

Appendices

Appendices A, B, and D-H are unchanged from the *Revised Draft EIS* and are incorporated here by reference. Additions and changes to the Bibliography are presented below as an Errata sheet. Appendix C: ANILCA Section 810(a) Summary of Evaluations and Findings is updated to reflect the modifications in the preferred alternative and is provided in its entirety.

BIBLIOGRAPHY

ERRATA

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APPENDIX C: ANILCA SECTION 810(A) SUMMARY OF EVALUATIONS AND FINDINGS

I. Introduction

This evaluation and finding was prepared to comply with Title VIII, Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA). It evaluates the potential restrictions to subsistence activities that could result from implementation of the backcountry management plan for Denali National Park and Preserve. The *Revised Draft Backcountry Management Plan and Environmental Impact Statement* describes a range of alternatives for consideration.

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. Denali National Park and Preserve additions were created by ANILCA Section 202(3)(a) for the purposes of:

"The park additions and preserve shall be managed for the following purposes, among others: To protect and interpret the entire mountain massif, and additional scenic mountain peaks and formations; and to protect habitat for, and populations of fish and wildlife, including but not limited to, brown/grizzly bears, moose, caribou, Dall sheep, wolves, swans and other waterfowl; and to provide continued opportunities including

reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities."

Subsistence is an allowed use in the ANILCA additions to Denali National Park and Preserve (Sec. 202(3)(a)). 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." (Sec. 810(a))

III. Proposed Action on Federal Lands

The "Description of Alternatives" section of the *Revised Draft* and the *Final Backcountry Management Plan and Environmental Impact Statement* describes in detail the alternatives for consideration. Following is a brief summary of each.

Alternative 1: No Action

The National Park Service would continue the present management direction, guided by the 1986 *General Management Plan*, the 1997 *Entrance Area and Road Corridor Development Concept Plan*, the 1997 *South Side Denali Development Concept Plan*, the 1997 *Strategic Plan*, and backcountry management plans from 1976 and 1982.

Recreational use and access patterns would continue to develop, and the agency would respond as necessary on a case-by-case basis. No new services or facilities would be developed to meet increased levels of use in the backcountry, except for those identified in the entrance area or south side plans.

There would be no new management areas defined for the backcountry of Denali National Park and Preserve. The entire backcountry would continue to be defined as a "Natural Area" under the 1986 General Management Plan. The only distinctions between areas of the backcountry would be the legislative distinctions of the designated Wilderness in the former Mount McKinley National Park, the 1980 national park additions, and the national preserves. There would be no resource or social standards defined for any portion of the backcountry.

Alternative 2

This alternative would distinguish a unique Denali experience based on dispersed use in a wilderness landscape with few sights or sounds of people or mechanized civilization.

There would be few services, facilities, or signs of management presence. This alternative would most clearly distinguish the backcountry experience in Denali from the surrounding public lands, providing a place primarily for visitors who are very self-reliant, and including many opportunities for extended expeditions in very remote locations. Backcountry users seeking other experiences would find those opportunities on neighboring lands.

Alternative 3

This alternative would provide a variety of appropriate wilderness recreational activities by establishing areas to serve those visitors who want to experience the wilderness resource values of the Denali backcountry but require services, assistance, or short time-commitments. The areas would be the minimum necessary to provide these experiences based on present demand and would be focused along the park road, in Kantishna near the park road, and around the Ruth Glacier (along with existing mountaineering activity on the Kahiltina Glacier). The majority of the backcountry would be managed for dispersed, self-reliant travel and would include opportunities for extended expeditions in very remote locations. Growth in other uses would be accommodated on neighboring lands.

Alternative 4 – Modified (NPS Preferred)

This backcountry management plan would guide the National Park Service in providing opportunities for a variety of wilderness recreational activities and experiences while recognizing and protecting the premier wilderness resource values of the entire backcountry. Areas in the Dunkle Hills and around the Ruth and Tokositna Glaciers on the south side of the Alaska Range would be managed for those visitors who want to experience the wilderness resource values or other resource values of the Denali backcountry but require services or assistance, or who are unable to make a lengthy time commitment. Areas along the park road in the Old Park and the Kantishna Hills would provide accessible opportunities for short- or long-duration wilderness recreational activities with only limited options for guidance or assistance the farther one gets from the park road. The remainder of the backcountry would be managed for dispersed, self-reliant travel, and would include opportunities for extended expeditions in very remote locations.

Alternative 5

This alternative would create two distinct geographic areas that provide different kinds of visitor experiences in the Denali backcountry. The old Mount McKinley National Park and the Denali additions north of the Alaska Range would be primarily managed for dispersed, self-reliant travel although no areas would be managed specifically to preserve opportunities for extended expeditions in remote locations. Areas along the park road and in Kantishna that presently receive a relatively high volume of use and large parts of the additions south of the Alaska Range would be managed for a greater intensity and variety of appropriate recreational activities and would have more visible management presence and opportunities for more services and facilities.

