

draft

general management plan/environmental assessment
land protection plan
wilderness suitability review
march 1985

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NATIONAL PARK AND PRESERVE / ALASKA

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NATIONAL PARK AND PRESERVE / ALASKA

draft
general management plan/environmental assessment
land protection plan
wilderness suitability review



ANILCA REQUIREMENTS

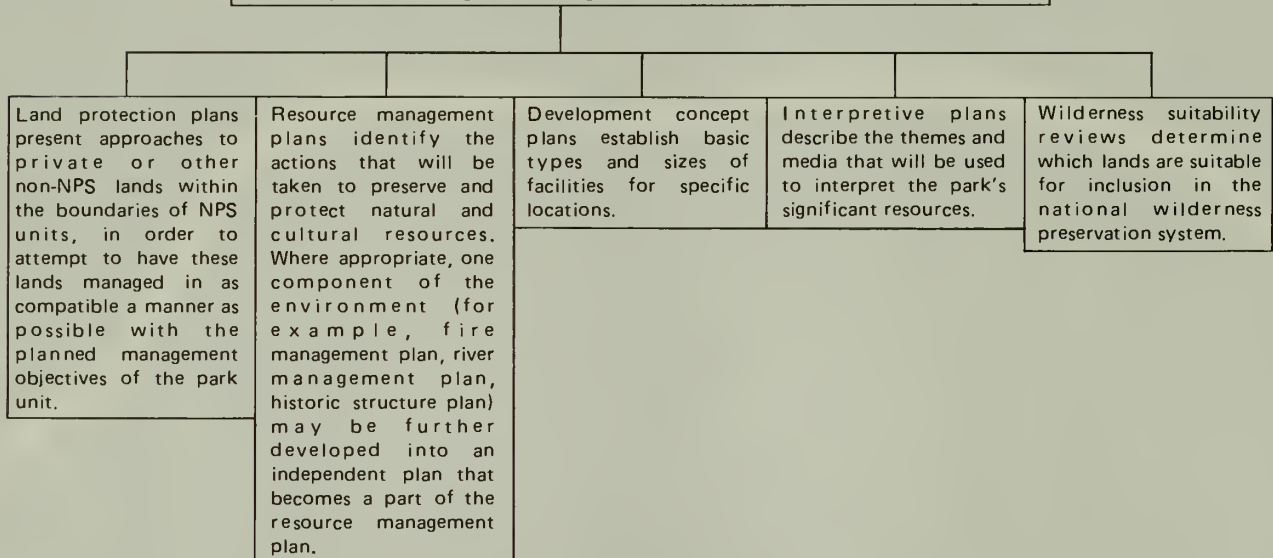
Section 1301 of the Alaska National Interest Lands Conservation Act (ANILCA: PL 96-487) requires the preparation of conservation and management plans for each unit of the national park system established or enlarged by ANILCA. These plans are to describe programs and methods for managing resources, proposed development for visitor services and facilities, proposed access and circulation routes and transportation facilities, programs and methods for protecting the culture of local residents, plans for acquiring land or modifying boundaries, methods for ensuring that uses of private lands are compatible with the purposes of the unit, and opportunities for mutually beneficial cooperation with other regional landowners.



NPS PLANNING DOCUMENTS

The National Park Service planning process for each park (preserve, monument, or other unit of the system) involves a number of stages, progressing from the formulation of broad objectives, through decisions about what general management direction should be followed to achieve the objectives, to formulation of detailed actions for implementing specific components of the general management plan.

The general management plan addresses topics of resource management, visitor use, park operations, and development in general terms. The goal of this plan is to establish a consensus among the National Park Service and interested agencies, groups, and individuals about the types and levels of visitor use, development, and resource protection that will occur. These decisions are based on the purpose of the park, its significant values, the activities occurring there now, and the resolution of any major issues surrounding possible land use conflicts within and adjacent to the park. The following kinds of detailed action plans are prepared concurrently with or after completion of the general management plan.



Depending largely on the complexity of individual planning efforts, action plans may or may not be prepared simultaneously with the general management plan. If they are prepared after the general plan, the NPS public involvement and cooperative planning efforts are continued until all of the implementation plans are completed.

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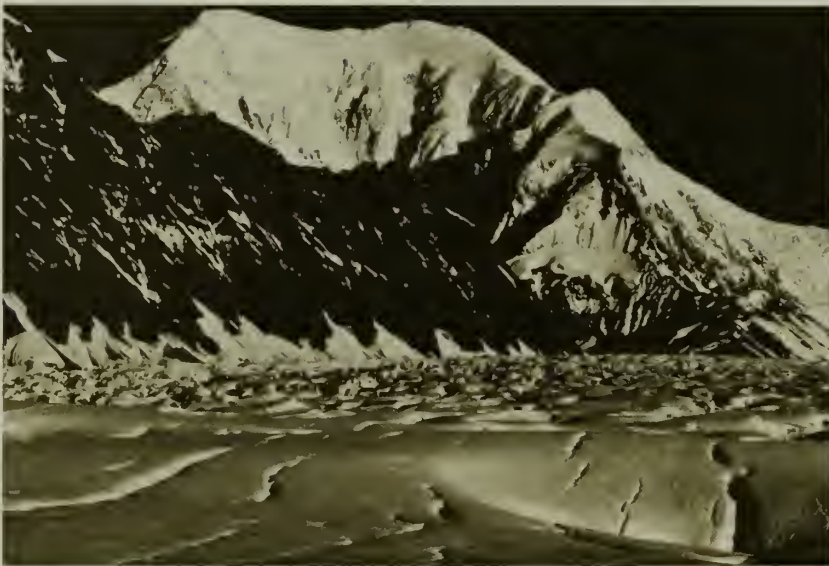
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INTRODUCTION

By Alaskan standards Denali is an unusual national park. First, it is an old park, having been established in 1917, and unlike many of the newer Alaskan parks it has a management tradition, existing development, and established patterns of visitor use. Second, Denali lies between the state's two major population centers, Anchorage and Fairbanks, from which it is accessible by private automobile, tour bus, railroad, and airplane. And finally, Denali contains resources of international significance--the highest mountain on the North American continent and the largest continuously protected ecosystem in the world. For this reason it has gained international recognition through its designation as a biosphere reserve under the Man and the Biosphere program of the United Nations. Because it is an established, well-known park with relatively easy access and outstanding features, Denali has attracted large numbers of visitors in the past, and indications are that it will continue to do so in the future.

In 1980 Denali National Park was expanded by the Alaska National Interest Lands Conservation Act (PL 96-487, hereafter cited as ANILCA). Previously confined to the north side of the McKinley massif, the park now also encompasses the south side, which has considerably different landscape features and resource values from the north side and offers additional opportunities for visitor use.

Today Denali is confronted with a serious threat of overuse along the park road corridor. A recent study (NPS, Singer and Beattie 1984) demonstrated some disruption to wildlife populations caused by increasing visitor traffic along the park road, indicating that one of the principal visitor experiences, wildlife viewing, may be in jeopardy. The current experience is unique because Denali is the only place in the national park system where visitors can consistently expect to see caribou, Dall sheep, moose, and bears--the "big four" of Alaskan wildlife--in a single day of travel. Park managers are challenged to ensure the long-range preservation of Denali's remarkable wildlife viewing opportunities while at the same time meeting the expectations of this generation of visitors.

The current planning effort focuses on visitor use of the park and preserve: how and where increasing levels of use can be accommodated, opportunities for enhancing the visitor experience, and what actions are required to ensure that use does not unacceptably degrade Denali's natural and cultural values.

DOCUMENT ORGANIZATION

This document contains an integrated set of proposals and environmental analysis information for Denali National Park and Preserve, in two parts. Part one, titled "Plans," contains various plans prepared to meet the requirements set forth in ANILCA and other legislation and policies, as follows:

A "General Management Plan" is presented in compliance with section 1301 of ANILCA and section 604 of the National Parks and Recreation Act.

A "Land Protection Plan" is presented in compliance with section 1301 of ANILCA and the Department of the Interior policy on land protection.

A "Wilderness Suitability Review" is presented in compliance with section 1317(a) of ANILCA and sections 3(c) and (d) of the Wilderness Act, as amended.

Part two of this document, titled "Environmental Assessment," contains a description of the natural, cultural, and socioeconomic environments that will be affected by this planning effort, and an analysis of the alternatives that were considered during the preparation of the plans.

PLANNING ISSUES AND MANAGEMENT CONCERNS

The following issues are addressed by the plans included in this document.

Visitor use and general development: Until now nearly all visitors to Denali have been confined to the road corridor that extends from Riley Creek to Kantishna. However, there is growing evidence that

escalating use along the road has begun to disrupt the natural behavior and movements of wildlife (NPS, Singer and Beattie 1984). Also, the campgrounds, interpretive facilities, utilities, and the roadway itself are in need of rehabilitation to safely accommodate even the existing levels of use--and another increase in visitation of the magnitude of what occurred over the past decade (a 144 percent increase) could not be accommodated without major new development.

For several years federal and state planners have been exploring opportunities to cooperate with private enterprise to develop a new visitor service and activity center on state park lands south of Mount McKinley. The expansion of Denali National Park by ANILCA in 1980 resulted in a shared boundary between the national park and Denali State Park, immediately to the south, giving new impetus to the concept of cooperative management to support visitor use. The shift in attention from already developed areas on the north side of Denali National Park to state and national park lands on the south side of the Alaska Range is due in part to the outstanding potential of these areas for interpreting Mount McKinley and associated geologic features. Another reason that south-side development is attractive is that it promises to relieve some of the problems associated with increasing use of the existing park road corridor.

The issues of controlling use on the north side of Denali and creating a new center for visitor activities on the south side are addressed in the visitor use and general development section of the "General Management Plan."

Natural resource management: If the ecological integrity of the park and preserve is to be maintained, natural processes must be allowed to prevail in shaping the environment. Natural processes could potentially be disrupted by visitor activities and associated development or by mining operations. Management of these activities to protect resource values is addressed in the natural resource section of in the "General Management Plan." Because too little is known about natural processes to evaluate with certainty at what point human activities become disruptive influences, the plan includes a program of research, analysis, and monitoring to provide managers with the requisite understanding of Denali's complex environment. This basic management strategy is consistent with the park's current "Resources Management Plan," which is a separate, more detailed document that is updated annually to reflect specific management needs and priorities.

Cultural resource management: All significant cultural resources must be identified, evaluated, and protected under federal and state laws. The cultural resource section of the "General Management Plan" describes the long-range strategy for carrying out this mandate.

Land protection: The eventual disposition and use of nonfederal lands within and adjacent to Denali remains a concern to park management. The "Land Protection Plan" identifies the techniques

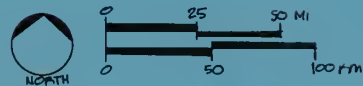
available to ensure the long-term protection of the park and preserve and describes the specific actions the National Park Service intends to pursue in the immediate future. The proposed management of mineral development operations on patented and valid unpatented claims is discussed in both the "Land Protection Plan" and the natural resource section of the "General Management Plan."

Wilderness suitability: The National Park Service has conducted a preliminary evaluation of all federal lands within Denali National Park and Preserve to determine their suitability for inclusion in the national wilderness preservation system. Factors such as landownership, existing uses, and potential development were considered in determining wilderness suitability. This evaluation is described in the "Wilderness Suitability Review."

A great deal of specific guidance for the future management of the park and preserve--particularly as it relates to established traditional uses by local residents--is provided by ANILCA and by the federal regulations for public use of Alaskan parks. These provisions, which are an integral part of the management of Denali National Park and Preserve, are not repeated in the "General Management Plan" section of this document; however, major provisions of ANILCA are summarized for reference in appendix A, and the federal regulations are reprinted for reference in appendix B. Also included, in appendix C, are the management objectives for the park, which provide broad direction for day-to-day park management.

Once approved, the general management plan is intended to serve as a management guide for approximately ten years. The land protection plan will be reviewed and revised if necessary every two years. The wilderness suitability review will form the basis for a formal wilderness recommendation to the Congress that will be submitted by 1987.

DENALI NATIONAL PARK AND PRESERVE



REGION

Denali National Park and Preserve

United States Department of the Interior
National Park Service

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PART ONE: PLANS



GENERAL MANAGEMENT PLAN

INTRODUCTION

Two alternatives for accommodating visitor use were analyzed during the development of this plan: (A) continue present management with no south-side development, and (B) develop the south side and reduce private vehicle use and camping along the north road corridor. The impacts of both alternatives are addressed in the "Environmental Assessment" section of this document. Alternative B has been selected as the preferred alternative and is presented here as the proposal for the general management plan.

PROPOSED MANAGEMENT ZONING

As a basis for all subsequent land use planning, zoning broadly delineates the appropriate management strategies for various lands, based on their resource characteristics and how they can best be used to achieve the park's purpose and objectives. Areas of Denali will be placed in four management zones--natural, historic, park development, and special use--as shown on the Management Zoning map. The management emphasis for each zone is described below.

Natural Zone. Lands and waters in this zone are managed for the conservation of natural resources and processes and for the accommodation of uses that do not adversely affect resources. Because of the relatively pristine nature of the park, more than 97 percent of the total acreage is in this zone. The natural zone has been subdivided into two subzones: the wilderness subzone and the outstanding natural feature subzone. The wilderness subzone comprises those lands either designated as wilderness or determined suitable for designation as wilderness. These lands will be managed to ensure that natural processes prevail. Those uses compatible with the 1964 Wilderness Act and special uses allowed by ANILCA will be permitted in this subzone. (See the "Wilderness Suitability Review" section of this document for a more detailed discussion of wilderness areas and allowable activities.) The outstanding natural feature subzone includes the Ruth Glacier and associated drainages. The purpose of this subzone is to promote public appreciation and interpretation of the unique geologic features of this area of the park. Visitor activities that are compatible with this purpose will be encouraged in this subzone.

Historic Zone. Lands in this zone are managed primarily to preserve cultural resources. In Denali this zone includes all the sites and structures that are listed on or are eligible for the National Register of Historic Places. Appropriate uses in this zone include visitor appreciation and study of cultural features and adaptive use of historic structures for other park purposes. Lands qualifying for the historic zone are not represented on the zoning map because of their small scale. For a description of these properties, refer to the cultural resource description in part two of this document.

Park Development Zone. Lands in this zone are managed to accommodate major development and intensive use. In Denali this zone includes the road corridor and all lands where major facilities exist.

Special Use Zone. Lands in this zone are owned or used by parties other than the National Park Service. In Denali this zone includes private properties and mining claims.

VISITOR USE AND GENERAL DEVELOPMENT

In 1972, when the George Parks Highway opened, visitor use at Denali totaled 88,615. Over the next 12 years visitor use grew at an average rate of 25,000 visitor days per year to a total of 394,426 visits in 1984. The escalating demands on Denali's resources, coupled with the need to provide a visitor experience equal to the resources, is the single most critical problem facing park managers. The solution suggested by this plan is to expand recreational opportunities on the south side of Denali, then to modify use on the north to protect resource values. Based on current trends it is expected that the demand for use of Denali will increase by another 250,000 people per year by the end of the 10-year planning period. This amount of additional demand cannot be accommodated in the existing park road corridor without a significant decline in the visible wildlife, but it can be accommodated if the south side is developed as an alternative destination for visitors.

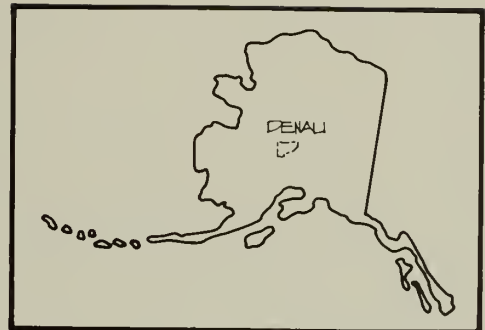
The southern expansion of Denali National Park to the boundary of adjoining Denali State Park has created an opportunity to add a new dimension to the Denali experience. The established uses of the "old park" will continue while work is undertaken to develop Denali State Park and the south side of Denali National Park for expanded and diversified visitor use. Together the north and south sides will offer a large range of visitor experiences geared to the full complement of Denali's outstanding natural resources. Developed in this way, the parks should be able to meet visitor demands for many years.

North-side Proposals

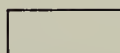
During the 70 years of National Park Service stewardship at Denali, the visiting public has been accommodated almost exclusively along the park road corridor, where the principal experience has been viewing Mount McKinley and the park's fascinating wildlife. Within the past 15 years, however, since the completion of the George Parks Highway and the associated dramatic increase in visits to Denali, the National Park Service has become aware that increasing traffic has been detrimental to opportunities for viewing wildlife along the park road corridor.

In 1972, the year the Parks Highway opened, a mandatory public transportation system was instituted, and only visitors with overnight or other special use permits were allowed to drive their cars beyond Savage River. Because of significant increases in visitor use over the next decade, by 1981 the level of bus and permitted private vehicle traffic had increased 50 percent and was again recognized as a threat to wildlife

REEK
 MINLEY
 LAGE
 SWIFT FORK



NATURAL ZONE
 97.5% OF THE PARK AND PRESERVE



WILDERNESS SUBZONE



OUTSTANDING NATURAL FEATURE SUBZONE



SPECIAL USE ZONE
 1.7% OF THE PARK AND PRESERVE



PARK DEVELOPMENT ZONE
 0.7% OF THE PARK AND PRESERVE



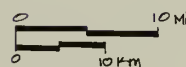
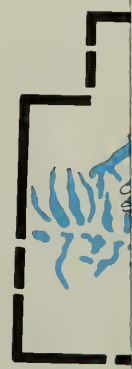
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 PRESERVE BOUNDARY



AIRSTRIP



GLACIER

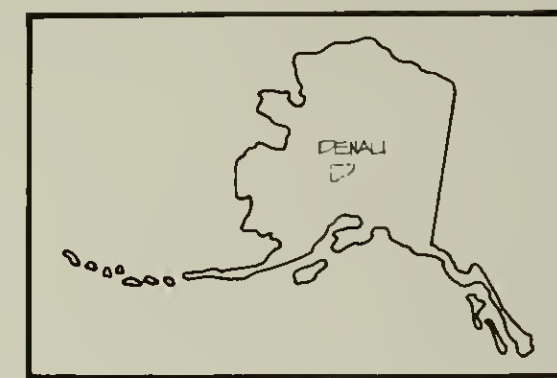


PROPOSED MANAGEMENT ZONING

Denali National Park and Preserve
 United States Department of the Interior
 National Park Service

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- NATURAL ZONE
97.5% OF THE PARK AND PRESERVE
- WILDERNESS SUBZONE
- OUTSTANDING NATURAL FEATURE SUBZONE
- SPECIAL USE ZONE
1.7% OF THE PARK AND PRESERVE
- PARK DEVELOPMENT ZONE
0.7% OF THE PARK AND PRESERVE
- DENALI NATIONAL PARK AND PRESERVE BOUNDARY
- AIRSTRIP
- GLACIER



PROPOSED MANAGEMENT ZONING

Denali National Park and Preserve
United States Department of the Interior
National Park Service

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viewing. A special wildlife study undertaken that year and completed in March 1984 concluded that the traffic increase between 1974 and 1981 had not had a significant effect on overall populations in the area, but that it had caused many moose and bears to avoid using the road corridor. In addition to the demonstrated effect of reducing the number of moose and bears that utilize habitat in the immediate vicinity of the road, there is concern that increasing traffic might eventually disrupt the movements of migrating herds if the spacing between vehicles becomes too short.

In an effort to allow as many people as possible to view all of the big four Alaskan wildlife in their natural habitat, the National Park Service will make additional use of the shuttle bus system and allow fewer private vehicles on the park road. It has been demonstrated that private vehicle use causes the greatest amount of avoidance behavior on the part of wildlife because the occupants of private vehicles can stop at will and approach the animals on foot, while visitors riding shuttle buses are not allowed to leave the vehicles in areas of critical wildlife habitat (NPS Singer and Beattie 1984). Shuttle buses also have the obvious advantage of carrying 40 people per vehicle, compared to the average carload of three people per vehicle. As a first step in implementing this concept the National Park Service will continue to start the operation of the shuttle bus system as soon as the road opens and will extend it into the fall for as long as visitor use remains high. Initially, until the south-side development is operational, all traffic on the park road will be held to within plus or minus 15 percent of the 1984 levels. A 15 percent daily variance will allow the shuttle and tour bus service to be tailored more closely to daily fluctuations in demand. Once the proposals for the south side of Denali are implemented, private vehicle traffic on the park road will be reduced by about 45 percent, causing an overall reduction of 23 percent in road traffic. Bus traffic can then be increased by 20 percent, leaving a net reduction of 17 percent in total vehicle traffic (see table 1). As a result of these actions, up to 24,000 additional visitors per year can be accommodated with less disturbance to wildlife behavior.

Table 1: Proposed Changes in Traffic Levels

	1984	Seasonal Use	
		At Full Plan Implementation	Net Change
Tour and shuttle buses	4,008	4,810	+ 20%
Private vehicles	6,245	3,435	- 45%
NPS vehicles	<u>1,702</u>	<u>1,702</u>	<u>0</u>
Total traffic	11,955	9,947	- 17%

The reduction in private vehicle traffic will be accomplished by decreasing the vehicle use associated with camping. The campgrounds at Sanctuary, Igloo, and Teklanika will be phased out once replacement campgrounds are available on the south side of Denali. Campgrounds will be retained at their existing sizes at Riley Creek, Savage River, and Wonder Lake. The



reduction in campsite vehicle permits will reduce the number of private vehicles that can stop at will near wildlife. Closing some campgrounds will have the further advantage of reducing the potential for human/bear encounters in an area that already has a high incidence of problems.

Based on past trends, the proposed 20 percent increase in bus service will not be enough to accommodate all of the demand; however, visitors who cannot be accommodated on the north side of the park can be accommodated on the south side once the proposal for south-side development is implemented. In fact, development of the south side of Denali as an alternative visitor destination is expected to provide additional recreational opportunities for the visitors to Denali, resulting in a leveling off of demand for transportation services and accommodations in the northern part of the park.

The proposal to reduce the number of campsites in the road corridor constitutes a revision of the 1983 Development Concept Plan to reflect the wildlife data published in Singer and Beattie's 1984 report. The elements of the DCP that are endorsed by this plan include the rehabilitation of the road surface, upgrading of utility systems, renovation of existing structures, and development of new interpretive facilities. In addition, construction of a new \$3.7 million visitor access center is underway and will be completed in the spring of 1987, and the reconstruction of the Denali National Park Hotel, a \$14 million construction project, is scheduled to begin in 1987. All of the specific development projects are listed on the North-Side Proposals chart. Together these actions will improve health and safety conditions, provide better information and interpretation, and help to confine environmental impacts to the most suitable locations. The intent of these actions is to reinforce existing conditions. No action is intended to significantly change the types or levels of visitor use. The preliminary cost estimates for these projects are listed in appendix D.

Any further development of commercial visitor facilities on private properties in the Kantishna mining district will be considered incompatible with the planned purposes of the park because of the need to limit vehicle use in this portion of the park. The National Park Service is concerned that commercial development would increase the demand for vehicle use and proposes to avoid it by acquiring the surface estates to patented mining claims. This issue is discussed in greater detail in the "Land Protection Plan" section of this document.

NORTH-SIDE PROPOSALS

A. Riley Creek/Park Entrance - Construct new visitor access center along the park road; relocate campground entry; construct central camper services building (shower, laundry, store, gas, equipment rental) and new hostel

B. Hotel/Depot Area - Construct new hotel; provide new coffee shop, employee dining room, bus maintenance shop, employee housing; improve information/orientation services and exhibits; construct new service road and loop drive; expand hotel parking; landscape hotel grounds and depot parking area; relocate gas station/store; convert Morino campground to picnic area; close hostel and replace at Riley Creek

C. Park Headquarters/C-Camp - Renovate and expand the permanent and seasonal housing; develop seasonal housing and trailer sites; construct bunkhouse; consolidate maintenance/office facilities; construct administration building annex; separate maintenance/administration functions from housing

D. Taiga Wayside - Provide major exhibit area, seating, vehicle turnaround

E. Savage River Campground - Rehabilitate sites; construct bus stop shelter with orientation exhibits

F. Primrose Ridge Wayside - Provide orientation and interpretive exhibits, possibly with a shelter, and short loop trail

G. Sanctuary Campground - Remove campground and restore sites to natural conditions

H. Teklanika Campground - Remove campground and restore sites to natural conditions

Teklanika Rest Stop - Provide comfort station, picnic tables

I. Igloo Canyon Campground - Remove campground and restore sites to natural conditions

J. Polychrome Pass Wayside - Upgrade with comfort station and interpretive exhibits/shelter; delineate parking and paths

K. Toklat - Improve and expand employee housing; separate maintenance and housing; construct maintenance/storage shop, bunkhouse, sewer plant

Toklat Ranger Station - Rehabilitate structure; build adequate winter storage/emergency supplies cache

L. Stony Hill Wayside - Provide interpretive exhibits, picnic shelter/ comfort station, short trail; reduce parking area

M. Eielson Visitor Center - Short-term: reduce parking area, pave, landscape; long-term: replace structure with facility or enlarge and renovate existing structure

N. Wonder Lake Campground - Construct new campground adjacent to the existing one; reduce roads and parking areas; surface the most erodible sections of the trail to McKinley River Bar; restore existing campground to natural conditions

O. Wonder Lake Ranger Station - Provide employee/bus driver residences, transient bunkhouse, grounds rehabilitation

P. Kantishna Area - Encourage private owners to preserve historic artifacts; prevent additional privately owned lodging by acquiring surface estates; develop NPS maintenance facility

Parkwide Improvement Proposals - Restore park road to original design standard; retain gravel surface; correct drainage; repair/replace bridges

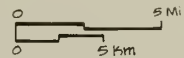
Upgrade water/sewage treatment systems to current standards

Retain public shuttle bus system; continue wildlife tours; adjust shuttle schedule to improve service (provide flexible service); provide comfortable shuttle buses if possible; coordinate schedules with interpretive programs--more eastbound morning buses and later buses partway into park and return, special buses for discovery hikes

Improve orientation/interpretive exhibits at entry points, campgrounds, waysides; generally improve sign program, install road signs to key with text in brochures/guides

Provide food storage caches/cooking shelters at tent campgrounds, as needed

Provide short, formal trails and "harden" surfaces where resources are being damaged or where extensive informal trails are developing



ROAD CORRIDOR

Denali National Park and Preserve

United States Department of the Interior
National Park Service

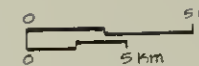
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- DENALI NATIONAL PARK AND PRESERVE BOUNDARY
- WILDERNESS BOUNDARY
- GLACIER



- A** RILEY CREEK/PARK ENTRANCE
- B** HOTEL/DEPOT AREA
- C** PARK HEADQUARTERS/C-CAMP
- D** TAIGA WAYSIDE
- E** SAVAGE RIVER CAMPGROUND
- F** PRIMROSE RIDGE WAYSIDE
- G** SANCTUARY CAMPGROUND
- H** TEKLANIKA CAMPGROUND/REST STOP
- I** IGLOO CANYON CAMPGROUND/WAYSIDE
- J** POLYCHROME PASS WAYSIDE
- K** TOKLAT
- L** STONY HILL WAYSIDE
- M** EIELSON VISITOR CENTER
- N** WONDER LAKE CAMPGROUND
- O** WONDER LAKE RANGER STATION
- P** KANTISHNA AREA

See facing page for Summary of
Development Concepts



ROAD CORRIDOR

Denali National Park and Preserve

United States Department of the Interior
National Park Service

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- DENALI NATIONAL PARK AND PRESERVE BOUNDARY
- WILDERNESS BOUNDARY
- GLACIER

- A** RILEY CREEK/PARK ENTRANCE
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- H** TEKLANIKA CAMPGROUND/REST STOP
- I** IGLOO CANYON CAMPGROUND/WAYSIDE
- J** PDLYCHROME PASS WAYSIDE
- K** TOKLAT
- L** STONY HILL WAYSIDE
- M** EIELSON VISITOR CENTER
- N** WONDER LAKE CAMPGROUND
- O** WONDER LAKE RANGER STATION
- P** KANTISHNA AREA

See facing page for Summary of
Development Concepts



South-side Proposals

The south slope of the McKinley massif is conspicuously different from the sheer north wall and the valley traversed by the existing park road. The south slope receives a greater annual precipitation and spans a more gradual elevation rise from the adjacent lowlands and, as a result, contains a much more extended glacial system and a broader cross section of dramatically sculptured landscapes. Some of the south-side valley glaciers--the Yentna, Kahiltna, Tokositna, Ruth, and Eldridge--are among the longest in the world, extending up to 45 miles from source to terminus. The enlarged national park encompasses these glaciers and the lower reaches of moraines and tundra. Adjacent Denali State Park, established in 1970, now adjoins the expanded national park, creating opportunities for cooperative management for visitor use.

Compared to the north side, with its sensitive wildlife values and fragile tundra, the glaciated landscape on the south side offers more varied opportunities for access and recreational use. Potential activities in the state and national parks range from viewing the Alaska Range from the George Parks Highway to the ultimate in American mountaineering challenges--reaching the summit of Mount McKinley. Small aircraft can fly up and land on the numerous glaciers. Hiking opportunities of varying degrees of difficulty abound in the front range mountains (particularly the Tokoshas), in the rolling tundra highlands of the Peters and Dutch hills, and on Curry Ridge in the state park, where a 40-mile trail loop already exists. River floating possibilities exist on the Tokositna and Chulitna rivers. The broad, marshy Chulitna and Tokositna river valleys, dotted with lakes and ponds, provide good opportunities for viewing wildlife, notably moose and trumpeter swans. The views to the Tokosha Mountains are superlative. In the winter and spring when the marshy terrain is frozen, these valleys become vast cross-country skiing and dogsledding grounds. Several residents of the Tokosha community currently operate cross-country ski-touring businesses that utilize trails and cabins in the area.

Many of the activities mentioned already occur on a modest level, but the development of access and support services will make these activities available to a wider cross section of visitors. This provision of mountain-oriented recreational opportunities was legislated in the park's expansion act.

Foremost in facilitating visitor use of the south side--especially for national and international visitors--will be the development of a full range of lodging and other visitor services and the provision of access to major features, viewpoints, and activity areas. These major facilities on the south side of Denali should be visually linked with the Ruth Glacier because of the Ruth Glacier's wealth of spectacular features capable of accommodating visitor use. With the Sheldon Amphitheater, Great Gorge, Alder Point, Alder Lake, and the Moose's Tooth and other granitic monoliths, the Ruth Glacier is superior to neighboring glaciers for the purposes of providing a dramatic visitor experience.

The most striking vantage point for viewing Mount McKinley through the corridor opened by the Ruth Glacier occurs on the south end of Curry

Ridge. Curry Ridge is a tundra plateau that parallels the Alaska Range for some 30 miles. From this elevated vantage point, 1,000 feet above the highway, the full sweep of the Alaska Range is revealed across the forested Chulitna River valley. This dramatic viewpoint is the proposed site for the visitor service and activity center. This site also offers the advantage of being easily accessible from the George Parks Highway and the Alaska Railroad. Alaskan residents and tourists could reach the area in a 3-hour drive from Anchorage or a 5-hour drive from Fairbanks, or if they wished to travel by train, they could arrange a round-trip in a minimum of two days.

The final selection of a site for development will be made in cooperation with the state of Alaska. At that time a second-phase analysis will be undertaken to provide more detailed, site-specific information, including further environmental studies, marketing projections, and design and construction feasibility. The National Park Service and the state of Alaska have signed a memorandum of understanding that establishes what processes will be followed for cooperative planning for south-side development (see appendix E). The Curry Ridge site, preferred by the National Park Service, is part of Denali State Park, which is currently managed as a primitive area with a single campground and a trail system. Thus, the development of a visitor activity center as envisioned in this plan will constitute a major change in the management of Denali State Park as well as a new focus for use of Denali National Park.

Tokositna Glacier now appears impractical as a major development site. The Tokositna Glacier in Denali National Park and the Peters and Dutch hills in Denali State Park were originally assessed for the state's Tokositna plan and reassessed for the Denali general management plan. Several factors were considered, including the fact that development of an activity center at Tokositna would require expensive road construction and the area would not be accessible to the railroad. Furthermore, the Peters Hills and Dutch Hills contain a variety of mixed land uses, particularly mining activity, that might conflict with a large increase in visitor use.

As shown on the South Side Landscape Features map, the particular attributes of different areas on the south side of Denali can be used to advantage to create a great variety of outstanding experiences for visitors to choose from. For the foreseeable future, aircraft will be the primary means of access to features within Denali National Park. Both fixed-wing and helicopter access will be evaluated in future studies. Most visitors' destinations will be in the vicinity of the Ruth Glacier, which could be reached in a matter of minutes from an airstrip near Curry Ridge. A system of trails and up to four mountain huts will be developed in this part of the national park to support day and overnight trips ranging from fly-in/fly-out excursions to wilderness treks. Aircraft use will be managed through commercial use licenses to fit the capacity of popular fly-in sites and to avoid disturbing the solitude of more remote park destinations and private lands.

The visitor service and activity center within Denali State Park could be supplemented by additional facilities along the George Parks Highway provided by the private sector in concert with the recommendations made



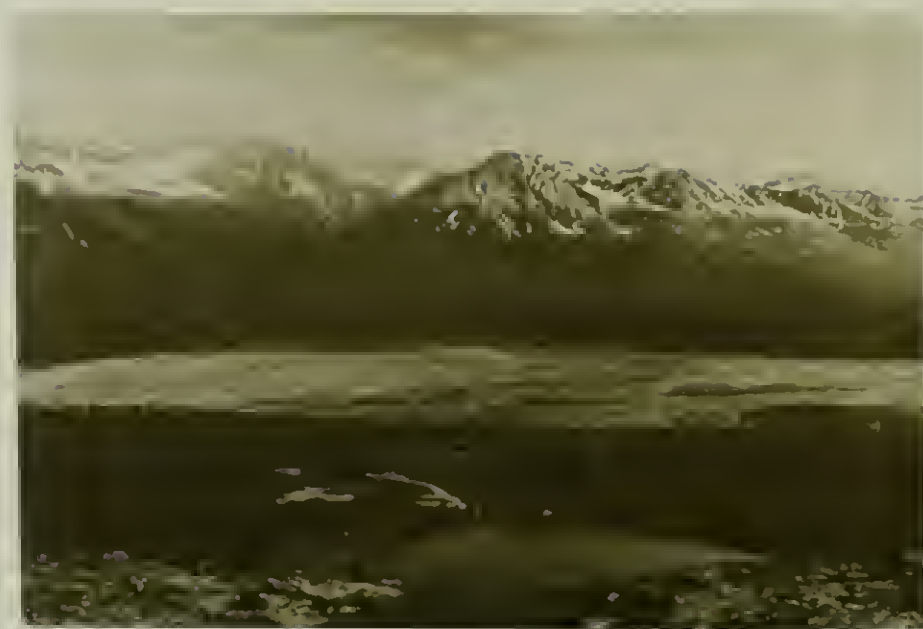
SHELDON AMPHITHEATER, RUTH GLACIER



PETERS HILLS. MT. MC KINLEY IS VISIBLE IN THE BACKGROUND.



GEORGE PARKS HIGHWAY



VIEW FROM CURRY RIDGE, DENALI STATE PARK. BYERS LAKE IS VISIBLE IN THE FOREGROUND, BACKED BY THE CHULITNA RIVER VALLEY AND THE FRONT RANGE MOUNTAINS.



GREAT GORGE OF THE RUTH GLACIER

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BYERS LAKE

ENE, EASILY ACCESSIBLE LAKE SET
LUSH FOREST ENVIRONMENT

CAMPING, PICNICKING, HIKING, AND NON-
MOTORIZED BOATING SUPPORTED BY
STATE PARK FACILITIES

BYERS LAKE

CHUBONE TRAIL

CURRY RIDGE

CURRY
(RAILWAY STATION)

SUBITNA RIVER
ALASKA RAILWAY



* SIGNIFICANT VIEWPOINTS



TRAILS OR HIKING ROUTES

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NORTH

SOUTH-SIDE LANDSCAPE FEATURES

Denali National Park and Preserve

United States Department of the Interior / National Park Service

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MCKINLEY MASSIF

THE ROOF OF THE CONTINENT

- EXPEDITION CLIMBING AND MOUNTAINEERING
- SCENIC OVERFLIGHTS

MOUNT MCKINLEY

SHELDON AMPHITHEATER

THE GREAT GORGE

THE MOOSE'S TOOTH

ICE FALL

RUTH GLACIER

RUTH GLACIER

NATURAL CORRIDOR THROUGH AN IMMENSE GLACIALLY SCULPTED LANDSCAPE CULMINATING IN THE GREAT GORGE AND SHELDON AMPHITHEATER

- AIR TOURS WITH THE OPPORTUNITY TO LAND ON AND WALK ABOUT THE GLACIER
- OVERNIGHT STAYS IN MOUNTAIN HUTS
- GLACIER INTERPRETATION AND DEPARTURE POINT AT ALDER CREEK FOR HIKING, DOG SLED TRIPS, AND ACCESS TO MOUNTAIN HUTS AND PRIMITIVE CAMPSITES

FRONT RANGE MOUNTAINS

RUGGED PEAKS AND RIDGES WHICH SERVE AS PLATFORMS FOR VIEWS OF THE MCKINLEY MASSIF, TRANSITION ZONE BETWEEN RICH LOWLAND HABITATS AND LIFELESS HIGH ALTITUDE MOUNTAIN LANDSCAPE OF THE MCKINLEY MASSIF

- MOUNTAINEERING, HIKING, AND BACKCOUNTRY CAMPING SUPPORTED BY A SYSTEM OF TRAILS AND MOUNTAIN HUTS
- AIR ACCESS TO SELECTED VIEWPOINTS, TRAILHEADS, AND PRIMITIVE CAMPSITES

DUTCH HILLS

HILLS

PETERS HILLS

ISOLATED, ROLLING TUNDRA HIGHLANDS WITH CLASSIC FRAMED VIEWS OF MOUNT MCKINLEY

- HIKING, BACKCOUNTRY CAMPING AND CROSS-COUNTRY SKIING AWAY FROM THE MAINSTREAM OF TOURIST ACTIVITY

CHULITNA RIVER VALLEY

AN EXPANSIVE VALLEY OF RIVERS, PONDS, AND FORESTS ENCLOSED BY THE TOKOSHA MOUNTAINS AND CURRY RIDGE

- VIEWING OF MOOSE, SWANS, AND OTHER WILDLIFE
- RIVER RAFTING, CROSS-COUNTRY SKIING AND DOG SLED TRIPS
- WILDERNESS OVERNIGHT STAYS IN PRIMITIVE CABINS

GEORGE PARKS HIGHWAY

THRESHOLD TO THE SOUTH SIDE OF DENALI, A FORESTED CORRIDOR OFFERING GLIMPSES OF MOUNT MCKINLEY

- INFORMATION AND ORIENTATION
- PICNICKING, SCENIC VIEWING, INTERPRETIVE
- PUT-IN AND TAKE-OUT FOR CHULITNA RIVER TRIPS
- STAGING FOR HIKING AND BACKCOUNTRY CAMPING
- COMMERCIAL VISITOR SERVICES

EYS LAKE

SERENE, EASILY ACCESSIBLE LAKE SET IN A LUSH FOREST ENVIRONMENT

- CAMPING, PICNICKING, HIKING, AND NON-MOTORIZED BOATING SUPPORTED BY STATE PARK FACILITIES

SOUTH CURRY RIDGE

BEST VANTAGE POINT FOR SIMULTANEOUSLY EXPERIENCING THE IMMENSE SCALE AND GRANDEUR OF THE ALASKA RANGE WITHIN DENALI NATIONAL PARK AND THE RICH DETAILS OF A TUNDRA ENVIRONMENT WITHIN DENALI STATE PARK

- ORIENTATION AND INTERPRETATION AT A MAJOR VISITOR CENTER
- OVERNIGHT STAYS AT A FULL-SERVICE LODGE ORIENTED TO VIEWS OF THE ALASKA RANGE AND THE CHULITNA RIVER VALLEY
- STAGING FOR AIR ACCESS INTO THE MOUNTAINS AND THE RUTH GLACIER
- HIKING, PICNICKING, CAMPING, INTERPRETIVE WALKS, AND WINTER SPORTS
- ACCESS FROM THE HIGHWAY AND THE ALASKA RAILROAD

- ← * SIGNIFICANT VIEWPOINTS
- TRAILS OR HIKING ROUTES



SOUTH-SIDE LANDSCAPE FEATURES

Denali National Park and Preserve
United States Department of the Interior / National Park Service

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by the Alaska Department of Natural Resources in Scenic Resources Along the Parks Highway (1981). These recommendations promote greenbelts, foreground studies, landscape design, and buffers to protect the scenic resources of the corridor.

As another alternative to the more intensive recreational use of the activity center in Denali State Park, hiking and primitive camping opportunities will be available in the areas of the Peters Hills and the Tokositna Glacier that are accessible by existing primitive roads. The Peters Hills and the Tokositna Glacier will appeal to people looking for an experience away from the highway corridor.

Since the George Parks Highway is open year-round, winter and spring activities, such as cross-country skiing and dogsled trips, will also be possible. When the streams are frozen, numerous opportunities will exist to explore the Chulitna and Tokositna valleys. Aircraft will support cross-country skiing trips into the mountain valleys and passes and onto the glaciers.

The south-side plan proposes joint government and private commercial development of federal and state park lands, and it will require extensive cooperation between the National Park Service, the state of Alaska, and private enterprise. As stated previously, a separate development concept plan will be prepared for the south side of Denali. Specific development proposals will be preceded by marketing studies, site analyses, and impact analyses.

Access

The primary method of access into the northern portion of Denali will continue to be the shuttle bus transportation system, and private and commercial traffic will continue to be restricted. The 88.5-mile park road is currently being upgraded to minimum park standards except in those rugged areas where standards cannot be accomplished without an unacceptable impact on the environment.

For the immediate future, the primary method of access into the south side of the national park will continue to be aircraft. As part of more detailed studies, the feasibility of expanded aircraft service from a nearby location will be evaluated. Studies will also be conducted to determine the feasibility of other forms of access to features in the state and national parks.

The potential for upgrading the Stampede Trail to provide access into the far northern area of the park was eliminated from further consideration because of the estimated cost of construction and the potential for environmental damage. The Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984) estimated the cost of this road to be \$100 million to \$150 million. There is currently no economic justification for building this road. This trail crosses the denning areas of the Toklat and Savage wolf packs, the winter range of the Denali caribou herd, the major movement corridor along the Toklat River for both wolves and caribou, and many miles of pristine country that currently are suitable for wilderness designation.

The National Park Service is aware that the state of Alaska might assert certain claims of rights-of-way under Revised Statute 2477. The Park Service intends to cooperate with the state and any other claimant in identifying such claims, the nature, extent, and validity of which may vary depending on the circumstances under which they were acquired or asserted. Notwithstanding that certain RS 2477 rights-of-way may exist, it will still be necessary for users of any right-of-way to comply with applicable NPS permit requirements.

Interpretation

For many visitors, a view of the McKinley massif will be the high point of their trip. The south-side activity center will orient visitors to views of that part of the Alaska Range from both inside and outside the buildings. Also, since Mount McKinley is shrouded in clouds much of the time, some means of suggesting its magnificence should be displayed. Exhibits and audiovisual presentations at the activity center, displays at the Talkeetna ranger station, waysides along roads and trails, and guided tours and ranger talks will complete the range of interpretive services available on the south side of Denali.

Interpretive services on the north side will be enhanced by individualized computer terminals and interactive video displays in the new visitor access center and also by wayside exhibits and improved publications. The primary means of interpretation on the north side will continue to be the programs given by NPS naturalists and the talks presented on the commercial tour buses.

The following interpretive themes will be developed for the park, with the greatest emphasis placed on the specific resources of each location:

- the ecosystems in the park, and the necessity for preserving large tracts of land to support the wildlife

- geology, focusing on the McKinley massif and the processes of faulting and glaciation

- mountain climbing, including both the history of the ascents of Mount McKinley and messages about minimum-impact use and safety for contemporary mountaineers and backpackers

- man's role in the park, including the stories of the early pioneers and the discovery of gold in Kantishna, the work of Charles Sheldon (the hunter/naturalist who, along with the Boone and Crockett Club, was instrumental in establishing Mount McKinley National Park), and the ongoing subsistence use by area residents

Development Considerations

The proposals for the south side of Denali are conceptual. More detailed plans and designs will be prepared for specific projects following the approval of this plan. The construction of facilities will be preceded by

site-specific feasibility and environmental analyses and marketing studies. Certain development considerations related to engineering feasibility, aesthetic values, and environmental concerns are summarized below as a guide for more detailed planning for the south side.

