992. *Wild fish and game harvest and use by residents of five Upper Tanana communities, Alaska, 1987-88*. ADF&G Division of Subsistence, Technical Paper No. 168.

Norris, Frank. 2002. *Alaska Subsistence: A National Park Service Management History*, NPS Alaska Region.

NPS Alaska Region. 1986. *General Management Plan/Land Protection Plan, Wrangell-St. Elias National Park and Preserve*.

NPS Alaska Region. 1988. *Wrangell-St. Elias Subsistence Management Plan*. (Updated most recently in 2004.)

NPS Alaska Region. *Wrangell-St. Elias National Park and Preserve Subsistence Users Guide*. (Updated most recently in 2005.)

Stratton, Lee, and Susan Georgette. 1984. *Use of fish and game by communities in the Copper River Basin, Alaska: a report on a 1983 household survey*. ADF&G Division of Subsistence, Technical Paper No. 107.

Subsistence uses are allowed within Wrangell-St. Elias National Park and Preserve in accordance with Titles II and VIII of ANILCA. The national preserve is open to federal subsistence uses and state-authorized general (sport) hunting, trapping and fishing activities. NPS qualified local rural residents who live in one of the park's twenty-three resident zone communities or have a special subsistence use permit issued by the park superintendent under 36 CFR 13.440 may engage in subsistence activities within Wrangell-St. Elias National Park. State regulated sport fishing is also allowed in the national park.

The proposed site for the commercial guide operations facility is located within the national preserve. To engage in Federal subsistence hunting and wildlife harvest activities in Wrangell-St. Elias National Preserve, you must be a local rural resident that maintains your primary place of residence in a rural community or area that has a positive customary and traditional use determination for the species and the area where you wish to take fish and wildlife.

Based on 2000 U.S. Census data compiled by the Alaska Department of Community and Economic Development, the National Park Service estimates that approximately 6,000 individuals are eligible to engage in federal subsistence activities in Wrangell-St. Elias National Park and Preserve. These activities include hunting, trapping, fishing, berry picking, gathering mushrooms and other plant materials, collecting firewood, and harvesting timber for house construction. The Copper, Nabesna, Chisana and Chitina rivers serve as popular

riverine access routes for subsistence users. Most of the subsistence fishing takes place in the Copper River.

The Horsfeld Creek drainage is located on the southern edge of the Nutzotin Mountains, approximately 6 miles from the international border with Canada. The most common means of access to the site is fixed-wing aircraft, although there is an unmaintained trail overland from Chisana. Horsfeld has been the base for guided hunting operations since the late 1930s. Since the park and preserve was established in 1980, guided hunting has been authorized under the conditions of a concessions permit. In addition to guided hunting, the current concessioner offers horse pack trips and other wilderness adventures in and around the Horsfeld Creek area.

Freshwater fish observed in the Beaver and Horsfeld creeks include arctic grayling and slimy sculpin. Vegetation in the floodplains and terraces of the creeks include open dwarf shrub, dwarf shrub sedge bog, and woodland needle leaf forest. Sheep, moose, caribou, grizzly bear and a number of furbearer species occur within the analysis area. Due to the site's remote location and consequent need for aircraft access, subsistence use of the study area is very limited.

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

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 which could be impacted.

The evaluation criteria are as follows:

1. the potential to reduce important subsistence fish and wildlife populations by (a) reductions in numbers, (b) redistribution of subsistence resources, or (c) habitat losses;
2. what effect the action might have on subsistence fisher or hunter access; and
3. the potential for the action to increase fisher or hunter competition for subsistence resources.

The potential to reduce populations:

No significant impact in the number or distribution of fish or wildlife harvested for subsistence is anticipated as a result of the proposed action or the no-action alternative. At most, the site might see a minor amount of temporary dislocation of wildlife while the camp is moved. However, the site already sees considerable activity by humans and the concessioner's horses, such that the movement of the camp would just be one of several

different activities at the site. No wildlife beyond one set of moose tracks was observed during a cultural resource survey of the general vicinity of the site in 2008.

The effect on subsistence access:

The proposed actions are not anticipated to result in a significant restriction to subsistence access. Access for federal subsistence uses in the Wrangell-St. Elias National Park and Preserve is granted pursuant to Section 811 of ANILCA. Allowed means of access by federally qualified subsistence users in Wrangell-St. Elias National Park and Preserve include motorboat, snowmachine (subject to frozen ground conditions and adequate snow cover), ORVs, and airplane (preserve only), along with non-motorized means such as foot, horses, and dog teams. Under current federal regulations, the Superintendent may restrict or close a route or area if he or she determines that the means of access is causing or may cause an adverse impact, subject to notice and a public hearing (36 CFR 13.460 (a) and (b)).

The potential to increase competition:

The proposed actions are not expected to increase competition for subsistence resources on federal public lands within the affected area, and thus not to result in a significant restriction on subsistence uses. The number of guided hunting clients or other visitors to the study area is not expected to change as a result of the actions discussed in this analysis. Subsistence user activity in the study area is very low due to the site's remote location and the consequent need for aircraft access. The majority of subsistence user activity in the park and preserve occurs along the state road system and river corridors.

VI. AVAILABILITY OF OTHER LANDS

The EA and this evaluation have described and analyzed the proposed alternatives. No other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes were identified. The amount of land affected by the proposed action is minimal in relation to the overall amount of federal public land in the park and the preserve, however, and it is possible for subsistence users to utilize other lands.

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 General Management Plan for the park and preserve. No other alternatives that would reduce or eliminate the use of public lands needed for subsistence purposes were identified. It is possible for subsistence users to utilize other lands inside and outside the park and preserve. Subsistence users extend their activities to other areas as necessary to obtain subsistence resources.

VIII. FINDINGS

This analysis concludes that none of the alternatives discussed in this evaluation would result in a significant restriction of subsistence uses.

Appendix B: Photos of Affected Horsfeld Camp Structures

Store Room
Note water line on door



Tack Room and Corral
Note water line on door



Dry Sauna



Washroom



Corral



Corral During Moderately High Water



Cook Cabin



Pantry



Master Guide Cabin



Meat Cache



**New Cabin Construction Method:
Butt and Run**



Unauthorized Dump Site



Horsfeld Airstrip



Typical ORV Trail Segment



ORV Trail Crossing Dry Channel of Horsfeld Creek