IV. Affected Environment

Introduction

The backcountry of Denali National Park and Preserve includes the entire park except the development sub-zones delineated in the 1997 *Entrance Area and Road Corridor Development Concept Plan*. For some topics the backcountry management plan includes

uses even in the development sub-zones, but proposed actions are consistent with the *Entrance Area and Road Corridor Development Concept Plan* and the *South Side Denali Development Concept Plan*. The study area includes designated, proposed, potential, recommended, and suitable wilderness, but the plan does not make recommendations for federally-designated Wilderness.

Park Environment

Denali National Park and Preserve is located in the interior of Alaska and is dominated by an east to west line of towering, glaciated mountains known as the Alaska Range. The range rises abruptly from lowlands of 500 to 2,000 feet in elevation to the pinnacle of Mount McKinley, North America's highest mountain, at 20,320 feet. The range is perpetually snowclad above approximately 7,500 feet on the north and 6,000 feet on the south. Glaciers are numerous and tend to be larger and longer on the south side of the range than on the north.

Moisture from the Gulf of Alaska is blocked by the Alaska Range, causing a continental climate to the north of the range and more of a maritime climate to the south. Moisture-laden air from the south results in greater levels of precipitation on the southern flanks of the range. The average annual precipitation at park headquarters is 15 inches, while at some higher elevations in the park the total precipitation exceeds 80 inches and snowfall exceeds 400 inches. Normal snowpack throughout the region averages between 20 and 40 inches.

Vegetative cover in Denali is typical of interior Alaska taiga. Lowland floodplains are dominated by dense, deciduous or coniferous forest, or by a mixed forest of balsam poplar and white spruce. Upland forests tend to be more open with mixed or continuous stands of black spruce, white spruce, or aspen. Upland forests give way to shrub communities at elevations above approximately 2,400 feet. Glacial rivers flowing from the Alaska Range create broad floodplains that are sparsely vegetated. Tall shrub communities of willow and alder grow on moist slopes and along drainages, and low shrub communities of dwarf birch and willow grow at higher elevations or on dry slopes. Alpine tundra, composed of dryas and dwarf willow shrub, mat and cushion species, or grass and sedge mixes, grows on slopes and ridges to about 6,000 feet. More than 650 species of flowering plants inhabit the slopes and valleys of the park.

The original Mount McKinley National Park was established in 1917 primarily as a refuge for large mammals. In 1980, ANILCA enlarged the Old Park to more than 6 million acres and re-designated the area as Denali National Park and Preserve. The protected subarctic ecosystem of Denali provides habitat for 30 species of mammals, at least 152 species of breeding birds, 16 species of fish (twelve resident species and four anadromous Pacific salmon species), and 1 amphibian. The American peregrine falcon (*Falco peregrinus anatum*), the subspecies that nests in the Denali region, was formerly listed as an endangered species under the Endangered Species Act but was delisted as of August 25, 1999 (64 FR 46542). No federally designated threatened or endangered species are known to occur within Denali National Park and Preserve (see appendix E of the original draft plan, consultation letter from the U.S. Fish and Wildlife Service, NPS 2003d).

About 100 archeological sites are recorded within Denali National Park and Preserve. Archeological investigations conducted within and immediately adjacent to the park strongly suggest that sites dating from the Paleoarctic tradition (10,000 years before present) through the Protohistoric period (200 years before present) exist within the park. Excavations at the Dry Creek site, situated near the northeastern boundary of the park, have yielded one of Alaska's earliest dates, 11,000 years before present (BP). The Carlo Creek site, situated along the Nenana River on the eastern boundary of the park, is dated at approximately 8,000 BP. These sites may depict tool technologies and subsistence patterns representing the earliest peopling of North America by means of the Bering Land Bridge.

The Denali area was used historically by several Athabaskan Indian groups. The Ahtna people of Cantwell arrived from the east, the Tanana people came into the area from the north traveling up the Nenana and Toklat Rivers, and the Koyukon people who lived at Lake Minchumina ascended the McKinley, Foraker, and Herron Rivers. The Upper Kuskokwim people who still live in Nikolai and Telida approached the park from the west, and the Dena'ina people approached the park from the south. Subsistence activities included large mammal hunting, fishing, and small game trapping.

A more comprehensive description of existing conditions can be found in the affected environment section of the *Revised Draft Backcountry Management Plan and Environmental Impact Statement*.

V. Subsistence Uses and Needs Evaluation

Background Information

The 1980 additions to Denali National Park and Preserve are open to subsistence uses in accordance with Section 202(3)(a) of ANILCA. Lands within the former Mount McKinley National Park are closed to subsistence activities. Congress found and declared in Title VIII, Subsistence Management and Use, Section 801(3), that the continuation of the opportunity for subsistence uses of resources on public and other lands in Alaska is threatened by the increasing population of Alaska, with resultant pressure on subsistence

resources, by sudden decline in the populations of some wildlife species which are crucial subsistence resources, by increased accessibility of remote areas containing subsistence resources, and by the taking of fish and wildlife in a manner inconsistent with recognized principles of fish and wildlife management.