The location and design of facilities will require on-site evaluation of local soil conditions. Active alluvial areas and swampy zones will be avoided because of low bearing strength and the potential for swelling and movement. Bedrock, glacial drift zones, and morainal deposits are generally suitable for roads and building foundations. The Talkeetna-Mutnala soils within the area contain a glacial till with high bearing strength and thus good capacity for supporting building and road foundations. This till is overlain by silty materials which occupy the upper 15 to 30 inches.

Sand and gravel for road fill will be obtained from alluvial deposits that lie along the creeks and established borrow sites. The selective use of these materials will be based not only on feasibility, material quality, and haul distances, but also on aesthetic impacts and effects upon fish and wildlife within the local area.

Construction in areas of discontinuous permafrost might require the use of special materials for foundations (gravel pads, blocks, pilings, or timbers that could be jacked up or down). Wherever feasible, more suitable sites will be selected.

The locations, sizes, and configurations of proposed facilities will take into consideration the potentials for landslides, rockslides, avalanches, and earthquakes.

Environmental studies will precede any construction activity for the purpose of identifying and avoiding prime wildlife habitats and migration routes. These generally include the river valleys associated with the south-flowing glaciers and the extensive bog and pond areas south of the range. Low-lying areas where willow is abundant are important moose winter range. Wet meadows are used by trumpeter swans. Creeks and ponds are prime use areas for beaver. Bear denning occurs on well-drained areas near brushline, which also serve as moose summer range.

Floodplains and wetlands will be avoided to the greatest extent practical in the selection of sites appropriate for visitor use and development of facilities. Development will be guided by the regulations for complying with Executive Order 11988, "Floodplain Management," and Executive Order 11990, "Protection of Wetlands" (45 FR 35916 and 47 FR 36718).

Since the south side offers a potential to extend the season of use beyond the summer season, energy conservation features will be incorporated into facility design. Climate, slope, and aspect are important design factors.

NATURAL RESOURCES

The national interest in Denali that led Congress to expand the park in 1980 was preceded in 1974 by action on behalf of the international community to designate the original park acreage as a biosphere reserve under the Man and the Biosphere program of UNESCO (the United Nations' Educational, Scientific and Cultural Organization). The purpose of this designation was to support the protection of the park's natural processes and genetic diversity for comparison with areas that have been altered by human activity. The primary intent of Congress in enlarging the park and preserve was similarly to enhance the protection and interpretation of Denali's natural resources.

Given the clear preservation intent of the Congress and faced with a growing concern about the impacts of increasing visitor use and other activities, the National Park Service is continuously expanding its resource management program. The intent of the resource management program is to understand the natural forces that shape Denali's environment and to avoid or eliminate activities that significantly interfere with natural processes. Although much has been done by the state of Alaska, the National Park Service, other government agencies, universities, and private organizations to understand the resources of this region, there is an identified need for additional study, understanding, and interpretation of Denali's natural systems so that significant impacts can continue to be avoided or mitigated in the future.

This plan proposes that the ongoing program of research and monitoring be continued. The park's current "Natural Resource Management Plan," which is updated annually, describes in detail the scientific research and management program that will be employed to gain a better understanding of park resources and to apply that knowledge in future resource-related decision making. The "Natural Resource Management Plan" is available for review by the public, and any major change in the direction, philosophy, or goals presented in the "General Management Plan" will be subject to public involvement.

The resource studies currently underway are

- fire study (1982-1986)
- fire plan (approved 1982, updated annually)
- wildlife surveys (annual)
- declining caribou herd study (1984-1986)
- wolf pack monitoring (1985-1988)
- bearproof food container study (1983-1985)
- bear aversive conditioning study (1984-1986)
- study of effects of placer mining on water quality (1981-1985)
- study for revegetation of placer mining areas (proposed)
- air quality monitoring (1980, ongoing)
- vegetation trampling study (1977-1984)
- Dall sheep study (1984-1985)

The U.S. Forest Service is also conducting research that will include studies of the moose and Dall ram populations of the park.

The primary concerns of natural resource managers at Denali are briefly discussed in the following paragraphs.

Wildlife Management

Most current management concerns are related to wildlife. In accordance with NPS policy and legislation specific to the park, managers are striving to maintain the natural abundance, behavior, diversity, and habitat of Denali's native wildlife and fish populations.

Both sport and subsistence hunting are permitted in the preserve, and local rural residents are permitted to continue traditional subsistence uses, including subsistence hunting, within established use areas in the new park additions. The lands within former Mount McKinley National Park are closed to all hunting activity (see appendix A). A subsistence resource commission composed of members nominated by the National Park Service, state of Alaska, and the Regional Council has been formed in accordance with section 810 of ANILCA. The commission will submit a hunting program to the secretary of the interior by the end of 1985. The subsistence use evaluation required by section 810 of ANILCA has been conducted as a part of this planning effort and is included as appendix F.

In cooperation with the National Park Service the state of Alaska is responsible for establishing fishing, hunting, and trapping regulations for those lands recently added to the park and preserve. A memorandum of understanding between the National Park Service and Alaska Department of Fish and Game (reprinted in appendix G) defines the cooperative management responsibilities of each agency. The NPS management program, which focuses on the collection of baseline data and on monitoring to determine trends and potential impacts, is in substantial agreement with most ADF&G goals and research proposals. The two agencies will continue to cooperate in the collection, interpretation, and dissemination of fish and wildlife research data on projects of mutual concern. NPS and other federal, state, and university personnel exchange data and consult on matters affecting wildlife populations within Denali. The state may undertake studies related to the regulation of sport and subsistence harvests. When the taking of fish and wildlife conflicts with other established purposes of the park and preserve, the National Park Service may implement regulations concerning consumptive uses that are more restrictive than the laws and regulations of the state. The Park Service will ensure access for state officials for purposes of conducting research and managing wildlife where these activities are consistent with NPS policies and regulations. The park staff will also cooperate with the Alaska Department of Environmental Conservation and the Alaska Department of Fish and Game in identifying activities that adversely affect fish and wildlife. The park's interpretive program will educate visitors about specific human behaviors that are particularly disturbing to wildlife.



Because of a concern that increasing vehicle traffic on the park road is causing unacceptable impacts on wildlife, this plan proposes further restrictions on the use of the park road (refer to the north-side proposals under "Visitor Use and Development"). This decision is supported by the data gathered in a recent study (NPS, Singer and Beattie 1984). The existing visitor transportation system limits the number of vehicles on the park road, and training has helped drivers avoid some of the incidents that are particularly disturbing to wildlife. These actions have been effective in lessening impacts on wildlife and will be continued, and the impacts of vehicle use will continue to be monitored.

Bears. A major concern of park managers is the potential for human/bear conflicts because they threaten human safety and could result in a loss of wild and free-ranging grizzly bears. While no fatalities have occurred, the increasing number of encounters and incidents of property damage may signify a change in the natural behavior of bears. Park records indicate that the number of incidents increased from three to five times in the period 1972-1980 in the frontcountry where the campgrounds are located. More human injuries by bears were reported during the period from 1970 to 1981 than during all previous years. Additionally, from 1978 to 1981 there were reportedly up to 40 occurrences annually of humans being approached by bears showing curiosity or lack of fear. An analysis of available records indicates that Denali's backcountry human/grizzly incident rate is the highest reported in the national park system.

The park staff operates an extensive management program to minimize human/bear encounters within the park. All visitors receive printed literature concerning bears, and all backcountry permit holders also receive verbal instruction. Other features of the program include ranger patrols, bus driver guidance, employee training, and use of bearproof food-storage and trash facilities.

Present management actions to minimize human/bear conflicts will continue. The park staff will work to improve the incident reporting process, increase employee training, enhance the field response capability, and promote greater visitor awareness. In addition, research has been initiated to determine the seasonal distribution and relative abundance of grizzly bears. This information will be correlated with traditional hiker routes and camping areas to identify areas with high potential for conflicts. Research has been undertaken to improve backcountry food containers, determine the effectiveness of temporary area closures, and establish appropriate levels of visitor use. Humans, rather than bears, will be removed from areas with high potential for conflict. The proposal to phase out the campgrounds at Sanctuary, Igloo, and Teklanika is based, in part, on this management concept.

A past solution in many parks has been to relocate problem bears; however, this concept has two flaws. First, it does not remedy the situation that caused the bear to become a problem, and the bear remains a problem somewhere else. Second, removal of bears alters the genetic and social integrity of the natural bear population, which is a key feature of this particular biosphere reserve. Unhunted and unmanipulated

natural bear populations are almost unavailable elsewhere, and Denali's population is a valuable control group for studies of other populations. Removal of bears disrupts the natural social diversity of a population and in time leads to a population where only the shy and reclusive are unnaturally selected. The state of Alaska also recognizes problems with a relocation policy and prohibits the relocation of Denali bears to areas outside the park boundaries (ADF&G 1982).

Caribou. The decline in the Denali caribou herd is another matter of immediate management concern. The herd, estimated to number 20,000 to 30,000 in 1944, has declined to approximately 2,600 in number today. While caribou are known to experience rises and declines in population, the reasons for the dramatic decline of the Denali herd are the subject of continuing research. Several factors have been suggested, including past hunting pressure outside the park, road and other development, disease, natural predation, and declining range quality. Emigration, or exchange between the Denali and other herds, has also been considered. The state of Alaska has prohibited hunting of the Denali herd since 1977. Current caribou-related research and monitoring conducted by the park staff include

- monitoring of herd activity and surveillance for poaching

- a three-year caribou calf mortality study (1984-1986) to investigate calving areas, yearling ratios, and other reproduction factors

- studies to evaluate the effects of predation

- observations of caribou movements relative to the ongoing work to rehabilitate the park road

Ground and air patrols will be initiated to prevent harassment and poaching during times when caribou are migrating near the park road or otherwise more susceptible to the impact of humans. Other activities related to caribou are described in the park's "Resource Management Plan."

Wolves. The protection of healthy and natural wolf populations within Denali is a continuing objective of the National Park Service. Wolves are important predators within Denali but are a species of relatively low density, so their role in the natural ecological processes is easily altered by man. The behavior and significance of the wolves at Denali were most eloquently discussed by Adolph Murie in his book, The Wolves of Mount McKinley (1944). In consideration of the great importance of the small wolf population at Denali, and because the range of some of Denali's wolves extends beyond the park's boundaries, the park staff is particularly concerned with safeguarding the viability of these animals.

Park managers will continue to protect dens, secondary homesites, and rendezvous sites from recreational use disturbance through seasonal closures and a monitoring program. Aerial patrols will be increased to protect wolves against illegal hunting. ANILCA permits subsistence hunting and trapping of wolves in the park additions, and both subsistence and sport harvests are permitted in the preserve. Action will

be taken to ensure that legal subsistence and sport harvests are consistent with the legislative objectives for wildlife protection in the area, one of which is to maintain natural predator/prey relationships. To minimize human influences on the predator/prey balance in the designated wilderness, the park staff will initiate research to determine the nature and extent of pack territories, and recommendations will be developed for the protection of packs whose primary territories are in the wilderness but extend into areas otherwise open to harvest. The superintendent has reserved the authority to close portions of the park or the preserve to subsistence and sport hunting of wolves. Such closures could be instituted on an emergency, temporary, or permanent basis. Such action would require public notification of the reasons for the action (36 CFR 13.30).

Mineral Management

Mining on valid existing claims is authorized in the park subject to applicable laws and regulations. In the absence of any new federal legislation governing mineral development in Denali, the level of mining activity is expected to remain fairly constant for the next 10 years. The National Park Service would oppose a significant increase in mining operations. Federal lands within the park and preserve have been withdrawn from additional mineral location, entry, and patent under the United States mining laws, subject to valid existing rights (see appendix A). The 464 recorded placer and lode mining claims (patented and unpatented) encompass an estimated 12,620 acres within Denali National Park and Preserve. Of this total the 39 patented claims occupy approximately 757 acres. Current mineral development activity on existing claims in the Kantishna Hills includes placer mining of gold and silver and limited small-scale lode mining of silver, gold, and antimony. The current level of mineral development is described in detail in the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study prepared for the Alaska Land Use Council by an interagency work group (USDI 1984).

The patented and unpatented claims may continue to operate, subject to federal mineral management regulations (36 CFR 9A). Mine operators are required to submit plans of operations (36 CFR 9.9) which, among other things, must describe how the operation will comply with federal, state, and local laws and minimize impacts on park resources. ANILCA (section 1110(b)) guarantees adequate and feasible access to valid mining claims within the park. Access to the Kantishna Hills mining claims will continue to be provided by the existing park road. The estimated 1983 mining-related traffic on the park road was 270 round trips per month, and it is assumed that this level of traffic will continue.

Lode and placer mining operations may adversely affect park values such as water quality, fisheries, and wildlife, and they require continuing federal and state investigation and cooperative management efforts. Federal regulations governing mining operations in the park are being revised and will be made available for public comment at a later date.

The Clean Water Act (section 402) requires an Environmental Protection Agency wastewater discharge permit for each mining operation. Ordinarily, states certify this permit, but in Alaska the Department of Environmental Conservation (ADEC) has waived this certification process and enforces the state's own water quality standards, which are more restrictive than the EPA standards. ADEC field personnel have monitored mining operations to evaluate turbidity, sediment, heavy metal, and settleable solid levels in mine effluent, suggested ways miners can lessen impacts on water quality, and sought voluntary compliance with water quality standards. The park staff is cooperating with ADEC and is conducting research in Kantishna on mining effects on fisheries and water quality. Currently, the National Park Service requires mine operators to use effective settling ponds wherever an operation would discharge wastewater to receiving streams. This requirement improves compliance with applicable water quality standards. Recirculation of mine process waters in conjunction with settling ponds is not currently required.

Denali's "Resource Management Plan" proposes a cooperative federal/state program to coordinate mining-related research and to develop "the best alternative technology economically achievable" and associated compliance strategies. Such pooling of agency resources could avoid research duplication and would simplify procedures by establishing a lead agency for impact analysis and enforcement.

The National Park Service remains concerned over possible development of patented mining properties for uses other than mining activities. Therefore a recommendation to acquire surface estates of patented properties is a component of the "Land Protection Plan."

Fire Management

The National Park Service is a participant in the Tanana-Minchumina interagency fire management plan, which encompasses most of the fire-dependent ecosystems of Denali (as well as millions of outlying acres). The plan, which coordinates the fire management objectives of all the participating regional landowners, was completed and put into operation for the 1982 fire season. In accordance with NPS policy, the objective for Denali is to allow natural forest and tundra fires to fulfill their ecological role in vegetational succession. Under the plan, natural fires occurring in Denali will be allowed to burn unless they threaten inholdings, certain identified historic sites, or neighboring lands that are zoned for protection. Such neighboring lands include abutting native regional and village corporation lands, which are currently managed for total fire suppression.

The ability of the park staff to accurately predict fire behavior is restricted by a lack of basic data regarding weather patterns, fuel types, and the effectiveness of natural barriers. The National Park Service is completing a comprehensive fire history and needs to more thoroughly map park vegetation in an effort to develop fire prescriptions for Denali's fire-prone zones. In addition to the fire weather stations established at park headquarters and at Wonder Lake in 1981, the Alaska Fire Service has installed one automatic fire weather station at a remote location, and

the park plans to install two more. With more accurate fire prescriptions in the future, the park staff can allow natural fires to fulfill their ecological role to the greatest extent possible, while simultaneously being prepared to protect life and property as required in the Tanana-Minchumina fire plan.

Backcountry Management

A "Backcountry Use Plan" was developed and implemented in 1976 in response to an unprecedented increase in use of the backcountry. The plan is revised annually. The primary objectives of the plan are to provide backcountry opportunities for visitors while (1) preventing vegetation damage which would not recover within one growing season, (2) preventing the creation of trails, campsites, and other signs of human use which compromise wilderness values, and (3) minimizing human impacts upon wildlife (University of Washington 1979; Sundstrom 1983).

The wilderness area is zoned into a number of backcountry units, and only a limited number of overnight permits are issued for each unit. Fires, littering, cutting of vegetation, and other activities that would mar the environment are prohibited. Some vegetation trampling and trail formation occurs, but overall impacts are minor.

To the extent possible, visitor use will remain dispersed so that no areas become overused. If visitor pressure for use of the backcountry increases, park managers may add accessible areas in the new park and preserve additions to the backcountry permit system. The proposed development of new facilities on the south side of the park (see "Visitor Use and General Development") will facilitate access to and use of backcountry areas in this part of Denali. Future increases in demand for backcountry recreation can be met on the south side, allowing the perpetuation of appropriate levels of use throughout the entire park. The south side will be included in the "Backcountry Management Plan."

The park intends to maintain primarily a "no formal trails" policy for the designated wilderness area on the north side of Denali. Generally, hiking routes in this portion of the park follow natural drainages and therefore do not require designation or maintenance. The no trails policy will be extended to include the northern additions to the park wherever possible. Along the park road corridor and near the park entrance, the existing short loop trails will be maintained for continued use. The southern additions to the park will be managed in a different fashion. Trail routes will be designated and routine maintenance will be conducted as part of the south-side development.

Site Restoration

Active revegetation with native species will be undertaken for areas within the park road corridor, at development sites, and at mining sites that have suffered vegetation damage or loss. NPS policy allows for manipulation of terrain and vegetative cover in natural zones to restore natural gradients and native vegetation on human-altered lands. As part

of future development projects (water, sewer, borrow pits, and other uses), native vegetation will be retained and stockpiled wherever practical for use in revegetation work. Research to refine handling techniques and acceptable time periods for stockpiling will continue, and a handbook of technical guidelines and methods will be prepared for use by the park staff. The handbook will cover erosion potentials, revegetation time frames, and specific treatments for all the major soil and vegetation types in the park.

Air Quality Management

The 1977 amendments to the Clean Air Act designated Denali National Park and Preserve as a federal class I air quality area. At the present time air quality in the park is considered excellent. Monitoring of air quality and visibility will be expanded as lands surrounding the park are developed, to ensure that resource values inside the park are not impaired by external sources of pollution. The park staff will update the equipment at the existing monitoring sites (the National Atmospheric Deposition Program monitoring station at the park headquarters and two vista points), and they will conduct a technical review to determine the need for additional stations at other locations.

CULTURAL RESOURCES

The National Park Service will provide for the identification, preservation, protection, and interpretation of all significant cultural resources through adequate research and programming in accordance with NPS policy and guidelines. No undertakings resulting in the destruction or loss of known cultural resources are proposed in this plan.

The identification and treatment of the park's prehistoric and historic resources is one of the long-range goals of park management. Specific actions for accomplishing this objective are described in the park's "Cultural Resource Management Plan," which is updated yearly, or as necessary, to reflect changing preservation needs and management priorities. The plan is available for review by the public, and any major changes in the direction, philosophy, or goals described by this "General Management Plan" will be subject to public involvement.

The current cultural resource study priorities are to

- complete preliminary site studies and architectural evaluations for critical area resources: Teklanika archeological district, the park headquarters area, and other historic structures in the park

- monitor the cultural and natural resource concerns for areas of the park and preserve that are open to subsistence uses

There are currently about 100 historic and prehistoric sites recorded in the park. The cultural resource data are incomplete. The National Park Service has sponsored limited site and critical-area resource studies (studies of the Kantishna Hills and Dunkle Mine areas, for example);

however, little of the land within the park has been closely examined for prehistoric and historic resources. Some of the land additions made to the park in 1980 have been subject to reconnaissance studies, but the presence and significance of cultural resources in that area are not well established. The historic period is briefly chronicled in a number of publications and topical/anecdotal writings, most of which rely heavily upon the works of former park ranger and superintendent Grant Pearson. Currently the only resource in the park listed on the National Register of Historic Places is the Teklanika archeological district. The park headquarters district and dog kennels have been evaluated by park and regional staffs and will be nominated to the National Register.

In order to more completely document the presence of cultural resources in the park, an inventory will be undertaken by a multidisciplinary team of archeologists, historical architects, and historians. The park will be inventoried in geographic segments over a four-year period to document the presence of cultural resources. The reports resulting from the survey will identify and prioritize sites for which actions are necessary. Sites will be recorded, base maps will be produced, resources will be professionally evaluated for eligibility for the National Register of Historic Places and the park's List of Classified Structures (LCS), and preservation treatment plans will be prepared.

Resources listed on the National Register and the LCS will be provided the protection and interpretation afforded to such listed properties. Potential LCS structures will be further evaluated for adaptive and interpretive uses.

Until such time as native land selections are complete, the National Park Service will protect, preserve, and manage all native historic sites identified under the provisions of section 14(h) of the Alaska Native Claims Settlement Act of 1971 as properties eligible to the National Register. The National Park Service will encourage the owners of nonfederal historic properties within the park to nominate them to the National Register, and it will provide technical assistance and advice in proper care and treatment of such properties.

A historic resource study will build upon the initial inventory. This study will describe the obvious and more subdued themes of the history of Denali. The initial themes that have been identified are Russian efforts at mapping and exploration of the interior, American exploration and surveying, mountaineering, gold mining, and the building of the Alaska Railroad. The current park administrative history will be expanded to incorporate the story of park developments since 1953.

A preservation maintenance program will be developed to guide the park staff in performing routine maintenance on structures, equipment, and artifacts.

The assembled cultural resource information, including a cultural resource base map, will be used for interpretation of the cultural resources for the public. Interpretation will also make visitors aware of the fragile nature of many of the cultural resources and will alert visitors to the protected status of the resources. Use of information for interpretive purposes will be preceded by consultation with any affected native group.

Development proposals that relate to cultural resources will reflect a sensitivity to the preservation of the cultural scene through compatible and complementary design. All developments with potential for ground disturbance will be preceded by archeological surveys and clearances. Native groups will be consulted in order to avoid impacts upon traditional or sacred sites. Projects will be designed to avoid impacts or to have minimal effects on cultural resources.

Archeological Sites

Limited archeological surveys have been conducted in scattered locations throughout the park and preserve. The majority of the surveys took place in the early 1960s and were conducted under contracts by the University of Alaska (Traganza 1964; Morgan 1965; West 1965). The results were meager, and additional archeological work did not resume until the late 1970s, when clearance was needed for the construction of a power line south along the Nenana River valley road to park headquarters. Recent surveys (NPS, Davis 1980) significantly contributed to the knowledge of prehistory and to the identification of archeological sites of the area, but Denali still lacks a systematic parkwide archeological survey and overview. An archeological overview will be developed by first identifying all significant archeological sites and then conducting selective archeological investigations in typical, stable environment areas (such as ridgetops) to develop a comprehensive understanding of the prehistory of Denali.

The protection of archeological sites and districts will include permanently marking sites; monitoring selected sites to determine continuing natural and human impacts; conducting test excavations of selected sites to evaluate them and to plan further preservation actions; gathering data to determine significance for National Register eligibility; and recovering data at sites that could be affected by development, use, or natural destructive forces.

All data recovery, such as controlled surface collection and excavation, will be designed to obtain the most information with the least destruction of archeological resources. When excavation is made necessary by development, it will be programmed in timely advance of construction (not less than one fiscal year).

Surface collection will be undertaken to professionally record and preserve artifacts that are potentially subject to adverse impacts because of vandalism or proposed development actions. This surface collection will be conducted only by professional archeologists meeting professional standards.

Historic Structures

As a general policy historic structures and sites, such as native villages, historic cabins, or mining complexes, will not be reconstructed. Visitor understanding will be gained through other interpretive techniques.

When preservation or restoration of existing structures is specified, the intent will be to preserve existing original work and to maintain it by compatible repair or replacement of deteriorated fabric. New work on such structures, when required for maintenance purposes, will conform to the building's original character and be undertaken only when it can be satisfactorily documented. When restoration is not possible, the elements being replaced will be duplicated.

Certain structures may not merit preservation because of minimal significance, advanced deterioration, or excessive costs. These structures will be allowed to deteriorate naturally, with their sites eventually reverting to a natural condition. Some removal of hazardous elements may be necessary for safety and to avoid an attractive nuisance, particularly around abandoned mining sites. Park users will be alerted to the potential hazards associated with these structures, which do have value as "discovery" sites.

Historic archeology for the purpose of uncovering all available details and increasing knowledge of historic structures plays a significant role in the restoration and reconstruction of historic sites. Historic archeological investigations will be as complete as possible, and archeological deposits will be clearly identified. Any actions affecting these deposits will be designed for minimal impact.

Contemporary Native American Concerns

The National Park Service will ensure the preservation of resources associated with native peoples whose cultural memory, traditions, and lives are closely associated with the park and its general vicinity.

The ongoing identification of areas of sacred and traditional importance to local native peoples will be continued by professional archeologists and anthropologists. As new information is obtained, it will be added to the confidential inventory of these sites. Measures will be taken to ensure that mutually acceptable methods of protection and preservation are adopted, in conformance with NPS management policies and legislation.

The National Park Service will encourage active participation of local native groups in developing methods of interpreting native American culture.

PARK OPERATIONS

The park headquarters will remain in its present location. The current staffing level for headquarters is considered adequate with the exception of a wildlife biologist. Filling this position is a high priority of park management. Additionally, aircraft availability on a year-round basis is considered necessary for the proper management of the park complex.

The visitor use proposals will require establishing a district operation on the south side of Denali. The facilities needed for management, operations, maintenance, etc., on the south side will be constructed

separate from the activity center. These facilities will require cooperative management with the Alaska Division of Parks, and actual staffing needs will depend on agreements reached with that agency. The long-range personnel requirements for the south side are estimated as follows:

- 1 permanent district ranger
- 1 permanent maintenance worker
- 3 temporary maintenance workers
- 2 temporary park rangers
- 4 temporary interpreters
- 1 permanent secretary

The National Park Service has authority to hire local individuals who have special knowledge or expertise concerning the resources of the unit without regard to civil service requirements or other personnel limitations, according to section 1308 of ANILCA. The Park Service will continue to recruit and develop such local individuals for seasonal and permanent staff positions.

LAND PROTECTION PLAN

SUMMARY

Current ownership (acres):

Federal	5,933,220
State	32,103
Private	62,768
Total	<u>6,028,091</u>

Number of tracts remaining to be protected: 527

Methods of protection proposed (acres*):

fee-simple acquisition through exchange, donation, or purchase	85,292
acquisition of surface estates through exchange, donation, or purchase	640
acquisition of mineral interest through exchange, donation, or purchase	1,300
acquisition of scenic/habitat easements through exchange, donation, or purchase	27,954
fee-simple acquisition of state lands currently outside the park boundary	95,000
zoning	0
regulation	5,290
adequately protected	1,248

Statutory acreage ceiling: 0

Funding status as of December 1, 1984:

Authorized acquisition ceiling:	0
Appropriated to date:	0
Obligated to date:	0
Unobligated balance:	0

Top priorities:

Wolf townships
Kantishna Hills surface estates

*The acreages listed in this section exceed the total nonfederal land acreage because they include mineral interests on federal lands.

INTRODUCTION

In May 1982 the Department of the Interior issued a policy statement for use of the federal portion of the Land and Water Conservation Fund which requires that, in carrying out its responsibility for land protection in federally administered areas, each agency using the fund will follow the procedures listed below:

Identify what lands or interests in land need to be in federal ownership to achieve management purposes consistent with the public objectives for the unit.

Use to the maximum extent practical cost-effective alternatives to direct federal purchase of private lands and, when acquisition is necessary, acquire or retain only the minimum interests necessary to meet management objectives.

Cooperate with landowners, other federal agencies, state and local governments, and the private sector to manage land for public use and resource conservation.

Formulate, or revise as necessary, plans for land acquisition and resource use or protection to ensure that sociocultural impacts are considered and that the most outstanding areas are adequately managed.

In response to this policy, the National Park Service requires that a land protection plan be prepared for each unit of the national park system that contains private or other nonfederal lands or interests in land within its authorized boundary.

The guiding principle of each land protection plan is to ensure the protection of that unit of the national park system consistent with the stated purpose for which it was created and administered. Land protection plans are intended to accomplish several tasks:

Determine what lands or interests in land need to be in public ownership and what means of protection other than fee acquisition are available to achieve the purpose of the unit as established by Congress.

Inform landowners of National Park Service intentions to buy land or protect it through other means.

Help managers identify priorities for making budget requests and allocating available funds to protect land and unit resources.

Find opportunities to help protect the unit by cooperating with state or local governments, landowners, and the private sector.

A major issue addressed by this plan is the potential for increased traffic on the park road associated with new visitor accommodations that might be built on private lands in the Kantishna Hills. It has been demonstrated that traffic causes avoidance behavior by some wildlife, and one of the

objectives of the general management plan is to reduce traffic levels on the road (see the discussion of visitor use and general development in the "General Management Plan" section of this document). Another issue is the protection of important habitat for caribou and wolves that inhabit lands inside the park for much of the year but also utilize adjacent lands.

This plan does not constitute an offer to purchase lands or interests in land; neither does it diminish the rights of nonfederal landowners. The plan is intended to guide subsequent land protection activities subject to the availability of funds and other constraints.

PURPOSE OF THE PARK AND RESOURCES TO BE PROTECTED

Significance and Purpose of the Park

Denali National Park and Preserve encompasses an internationally significant subarctic ecosystem that serves as a baseline for the study of comparable environments around the world. The original purposes in establishing the park in 1917 were to preserve wildlife, "natural curiosities," and "scenic beauties" for the benefit and enjoyment of the people. These purposes were reinforced by ANILCA when the park was enlarged in 1980. A more detailed description of the legislated purposes of the park is provided in appendix A.

Resource Description

Denali is primarily a natural area known for its outstanding Alaskan wildlife and the highest mountain in North America. A detailed description of the park's resources is contained in the "Affected Environment" section of this document.

Legislative Authorities

Passage of ANILCA provided a general framework for land protection for the newly established conservation units in Alaska. Section 1302 contains the general authorities for land acquisition (see appendix H). The secretary of the interior is authorized to acquire, by purchase, donation, exchange, or otherwise, any lands or interests in land within the park and preserve. However, any lands or interests in land owned by the state and local governments or by native village and regional corporations may be acquired only with the consent of the owners. In addition, lands owned by natives, allotted under the Alaska Native Claims Settlement Act, who received title to the surface estate of lands from a village corporation as a primary place of residence, business, or subsistence campsite (section 14(c)(1)) or from the secretary of the interior as a primary place of residence (section 14(b)(5)) may be acquired only with the consent of the owner unless the secretary determines that the land is no longer being used for the purpose for which it was conveyed and that the use is or will be detrimental to the purposes of the preserve.

Native allotments or other private small tracts may be acquired without consent only after offering an exchange for other public lands of similar characteristics and like value and if the owner chooses not to accept the exchange. Exchanges are complicated by selections and past conveyances of lands within the state and by the lack of suitable substitute lands.

No improved property may be acquired without the consent of the owner unless the acquisition is necessary for the protection of resources or for protection of the values listed in ANILCA. When an owner of improved property consents to exchange lands or to sell to the United States, the owner may retain a right of use and occupancy for noncommercial residential and recreational use by agreement with the National Park Service.

Section 1302(i)(1) and (2) of ANILCA authorizes the secretary of the interior to acquire, by donation or exchange, state-owned or validly selected lands that are contiguous to the park. Any lands so acquired will become part of the conservation unit without reference to the 23,000-acre restriction included in minor boundary adjustments as defined in section 103(b).

Section 103(b) states that only the public land within the boundaries of any conservation system unit is included as a portion of the unit. The state, native, and other private lands within the boundaries are not subject to regulations applicable solely to the federal lands. If conveyed to the federal government under the provisions cited above, such lands become part of the preserve and are subject to the federal regulations.

In addition to complying with the above legislative and administrative requirements, the National Park Service must administer the area as a unit of the national park system pursuant to the provisions of the act of August 25, 1916 (39 Stat. 535) as amended and supplemented, and in accordance with the provisions of title 16 of the United States Code, title 36 of the Code of Federal Regulations, and other applicable laws. The National Park Service has jurisdiction over federally owned lands in the unit.

Resource Management and Visitor Use Objectives

The general management plan proposes to protect sensitive wildlife habitat on the north side of the Alaska Range by decreasing vehicle traffic and camping in the road corridor. Increases in visitor use will be accommodated by opening up a second visitor service and activity center on the south side of Denali. Natural resources will be monitored, and activities found to have an adverse effect on resource values will be modified or eliminated. These proposals are described in more detail in the "General Management Plan" section of this document.

Specifically, the land protection objectives at Denali are to preserve and protect the park's natural and cultural values from the adverse effects of incompatible activities and to protect the visitor experience from intrusive development. Resources that are particularly susceptible to damage and therefore most in need of protection are wildlife habitat, water quality, scenic quality, and recreational value.

LANDOWNERSHIP AND USES

Current Land Status Inside the Park and Preserve Boundary

At the present time 97,726 acres, or 1.6 percent of the land within the boundaries of Denali National Park and Preserve, are either in nonfederal ownership or under application. These nonfederal lands or interests are owned or held by the state of Alaska, Alaska native regional and village corporations and groups, and private individuals (table 2). State lands account for 31 percent of these nonfederal lands. An additional 9,280 acres, more or less, of unpatented mining claims exist within Denali. While the surface estates of unpatented mining claims are retained in federal ownership, these lands remain encumbered by mineral rights.

Table 2: Land Status

<u>General</u>	<u>Acres</u>
Park	4,716,726
Preserve	1,311,365
Total	<u>6,028,091</u>
Federal	5,933,220
Nonfederal	94,871
<u>Nonfederal Categories</u>	
State application (including submerged lands)	32,103
Native regional corporation	55,048
Under application	54,673
Patented	375
Native village corporation	4,750
Under application	4,750
Patented	0
Native allotments	1,220
Small tracts	244
Cemetery/historic sites (applications)	839
Patented mining claims	667
Overlapping applications	<u>(478)</u>
Total	94,871

For the most part the nonfederal lands are concentrated in three specific areas of the park. The Kantishna Hills contain 292 patented and unpatented mining claims and some small tracts of private land. The Cantwell/Dunkle Mine area contains 163 unpatented mining claims along with state and regional and village corporation lands under application. An area near Lake Minchumina in the preserve contains state, regional corporation, and native group lands under application (some covering entire townships) and some small tract entries and cemetery sites. The state submerged lands of concern in Denali are the navigable portions of

the Tokositna, Kantishna, and Muddy rivers. These lands are shown generally on the Land Status map. Individual tracts are listed in appendix I.

Compatibility of Land Uses

Existing land uses provide small-scale recreational services and visitor opportunities that are compatible with the management objectives for the park. Any development that would cause traffic along the Denali park road to increase beyond 1984 levels would be incompatible. One of the objectives of the general management plan is to reduce traffic on the road to decrease avoidance behavior by wildlife (see the discussion of visitor use and development in the "General Management Plan" section of this document).

The existing and potential uses of nonfederal lands are described below.

Native Regional and Village Corporations. ANCSA established native shareholder corporations and enabled them to make applications for land selections. Two regional corporations--Doyon, Limited, and Ahtna, Incorporated--have made prior-right applications for lands within Denali National Park and Preserve, but only a small portion of these lands have been conveyed. ANILCA, section 906(a), provides that "at such time as the entitlement of any Native Corporation to land under the Alaska Native Claims Settlement Act is satisfied, any land within a conservation unit selected by such Native Corporation shall, to the extent that such land is excess of its entitlement, become part of such unit and administered accordingly."

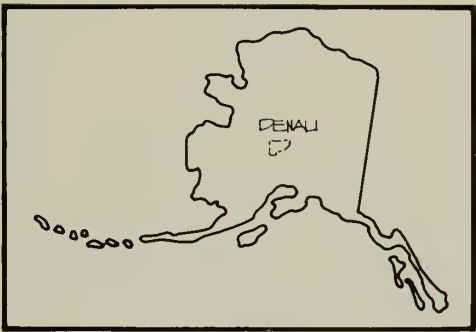
Doyon has developed long-term plans for its selected lands if conveyance takes place. The corporation has indicated an interest in developing tourist recreational facilities within the next 10 to 15 years in the vicinity of Lake Chilchukabena, where access would be provided by float planes. Planning is in a very early stage, but managers foresee developing a large lodge facility rather than cabin sites, if warranted by future demand.






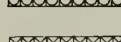

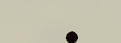


Ahtna currently has no plans for its application lands within the park boundary. Park managers believe these sections, and also the sections selected by the Cantwell Village Corporation (which has since merged with the regional corporation) will be relinquished.

The Minchumina native group has selected several sections within the preserve boundary. Potential uses of group selections will likely concentrate on subsistence use, but they may include commercial guiding or development.

Small Private Tracts. Existing uses of the scattered small tract entries include a mountaineer staging camp in the Ruth Amphitheater, recreational lodges in the Kantishna area, homesteads, cabin sites, and subsistence activities. Future uses of these tracts could include additional private or commercial development.

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-  NATIVE REGIONAL CORPORATION
-  STATE LANDS AND APPLICATIONS
-  NATIVE VILLAGE CORPORATION
-  CEMETERY SITE OR HISTORIC PLACE
-  PATENTED MINING CLAIMS
-  SMALL TRACT ENTRIES
-  UNPATENTED MINING CLAIMS AND NATIVE ALLOTMENTS
-  DENALI NATIONAL PARK AND PRESERVE BOUNDARY
-  AIRSTRIP
-  GLACIER

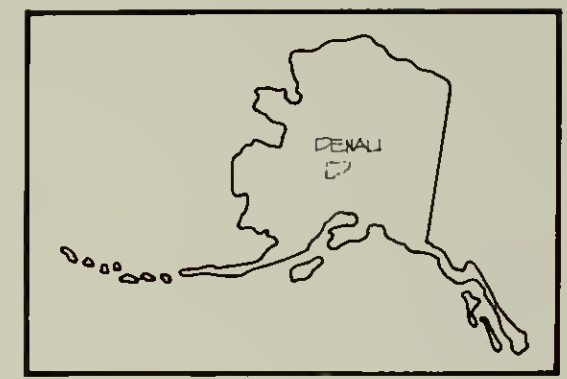







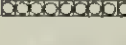
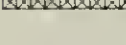



LAND STATUS

Denali National Park and Preserve
 United States Department of the Interior
 National Park Service

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 LODGE



-  NATIVE REGIONAL CORPORATION
-  STATE LANDS AND APPLICATIONS
-  NATIVE VILLAGE CORPORATION
-  CEMETERY SITE OR HISTORIC PLACE
-  PATENTED MINING CLAIMS
-  SMALL TRACT ENTRIES
-  UNPATENTED MINING CLAIMS AND NATIVE ALLOTMENTS
-  DENALI NATIONAL PARK AND PRESERVE BOUNDARY
-  AIRSTRIP
-  GLACIER



LAND STATUS

Denali National Park and Preserve
United States Department of the Interior
National Park Service

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Native Allotments. Applications for parcels up to 160 acres within the preserve have been filed under the 1906 Alaska Native Allotment Act. Uses of these lands by their owners may include private and commercial development and use of renewable resources, but not development of coal, oil, or gas or construction of ditches or canals (these rights are reserved by the federal government on the title documents). To date these allotments have occasionally been used for subsistence and recreational purposes.

Cemetery/Historic Sites (ANCSA 14(h)(1) sites). Three sites within the park and preserve have been selected based on their importance to native cultural heritage. However, since the lands containing the selections were already reserved at the time of the selection, it appears that they will not be conveyed and will remain under the protection of the United States.

State of Alaska. The Submerged Lands Act of 1953 and the Alaska Statehood Act of 1958 provide for state ownership of the beds of navigable waters to the "ordinary high water mark." Determination of what waters are navigable is an ongoing process in Alaska at both administrative and judicial levels. A 4-mile segment of the Tokositna River has been determined to be navigable, and title therefore lies with the state of Alaska. The matter of navigability of portions of the Kantishna and Muddy rivers is still in adjudication. If portions are determined to be navigable, ownership of the submerged lands will lie with the state. Potential uses of state-owned submerged lands include gravel extraction, placer mining, and oil and gas development.

The state has applied for adjacent lands along the eastern boundary of the park and adjacent lands in the Minchumina region. The state has no plans at present to subdivide these selections if they are conveyed (draft "Tanana Basin Plan," 1984). Future uses could include subdivision, commercial development, and oil, gas, or mineral development.

Mining Claims. Existing and potential mining and mineral development in the Kantishna Hills/Dunkle Mine area are addressed extensively in two documents: the Environmental Overview and Analysis of Mining Effects (NPS 1981a) and the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984). The latter document was prepared for the Alaska Land Use Council by an interagency work group and examines several alternatives for future uses of the mining areas. Based on this study the Alaska Land Use Council has recommended the implementation of a mineral leasing program for the Kantishna Hills area and has recommended status quo management for the Dunkle Mine area on the south side of the Alaska Range. These recommendations are being forwarded to Congress. The implementation of a mineral leasing program would require an act of Congress, since the park and preserve are currently closed to all forms of new mineral entry. Until such time as Congress may act upon the recommendations of the council, both the Kantishna Hills and Dunkle Mine areas will continue to be managed according to existing applicable laws and regulations.

The assumption is made in the environmental impact statement on the Kantishna Hills/Dunkle Mine study that if mining is increased substantially

on existing patented and unpatented mining claims in the Kantishna Hills, a new mining access road will be required to handle the additional mining traffic between the state highway system and the Kantishna Hills. As stated in the environmental impact statement, "this access route would require applying Title XI of ANILCA and necessary additional environmental analysis and compliance with the National Environmental Policy Act for the project. Title XI requires all feasible access corridors to be evaluated, and an additional EIS would have to be prepared." The National Park Service does not support either an expanded mineral leasing program or a new mining access road.

External Conditions Affecting Land Protection

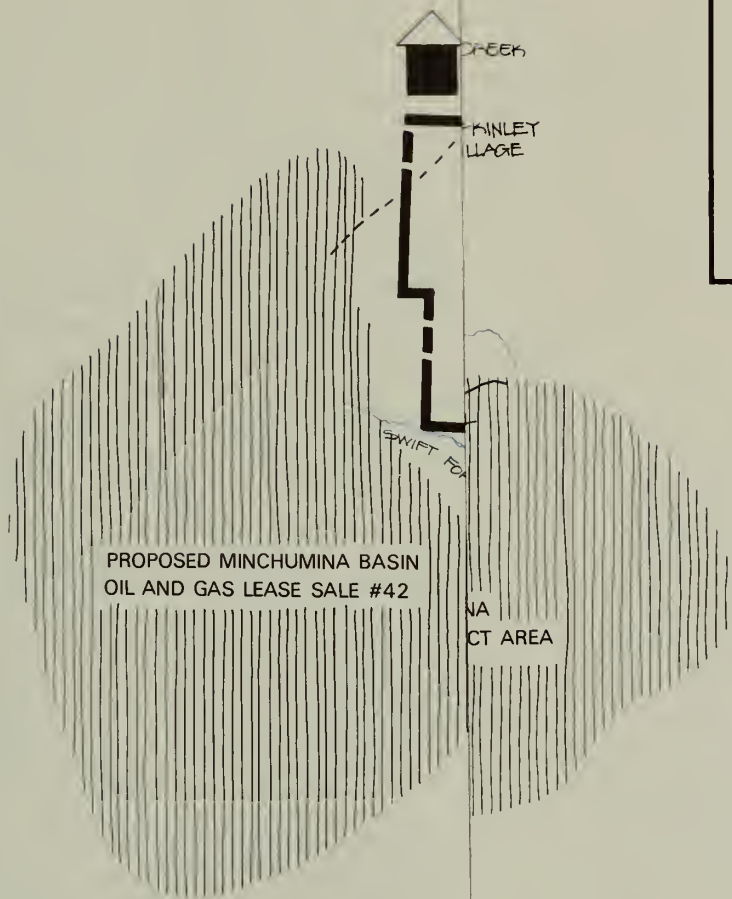
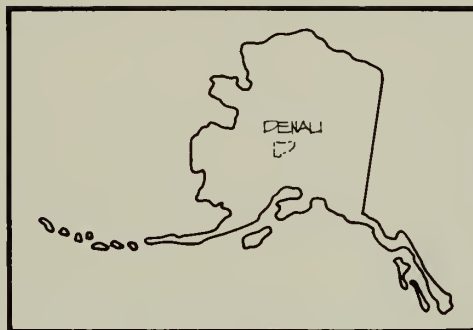
The National Park Service may not acquire interests in land outside the unit with two exceptions: Section 103(b) of ANILCA provides for minor boundary adjustments up to 23,000 acres, and section 1302(i) allows for the acquisition of contiguous state lands through exchange or donation. Protection of resources and the visitor experience can be affected by adjacent land uses in a positive way, if the uses are compatible with the purpose of the park, or in a negative way if they are incompatible.