Furthermore, Congress declared it to be the policy in Section 802(1), that consistent with sound management principles and the conservation of healthy populations of fish and wildlife, the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of resources of such lands; consistent with management of fish and wildlife in accordance with recognized scientific principles and the purposes for each unit established, designated, or expanded by Title II; it is the purpose of Title VIII to provide the opportunity for rural residents engaged in a subsistence way of life to do so.

Denali National Park and Preserve has a total of about 380 eligible local rural residents who qualify for subsistence use of park and preserve resources. Denali's subsistence users primarily reside in the communities of Cantwell, Minchumina, Nikolai, and Telida. Other local rural residents who do not live in these designated resident zone communities, but who have customarily and traditionally engaged in subsistence activities within the park, may continue to do so pursuant to a subsistence permit issued by the park superintendent. There are about 12 individuals from McKinley Village, Nenana, Healy, Tanana, and the community of Colorado south of Cantwell that have received subsistence use permits. Each year, between one and seven people engage in subsistence activities in the Kantishna area and about 50 households in Cantwell acquire moose permits.

Denali has two areas designated as National Preserves. Both federal subsistence and State of Alaska hunting and trapping are permitted in the national preserves. State harvests are regulated by State game laws passed by the Alaska Board of Game. Federal subsistence harvest is regulated by federal regulations passed by the Federal Subsistence Board.

ANILCA provides a preference for local rural residents over other consumptive users should a shortage of subsistence resources occur and allocation of harvest becomes necessary. This is particularly important for national preserves where state hunting and trapping is allowed. When the harvest must be limited, state hunting opportunities must be restricted first before any reduction in the harvest for federal subsistence users occurs.

Areas receiving the most extensive subsistence use activities are the northwestern park and preserve region near Lake Minchumina, and the southeastern park region near Cantwell, and the southern Kantishna Hills region near Kantishna. Cantwell area subsistence users primarily use park lands in the Windy Creek, lower Cantwell Creek, and Bull River drainages. In more recent years the Kantishna Hills region has seen increased utilization for subsistence resources. In the northwestern region, there is a long history of established traplines that extend throughout the ANILCA park and preserve additions up to the boundaries of the former Mt. McKinley National Park. Denali National Park and Preserve lands are responsible for only a portion of the estimated

community subsistence harvests reported by these communities since a significant portion of the areas used by these communities for subsistence are beyond the park and preserve boundaries

Overall, Denali's main subsistence species are moose, caribou, salmon, hare, rock and willow ptarmigan, spruce grouse, ducks and geese, and a few species of freshwater fish. Less frequently used large mammals include black bear, brown bear and Dall sheep. Fresh water fish include burbot, dolly varden, grayling, lake trout, northern pike, rainbow trout and whitefish. Important fur animals include marten, mink, red fox, wolf, lynx, weasel, wolverine, land otter, beaver, muskrat, and coyote.

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

Potential Impacts to Subsistence Users

Increases in types and levels of recreation have the potential to interfere with subsistence activities. As popular places become crowded, it is expected that recreational use will disperse into more remote or infrequently-used places. Potential restrictions to subsistence may occur if visitors frequent areas used for subsistence. Visitors, especially those who travel via motorized means, may disturb wildlife and interfere with subsistence users who are hunting or scouting for subsistence resources.

In the last five years, non-subsistence snowmachine use has expanded dramatically in and adjacent to the southeastern areas of the park, particularly in the area near Cantwell and Broad Pass. Along with increasing popularity for snowmobiling have come dramatic improvements in snowmachine technology. Because of the increased reliability, power and flotation ability of the newer snowmachines, snowmachiners have been accessing more distant areas and operating in significantly steeper and higher terrain than in past years.

Open habitat, mountain slopes, and reasonably good snow deposition in the Broad Pass area have attracted increasing numbers of snowmachiners from areas of the state accessible to the Parks Highway. Typically, non-subsistence snowmachine groups tend to travel in larger numbers and spend more time traveling in basins and drainages.

As the range of non-subsistence snowmachiners overlaps with subsistence use areas, the potential for conflict between these user groups increases. Snowmachine users can interfere with subsistence traplines, displace furbearers, and create paths that encourage animals to travel farther from places where subsistence activities typically occur. For several years, subsistence users have expressed concerns about the impacts and conflicts of increasing recreational use and increasing non-subsistence snowmachine use on

subsistence resources and subsistence activities. Members of Denali's Subsistence Resource Commission have specifically expressed concerns regarding the effects of increasing levels of snowmachine use in the Broad Pass/Cantwell area upon moose, furbearers, and ptarmigan populations and their distributions (Denali Subsistence Resource Commission Meeting Minutes, April 30, 2001; April 29, 1996; August 9, 1996; and June 28, 1993). Concerns about the impacts of increasing non-subsistence uses were also mentioned by Lake Minchumina area residents during public scoping (see also Letter from Collins, 3/3/01).

The Denali Subsistence Resource Commission Meeting Minutes (June 1993) document high levels of non-subsistence related snowmachine use in the Cantwell area. It was noted that riders were primarily using drainages and basins, essentially saturating the area and displacing furbearers, causing local trappers to pull their traps prematurely in December of that year.

In the Preserves, sport hunting can also interfere with subsistence as subsistence users would have to compete with sport hunters for game.

Evaluation Criteria

To determine the potential impacts of the alternatives on existing subsistence activities, three evaluation criteria were analyzed relative to existing subsistence resources:

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

1. The potential to reduce populations

(a) Reduction in Numbers:

Alternatives 1-3

Actions in these alternatives are not expected to reduce numbers of wildlife.

Alternative 4 - Modified (NPS Preferred Alternative)

Expanding the hunting guide area in the southwest preserve has the potential to reduce wildlife populations as animals in this area could be shot; however, geographic and temporal limitations would prevent a significant restriction to subsistence resources.

Alternative 5

Expanding the hunting guide area in the southwest and northwest preserves has the potential to reduce wildlife populations as animals in these areas could be shot; however,

geographic and temporal limitations would prevent a significant restriction to subsistence resources.

(b) Redistribution of Resources:

Alternative 1 (no action)

Continuing current management direction under alternative 1 would result in rapidly increasing recreational use in parts of Denali National Park and Preserve, including in important subsistence use areas. The main impact from non-subsistence activities, such as snowmachine use and motorboat use, would be redistribution of wildlife resources available to subsistence users and competition for resources. This impact could be expected to increase over time as visitor use increases. There are no provisions in current management plans to allocate between recreational and subsistence uses, so increased user conflicts could be expected at some locations.

Increases in recreational activities in subsistence use areas have the potential to redistribute wildlife populations. Use levels among a variety of activities are expected to increase, especially near access points and at destinations that are already popular. Visitors engaged in recreational activities have the potential to harass or frighten wildlife. In addition to the mere presence of people, human-generated noise, and noise from machines, such as airplanes and snowmachines, could cause wildlife to move away from visitors. As popular areas become crowded, visitor use is expected to disperse to other areas of the park, which could force wildlife to vacate those areas.

For example, wildlife may be displaced by snowmachines in the Broad Pass area south of Cantwell, along the Stampede corridor, in the southwest preserve, and in the Tokositna and Lower Ruth areas, and may expend valuable energy fleeing from them. Potential adverse impacts on wildlife most likely would occur during mid-to-late winter, when wildlife is likely to be in a nutritionally-stressed condition. Some dispersion is also possible in the northwest preserve as wildlife could be frightened by non-subsistence motorboat and snowmachine use. This scenario would be likely in alternative 1 where park staff would have little ability to educate visitors about wildlife before visitors go into the backcountry.

Subsistence users in the Cantwell area have expressed concern about increasing snowmachine use in the Broad Pass area, as noted above. Subsistence users in the northwest preserve and adjacent park additions have also expressed concerns about motorized use. Additional non-subsistence use involving snowmachines and motorboats in subsistence use areas, such as along Birch Creek, could result in displacement of furbearers and moose, cabin vandalism and unauthorized use, disturbed traps, and conflicts between recreational and subsistence users (letters from Miki and Julie Collins, 7/16/00, 7/24/00 and 3/3/01). Introducing new or expanded recreational uses into these areas increases the potential for conflict between consumptive and non-consumptive users. Subsistence trappers may be adversely affected during certain times of the year by displacement of furbearers, and subsistence hunters may be adversely affected during

winter hunting seasons by the temporary displacement of wildlife, particularly moose and caribou.

Because of concerns about the declining number of ptarmigan in Wildlife Management Unit 13, which encompasses the east side of the south additions and important subsistence use areas south of Cantwell, hunting bag limits have been reduced and the season shortened to close on March 31. One of the reasons for shortening the season from April 30 to March 31 was to avoid hunting and activity during the nesting period in April. Increased recreation, particularly snowmachine use, could have a negative effect by causing displacement of ptarmigan populations during their sensitive breeding and nesting period (Denali Subsistence Resource Commission Meeting Minutes, August 9, 1996 and June 28, 1993).

For several years, subsistence users have expressed concerns about the impacts and conflicts of increasing recreational use and increasing non-subsistence snowmachine use on subsistence resources and subsistence activities. Members of Denali's Subsistence Resource Commission have specifically expressed concerns regarding the effects of increasing levels of snowmachine use in the Broad Pass/Cantwell area upon moose, furbearers, and ptarmigan populations and their distributions (Denali Subsistence Resource Commission Meeting Minutes, April 30, 2001; April 29, 1996; August 9, 1996; and June 28, 1993). The Denali Subsistence Resource Commission Meeting Minutes (June 1993) document high levels of non-subsistence related snowmachine use in the Cantwell area. It was noted that riders were primarily using drainages and basins, essentially saturating the area and displacing furbearers, causing local trappers to pull their traps prematurely in December of that year. As the range of non-subsistence snowmachine use overlaps with subsistence use areas, the potential for conflict between these user groups increases.