Activities occurring outside the park and preserve boundary which could affect resource protection and visitor use include mining, oil and gas exploration and development, state and federal land disposal and subsequent future development, transportation development, the construction of the Susitna hydroelectric project and related utilities, and future activities on adjacent native lands. None of the potential problems identified in this section are expected to seriously affect park resources in the next two years, which is the time frame for land protection recommendations. Appropriate responses to external influences will be determined if potential problems materialize, and the "Land Protection Plan" will be revised every two years to reflect new management needs and priorities.

The National Park Service will continue to monitor activities in areas adjacent to the park, to identify factors that might have harmful effects on the park. Park managers will work with state and borough planning teams and private individuals to recommend actions that would avoid or mitigate impacts on park resources.

Mining. Metallic, coal, and limestone deposits and potential oil and gas reserves lie outside the park and preserve. The Usibelli Mine, operated by the Usibelli Coal Company, is the only active coal mine in the vicinity of the park. It currently is the site of extensive surface mining activity (Plangraphics 1983). The coal is transported by railroad to Fairbanks and Seward. According to the Alaska Division of Mining, a three- to four-fold increase in coal mining over the next 10 to 15 years will likely result from sales to Pacific Rim countries. Park managers foresee no significant impacts.

Numerous gold mining claims exist in the Yentna mining district (see the Regional Influences map). The rising price of gold in the late 1970s resulted in extensive new claim staking, primarily along Cache Creek,



STATE LAND PROPOSED
FOR SETTLEMENT

STATE LAND DESIGNATED FOR MINING

EXISTING MINING

MINCHUMINA LAND SETTLEMENT AREA



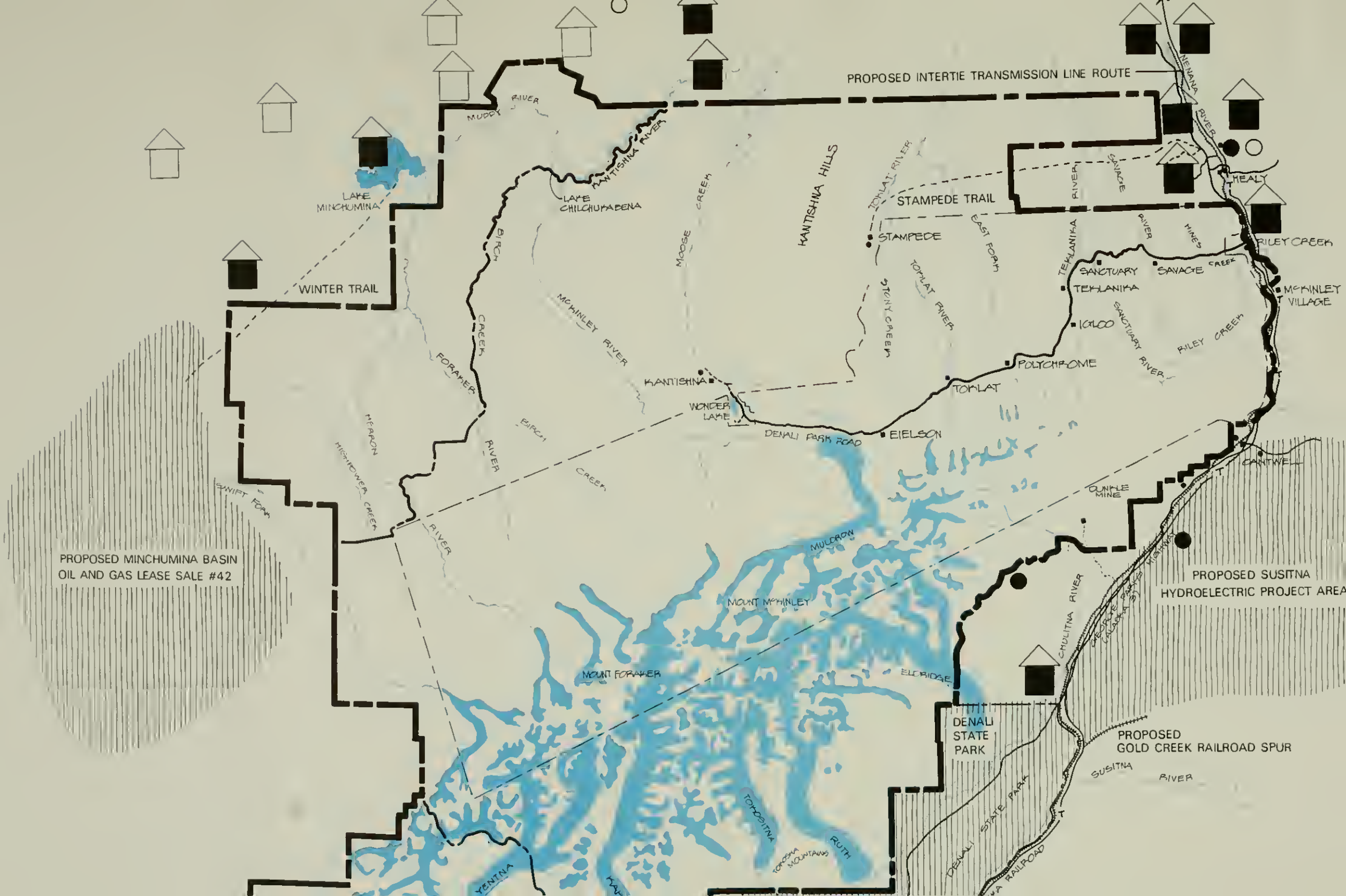
REGIONAL INFLUENCES

Denali National Park and Preserve

United States Department of the Interior
National Park Service

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upper Peters Creek, and the Kahiltna River, and at Mount Fairview. Placer mining in this area is not expected to increase substantially over the next 20 years, but access will be improved (ADNR 1984). The Matanuska-Susitna Borough is requesting priority consideration for construction of an all-weather road across the mining district to the Fairview mountain group in addition to reconstruction of the Petersville Road. Improved access would serve mining, private land development, recreation, sport hunting, and fishing, and it would potentially offer alternative access to the national park for backcountry use. The Petersville Road vicinity supports the most intense hunting activity in the area, and increased access by sport hunters might necessitate additional monitoring during the hunting season to ensure that no sport hunting occurred within the national park boundary.

Mining claims in the Chulitna mining district are concentrated primarily in the Dunkle Hills area (inside the park boundary) and from the Golden Zone Mine on adjoining lands southwesterly for several miles to the Eldridge Glacier. The Golden Zone Mine has been productive in the past and currently is being reactivated to the extent of improving access along the four-wheel-drive road that connects the area with the George Parks Highway at Colorado Station. The road is not open for public use at present, but it potentially could offer access for recreationists in the future. Other claim groups in this area are being actively explored.

Oil and Gas Development. As part of the state's five-year oil and gas leasing program, the state proposed the lease sale of 960,000 acres in the Minchumina Basin adjacent to the park and preserve. A notice of delay has been issued for sale number 42 because of a lack of industry interest. The sale, originally scheduled for January 1984, may still be held in the future, although petroleum potential is considered low (ADNR 1984). No federal inland oil and gas lease sales are proposed for the area adjacent to the park and preserve.

If oil and gas development does occur, the following associated impacts could result: disruption of traditional subsistence use in and near Denali, disruption of natural fire processes and consequent damage to natural wildlife populations, increased costs for managing the Tanana-Minchumina interagency fire management plan, and new pressures to build roads, which would alter the lifestyle of present residents and change the character of the area.

The Yukon Pacific Corporation is currently evaluating the potential for constructing a gas pipeline from Fairbanks to Anchorage. The pipeline would be added to the Nenana River transportation and utility corridor, which parallels the park's eastern boundary. The company would be required to apply for a right-of-way permit from the Bureau of Land Management and to complete an environmental impact statement before approval could be granted to build along federal portions of the pipeline corridor (BLM 1984). Details and impacts of this proposal are not yet available, but they would be analyzed thoroughly in the environmental impact statement.

Federal and State Land Disposal Programs. The Bureau of Land Management opened approximately 10,000 acres of land adjacent to the

park boundary in the Minchumina block to settlement under the Trade and Manufacturing Site, Homesite, and Headquarters Site Laws. The opening was to provide settlement opportunities for the general public commencing in December 1981. Since then many notices of location have been submitted for the block closest to the park boundary, but only one location has been field-examined and approved (BLM 1984). The central Yukon resource management plan, due to be completed in July 1985, will address this and other BLM land issues in the vicinity of the park.

As part of its land disposal program, the state of Alaska is subdividing parcels for land settlement. The "Susitna Area Plan" and the "Tanana Basin Plan," both in preparation by the Alaska Department of Natural Resources in cooperation with other agencies, will make recommendations for classifying state lands and develop policies and guidelines for these lands. At this point in the planning process, recommendations are being made to slow the pace of land sales. For example, in the Susitna area the current pace of disposing of 20,000 to 30,000 acres per year will be slowed to approximately 7,000 acres per year (ADNR 1984).

Generally the state lands adjacent to the park have been classified for the primary uses of recreation, habitat protection, and water resource protection, all of which are compatible with park purposes. Possible secondary uses of these lands include oil and gas development, which could potentially interfere with traditional subsistence uses or degrade natural values within the park. The state plans to dispose of several parcels within 6 miles of the park and preserve boundary; these lands are primarily along the George Parks Highway.

Additionally, the National Park Service remains concerned over the potential for strip development along the George Parks Highway, particularly in the vicinity of the Riley Creek entrance, and it supports the implementation of the recommendations in Scenic Resources along the Parks Highway as a means of avoiding this sort of visually intrusive development. The study recognizes the outstanding visual quality of the Riley Creek area and recommends that it remain free of development. Residential and commercial development will more appropriately remain concentrated in the McKinley Village area.

Alaska State Park System. The 1982 Southcentral Region Plan outlines recommendations for Denali State Park over the next 10 years. These include boundary adjustments, updating the management plan, completing the trail program and management plan development phases, staffing for visitor information services at Byers Lake, and reconsidering joint management agreements with the National Park Service. All of these recommendations are compatible with the land protection goals of the National Park Service.

The development of a major visitor activity center on state park lands, as proposed in the NPS plan for Denali National Park and Preserve, will constitute a major change in the management of Denali State Park. Future cooperative planning regarding this proposal is called for in a memorandum of understanding between the National Park Service and the Alaska Departments of Natural Resources and of Transportation and Public Facilities (see appendix E). Cooperation among all concerned agencies

will help ensure that future development and use are fully compatible with the objectives for both the state and the national parks.

Recently Denali State Park was opened to hunting. The National Park Service will continue to work with the state to minimize the effects that hunting might have on increased recreational use as envisioned in the general management plan for Denali National Park and Preserve.

Transportation. A demand for access has accompanied the parceling of state land. Most subdivided parcels are either accessible by air or are close to existing roads. Future roads will be provided by the borough or by the Alaska Department of Transportation. Currently there are no plans for the borough to provide roads in the vicinity of the park other than in the Petersville area, as described in the mining section.

The potential for state road development is described in the draft "Interior Alaska Transportation Study" (ADOT 1983). One of the potential roads identified in the study would go from Healy to McGrath, with a possible spur road south into Kantishna along the Kantishna drainage. Another possible road corridor would follow the Stampede Trail beyond its current terminus to the Kantishna mining area. This latter road would be 75 miles long, cost approximately \$100 million to \$150 million to build, and provide access primarily for miners. At present, the Stampede Trail is passable by most vehicles for the first several miles, negotiable by four-wheel-drive vehicles for several additional miles, then deteriorates into a tractor trail. There are no current plans to upgrade the trail. Further consideration of any roads into Kantishna should await Congress's decision regarding the status of the Kantishna Hills and would be subject to more detailed study and environmental compliance.

The state of Alaska has negotiated the transfer of the Alaska Railroad from the federal government to the state. As a part of the transfer the Department of the Interior has granted the state a 200-foot easement along the railroad to be used for "railroad-related purposes." No major developments other than for railroads may be built in this easement through the park.

Utility Development. The Alaska Power Authority has submitted an 18-volume license application to the Federal Energy Regulatory Commission for the development of a major hydroelectric project on the Susitna River, southeast of the park and preserve. Briefly, the project entails constructing two dams, reservoirs, a permanent townsite, temporary camps, an access road from the Denali Highway, a railroad link from Gold Creek, and transmission lines to deliver power to the railbelt. Depending on the granting of the license, the preparation of an environmental impact statement, public hearings, and financing, the project is scheduled for construction beginning in 1987 and reaching a peak in 1990. A work force of 3,500 could be operating in the area by 1990, quadrupling the population of Cantwell and doubling the populations of small communities like Trapper Creek. Visitation to the national park and preserve might increase with the surge in nearby populations, even though recreational facilities would be provided within the dam construction area. Traffic along the George Parks Highway would increase and stimulate additional commercial development. Competition for fish, wildlife, and other

resources would increase, and the rapid growth of Cantwell might affect the movements of the Denali, Nelchina, and Yanert caribou herds. Transmission lines would connect with the intertie utility lines currently under construction, and the number of lines from Willow to Healy, which are visible from the park, would double.

The Alaska Power Authority has constructed an intertie transmission line between Willow and Healy that involves erecting 100-foot towers at 1,300-foot intervals along the route shown on the Regional Influences map. The lines and towers, which pass through the Yanert Valley, are not visible from the national park entrance. This corridor will be the defined route for other future utility transmission from Anchorage to Fairbanks, and the National Park Service will continue to work with the Alaska Power Authority to mitigate the visual impacts of any future development along the Parks Highway and the park boundary.

Adjacent Native Lands. Doyon does not currently intend to develop the Telida tract of native land west of the preserve, and the corporation will promote subsistence use of the area. Further west on the Nikolai tract, studies have indicated, there is potential for developing coal for liquefaction. The future development of the coal deposits might influence transportation systems in the region.

Ahtna is developing a placer mining operation on Valdez Creek east of the park boundary, but otherwise it is not pursuing major developments in the vicinity of the park and preserve.

Cook Inlet Region does not intend to select lands in the vicinity of the park, at least not until native village selections have been made. At present, small native villages in this area are applying for group status to enable them to select lands. Potential uses of these lands if they were eventually selected would likely be limited to subsistence, but they could include mineral and commercial development.

Sociocultural Characteristics

Denali National Park is primarily a natural area, and the sociocultural resources are directly linked to the natural features. Native and white subsistence users in the areas added by ANILCA continue time-honored traditional hunting and trapping lifestyles. In many cases these people have trapping cabins or have applied for lands used in their ancestral hunting areas. These lands are for the most part in the northern additions near Lake Minchumina. Also included are three cemetery sites near these traditional lands.

PROTECTION ALTERNATIVES

The following alternatives would offer some degree of protection to the park's nonfederal lands. Each alternative is analyzed with respect to its application, sociocultural impacts, and potential effectiveness in land protection. The alternatives considered include regulations, cooperative agreements, the Alaska Land Bank, coordination with other agencies,

zoning, less-than-fee acquisitions (easements), and fee simple acquisition. Any of these alternatives could be used singly or in combination.

Regulations

The following federal and state laws and authorities provide some protection for park resources.

Mining operations within the park are addressed by the Mining in the Parks Act of 1976 (16 USC 21-54) and its implementing regulations (35 CFR 9A). The regulations intend to minimize resource impacts by requiring operations to adhere to an approved plan of operations. Operations are monitored by NPS staff for compliance.

All private resource development activities on private, state, and federal lands must meet applicable state and federal environmental protection standards. These standards are cooperatively enforced by the Alaska Departments of Environmental Conservation and Natural Resources, the Environmental Protection Agency, and the National Park Service. Air quality must meet the standards for a class I area as established in the Clean Air Act amendments (42 USC 7401 et seq.) In Alaska the state's water quality standards are more restrictive than the EPA standards, and they are enforced by the Alaska Department of Environmental Conservation.

Section 1104 of ANILCA specifies the procedure for reviewing requests for rights-of-way for any transportation or utility system across public lands, and it establishes the criteria for approving or disapproving such requests. The access provision of section 1110 of ANILCA assures private landowners that they will be given "such rights as may be necessary to assure adequate and feasible access for economic and other purposes to the concerned lands," subject to reasonable regulations to protect park values.

The Alaska Anadromous Fish Act (Stat. 16.05.870) provides protection to specific rivers, lakes, and streams or parts of them that are important for the spawning, rearing or migration of anadromous fish. Bear-Paw River and its tributaries are on the list of specific rivers that are protected by this act. The act requires that any person or governmental agency desiring to construct a hydraulic project, to use, divert, obstruct, pollute, or change the natural flow or bed of a specified river, lake, or stream, or to use wheeled, tracked, or excavating equipment or log-dragging equipment in the bed of a specified river, lake, or stream must notify the commissioner of this intention before beginning the construction or use.

Application. Regulations cannot usually provide for public use, but they can prevent harm to natural or cultural resources. For example, federal, state, and local regulations often impose strict limits on dredging or filling of wetlands that would destroy wildlife habitat or degrade water quality. It is much more difficult for regulations to absolutely prohibit

an activity than to simply limit the type, amount, or intensity of the activity.

Sociocultural Impacts. Regulations may prevent individual landowners from using their land in some manner, but this restriction on individual freedom is imposed for the benefit of the community as a whole. The impact can be regarded as beneficial to the public at large.

Effectiveness. In parks where the impact of development is already evident, regulations are more likely to be effective in reducing adverse effects of major projects. In relatively pristine areas, regulations may be of little use in efforts to preserve natural systems from any intrusions of development. Regulations also are more likely to be effective where there is a good base of information about the impacts of certain activities on park resources.

Cooperative Agreements

Application. Agreements are written descriptions of how two or more parties will take certain actions. Agreements can provide for the exchange or transfer of services, funds, or benefits. Some of the elements that could be addressed in an agreement for land protection include

- access for resource management activities
- interpretive services
- routine maintenance or restoration of structures
- law enforcement
- joint review of permit applications
- enforcement of environmental protection laws

Advantages of agreements include their flexibility, relative low cost, and ability to establish cooperative management arrangements. Disadvantages include the ability of one party to terminate on short notice and lack of permanent protection.

Sociocultural Impacts. Specific impacts are defined by the terms of the agreement. Since agreements allow current uses to continue and all parties have to agree to the terms, negative or adverse impacts are unlikely.

Effectiveness. Agreements are likely to be most effective for land owned by entities other than individuals. These include state or local governments, private nonprofit organizations, federal agencies, and corporations. Agreements are more likely to be workable with these groups than with individuals because organizations often have the necessary resources (staff, equipment, money) to make an agreement worth considering in the first place and to carry out the terms of the agreement over a long period of time.

Cooperative agreements are appropriate when both parties have similar or compatible management objectives. They can be used as interim protective measures when long-term goals cannot be immediately achieved.

The expenditure of federal funds to provide permanent facilities is generally prohibited under short-term cooperative agreements.

Alaska Land Bank

ANILCA (section 907) established an Alaska Land Bank program to provide legal and economic benefits to native landowners and to provide for the maintenance of land in its natural condition, particularly where these nonfederal lands relate to conservation system units. Land bank agreements may contain provisions such as the landowner's responsibility to manage land in a manner compatible with the planned management of the park. The superintendent's responsibility is also defined. It may include technical and other assistance such as fire management, trespass control, resource and land use planning, and other services, with or without reimbursement as agreed upon by the parties involved. Native corporation lands (but not native allotments or small patented tracts) are immune from adverse possession, real property taxes, and assessments when included in the land bank. They are also immune from judgment in any action of law or equity to recover sums owed or penalties incurred by any native corporation or group or any officer, director, or stockholder of the corporation or group. Land bank agreements are particularly important in cooperating with native corporations that own large tracts of land in and adjacent to the preserve. Sociocultural impacts and effectiveness are essentially the same as cooperative agreements.

Coordination with Other Agencies

Actions by federal and local agencies to permit, license, or provide financial assistance for a project might have significant impacts on park resources. Under provisions of the National Environmental Policy Act, major federal actions are subject to public review processes to ensure adequate consideration of possible impacts on the environment. As a concerned land manager and neighbor, the park superintendent can ensure that other agencies are fully aware of any impacts proposed actions might have on park resources. Participation in public hearings and review processes is one means of expressing park concerns. Coordination also might be improved by memoranda of understanding or advance requests to agencies that the park be notified when certain actions are being considered. Participation by the park staff in project or permit review processes encourages compatible designs, locations, and operating requirements for new construction.

Zoning

The Matanuska-Susitna Borough encompasses lands in the southern portion of the park and preserve. No zoning regulations have been applied, but they may be in the future, based on the area's proximity to Anchorage and Fairbanks and its potential for residential and commercial growth.

Easements

Landownership may be envisioned as a package of rights. Easements convey only some of those rights from one owner to another, while the other rights of ownership remain unchanged. Easements can be positive (such as conveying a right of access) or negative (such as limiting specific uses of the land).

Application. Easements are most likely to be useful under the following conditions:

Some, but not all, existing or potential private uses are compatible with park purposes.

Current owners desire to continue current types of use and occupancy of the land under conditions conveyed to the National Park Service.

Protection of scenic values or provision of access for the public or the Park Service is needed only over a portion of the land.

Specific easement terms can be constructed to fit the topography, vegetation, visibility, and character of existing or potential developments on each tract. Easement provisions to protect park resources may address the following points: clearing of vegetation; location and design of new access roads and utilities; density, height, design, and color in developments visible to the public; and access for management of natural and cultural resources.

Sociocultural Impacts. Individual and collective impacts will vary depending on the rights acquired. In most cases an easement continues the current conditions while compensating the owner for the loss of potential uses.

The development of specific easement terms for large tracts requires some detailed site planning to identify the most environmentally sensitive areas and those where development could be accommodated with minimal impacts. The development of specific easement terms can be a cooperative effort to ensure that development follows traditional land use patterns or avoids any unnecessary disturbance of the natural system.

Effectiveness. Because easements are enforceable interests in property, they provide greater assurance of permanent protection than do agreements or zoning ordinances. Easements "run with the land" and are binding on future owners. Advantages of easements include

continued private ownership and use subject to the terms of the easement

lower initial acquisition costs than fee, and potential to protect more land

reduced impact on local property taxes

reduced costs for NPS operations and maintenance

Disadvantages of easements as compared to fee include

- potential difficulty in enforcement of easement terms

- unfamiliarity of landowners with less-than-fee ownership

- relatively high costs of acquisition on undeveloped properties where no further development is compatible

- increased costs of monitoring the terms and conditions of easement provisions

Fee Acquisition

When all of the interests in land are acquired, it is owned in fee simple.

Application. Fee acquisition may be recommended when other methods of protection have been found to be inadequate, inefficient, or ineffective to meet management needs. Fee acquisition is most often appropriate under the following conditions:

- The land is needed for development of park facilities or heavy public use.

- The land must be maintained in a pristine natural condition, which precludes reasonable private use.

- The owner does not wish to sell less-than-fee interest.

- The land cannot be protected in accord with park purposes by other methods, or alternatives would not be cost-effective.

Sociocultural Impacts. This alternative has great potential for significant change in the life of an individual or community. Unless use and occupancy are reserved, residential dislocations result from acquisition.

Effectiveness. Fee-simple acquisition is the most effective and secure land protection alternative. Generally, it is also the most expensive form of land protection. Advantages of fee acquisition include

- permanent and complete NPS control over use of the land

- provision for public access and access by management

- ability to develop necessary facilities

- familiarity to landowners

- opportunity for continued private use under reservations of use and occupancy

Disadvantages of fee acquisition include

- initial acquisition costs

- maintenance and management requirements, especially for developed properties

- impacts on local community from the relocation of a previous owner or the removal of housing from the local market

Methods of Acquisition

There are four primary methods of acquisition of fee and less-than-fee interests in lands: donation, purchase, exchange, and relinquishment.

Donation. Landowners may be motivated to donate their lands or interests in land to achieve conservation objectives. The tax benefits of donation also may be an important incentive. Donations of fee are deductible from taxable income. Easement donations also may provide deductions from taxable income, but they are subject to certain IRS requirements to qualify as a charitable contribution. Landowners are encouraged to consult their qualified tax advisors to discuss the specific advantages of donations. NPS representatives may be able to provide some general examples of tax advantages, but they cannot provide tax advice or commitments of what deductions will be allowed by the IRS.

Exchange. Lands or interests in land may be acquired by exchange. The land to be exchanged must be located within Alaska and must be of approximately equal value. Differences in value may be resolved by making cash payments. The National Park Service will consider other federal lands within the authorized boundary as potential exchange lands to consolidate NPS jurisdiction over more manageable units.

Other federal lands in Alaska that become surplus to agency needs would normally go through disposition procedures, including public sale. The National Park Service will work with the Bureau of Land Management and the General Services Administration to determine if any additional federal land may be available for exchange purposes.

Purchase. Acquisition by purchase requires funds to be appropriated by Congress or donated from private sources. Further funding for purchases depends primarily on future appropriations. Potential donations of funds or purchases by individuals or organizations interested in holding land for conservation purposes will be encouraged.

Relinquishment. State and native corporation lands under application may be relinquished, in which case ownership remains with the United States. The relinquishing entity can utilize the acreage being relinquished to acquire other lands outside the unit.

RECOMMENDATIONS

The recommended land protection approaches for nonfederal land are discussed below. Information about specific tracts--owners, acreages, minimum interest needed for protection, justification, proposed method of acquisition, and priority--is included in appendix I. In instances where acquisition of land or an interest in land is recommended, exchange or donation is a preferred method in all cases; it may also be attractive to private owners in certain tax situations. Purchase with appropriated or donated funds, bargain sales, and leaseback/sellback are other possibilities. Where purchase is necessary, every effort will be made to reach an agreement with the owner. However, eminent domain could be used in emergencies to prevent land use activities that would severely damage the park's integrity or to clear title.

The use of patented mining claims for new visitor facilities would conflict with the objective of the general management plan to reduce the traffic in the road corridor (refer to the discussion of visitor use and general development in the "General Management Plan" section of this document). The existing recreational uses of private properties in the Kantishna area are considered compatible; however, additional recreational use and facility development in this portion of the park would generate additional traffic on the park road and increase the problem of avoidance behavior by wildlife. To avoid this potential for adverse effects, the National Park Service will seek to acquire, through purchase, donation, or exchange, the surface estates to the mining properties to preclude large-scale recreational development. This action will allow mining activity to continue according to applicable laws and regulations (see appendix A).

The National Park Service will use existing authorities to minimize the adverse effects of ongoing mining activities. Validity determinations for unpatented claims will be completed as quickly as feasible to determine status. Wherever new mining activity might introduce development into a previously undisturbed area, the National Park Service will acquire the mineral properties in fee title, through donation, exchange, or purchase.

The National Park Service will seek a land exchange with the state of Alaska, or a relinquishment by the state, to place the "wolf townships" inside the northeast park boundary. These lands were recognized by Congress as important habitat for park caribou and wolf populations, and they are also used by park bears and moose. Acquisition of these townships is needed to protect the natural ranges of these populations from incompatible development and sport hunting. Specific concerns for the wolf townships are that the Savage wolf pack populations have dropped drastically in recent years and also that wintering caribou are particularly sensitive to human disturbances (NPS, Singer and Beattie 1984). Adding the wolf townships to the park would complete the habitat and range protection of the Toklat and Savage wolf packs and the wintering caribou herd, removing them from sport hunting pressure.

This exchange or relinquishment of approximately 95,000 acres is fully supported by the state of Alaska and is a recommendation of the draft "Tanana Basin Plan" (ADNR 1984). Lands involved are primarily state lands which recently have been excluded from the state land disposal

program. A total of 41 small tract entries (206 acres total) have been patented by the state from previous small tract sales, and these will not be included in the exchange or relinquishment. Uses on these lands, which are primarily recreational, will be monitored for any adverse impacts on wildlife within the new park boundary. The lands also include Eight-Mile Lake and portions of the Stampede Trail.

The secretary of the interior is authorized to acquire by donation or exchange available state lands contiguous to the park boundary by notifying Congress of this intention. If acquisition of these townships is possible only through an exchange, the National Park Service will consider exchanging certain lands of approximately equal acreage and value. Congressional approval is required to increase or decrease the total amount of land within the boundary by more than 23,000 acres.

The state intends to leave the wolf townships open to mineral entry and coal prospecting and leasing. However, the National Park Service recommends the exclusion of these lands from mineral entry until they are acquired by the federal government. Once the area is within the boundaries of the national park, it will be closed to mineral entry.

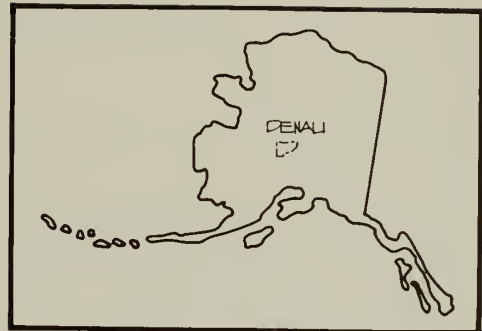
The national park and preserve boundary will be adjusted to follow natural geographic and hydrographic features wherever possible. The National Park Service proposes that much of the western boundary follow the Swift Fork River. Placing the boundary along this natural barrier to the spread of fire will greatly enhance the fire protection afforded to state and native lands, consistent with the "Tanana-Minchumina Interagency Fire Management Plan." In addition, the inclusion of these lands within Denali will offer added protection to an area of significant caribou habitat, based on 1984 caribou surveys, which indicated use of an area immediately east of the Swift Fork by as many as 200 to 300 caribou. If made part of the preserve, the area will still be subject to both sport and subsistence hunting.

Other areas of federal parkland identified for possible exchange with the state include fragments of small river valleys, such as the Tokositna, which are only partially inside the southern park boundary. Deletion of these valley segments from the national park will simplify the description of legal hunting areas and provide easily identifiable boundaries for sportsmen and others. The recommended boundary redesignation will also exclude one headquarters site and two trade and manufacturing sites from the national park boundary. Since sport hunting will then be allowed in this area now closed to hunting, landowners could realize economic benefits from guiding or other services.







The National Park Service will not seek to include the Chelatna Lake area within Denali National Park and Preserve. Congress recognized that this area was potentially valuable for recreational use and access to the south side of Denali. However, the current proposal for south-side development and use, which focuses on the Ruth Glacier, can be implemented without federal land management in the Chelatna Lake area.

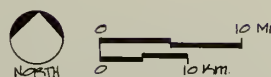
The National Park Service strongly urges the state to establish buffer zones between developable parcels and parklands to facilitate fire

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KINLEY
VILLAGE
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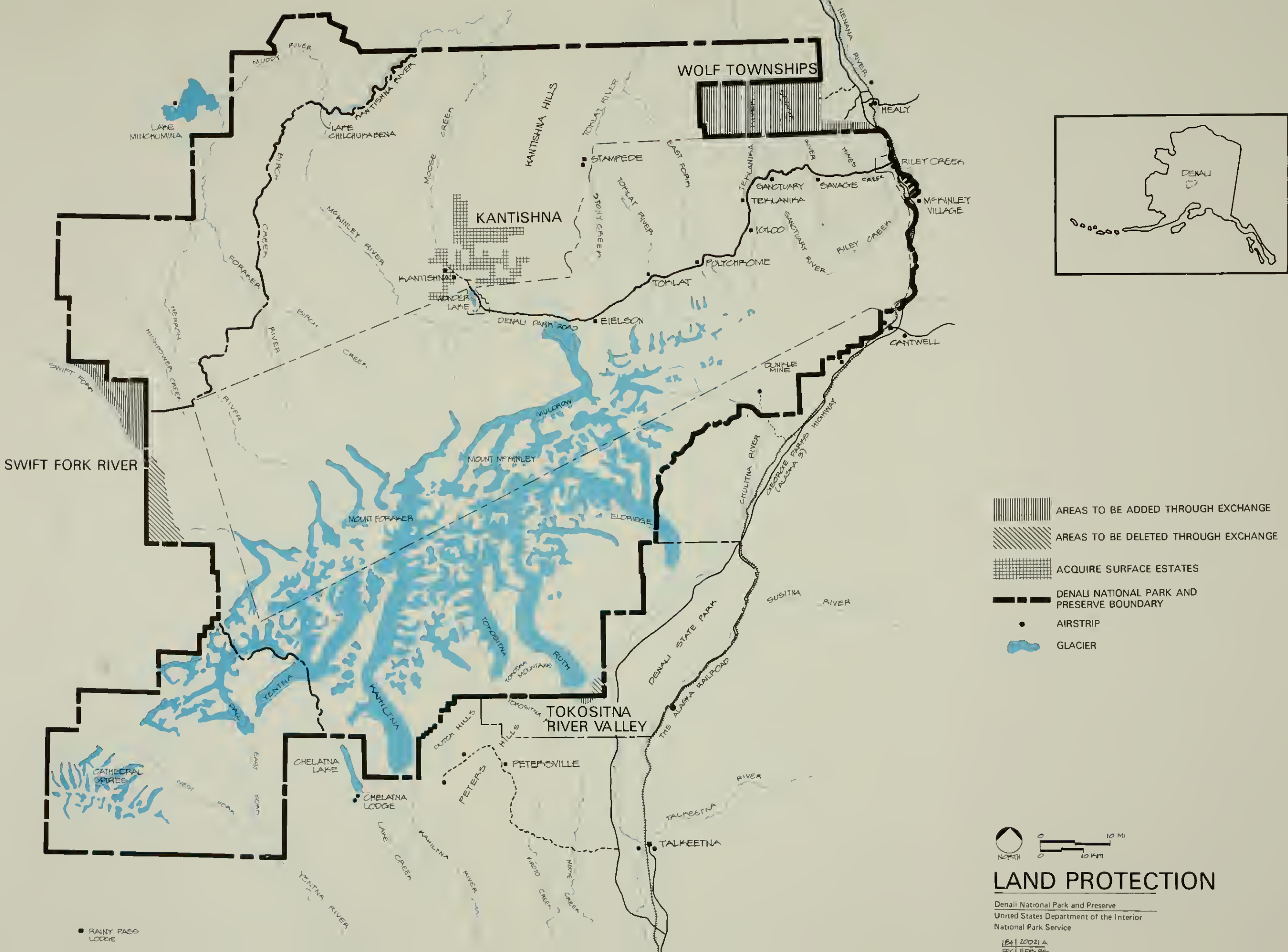
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-  DENALI NATIONAL PARK AND PRESERVE BOUNDARY
-  AIRSTRIP
-  GLACIER



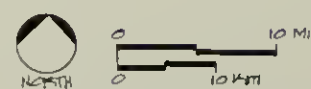
LAND PROTECTION

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National Park Service

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- AREAS TO BE ADDED THROUGH EXCHANGE
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LAND PROTECTION

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management, avoid interference with traditional subsistence uses, and protect wildlife and cultural resource values. Also, for the navigable portion of the Tokositna River and any rivers determined navigable in the future, the National Park Service strongly urges the state of Alaska to disallow activities that would compromise the natural, cultural, scenic, and recreational values of Denali National Park and Preserve.

The National Park Service will continue to work cooperatively with native groups in the management of cemetery and historic sites to preserve their cultural significance regardless of their ownership.

COMPLIANCE CONSIDERATIONS

In accordance with section 910 of ANILCA, proposed actions of the land protection plan involving land exchanges with village, native, and regional corporations are excluded from National Environmental Policy Act (NEPA) considerations. Other land protection actions which will not significantly change existing land or visitor use are categorically excluded from NEPA considerations (516 DM 6, appendix 7.4). Impacts of the proposed exchange for the state-owned wolf townships have been assessed and are presented in the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984).

WILDERNESS SUITABILITY REVIEW

Congress enacted the Wilderness Act in 1964 "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." The act defines wilderness as follows:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in the Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which . . . generally appears to have been affected primarily by the forces of nature, with the imprint of man's works substantially unnoticeable.

ANILCA, section 701, formally designated approximately 1,900,000 acres of Denali as wilderness. The area covered by this congressional designation comprises most of what was Mount McKinley National Park, with the exception of a buffer zone of 300 feet (90 meters) surrounding each development, a corridor extending 150 feet (45 meters) from either side of the centerline of the park road, existing borrow sources and waysides, and lands east of the railroad right-of-way. The designated wilderness area will be managed in accordance with the provisions of the Wilderness Act except for the extraordinary uses allowed by ANILCA because of the unique conditions in Alaska. For example, section 1110 of ANILCA allows the use of snowmachines, motorboats, and airplanes for traditional activities on lands and waters designated as wilderness. Specific closures to this type of use have been proposed for the road corridor and Wonder Lake. Section 1315 permits the continuation of existing public use cabins and the construction of a limited number of new public use cabins or shelters. Section 1316 allows the continued taking of wildlife where such use existed prior to ANILCA. However, since all hunting was already prohibited in the old Mount McKinley National Park, it will continue to be prohibited in the designated wilderness.

Section 1317 of ANILCA requires a wilderness review to determine the suitability or nonsuitability of federal lands within Denali National Park and Preserve for eventual designation as wilderness. Any recommendations forthcoming from this review are to be submitted to Congress by December 2, 1987. A preliminary analysis has been accomplished. The analysis accounted for such factors as lands needed to serve visitors now and in the future, the land status of those areas added by ANILCA, existing and potential mineral activities, lands needed for operation of the park and preserve, and the locations of improved and regularly used roads.

Those areas determined to qualify for wilderness designation are shown on the Wilderness Suitability map. This map represents only a preliminary analysis, and a final recommendation could change certain boundaries.

Lands in other than full federal ownership are ineligible for wilderness designation. The park road corridor and the Ruth Glacier are also ineligible because of the nature of the visitor use proposed for these areas.

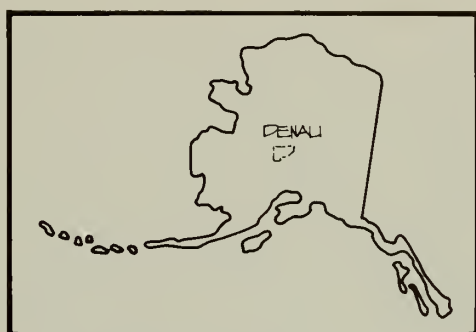
If additional lands are acquired by the federal government, as discussed in the "Land Protection Plan," they will be studied for wilderness suitability. Conversely, any lands deleted from federal ownership will no longer be eligible for wilderness designation.



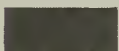



The areas determined suitable for wilderness designation combined with the areas already designated amount to approximately 95 percent of the park complex. Managing these lands according to the criteria of the Wilderness Act and ANILCA will provide additional protection to the Denali environment by precluding large-scale development and the attendant disturbance of wildlife and other resources. At the same time, formal designation of preserve lands will not prohibit or otherwise restrict sport hunting, fishing, trapping, or traditional subsistence activities. Nor will wilderness designation of the park additions affect traditional subsistence use in these areas.

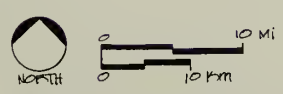
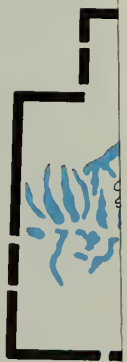
Regardless of this suitability review or any subsequent National Park Service proposal, wilderness can be designated only by Congress, and any subsequent change in the status and management of designated areas can also be accomplished only by Congress. In the interim those lands considered suitable for designation as wilderness will be managed in accordance with the provisions of the Wilderness Act and the special provisions for Alaska conveyed by ANILCA.

Following analysis of public response on this suitability review, the National Park Service will make a wilderness proposal to the secretary of the interior, who will in turn make a recommendation regarding wilderness designation to the president and Congress. As required in ANILCA, the president is to make his recommendations prior to December 2, 1987.

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-  UNSUITABLE FOR WILDERNESS DESIGNATION
-  DESIGNATED WILDERNESS
-  DENALI NATIONAL PARK AND PRESERVE BOUNDARY
-  AIRSTRIP
-  GLACIER



WILDERNESS SUITABILITY

Denali National Park and Preserve
 United States Department of the Interior
 National Park Service

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- SUITABLE FOR WILDERNESS DESIGNATION
- UNSUITABLE FOR WILDERNESS DESIGNATION
- DESIGNATED WILDERNESS
- DENALI NATIONAL PARK AND PRESERVE BOUNDARY
- AIRSTRIP
- GLACIER



WILDERNESS SUITABILITY

Denali National Park and Preserve
United States Department of the Interior
National Park Service

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■ PAINY PASS LODGE

PART TWO ENVIRONMENTAL ASSESSMENT



INTRODUCTION

This "Environmental Assessment" analyzes the environmental consequences of the proposed actions to determine if there would be any impacts on the environment. Subsequent review will identify the significance of any environmental impacts, and the conclusions will be presented either in a finding of no significant impact or a notice of intent to prepare an environmental impact statement.

Alternatives for this project focused on two major visitor use and development issues: (1) the most appropriate level of use for the north road corridor, and (2) whether or not a major visitor service and activity center should be established on the south side of Denali. Two alternatives were assessed: (A) continue present management with no south-side development, and (B) develop the south side and reduce vehicle use and camping along the north road corridor. Alternative B was selected as the preferred alternative and is presented as the draft general management plan in part one of this document.

This document also contains an assessment of the impacts of mining authorized by applicable law and regulation in the Kantishna Hills area. A range of mineral management strategies was considered in the Final Environmental Impact Statement, Kantishna Hills/ Dunkle Mine Study, which was prepared for the Alaska Land Use Council by an interagency work group (USDI 1984). The alternatives are not repeated in this document. The Land Use Council proposal, which calls for additional mineral development activity in the Kantishna Hills district, is presented as the preferred alternative in the 1984 FEIS.

ALTERNATIVES

ALTERNATIVE A: CONTINUE PRESENT MANAGEMENT WITH NO SOUTH-SIDE DEVELOPMENT

Visitor Use and General Development

Under this alternative the National Park Service would not take any concerted action to implement a south-side activity center. All development necessary to accommodate visitors would remain consolidated along the park road corridor on the north side of the park. Facilities would be rehabilitated and upgraded to support wildlife viewing, overnight camping, and backcountry use, as proposed in the 1983 Development Concept Plan. The intent of all actions would be to reinforce existing conditions, and nothing would be done that would represent extensive new development or a new management direction. The existing level of development along the park road corridor and the level proposed in the 1983 development plan are compared in table 3.

Table 3: Changes in Development, 1983 Development Concept Plan

<u>Site</u>	<u>Existing Conditions</u>	<u>1983 DCP</u>
Riley Creek	102 campsites	Add 50-100 campsites, construct interpretive center, construct camping support facilities
Hotel	120 double rooms 21 single rooms	Replace with new facility at same capacity
Savage River	29 campsites	Possible expansion
Sanctuary	7 campsites	No change in capacity
Teklanika	50 campsites 2 group campsites	Add 45 walk-in sites
Igloo	7 campsites	No change in capacity
Eielson Visitor Center	Viewing shelters, information, exhibits, and sales	Construct expanded facility
Wonder Lake	20 campsites	Relocate at same capacity

An increase in campsites at Riley Creek and Teklanika would increase the demand for shuttle bus service beyond Savage River by approximately six

buses a day, assuming that all the campers would ride the shuttle bus either to get to their campsites or to see other areas of the park. This increase in bus use would increase total vehicle traffic by about 5 percent. Further increases in the demand for shuttle bus transportation would be associated with the future development of campgrounds and hotels outside the park. Park managers would be under considerable pressure to increase transportation services to meet this demand, which could result in the number of vehicles increasing by an additional 4 percent per year (see the "Environmental Consequences" section for a more detailed discussion of probable traffic increases).

Resource Management

Research would be conducted to gain a better understanding of the complex forces at work in the environment. The specific studies are described in detail in the park's current "Natural Resource Management Plan" and are summarized in the "General Management Plan" section of this document.

Mining on valid existing claims is authorized in the park subject to applicable laws and regulations. Unless Congress enacted new legislation governing mineral development in the Kantishna Hills, the levels of placer and lode mining would be expected to remain fairly constant for the next 10 years. The current level of mineral development is described in detail in the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984). There are currently 292 active claims in the district, covering approximately 2,250 acres. Operations include placer mining for gold and silver and small-scale lode mining for gold, silver, and antimony. The claims would continue to be accessible by the existing park road. In 1983 mining-related traffic on the road amounted to an average of 270 round trips per month, and this level of mining-related traffic would be expected to continue. Mining operations would continue to be subject to federal regulations (36 CFR 9A) intended to protect park values by requiring approved plans of operations.

Park Operations

No substantive change in staffing or workspace would be undertaken. A wildlife biologist would be added to the park staff to closely monitor the effects of visitor use on the wildlife populations north of the Alaska Range.

ALTERNATIVE B (PROPOSAL): DEVELOP A VISITOR SERVICE AND ACTIVITY CENTER ON THE SOUTH SIDE AND REDUCE PRIVATE VEHICLE USE AND CAMPING ALONG THE NORTH ROAD

This alternative was selected as the proposal and is described in detail in the "General Management Plan" section of this document. It is summarized below for purposes of comparison with alternative A.