Non-subsistence snowmachine users would interfere with subsistence traplines, displace furbearers, and create paths that encourage animals to travel farther from places where subsistence activities typically occur. Trappers would continue to pull their traps by December because it would be inefficient to set traps in an area in which furbearers have been displaced.

Increased use of the park, particularly non-subsistence snowmachine use, would likely displace moose and caribou from critical wintering areas on park lands in the Windy and Cantwell Creek drainages. Local moose populations and the Cantwell group of the Nelchina Caribou herd use areas within the former Mount McKinley National Park and the ANILCA park additions of Windy Creek, Cantwell Creek, and the Bull River drainages during winter. These areas along the Alaska Range in the vicinity of Windy Pass provide important winter habitat for moose and caribou because snow depths associated with the pass area are less than in other areas.

Non-subsistence snowmachine use is often concentrated in these high-elevation basins where riders spend many hours at a time. These basins provide critical winter habitat for moose and caribou. Moose and caribou would continue to be displaced from these critical

wintering areas as non-subsistence snowmachine use increases. This could significantly increase the stress and nutritional demands upon moose and caribou and result in some moose or caribou mortality, depending on the environmental conditions and the body reserves of moose or caribou in a given year.

Non-subsistence snowmachine use originating in Cantwell begins when adequate snowcover is present, and during early winter, use is relatively low. As snowpack increases so does snowmachine use. In late winter when the days are lighter, warmer, and there's lots of snow, non-subsistence snowmachine use is highest. This corresponds with the time of the year when moose and caribou are at their lowest nutritional states. Non-subsistence snowmachine use would continue to induce stress on moose and caribou in the Windy and Cantwell drainages, especially in late winter when the animals are in a nutritional deficit. The magnitude of the impact would depend on snow depth. Die off would be greater as snow depth increases because displaced animals would have a more difficult time moving through the snow to forage and to get away from snowmachine use.

Due to the potential for high levels of widespread recreation that could create unfavorable conditions for wildlife (i.e. presence and noise from visitors would scare wildlife), alternative 1 would have major impacts on distribution of subsistence resources.

Alternative 2

Redistribution of wildlife populations is not expected under alternative 2 because of the emphasis on protecting wildlife habitat and highly dispersed recreation. Snowmachine use in the park additions and preserve would be limited to traditional activities as defined for the Old Park, which would result in an immediate decrease in the non-subsistence snowmachine use mentioned under alternative 1. The impacts described under alternative 1 would therefore not occur. Subsistence opportunities would likely improve as compared to current conditions because visitor use, particularly non-subsistence snowmachine use, would be reduced, so wildlife would be less likely to be frightened and move elsewhere. Alternative 2 would have the least overall impacts to subsistence resources and opportunities.

Alternative 3

Alternative 3 provides for dispersed recreational uses, including some motorized access, in parts of the park additions and preserve that are used for subsistence. Because non-subsistence uses would be managed for low encounter rates and minimal impacts to natural resources in most of the park additions and preserve, only minimal redistribution of populations would occur.

Snowmachine use would be limited to subsistence and traditional activities as defined for the Old Park in the park and preserve additions, and to established winter corridors for recreational use. Therefore, there would be an immediate decrease in non-subsistence snowmachine use throughout the park and preserve, but the winter corridors would result in areas of more concentrated snowmachine use.

Establishing corridors would channel snowmachine use in the Broad Pass area; to the toes of the Ruth, Tokositna, and Kanikula glaciers from the Tokositna River; and along the Yentna, Tokositna, and Kantishna/Muddy Rivers (135 linear miles of winter corridors). Trapping occurred west of Cantwell Creek in the 1990's, but it does not generally occur there presently, so high use snowmachine corridors designated under this alternative in the Broad Pass area would not conflict with areas around Cantwell that are currently used for subsistence activities. Along most of the other corridors, these higher use areas overlap with areas currently or traditionally used for subsistence activities. Encounters with wildlife along these corridors could cause behavioral disturbance, increase stress levels, and temporarily displace wildlife.

Minor impacts that would result would be attributable to snowmachine use, airplane access, and other increasing recreational uses that could scare wildlife and cause them to relocate.

Alternative 4 - Modified (NPS Preferred Alternative)

Under this alternative, access by snowmachine to the park and preserve additions would continue to grow. If demand is sufficient, Corridors could be designated to provide winter access along Cantwell Creek, Bull River, West Fork Chulitna, and the Tokositna River. In a future wilderness proposal, accommodation would be made as necessary for recreational snowmachine access along these Corridors (19.5 miles). Winter corridors would result in areas of concentrated snowmachine use. Areas designated as Management Area A would also allow for an encounter rate of up to five parties per day, including two parties larger than six people. All but the Tokositna River corridor overlap with areas currently or traditionally used for subsistence activities. Other than the Corridors, subsistence use areas in Kantishna and the Broad Pass area would be designated Management Area B and areas in the northwestern portion of the park would be designated Management Area D, allowing only moderate or low levels of visitor impacts respectively. However, non-subsistence snowmachine use could still occur in these areas and use levels could grow, particularly in accessible areas such as Broad Pass during times when there is presently little use.

For several years, subsistence users have expressed concerns about the impacts and conflicts of increasing recreational use and increasing non-subsistence snowmachine use on subsistence resources and subsistence activities. Members of Denali's Subsistence Resource Commission have specifically expressed concerns regarding the effects of increasing levels of snowmachine use in the Broad Pass/Cantwell area upon moose, furbearers, and ptarmigan populations and their distributions (Denali Subsistence Resource Commission Meeting Minutes, April 30, 2001; April 29, 1996; August 9, 1996; and June 28, 1993). The Denali Subsistence Resource Commission Meeting Minutes (June 1993) document high levels of non-subsistence related snowmachine use in the Cantwell area. It was noted that riders were primarily using drainages and basins, essentially saturating the area and displacing furbearers, causing local trappers to pull their traps prematurely in December of that year. As the range of non-subsistence snowmachine use overlaps with subsistence use areas, the potential for conflict between these user groups increases.

Non-subsistence snowmachine users would interfere with subsistence traplines, displace furbearers, and create paths that encourage animals to travel farther from places where subsistence activities typically occur. Trappers would continue to pull their traps by December because it would be inefficient to set traps in an area in which furbearers have been displaced.

Increased use of the park, particularly non-subsistence snowmachine use, would likely displace moose and caribou from critical wintering areas on park lands in the Cantwell Creek drainage. Local moose populations and the Cantwell group of the Nelchina Caribou herd use areas within the former Mount McKinley National Park and the ANILCA park additions of Windy Creek, Cantwell Creek, and the Bull River drainages during winter. These areas along the Alaska Range in the vicinity of Windy Pass provide important winter habitat for moose and caribou because snow depths associated with the pass area are less than in other areas.

Wildlife may be displaced by snowmachines in the Broad Pass area south of Cantwell, along the Stampede corridor, in the southwest preserve, and in the Tokositna and Lower Ruth areas, and may expend valuable energy fleeing from them. Potential adverse impacts on wildlife most likely would occur during mid-to-late winter, when wildlife is likely to be in a nutritionally-stressed condition. Some dispersion is also possible in the northwest preserve as wildlife could be frightened by non-subsistence motorboat and snowmachine use.

Subsistence users in the northwest preserve and adjacent park additions have also expressed concerns about motorized use. Additional non-subsistence use involving snowmachines and motorboats in subsistence use areas, such as along Birch Creek, could result in displacement of furbearers and moose, cabin vandalism and unauthorized use, disturbed traps, and conflicts between recreational and subsistence users (letters from Miki and Julie Collins, 7/16/00, 7/24/00 and 3/3/01). Introducing new or expanded recreational uses into these areas increases the potential for conflict between consumptive and non-consumptive users. Subsistence trappers may be adversely affected during certain times of the year by displacement of furbearers, and subsistence hunters may be adversely affected during winter hunting seasons by the temporary displacement of wildlife, particularly moose and caribou.

Because of concerns about the declining number of ptarmigan in Wildlife Management Unit 13, which encompasses the east side of the south additions and important subsistence use areas south of Cantwell, hunting bag limits have been reduced and the season shortened to close on March 31. One of the reasons for shortening the season from April 30 to March 31 was to avoid hunting and activity during the nesting period in April. Increased recreation, particularly snowmachine use, could have a negative effect by causing displacement of ptarmigan populations during their sensitive breeding and nesting period (Denali Subsistence Resource Commission Meeting Minutes, August 9, 1996 and June 28, 1993).

Redistribution of wildlife could also occur as a result of expanding the hunting guide area in the southwest preserve. Human presence, aircraft used to access the area, and gunshots may frighten wildlife, causing animals to relocate.

Due to the potential for high levels of widespread recreation and increases in non-subsistence snowmachine use that could create unfavorable conditions for subsistence wildlife populations, this alternative would have minor to moderate impacts on subsistence resources and opportunities.

Alternative 5

There would be considerable potential for redistribution of resources under alternative 5 because of continued increases in non-subsistence activities in important subsistence use areas. Redistribution of wildlife populations would result from greater levels of motorized use, including snowmachine use, motorboats, and airplane landings.

Access by snowmachine to the park additions and preserves would continue and grow. Designating corridors for winter use would focus snowmachine use in the following places: from the southern park boundary to the Old Park boundary near the West Fork Chulitna, Bull River, and Cantwell Creek; to the toes of the Ruth, Tokositna, and Kanikula glaciers from the Tokositna River; to Kantishna from the Sushana River; along the Yentna, Tokositna, and Kantishna/Muddy Rivers. In a future wilderness proposal, accommodation would be made as necessary for recreational snowmachine access along corridors and throughout those areas designated as Management Area A (18% of the total park area plus 183 linear miles of corridors). Winter corridors would result in areas of more concentrated snowmachine use and areas designated as management area A would allow for an encounter rate of up to five parties per day, including two parties of larger than six people. Nearly all of the winter corridors overlap with areas currently or traditionally used for subsistence activities. Increases in snowmachine use would likely frighten animals and cause them to relocate. Potential adverse impacts on wildlife most likely would occur during mid-to-late winter, when wildlife is likely to be in a nutritionally-stressed condition.