Visitor Use and General Development

Alternative B suggests that in addition to the wildlife-viewing experience along the north park road corridor, an entirely different experience focused on mountains, glaciers, and outdoor recreation would be provided on the south side of Denali. The south-side proposal would involve joint government and private commercial development on both national park and state park lands, and it would require extensive cooperation between the National Park Service, the state of Alaska, and private enterprise. Once the general management plan was approved, all of the involved agencies and individuals would work together to accomplish specific feasibility studies, development proposals, environmental analyses, and cooperative management agreements.

The central feature of the south-side development would be a visitor service and activity center and lodging complex. The staff would offer a variety of informational, trip-planning, interpretive, and recreational services and programs designed for visitors having a broad cross section of sightseeing, recreational, and educational interests. Additionally, the center would serve as a point for trip planning and arrangements for scenic overflights, ground and river trips in the state and national parks, and fly-ins to outlying mountain huts, dramatic viewpoints, and remote trailheads. This would greatly expand opportunities for visitors to enter the mountain realm. Such a visitor center and variety of activities and experiences in the heart of Alaska, relatively close to Anchorage and Fairbanks by highway, would offer visitors an alternative destination and add a new dimension to Alaska tourism in general.

The visitor activity center would be developed on state park lands. Areas of the national park would be accessible from the center primarily by air. A system of trails and up to four mountain huts would be developed inside the national park to facilitate visitor use. Other camping and hiking opportunities would be available along the George Parks Highway, at other sites in Denali State Park, and along the existing primitive roads in the Peters and Dutch hills.

To prevent increasing avoidance behavior by wildlife on the north side of the park, traffic along the existing park road would initially be held to within 15 percent, more or less, of the 1984 traffic levels. Once the south-side activity center was operational, the Teklanika, Igloo, and Sanctuary campgrounds (64 sites) would be removed, thus eliminating the need for an estimated 33 vehicles per day, or 23 percent of the total traffic on the park road. This estimate assumes one vehicle per campsite (and one bus for each of the two group sites) and that each party spends two days in the park (one round trip every two days per site). The reduction in private vehicles would help to reduce avoidance behavior by wildlife. For the same reason that camping would be reduced in the road corridor, the National Park Service would oppose new private commercial development of campgrounds or accommodations on patented mining claims in the Kantishna Hills. Such development would be avoided by acquiring the surface estates to patented claims in the Kantishna area.

Shuttle and tour bus transportation would be allowed to increase by approximately 2 percent per year (or 20 percent over the 10-year life of

the plan) to serve day visitors and backcountry users. This increase would be more than offset by the decrease in private vehicle traffic. There would be an overall net decrease in traffic of 17 percent over the life of the plan.

The north-side road corridor would be managed primarily as a daytime wildlife viewing area and an access route for backcountry hiking and backpacking. Campgrounds would remain at Riley Creek, Savage River, and Wonder Lake. As described for alternative A, interpretive services would be improved, a new visitor access center and interpretive waysides would be installed, and the hotel would be replaced at Riley Creek.

Resource Management

As in alternative A, the resource management program would involve extensive studies to improve the understanding of the complex environment at Denali. The level of placer and lode mining in the Kantishna Hills would be expected to remain fairly constant for the next 10 years, the same as in alternative A.

Park Operations

The park headquarters would remain at its present location on the north side. This alternative would require an additional management presence on the south side of the park. Up to 12 employees would be stationed on the south side to conduct such activities as maintenance, interpretation, and ranger services. This staff would require development of necessary support facilities, including administration buildings, maintenance and storage facilities, and housing. Development of these facilities would be undertaken in cooperation with the state of Alaska, outside the national park boundaries.

ENVIRONMENTAL CONSEQUENCES

The "Environmental Consequences" section addresses impacts on environmental components as a result of implementing either alternative A (present management) or alternative B (proposed general management plan). The principal environmental components addressed in this section are

- moose, caribou, bear, Dall sheep, and wolf
- vegetation
- fish
- water quality
- air quality
- archeological and historical resources
- subsistence use of resources
- park visitors and regional tourism
- scenic quality
- wilderness values

The primary source of information for the environmental impacts of mineral development was the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984). The primary source of impacts related to visitor use and development on the north side of the park was the Development Concept Plan for the park road corridor (NPS 1983).

The south-side proposals have been addressed only generally in this document for several reasons. First, the visitor service and activity center would be developed in Denali State Park, and the details about locations, sizes, and capacities have not been determined. Second, resource data for the south side of Denali are limited. What information exists is general in nature. No detailed vegetation, soil, or wildlife maps exist for the area. The discussion of impacts has been developed primarily from the personal knowledge of the park staff and not from written or published information. The collection and analysis of resource information will occur in subsequent stages of planning. Additional National Environmental Policy Act compliance will be accomplished once more detailed proposals and adequate resource data are available. The focus of the evaluation at that time will be the alternatives for implementing the concept rather than whether or not a south-side development should be pursued.

ALTERNATIVE A: CONTINUE PRESENT MANAGEMENT WITH NO SOUTH-SIDE DEVELOPMENT

Impacts on Moose, Caribou, Bear, Dall Sheep, and Wolf

Activities Affecting Wildlife Populations. Activities that would affect wildlife would include vehicle driving, camping, and facility development in the park road corridor and mining in the Kantishna Hills and Dunkle Mine areas.

During the 1984 season, from the last week in May to the first week in September, road traffic amounted to approximately 12,000 vehicles, including both buses and automobiles. Under this alternative, traffic would be expected to increase by 5 percent as a result of campground expansion inside the park and by an unquantifiable additional amount each year as a result of private commercial development outside the park. It was estimated that the new campsites at Riley Creek and Teklanika would increase the vehicle travel beyond Savage River by five to six shuttle buses per day. This estimate assumed that all the occupants of 145 new campsites (435 people) would ride the shuttle bus at least once during a two-night stay in the park.

The amount of new campsites and hotel rooms that would be built outside the park over the 10-year life of the plan cannot be projected with certainty, but it would be expected to considerably exceed development inside the park. Between 1981 and 1985, 102 new campsites and 168 new hotel rooms were completed by private developers outside the park. If this trend continued, accommodations would increase by 60 to 70 units per year. This number of new units would accommodate up to 200 people per day, who would require up to five additional shuttle buses or tour buses per day to transport them into the park. If transportation services were increased to meet the continuously growing demand, the cumulative effect would be the addition of five buses per day per year, or 50 additional buses per day by the end of the 10-year planning period. Added to the number of additional buses associated with NPS campground development (five to six per day) the total increase in traffic would be 55-56 buses per day, or a 45 percent increase in total traffic by 1994.

Current mineral development activity on existing claims in the Kantishna Hills and Dunkle Mine areas includes placer mining of gold and silver and limited small-scale lode mining of silver, gold, and antimony. The recorded placer and lode mining claims encompass about 12,600 acres, of which about 750 acres are patented. Details of current levels of mineral development and mining techniques are contained in the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984).

Moose. A natural, largely unhunted population of moose provides unique opportunities for research, photography, and observation. The number of vehicles used to view this wildlife increased by 50 percent in the last decade and resulted in altering this viewing opportunity. The Singer and Beattie 1984 study of wildlife disturbance along the park road corridor indicates that between 1973 and 1983 moose sightings dropped by 72 percent, reflecting stronger avoidance reactions by moose than by any of the other large mammals of Denali. However, it was also observed that moose spent more time closer to the road in 1983 than they did in 1973, suggesting habituation by some individuals.

Moose avoided the road less when screened from vehicles by vegetation. Therefore, roadside vegetation removal during road rehabilitation would cause moose to move away from the road until the rapidly growing vegetation, such as alder and willow, revegetated the area.

Habitat lost as a result of new facility development along the road corridor would total approximately 69.5 acres and consist primarily of white spruce and quaking aspen (specific proposals and impacts are described under "Impacts on Vegetation"). This particular habitat is not particularly important to moose. Damage or loss would be partially offset by revegetation and landscaping at the proposed visitor center and the depot, and by natural recovery of some currently occupied land.

Continued placer mining would result in disturbance of about 2,250 acres of large mammal habitat in the western Kantishna Hills (floodplains, upland forests, and uplands) and about 20 acres in the Dunkle Mine area (mostly scrubland), or about 1.2 percent and 0.1 percent of the respective mining study areas. Additional habitat loss would result from developing new mining trails within placer claim boundaries in the Kantishna Hills. Both mining districts overlap important wildlife habitat. The Kantishna Hills contain some of the largest moose populations in the park. Moose are the only species that would be seriously affected by this loss of habitat. Reductions in moose populations have been observed in areas where placer mining has disturbed streamside habitat. A comparative analysis of moose pellet groups found moose to be 15 times more plentiful in unmined areas than in mined areas.

Equipment and vehicle noise and human activity might cause some moose to avoid mining areas in the Kantishna Hills. It is estimated that 270 vehicle round trips per month serve the mining area during the 100-day summer activity season, and that a maximum of 133 people live there during the summer. That level of activity would be expected to continue under this alternative. Poaching or subsistence hunting could adversely affect moose populations in the Kantishna Hills area.

Conclusion: Implementation of this alternative could result in a 45 percent increase in vehicle traffic over the 10-year life of the plan. Based on the previous decade of reduced moose sightings it can be expected that moose would avoid the road corridor to a greater extent. Mineral developments and the loss of over 2,000 acres of habitat would continue to significantly affect moose populations in the Kantishna Hills area. Impacts resulting from habitat loss along the road corridor as well as poaching loss would not be expected to significantly affect moose populations.

Caribou. At the present time, the Denali caribou herd is the 13th largest of 22 herds in Alaska. Because of its accessibility, the herd is also the most easily viewed and photographed in Alaska. The Denali caribou herd is also significant because it provides unique opportunities for the study of predator-prey relationships within a relatively untouched subarctic ecosystem. The Denali herd has declined in size from 20,000-30,000 animals between 1910 and 1940 to its present size of 2,600, which is now only 5-6 percent of the earlier recorded population. The herd has shown a recent upward trend during a period when several other nearby depressed herds are also increasing. Nevertheless, because of the present small size, disturbance of the Denali herd should be avoided, because when caribou herds are at low levels, some traditions, timing of events, and movements may be weaker and more easily disrupted (Klein 1980).

According to Tracy and Dean (1977), the frequency of summer vehicle traffic on the Denali park road in 1974, two years after the shuttle system was implemented, was high enough to affect the activity patterns of large mammals, particularly caribou, within 600 feet of the park road. Cow/calf groups, which move along the park road in large numbers between late June and early July, were more sensitive to road disturbance than were mature bulls. The study concluded that implementation of the shuttle bus system reduced the disturbances to wildlife by decreasing the volume of traffic and by controlling visitor behavior.

Singer and Beattie (1984) concluded that between 1973 and 1983 caribou sightings did not decline; indeed, caribou were observed closer to the road in 1983 than they were in 1973. Habituation of some caribou was attributed to the predictability of traffic along the road. It was noted that avoidance behavior increased if private vehicles stopped and the occupants got out and approached the wildlife on foot. Different types of vehicles on the road did not seem to be a factor affecting avoidance behavior. Wildlife reactions to cars, buses, trucks, and heavy construction equipment all appeared to be the same. However, it was concluded that a greater degree of disturbance occurred to wildlife when passengers left their private vehicles to approach and photograph the animals.

The loss of about 70 acres of primarily white spruce and quaking aspen would not significantly adversely affect caribou because it is not normally preferred habitat.

The segment of the corridor between Toklat and Eielson is part of the migration route followed by the Denali caribou herd when it moves west in late June and July. The animals pass through some particularly narrow areas where the road also passes. To mitigate impacts on caribou, bus drivers are instructed not to discharge passengers within this area during migration periods. Road repair and maintenance operations also avoid this area during migration.

The inclusion of the wolf townships in the park would increase protection for the Denali caribou herd by eliminating the potential for incompatible development of important habitat areas and by eliminating sport hunting.

No mining-related impacts on caribou in the Kantishna Hills area were identified in the Final Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study (USDI 1984). However, the loss of 2,250 acres of habitat might affect some segments of the population.

The Dunkle Mine area is part of the Cantwell calving ground, portions of which are some of the most significant calving areas used by the Denali caribou herd (NPS, Duff and Singer 1982a). Groups of mostly cows arrive at the calving area in mid-May and usually leave by mid-July. Some evidence indicates that calf survival is greater at the Cantwell calving ground than at the Wonder Lake or Stampede areas. From 1974 to 1982 approximately 34-51 percent of the entire Denali herd utilized the area during either the pre-calving or post-calving periods. The projected levels of mining in the Dunkle Mine area would not be of sufficient intensity to cause significant habitat loss or other disturbance

(USDI 1984). If the Dunkle Mine area is exchanged for other lands, miners have consented to annually limit use during the calving period until the first of July.

Conclusion: Caribou do not appear to have been affected by controlled traffic levels but are adversely affected by irregular traffic related activities. Habitat loss along the road corridor would be negligible, but the extent of the habitat loss in Kantishna could affect caribou numbers. Addition of the wolf townships would measurably benefit the Denali caribou herd.

Bears. Tracy (1977) reported that grizzly bears are more sought for viewing and photographing than other species. Therefore, they are more often subject to disturbance when close to the road. Singer and Beattie (1984) reported that grizzlies were observed, on the average, closer to the road in 1983 than in 1973 and that they exhibited the greatest flight distances after removing vehicle restrictions. Less avoidance response would occur following implementation of an extended bus system.

According to Singer and Beattie grizzly sightings declined 32 percent during the reported period of study. In addition they observed that grizzlies were more cautious when screened by vegetation. It can be expected that observations would continue to decline with a 45 percent increase in traffic levels.

Sable Pass is an area heavily used by grizzly bears and subsequently is a prime viewing area. When grizzlies are in the area, passengers are not allowed to leave the shuttle buses, and hikers and people using private vehicles are directed to stay on the road.

The number of incidents involving humans and bears increased from three to five times in the period 1972-1980 in the front country where the campgrounds are located. Between 1978 and 1981 there were up to 40 incidents annually of humans being approached by bears showing curiosity or lack of fear. At the Igloo Canyon, Sanctuary, and Teklanika campgrounds, There were five such incidents in 1983 and eight in 1984. Campground expansion would be expected to increase these levels. Most of the habitat loss associated with visitor development would occur immediately adjacent to the road corridor, an area not heavily used by grizzlies. Therefore, the loss would not significantly affect grizzly populations.

Continued levels of poaching and more than 2,000 acres of habitat loss could reduce numbers and influence activity patterns of bear in the Kantishna Hills. It is expected that bears would continue to be attracted occasionally to garbage generated by mining operations and that some of these animals would be destroyed by miners (Valkenburg 1976).

Conclusion: Human/bear interactions appear to be growing and occur commonly in campground areas. Increased numbers of campers would aggravate the problem. A continued increase in traffic levels would result in more avoidance of the park road corridor. Destruction of habitat and loss through poaching would continue to moderately reduce bear populations in the Kantishna Hills area.

Sheep. Singer and Beattie (1984) reported that sheep observations did not decline from 1973 to 1983. The sheep also showed evidence of habituation to vehicles. Migrating sheep were rarely observed, indicating that they were more sensitive during road crossings.

The segment of the road corridor between Igloo Mountain and Sable Mountain is crossed by great numbers of sheep in early spring. In late May and early June herds with lambs cross the road. Also, the segment between the Sanctuary and Teklanika rivers and the Hogan Creek area are crossed by sheep moving south in early June and back north in September and October. Vehicle and passenger restrictions apply to these areas as previously described for other sensitive species. In addition, road repair and maintenance activities are restricted from these areas during these same periods.

The 70 acres of habitat loss associated with visitor facility development would not affect important sheep habitat.

Mining activities in the Kantishna Hills or Dunkle Mine area occurs for the most part in good sheep habitat. Poaching and subsistence hunting could affect sheep populations if the number taken became excessive.

Conclusion: Sheep would not be significantly affected by regulated traffic levels or habitat loss along the road corridor. Sheep would be moderately affected by poaching and subsistence hunting in the Kantishna Hills area.

Wolves. Wolves are seldom seen from the road corridor, and avoidance behavior or habituation is unknown. Wolf population levels depend on prey populations and therefore are indirectly affected by changes in the number and distribution of prey.

The addition of the 63,000 acres associated with the wolf townships would provide an added degree of protection to the Savage River wolf pack.

Continued poaching and legal subsistence trapping could reduce levels of wolves in the Kantishna Hills area.

Conclusion: Wolves would not be significantly affected by activities along the northern road corridor. Some measure of protection would be afforded to the Savage River wolf pack by inclusion of the wolf townships.

Impacts on Vegetation

Vegetation would be affected by the development of new facilities in the north road corridor and by mineral development activity in the Kantishna Hills and Dunkle Mine areas. The 86.6-mile-long park road corridor spans three of the park's major vegetation associations: bottomland spruce-poplar forest (21% of the corridor), moist tundra (48%), and alpine tundra (31%). The forest vegetation along the easternmost 10 miles of the road corridor and along the floodplains and river terraces that intersect the road is dominated by white spruce, often in association with quaking

aspen. Balsam poplar is sometimes found on gravelly riverbottom sites. Moist tundra is interspersed with the spruce-hardwood forest east of the Teklanika River, and it becomes predominant west of the river. This association is dominated by dwarf birch, willow, and low ericaceous shrubs. Sedge tussocks are common in the wetter areas. Alpine tundra is found at higher elevations (generally 2,500 to 5,000 feet), most notably between Polychrome and Thorofare passes. Bedrock is usually close to the surface or exposed. Vegetation is sparse and rarely grows taller than a few inches. It consists of low shrubs and low mat plants, including avens, in combination with mosses, grasses, sedges, wildflowers, and lichens. Common shrubs include willow, dwarf birch, and bearberry. The principal vegetation type in the Kantishna Hills is moist tundra. No federally listed threatened or endangered plant species are known to inhabit the area. Two candidate species inhabit dry ridgelines at high elevations (see appendix J).

About 45 acres of upland spruce-hardwood forest vegetation would be selectively cleared for construction of new facilities in the park headquarters, hotel/depot, and Riley Creek areas. In this zone white spruce dominates and is found in association with quaking aspen. Predominant understory in the area includes alder, willow, and highbush cranberry. Placement of the interpretive center adjacent to the entrance road would disturb a 6.0-acre area of white spruce and quaking aspen within this zone. A rich humus layer at this location supports diverse mosses, lichens, and some ferns. New facilities would be designed to minimize disturbance of this layer. Formal paths would be defined to discourage random trampling of the vegetation.

Road rehabilitation, campground expansion, and construction of waysides and other proposed facilities would disturb approximately 25 acres of moist tundra. Taller willows would be removed from drainage areas during the rehabilitation of the park road, and sparse willow growth would be removed during scrape gravel-borrow operations at Stony Creek, Igloo Creek, and other areas. A large new disturbance in this vegetation type would occur at Teklanika, where the addition of up to 45 campsites would require the selective clearing of 2.5 acres. A caretaker cabin at Teklanika and overnight housing for shuttle drivers at Toklat could disturb an additional 1.5 acres of this vegetation type.

Approximately 21 acres of varying vegetation types would be restored to natural conditions as a result of improved design, removed facilities, or revegetation work.

About 2,250 acres of mixed vegetation types would be affected within the Kantishna Hills area. The majority of placer mining disturbance would probably occur within 580 acres of bottomland spruce-poplar forest and about 1,610 acres of moist tundra. These vegetation types characteristically grow in or adjacent to the floodplains and stream channels that are the prime placer mining sites. Placer mining in the Dunkle Mine area would disturb about 20 acres of floodplain forest, less than 1 percent of the available habitat in that study area.

Conclusion: Approximately 60 acres of vegetation, predominantly spruce-hardwood forest, would be selectively cleared for facility

construction in the park road corridor. About 2,250 acres of mostly moist tundra vegetation, 1.2 percent of the Kantishna Hills study area, would be disturbed in the Kantishna Hills, and about 20 acres would be disturbed in the Dunkle Mine area as placer mining continued. Impacts on vegetation would be significant within the Kantishna Hills area.

The patchy distribution of mineral development sites, coupled with the patchy distribution of the vegetation types, would result in no significant loss of any vegetation type except perhaps the riparian bottomland forest, approximately 11 percent of which would be destroyed.

Impacts on Fish

Fish would be affected by changes in water quality and streamflow caused by road maintenance and bridge repair/replacement in the park road corridor and by placer mining in the Kantishna Hills and Dunkle Mine areas. In the road corridor the arctic grayling is commonly found east of Wonder Lake along select tributaries containing relatively small amounts of glacial silt.

In the Kantishna Hills area approximately 360 miles of clearwater streams provide rearing, feeding, spawning, and overwintering habitat for arctic grayling, chinook salmon, coho salmon, and chum salmon. Approximately 20 miles of streams have been extensively disturbed by mining. An additional 28 miles could be affected if all existing claims were operated. Undisturbed streams or stream reaches containing productive fish habitat include Moose Creek, North Fork of Moose Creek, Jumbo Creek (outside the study area), Eldorado Creek, Rock Creek, and the unmined reaches of Glacier and Caribou creeks. Known chinook and chum salmon spawning areas exist in sections of the Bearpaw River, Moose Creek, Glacier Creek, and Caribou Creek. In the Dunkle Mine area productive fish habitat is provided by Colorado Creek.

Placer mining claims in the Moose, Glacier, Caribou, and Eldorado creek drainages would subject fish habitat to extensive physical disturbance. Streambeds overlain by mining claims would be altered by the removal of riparian vegetation, construction of access roads, use of heavy mining equipment in the streambeds, channelization and relocation of streambeds, excavation and processing of stream gravels, and construction of wastewater treatment facilities for mine effluent. Specific impacts would include destruction of habitat for fish spawning, rearing, and feeding; loss of stream sinuosity; impediments to the natural migrations of fish; reduced levels of primary production by algae and macrophytes, the basis of the food chain in stream ecosystems; loss of available instream cover for fishes (pools, boulders, cut banks); and elevated heavy metal concentrations.

Mining operations on Moose Creek and lower Eldorado Creek could impede or stress natural fish migrations into Jumbo, upper Eldorado, and North Fork of Moose creeks. As a result, some of the most productive spawning, rearing, and feeding habitat could be altered. This would constitute 8 percent of the total fish habitat in the Kantishna Hills study area. High turbidity levels and sediment would be major concerns

because the mining season coincides with periods of peak biological productivity and peak salmon spawning. In the long term, water quality factors would limit the natural reproduction, growth, and survival of salmon in these streams, which are possibly the most important salmon spawning streams within Denali National Park and Preserve.

Placer mining in the Dunkle Mine area would subject fish habitat in the lower 2 miles of Colorado Creek to only a minor degree of alteration from sedimentation, turbidity, increased heavy metal levels, and physical manipulation of stream channels.

Conclusion: Visitor facility development and road repair and maintenance would have minor if any impacts on fish populations adjacent to the road corridor. Impacts on arctic grayling as a result of repair and/or replacement of bridges would be temporary and minor. About 15 percent of the 360 miles of clearwater streams in the Kantishna Hills area would be adversely affected by mining operations. This would represent a significant impact on the park's fisheries.

Impacts on Water Quality

Water quality would potentially be affected by vehicle travel and road work in the park road corridor and by mineral development in the Kantishna Hills and Dunkle Mine areas.

Vehicles traveling on the park road would continue to introduce minor levels of pollutants, including immeasurable amounts of particulates and hydrocarbons, which would eventually reach roadside streamcourses. A 45 percent increase in traffic volume would increase these pollutants, but not to any measurable extent.

Gravel to resurface the park road would be obtained from scrap and berm sources in inactive floodplains. Gravel removal operations in the inactive floodplain sites would be located and designed to minimize the potentials for temporary sedimentation and stream turbidity and long-term erosion. A maximum of 10 acres would be affected along the park road corridor.

No adverse impacts would be expected to result from domestic water consumption or sewage disposal in the road corridor. Potable water would continue to be derived primarily from wells. No measurable impact on groundwater has been observed, and none would be expected.

Recent measurements indicate that inadequate treatment of mine effluent is causing excess levels of suspended solids, heavy metals, and turbidity in normally clear streams in the Kantishna Hills. Continued seasonal mining in the area would affect about 164 miles of streams in the Kantishna Hills. Impacts on water quality in the Dunkle Mine area would remain minor because of the relatively small amount of mining activity in that area.

Conclusions: Water quality would not be measurably affected by visitor use or facility development. Placer mining in the Kantishna Hills area would have an adverse effect on the area's water quality, principally by adding suspended solids, heavy metals, and turbidity.

Impacts on Air Quality

Although no comprehensive air quality monitoring program is in effect, a modest monitoring program indicates that the air quality within the park is generally excellent. Air samples taken along the road during the summer of 1977 showed very low levels of sulfur dioxide and carbon monoxide, which were below the detection limits of most instrumentation. Vehicle emissions and the dust produced by vehicles are the primary sources of air pollutants along the north-side road corridor. These sources are relatively insignificant, localized, and temporary; however, they have been increasing at a significant rate. Singer and Beattie (NPS 1984) calculated that vehicles pass any given spot on the north-side road once every 9 minutes. This is up from once every 14 minutes in 1972 (Tracy and Dean 1977).

Increasing traffic by 45 percent would increase the relatively low levels of pollution. A dust palliative might be useful in suppressing dust along the road on the drier summer days, but the potential for adverse environmental impacts would first have to be evaluated. Calcium chloride, slow-cure and emulsified oils, and water all appear to have the potential for unacceptable impacts on streamwater quality and vegetation.

Forest fires (mostly of natural origin) occasionally cast a pall of smoke over much of the park for days at a time. This source of air pollution is intermittent, but it is temporarily more disruptive to the viewing experience than the presence of airborne dust. The National Park Service fire management plan to allow most natural fires to fulfill their ecological role in vegetative succession could affect Denali's class I air quality if a fire of sufficient magnitude occurred. It is expected that fires of a magnitude to affect class I air quality could occur, but the possibility is considered remote. The impact on air quality would be short-term, probably lasting no longer than one week.

Conclusion: Impacts on air quality would be insignificant and would result primarily from vehicle emissions and dust. These impacts would be localized and temporary. The potential for a class I air quality violation from natural fires appears remote, and any impacts would be minor.

Impacts on Archeological and Historic Resources

Construction of additional campsites and comfort stations at the Teklanika campground would not directly affect the Teklanika archeological district, listed on the National Register of Historic Places. The proposed developments would be outside the district boundary. All construction work would be preceded by a thorough archeological investigation of areas where construction activities would take place. Expansion of the Teklanika campground could result in increased visitation to the archeological sites and lead to indirect and secondary impacts, such as site trampling/erosion and unauthorized collecting or digging. No problems have been discovered as yet, but informal trails pass through the two key sites within the district. These paths have existed for many years but, in the opinion of the NPS Alaska regional archeologist, they have not contributed to significant resource problems.

Prehistoric sites located within a mile of the Denali road corridor would not be directly affected as a result of proposals discussed in this plan. These sites would continue to be evaluated and managed according to existing NPS policy, guidelines, and procedures, and by federal law, regulation, and policy. No other known sites would be affected by activities related to visitor use and development.

Twenty-eight structures (mostly along the road corridor) are on the List of Classified Structures for Denali National Park and Preserve, and further evaluation would determine which, if any, should be placed on the National Register. Actions proposed in the plan would affect at least two of the structures on the list--the Wonder Lake ranger station and the Pearson cabin (or Toklat patrol cabin) near the Toklat road camp. The Wonder Lake ranger station was evaluated in September 1981, and it was determined that the structure was not eligible for nomination to the National Register. Data obtained in 1981 are being analyzed to determine if structural sags and foundation problems can be corrected economically and without significantly altering the historic integrity of the resource. Under this alternative, the structure would be preserved if feasible. However, if restoration costs were prohibitive or if the building could not be restored to provide adequate service, it would be replaced.

Construction of new seasonal residences at the Toklat road camp would probably eliminate the need to use the Pearson cabin as a residence. The structure would be evaluated for its eligibility for inclusion on the National Register and would be preserved for its interpretive potential.

Several classified structures in the headquarters area would be considered for renovation, adaptive use, or possible relocation. Specific proposals for these structures would be developed during the comprehensive design phase, in consultation with appropriate NPS cultural resource specialists. Significant adverse effects would not be anticipated.

Of the three known archeological sites in the Kantishna Hills area, two would be threatened by placer mining: the site on Rainy Creek and the site on Willow Creek. The loss of either site would be significant. Placer mining on Spruce Creek could affect the Spruce Creek cabin ruins. Additional historic sites that would potentially be threatened include the Caribou Creek cabin and wagon complex, the cabin ruin near the airstrip, the Glacier Creek dragline operation, Glacier City, and the Red Top (or Banjo) mill complex. No known archeological or historic sites would be threatened in the Dunkle Mine area. Mitigating measures could include surface collection followed by testing and possible complete excavation depending on the significance of each individual site.

Conclusion: Archeological and historical resources would be threatened in the vicinity of Teklanika and at numerous sites in the the Kantishna Hills area.

Impacts on Subsistence Use

Visitor use and development in the road corridor would have no impact on subsistence use because subsistence activities are not permitted in that

part of the park (inside the original park boundary). Some potential for adverse impacts on subsistence use would result from mineral development, since that activity occurs in the new park additions where subsistence is an allowable traditional use.

Nine residents are currently eligible to engage in subsistence harvests within the Kantishna Hills. Six to eight moose and caribou are hunted by subsistence hunters each year in the study area. Residents of Kantishna and lands along the George Parks Highway also trap a variety of furbearers in the study area, including marten, lynx, wolf, wolverine, and fox; the numbers of animals trapped fluctuate annually.

Mining operations continued at existing levels would result in minor reductions in the wildlife populations on which subsistence users depend. Moose populations would be reduced more than caribou populations because placer mining would damage the riparian habitat most important to moose. Furbearer populations would also be slightly reduced, particularly the populations of species dependent on riparian habitat, such as marten and fox. Placer mining would be conducted in areas of currently undisturbed riparian habitat on Glacier, Caribou, and Moose creeks and some of their tributaries. Construction of new mining trails would improve access for subsistence hunters within the Kantishna Hills, therefore aiding in subsistence harvests.

Conclusion: Implementing this alternative would cause minor reductions in wildlife populations used by qualified subsistence users, resulting in reduced subsistence harvests. New mining trail construction could improve access for subsistence hunters. A subsistence use evaluation (810 compliance) has been accomplished in conjunction with this project and is included in appendix F.

Impacts on Park Visitors and Regional Tourism

Levels of use at Denali National Park have been increasing dramatically since the opening of the George Parks Highway in 1972, and they would be expected to continue to do so. Visitation levels in 1971 were about 44,000, in 1972 about 88,000, in 1981 about 256,500, and in 1984 about 394,000. Demand would be expected to increase to 644,000 visits per year by 1994.

Under this alternative, the majority of visitors would remain confined to the park road corridor, where their experience would be principally related to viewing wildlife and Mount McKinley. Implementation of the 1983 Development Concept Plan would promote modest improvements in the visitor experience. Opportunities for camping along the north park road would be increased by the addition of approximately 95-145 new campsites within the existing campgrounds. More sources of information would be available to visitors through personal contact and publications. Shuttle system improvements and construction of better waysides would increase visitors' options for park activities. Short loop trails at points of interest would provide additional opportunities to hike within the park. The long-term expansion planned for the Eielson Visitor Center would improve the visitors' experiences at this dramatic viewpoint.

As stated above, a significant part of the Denali experience would continue to be related to scenic and wildlife viewing. However, wildlife appear to be adversely affected by the vehicles used by visitors to reach prime wildlife viewing areas. To reduce the impacts of vehicles, the National Park Service has limited shuttle bus use along the road since 1981 (see table 4). As a result of ongoing efforts, during the period 1981-1983, when total park visits increased by 36 percent, vehicle use increased by only 29 percent, and in 1984 vehicle use declined.

Table 4: Numbers and Kinds of Vehicles Using the North Park Road Corridor, 1981-1984

	1981	1982	1983	1984
Shuttle buses	2,692	2,993	2,904	2,805
Tour buses	908	984	1,285	1,203
Private vehicles	3,773	5,852	6,214	6,245
NPS/special permit	2,155	1,443	1,858	1,702
Total	9,528	11,272	12,261	11,955

The largest increases in vehicle numbers between 1981 and 1983 were attributable to a 42 percent increase in tour buses and a 65 percent increase in private vehicles destined to campgrounds beyond Savage River. NPS vehicles and special permits decreased by 14 percent over this same period.

Allowing vehicle traffic to increase further would result in reduced opportunities for viewing wildlife, notably grizzly bear and moose. Sightings of these species decreased 32 and 72 percent, respectively, during a recent 10-year period when vehicle traffic increased by 50 percent. If traffic increased an additional 45 percent over the next 10 years, sightings could be expected to continue to decrease, and if they continued to decrease proportionally, it would no longer be possible to view moose along the road corridor.

Continued mining at existing levels in the Kantishna Hills area would reduce opportunities for viewing moose in that part of the park, also. Mining would also have an adverse effect on sportfishing in the Kantishna Hills as a result of adverse effects on fish habitat (see "Impacts on Fish"). Approximately 1,600-1,700 recreationists visited the Kantishna Hills study area in the summer of 1983. About 1,100 people visited for part of a day, and the remainder stayed for longer periods. Recreational use of the Kantishna Hills is increasing yearly, with most recreation occurring near Kantishna.

In the short run Denali would remain a primary attraction for Alaska tourism. However, if increasing numbers of visitors were someday denied access to the park complex because of limited facilities, Denali's role as a stimulus to tourism could decline in the future. Those sectors of the local and regional economies dependent upon visitors to the park's north side would continue to enjoy the revenues generated by this use;

however, new economic opportunities might be limited by this alternative. Only modest employment and income would be generated through expenditures by the federal government. However, private enterprise might respond to increasing demands and expand facilities along the George Parks Highway and on private inholdings within Kantishna.

Conclusion: There would be minor improvements in the visitor experience associated with improvement of facilities; however, implementation of this alternative would not change the pattern of recreational use in Denali to any significant degree. So long as visitor use and development was confined to the park road corridor, visitor demand could not be met without a reduction in wildlife viewing opportunities. Private enterprise would be stimulated by increasing visitor demand to provide additional accommodations and other commercial services on private lands.

Continuation of the existing levels of mining activities in the Kantishna Hills area would result in fewer opportunities for sportfishing, wildlife observation, and recreation in that portion of the park. Opportunities for observing active mining operations would be continued.

Impacts on Scenic Quality

Additional placer mining on valid claims in undeveloped areas of the Kantishna Hills would alter the natural landscape through the stripping of vegetation and soil, stockpiling of gravels and overburden, introduction of heavy mining equipment and structures, siltation of otherwise clear-flowing streams, and construction of new mining trails within placer claim boundaries. Additional ground disturbance would occur on 2,250 acres of land that is typical of the hilly areas of interior Alaska. Mining activities have previously disturbed natural scenic qualities in the southern and western portions of the area. New roads and stream siltation would extend beyond the mining claims and would degrade scenic qualities in the area for as long as 100 years following the conclusion of placer mining. These effects would not be visible from Wonder Lake or any other major visitor use area.

Placer mining in the Dunkle Mine area would cause stream modifications and the stockpiling of gravels. The ordinarily clear-flowing waters of the creek would be temporarily clouded by mining-induced sediments. Temporary structures for residences and equipment storage would be located along the lower portion of the creek. This mining activity would occur in the steep-sided Colorado Creek drainage and not be visible from other locations within the area.

Conclusion: Impacts of placer mining would increase, but they would not be visible to most park visitors.

Impacts on Wilderness Values

Current wilderness boundaries exclude a 300-foot-wide corridor that extends for 150 feet on either side of the park road. All existing and proposed visitor development lies within this corridor. No direct impacts

on wilderness values would be anticipated. However, backcountry users would be abruptly aware of the "lack of wilderness" associated with the corridor on their return from the backcountry.

In the Kantishna Hills area approximately 70 percent of the study area is currently suitable for designation as wilderness, as provided for in the Wilderness Act of 1964. These lands offer opportunities for solitude and recreation in undisturbed environments. Because private lands are not eligible for designation, the 680 acres of patented mining claims in the study area are not eligible for designation. Some federal lands in the study area are unsuitable for wilderness designation because of the presence of unpatented mining claims, permanent roads, structures, and other man-made effects. Some areas beyond claims and roads are also unsuitable for wilderness designation because of the visual intrusions and noise of mining activities and traffic.

Placer mining at existing levels would result in the development of mining trails in the study area and disturbance of about 2,250 additional acres. Existing levels of lode mining would result in negligible disturbance. Disturbances resulting from placer and lode mining would occur within the areas already unsuitable for wilderness designation.

Nearly all of the Dunkle Mine study area is in a natural, undisturbed condition at the present time. The entire study area is in federal ownership, although there are unpatented mining claims within the study area. Lands in the southwestern portion of the study area, along a mining access road, and lands encumbered by unpatented mining claims are not suitable for designation as wilderness. Approximately 85 percent of the study area is currently suitable for wilderness designation and offers opportunities for solitude and recreation in an undisturbed environment. Approximately 9 acres would be disturbed by placer gold mining. With the commencement of placer mining on lower Colorado Creek, this portion of the study area would remain unsuitable for wilderness designation. It is assumed that the unpatented lode claims would be determined to be invalid and that these claims would be voided. The lands occupied by these claims would subsequently become suitable for wilderness designation.

Conclusion: No significant impacts on wilderness values would result from visitor use and development activities along the Denali road corridor or from mining activities in the Kantishna Hills and Dunkle Mine areas. Lands affected by mining activities are unsuitable for wilderness designation because they are not in full federal ownership. Approximately 70 percent of the Kantishna Hills area and 85 percent of the Dunkle Mine area would remain suitable for wilderness designation.

Impacts on Local Economy and Employment

Present NPS employees account for 28 permanent (year-round) and 117 seasonal positions. The concessioner employs 5 permanent and 235 seasonal employees.

Businesses outside the park boundary near the Riley Creek complex basically consist of lodging, campgrounds, rafting, guides, trail rides, restaurants, and related support services. Such businesses could be expected to increase as part of the general growth pattern of the area.

Existing levels of mining activity in the Kantishna Hills study area would allow for the continued seasonal employment in the Kantishna area of 100-120 people engaged in placer mining operations, 5-17 people in small lode mining operations, and approximately 15 people in the operation of lodges and food services. Additional employment would be generated by mining outside the Kantishna area in transportation services, retail sales, manufacturing, mineral processing, and government.

Conclusion: Demand for visitor services would be expected to increase over the next 10 years. This would result in continued employment opportunities with the concessioner and outside of the park in the local economy.

ALTERNATIVE B: DEVELOP A VISITOR SERVICE AND ACTIVITY CENTER ON THE SOUTH SIDE AND REDUCE VEHICLE USE AND CAMPING ALONG THE NORTH ROAD

Introduction

This section describes the impacts of alternative B that would differ from the impacts of alternative A. The impacts of resource management actions, mineral development in the Kantishna Hills and Dunkle Mine areas, and acquisition of the wolf townships would be identical to the impacts described for alternative A, and they are not repeated in this section. The impacts described in this section would result from decreases in camping and vehicle use on the north side of Denali and from new development and use on the south side.

The visitor use and facilities proposed for the south side of Denali would primarily occur on state lands (see the south-side proposals for visitor use in the "General Management Plan"). The activities that would occur within Denali National Park over the life of this plan would be overflights, fixed-wing aircraft or helicopter landings at designated sites, overnight stays in mountain huts, backcountry hiking, and cross-country skiing, dogsledding, and snowmobiling during the winter. Related development would include up to four mountain huts similar to the Sheldon hut adjacent to the Ruth Amphitheater. This facility offers overnight sleeping accommodations and pit toilets; no food service is available. All construction materials were flown in. Proposed mountain huts in the future might accommodate up to 20 persons. The locations have not been determined, but they might include the vicinities of the drainages of Slide and Alder creeks. The maximum disturbed areas related to mountain huts would be about $\frac{1}{2}$ acre apiece, or 2 acres total. Designated trails might also be developed in the national park. The alignments would depend upon visitor use patterns and whether or not resource degradation was occurring at various locations. Visitor access would be principally by fixed-wing aircraft and possibly by helicopter. Overflights occur now at an estimated rate of five or fewer a day. Air traffic access routes would

be designated. At peak use periods the number of overflights might increase to 10 or 15 per day.

Impacts on Moose, Caribou, Bear, Dall Sheep, and Wolf

As described for alternative A, moose and bear appear to be the wildlife species most affected by traffic levels along the north road corridor; these species have generally avoided vehicles and visitors, although some individuals have become habituated. Under this alternative, vehicle traffic would initially be held to plus or minus 15 percent of the 1984 levels to help to avoid further increases in avoidance behavior by wildlife. The eventual elimination of vehicle camping between Savage River and Wonder Lake would reduce total vehicle traffic by about 23 percent. Allowable increases in shuttle bus service would reduce this advantage to about 17 percent at the end of 10 years. An overall 17 percent reduction in road traffic might result in a measurable increase in observations of moose and bear in the corridor. Extending the shuttle bus season would have additional beneficial effects by further decreasing avoidance behavior by wildlife. Singer and Beattie (NPS 1984) noted a disproportionate increase in wildlife's avoidance of the road corridor when vehicle restrictions were eliminated after the summer season. In recent years the number of private vehicles using the road following the relaxation of vehicle restrictions has averaged 530 vehicles per season; however, in 1984 there were 1,100 vehicles on the road over the Labor Day weekend alone. Passengers leaving vehicles contributed significantly to adverse wildlife reactions. Extending the shuttle bus season would eliminate these activities and result in less disturbance to wildlife.

Elimination of camping facilities at Sanctuary, Teklanika, and Igloo would result in approximately 46 acres of wildlife habitat eventually returning to natural conditions. Recovered habitat would predominantly be within the moist tundra vegetation type.

Fewer concentrations of moose, caribou, sheep, bear, or wolf occur on the south side of the national park, primarily because of the rugged topography of the area. Most new development on the south side of the national park would occur at high-elevation sites that do not provide suitable habitat for large mammals. Backcountry users, who would be expected to number fewer than 200 per day, would be spread out over an area greater than 400 square miles, so their effect would be expected to be minor. Fixed-wing aircraft and helicopters would continue to land on glaciers and other designated sites. Glacier landings would generally remain confined to areas above the ice fall zones. Impacts on wildlife would be expected to be minimal.

Overall impacts on specific species are summarized below:

Moose: An overall 17 percent reduction in vehicle traffic on the north road corridor would decrease avoidance behavior and might result in an increase in the number of moose visible from the road. Removal of the campgrounds and other development would result in the restoration of 46 acres of habitat on the north side of Denali. Moose concentrations in the vicinity of the proposed south-side

development occur outside the park. For example, relatively large numbers of moose are found in the Tokositna and Chulitna river drainages. The principal impact on moose populations would be related to infrequent encounters with backcountry users and disturbance associated with overflights. Neither impact would be expected to significantly affect moose populations.

Caribou: The reduction in traffic on the north park road would decrease impacts on caribou behavior. The removal of the three campgrounds and restoration of 46 acres of vegetation would make more habitat available to caribou. Road construction would result in removal of vegetation and visual barriers that normally inhibit caribou in crossing roadways. Road construction and facility development along the park road would result in short-term impacts such as avoiding the area due to equipment noise. Road construction would be scheduled to avoid operation between May and early June, when wildlife travel through the area in large numbers.

Inclusion of the wolf townships would protect winter range of the Denali caribou herd from incompatible development and eliminate sport hunting.

Caribou do not occur on the south side of Denali in any significant numbers. A small population uses an area approximately 3 to 5 miles east of Curry Ridge on state park lands, where it would not be affected by development or use of the proposed visitor facilities.

Bears: Impacts under alternative B would differ from those described for alternative A in two respects. First, elimination of three campgrounds along the north park road would reduce the likelihood of human/bear interaction, artificial food sources, and potential reduction of bears, resulting in better bear management. Bear/human interactions at the campgrounds proposed for removal amounted to 5 incidents in 1983 and 8 incidents in 1984. Second, a net restoration of 46 acres on the north side would provide more natural habitat along the road corridor.

On the south side, relatively little bear habitat occurs within park boundaries near the Ruth Glacier. Both black bear and brown bear habitat are found on state park lands. Approximately 25 acres would be utilized for access and development, which is insignificant compared to the total available. Frequent bear encounters have occurred in state park campgrounds, and future design efforts will mitigate this potential problem by actions such as using bearproof garbage containers and not locating facilities in areas of high bear concentrations.