Redistribution of wildlife could also occur as a result of expanding the hunting guide areas in the southwest and northwest preserves. Human presence, aircraft used to access the area, and gunshots may frighten wildlife, causing animals to relocate.

For several years, subsistence users have expressed concerns about the impacts and conflicts of increasing recreational use and increasing non-subsistence snowmachine use on subsistence resources and subsistence activities. Members of Denali's Subsistence Resource Commission have specifically expressed concerns regarding the effects of increasing levels of snowmachine use in the Broad Pass/Cantwell area upon moose, furbearers, and ptarmigan populations and their distributions (Denali Subsistence Resource Commission Meeting Minutes, April 30, 2001; April 29, 1996; August 9, 1996; and June 28, 1993). The Denali Subsistence Resource Commission Meeting Minutes (June 1993) document high levels of non-subsistence related snowmachine use in the Cantwell area. It was noted that riders were primarily using drainages and basins,

essentially saturating the area and displacing furbearers, causing local trappers to pull their traps prematurely in December of that year. As the range of non-subsistence snowmachine use overlaps with subsistence use areas, the potential for conflict between these user groups increases.

Non-subsistence snowmachine users would interfere with subsistence traplines, displace furbearers, and create paths that encourage animals to travel farther from places where subsistence activities typically occur. Trappers would continue to pull their traps by December because it would be inefficient to set traps in an area in which furbearers have been displaced.

Increased use of the park, particularly non-subsistence snowmachine use, would likely displace moose and caribou from critical wintering areas on park lands in the Windy and Cantwell Creek drainages. Local moose populations and the Cantwell group of the Nelchina Caribou herd use areas within the former Mount McKinley National Park and the ANILCA park additions of Windy Creek, Cantwell Creek, and the Bull River drainages during winter. These areas along the Alaska Range in the vicinity of Windy Pass provide important winter habitat for moose and caribou because snow depths associated with the pass area are less than in other areas.

Wildlife may be displaced by snowmachines in the Broad Pass area south of Cantwell, along the Stampede corridor, in the southwest preserve, and in the Tokositna and Lower Ruth areas, and may expend valuable energy fleeing from them. Potential adverse impacts on wildlife most likely would occur during mid-to-late winter, when wildlife is likely to be in a nutritionally-stressed condition. Some dispersion is also possible in the northwest preserve as wildlife could be frightened by non-subsistence motorboat and snowmachine use.

Subsistence users in the northwest preserve and adjacent park additions have also expressed concerns about motorized use. Additional non-subsistence use involving snowmachines and motorboats in subsistence use areas, such as along Birch Creek, could result in displacement of furbearers and moose, cabin vandalism and unauthorized use, disturbed traps, and conflicts between recreational and subsistence users (letters from Miki and Julie Collins, 7/16/00, 7/24/00 and 3/3/01). Introducing new or expanded recreational uses into these areas increases the potential for conflict between consumptive and non-consumptive users. Subsistence trappers may be adversely affected during certain times of the year by displacement of furbearers, and subsistence hunters may be adversely affected during winter hunting seasons by the temporary displacement of wildlife, particularly moose and caribou.

Because of concerns about the declining number of ptarmigan in Wildlife Management Unit 13, which encompasses the east side of the south additions and important subsistence use areas south of Cantwell, hunting bag limits have been reduced and the season shortened to close on March 31. One of the reasons for shortening the season from April 30 to March 31 was to avoid hunting and activity during the nesting period in April. Increased recreation, particularly snowmachine use, could have a negative effect by

causing displacement of ptarmigan populations during their sensitive breeding and nesting period (Denali Subsistence Resource Commission Meeting Minutes, August 9, 1996 and June 28, 1993).

Due to the potential for high levels of widespread recreation that could create unfavorable conditions for wildlife (i.e. presence and noise from visitors would scare wildlife), Alternative 5 would have major impacts on distribution of subsistence resources.

(c) Habitat Loss:

None of the alternatives would result in significant habitat loss. Alternative 5 would result in the greatest habitat loss. Proposed facilities in alternative 5 include some trails and campsites on the south side of the park additions and temporary facilities to support winter recreation. These facilities would result in only negligible or temporary habitat loss.

2. Restriction of Access:

Access for subsistence uses on the ANILCA park and preserve additions is granted pursuant to Sections 811(a)(b) and 1110(a). Section 811(b) of ANILCA states that "rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on the public lands." Section 1110(a) of ANILCA authorizes the use of snowmachines for traditional activities during periods of adequate snow cover.

None of the alternatives would restrict access for subsistence. The National Park Service would take action to manage visitor use under many circumstances if that use would be detrimental to subsistence resource values of the park. Proposed registration requirements would be designed to count and track the level of use and would not disrupt subsistence uses. Subsistence users would be registered automatically by meeting eligibility requirements.