Sheep: Impacts would be minor. Sheep do not appear to be significantly affected by existing levels of traffic on the north park road, and the proposed reduction in traffic levels would not be expected to affect sheep populations or behavior. Sheep are not found on the south side of Denali, so no impacts would result from south-side developments.

Wolves: No known wolf packs exist within the southern park boundaries. However, it is likely that some pack territory overlaps some areas of proposed visitor use. Development on state park lands would not be expected to directly influence wolf populations in the area. Additional impacts on wolf populations would be identical to alternative A.

Swans: Trumpeter swans frequent floodplain meadows and small ponds on state park lands on the south side of Denali. The U.S. Fish and Wildlife Service has a proposal for a trumpeter swan reserve for this area (see Regional Influences map). The proposed south-side development is over 20 miles away, and there would be no impact from backcountry use in the national park.

Conclusion: Impacts on wildlife along the north road corridor would be expected to decrease as a result of a 17 percent reduction in traffic and the restoration of 46 acres of wildlife habitat. Wildlife populations on the south side of Denali National Park would not be expected to be significantly affected.

Impacts on Vegetation

On the north side of the park, the reconstruction of the hotel would affect 21 acres of the previously impacted hotel area, and construction of a visitor center would result in disturbance of 24 acres of land. In all, new construction would disturb 35 fewer acres than would be affected under alternative A, the difference resulting from no new campsites. Removal of some facilities would allow restoration of natural conditions on about 46 acres. This would be 25 acres more than would be restored under alternative A, the difference resulting from the removal of campgrounds at Teklanika, Igloo, and Sanctuary.

On the south side of Denali, most disturbance of vegetation would occur on state park land. Construction of an access road to the proposed visitor service and activity center would affect approximately 9 to 11 acres of vegetation and soils. The affected vegetation would include spruce-hardwood forest below 2,000 feet and tundra/upland thicket above that elevation.

The construction and use of an activity and service center, with access, parking, camping, lodging, interpretive, and administrative facilities, would severely disturb moist tundra and upland thickets on Curry Ridge, at about the 2,500-foot elevation. Although accurate figures are difficult to project at this early stage in the planning, experience with visitor complexes in other park areas with a comparable range of visitor services suggests that the south-side activity center might affect as much as 20 acres of land on Curry Ridge.

The development on Curry Ridge could be supplemented by additional facilities (campgrounds, hiking trails, interpretive pull-offs) along the George Parks Highway. Impacts along the highway would be less severe because the highway corridor passes through the more resilient spruce-hardwood vegetation type that has already been disturbed by road construction.

Development of four mountain huts inside the national park would not impact an area greater than 2 acres (0.5 acre each). Specific sites have not been proposed, but the huts would probably be located in areas affording the best views, which are principally the high-elevation rock fields and tundra.

Probable sites for fixed-wing and helicopter landings would include smooth glaciated areas, such as occur above the ice fall on Ruth Glacier, and nonvegetated gravel bars.

Trail development in the southern part of the park would affect about 3 acres of mixed vegetation types. Trail locations have not been proposed but are currently being studied. The overall effect would not be expected to be any greater than that which would occur with normal backcountry use.

No threatened or endangered plant species are known to occur within the southern end of the park (see appendix J). Therefore, no impact would be anticipated. Areas proposed for trail or other development would be evaluated for the presence of previously unknown threatened or endangered species, and if discovered, plans would be changed to avoid these sensitive areas.

Conclusion: Approximately 24 acres of mixed vegetation types would be disturbed along the north road corridor, and 46 acres would be restored, for a net gain of 22 acres allowed to return to natural conditions. The primary impact on the south side of Denali would occur within Denali State Park, where an estimated 30 acres would be disturbed by construction of the visitor center and access. Facility development within Denali National Park would not affect more than 2 acres for huts plus an additional 3 acres for trail development.

Impacts on Water Quality

Overall impacts on water quality along the north-side road corridor are currently negligible, and they would be reduced by a 17 percent decrease in vehicle trips over the life of the plan.

Purchase of surface rights in the Kantishna Hills and Dunkle Mine areas would have no appreciable effect on water quality because placer mining would continue.

Development of visitor facilities on the south side of Denali would occur primarily on Curry Ridge, where the major drainages include the Susitna River and Troublesome Creek. Road access to Curry Ridge directly off the George Parks Highway would not affect either watercourse or the Chulitna River on the other side of the highway.

Visitor facilities on the south side of Denali National Park would be confined to trails and mountain huts. Foot trails would occasionally cross streams and creeks or traverse floodplains, but the impact on water quality would be insignificant. Mountain hut development would occur on higher, well-drained sites affording scenic vistas, where it would not

affect water quality. Sites for pit toilets would be located in well-drained areas.

Conclusion: No significant effects on water quality would be anticipated as a result of the proposed south-side visitor use and development.

Impacts on Air Quality

Elimination of vehicle camping between Savage River and Wonder Lake would initially reduce vehicle sources of emissions and road dust by about 23 percent. Subsequent incremental increases in shuttle bus service would reduce this advantage to about 17 percent at the end of 10 years.

Air quality along the George Parks Highway in the vicinity of the south-side development would decrease as a result of increased auto emissions and fossil fuels burned for heating facilities. The level of increase is difficult to estimate, but in terms of numbers of vehicles and facilities it may be assumed to be equivalent to north-side levels. Aircraft and helicopter flights into the south side of Denali National Park would be a negligible source of exhaust emissions.

Conclusion: North-side road corridor emissions and road dust would be expected to decrease by 17 percent because of an overall 17 percent reduction in traffic. Overall, air quality impacts of the south-side development would be assumed to be equivalent to north-side levels. Pollution levels on both the north and south sides of the park would be insignificant and would not exceed the limitations established for designated class I areas.

Impacts on Archeological and Historic Resources

The removal of campgrounds between Savage River and Wonder Lake might result in fewer human impacts on the cultural resources that are adjacent to the existing campgrounds. No sites are known to exist within the area proposed for development on Curry Ridge, and none are known on the south side of Denali National Park. Therefore, no impacts on archeological resources would be expected to result from the south-side development proposal. Site-specific planning for Denali State Park and the south side of Denali National Park would be accomplished in conjunction with archeological surveys of the proposed development sites. Should archeological evidence be discovered, appropriate mitigating measures would be applied.

Conclusion: No known cultural resources would be affected by north-side or south-side proposals.

Impacts on Subsistence Use

Subsistence use along the north-side road corridor is nonexistent and would not change as a result of reducing the north-side developments.

There is no subsistence use in the vicinity of Denali State Park (Curry Ridge area). Subsistence use on the south side of Denali National Park occurs primarily from Cantwell to the west fork of the Chulitna and consists of hunting and trapping. These types and levels of use would not be altered.

Conclusion: Subsistence use would not be affected.

Impacts on Park Visitors and Regional Tourism

The primary effect of eliminating camping between Savage River and Wonder Lake would be to eliminate opportunities for camping at 62 drive-in and two group sites. These sites would not be removed until replacement facilities were developed on the south side of Denali. Nevertheless repeat visitors desiring to camp again at these same campgrounds would be disappointed that they were closed. Even though campgrounds would be removed, the numbers of visitors who would be able to use the park to see wildlife would actually increase, since bus service would be increased by 20 percent. The chances for visitors to observe wildlife would increase as a result of an overall 17 percent reduction in vehicle traffic and a decrease in the number of visitors who could freely leave their vehicles, causing avoidance reactions by wildlife.

Implementation of a south-side service and activity center would have major effects on the visitor experience, the patterns of use, and the ability to accommodate visitors at Denali. Visitors preferring day activities and programs near a major visitor complex or sightseeing flights, skiing, river rafting, camping, or hiking would find greatly expanded opportunities for these pursuits on the south side. Some visitors would likely limit their stay at Denali to this area. Other visitors seeking the experience of the vast open tundra and wildlife display on the north side would continue to use the park road corridor.

A primary objective of developing the south side would be to add a new dimension to the visitor experience in Denali. This would be accomplished by focusing use upon the McKinley massif and the glaciers. In contrast to the wildlife-viewing experience available on the north side, the south side would offer a mountain experience so that visitors could gain a greater appreciation of this component of the park.

It is anticipated that with an expanded visitor use season, 300,000 to 400,000 visitors a year--as many as now visit the north side--might utilize facilities on the south side of Denali. Although the major facilities at the state park would attract and retain a large number of tour-related visitors, it is expected that up to 200 visitors per day might enter Denali National Park. These visitors would be spread out over an area in excess of 400 square miles on the south side.

No adverse effect on climbing activities would be expected because most of the activities are staged out of a base camp on the Kahiltna Glacier and therefore would remain isolated from the increased visitor activity centered on the Ruth Glacier. With increased access and accommodations provided on the south side of the park, climbing areas such as the Tokosha Mountains and Ruth Glacier would gain in popularity.

Backcountry users might be affected by overflights in fixed-wing aircraft and helicopters. Backcountry users would be monitored periodically to detect any significant degradation of their experience. Should a significant decrease be observed, then overflights and landings would be regulated.

Conclusion: Levels of use along the north-side of Denali would remain about the same, although there would be some reduction in camping within the park. Visitor use on the south side of Denali would be expected to be as high as use on the north side. Overall, Denali's recreational opportunities would be increased by south-side developments.

Impacts on Scenic Quality

Facility developments on Curry Ridge would disrupt the natural scene of the ridge. The orientation of the facilities, and the visitors view, would be towards Mount McKinley and the Alaska Range.

Conclusion: Facility development would have no impact on the scenic quality of the park. It would enhance the visitor opportunity to view the Alaska Range.

Impacts on Wilderness Values

The Ruth Glacier would not be suitable for wilderness designation because of its intended use as the focus for visitor activities on the south side of Denali National Park.

Deletion of campgrounds along the north road corridor would enhance the values of the adjacent wilderness by returning approximately 49 acres to natural conditions.

Impacts on Local Economy and Employment

The preferred alternative would enhance Denali's role as a major attraction of Alaskan tourism. The local economy would continue to benefit from the current level of visitor use on the north side. In addition, new opportunities for economic benefit would be created by attracting additional visitors to the south side and by extending the season of use beyond the peak summer months.

Implementation of a south-side service and activity center would be expected to benefit the local economy and perhaps the regional economy in a variety of tangible ways. Employment opportunities and additional income would be realized over the lifetime of the construction projects. In the longer run employment and income would also be expanded by opportunities to supply additional visitors with necessary services. It is anticipated that many of the facilities and support services would be provided by private enterprise. It is therefore expected that the preferred alternative would create new opportunities for local entrepreneurs.

AFFECTED ENVIRONMENT

NATURAL ENVIRONMENT

Physiography and Geology

The Denali area is dominated by Mount McKinley and an east-west trending line of towering mountains known as the Alaska Range. The Alaska Range forms the northernmost portion of the Pacific Mountain System, and it is one of the great mountain uplifts in North America, rising above 500- to 2,000-foot-elevation lowlands to the pinnacle of Mount McKinley at 20,320 feet.

A series of two and sometimes three parallel rugged and glaciated mountain ridges compose the Alaska Range. In the vicinity of Mount McKinley, numerous peaks stand at elevations of 10,000 to 13,000 feet. Mount Foraker, 14½ miles southwest of McKinley, is the second highest peak, attaining an altitude of 17,400 feet. Nearby Mount Hunter, third highest, is 14,573 feet. The range is perpetually snowclad above approximately 7,000 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. The larger glaciers range between 35 and 45 miles in length. These include the Kahiltna (the largest), Ruth Eldridge, Tokositna, and Yentna. The largest glacier on the north side is the 34-mile-long Muldrow.

The northern foothills of the Alaska Range consist of a series of east-trending ridges, starting with the Kantishna Hills and running eastward. Summit altitudes range generally between 2,000 and 4,500 feet. The foothills vary from 3 to 7 miles in width and from 5 to 20 miles in length. They are separated by broad flat valleys of glacial origin which range from 2 to 10 miles in width. Beyond the northern foothills lies a broad region of lowlands drained by the Tanana and the Kuskokwim rivers.

The foothills that line the southern edge of the Alaska Range are generally quite steep and are cut through by large south-flowing glaciers. Southeast of the Alaska Range, across Broad Pass, are the Talkeetna Mountains. Curry Ridge, which lies along the western edge of these mountains, trends in a northeasterly direction, parallel to and between the Chulitna and Susitna rivers. It is a gently rounded ridge marked by past glacial activity, and it is generally 3,000 feet in elevation.

To the south of the Alaska Range and west of the Talkeetna Mountains, the broad Susitna River lowlands stretch out in a north-south direction. Both the Susitna and the Yentna rivers drain this area where elevations are less than 500 feet.

In terms of geology, the Denali area is one of the most interesting and important in North America. It encompasses a region of diverse igneous, metamorphic, and sedimentary rocks ranging in age from Recent to units which may be as old as Precambrian. Wahrhaftig (Geological Survey 1965)

describes the internal structure of the Alaska Range as a synclinal complex with Cretaceous rocks in its center and Paleozoic rocks on its flanks. Longitudinal faults, the principal one being the Denali fault, trend approximately parallel to the trend of the range. Fault traces are marked by linear valleys, low passes, scarps, and sag ponds. The Denali fault system is a major zone of fracturing which represents one of the most fundamental geologic features on the continent.

South-central Alaska is one of the most seismically active areas in North America. This region is part of a larger seismically active arc which follows the coastline of the North Pacific and is known generally as the Ring of Fire. The seismic activity is caused by the collision of two tectonic plates. The Pacific plate is colliding with the continental plate along the northern Pacific coastline. Numerous small faults which are part of the Denali fault complex occur on the south side of the Alaska Range. While these small faults themselves may not cause major earthquake activity, activity in other areas could trigger subsidiary movements within the area. In general, the potential for significant damage as a result of earthquakes decreases from Anchorage toward the interior.

Metamorphic rocks, which include schist, underlie much of the northern foothill ridges and appear as isolated hills jutting above the unconsolidated deposits in the Tanana-Kuskokwim lowlands. A Tertiary rock sequence known as the Cantwell formation contains abundant volcanic rocks. The upper portion of the Cantwell formation is predominantly volcanic flows and tuffs. A thick conglomerate cover near the top of the Tertiary rock section forms ridges where dips are steeper than 20 degrees and broad dissected plateaus where the conglomerate is flat-lying.

Rocks in the central and southern portions of the park are characterized by a sequence of predominantly dark gray argillite, slate, graywacke, and a few intervals of limestone.

Tertiary sedimentary and volcanic rocks occupy lowlands north of the range and also form east-west trending ridges along the northern flank of the mountains. Much of the present topography within the region probably resulted from erosion and removal of the relatively weaker Tertiary rocks.

Granitic plutons (igneous rocks) support groups of high mountains that have glacier-carved canyons and cirque headwalls rising almost vertically to heights of 5,000 feet. The most rugged and scenically striking landforms in the region are eroded granitic rocks. Notable examples include Mount McKinley, Mount Foraker, the Cathedral Spires, and the Great Gorge of the Ruth Glacier. The granitic rocks to the south of the fault system are composed of quartz monzonite and granite between 55 and 60 millions years old, whereas rocks to the north of the system are chiefly granodiorite 38 million years old.

Four periods of glaciation are recognized in the Denali region. On the north side of the Alaska Range beyond the existing glaciers, morainal and glacial outwash deposits extend into the foothills belt and cover large

areas of bedrock. Except for some valleys, the foothills section was never glaciated.

South of the Alaska Range, the Cook Inlet-Susitna lowlands are covered by ground moraines, drumlin fields, eskers, and glacial outwash plains. Nearer to the mountains are broad flat valleys with sides that show a glacial trim line. A few small rock-floored lakes occur throughout this area. The largest is Chelatna Lake, which is 7 miles long. Bedrock beneath the lowlands is mainly poorly consolidated Tertiary rocks which are flat-lying or only slightly deformed. Mesozoic metamorphic and granitic rocks occur as isolated mountains near the center of the lowland.

Mineral Resources and Mining

The complex sequence of tectonic, volcanic, and metamorphic activities that has influenced the Denali region provides significant possibilities for mineral deposits. While not enough is known to link the geology of the area with specific levels of mineralization, recent studies have revealed the occurrence of mineral resources within portions of the 1980 park boundaries (NPS 1981 and 1983a).

Regional metal mining and prospecting during the early part of this century were dominated by placer gold mining. Other metals were mined in association with gold to a limited extent in the Kantishna area. From the early 1970s to present time, a renewed interest in placer mining has been evidenced within the region, particularly within the Kantishna mining district. This area encompasses an elongated 40-mile, northeast-trending mineralized belt known for silver and gold polysulfide crosscutting veins, placer gold deposits, and also antimony and base metal lodes. According to the probabilistic resource assessment method, the average aggregate value of recoverable minerals for all deposit types in the Kantishna Hills is estimated to be \$781 million (ADNR, DGGS 1983, Salisbury and Dietz 1983). Important mineral deposits are gold, silver, antimony, lead, and zinc.

The Dunkle Mine township on the east side of the park is part of the Chulitna-Yentna mining district, which is a significant base and precious metal province to the south of the Alaska Range. Metals from the area include copper, arsenic, gold, silver, tin, molybdenum, lead, and zinc. No metal production has occurred in the Dunkle Mine township to date, although the nearby Golden Zone Mine has produced gold, copper, and silver. The abandoned Dunkle Mine, which is within the Dunkle Mine township, produced 64,000 tons of coal from underground mining operations during the period from 1940 until 1954. Coal reserves of up to eight million tons are estimated in the Costello, Colorado, and Camp creek basins.

North of the Alaska Range the park boundary encompasses the westernmost portion of the Nenana coal field. Production began in the Healy area in 1920 and today the Usibelli Mine produces over 700,000 tons annually. The Healy area and points farther to the east overlie the major segments of the coal field. Coal was once mined on a small scale near Riley Creek to supply park facilities.

No production of oil or gas has occurred within the park, although several outlying areas contain sedimentary basins and have, in the past, been identified as possible petroleum provinces. Nonmetallic materials including sand, gravel, limestone, perlite, clay, haydite, shale, and argillite occur throughout the region, but the only extraction has been for gravel, which was mined during the construction of the railroad and highway. Deposits of limestone suitable for making cement occur near Cantwell both in and out of the park. Clay, shale, and argillite (components of insulating mineral wool) occur in the Windy Creek/Cantwell area.

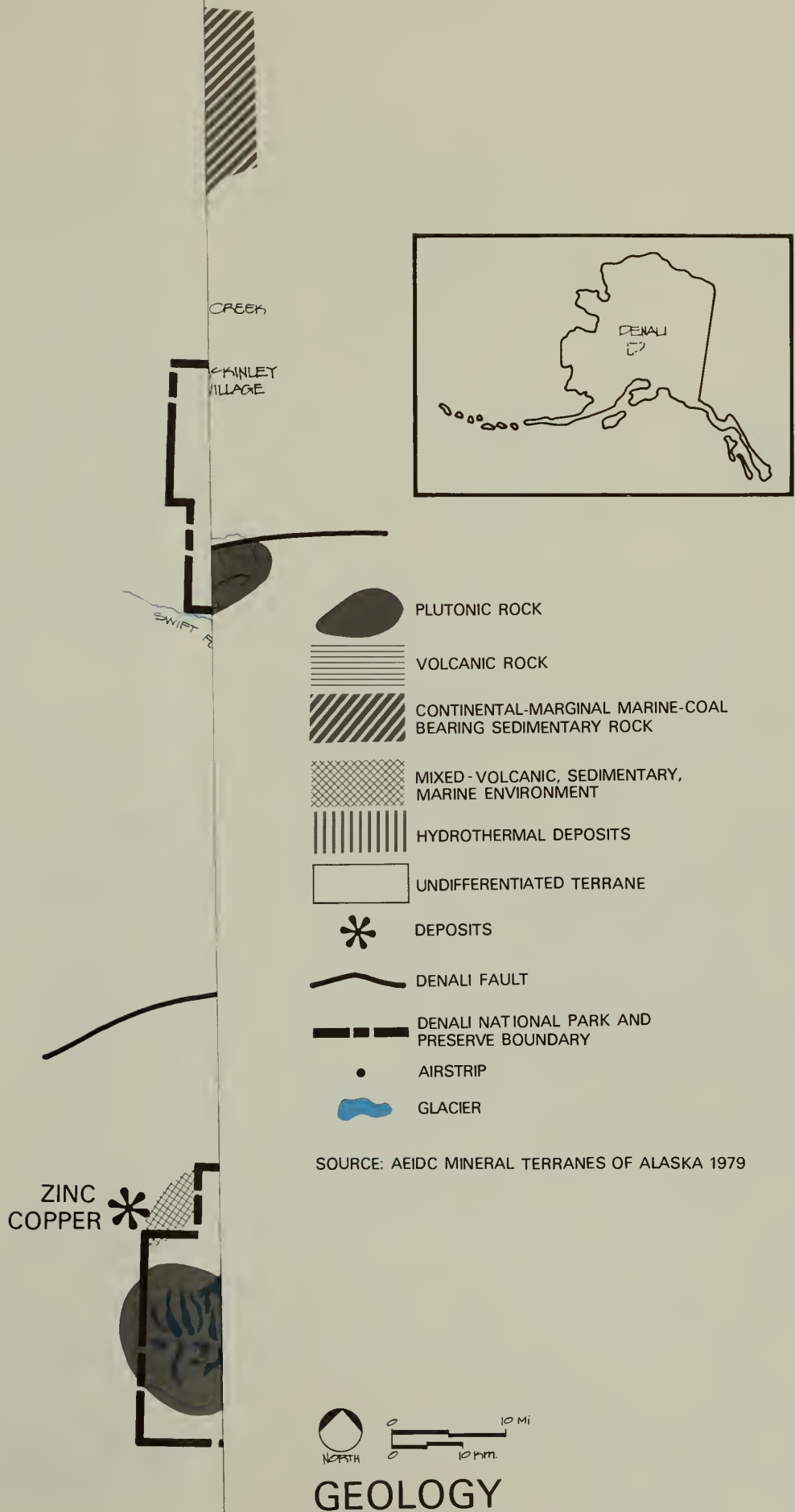
Hydrology

Flowing from all major glaciers within the park are large braided streams whose waters are milky with glacial silt. Below various glaciers these rivers cut intermingling channels, sometimes extending over two miles wide. The most important rivers that have their headwaters in this portion of the Alaska Range are the Foraker, McKinley, Toklat, Teklanika, Savage, Chulitna, Kahiltna, and Yentna. Clear streams occur sporadically throughout the area, oftentimes as tributaries to major glacial streams or rivers. The sources of these streams are primarily snowmelt and precipitation.

Mean annual runoff is from 1 to 2 cubic feet per second per square mile in the lower elevations of the park. Suspended sediment concentrations vary from 500 to 2,000 milligrams per liter for glacial streams and are considerably less for nonglacial streams. Most of the sediment load is carried during the summer months, and very little is carried during the winter. Except in the Kantishna Hills, nearly all surface water is potable, although iron is sometimes present in undesirable quantities. However, boiling of surface water is necessary due to the presence of Giardia. Summer flooding is common on the major streams.

Water for the various developed areas along the park road is generally taken from surface sources, but the park is gradually shifting to groundwater (well) sources to meet current standards. Five wells were drilled in 1981 in the vicinities of the Wonder Lake, Igloo, Sanctuary, and Savage River campgrounds and the Wonder Lake ranger station. Wells have generally been successful only in the unfrozen alluvium associated with glacial rivers. Attempts to obtain deep groundwater at the park headquarters and at the Riley Creek/hotel area have been unsuccessful because permafrost inhibits the subsurface flow of water. Thus, surface water and shallow groundwater sources will probably continue to provide primary water supplies to developed areas within the park.

Because of glacial gouging and moraine formation, many large, deep lakes would be expected in glaciated country such as this. However, within the Denali region there are only two such lakes. Wonder Lake is within the western boundary of former Mount McKinley National Park and is approximately 2.5 miles long. Chelatna Lake is found just outside the expanded park's southern boundary and is 7 miles in length. Numerous small lakes are found scattered throughout the northwest portion of the park. The largest lake in this area is Lake Minchumina, just outside the park boundary.



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Climate

Denali National Park and Preserve is located in two of the major climatic zones of Alaska. The Alaska Range plays a major role in influencing climate by blocking much of the moisture that sweeps inland from the Pacific Ocean and the Gulf of Alaska. A continental climate is formed to the north of the range, while a transitional climate is formed to the south. The north is characterized by less precipitation and greater fluctuations in temperature (hotter in summer and much colder in winter) than the area to the south.

Annual temperature extremes may range from 90 degrees to -52 degrees Fahrenheit. The mean maximum temperatures at headquarters at the eastern entrance to the park are 12.8 degrees for January and 65.9 degrees for July. The mean minimum temperatures for the same months at this location are -5.2 degrees and 43.8 degrees, respectively. The average 24-hour temperature spread during the summer months, June through August, is only 22 degrees. Wider daily temperature ranges occur during the winter months, with a record of 63 degrees. Temperatures decrease with increases in elevation. Chill factors in excess of -148 degrees have been experienced on the Mount McKinley summit.

Table 5. Climatological Data

<u>Location</u>	<u>Temperature (°F)</u>			<u>Precipitation (in.)</u>		<u>Wind (knots)</u>	
	<u>Mean High/Low</u>		<u>Extreme</u>	<u>Snow</u>	<u>Total</u>	<u>Average</u>	<u>Extreme</u>
	<u>Summer</u>	<u>Winter</u>					
Willow	40/70	-10/33	-55/90	--	24	--	--
Skwenta	44/69	-4/40	-50/90	119	29	--	--
Talkeetna	44/68	0/40	-48/91	102	29	N 3.7	NE 33
Summit	40/60	-5/30	-45/89	119	20	NE 8.4	E 42
Park headquarters	41/64	-1/18	--	76	15	--	55
Healy	44/66	-3/26	-46/90	66	17	SE	--
Clear	45/71	-28/14	-42/96	61	13	--	--
Nenana	43/70	-17/12	-69/98	48	12	E 5.3	--

Precipitation is greater on the south side of the Alaska Range than on the north side. Precipitation is greater in summer than in winter for the entire region. Rainfall occurs on an average of 21 days during June, July, and August at the Denali and Lake Minchumina recording stations, on 45 days at Summit, and on 36 days at Talkeetna. The average annual precipitation at park headquarters is slightly in excess of 15 inches; snowfall there is 75.7 inches.

At higher elevations in the Alaska Range the total precipitation exceeds 80 inches in some locations and snowfall exceeds 400 inches. Normal snowpack throughout the region averages between 20 and 40 inches.

Sudden showers and thunderstorms occasionally develop to the north of the Alaska Range. Flash floods occur throughout the region.

Calm days are the rule in summer. Turbulance is more characteristic of fall and winter. The maximum wind velocity recorded at headquarters is 60 miles per hour, but winds of this magnitude are rare. Winds in excess of 100 miles per hour are not uncommon on Mount McKinley's summit.

Mount McKinley's visibility (and frequent invisibility) depends on the weather. North-trending winds commonly pile up clouds on the mountain's south flank and then surround it. Because of its sheer immensity and height, the mountain mass tends to generate its own weather and cloud formation, even on days that may otherwise be clear. Many visitors to the area go away disappointed, having never glimpsed the mountain itself. A rough visibility index indicates that during the three summer months the peak is totally obscured about 30 days, visible 4 hours or less about 30 days, and visible more than 4 hours another 30 days. It is a rarity when the peak is visible all or most of any one day. It seems that the peak is hidden well over half of the time, and it is often hidden for many successive days.

Weather is also an important factor in other forms of visitor use. The peak visitor season is between June and mid-September. Cross-country hiking may not be practical until early June, and snow may close the park road by mid-September. Winters are extremely cold, particularly north of the Alaska Range, although snow depths there rarely exceed 3 feet. Greater snow depths and somewhat milder winter temperatures to the south of the range are more conducive to a broader range of winter visitor use. Spring provides the best opportunity for cross-country skiing, snowshoeing, and dogmushing. During the summer up to 18 hours of sunlight supply ample opportunity to enjoy the park, although mosquitoes (most abundant in June and July) are a constant annoyance. Early fall is one of the best seasons to visit Denali because there is a better chance of fair weather, the landscape is brilliant with color, and the animals begin to show their winter coats.

Soils

Soil types within the area vary as a result of parent material, topography, and vegetative cover. Soils in the park can be generally classified as mountain and tundra soils, bog soils, and forest soils. Mountain or tundra soils form directly from bedrock and the slow accumulation of organic matter. The sparseness of these soils is attributable to cold weather extremes and steepness of slopes. Bog soils, or histosols, consist of clay and glacial moraine and are poorly drained. This causes, over time, the accumulation of plant material and often peat layers. Forested areas within the park typically have soils of sandy and silty clay with humus layers supporting mosses and lichens.

Permafrost (perennially frozen ground) is intermittently present throughout the lowlands north of the Alaska Range and is continuous at higher elevations both north and south of the range. Detailed studies of

the extent of permafrost in lowland areas to the south of the range have not been made, but wells, roadcuts, and other past development within the region have encountered permafrost at varying depths beneath the surface. Exact permafrost thicknesses have not been documented, but thicknesses of up to 100 feet have been recorded near the eastern entrance to the park.

Permafrost essentially consists of soil, rock, or other earth materials at a temperature of 32 degrees Fahrenheit or colder for two or more consecutive years. A delicate heat balance exists between the permafrost and the active layer above it. Thus, changes in the vegetative mat, snow, or other characteristics of the upper layer can significantly alter the thermal regime with resultant changes at ground level. For example, removal of vegetation increases the release of heat from the ground in the winter and prevents heat absorption into the ground in summer, and this can cause the melting of permafrost. In addition, an increase in solifluction, or soil movement, is possible. These phenomena can cause heaving, sagging, soil slumping, and erosion at the surface during successive periods of freeze and thaw in the active layer. The result can be highly detrimental to buried cables and utility lines, paved surfaces, roadbed foundations, buildings, and other developments.

Permafrost also poses problems for the disposal of liquid and solid waste. Decay rates in frozen ground are extremely slow. Frozen ground is also impermeable to subsurface flow of fluids because ice fills all rock or soil pore spaces.

Vegetation

Vegetation within the park is similar to that found throughout the interior of Alaska. The five major vegetation associations within the park and preserve are low brush-bog, bottomland spruce-poplar forest, upland spruce-hardwood forest, moist tundra, and alpine tundra.

Bogs are found within the river drainages and around the permanent water bodies, often in association with black spruce. A broad lowland area of bogs extends south and east of Lake Minchumina, along old river terraces, outwash plains, and sloughs.

Interspersed within this lowland area, on relatively stable soils farther back from the drainages, lie areas of bottomland spruce-poplar forest. This plant association is dominated by white spruce and Alaska paper birch, often in association with an understory of balsam poplar, willow, and alder. Mosses, horsetails, and a variety of flowering plants are common groundcover.

The tree line within the park is approximately 2,000 feet, except within protected river valleys where it may extend to 3,000 feet. Between the bottomland spruce-hardwood forest and tree line is an area of upland spruce-hardwood forest. It is composed of white and black spruce, paper birch, balsam poplar, quaking aspen, larch, and willow. Species composition is uniform over large areas, but certain species are locally dominant. Paper birch, a major constituent of most interior Alaska

forested lands, is not abundant in the region but forms significant stands in the northernmost portions of the park. Quaking aspen occurs principally on well-drained uplands in small scattered stands mixed with white spruce. Dense stands of white spruce are found principally along the banks of large rivers. Balsam poplar, an early invader of floodplains, is mainly restricted to gravelly riverbottom sites. Black spruce covers large areas in the northern part of the park. A variety of other species occur in association with the upland forest. These can include little tree willow, flatleaf willow, resin birch, American green alder, thinleaf alder, Alaska rose, bush cinquefoil, red currant, and shrubs such as cranberry, blueberry, and lingonberry. Mosses and lichens are abundant on the forest floor.

At higher elevations (usually above 2,000 feet) the spruce-hardwood association gives way to a dwarf shrub and moist tundra association. This association, which occurs extensively along the foothills of the vast Alaska Range, usually forms a complete groundcover dominated by dwarf birch and willow. Blueberry, Labrador tea, bearberry, alpine azalea, and crowberry are common in this moist tundra zone. In addition, grasses and sedges are oftentimes found in nearly continuous stands in the wetter areas.

Alpine tundra, low-growing mats composed of herbaceous and shrubby plants, grows where a thin soil mantle is present with frequent outcrops of bare rock. It includes mat and cushion tundra, tussock tundra, and dwarf shrub vegetation associations. Species composition varies from almost continuous cottongrass tussocks with a sparse growth of sedges and dwarf shrubs, to stands where dwarf shrubs dominate. Often found in the alpine tundra are mountain avens, bearberry, crowberry, ground willows, alpine azalea, and lingonberry. On the highest and rockiest areas, below the zone of barren rock and ice, lichens are found in abundance. Lichens are slow-growing plants which are highly sensitive to any disturbance.

In general, the extensive glacier and drainage system, the greater precipitation levels, and the varied physiographic features to the south of the Alaska Range support a somewhat more varied and diverse range of plant associations than what are found on the north side of the range.

Two plant species reported to occur within or near the park and preserve have been cited as potentially eligible for the list of threatened or endangered species. These are Taraxacum carneocoloratum and Smelowskia borealis var. villosa, both reported to occur along dry ridgelines at high elevations (see appendix J).

Wildlife

The park hosts a wide variety and abundance of wildlife. Prominent large mammal species include moose, Dall sheep, grizzly bear, wolf, and caribou. These large mammals occur within the park in greater concentrations north of the Alaska Range than south of the range. Greater habitat variety and less permanent snow and ice on the north side may be responsible for these differences in concentrations. Other



BOTTOMLAND SPRUCE-POPLAR FOREST



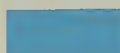
SPRUCE HARDWOOD FOREST



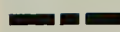
LOW BRUSH BOG



TUSOCK TUNDRA



ALPINE TUNDRA AND BARREN GROUND



DENALI NATIONAL PARK AND PRESERVE BOUNDARY



AIRSTRIp

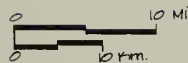


GLACIER

SOURCE: SELKREGG, LIDIA. ALASKA REGIONAL PROFILE VOLUME IV YUKON REGION



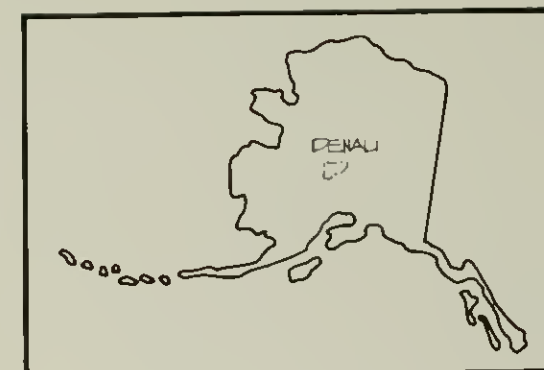
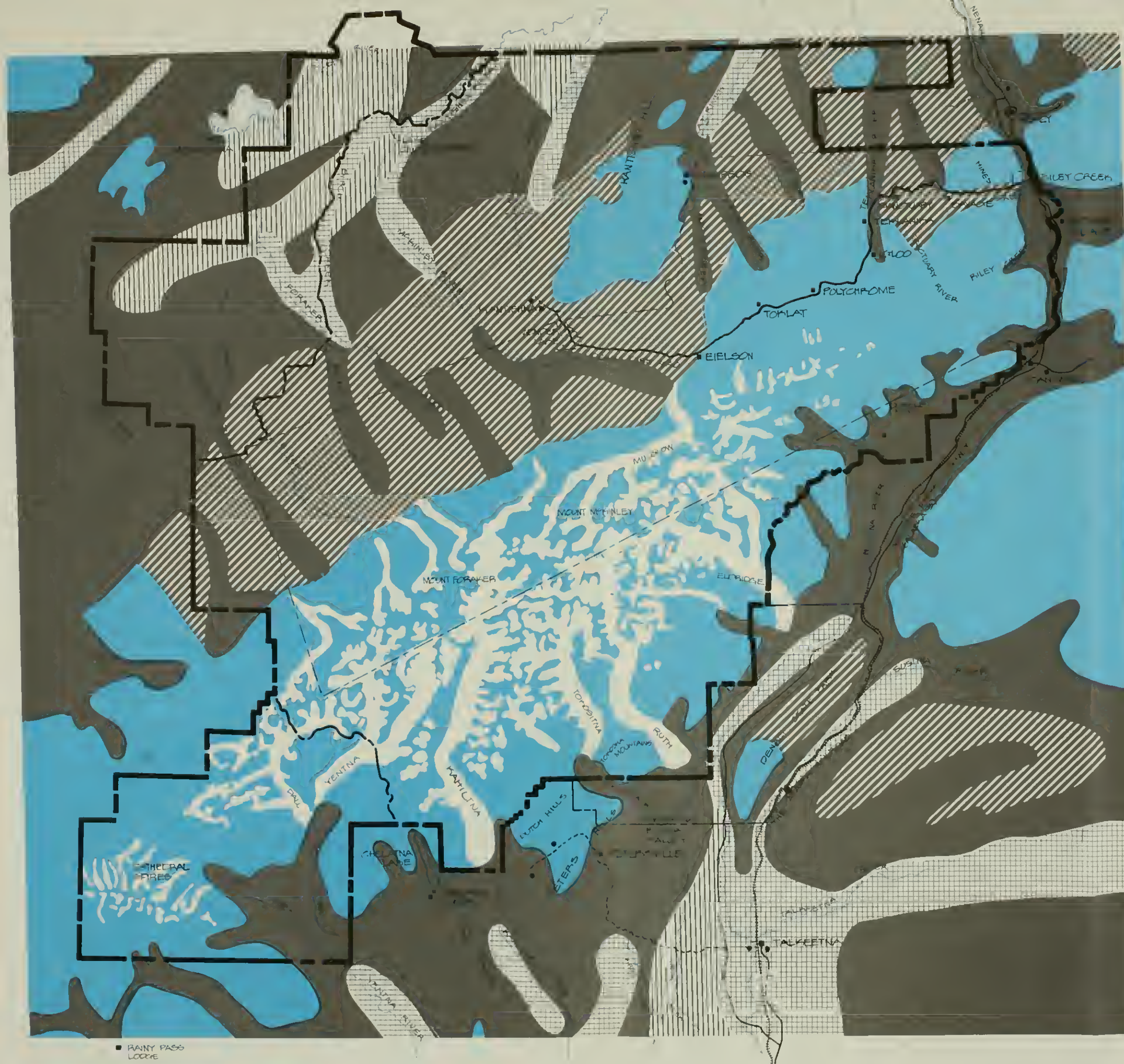
NORTH





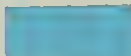





VEGETATION

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-  BOTTOMLAND SPRUCE-POPLAR FOREST
-  SPRUCE HARDWOOD FOREST
-  LOW BRUSH BOG
-  TUSOCK TUNDRA
-  ALPINE TUNDRA AND BARREN GROUND
-  DENALI NATIONAL PARK AND PRESERVE BOUNDARY
-  AIRSTRIP
-  GLACIER

SOURCE SELKREGG, LIDIA ALASKA REGIONAL PROFILE VOLUME IV YUKON REGION



VEGETATION

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■ RAINY PASS
LOCORE

smaller mammal species are beaver, red fox, hoary marmot, coyote, collared pika, arctic ground squirrel, red squirrel, snowshoe hare, lynx, otter, porcupine, marten, wolverine, weasel, several mice, lemming, and vole.

Moose are abundant the year around within and near the numerous drainages throughout the park. Moose are particularly abundant within the broad drainages on the south side of the Alaska Range, particularly within the Tokositna, Ruth, and upper Yentna drainages. The Yentna drainage alone supports approximately 300 moose (Troyer 1979). They browse primarily on willow, dwarf birch, and alder. Sedges, horsetails, and other plants are also eaten in the spring. Moose are unpredictable in behavior and can be dangerous if casually approached by visitors. This is particularly true of rutting males and females with young.

Caribou are migrating herd animals which utilize varying habitats for wintering, calving (late May to early June), summer range, and rutting (September and October). Such plants as willow, dwarf birch, and lichens constitute much of the caribou diet. The Denali caribou herd ranks 13th in size of the 22 Alaskan herds. Because of its accessibility it is also the most frequently viewed and photographed. This herd, which was determined to consist of 20,000 to 30,000 animals from 1900 to the early 1940s, has declined dramatically in numbers since that time. Today, the population appears to number approximately 2,600 animals. The reasons for the decline are speculative and may include emigration, habitat quality, predation, hunting, and herd condition.

An area south of the crest of the Alaska Range, south of the town of Cantwell and between the middle and west forks of the Chulitna River, is a prime calving and post-calving ground for caribou. From 1975 to 1980 this area received significantly more use than other calving areas north of the range. Since 1980 the northern calving areas have been more significant. The critical use period for the Cantwell calving ground is from about May 1 through July 20. After calving, the herd moves to the north side of the Alaska Range, passing through Polychrome Flats as early as July. Movements then follow a traditional migration route west and north to summer and winter ranges. When the herd calves north of the Alaska Range, most cows still travel to the Cantwell area approximately the first week in June and migrate back to the north from early to mid July. The significance of the southern area as a post-calving destination is not understood.

Both grizzly and black bears inhabit the area, which provides abundant food including various berries, roots, sedges, and grasses. Salmon is also taken during spawning times in a few areas. Grizzly bears utilize high alpine areas for denning and are dormant from October until April.

Wolves exist in and out of the park on both sides of the Alaska Range. They, along with bears, occupy the top of the predator/prey pyramid in Denali's large mammal ecosystem. Wolves travel in packs and prey upon moose, caribou, Dall sheep, and small mammals. The young are born in dens excavated into hillsides.

Wolverines are relatively abundant within central Alaska, although they never occur in great abundance compared to other furbearers. The wolverine is a member of the weasel family and feeds on everything from carrion to berries in all major vegetation associations. The lynx, Alaska's only native cat, inhabits the lowland forests and wetlands. It preys largely upon snowshoe hares, and cycles in the hare population directly affect the lynx population.

Denali's birdlife includes a variety of migratory waterfowl. Nonmigratory birds include chickadee, raven, magpie, woodpecker, ptarmigan, and owls. Trumpeter swans, formerly listed as endangered species, frequent floodplain meadows and small ponds.

Fish species include several salmon (king, coho, chum,), arctic char, Dolly Varden, whitefish, burbot, northern pike, sheefish, and grayling.

The only amphibian known to inhabit the area is the wood frog. Insects, including mosquitoes and various biting gnats, are prevalent in muskegs, drainages, and at lower elevations where winds are reduced by topography and vegetation. On higher hills and knolls in more exposed areas, winds tend to disperse insects.

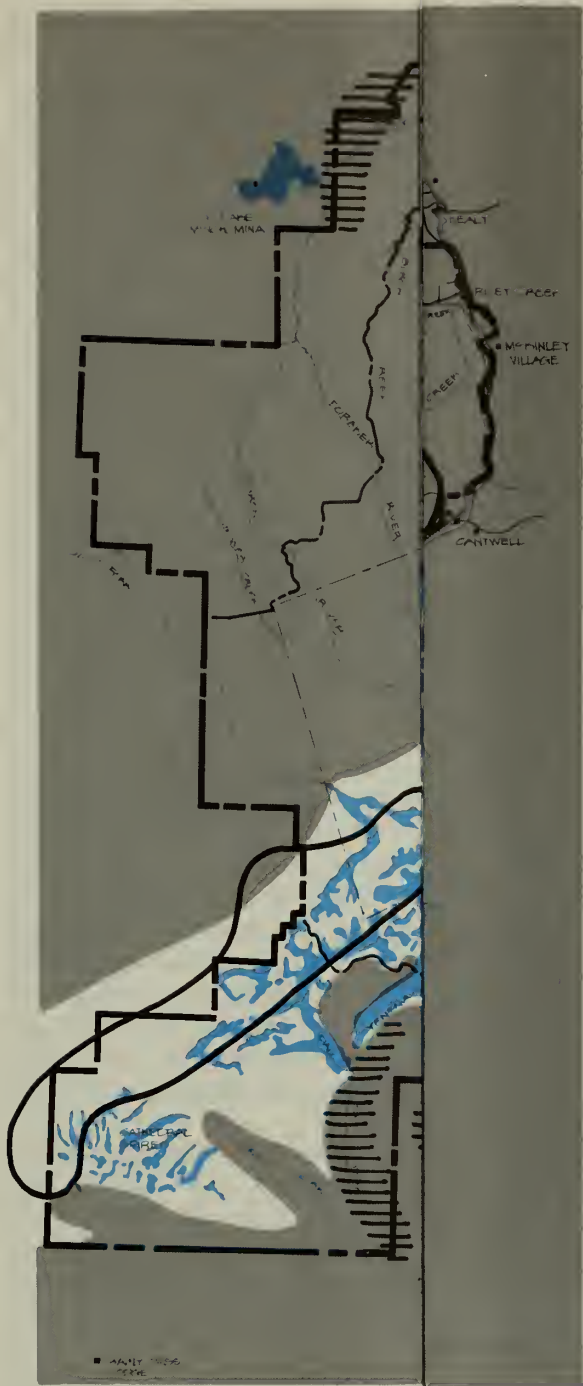
In general the wildlife to the south of the Alaska Range is less abundant and less visible than the wildlife along the park road corridor to the north. The existing park road follows a broad tundra valley north of the range and traces portions of a traditional caribou migration route. The dominant low mat vegetation and steep rock cliffs flanking segments of the route facilitate the viewing of large mammals (primarily caribou, Dall sheep, and grizzly bear) at great distances.

Most areas to the south of the range are not expansive and open and thus do not afford a comparable viewing experience. Instead, wildlife viewing on the south side occurs within more enclosed spaces, as for example, sighting a moose in a small pond within a lowland forest area. Other species readily observable, particularly along drainages, are bear, beaver, and numerous small mammals. Wolf, wolverine, and coyote are wary of humans and are not often seen. Waterfowl, including trumpeter swans, are found in ponds and wetter areas. While access remains a major obstacle for most south-side fishing, the potential is greater than in rivers and streams which intersect the park road.

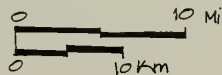
No threatened or endangered wildlife species is known to inhabit or migrate through the park and preserve. Grizzlies, wolves, and the golden and bald eagles are not considered threatened or endangered in Alaska (see appendix J).

CULTURAL ENVIRONMENT

The Denali region has fostered a rich prehistory and history of human occupation. However, the exact extent of human activity is not yet fully known, given the awesome dimensions of Mount McKinley and its flanks of lesser mountains, foothills, glacial canyons, and river valleys. Further archeological surveys and academic studies are needed to develop a comprehensive picture of human activity in the Denali region.



Sources: ADF&G, *Alaska's Wildlife and Habitat* (1973); ADF&G, 1984 habitat maps; ADNRP, *Susitna Area Plan* (Anchorage 1984); USDI, FWS, "1980 Trumpeter Swan Survey Data" (1984); USDI, NPS, "Road Surface Treatment Planning Analysis, Mount McKinley National Park" (1978); USDI, NPS, *Draft Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study, Denali National Park and Preserve* (Denver 1983); USDI, NPS, "Wildlife Viewing and the Mandatory Public Transportation System in Denali National Park," by F. Singer and J. Beattie (Anchorage 1984).



WILDLIFE RESOURCES

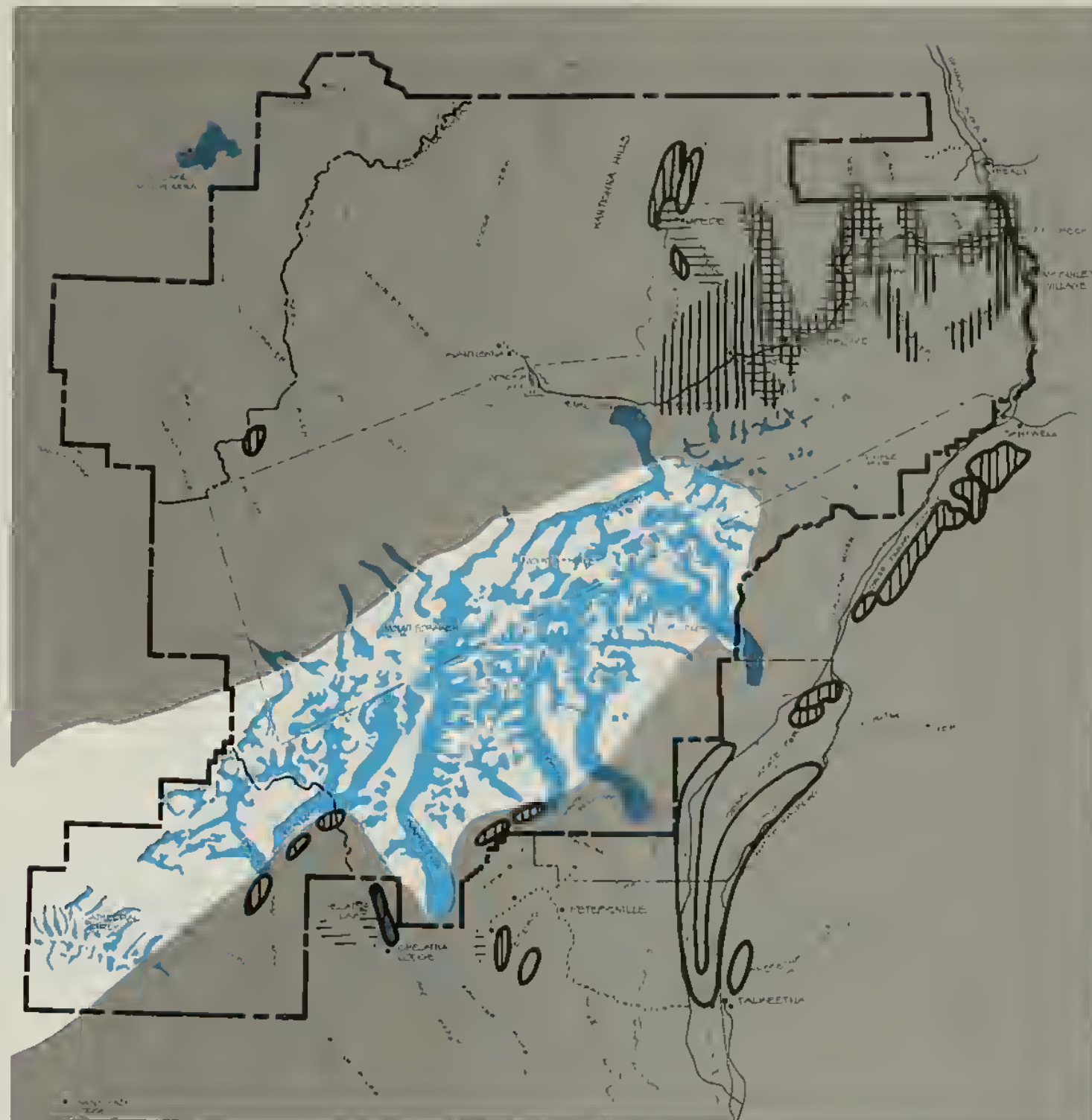
Denali National Park and Preserve

United States Department of the Interior
National Park Service

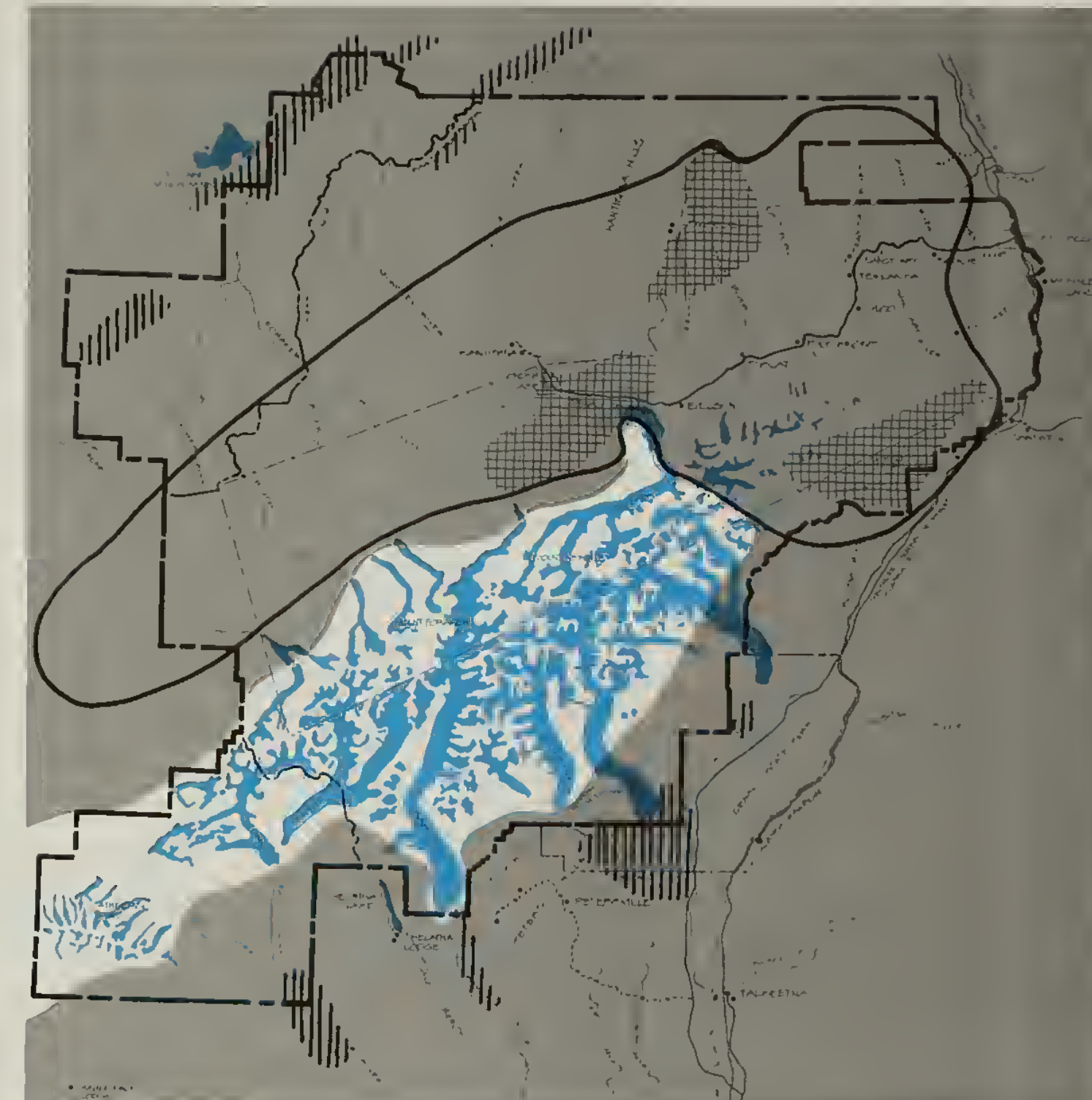
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- MOOSE**
- GENERAL DISTRIBUTION
 - FALL AND WINTER CONCENTRATIONS
 - DALL SHEEP**
 - GENERAL DISTRIBUTION



- BEAR**
- GENERAL DISTRIBUTION OF BLACK AND BROWN BEAR
 - BLACK BEAR INTENSIVE USE
 - BROWN BEAR INTENSIVE USE
 - KNOWN OR SUSPECTED DENNING
 - OVERLAP OF INTENSIVE USE



- WOLVES**
- GENERAL DISTRIBUTION
 - CARIBOU**
 - GENERAL DISTRIBUTION
 - CALVING
 - TRUMPETER SWAN**
 - SIGHTINGS AND NESTING AREAS

Sources: ADF&G, *Alaska's Wildlife and Habitat* (1973); ADF&G, 1984 habitat maps; ADNR, *Sustina Area Plan* (Anchorage 1984); USDI, FWS, "1980 Trumpeter Swan Survey Data" (1984); USDI, NPS, "Road Surface Treatment Planning Analysis, Mount McKinley National Park" (1978); USDI, NPS, *Draft Environmental Impact Statement, Kantishna Hills/Dunkle Mine Study, Denali National Park and Preserve* (Denver 1983); USDI, NPS, "Wildlife Viewing and the Mandatory Public Transportation System in Denali National Park," by F. Singer and J. Beattie (Anchorage 1984)

Archeology and Ethnography

In very early times, 10,000 to 20,000 years ago, the northern sector of the park was on the margin of the Beringian steppe, where Pleistocene megafauna could support big game hunters of Siberian origin. Representations of this earliest culture are found in the early man site just outside the park boundary at Dry Creek, west of Healy. There, artifactual remains have been determined to be older than 10,500 BP, thus constituting one of the more important archeological discoveries in Alaska. The significance of this site has drawn considerable archeological attention to the area. A large stone spear point was recently found in the west end of the park, indicating the potential for an equivalent site to be found and dated within the park.

Prehistorically, the land comprising Denali National Park and Preserve was sparsely populated, reflecting the low biological productivity of the land and the geography of this border region between Pacific systems and the interior. Large game animals--the principal food source--were widely scattered, and thus, occupation was on an intermittent seasonal basis. Concentrating on obtaining the necessities of life, the inhabitants were likely migratory, seasonally following and intercepting herds of big game, especially caribou.

These bands left scanty remains at their temporary camps and game lookout points in the form of lithic scatterings. Thus, archeologists have been unable to determine the specific Alaska cultural tradition they represent. The archeological evidence gathered to date suggests representations of the American Paleoarctic tradition (Denali complex), the Northern Archaic tradition (possibly the Arctic Small Tool tradition), and prehistoric and historic Athapascans. The most definitive archeological remains, located within the Teklanika archeological district, are considered type sites for the Denali complex of the American Paleoarctic tradition, representing a people who preyed upon herds of grazing mammals in Beringia during the early Holocene.

More recently, Athapaskan groups exploited this region, centering upon the Susitna, Tanana, and Kuskokwim river systems. At the time of European contact, three major Alaska native groups occupied the area: the Tanaina and Tanana Indians and the Ingalik. A mixing of Eskimo and Athapaskan cultures may have taken place in the upper Kuskokwim River drainage before Russian exploration.

Native villages within the Denali region are known to have existed at McGrath, Telida, Nikolai, Lake Minchumina, and along the Tanana River and its tributaries. Another village may have been situated 50 miles southeast of Cantwell.

To these natives living in the region two centuries ago, the majestic snow covered peak towering above all others was known by various names--Denali, Trolike, Tenada, Trelaka--all meaning the great or high mountain. The foreigners drawn to the area in search of wealth (from furs to be harvested or minerals to be prospected) were not aware or apparently not interested in the great size of the mountains of the interior Alaska Range. It was not until 1896, spurred by a minor gold

rush in the area, that prospector William Dickey arrived and drew public attention to the lofty peak, estimating its height at 20,000 feet. He named the mountain McKinley after William McKinley, presidential candidate and fellow proponent of the gold standard. Thus, Mount McKinley was recognized as the "summit of North America."

History

The first sighting of Mount McKinley by nonnatives occurred in 1794 when George Vancouver saw "distant stupendous mountains" from the Knik Arm of Cook Inlet.

Russian explorer-traders were the first nonnatives to visit the Mount McKinley region. Vassili Malakoff of the Russian American Company ascended the Susitna River in the early 1800s in search of furs and reached the area now comprising Denali State Park. Russians also came up the Kuskokwim River, setting up a few trading posts along its banks. Their initial ascendancy of the upper Kuskokwim took place in 1830, and arrival in the McKinley region occurred around 1842. The upper Kuskokwim was not attractive to the Russians, and so the trading posts were soon abandoned.

Despite the early European observations and tentative explorations, the Denali region remained virtually unknown to modern explorers until the late 19th century.

Alaska was purchased by the United States in 1867, but government-backed exploration of the area did not occur until 1898, when George Eldridge, geologist, and Robert Muldrow, topographer, of the United States Geological Survey approached Mount McKinley from the south to measure its elevation. Twenty-five years later the general route taken by Eldridge and Muldrow was followed during construction of the Alaska Railroad. Also in 1898 Sargent William Yanert crossed the Alaska Range through Broad Pass, making him the first white man to set foot in what is today Denali National Park and Preserve.

Another USGS party, headed by Alfred H. Brooks, set out in 1902 to survey the geology of the McKinley massif. This party circled nearly the entire base of the mountain and was the first to visit the local native tribes and to set foot on McKinley's lower slopes.

One year later, in 1903, Judge James Wickersham and party attempted the first ascent up Mount McKinley. The attempt was unsuccessful, reaching only 8,000 feet before turning back. At least 11 more expeditions would fall short of the summit before it was finally reached by the Stuck-Karstens expedition in 1913.

In 1905 placer gold was discovered on Moose Creek and in the Kantishna Hills, luring thousands of miners to the north side of McKinley. After a frenzied summer of prospecting, most miners moved onto other areas, while the handful of lucky miners who had struck pay dirt remained.

In 1915 construction was underway on a railroad which would connect Seward with Fairbanks. Construction camps sprang up along the line with the advance of the project. Train depots and roadhouses arose along the railway and small settlements developed at the train stops.

The metal prospecting and related geological and travel route surveys brought the mountain and its varied wildlife to public attention. Widely publicized mountaineering expeditions and naturalist Charles Sheldon's early movements to protect the animals of the Denali wilderness led to national park designation in 1917. The boundary included the top and north side of the McKinley massif as well as the northern flank of the Alaska Range. Automobile access within the park was provided in 1938, upon the completion of the McKinley National Park road. Visitors then brought their cars via the railroad. Almost 20 years later, in 1957, the Denali Highway connected the park road to the Richardson Highway and the rest of the Alaska road system. With the completion of the George Parks Highway in 1972, travel time from Anchorage and Fairbanks was greatly reduced, and in anticipation of greatly increased visitor use, the National Park Service instituted a free shuttle bus service along the park road and prohibited most private vehicle travel.

Significant Cultural Resources

There are approximately 100 known cultural sites and structural units or complexes located within Denali National Park and Preserve. Though this may constitute only a fraction of what actually exists within the park, these cultural resources illustrate most major elements of the region's prehistory and history, representing themes from early man to modern Euro-American occupation.

Many cultural sites relate to prehistoric occupation of migratory big game hunters who used the area on an intermittent seasonal basis possibly as early as 10,000 years ago. Two sites, Teklanika East (HEA-001) and Teklanika West (HEA-002), comprise the Teklanika archeological district, which is listed on the National Register of Historic Places. The significance of this district is its archetypal site representation of the Denali complex of the Paleoarctic tradition--a people who preyed upon herds of grazing mammals in the Beringia during the early Holocene.

Two additional prehistoric sites containing lithic remains of early hunters have been determined potentially eligible for nomination to the National Register of Historic Places. Alaska heritage resource site MMK-028 is located on a hilltop near the confluence of Willow Creek and Moose Creek. MMK-027 is situated on a hill west of Rainy Creek.

Of additional archeological significance is an early man site at Dry Creek, located just outside the park boundaries. Listed on the National Register of Historic Places, this site has produced the earliest evidence of culture in the Denali region, and its proximity to the park suggests such prehistoric site potential therein.

Other sites relating to prehistoric use of Denali have been identified in the vicinity of the park road corridor on the Savage and Sanctuary

rivers, along the upper reaches of the Susitna and Nenana river valleys, and at Telida, Minchumina, and Stephan lakes. The scanty remains of these brief encampments do not lend themselves to precise classification within a specific Alaska cultural tradition, and their overall significance is yet unclear.

Many of the significant historic structures relate to two distinct but often interrelated themes: mining and subsistence hunting and trapping. The majority of these surviving structures, which date between 1905 and 1935, are located in the Kantishna mining district. Based on a recent field study of this area, the National Park Service and the Alaska state historic preservation officer have determined the following structures are potentially eligible for the National Register of Historic Places:

- Kantishna roadhouse (unknown)
- Fanny Quigley residence (unknown)
- Busia's cabin (1920s)
- Banjo Mill (1936)
- Upper Caribou Creek (1920s)
- Glacier City (1905-06)
- Stampede Mine (1936-41)

The first four sites are privately owned.

The administrative history of the park is represented by two complexes of structures which are in the process of being nominated to the National Register of Historic Places. The park headquarters area is comprised of several buildings, including the park headquarters (1935), the east district ranger office (1928), the warehouse (1932), the dog kennels (1929), and the interpretive building (1928).

Other historic structures potentially eligible for inclusion in the National Register of Historic Places are the patrol cabins in the interior of the park dating from 1924 to 1939.

EXISTING VISITOR USE

The large visitation statistics at Denali National Park and Preserve are a reflection of the park complex's strategic location between Anchorage and Fairbanks, its long history in the national park system, and its easy access. Visitors can arrive at Denali via private vehicle, tour bus, railroad, or aircraft. A landing strip at Riley Creek accommodates small planes.

Currently, almost all visitor facilities are confined to the 88.5-mile-long park road corridor and near the park entrance along the George Parks Highway. The National Park Service operates seven campgrounds with a combined total of 225 campsites. Other overnight accommodations are provided inside the boundary by privately operated lodges and a concessioner-operated hotel. Camp Denali and the North Face Lodge, both privately owned, are located near the end of the park road in Kantishna. Camp Denali offers cabin accommodations for approximately 43 people, while the North Face Lodge has 15 motel-style rooms. Recently,

the Kantishna Roadhouse has reopened for use and provides several rental cabins. Denali National Park Hotel (formerly McKinley Park Station Hotel), near the entrance to the park, offers a variety of accommodations with a capacity of 120 double rooms and 21 single rooms. Several additional commercial operations near the park entrance and adjacent to the park boundary provide lodging, camping, and associated visitor services for tourists to Denali.

The activities of visitors reflect the available access corridors and facilities. The majority of visitor use occurs along the park road corridor between Riley Creek and Wonder Lake. A shuttle bus system operates during the peak visitor use season. This transportation system performs two principal functions. It provides an opportunity for visitors to experience the park (primarily viewing wildlife and Mount McKinley) and it also provides access into the park's interior for backcountry users. In addition to the NPS park shuttle bus system, the concessioner offers wildlife tours along the park road, and the three lodges in Kantishna provide transportation from the park entrance to their facilities.

Visitor travel along the road corridor is by necessity controlled, and only those with camping permits or special use permits are allowed access in private vehicles. Even with the transportation systems and other controls to minimize wildlife disturbance, traffic volume along the road doubled between 1971 and 1979.

Visitation to Denali has grown remarkably since the area was established as a national park (see table 6). The extraordinary increase that occurred in 1972 was the result of the completion of the George Parks Highway and the ease of access it provided between Anchorage, Fairbanks, and the park. The past decade has witnessed continued growth in visitation, with recorded use almost quadrupling from 1972 to 1983.

Table 6: Annual Visitation, 1922-1984

<u>Year</u>	<u>Total Recreation Visits</u>
1922	7
1932	400
1942	5
1952	7,300
1962	16,600
1972	88,615
1973	137,418
1974	161,427
1975	160,600
1976	157,612
1977	170,031
1978	222,993
1979	251,105
1980	216,341
1981	256,593
1982	321,868
1983	346,082
1984	394,426

Visitation to Denali is highly seasonal, with 93 percent of the total annual use occurring during the months of June, July, August, and September (see table 7).

Table 7. Seasonal Use Patterns, 1980

<u>Month</u>	<u>Total Recreational Visits</u>
January	198
February	146
March	401
April	633
May	12,791
June	27,623
July	61,963
August	73,791
September	36,250
October	1,564
November	828
December	<u>153</u>
Total	216,341

CONSULTATION AND COORDINATION

The process of developing the general management plan for Denali began in earnest in May 1983. The initial effort consisted of discussions between the planning team and the park to determine the range of issues at Denali National Park and Preserve and the best approach to be taken for this planning effort. The conclusion of these discussions was that the major problems facing Denali were the increasing level of visitors attracted to the park, the ramifications of increased use on the preservation of the park's resources, and how recreational activities might best be accommodated as demand accelerated in the future. As a result the planning effort principally focused on examining the south side of Denali for opportunities to support development and for its recreational potential.

During the 1983 summer season, field trips were scheduled to explore various sites on the south side. In conjunction with the field studies, informal meetings were scheduled with knowledgeable and interested parties to present the approach being taken on the plan and to gain an understanding of any concerns that might be evident. These meetings included representatives of state agencies, the native organizations, and conservation groups.

The proposal for the south side of Denali relies heavily upon the Alaska state park system for the implementation of an activity center in Denali State Park. Several meetings were held with the Alaska Division of Parks, both in the field and in Anchorage. The purpose of these meetings was to explain the approach, gauge any interest the state might have in the proposal, and provide periodic updates on the progress of the project. The contacts with the Alaska Division of Parks eventually resulted in the memorandum of understanding presented in appendix E.

In accordance with the revised programmatic memorandum of agreement between the National Park Service, the Advisory Council on Historic Preservation, and the Council of State Historic Preservation Officers, the National Park Service has sought the advice of the Advisory Council and the state historic preservation officer during the formulation of this plan.

The U.S. Fish and Wildlife Service was contacted for information regarding endangered or threatened plant or animal species within or adjacent to Denali National Park and Preserve (see appendix J).

Finally, as the project evolved, a planning newsletter was published and distributed to all individuals and agencies on the mailing list for Denali National Park and Preserve. The newsletter was released in February 1984, and generally indicated the scope of the plan, issues to be discussed, and a projected timeframe for completion of the project.

Copies of this document have been forwarded to all federal, state, and local agencies concerned with Denali National Park and Preserve. Additionally copies have been sent to all interested parties and individuals on the mailing list for Denali. The responses will be utilized in any necessary revisions prior to release of a final plan.

APPENDIX A: THE MANDATE FOR DENALI

ESTABLISHMENT

The central portion of Denali was originally dedicated as Mount McKinley National Park on February 26, 1917, and "set apart as a public park for the benefit and enjoyment of the people." Congress specified that the park was established to serve as a "game refuge," and the secretary of the interior was directed to manage it for "the freest use . . . for recreation purposes by the public and for the preservation of animals, birds, and fish and . . . the natural curiosities and scenic beauties thereof." Subsequent legislation expanded the park boundaries and allocated funds "for the adequate housing, feeding, and transportation of the visiting public and residents."

In 1978 President Carter ordered extensive additions to the park, and using the central Alaskan native name for the "High One," he designated the area Denali National Monument. With the passage of the Alaska National Interest Lands Conservation Act (PL 96-487, section 202(3)(a)) on December 2, 1980, the former park with slightly modified additions was redesignated by Congress as Denali National Park and Preserve.

CONGRESSIONAL INTENT

All the new additions to the national park system established by ANILCA were to be administered, like all other NPS units, pursuant to the act of August 25, 1916, which created the National Park Service (39 Stat. 535, as amended and supplemented in 16 USC 1, et seq.). That act states that lands within the system will be managed "to conserve scenery and the natural and historic objects and the wildlife . . . and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Specific to Denali, Congress stated that the intent was

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 (ANILCA, sec. 202 (3)(a)).

SUBSISTENCE AND SPORT HUNTING

The congressional guidance for the management of subsistence and sport hunting and trapping differs for the original park and for the new park and preserve additions. Within former Mount McKinley National Park, where all hunting was prohibited at the time of the passage of ANILCA, such use (and any associated shelters and equipment) will continue to be prohibited. Subsistence harvests are authorized within the new park and preserve additions, pursuant to title VIII of ANILCA. Local rural

residents engaged in a subsistence lifestyle may continue to do so in a manner consistent with the perpetuation of natural and healthy wildlife populations (ANILCA, section 815). Sport hunting and trapping are prohibited on all park lands, including the new park additions, but they are permitted on preserve lands. With this exception, the preserve is managed the same as the national park. ANILCA created a subsistence resource commission and charged it with establishing a subsistence hunting plan for the park. The commission's recommendations will be forwarded to the secretary of the interior for review and implementation in accordance with section 808(b) of the act.

In accordance with section 1316(b) of ANILCA, the National Park Service proposes not to allow the establishment on public lands of any new "tent platforms, shelters and other temporary facilities and equipment directly and necessarily related to" the taking of fish and wildlife in Denali National Preserve. Such new facilities or equipment would constitute a significant expansion of existing facilities or uses that would be detrimental to the purposes for which the preserve was established. Temporary structures in support of subsistence activities are authorized under existing regulations (36 CFR 13.17).

MINING AND MINERAL DEVELOPMENT

Mining within the park was first addressed in the 1917 park enabling legislation, which stipulated that existing valid claims and entry and location rights could not be affected by park designation and that existing mineral land laws, in particular the Mining Law of 1872, would continue to apply to all lands within the boundary. Subsequent legislation in 1931 (46 Stat. 1043) authorized the secretary of the interior to prescribe regulations for the surface use of lands within Mount McKinley provided that no one was denied entrance to the park for prospecting and mining purposes.

The Mining in the Parks Act of 1976 (PL 94-429, 16 USC 21-54) closed the park to any further mineral entry and location and placed a four-year moratorium on surface disturbance for mineral explorations and development of existing valid claims. This legislation also required that unpatented claims within the park boundary be recorded, and that the secretary of the interior recommend to Congress whether any valid or patented claims should be acquired by the federal government. The act also precipitated the promulgation of federal regulations governing all mining activities on patented or valid unpatented mining claims in all NPS areas. These regulations (36 CFR 9A) enable the National Park Service to prevent or minimize damage to resource values through control of mining activities.

ANILCA, section 206, withdrew all federal lands within Alaskan units of the national park system from mineral entry and location and from disposition under the mineral leasing laws, subject to valid existing rights.

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**PART 13—NATIONAL PARK SYSTEM
UNITS IN ALASKA**

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- 13.2 Applicability and scope.
- 13.3 Penalties.
- 13.4 Information collection.
- 13.10 Snowmachines.
- 13.11 Motorboats.
- 13.12 Nonmotorized surface transportation.
- 13.13 Aircraft.
- 13.14 Off-road vehicles.
- 13.15 Access to inholdings.
- 13.16 Temporary access.
- 13.17 Cabins and other structures.
- 13.18 Camping and picnicking.
- 13.19 Weapons, traps and nets.
- 13.20 Preservation of natural features.
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Subpart B—Subsistence

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- 13.47 Subsistence fishing.
- 13.48 Subsistence hunting and trapping.
- 13.49 Subsistence use of timber and plant material.

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- 13.51 Application procedures for subsistence permits and aircraft exceptions.

**Subpart C—Special Regulations—Specific
Park Areas in Alaska**

- 13.60 Aniakchak National Monument and Preserve.
- 13.61 Bering Land Bridge National Preserve.
- 13.62 Cape Krusenstern National Monument.
- 13.63 Denali National Park and Preserve.
- 13.64 Gates of the Arctic National Park and Preserve.
- 13.65 Glacier Bay National Park and Preserve.
- 13.66 Katmai National Park and Preserve.
- 13.67 Kenai Fjords National Park.
- 13.68 Klondike Gold Rush National Historical Park.
- 13.69 Kobuk Valley National Park.
- 13.70 Lake Clark National Park and Preserve.
- 13.71 Noatak National Preserve.
- 13.72 Sitka National Historical Park.
- 13.73 Wrangell-St. Elias National Park and Preserve.
- 13.74 Yukon-Charley Rivers National Preserve.

Authority: Sec. 3 of the Act of August 15, 1916 (39 Stat. 535, as amended (16 U.S.C. 3); 16 U.S.C. 1, 1a-1, 1c, 462); Alaska National Interest Lands Conservation Act (ANILCA), 94 Stat. 2371 and 1281; Pub. L. No. 96-487 (December 2, 1980); and the Paperwork Reduction Act of 1980, 94 Stat. 2812, Pub. L. No. 96-511.

Subpart A—Public Use and Recreation

§ 13.1 Definitions.

The following definitions shall apply to all regulations contained in this part:

(a) The term "adequate and feasible access" means a reasonable method and route of pedestrian or vehicular transportation which is economically practicable for achieving the use or development desired by the applicant on his/her non-federal land or occupancy interest, but does not necessarily mean the least costly alternative.

(b) The term "aircraft" means a machine or device that is used or intended to be used to carry persons or objects in flight through the air, including, but not limited to airplanes, helicopters and gliders.

(c) The term "ANILCA" means the Alaska National Interest Lands Conservation Act (94 Stat. 2371; Pub. L. 96-487 (December 2, 1980)).

(d) The term "carry" means to wear, bear or carry on or about the person and additionally, in the case of firearms, within or upon a device or animal used for transportation.

(e) The term "downed aircraft" means an aircraft that as a result of mechanical failure or accident cannot take off.

(f) The term "firearm" means any loaded or unloaded pistol, revolver, rifle, shotgun or other weapon which will or is designated to or may readily be converted to expel a projectile by the action of expanded gases, except that it does not include a pistol or rifle powered by compressed gas. The term "firearm" also includes irritant gas devices.

(g) The term "fish and wildlife" means any member of the animal kingdom,

including without limitation any mammal, fish, bird (including any migratory, nonmigratory or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod, or other invertebrate, and includes any part, produce, egg, or offspring thereof, or the dead body or part thereof.

(h) The term "fossil" means any remains, impression, or trace of any animal or plant of past geological ages that has been preserved, by natural processes, in the earth's crust.

(i) The term "gemstone" means a silica or igneous mineral including, but not limited to (1) geodes, (2) petrified wood, and (3) jade, agate, opal, garnet, or other mineral that when cut and polished is customarily used as jewelry or other ornament.

(j) The term "National Preserve" shall include the following areas of the National Park System:

Alagnak National Wild and Scenic River, Aniakchak National Preserve, Bering Land Bridge National Preserve, Denali National Preserve, Gates of the Arctic National Preserve, Glacier Bay National Preserve, Katmai National Preserve, Lake Clark National Preserve, Noatak National Preserve, Wrangell-St. Elias National Preserve, and Yukon-Charley National Preserve.

(k) The term "net" means a seine, weir, net wire, fish trap, or other implement designed to entrap fish, except a landing net.

(l) The term "off-road vehicle" means any motor vehicle designed for or capable of crosscountry travel on or immediately over land, water, sand, snow, ice, marsh, wetland or other natural terrain, except snowmachines or snowmobiles as defined in this chapter.

(m) The term "park areas" means lands and waters administered by the National Park Service within the State of Alaska.

(n) The term "person" means any individual, firm, corporation, society, association, partnership, or any private or public body.

(o) The term "possession" means exercising dominion or control, with or without ownership, over weapons, traps, nets or other property.

(p) The term "public lands" means lands situated in Alaska which are federally owned lands, except—

(1) land selections of the State of Alaska which have been tentatively approved or validly selected under the Alaska Statehood Act (72 Stat. 339) and lands which have been confirmed to, validly selected by, or granted to the Territory of Alaska or the State under any other provision of Federal law;

(2) land selections of a Native Corporation made under the Alaska Native Claims Settlement Act (85 Stat. 688) which have not been conveyed to a Native Corporation, unless any such selection is determined to be invalid or is relinquished; and

(3) lands referred to in section 19(b) of the Alaska Native Claims Settlement Act.

(q) The term "snowmachine" or "snowmobile" means a self-propelled vehicle intended for off-road travel primarily on snow having a curb weight of not more than 1,000 pounds (450 kg), driven by a track or tracks in contact with the snow and steered by a ski or skis on contact with the snow.

(r) The term "Superintendent" means any National Park Service official in charge of a park area, the Alaska Regional Director of the National Park Service, or an authorized representative of either.

(s) The term "take" or "taking" as used with respect to fish and wildlife, means to pursue, hunt, shoot, trap, net, capture, collect, kill, harm, or attempt to engage in any such conduct.

(t) The term "temporary" means a continuous period of time not to exceed 12 months, except as specifically provided otherwise.

(u) The term "trap" means a snare, trap, mesh, or other implement designed to entrap animals other than fish.

(v) The term "unloaded" means there is no unexpended shell or cartridge in the chamber or magazine of a firearm; bows, crossbows and spearguns are stored in such a manner as to prevent their ready use; muzzle-loading weapons do not contain a powder charge; and any other implement capable of discharging a missile into the air or under the water does not contain a missile or similar device within the loading or discharging mechanism.

(w) The term "weapon" means a firearm, compressed gas or spring powered pistol or rifle, bow and arrow, crossbow, blow gun, speargun, hand thrown spear, slingshot, explosive device, or any other implement designed to discharge missiles into the air or under the water.

§ 13.2 Applicability and scope.

(a) The regulations contained in this Part 13 are prescribed for the proper use and management of park areas in Alaska and supplement the general regulations of this chapter. The general regulations contained in this chapter are applicable except as modified by this Part 13.

(b) Subpart A of this Part 13 contains regulations applicable to park areas. Such regulations amend in part the

general regulations contained in this chapter. The regulations in Subpart A govern use and management, including subsistence activities, within the park areas, except as modified by Subparts B or C.

(c) Subpart B of this Part 13 contains regulations applicable to subsistence activities. Such regulations apply to park areas except Kenai Fjords National Park, Katmai National Park, Glacier Bay National Park, Klondike Gold Rush National Historical Park, Sitka National Historical Park, and parts of Denali National Park. The regulations in Subpart B amend in part the general regulations contained in this chapter and the regulations contained in Subpart A of this Part 13.

(d) Subpart C of this Part 13 contains special regulations for specific park areas. Such regulations amend in part the general regulations contained in this chapter and the regulations contained in Subparts A and B of this Part 13.

(e) The regulations contained in this Part 13 are applicable only on federally owned lands within the boundaries of any park area. For purposes of this part, "federally owned lands" means land interests held or retained by the United States, but does not include those land interests: (1) Tentatively approved, legislatively conveyed, or patented to the State of Alaska; or (2) interim conveyed or patented to a Native Corporation or person.

§ 13.3 Penalties.

Any person convicted of violating any provision of the regulations contained in this Part 13, or as the same may be amended or supplemented, may be punished by a fine not exceeding \$500 or by imprisonment not exceeding 6 months, or both, and may be adjudged to pay all costs of the proceedings (16 U.S.C. 3).

§ 13.4 Information collection.

The information collection requirements contained in §§ 13.13, 13.14, 13.15, 13.16, 13.17, 13.31, 13.44, 13.45, 13.49, and 13.51 have been approved by the Office of Management and Budget under 44 U.S.C. 3507 and assigned clearance number 1024-0015. The information is being collected to solicit information necessary for the Superintendent to issue permits and other benefits. This information will be used to grant statutory or administrative benefits. In all sections except 13.13, the obligation to respond is required to obtain a benefit. In § 13.13, the obligation to respond is mandatory.

§ 13.10 Snowmachines.

(a) The use of snowmachines (during periods of adequate snow cover or frozen river conditions) for traditional activities (where such activities are permitted by ANILCA or other law) and for travel to and from villages and homesites, is permitted within park areas, except where such use is prohibited or otherwise restricted by the Superintendent in accordance with the provisions of § 13.30. Nothing in this section affects the use of snowmobiles by local rural residents engaged in subsistence uses as authorized by § 13.46.

(b) For the purposes of this section "adequate snow cover" shall mean snow of sufficient depth to protect the underlying vegetation and soil.

§ 13.11 Motorboats.

Motorboats may be operated on all park area waters, except where such use is prohibited or otherwise restricted by the Superintendent in accordance with the provisions of § 13.30, or § 7.23(b)-(f) of this chapter. Nothing in this section affects the use of motorboats by local rural residents engaged in subsistence uses as authorized by § 13.46.

§ 13.12 Nonmotorized surface transportation.

The use of nonmotorized surface transportation such as domestic dogs, horses and other pack or saddle animals is permitted in park areas except where such use is prohibited or otherwise restricted by the Superintendent in accordance with the provisions of § 13.30. Nothing in this section affects the use of nonmotorized surface transportation by local rural residents engaged in subsistence uses as authorized by § 13.46.

§ 13.13 Aircraft.

(a) Fixed-wing aircraft may be landed and operated on lands and waters within park areas, except where such use is prohibited or otherwise restricted by the Superintendent in accordance with this section. The use of aircraft for access to or from lands and waters within a national park or monument for purposes of taking fish and wildlife for subsistence uses therein is prohibited as set forth in § 13.45.

(b) In imposing any prohibitions or restrictions on fixed-wing aircraft use the Superintendent shall: (1) Comply with the procedures set forth in § 13.30; (2) publish notice of prohibitions or restrictions as "Notices to Airmen" issued by the Department of Transportation; and (3) publish permanent prohibitions or restrictions as a regulatory notice in the United States

Government Flight Information Service "Supplement Alaska."

(c) Except as provided in paragraph (d) of this section, the owners of any aircraft downed after December 2, 1980, shall remove the aircraft and all component parts thereof in accordance with procedures established by the Superintendent. In establishing a removal procedure, the Superintendent is authorized to: (1) Establish a reasonable date by which aircraft removal operations must be complete; and (2) determine times and means of access to and from the downed aircraft.

(d) The Superintendent may waive the requirements of § 13.12(c) upon a determination that: (1) The removal of downed aircraft would constitute an unacceptable risk to human life; or (2) the removal of a downed aircraft would result in extensive resource damage; or (3) the removal of a downed aircraft is otherwise impracticable or impossible.

(e) Salvaging, removing, possessing, or attempting to salvage, remove or possess any downed aircraft or component parts thereof is prohibited, except in accordance with a removal procedure established under paragraph (c) of this section. *Provided, however,* That the owner or an authorized representative thereof may remove valuable component parts from a downed aircraft at the time of rescue without a permit.

(f) The use of a helicopter in any park area, other than at designated landing areas (see Subpart C regulations for each park area) pursuant to the terms and conditions of a permit issued by the Superintendent, is prohibited.

§ 13.14 Off-road vehicles.

(a) The use of off-road vehicles in locations other than established roads and parking areas is prohibited, except on routes or in areas designated by the Superintendent or pursuant to a valid permit as prescribed in paragraph (c) of this section or in § 13.15 or § 13.16. Such designations shall be made in accordance with procedures in this section. Nothing in this section affects the use of off-road vehicles by local rural residents engaged in subsistence as authorized by § 13.46.

(b)(1) The Superintendent's determination of whether to designate a route or area for off-road vehicle use shall be governed by Executive Order 11644, as amended.

(2) Route or area designations shall be published in the "Federal Register."

(3) Notice of routes or areas on which off-road travel is permitted shall be in accordance with the provisions of § 13.30(f).

(4) The closure or restrictions on use of designated routes or areas to off-road vehicles use shall be in accordance with the provisions of § 13.30.

(c) The Superintendent is authorized to issue permits for the use of off-road vehicles on existing off-road vehicle trails located in park areas (other than areas designated as part of the National Wilderness Preservation System) upon a finding that such off-road vehicle use would be compatible with park purposes and values. The Superintendent shall include in any permit such stipulations and conditions as are necessary for the protection of park purposes and values.

§ 13.15 Access to inholdings.

(a) *Purpose.* A permit for access to inholdings pursuant to this section is required only where adequate and feasible access is not affirmatively provided without a permit under §§ 13.10-13.14 of these regulations. Thus, it is the purpose of this section to ensure adequate and feasible access across a park area for any person who has a valid property or occupancy interest in lands within or effectively surrounded by a park area or other lands listed in section 1110(b) of ANILCA.

(b) *Application and Administration.* (1) Applications for a permit designating methods and routes of access across park areas not affirmatively provided for in this part shall be submitted to the Superintendent having jurisdiction over the affected park area as specified under § 13.31.

(2) Except as provided in paragraph (c) of this section, the access permit application shall contain the name and address of the applicant, documentation of the relevant property or occupancy interest held by the applicant (including for 1872 Mining Law claimants a copy of the location notice and recordings required under the 1872 Mining Law and 43 U.S.C. 1744), a map or physical description of the relevant property or occupancy interest, a map or physical description of the desired route of access, a description of the desired method of access, and any other information necessary to determine the adequacy and feasibility of the route or method of access and its impact on the natural or other values of the park area.

(3) The Superintendent shall specify in a nontransferable permit, adequate and feasible routes and methods of access across park areas for any person who meets the criteria of paragraph (a) of this section. The Superintendent shall designate the routes and methods desired by the applicant unless it is determined that:

(i) The route or method of access would cause significant adverse impacts on natural or other values of the park area, and adequate and feasible access otherwise exists; or

(ii) The route or method of access would jeopardize public health and safety, and adequate and feasible access otherwise exists.

(4) If the Superintendent makes one of the findings described in paragraph (b)(3) of this section, he/she shall specify such other alternate methods and routes of access as will provide the applicant adequate and feasible access, while minimizing damage to natural and other values of the park area.

(5) Any person holding an access permit shall notify the Superintendent of any significant change in the method or level of access from that occurring at the time of permit issuance. In such cases, the Superintendent may modify the terms and conditions of the permit, provided that the modified permit also assures adequate and feasible access under the standards of paragraph (b)(3) of this section.

(6) Routes and methods of access permitted pursuant to this section shall be available for use by guests and invitees of the permittee.

(c) *Access requiring permanent improvements.* (1) Application form and procedure. Any application for access to an inholding which proposes the construction or modification of an improved road (e.g., construction or modification of a permanent, year-round nature, and which involves substantial alteration of the terrain or vegetation, such as grading, gravelling of surfaces, concrete bridges, or other such construction or modification), or any other permanent improvement on park area lands qualifying as a "transportation or utility system" under Section 1102 of ANILCA, shall be submitted on the consolidated application form specified in Section 1104(h) of ANILCA, and processed in accordance with the procedures of Title XI of ANILCA.