3. Increase in Competition:

Alternative 1

Increasing use of the preserve areas could eventually result in additional hunting activity and competition for wildlife resources. For example, Lake Minchumina area subsistence users have expressed concerns that unrestricted hunting in the northwest preserve, especially along the Muddy River, would deplete moose populations and prevent subsistence hunters from obtaining meat (letter from Miki and Julie Collins, 7/24/00). Although there is less subsistence use in the southwest preserve, the same effect could occur in that area.

The park and preserve additions are open to both subsistence and non-subsistence fishing. Subsistence use of fisheries is generally infrequent except in the northwest preserve.

National Park Service regulations and provisions of the Alaska National Interest Lands Conservation Act mandate that if and when it is necessary to restrict the taking of fish, subsistence users are the priority consumptive users on federal public lands. They would be given preference on such lands over other consumptive uses (ANILCA, Section 802(2)). Continued implementation of the ANILCA provisions should mitigate any increased competition from resource users other than eligible subsistence users.

Increased non-subsistence use in the park and preserve additions, especially snowmachine use, leads to more frequent user conflicts (letter from Russ Wilson, 12/28/99; letter from Miki and Julie Collins, 7/24/00). Conflict is likely in areas where non-subsistence use is rapidly increasing, such as south of Cantwell. Higher levels of use have the potential to displace local wildlife resources farther from common access corridors and into the Old Park, where these resources would be out of reach of subsistence users. In other places, such as in the northwest preserve, increased non-subsistence use over time, particularly snowmachine and motorboat use, could result in less wildlife being locally available, so subsistence users would have to travel farther to locate and harvest subsistence resources. To prevent any restriction to subsistence resources due to increased recreational use in the park additions and preserve (especially along common access corridors), the National Park Service would take a reactionary approach that may result in emergency closures to recreation.

Increased use and access near subsistence traplines near Lake Minchumina encourage snowmachiners and other travelers from the Kantishna area and the road system to use subsistence trapline routes. Every year the trapline is open, additional users follow it into the park. Subsistence users find it necessary to patrol their cabins to make sure recreational users are not using them illegally, and this requires additional time away from subsistence activities. Additional trails made from recreational users can confuse the dog teams of the subsistence users. To avoid conflicts with recreational users, subsistence users have altered their trapping schedule by pulling sets early. Subsistence users have stated that rapid increases in numbers of people cause considerable concern about their way of life and connection to a pristine environment being threatened (letter from Collins, 6/2/00).

Alternatives 2 and 3

None of the proposals in alternatives 2 and 3 are expected to result in increased competition for subsistence resources. Non-subsistence snowmachine use in the Broad Pass area, for example, could be expected to decrease significantly in alternative 2, resulting in far fewer conflicts with subsistence uses.

Alternative 4 (NPS Preferred Alternative)

Increases in recreation and facilitated access would occur throughout the park; however, management zoning under this alternative protects subsistence resources by allowing for managed growth and lower levels of use in areas used for subsistence.

Minor competition would occur in the southwest preserve as the hunting guide area would be expanded.

Alternative 5

Alternative 5 includes provisions for managing recreational uses and allocating between recreational and subsistence uses. However, the zoning scheme under alternative 5 allows for higher levels of resource impacts (as compared to the other action alternatives) and provides for increased access throughout much of the park and preserve additions, including important subsistence use areas.

As in alternative 1, improved access to the preserve areas over time could result in additional hunting activity and competition for wildlife resources. Alternative 5 would also expand hunting guide areas in the southwest and northwest preserve; however, the areas would be limited geographically and use would be limited to only certain times of the year to prevent a significant restriction to subsistence resources. Alternative 5 differs from alternative 1 in that non-subsistence use would be managed using the tools described in Actions Common to All Action Alternatives to achieve the desired conditions for each management area. However, more hunting may occur in the southwest and northwest preserve since there would be an additional guiding company in each. The potential for increased competition would likely be about the same as under alternative 1. In light of additional access and activity proposed under this alternative, the National Park Service may have to take management action in order to prevent a significant restriction to subsistence resources throughout the life of the backcountry management plan (the next 20 years).

VI. Availability of Other Lands and Alternatives to the Proposed Action

The backcountry management plan and general management plan amendment includes all areas within the park additions and preserve that are open to subsistence uses. Therefore, there are no other lands that can be substituted in the proposed action.

VII. Alternatives Considered

The backcountry management plan includes a full range of alternatives with proposals for different levels of recreational use and access improvements. This range of alternatives includes some alternatives in which impacts on subsistence uses would be avoided (see Findings below).

VIII. Findings

This analysis concludes that the preferred alternative and proposed actions would not result in a significant restriction of subsistence uses. However the National Park Service would have to take reactionary measures, such as closing areas to recreation, in order to prevent a significant restriction of subsistence resources from alternative 1 (no action alternative) and alternative 5.