(2) Decision-making standard. (i) If the permanent improvement is required for adequate and feasible access to the inholding (e.g., improved right-of-way or landing strip), the permit granting standards of paragraph (b) of this section shall apply.

(ii) If the permanent improvement is not required as part of the applicant's right to adequate and feasible access to an inholding (e.g., pipeline, transmission line), the permit granting standards of Sections 1104-1107 of ANILCA shall apply.

(d) *Clarification of the Applicability of 36 CFR Part 9.* (1) 1872 Mining Law

Claims and 36 CFR Subpart 9A. Since section 1110(b) of ANILCA guarantees adequate and feasible access to valid mining claims within park areas notwithstanding any other law, and since the 36 CFR 9.3 requirement for an approved plan of operations prior to the issuance of an access permit may interfere with needed access, 36 CFR 9.3 is no longer applicable in Alaska park areas. However, holders of patented or unpatented mining claims under the 1872 Mining Law (30 U.S.C. 22 *et seq.*) should be aware that 36 CFR 9.9, 9.10 independently require an approved plan of operations prior to conducting mining operations within a park area (except that no plan of operations is required for patented claims where access is not across federally-owned parklands).

(2) Non-Federal Oil and Gas Rights and 36 CFR Subpart 9B. Since section 1110(b) of ANILCA guarantees adequate and feasible access to park area inholdings notwithstanding any other law, and since 36 CFR Subpart 9B was predicated on the park area Superintendent's discretion to restrict and condition such access, 36 CFR Subpart 9B is no longer applicable in Alaska park areas.

§ 13.16 Temporary access.

(a) *Applicability.* This section is applicable to State and private landowners who desire temporary access across a park area for the purposes of survey, geophysical, exploratory and other temporary uses of such nonfederal lands, and where such temporary access is not affirmatively provided for in §§ 13.10-13.15. State and private landowners meeting the criteria of § 13.15(a) are directed to utilize the procedures of § 13.15 to obtain temporary access.

(b) *Application.* A landowner requiring temporary access across a park area for survey, geophysical, exploratory or similar temporary activities shall apply to the Superintendent for an access permit and shall provide the relevant information described in section 13.15(b)(2), concerning the proposed access.

(c) *Permit standards, stipulations and conditions.* The Superintendent shall grant the desired temporary access whenever he/she determines that such access will not result in permanent harm to park area resources. The Superintendent shall include in any permit granted such stipulations and conditions on temporary access as are necessary to ensure that the access granted would not be inconsistent with the purposes for which the park area was reserved and to ensure that no

permanent harm will result to park area resources.

(d) *Definition.* For the purposes of this section, "temporary access" shall mean limited, short-term (i.e., up to one year from issuance of the permit) access, which does not require permanent facilities for access, to undeveloped State or private lands.

§ 13.17 Cabins and other structures.

(a) *Purpose.* It is the purpose of this section to provide procedures and guidance for those occupying and using existing cabins and those wishing to construct new cabins within park areas.

(b) *Existing cabins or other structures.* (1) This subsection applies to all park areas in Alaska except Klondike Gold Rush National Historical Park, Sitka National Historical Park and the former Mt. McKinley National Park, Glacier Bay National Monument and Katmai National Monument.

(2) Cabins or other structures existing prior to December 18, 1973, may be occupied and used by the claimants to these structures pursuant to a nontransferable, renewable permit. This use and occupancy shall be for terms of five years. *Provided, however,* That the claimant to the structure, by application:

(i) Reasonably demonstrates by affidavit, bill of sale or other documentation proof of possessory interest or right of occupancy in the cabin or structure;

(ii) Submits an acceptable photograph or sketch which accurately depicts the cabin or structure and a map showing its geographic location;

(iii) Agrees to vacate and remove all personal property from the cabin or structure upon expiration of the permit;

(iv) Acknowledges in the permit that he/she has no interest in the real property on which the cabin or structure is located; and

(v) Submits a listing of the names of all immediate family members residing in the cabin or structure.

Permits issued under the provisions of this paragraph shall be renewed every five years until the death of the last immediate family member of the claimant residing in the cabin or structure under permit. Renewal will occur unless the Superintendent determines after notice and hearing, and on the basis of substantial evidence in the administrative record as a whole, that the use under the permit is causing or may cause significant detriment to the principal purposes for which the park area was established. The Superintendent's decision may be appealed pursuant to the provisions of 43 CFR 4.700.

(3) Cabins or other structures, the occupancy or use of which began between December 18, 1973, and December 1, 1978, may be used and occupied by the claimant to these structures pursuant to a nontransferable, nonrenewable permit. This use and occupancy shall be for a maximum term of 1 year: *Provided, however*, That the claimant, by application, complies with § 13.17(c)(1) (i) through (iv) above. Permits issued under the provisions of this paragraph may be extended by the Superintendent, subject to reasonable regulations, for a period not to exceed one year for such reasons as the Superintendent deems equitable and just.

(4) Cabins or other structures, construction of which began after December 1, 1978, shall not be available for use and occupancy, unless authorized under the provisions of paragraph (d) of this section.

(5) Cabins or other structures, not under permit, shall be used only for official government business: *Provided, however*, That during emergencies involving the safety of human life, or where designated for public use by the Superintendent through the posting of signs, these cabins may be used by the general public.

(c) *New Cabins or Other Structures Necessary for Subsistence Uses or Otherwise Authorized by Law.* The Superintendent may issue a permit under such conditions as he/she may prescribe for the construction, reconstruction, temporary use, occupancy, and maintenance of new cabins or other structures when he/she determines that the use is necessary to accommodate reasonably subsistence uses or is otherwise authorized by law. In determining whether to permit the use, occupancy, construction, reconstruction or maintenance of cabins or other structures, the Superintendent shall be guided by factors such as other public uses, public health and safety, environmental and resource protection, research activities, protection of cultural or scientific values, subsistence uses, endangered or threatened species conservation and other management considerations necessary to ensure that the activities authorized pursuant to this section are compatible with the purposes for which the park area was established.

(d) *Existing Cabin Leases or Permits.* Nothing in this section shall preclude the renewal or continuation of valid leases or permits in effect as of December 2, 1980, for cabins, homesites, or similar structures on federally owned lands. Unless the Superintendent issues specific findings, following notice and

an opportunity for the leaseholder or permittee to respond, that renewal or continuation of such valid permit or lease constitutes a direct threat or a significant impairment to the purposes for which the park area was established, he/she shall renew such valid leases or permits upon their expiration in accordance with the provisions of the original lease or permit subject to such reasonable regulations as he/she prescribe in keeping with the management objectives of the park area. Subject to the provisions of the original lease or permit, nothing in this paragraph shall necessarily preclude the Superintendent from transferring such a lease or permit to another person at the election or death of the original permittee or leasee.

§ 13.18 Camping and picnicking.

(a) *Camping.* Camping is permitted in park areas except where such use is prohibited or otherwise restricted by the Superintendent in accordance with the provisions of § 13.30, or as set forth for specific park areas in Subpart C of this part.

(b) *Picnicking.* Picnicking is permitted in park areas except where such activity is prohibited by the posting of appropriate signs.

§ 13.19 Weapons, traps and nets.

(a) This section applies to all park areas in Alaska except Klondike Gold Rush National Historical Park, Sitka National Historical Park and the former Mt. McKinley National Park, Glacier Bay National Monument and Katmai National Monument.

(b) Firearms may be carried within park areas in accordance with applicable Federal and State laws, except where such carrying is prohibited or otherwise restricted pursuant to § 13.30.

(c) Traps, bows and other implements authorized by State and Federal law for the taking of fish and wildlife may be carried within National Preserves only during those times when the taking of fish and wildlife is authorized by applicable law or regulation.

(d) In addition to the authorities provided in paragraphs (b) and (c) of this section, weapons (other than firearms) traps and nets may be possessed within park areas provided such weapons, traps or nets are within or upon a device or animal used for transportation and are unloaded and cased or otherwise packed in such a manner as to prevent their ready use while in a park area.

(e) Notwithstanding the provisions of this section, local rural residents who are authorized to engage in subsistence

uses, including the taking of wildlife pursuant to § 13.48, may use, possess, or carry traps, nets and other weapons in accordance with applicable State and Federal laws.

§ 13.20 Preservation of natural features.

(a) This section applies to all park areas in Alaska except Klondike Gold Rush National Historical Park, Sitka National Historical Park, the former Mt. McKinley National Park, Glacier Bay National Monument, and Katmai National Monument.

(b) *Renewable Resources.* The gathering or collecting, by hand and for personal use only, of the following renewable resources is permitted:

(1) Natural plant food items, including fruits, berries and mushrooms, but not including threatened or endangered species;

(2) Driftwood and uninhabited seashells;

(3) Such plant materials and minerals as are essential to the conduct of traditional ceremonies by Native Americans; and

(4) Dead or downed wood for use in fires within park areas.

(c) *Rocks and Minerals.* Surface collection, by hand (including hand-held gold pans) and for personal recreational use only, of rocks and minerals is permitted: *Provided, however*, That (1) collection of silver, platinum, gemstones and fossils is prohibited, and (2) collection methods which may result in disturbance of the ground surface, such as the use of shovels, pickaxes, sluice boxes, and dredges, are prohibited.

(d) *Closure and Notice.* Under conditions where it is found that significant adverse impact on park resources, wildlife populations, subsistence uses, or visitor enjoyment of resources will result, the Superintendent shall prohibit the gathering or otherwise restrict the collecting of these items. Portions of a park area in which closures or restrictions apply shall be (1) published in at least one newspaper of general circulation in the State and designated on a map which shall be available for public inspection in the office of the Superintendent, or (2) designated by the posting of appropriate signs, or (3) both.

(e) *Subsistence.* Nothing in this section shall apply to local rural residents authorized to take renewable resources.

§ 13.21 Taking of fish and wildlife.

(a) *Subsistence.* Nothing in this section shall apply to the taking of fish and wildlife for subsistence uses.

(b) *Fishing.* Fishing is permitted in all park areas in accordance with applicable State and Federal law, and such laws are hereby adopted and made a part of these regulations to the extent they are not inconsistent with § 2.13 of this chapter. With respect to the Cape Krusenstern National Monument, the Malaspina Glacier Forelands area of the Wrangell-St. Elias National Preserve, and the Dry Bay area of Glacier Bay National Preserve, the exercise of valid commercial fishing rights or privileges obtained pursuant to existing law—including any use of park area lands for campsites, cabins, motorized vehicles, and aircraft landings on existing airstrips which is directly incident to the exercise of such rights or privileges—may continue: *Provided, however,* That the Superintendent may restrict the use of park area lands directly incident to the exercise of these rights or privileges if he/she determines, after conducting a public hearing in the affected locality, that such use of park area lands constitutes a significant expansion of the use of park area lands beyond the level of such use during 1979.

(c) *Hunting and Trapping.* Hunting and trapping are permitted in all National Preserves in accordance with applicable State and Federal law, and such laws are hereby adopted and made a part of these regulations: *Provided, however,* That engaging in trapping activities, as the employee of another person is prohibited.

(d) *Closures and Restrictions.* The Superintendent may prohibit or restrict the taking of fish or wildlife in accordance with the provisions of § 13.30. Except in emergency conditions, such restrictions shall take effect only after consultation with the appropriate State agency having responsibility over fishing, hunting, or trapping and representatives of affected users.

§ 13.22 Unattended or abandoned property.

(a) This section applies to all park areas in Alaska except Klondike Gold Rush National Historical Park and Sitka National Historical Park, or as further restricted for specific park areas in Subpart C of this part.

(b) Leaving any snowmachine, vessel, off-road vehicle or other personal property unattended for longer than 12 months without prior permission of the Superintendent is prohibited, and any property so left may be impounded by the Superintendent.

(c) The Superintendent may (1) designate areas where personal property may not be left unattended for any time period, (2) establish limits on the amount, and type of personal property

that may be left unattended, (3) prescribe the manner in which personal property may be left unattended, or (4) establish limits on the length of time personal property may be left unattended. Such designations and restrictions shall be (i) published in at least one newspaper of general circulation within the State, posted at community post offices within the vicinity affected, made available for broadcast on local radio stations in a manner reasonably calculated to inform residents in the affected community, and designated on a map which shall be available for public inspection at the office of the Superintendent, or (ii) designated by the posting of appropriate signs or (iii) both.

(d) In the event unattended property interferes with the safe and orderly management of a park area or is causing damage to the resources of the area, it may be impounded by the Superintendent at any time.

§ 13.30 Closure procedures.

(a) *Authority.* The Superintendent may close an area or restrict an activity on an emergency, temporary, or permanent basis.

(b) *Criteria.* In determining whether to close an area or restrict an activity on an emergency basis, the Superintendent shall be guided by factors such as public health and safety, resource protection, protection of cultural or scientific values, subsistence uses, endangered or threatened species conservation, and other management considerations necessary to ensure that the activity or area is being managed in a manner compatible with the purposes for which the park area was established.

(c) *Emergency Closures.* (1) Emergency closures or restrictions relating to the use of aircraft, snowmachines, motorboats, or nonmotorized surface transportation shall be made after notice and hearing; (2) emergency closures or restrictions relating to the taking of fish and wildlife shall be accompanied by notice and hearing; (3) other emergency closures shall become effective upon notice as prescribed in § 13.30(f); and (4) no emergency closure or restriction shall extend for a period exceeding 30 days, nor may it be extended.

(d) *Temporary closures or restrictions.* (1) Temporary closures or restrictions relating to the use of aircraft, snowmachines, motorboats, or nonmotorized surface transportation or to the taking of fish and wildlife, shall not be effective prior to notice and hearing in the vicinity of the area(s) directly affected by such closures or restrictions, and other locations as

appropriate; (2) other temporary closures shall be effective upon notice as prescribed in § 13.30(f); (3) temporary closures or restrictions shall not extend for a period exceeding 12 months and may not be extended.

(e) *Permanent closures or restrictions.* Permanent closures or restrictions shall be published as rulemaking in the *Federal Register* with a minimum public comment period of 60 days and shall be accompanied by public hearings in the area affected and other locations as appropriate.

(f) *Notice.* Emergency, temporary and permanent closures or restrictions shall be (1) published in at least one newspaper of general circulation in the State and in at least one local newspaper if available, posted at community post offices within the vicinity affected, made available for broadcast on local radio stations in a manner reasonably calculated to inform residents in the affected vicinity, and designated on a map which shall be available for public inspection at the office of the Superintendent and other places convenient to the public; or (2) designated by the posting of appropriate signs; or (3) both.

(g) *Openings.* In determining whether to open an area to public use or activity otherwise prohibited, the Superintendent shall provide notice in the *Federal Register* and shall, upon request, hold a hearing in the affected vicinity and other locations as appropriate prior to making a final determination.

(h) Except as otherwise specifically permitted under the provisions of this part, entry into closed areas or failure to abide by restrictions established under this section is prohibited.

§ 13.31 Permits.

(a) *Application.* (1) Application for a permit required by any section of this part shall be submitted to the Superintendent having jurisdiction over the affected park area, or in the absence of the Superintendent, the Regional Director. If the applicant is unable or does not wish to submit the application in written form, the Superintendent shall provide the applicant an opportunity to present the application orally and shall keep a record of such oral application.

(2) The Superintendent shall grant or deny the application in writing within 45 days. If this deadline cannot be met for good cause, the Superintendent shall so notify the applicant in writing. If the permit application is denied, the Superintendent shall specify in writing the reasons for the denial.

(b) *Denial and appeal procedures.* (1) An applicant whose application for a permit, required pursuant to this part, has been denied by the Superintendent has the right to have the application reconsidered by the Regional Director by contacting him/her within 180 days of the issuance of the denial. For purposes of reconsideration, the permit applicant shall present the following information:

(i) Any statement or documentation, in addition to that included in the initial application, which demonstrates that the applicant satisfies the criteria set forth in the section under which the permit application is made.

(ii) The basis for the permit applicant's disagreement with the Superintendent's findings and conclusions; and

(iii) Whether or not the permit applicant requests an informal hearing before the Regional Director.

(2) The Regional Director shall provide a hearing if requested by the applicant. After consideration of the written materials and oral hearing, if any, and within a reasonable period of time, the Regional Director shall affirm, reverse, or modify the denial of the Superintendent and shall set forth in writing the basis for the decision. A copy of the decision shall be forwarded promptly to the applicant and shall constitute final agency action.

Subpart B—Subsistence

§ 13.40 Purpose and policy.

(a) Consistent with the management of fish and wildlife in accordance with recognized scientific principles and the purposes for which each park area was established, designated, or expanded by ANILCA, the purpose of this subpart is to provide the opportunity for local rural residents engaged in a subsistence way of life to do so pursuant to applicable State and Federal law.

(b) Consistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of park areas is to cause the least adverse impact possible on local rural residents who depend upon subsistence uses of the resources of the public lands in Alaska.

(c) Nonwasteful subsistence uses of fish, wildlife and other renewable resources by local rural residents shall be the priority consumptive uses of such resources over any other consumptive uses permitted within park areas pursuant to applicable State and Federal law.

(d) Whenever it is necessary to restrict the taking of a fish or wildlife

population within a park area for subsistence uses in order to assure the continued viability of such population or to continue subsistence uses of such population, the population shall be allocated among local rural residents engaged in subsistence uses in accordance with a subsistence priority system based on the following criteria:

(1) Customary and direct dependence upon the resource as the mainstay of one's livelihood;

(2) Local residency; and

(3) Availability of alternative resources.

(e) The State of Alaska is authorized to regulate the taking of fish and wildlife for subsistence uses within park areas to the extent such regulation is consistent with applicable Federal law, including but not limited to ANILCA.

(f) Nothing in this subpart shall be construed as permitting a level of subsistence use of fish and wildlife within park areas to be inconsistent with the conservation of healthy populations, and within a national park or monument to be inconsistent with the conservation of natural and healthy populations, of fish and wildlife.

§ 13.41 Applicability.

Subsistence uses by local rural residents are allowed pursuant to the regulations of this Subpart in the following park areas:

(a) In national preserves;

(b) In Cape Krusenstern National Monument and Kobuk Valley National Park;

(c) Where such uses are traditional (as may be further designated for each park or monument in Subpart C of this part) in Aniakchak National Monument, Gates of the Arctic National Park, Lake Clark National Park, Wrangell-St. Elias National Park, and the Denali National Park addition.

§ 13.42 Definitions.

(a) *Local rural resident.* (1) As used in this part with respect to national parks and monuments, the term "local rural resident" shall mean either of the following:

(i) Any person who has his/her primary, permanent home within the resident zone as defined by this section, and whenever absent from this primary, permanent home, has the intention of returning to it. Factors demonstrating the location of a person's primary, permanent home may include, but are not limited to, the permanent address indicated on licenses issued by the State of Alaska Department of Fish and Game, driver's license, and tax returns, and the location of registration to vote.

(ii) Any person authorized to engage in subsistence uses in a national park or monument by a subsistence permit issued pursuant to § 13.44.

(b) *Resident zone.* As used in this part, the term "resident zone" shall mean the area within, and the communities and areas near, a national park or monument in which persons who have customarily and traditionally engaged in subsistence uses within the national park or monument permanently reside. The communities and areas near a national park or monument included as a part of its resident zone shall be determined pursuant to § 13.43 and listed for each national park or monument in Subpart C of this part.

(c) *Subsistence uses.* As used in this part, the term "subsistence uses" shall mean the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing for personal or family consumption; and for customary trade. For the purposes of this paragraph, the term—

(1) "Family" shall mean all persons related by blood, marriage, or adoption, or any person living within the household on a permanent basis; and

(2) "Barter" shall mean the exchange of fish or wildlife or their parts taken for subsistence uses—

(i) For other fish or game or their parts; or

(ii) For other food or for nonedible items other than money if the exchange is of a limited and noncommercial nature; and

(3) "Customary trade" shall be limited to the exchange of furs for cash (and such other activities as may be designated for a specific park area in Subpart C of this part).

§ 13.43 Determination of resident zones.

(a) A resident zone shall include—

(1) the area within a national park or monument, and

(2) the communities and areas near a national park or monument which contain significant concentrations of rural residents who, without using aircraft as a means of access for purposes of taking fish or wildlife for subsistence uses (except in extraordinary cases where no reasonable alternative existed), have customarily and traditionally engaged in subsistence uses within a national park or monument. For purposes of

determining "significant" concentrations, family members shall also be included.

(b) After notice and comment, including public hearing in the affected local vicinity, a community or area near a national park or monument may be—

(1) Added to a resident zone, or

(2) Deleted from a resident zone, when such community or area does or does not meet the criteria set forth in paragraph (a) of this section, as appropriate.

(c) For purposes of this section, the term "family" shall mean all persons living within a rural resident's household on a permanent basis.

§ 13.44 Subsistence permits for persons whose primary, permanent home is outside a resident zone.

(a) Any rural resident whose primary, permanent home is outside the boundaries of a resident zone of a national park or monument may apply to the appropriate Superintendent pursuant to the procedures set forth in § 13.51 for a subsistence permit authorizing the permit applicant to engage in subsistence uses within the national park or monument. The Superintendent shall grant the permit if the permit applicant demonstrates that,

(1) Without using aircraft as a means of access for purposes of taking fish and wildlife for subsistence uses, the applicant has (or is a member of a family which has) customarily and traditionally engaged in subsistence uses within a national park or monument; or

(2) The applicant is a local rural resident within a resident zone for another national park or monument, or meets the requirements of paragraph (1) of this section for another national park or monument, and there exists a pattern of subsistence uses (without use of an aircraft as a means of access for purposes of taking fish and wildlife for subsistence uses) between the national park or monument previously utilized by the permit applicant and the national park or monument for which the permit applicant seeks a subsistence permit.

(b) In order to provide for subsistence uses pending application for and receipt of a subsistence permit, until August 1, 1981, any rural resident whose primary permanent home is outside the boundaries of a resident zone of a national park or monument and who meets the criteria for a subsistence permit set forth in paragraph (a) of this section may engage in subsistence uses in the national park or monument without a permit in accordance with applicable State and Federal law. Effective August 1, 1981, however, such

rural resident must have a subsistence permit as required by paragraph (a) of this section in order to engage in subsistence uses in the national park or monument.

(c) For purposes of this section, the term "family" shall mean all persons living within a rural resident's household on a permanent basis.

§ 13.45 Prohibition of aircraft use.

(a) Notwithstanding the provisions of § 13.12 the use of aircraft for access to or from lands and waters within a national park or monument for purposes of taking fish or wildlife for subsistence uses within the national park or monument is prohibited except as provided in this section.

(b) *Exceptions.* (1) In extraordinary cases where no reasonable alternative exists, the Superintendent shall permit, pursuant to specified terms and conditions, a local rural resident of an "exempted community" to use aircraft for access to or from lands and water within a national park or monument for purposes of taking fish or wildlife for subsistence uses.

(i) A community shall qualify as an "exempted community" if, because of the location of the subsistence resources upon which it depends and the extraordinary difficulty of surface access to these subsistence resources, the local rural residents who permanently reside in the community have no reasonable alternative to aircraft use for access to these subsistence resources.

(ii) A community which is determined, after notice and comment (including public hearing in the affected local vicinity), to meet the description of an "exempted community" set forth in paragraph (b)(1) of this section shall be included in the appropriate special regulations for each park and monument set forth in Subpart C of this part.

(iii) A community included as an "exempted community" in Subpart C of this part may be deleted therefrom upon a determination, after notice and comment (including public hearing in the affected local vicinity), that it does not meet the description of an "exempted community" set forth in paragraph (b)(1) of this section.

(2) Any local rural resident aggrieved by the prohibition on aircraft use set forth in this section may apply for an exception to the prohibition pursuant to the procedures set forth in § 13.51. In extraordinary cases where no reasonable alternative exists, the Superintendent may grant the exception upon a determination that the location of the subsistence resources depended upon and the difficulty of surface access

to these resources, or other emergency situation, requires such relief.

(c) Nothing in this section shall prohibit the use of aircraft for access to lands and waters within a national park or monument for purposes of engaging in any activity allowed by law other than the taking of fish and wildlife. Such activities include, but are not limited to, transporting supplies.

§ 13.46 Use of snowmobiles, motorboats, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses.

(a) Notwithstanding any other provision of this chapter, the use of snowmobiles, motorboats, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses is permitted within park areas except at those times and in those areas restricted or closed by the Superintendent.

(b) The Superintendent may restrict or close a route or area to use of snowmobiles, motorboats, dog teams, or other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses if the Superintendent determines that such use is causing or is likely to cause an adverse impact on public health and safety, resource protection, protection of historic or scientific values, subsistence uses, conservation of endangered or threatened species, or the purposes for which the park area was established.

(c) No restrictions or closures shall be imposed without notice and a public hearing in the affected vicinity and other locations as appropriate. In the case of emergency situations, restrictions or closures shall not exceed sixty (60) days and shall not be extended unless the Superintendent establishes, after notice and public hearing in the affected vicinity and other locations as appropriate, that such extension is justified according to the factors set forth in paragraph (b) of this section. Notice of the proposed or emergency restrictions or closures and the reasons therefor shall be published in at least one newspaper of general circulation within the State and in at least one local newspaper if appropriate, and information about such proposed or emergency actions shall also be made available for broadcast on local radio stations in a manner reasonably calculated to inform local rural residents in the affected vicinity. All restrictions and closures shall be designated on a map which shall be available for public inspection at the office of the

Superintendent of the affected park area and the post office or postal authority of every affected community within or near the park area, or by the posting of signs in the vicinity of the restrictions or closures, or both.

(d) Motorboats, snowmobiles, dog teams, and other means of surface transportation traditionally employed by local rural residents engaged in subsistence uses shall be operated (1) in compliance with applicable State and Federal law, (2) in such a manner as to prevent waste or damage to the park areas, and (3) in such a manner as to prevent the herding, harassment, hazing or driving of wildlife for hunting or other purposes.

(e) At all times when not engaged in subsistence uses, local rural residents may use snowmobiles, motorboats, dog teams, and other means of surface transportation in accordance with §§ 13.10, 13.11, 13.12, and 13.14, respectively.

§ 13.47 Subsistence fishing.

Fish may be taken by local rural residents for subsistence uses in park areas where subsistence uses are allowed in compliance with applicable State and Federal law, including the provisions of §§ 2.13 and 13.21 of this chapter: *Provided, however, That* local rural residents in park areas where subsistence uses are allowed may fish with a net, seine, trap, or spear where permitted by State law. To the extent consistent with the provisions of this chapter, applicable State laws and regulations governing the taking of fish which are now or will hereafter be in effect are hereby incorporated by reference as a part of these regulations.

§ 13.48 Subsistence hunting and trapping

Local rural residents may hunt and trap wildlife for subsistence uses in park areas where subsistence uses are allowed in compliance with applicable State and Federal law. To the extent consistent with the provisions of this chapter, applicable State laws and regulations governing the taking of wildlife which are now or will hereafter be in effect are hereby incorporated by reference as a part of these regulations.

§ 13.49 Subsistence use of timber and plant material.

(a) Notwithstanding any other provision of this part, the non-commercial cutting of live standing timber by local rural residents for appropriate subsistence uses, such as firewood or house logs, may be permitted in park areas where subsistence uses are allowed as follows:

(1) For live standing timber of diameter greater than three inches at ground height, the Superintendent may permit cutting in accordance with the specifications of a permit if such cutting is determined to be compatible with the purposes for which the park area was established;

(2) For live standing timber of diameter less than three inches at ground height, cutting is permitted unless restricted by the Superintendent.

(b) The noncommercial gathering by local rural residents of fruits, berries, mushrooms, and other plant materials for subsistence uses, and the noncommercial gathering of dead or downed timber for firewood, shall be allowed without a permit in park areas where subsistence uses are allowed.

(c)(1) Notwithstanding any other provision of this part, the Superintendent, after notice and public hearing in the affected vicinity and other locations as appropriate, may temporarily close all or any portion of a park area to subsistence uses of a particular plant population only if necessary for reasons of public safety, administration, or to assure the continued viability of such population. For the purposes of this section, the term "temporarily" shall mean only so long as reasonably necessary to achieve the purposes of the closure.

(2) If the Superintendent determines that an emergency situation exists and that extraordinary measures must be taken for public safety or to assure the continued viability of a particular plant population, the Superintendent may immediately close all or any portion of a park area to the subsistence uses of such population. Such emergency closure shall be effective when made, shall be for a period not to exceed sixty (60) days, and may not subsequently be extended unless the Superintendent establishes, after notice and public hearing in the affected vicinity and other locations as appropriate, that such closure should be extended.

(3) Notice of administrative actions taken pursuant to this section, and the reasons justifying such actions, shall be published in at least one newspaper of general circulation within the State and at least one local newspaper if available, and information about such actions and reasons also shall be made available for broadcast on local radio stations in a manner reasonably calculated to inform local rural residents in the affected vicinity. All closures shall be designated on a map which shall be available for public inspection at the office of the Superintendent of the affected park area and the post office or postal authority of every affected

community within or near the park area, or by the posting of signs in the vicinity of the restrictions, or both.

§ 13.50 Closure to subsistence uses of fish and wildlife.

(a) Notwithstanding any other provision of this part, the Superintendent, after consultation with the State and adequate notice and public hearing in the affected vicinity and other locations as appropriate, may temporarily close all or any portion of a park area to subsistence uses of a particular fish or wildlife population only if necessary for reasons of public safety, administration, or to assure the continued viability of such population. For purposes of this section, the term "temporarily" shall mean only so long as reasonably necessary to achieve the purposes of the closure.

(b) If the Superintendent determines that an emergency situation exists and that extraordinary measures must be taken for public safety or to assure the continued viability of a particular fish or wildlife population, the Superintendent may immediately close all or any portion of a park area to the subsistence uses of such population. Such emergency closure shall be effective when made, shall be for a period not to exceed sixty (60) days, and may not subsequently be extended unless the Superintendent establishes, after notice and public hearing in the affected vicinity and other locations as appropriate, that such closure should be extended.

(c) Notice of administrative actions taken pursuant to this section, and the reasons justifying such actions, shall be published in at least one newspaper of general circulation within the State and in at least one local newspaper if available, and information about such actions and reasons also shall be made available for broadcast on local radio stations in a manner reasonably calculated to inform local rural residents in the affected vicinity. All closures shall be designated on a map which shall be available for public inspection at the office of the Superintendent of the affected park area and the post office or postal authority of every affected community within or near the park area, or by the posting of signs in the vicinity of the restrictions, or both.

§ 13.51 Application procedures for subsistence permits and aircraft exceptions.

(a) Any person applying for the subsistence permit required by § 13.44(a), or the exception to the prohibition on aircraft use provided by

§ 13.45(b)(2), shall submit his/her application to the Superintendent of the appropriate national park or monument. If the applicant is unable or does not wish to submit the application in written form, the Superintendent shall provide the applicant an opportunity to present the application orally and shall keep a record of such oral application. Each application must include (1) a statement which acknowledges that providing false information in support of the application is a violation of Section 1001 of Title 18 of the United States Code, and (2) additional statements or documentation which demonstrates that the applicant satisfies the criteria set forth in § 13.44(a) for a subsistence permit or § 13.45(b)(2) for the aircraft exception, as appropriate. Except in extraordinary cases for good cause shown, the Superintendent shall decide whether to grant or deny the application in a timely manner not to exceed forty-five (45) days following the receipt of the completed application. Should the Superintendent deny the application, he/she shall include in the decision a statement of the reasons for the denial and shall promptly forward a copy to the applicant.

(b) An applicant whose application has been denied by the Superintendent has the right to have his/her application reconsidered by the Alaska Regional Director by contacting the Regional Director within 180 days of the issuance of the denial. The Regional Director may extend the 180-day time limit to initiate a reconsideration for good cause shown by the applicant. For purposes of reconsideration, the applicant shall present the following information:

(1) Any statement or documentation, in addition to that included in the initial application, which demonstrates that the applicant satisfies the criteria set forth in paragraph (a) of this section;

(2) The basis for the applicant's disagreement with the Superintendent's findings and conclusions; and

(3) Whether or not the applicant requests an informal hearing before the Regional Director.

(c) The Regional Director shall provide a hearing if requested by the applicant. After consideration of the written materials and oral hearing, if any, and within a reasonable period of time, the Regional Director shall affirm, reverse, or modify the denial of the Superintendent and shall set forth in writing the basis for the decision. A copy of the decision shall be forwarded promptly to the applicant and shall constitute final agency action.

Subpart C—Special Regulations— Specific Park Areas in Alaska

§ 13.63 Denali National Park and Preserve.

(a) *Subsistence*—(1) *Resident Zone*. The following communities and areas are included within the resident zone for Denali National Park addition:

Cantwell
Minchumina
Nikolai
Telida

(b) *Camping*. Camping is prohibited along the road corridor and at Wonder Lake, except at designated areas. Camping is allowed in other areas in accordance with the backcountry management plan.

(c) *Unattended or Abandoned Property*. Leaving unattended and abandoned property along the road corridor, at Wonder Lake, and in the areas included in the backcountry management plan, is prohibited.

(d) [Reserved]

(e) *Fishing limit of catch and in possession*. The limit of catch per person per day shall be 10 fish but not to exceed 10 pounds and one fish, except that the limit of catch of lake trout (mackinaw) per person per day shall be two fish including those hooked and released. Possession of more than one day's limit of catch by one person at any one time is prohibited.

(f) *Mountain Climbing*. Registration is required in advance on a form provided by the Superintendent for climbing Mount McKinley and Mount Foraker.

[46 FR 31854, June 17, 1981, and 45 FR 78120, Nov. 25, 1980, as amended at 48 FR 30295, June 30, 1983]

APPENDIX C: MANAGEMENT OBJECTIVES

Resource Protection

Identify and evaluate all natural and cultural resources within the park and preserve, including wildlife, flora and historical, cultural, and geological resources, so that management has adequate information and data upon which to base decisions for their protection and preservation.

Identify threats and potential threats to all natural and cultural resources and analyze these threats and develop means to mitigate or resolve them so as to reduce or possibly eliminate adverse human effects on park and preserve resources.

Collect data on current conditions and uses of natural and cultural resources to serve as a basis for preparing and implementing both a resource management plan and a general management plan.

In accordance with the provisions of the Wilderness Act (1964) and the Alaska National Interest Lands Conservation Act (1980), and based upon a reevaluation of the management objectives that have evolved since the establishment of Mount McKinley National Park in 1917, develop and implement plans to protect and preserve designated wilderness areas.

Elicit the cooperation of knowledgeable individuals, groups, institutions, and agencies to collect the most current and complete information and data about cultural and natural resources.

Work cooperatively with the Alaska Department of Fish and Game in regulating consumptive uses of natural resources to preserve habitat and maintain healthy populations of wildlife.

To the fullest extent possible make management decisions that will allow natural forces to shape the substances of the park and preserve environment.

Seek the cooperation of mining interests for the purpose of maintaining high environmental standards and protecting and preserving natural and cultural resources.

Prepare and implement programs to encourage subsistence users of the park and preserve and sport hunters of the preserve to understand and respect the natural forces at work and to avoid actions that might disrupt natural balances.

Locate and identify all historic and prehistoric sites and structures for possible designation on the National Register of Historic Places and on the Alaska Heritage Resources Survey.

Assemble natural and cultural resource information and data to be used in interpretive materials and programs for the purpose of enhancing the enjoyment and education of visitors.

Prepare and implement plans to protect and preserve essential wildlife habitats and populations.

Conduct studies about fire in the area--both natural and otherwise--for the purpose of collecting information and data as a basis for updating the current interagency management plan and implementing the new version.

Information and Interpretation

Provide visitors with services, materials, and programs for the purpose of enhancing their knowledge of park and preserve resources and their opportunities for enjoyable, safe, and educational visits.

For the purpose of minimizing conflicts among various users of park and preserve resources, prepare and present informative materials about the differences between land use management categories and regulations for Alaskan park units and those of parks in other states.

Devise information and interpretive programs to afford visitors with opportunities to present their views to management in order that the programs might become more meaningful.

Provide information and programs for local communities so that citizens might be kept informed about the operations of the park and preserve.

Upgrade and maintain study collections of natural and cultural objects, the park library, and slide and photographic files to have adequate sources for interpreting Denali's cultural and natural history.

Administration

Provide adequate staff so that resources can be protected and preserved, visitors can be served effectively, cultural and natural resources information and data can be updated and kept current, and interpretive materials and programs can be made more meaningful.

Employ innovative management approaches in staffing plans and training and development programs that recognize the knowledge and skills of local persons and severe environmental working conditions so that there is a continuing effective staff to protect and preserve resources and to provide visitor services.

Work toward the implementation of the various sections of ANILCA including the formation of subsistence councils, mandatory studies and plans, and access routes, to comply with the legislation as soon as possible.

Visitor Use and Safety

Provide all visitors and potential visitors with information to enhance their opportunities for enjoyable, meaningful, and safe park experiences.

Provide recreational facilities, efficient public transportation and other visitor services which enable visitors to use and enjoy park resources in the safest and freest possible manner compatible with protection of park resources.

Specifically manage visitor use in the interest of public safety with respect to potential dangers associated with grizzly and black bear encounters and activities in subarctic wilderness conditions such as mountain climbing, hiking, camping, snowmobiling, and cross-country skiing.

Determine what feasible methods park management can employ for the purpose of better accommodating handicapped visitors.

Visitor Protection and Safety

Have well-trained, well-equipped field personnel for the purpose of operating effectively in emergencies in matters of search and rescue and law enforcement.

Provide information and programs to the public about the hazards in the park and preserve so that visitors are prepared to take the necessary precautions to avoid them.

Monitor mountaineering activities and conduct studies for the purpose of collecting information and data as a basis for a mountaineering management plan that will address such particulars as the injury and fatality rates; the logistics, costs, and coordination of search and rescue missions; the litter and human waste left by climbers; and the qualifications of persons on climbs and expeditions.

Concessions

Identify appropriate levels and types of commercial services and issue concessions contracts, permits, and commercial licenses as appropriate to those commercial operators best able to meet the needs of visitors and protect resources.

Cooperation

Work cooperatively with various local, state, and federal agencies that have mutual concerns about and interests in the park and preserve area, and when necessary develop memoranda of agreement, so that ideas and information can be shared and conflicts minimized.

Work especially close to the Division of State Parks in matters relative to uses and developments in Denali State Park and in the national park and preserve so that the state park and the national

park and preserve complement each other both in protecting and preserving resources and in providing services to visitors.

Share information with and provide technical assistance to private interests and local and regional governments in matters of community and regional planning so that the purposes of the park and preserve receive due consideration in community and regional plans.

APPENDIX D: PRELIMINARY COST ESTIMATES

The preliminary cost estimates cover only development proposals for the north-side park road corridor. The proposal for the south side of Denali remains too conceptual to estimate the costs of implementation. Further studies for the south side will be undertaken cooperatively with the state of Alaska, and they will provide the necessary level of detail. It is hoped that significant portions of any south-side development will be accomplished by private enterprise.

The following estimated construction costs include construction supervision, cultural resource compliance, and contingencies.

Alternative B: The Proposal

Riley Creek/Hotel Area	
Hotel	\$14,000,000
Interpretive center, roads, parking	\$ 3,700,000
Hostel, shower, store, gas station, parking	3,081,000
Landscaping/general site improvements at hotel and depot	291,000
Depot expansion	225,000
Park Road	
Comprehensive sign program, mileposts	66,000
Place power lines and transformers underground	131,000
Four waysides	1,048,000
Eielson Visitor Center	
Interim renovation and grounds improvements	1,048,000
*Option 1 - Expansion of existing building	2,620,000
*Option 2 - Replacement of existing building	5,240,000
Campground Improvements (excluding Riley Creek)	
Restore Sanctuary, Teklanika, and Igloo	346,000
Relocate Wonder Lake campground; obliterate and restore old campground	655,000
Wonder Lake trail system (assumes contract construction)	721,000
Park Headquarters/C-Camp	
Public comfort station, road and parking improvements	504,000
Administration building annex	1,769,000
Employee housing including garage, recreation court, and relocation of existing management structures-- total of 13 housing units	3,668,000
Seasonal housing including 5 duplexes, 6 cabins, shower/toilet building, and general site improvements	3,316,000

*Only one option will be selected. The total range of costs shows both options.

Transient bunkhouse	384,000
Access roads, trailer pads with utilities, paving of main road and maintenance area	452,000
Toklat	
Ranger station renovation and storage building	210,000
Seasonal employee housing--6 units	214,000
Trailer pads (8) with utilities	211,000
Transient bunkhouse	286,000
Maintenance facilities	1,146,000
Wonder Lake Ranger Station	
Rehabilitate existing ranger station	131,000
Seasonal employee cabins (4 units)	491,000
Central shower/laundry/toilet/fire and rescue cache building (this may not be needed if existing facilities in basement of ranger station can be retained)	262,000
Utility building, fuel pumps, and storage (at maintenance area)	550,000
Parkwide Radio System	<u>413,000</u>
Total	\$41,939,000 to \$44,559,000

Alternative A

The full range of actions included in the 1983 Development Concept Plan for the park road corridor would be undertaken in this alternative. Unlike the proposal, the unknown costs associated with any south-side proposal would not be underwritten by the National Park Service in this alternative.

Riley Creek/Hotel Area	
Interpretive center, roads, parking	\$ 8,515,000
Campground, roads, trails, site development, structures	2,164,000
Hostel, shower, store, gas station, parking	3,081,000
Concession improvements--employee housing & dining, bus maintenance building, coffee shop, AV room, etc.	2,751,000
Landscaping/general site improvements at hotel and depot	291,000
Depot expansion	225,000
Park Road	
Comprehensive sign program, mileposts	66,000
Place power lines and transformers underground	131,000
Develop 7 waysides	2,120,000
Eielson Visitor Center	
Interim renovation and grounds improvements	1,048,000
*Option 1 - Expansion of existing building	2,620,000
*Option 2 - Replacement of existing building	5,240,000

Campground Improvements (excluding Riley Creek)	
General rehabilitation of sites and minimal improvements (cooking shelters, etc.)	178,000
Expansion/renovation of Teklanika campground including roads, caretaker duplex, comfort stations, sewage system	1,975,000
Relocate Wonder Lake campground; obliterate and restore old campground	2,710,000
Wonder Lake trail system (assumes contract construction)	721,000
Park Headquarters/C-Camp	
Public comfort station, road and parking improvements	504,000
Administration building annex	1,769,000
Employee housing including garage, recreation court, and relocation of existing management structures-- total of 13 housing units	3,668,000
Seasonal housing including 5 duplexes, 6 cabins, shower/toilet building, and general site improvements	3,316,000
Transient bunkhouse	384,000
Access roads, trailer pads with utilities, paving of main road and maintenance area	452,000
Toklat	
Ranger station renovation and storage building	210,000
Seasonal employee housing--6 units	214,000
Trailer pads (8) with utilities	211,000
Transient bunkhouse	286,000
Maintenance facilities	1,146,000
Wonder Lake Ranger Station	
Rehabilitate existing ranger station	131,000
Seasonal employee cabins (4 units)	491,000
Central shower/laundry/toilet/fire and rescue cache building (this may not be needed if existing facilities in basement of ranger station can be retained)	262,000
Transient bunkhouse	286,000
Utility building, fuel pumps, and storage (at maintenance area)	550,000
Parkwide Radio System	<u>413,000</u>
Total	\$42,889,000 to \$45,509,000

APPENDIX E:

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE NATIONAL PARK SERVICE,
THE ALASKA DEPARTMENT OF NATURAL RESOURCES,
AND
THE ALASKA DEPARTMENT OF TRANSPORTATION AND
PUBLIC FACILITIES

ARTICLE I. BACKGROUND AND OBJECTIVES

The objective of this memorandum of understanding is to establish an agreement between the signatories regarding processes for cooperative planning and development of visitor services and facilities in the region south of the Mount McKinley massif. It is the intent of the signatories to continue to work cooperatively during the design, development, and operational stages. Following public comment on alternative systems of recreation services and facilities as set forth in the initial planning document, the signatories intend to come to a mutual decision on one of the alternatives and, through an addendum to this agreement, to set forth their respective roles in designing and developing this alternative.

It is recognized that a previous memorandum of understanding dated September 27, 1978, between the state of Alaska, the U.S. Department of the Interior, and the Matanuska-Susitna Borough set forth a similar intent to cooperate in providing visitor facilities in the south Denali area. The basic intent of that memorandum of understanding is still valid; however, this memorandum modifies the previous agreement in that (1) means of access in addition to the Petersville Road and locations other than the Peters Hills area will also be considered and (2) more extensive involvement of private enterprise is anticipated.

WHEREAS, the Mount McKinley massif and surrounding public lands constitute a valuable public resource, and

WHEREAS, improving the public's opportunity to view and experience this resource will benefit the citizens of Alaska and visitors to the state and will help carry out the purpose of Denali National Park and Preserve and Denali State Park, and

WHEREAS, access, interpretive services, recreation facilities and accommodations for the visitor to Denali National Park and Preserve are concentrated north of the Alaska Range, and

WHEREAS, the extension of a system of access, services, facilities and visitor accommodations to the region south of the range will (1) better distribute human impact on the natural resources of the region, (2) shorten travel distance from Anchorage and therefore reduce costs of reaching the resource for many people, and (3) enable public enjoyment of a different and equally spectacular aspect of the Mount McKinley massif and its surrounding geologic features and natural resources, and

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WHEREAS, public lands immediately south of the Alaska Range are under the management of the Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, and the Department of the Interior, National Park Service, and

WHEREAS, the Alaska Department of Transportation and Public Facilities has the primary responsibility for planning and developing means of access in the state, and

WHEREAS, the Alaska Department of Natural Resources is responsible for determining the future use of state park lands and is interested in coordinating its planning processes with the National Park Service, and

WHEREAS, the National Park Service is preparing a general management plan for submission to Congress by December 2, 1985, and

WHEREAS, the Park, Parkway and Recreation Area Study Act of May 23, 1936, charges the Secretary of the Interior with responsibility "to promote the coordination and development of effective programs relating to outdoor recreation."

ARTICLE II. STATEMENT OF WORK

NOW, THEREFORE,

1. The signatories to this memorandum of understanding agree to cooperate in defining and describing at least three alternative systems of access, interpretive services, recreational facilities and visitor accommodations for the region immediately south of the Alaska Range. These alternative systems will be designed to provide a variety of opportunities year around for enjoyment of the lands and resources of the area, including opportunities to view the Mount McKinley massif and surrounding mountain scenery, opportunities for close contact with glaciers, and opportunities for hiking, skiing, camping, wildlife viewing, and for the use and enjoyment of lakes and waterways in the region. Appropriate points of interpretation of natural features and resources will be included within this system.

These descriptions shall suggest state, federal, and private roles in developing and operating the alternative systems and include preliminary budget estimates for publicly funded components. Consideration will be given to the role of private enterprise both inside and outside the park boundaries. Participation by private parties will be proposed for those elements for which private enterprise is the most effective means of accomplishment.

2. The signatories agree to divide the task of defining and describing alternate systems as follows:

[copy]

- a. The National Park Service, in consultation with other participants, shall prepare a draft description and map depicting the alternative systems. The National Park Service planner assigned to this project shall work closely with the other two participants, spending time as necessary within their offices.
 - b. The Department of Natural Resources, Division of Parks and Outdoor Recreation, shall provide information on land ownership as needed to define and evaluate the alternative systems.
 - c. The Alaska Department of Transportation and Public Facilities shall provide a preliminary analysis of cost and feasibility of various means of access as needed to define the alternative systems (cost not to exceed \$10,000).
 - d. Wherever feasible the signatories shall share facilities, equipment, field opportunities, information, and staff in accomplishing this agreement.
 - e. Each signatory shall designate a planner to provide review and advice to the National Park Service in describing and defining alternatives. In addition, the following agencies shall be requested to designate representatives to provide review and advice in the definition and drafting of alternative systems: Matanuska-Susitna Borough, Alaska Department of Commerce and Economic Development, Alaska Federation of Natives, Alaska Visitors Association, and the Alaska Department of Fish and Game. The National Park Service shall be responsible for calling and chairing meetings, circulating materials for review, and otherwise initiating contact as necessary to obtain information, advice, and review from the other signatories and the advisory agencies.
 - f. The National Park Service, in consultation with representatives of the other two agencies, shall prepare a draft public participation program for this project, noting the time and place of all public meetings and the comment period on any documents issued to the public. This program shall be subject to the approval of each of the signatories of this agreement. The participation of both state and federal parties in this project shall be equally recognized at all public meetings and on any documents issued to the public.
3. It is the intent of the signatories to obtain public review and comment on concepts for alternative systems as part of the process of public review for the general management plan for the Denali National Park and Preserve during the fall of 1984. Prior to public review the concepts involving state land shall be subject to approval of the state.

[copy]

4. Following concept review, the draft of alternative systems shall be detailed and completed, printed in a separate document and released for public review and comment. The three signatories shall approve this document for purposes of public review and comment before it is released. It is anticipated that this phase of the project shall be completed by fall 1985.
5. To test the marketability and economic feasibility of the alternatives, the signatories may request expressions of interest from the private sector.
6. After public comment has been received and analyzed, the signatories will attempt to come to a mutual choice for one of the alternatives and through an addendum to this agreement, to set forth their respective roles in designing and developing this alternative. It is intended that these decisions will be made by spring 1986. It is recognized that the state has final approval authority over state lands and the National Park Service has final approval authority over National Park Service lands.

ARTICLE III. TERM AND TERMINATION

This agreement shall be effective for five years from the date of the last signature. It is the intent of the signatories to develop addenda to this agreement specifying their joint approval of one of the alternative systems of access, interpretive services, recreation facilities, and visitor accommodations, and outlining their participation in the design, development, and operation of the selected system. At the end of five years this agreement shall be reviewed to determine whether it should be renewed, modified, or terminated.

Any signator to this agreement may terminate the agreement by providing 60 days' written notice to the others.

ARTICLE IV. REQUIRED CLAUSES

During the performance of this agreement, the participants agree to abide by the terms of Executive Order 11246 on nondiscrimination and will not discriminate against any person because of race, color, religion, sex, or national origin. The participants will take affirmative action to ensure that applicants are employed without regard to their race, color, religion, sex, or national origin.

No member or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

State of Alaska
Department of Natural Resources

Esther C. Wunnicke

Title Commissioner

Date July 26, 1984

Department of the Interior
National Park Service

Robert J. Costor

Title Regional Director

Date 1 August '84

State of Alaska
Department of Transportation
and Public Facilities

Daniel W. Hargis

Title DEPUTY Commissioner

Date JULY 3, 1984

APPENDIX F:

SUBSISTENCE EVALUATION (Compliance with Section 810 of ANILCA)

I. INTRODUCTION

Section 810(a) of ANILCA states:

In determining whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands under any provision of law authorizing such actions, the head of the Federal agency having primary jurisdiction over such lands or his designee 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 -

(i) 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 will involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition, and (C) reasonable steps will be taken to minimize adverse impacts upon subsistence uses and resources resulting from such actions.

II. EVALUATION CRITERIA

The following criteria were used to determine adverse effects on subsistence:

large reductions in the abundance of harvestable resources because of adverse impacts on habitat or increased competition from sport harvests

major redistributions of resources because of alteration of habitat or migration routes

substantial interference with harvester access to active subsistence sites through physical or legal barriers

III. PROPOSED ACTION ON FEDERAL LANDS

The National Park Service proposes to implement a general management plan, land protection plan, and wilderness suitability review for Denali National Park and Preserve. The general management plan will guide resource management, visitor use, and development for a ten-year period. The land protection plan will guide management activities related to private lands for a period of two years. The wilderness suitability review evaluates lands in Denali for their suitability or nonsuitability for inclusion in the national wilderness preservation system; it will be valid until such time as a formal recommendation is transmitted to Congress.

IV. ALTERNATIVES CONSIDERED

A. General Management Plan

Continue present management (alternative A)

Develop a visitor service and activity center on the south side, accompanied by a reduction in overnight use on the north side (alternative B, selected as the proposed general management plan)

Perpetuate existing levels of mineral development in the Kantishna Hills and Dunkle Mine areas (alternatives A and B)

B. Land Protection Plan

Acquire surface estates in the Kantishna Hills

Acquire fee title to mining properties in the Kantishna Hills wherever an adverse threat to park resources is recognized

Acquire the wolf townships

Adjust the boundary along the Swift Fork and Tokositna rivers

V. AFFECTED ENVIRONMENT

ANILCA authorizes subsistence harvests within the new park additions and the preserve. Subsistence use is not considered extensive. Resident zones established for Denali include the communities of Cantwell, Minchumina, Nikolai, and Telida. In addition, 16 subsistence use permits are held by individuals who are not residents of those four communities. The principal subsistence activities are hunting for caribou and moose and trapping for marten and lynx.

VI. EVALUATION

A. The Potential to Reduce Populations, Redistribute Resources, or Interfere with Access

No action of the general management plan or the land protection plan will significantly reduce populations through impacts on habitat or increased competition from nonsubsistence harvest. Implementation of the proposed resource management strategy will result in better understanding of the natural processes at Denali and in corrective actions being taken where necessary to eliminate threats to wildlife populations. The proposal for visitor use and general development also attempts to reduce impacts on wildlife by limiting vehicle use on the north side of the park complex. Mining operations in the Kantishna Hills, if continued at existing levels, will damage riparian habitat and cause minor reductions in the populations of species dependent on that habitat, principally moose, marten, and fox. None of the reductions in population would be expected to be significant. The land protection plan supports the objective of reducing traffic on the north side of Denali by recommending the acquisition of the surface estates on patented mining properties to reduce the potential for recreational development within the interior of the park. The land protection plan also seeks the inclusion of the wolf townships within the park to protect the wildlife populations using those lands from sport hunting.

No action of the general management plan or the land protection plan will adversely affect the distribution or migration patterns of subsistence resources. Therefore, no change in the availability of subsistence resources is anticipated as a result of the implementation of either plan.

All rights of access for subsistence harvests granted by section 811 of ANILCA will be maintained by the general management plan and the land protection plan. Regulations implementing section 811 of ANILCA are currently in place, and the two plans do not suggest changing those regulations.

B. Availability of Other Lands for the Proposed Action

Established in 1917 and significantly enlarged in 1980, Denali National Park and Preserve was included as a unit of the national park system because of the wealth of outstanding natural resources and dramatic features. No other lands would be suitable for the specific purpose of preserving those resources and providing for their enjoyment by the public. The only other major land use addressed by the plans is mineral development, which will occur on patented or valid unpatented claims. The proposed plans are consistent with the mandates of ANILCA, including title VIII, and with the National Park Service Organic Act.

C. Alternatives

The alternatives considered during this project were limited to the park complex and lands immediately adjacent to the park and

preserve. None of the alternatives, including the proposal, would have a significant effect on subsistence use.

VII. CONSULTATION AND COORDINATION

See the consultation and coordination section of this document for information.

VIII. Based on the above process and considering all available information, this evaluation concludes that the proposed actions will not result in a significant restriction in subsistence use in Denali National Park and Preserve.

APPENDIX G:

(copy)

MASTER MEMORANDUM OF UNDERSTANDING
BETWEEN
THE ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA
AND
THE U.S. NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
ANCHORAGE, ALASKA

This Master Memorandum of Understanding between the State of Alaska, Department of Fish and Game, hereinafter referred to as the Department, and the U.S. Department of the Interior, National Park Service, hereinafter referred to as the Service, reflects the general policy guidelines within which the two agencies agree to operate.

WHEREAS, the Department, under the Constitution, laws, and regulations of the State of Alaska, is responsible for the management, protection, maintenance, enhancement, rehabilitation, and extension of the fish and wildlife resources of the State on the sustained yield principle, subject to preferences among beneficial uses; and

WHEREAS, the Service, by authority of the Constitution, laws of Congress, executive orders, and regulations of the U.S. Department of the Interior is responsible for the management of Service lands in Alaska and the conservation of resources on these lands, including conservation of healthy populations of fish and wildlife within National Preserves and natural and healthy populations within National Parks and Monuments; and

WHEREAS, the Department and the Service share a mutual concern for fish and wildlife resources and their habitats and desire to develop and maintain a cooperative relationship which will be in the best interests of both parties, the fish and wildlife resources and their habitats, and produce the greatest public benefit; and

WHEREAS, the Alaska National Interest Lands Conservation Act (ANILCA) and subsequent implementing Federal regulations recognize that the resources and uses of Service lands in Alaska are substantially different than those of similar lands in other states and mandate continued subsistence uses in designated National Parks plus sport hunting and fishing, subsistence, and trapping uses in National Preserves under applicable State and Federal laws and regulations; and

WHEREAS, the Department and the Service recognize the increasing need to coordinate resource planning and policy development;

NOW, THEREFORE, the parties hereto do hereby agree as follows:

(copy)

THE DEPARTMENT OF FISH AND GAME AGREES:

1. To recognize the Service's responsibility to conserve fish and wildlife and their habitat and regulate human use on Service lands in Alaska, in accordance with the National Park Service Organic Act, ANILCA, and other applicable laws.
2. To manage fish and resident wildlife populations in their natural species diversity on Service lands, recognizing that nonconsumptive use and appreciation by the visiting public is a primary consideration.
3. To consult with the Regional Director or his representative in a timely manner and comply with applicable Federal laws and regulations before embarking on management activities on Service lands.
4. To act as the primary agency responsible for management of subsistence uses of fish and wildlife on State and Service lands, pursuant to applicable State and Federal laws.
5. To recognize that National Park areas were established, in part, to "assure continuation of the natural process of biological succession" and "to maintain the environmental integrity of the natural features found in them."

THE NATIONAL PARK SERVICE AGREES:

1. To recognize the Department as the agency with the primary responsibility to manage fish and resident wildlife within the State of Alaska.
2. To recognize the right of the Department to enter onto Service lands after timely notification to conduct routine management activities which do not involve construction, disturbance to the land, or alterations of ecosystems.
3. To manage the fish and wildlife habitat on Service lands so as to ensure conservation of fish and wildlife populations and their habitats in their natural diversity.
4. To cooperate with the Department in planning for management activities on Service lands which require permits, environmental assessments, compatibility assessments, or similar regulatory documents by responding to the Department in a timely manner.
5. To consider carefully the impact on the State of Alaska of proposed treaties or international agreements relating to fish and wildlife resources which could diminish the jurisdictional authority of the State, and to consult freely with the State when such treaties or agreements have a significant impact on the State.

(copy)

6. To review Service policies in consultation with the Department to determine if modified or special policies are needed for Alaska.
7. To adopt Park and Preserve management plans whose provisions are in substantial agreement with the Department's fish and wildlife management plans, unless such plans are determined formally to be incompatible with the purposes for which the respective Parks and Preserves were established.
8. To utilize the State's regulatory process to the maximum extent allowed by Federal law in developing new or modifying existing Federal regulations or proposing changes in existing State regulations governing or affecting the taking of fish and wildlife on Service lands in Alaska.
9. To recognize the Department as the primary agency responsible for policy development and management direction relating to subsistence uses of fish and wildlife resources on State and Service lands, pursuant to applicable State and Federal laws.
10. To consult and cooperate with the Department in the design and conduct of Service research or management studies pertaining to fish and wildlife.
11. To consult with the Department prior to entering into any cooperative land management agreements.
12. To allow under special use permit the erection and maintenance of facilities or structures needed to further fish and wildlife management activities of the Department on Service lands, provided their intended use is not in conflict with the purposes for which affected Parks or Preserves were established.

THE DEPARTMENT OF FISH AND GAME AND THE NATIONAL PARK SERVICE MUTUALLY AGREE:

1. To coordinate planning for management of fish and wildlife resources on Service lands so that conflicts arising from differing legal mandates, objectives, and policies either do not arise or are minimized.
2. To consult with each other when developing policy, legislation, and regulations which affect the attainment of wildlife resource management goals and objectives of the other agency.
3. To provide to each other upon request fish and wildlife data, information, and recommendations for consideration in the formulation of policies, plans, and management programs regarding fish and wildlife resources on Service lands.

(copy)

4. To recognize that the taking of fish and wildlife by hunting, trapping, or fishing on certain Service lands in Alaska is authorized in accordance with applicable State and Federal law unless State regulations are found to be incompatible with documented Park or Preserve goals, objectives or management plans.
5. To recognize for maintenance, rehabilitation, and enhancement purposes, that under extraordinary circumstances the manipulation of habitat or animal populations may be an important tool of fish and wildlife management to be used cooperatively on Service lands and waters in Alaska by the Service or the Department when judged by the Service, on a case by case basis, to be consistent with applicable law and Park Service policy.
6. That implementation by the Secretary of the Interior of subsistence program recommendations developed by Park and Park Monument Subsistence Resource Commissions pursuant to ANILCA Section 808(b) will take into account existing State regulations and will use the State's regulatory process as the primary means of developing Park subsistence use regulations.
7. To neither make nor sanction any introduction or transplant of any fish or wildlife species on Service lands without first consulting with the other party and complying with applicable Federal and State laws and regulations.
8. To cooperate in the development of fire management plans which may include establishment of priorities for the control of wildfires and use of prescribed fires.
9. To consult on studies for additional wilderness designations and in development of regulations for management of wilderness areas on Service lands.
10. To resolve, at field office levels, all disagreements pertaining to the cooperative work of the two agencies which arise in the field and to refer all matters of disagreement that cannot be resolved at equivalent field levels to the Regional Director and to the Commissioner for resolution before either agency expresses its position in public.
11. To meet annually to discuss matters relating to the management of fish and wildlife resources on, or affected by, Service lands.
12. To develop such supplemental memoranda of understanding between the Commissioner and the Regional Director as may be required to implement the policies contained herein.
13. That the Master Memorandum of Understanding is subject to the availability of appropriated State and Federal funds.

(copy)

14. That this Master Memorandum of Understanding establishes procedural guidelines by which the parties shall cooperate, but does not create legally enforceable obligations or rights.
15. That this Master Memorandum of Understanding shall become effective when signed by the Commissioner of the Alaska Department of Fish and--Game- and the Alaska Regional Director of the National Park Service and shall continue in force until terminated by either party by providing notice in writing 120 days in advance of the intended date of termination.
16. That amendments to this Master Memorandum of Understanding may be proposed by either party and shall become effective upon approval by both parties.

STATE OF ALASKA

U.S. DEPARTMENT OF THE INTERIOR

Department of Fish and Game

National Park Service

By /s/ Ronald O. Skoog

By /s/ John E. Cook

Ronald O. Skoog

John E. Cook

Commissioner

Regional Director, Alaska

Date 14 October 1982

Date October 5, 1982

94 STAT. 2474

PUBLIC LAW 96-487—DEC. 2, 1980

LAND ACQUISITION AUTHORITY

16 USC 3192.

SEC. 1302. (a) GENERAL AUTHORITY.—Except as provided in subsections (b) and (c) of this section, the Secretary is authorized, consistent with other applicable law in order to carry out the purposes of this Act, to acquire by purchase, donation, exchange, or otherwise any lands within the boundaries of any conservation system unit other than National Forest Wilderness.

(b) RESTRICTIONS.—Lands located within the boundaries of a conservation system unit which are owned by—

(A) the State or a political subdivision of the State;

(B) a Native Corporation or Native Group which has Natives as a majority of its stockholders;

(C) the actual occupant of a tract, title to the surface estate of which was on, before, or after the date of enactment of this Act conveyed to such occupant pursuant to subsections 14(c)(1) and 14(h)(5) of the Alaska Native Claims Settlement Act, unless the Secretary determines that the tract is no longer occupied for the purpose described in subsections 14(c)(1) or 14(h)(5) for which the tract was conveyed and that activities on the tract are or will be detrimental to the purposes of the unit in which the tract is located; or

(D) a spouse or lineal descendant of the actual occupant of a tract described in subparagraph (C), unless the Secretary determines that activities on the tract are or will be detrimental to the purposes of the unit in which the tract is located—

may not be acquired by the Secretary without the consent of the owner.

(c) EXCHANGES.—Lands located within the boundaries of a conservation system unit (other than National Forest Wilderness) which are owned by persons or entities other than those described in subsection (b) of this section shall not be acquired by the Secretary without the consent of the owner unless prior to final judgment on the value of the acquired land, the owner, after being offered appropriate land of similar characteristics and like value (if such land is available from public lands located outside the boundaries of any conservation system unit), chooses not to accept the exchange. In identifying public lands for exchange pursuant to this subsection, the Secretary shall consult with the Alaska Land Use Council.

(d) IMPROVED PROPERTY.—No improved property shall be acquired under subsection (a) without the consent of the owner unless the Secretary first determines that such acquisition is necessary to the fulfillment of the purposes of this Act or to the fulfillment of the purposes for which the concerned conservation system unit was established or expanded.

(e) RETAINED RIGHTS.—The owner of an improved property on the date of its acquisition, as a condition of such acquisition, may retain for himself, his heirs and assigns, a right of use and occupancy of the improved property for noncommercial residential or recreational purposes, as the case may be, for a definite term of not more than twenty-five years, or in lieu thereof, for a term ending at the death of the owner or the death of his spouse, whichever is later. The owner shall elect the term to be reserved. Unless the property is wholly or partially donated, the Secretary shall pay to the owner the fair market value of the owner's interest in the property on the date of its acquisition, less the fair market value on that date of the right retained by the owner. A right retained by the owner pursuant to this section shall be subject to termination by the Secretary upon his

Post, pp. 2493, 2494.

determination that such right is being exercised in a manner inconsistent with the purposes of this Act, and it shall terminate by operation of law upon notification by the Secretary to the holder of the right of such determination and tendering to him the amount equal to the fair market value of that portion which remains unexpired.

(f) **DEFINITION.**—For the purposes of this section, the term “improved property” means—

“Improved property.”

(1) a detached single family dwelling, the construction of which was begun before January 1, 1980 (hereinafter referred to as the “dwelling”), together with the land on which the dwelling is situated to the extent that such land—

(A) is in the same ownership as the dwelling or is Federal land on which entry was legal and proper, and

(B) is designated by the Secretary to be necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures necessary to the dwelling which are situated on the land so designated, or

(2) property developed for noncommercial recreational uses, together with any structures accessory thereto which were so used on or before January 1, 1980, to the extent that entry onto such property was legal and proper.

In determining when and to what extent a property is to be considered an “improved property”, the Secretary shall take into consideration the manner of use of such buildings and lands prior to January 1, 1980, and shall designate such lands as are reasonably necessary for the continued enjoyment of the property in the same manner and to the same extent as existed before such date.

(g) **CONSIDERATION OF HARDSHIP.**—The Secretary shall give prompt and careful consideration to any offer made by the owner of any property within a conservation system unit to sell such property, if such owner notifies the Secretary that the continued ownership is causing, or would result in, undue hardship.

(h) **EXCHANGE AUTHORITY.**—Notwithstanding any other provision of law, in acquiring lands for the purposes of this Act, the Secretary is authorized to exchange lands (including lands within conservation system units and within the National Forest System) or interests therein (including Native selection rights) with the corporations organized by the Native Groups, Village Corporations, Regional Corporations, and the Urban Corporations, and other municipalities and corporations or individuals, the State (acting free of the restrictions of section 6(i) of the Alaska Statehood Act), or any Federal agency. Exchanges shall be on the basis of equal value, and either party to the exchange may pay or accept cash in order to equalize the value of the property exchanged, except that if the parties agree to an exchange and the Secretary determines it is in the public interest, such exchanges may be made for other than equal value.

48 USC note
prec. 21.

(i)(1) The Secretary is authorized to acquire by donation or exchange, lands (A) which are contiguous to any conservation system unit established or expanded by this Act, and (B) which are owned or validly selected by the State of Alaska.

(2) Any such lands so acquired shall become a part of such conservation system unit.

APPENDIX I: SPECIFIC LAND
PROTECTION RECOMMENDATIONS

Area 1

Owner: State of Alaska

Tract _____ (Fairbanks T12S R9W, T12S R10W, T12S R11W, T13S R7W, T13S R8W, T13S R9W, T13S R10W, T13S R11W)

Size (acres): 95,000 (approx.)

Minimum interest needed: Fee

Justification: These lands have long been identified as belonging to the original Mount McKinley National Park ecosystem. These are essential to preserve habitat for moose, wolves, bear, sheep, and caribou which migrate annually into the area from present park lands. For the past several years the Denali caribou herd has wintered in the Stampede area. Protection of the area would maintain the integrity of the Savage, Sanctuary, and Teklanika watersheds and preclude adverse development.

Recommended method of acquisition: Exchange

Priority: 1

Area 2

Owner: Geoprize, Ltd.; Swainbank (Nimbus 1-10, Nim 4-160)

Tracts AA 028909 and AA 029075 (Fairbanks T19S R10W)

Size (acres): 3,420

Minimum interest needed: None (delete from park)

Justification: The National Park Service intends to exchange the lands containing these mining claims for other lands, thus excluding these claims from the boundary of the park.

Recommended method of deletion: Exchange

Priority: 1

Area 3

Owner: Foster, Hawley, Zink (Golden Flower 1-6)

Tracts AA 023357-62 (Fairbanks T19S R10W)

Size (acres): 60

Minimum interest needed: None (delete from park)

Justification: The National Park Service intends to exchange the lands containing these mining claims for other lands, thus excluding these claims from the boundary of the park.

Recommended method of deletion: Exchange

Priority: 1

Area 4

Owner: Enserch (Golden Bob 14-16)
Tracts AA 029978-80 (Fairbanks T19S R11W)
Size (acres): 60
Minimum interest needed: None (delete from park)
Justification: The National Park Service intends to exchange the lands containing these mining claims for other lands, thus excluding these claims from the boundary of the park.
Recommended method of deletion: Exchange
Priority: 1

Area 5

Owner: Foster (Colorado 1-9)
Tract AA 023363-71 (Fairbanks T19S R10W)
Size (acres): 180
Minimum interest needed: None (delete from park)
Justification: The National Park Service intends to exchange the lands containing these mining claims for other lands, thus excluding these claims from the boundary of the park.
Recommended method of deletion: Exchange
Priority: 1

Area 6

Owner: 32 patented lode claims, Kantishna Tract
Size (acres): 640 (20 each claim)
Minimum interest needed: Less than fee
Justification: These claims were originally staked for their mineral interest. Acquisition of the surface estate would preclude adverse development not directly connected with the mineral industry. Such development might include subdivision, highrise buildings, or development causing increased road travel over the park road. Recent research has shown that increased traffic along the park road is detrimental to park wildlife. In addition, the surface of these lands is mostly undisturbed, and attempts to develop would cause considerable scarring, loss of vegetation, and erosion.
Recommended method of acquisition: Purchase interest in the surface estate of each patented lode claim, reserving to the owner the right to use the surface for the exploration and development of the minerals
Priority: 2

Area 7

Owner: Kantishna Mines, Anthony

Tract F 001169, 2 lode claims (Whistler, Bright Light)

Size (acres): 40.497

Minimum interest needed: Fee

Justification: These claims are the only patented lode claims situated on the west side of Moose Creek. They are covered with vegetation. Acquisition could preclude further disturbance to scenic and habitat values on the western side of the Moose Creek valley.

Recommended method of acquisition: Purchase

Priority: 3

Area 8

Owner: Fuksa (Comstock 1-8, Eagles Den 1 and 2, Lucky Tuesday 1 and 2, Eldorado 1-4, and Virginia City 1 and 2)

Tracts FF 059042-49, FF 059032,33, FF 059027,28, FF058991-94, and FF 058995,96 (Fairbanks T16S R18W)

Size (acres): 360

Minimum interest needed: Mineral interest

Justification: All unpatented claims will undergo validity determination. Acquisition of the mineral interest of valid claims could prevent further disturbance at these sites for the development of access and help maintain the scenic and habitat values of this relatively less disturbed west side of the Moose Creek drainage.

Recommended method of acquisition: Purchase

Priority: 4

Area 9

Owner: Taylor (Last Chance Creek lodes 1-6)

Tracts FF 052416-21

Size (acres): 120

Minimum interest needed: Mineral interest

Justification: All unpatented claims will undergo validity determination. Acquisition of the mineral interest of valid claims could prevent further disturbance for the development of access and further tailing piles at the sites. Protection of this area will help maintain the scenic and habitat values in the Caribou Creek drainage.

Recommended method of acquisition: Purchase

Priority: 4

Area 10

Owner: Northwest Exploration (Willow 1-8 and Liberty 22-54)

Tracts FF 59258-65 and FF 59209-41

Size (acres): 820

Minimum interest needed: Mineral interest

Justification: All claims will undergo validity determinations.

Acquisition of the mineral interest of valid claims could prevent further damage to scenic values and aquatic and riparian habitat, maintain fish passage to Upper Moose Creek, and maintain habitat for moose, birds, and other wildlife. Moose Creek flows out of the Denali wilderness. It is popular with hikers and backpackers and is readily accessible from the park road. It supports a large grayling population.

Recommended method of acquisition: Purchase. The DOWLING study appraised the value of these claims as follows:

Willow Creek 1-8	\$ 83,000
Moose Creek below Rainy Creek	36,000
Moose Creek, Spruce Creek to Glen Creek	341,000
Moose Creek, Glen Creek to Rainy Creek	1,055,000

Priority: 4

Area 11

Owner: Talkeetna Mines Trust, Jacobsen

Tract AA 05037, Tokachitna unpatented claims 1-8 (Seward T30N R8W)

Size (acres): 160

Minimum interest needed: Fee

Justification: The area is currently without mining access in the remote south of Denali National Park. Acquisition would preclude impacts from development and access into this otherwise primitive area of the park and would protect the natural setting.

Recommended method of acquisition: Donation

Priority: 5

Area 12

Owner: State of Alaska

Size (acres): 640

Minimum interest needed: Fee

Justification: Lands in these tracts are the only remaining inholdings in the southwest preserve. Their acquisition would consolidate management and ensure that highly scenic undisturbed areas would not be changed by new development.

Recommended method of acquisition: Exchange

Priority: 6

Area 13

Owner: Genet

Tract AA 5488 (Seward T30N R6W)

Size (acres): 79.96

Minimum interest needed: Less than fee

Justification: This property is located on Pirate Lake near the snout of the Ruth Glacier. Future development could be highly visible to park visitors in the area. Present use is considered compatible with park resources. If the boundary in this area is changed to the Tokositna River (land exchange proposed below), this property will no longer be within the park boundary. If the land is not exchanged, an easement could protect the area by limiting the amount and type of development.

Recommended method of acquisition: Purchase

Priority: 7

Area 14

Owner: State of Alaska

Tract _____ (Seward T29N R6W)

Size (acres): not available

Minimum interest needed: Fee

Justification: A land exchange would place boundaries along the Tokositna River and simplify identification by park visitors and NPS and state officials. Basic acreage would not change. The boundary would be the west bank of the Tokositna River.

Recommended method of acquisition: Exchange

Priority: 8

Area 15

Owner: Barron

Tract AA 3990 (Seward T30N R6W)

Size (acres): 47

Minimum interest needed: Less than fee

Justification: This property is located on the Tokositna River near the mouth of the Ruth Glacier. Future development could be highly visible to visitors floating the river. Present use is considered compatible with park resources. If the boundary in this area is changed to the Tokositna River (land exchange proposed above), this property will no longer be within the park boundary. If the land is not exchanged, an easement could protect the property by limiting waterfront development, providing screening from the river, and maintaining compatible architecture.

Recommended method of acquisition: Purchase

Priority: 9

Area 16

Owner: Basil headquarters site

Tract AA 1076 (Seward T30N R6W)

Size (acres): 4.98

Minimum interest needed: Less than fee

Justification: This property is located on the Tokositna River near the terminus of the Ruth Glacier. Future development could be highly visible to visitors floating the river. Present use is considered compatible with park resources. If the boundary in this area is changed to the Tokositna River, this property will no longer be within the park boundary. If the land is not exchanged, an easement could protect the property by limiting waterfront development, providing screening from the river, and maintaining compatible architecture.

Recommended method of acquisition: Purchase

Priority: 10

Area 17

Owner: State of Alaska

Size (acres):

Minimum interest needed: Cooperative agreement

Justification: Mining could occur in the beds of rivers determined to be navigable, because title to these riverbeds is vested in the state. The National Park Service needs to prevent the degradation of habitat, water quality, and scenic values on all rivers within the park boundary. A cooperative agreement with the state of Alaska could preclude mineral entry and leasing under state law and otherwise prevent the destruction of riparian habitat and scenic values along any rivers determined to be owned by the state.

Recommended method of acquisition: Cooperative agreement

Priority: 11

Area 18

Owner: Application, AHTNA Native Corporation (12(b))

Tract FF 14844A2 (Fairbanks T17S R8W, sec. 25, 36, and T18S R8W, sec. 1)

Size (acres): 2,073.0

Minimum interest needed: Less than fee

Justification: This area is adjacent to the community of Cantwell and serves as habitat for moose in the Windy Creek drainage. The area is at the base of the hills above the town and is forested. Land sales, growth, and development could impact this area which is now used by local rural residents for subsistence purposes. A scenic easement could allow compatible development and lessen impacts on habitat and other values.

Recommended method of acquisition: Purchase

Priority: 12

Area 19

Owner: Application, AHTNA Native Corporation
Tract AA 16172 (Fairbanks T18S R9W)
Size (acres): 7,860
Minimum interest needed: Fee
Justification: This area is important to the habitat and scenic values of the adjacent Denali wilderness.
Recommended method of acquisition: Relinquishment
Priority: 13

Area 20

Owner: AHTNA Native Corporation (12(c))
Tract AA 810402 (Fairbanks T17S R9W, sec. 35, 36)
Size (acres): 375.0
Minimum interest needed: Fee
Justification: This parcel is needed to maintain the integrity of the watershed on the Foggy Pass side of the former Mount McKinley National Park. The parcel blocks a small valley on the existing park side and is important for the movement of wildlife.
Recommended method of acquisition: Exchange
Priority: 14

Area 21

Owner: Application, Doyon, Ltd. (12(c))
Tract FF 02190156 (Fairbanks T10S R20W)
Size (acres): 9,488.0
Minimum interest needed: Fee
Justification: This area northeast of the Muddy River flats was set aside by Congress because of its high resource values. It is composed of wetlands and low wooded hills which serve as moose habitat. Local rural residents depend primarily on these moose for subsistence. Acquisition is necessary to preclude any land disposal, subdivision, or adverse development in the area and to maintain the habitat.
Recommended method of acquisition: Exchange
Priority: 15

Area 22

Owner: Application, Doyon, Ltd. (12(c))

Tract FF 2190491 (Fairbanks T10S R21W)

Size (acres): 19,662.0

Minimum interest needed: Fee

Justification: This is the northern end of the Muddy River flats. It is important marshland habitat for trumpeter swans and seasonal riparian habitat for moose. Local rural residents depend primarily on these moose for subsistence. Fee is necessary to preclude any land disposal, subdivision, or adverse development in the area.

Recommended method of acquisition: Relinquishment (or exchange, as appropriate)

Priority: 16

Area 23

Owner: Application, Doyon, Ltd. (14(h)(8))

Tracts FF 40216-219 (Fairbanks T11S R20W)

Size (acres): 22,932 (5,760, 5,697, 5,715, and 5,760)

Minimum interest needed: Fee

Justification: These applications are at the north end of Lake Chilchukabena, an area identified as important habitat for moose and migrating waterfowl. Local rural residents rely on this area for subsistence. This is the largest lake in the park, and its shoreline should be protected for its scenic and other values. Acquisition is needed to preclude any land disposal, subdivision, or adverse development in the area.

Recommended method of acquisition: Exchange

Priority: 17

Area 24

Owner: Application, Minchumina Natives, Inc.

Tracts AA 11184 (Fairbanks T11S R23W) and FF 22396 (T11S R22W)

Size (acres): 2,890

Minimum interest needed: Fee

Justification: The tracts are near Lake Minchumina. This area is important habitat for migrating waterfowl, including trumpeter swans. If these lands are conveyed, acquisition will be necessary to preclude adverse use, subdivision, or land development.

Recommended method of acquisition: Purchase or exchange

Priority: 18

Area 25

Owner: Sheldon headquarters site
Tract AA 445 (Fairbanks T22S R17W)
Size (acres): 4.90
Minimum interest needed: Fee
Justification: This is the only inholding on the McKinley massif and contains the only man-made structure in an otherwise mountain-wilderness setting. It currently serves as a shelter for mountaineers and skiers in the Sheldon Amphitheater. The present use is not in keeping with the long-term objective of restoring this area to its natural pristine condition and keeping it free of structures and incompatible uses.
Recommended method of acquisition: Purchase
Priority: 19

Area 26

Owner: Application, Doyon, Ltd.
Tract FF 22715 (Fairbanks T12S R17W)
Size (acres): 160
Minimum interest needed: Fee
Justification: The area is a cemetery/historic site important to native Athapascans. Designation as national park lands currently protects these historic sites by federal law. These lands and historic values should remain federally owned and can be managed and protected respecting native concerns.
Recommended method of acquisition: Relinquishment
Priority: 21

Area 27

Owner: Application, Doyon, Ltd.
Tract FF 22818 (Fairbanks T12S R21W, sec. 6)
Size (acres): 629
Minimum interest needed: Fee
Justification: The area is a cemetery/historic site important to native Athapascans. Designation as national park lands currently protects these historic sites by federal law. These lands and historic values should remain federally owned and can be managed and protected respecting native concerns.
Recommended method of acquisition: Relinquishment
Priority: 22

Area 28

Owner: Application, Doyon, Ltd.

Tract FF 22843 (Fairbanks T12S R21W, sec. 11-13)

Size (acres): 40

Minimum interest needed: Fee

Justification: The area is a cemetery/historic site important to native Athapascans. Designation as national park lands currently protects these historic sites by federal law. These lands and historic values should remain federally owned and can be managed and protected respecting native concerns.

Recommended method of acquisition: Relinquishment

Priority: 23

Area 29

Owner: University of Alaska (Stampede Mine)

Tract FF 79301 and 79302 (Ridge Claims 3 and 4)

Size (acres): 21.552

Minimum interest needed: Fee

Justification: Ridge Claims 3 and 4 are situated on a ridge above the main block of the Stampede Mine claims. They have not been mined. It is preferable that the activity at the Stampede Mine be confined to the already disturbed area, which is more out of sight and a mile away from the highly visible ridgetop.

Recommended method of acquisition: Relinquishment of the mineral interest in the claims

Priority: 24

Area 30

Owner: Application, State of Alaska

Tract F 034740 (Fairbanks T18S, R8W)

Size (acres): 6,141

Minimum interest needed: Fee

Justification: Acquisition of an approximately 1,000-acre portion of this parcel, from the ridgetop down the west drainage of Windy Creek, is necessary to maintain the integrity of the Windy Creek watershed. This area is adjacent to the town of Cantwell. A cooperative agreement for the remainder of the parcel will be sufficient.

Recommended method of acquisition: Relinquishment or exchange

Priority: none

Area 31

Owner: Application, state of Alaska
Tract FF 023477 (Fairbanks T11S R21W)
Size (acres): 22,892.0

Minimum interest needed: Cooperative agreement

Justification: This area was set aside by Congress because of its high resource values. It is composed of wetlands necessary for migrating waterfowl and seasonally supports a large moose population. Local rural residents depend on this area for subsistence uses. The important wildlife habitat is a common interest of the state of Alaska and the National Park Service. To protect habitat and to maintain wildlife values, there should be no land disposal, subdivision, or adverse development in the area.

Recommended method of acquisition: Cooperative agreement with the state of Alaska to protect the natural character of the area

Priority: None

Area 32

Owner: Travers
Tract F 29984 (Fairbanks T16S R17W, sec. 29NW, NW)
Size (acres): 0.517

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred or were proposed, the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or use causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. Part of this tract was sold; however, a parcel 150' x 150' in the southwest corner was retained by Mr. Travers. A small cabin sits on the property.

Recommended method of acquisition: None

Priority: None

Area 33

Owner: Hunter
Tract F 9215 (Fairbanks T16S R17W, sec. 19NE, 20NW)
Size (acres): 12

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred, the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife.

Recommended method of acquisition: None

Priority: None

Area 34

Owner: Olsen homestead site
Tract F 2627 (Fairbanks T12S R17W, Diamond, AK)
Size (acres): 15.39
Minimum interest needed: None
Justification: Use as a single residence or parttime residence without further improvements to the land or improved access is compatible. Otherwise, fee interest by purchase would be recommended.
Recommended method of acquisition: None
Priority: None

Area 35

Owner: Cole (Camp Denali)
Tract F 9215 (Fairbanks T16S R17W, sec. 19NE and 20NW)
Size (acres): 55.306
Minimum interest needed: None
Justification: The current historical pattern of use is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. Camp Denali is a private lodge which also operates guided activities in Denali National Park by concession permit.
Recommended method of acquisition: None
Priority: None

Area 36

Owner: Van Wickle homesite
Tract FF 6085 (Fairbanks T16S R17W, sec. 09SE, NE, SE, SE and 10SW, NW, SW, SW)
Size (acres): 4.99
Minimum interest needed: None
Justification: Current historical pattern of use and access is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or increased development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. This property is highly visible.
Recommended method of acquisition: None
Priority: None

Area 37

Owner: Ashbrook homesite (Kantishna Roadhouse)

Tract F 20831 (Fairbanks T16S R18W, sec. 13)

Size (acres): 5.0

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or increased development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. This property is used residentially and offers tourist facilities in the summer months.

Recommended method of acquisition: None

Priority: None

Area 38

Owner: Hunter headquarters site (Eagle's Nest)

Tract F 34584 (Fairbanks T16S R17W, sec. 17)

Size (acres): 4.99

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or increased development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife.

Recommended method of acquisition: None

Priority: None

Area 39

Owner: Cole (Hawk's Nest)

Tract F 29984 (Fairbanks T16S R17W, sec. 29NW, NW)

Size (acres): 4.483

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or increased development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. This property is highly visible from the park road. It is part of the Camp Denali complex.

Recommended method of acquisition: None

Priority: None

Area 40

Owner: Crabb (North Face Lodge)
Tract F 12691 (Fairbanks T16S R17W)
Size (acres): 4.75

Minimum interest needed: None

Justification: Current historical pattern of use is compatible with park resources. If incompatible uses occurred the National Park Service would want to acquire the property. Subdivision, highrise buildings, improved access, or other obtrusive development or increased development causing increased travel over the park road would be considered incompatible uses. Recent research has shown that increased travel on the park road is detrimental to park wildlife. This is a highly visible property, situated on the park road past Wonder Lake. If it was ever offered for sale, such sale, to be profitable, would require extensive development of the property, which would increase its visibility and road use. If such development appeared imminent, the National Park Service would want to purchase the property.

Recommended method of acquisition: None

Priority: None

Area 41

Owner: John
Tract F 2624 (Fairbanks T12S R21W, sec. 12W2)
Size (acres): 160

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 42

Owner: Application, Duyck
Tract F 24288 (Fairbanks T11S R17W, sec. 11N2)
Size (acres): 80

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 43

Owner: Menke

Tract FF 1268 (Fairbanks T11S R21W, parcel C, and
T11S R22W, parcel B)

Size (acres): 80

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 44

Owner: Application, Chase

Tract FF 16597 (Fairbanks T11S R20W)

Size (acres): 160

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 45

Owner: Nikolai

Tract FF 17523 (Fairbanks T15S R28W, sec. 18A, and T16S R27W,
sec. 28 and 33B)

Size (acres): 160

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 46

Owner: Nikolai

Tract FF 17524 (Fairbanks T15S R27W, sec. 34)

Size (acres): 80

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development. The property sits between Highpower and Deep creeks in the western end of the park.

Recommended method of acquisition: None

Priority: None

Area 47

Owner: Rudolph Chase

Tract FF 17876 (Fairbanks T11S R20W, sec. 31, and T12S R20W, sec. 6)

Size (acres): 160

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 48

Owner: Application, Starr

Tracts FF 19491 C (Fairbanks T12S R20W, sec. 9), FF 19491 B (T11S R21W, sec. 3 and 10), FF 19491 A (T11S R21W, sec. 6), and FF 19491 D (T11S R21W, sec. 18)

Size (acres): 160

Minimum interest needed: None

Justification: This is an Alaska native allotment. Present residential use is compatible with park resources. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 49

Owner: Harrison

Size (acres): 0.25

Minimum interest needed: None

Justification: Present residential use is compatible with park resources and uses of this area. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 50

Owner: Barb

Size (acres): 0.25

Minimum interest needed: None

Justification: Present residential use is compatible with park resources and uses of this area. The park would want to acquire this property in fee if an adverse use was imminent, to prevent further intrusions on lands basically primitive in character and to minimize impacts on wildlife habitat and subsistence uses. Adverse uses would include subdivision or commercial development.

Recommended method of acquisition: None

Priority: None

Area 51

Owner: University of Alaska (Stampede Mine)

Tract FF 079305-7 and FF 59096-7 (Fairbanks T13S R15W)

Size (acres):

Minimum interest needed: None

Justification: This mineral interest is owned by the University of Alaska, School of Mining. It is administered under an agreement with the National Park Service. The National Park Service intends to continue managing the area under the agreement to provide educational opportunities to students.

Recommended method of acquisition: None

Area 52

Owner: Cordasci (Absolution)

Tract AA 13539 (Fairbanks T20S R11W, sec. 5NW)

Size (acres): 20

Minimum interest needed: None

Justification: This claim will be examined for validity. If it is determined valid, it will be managed according to federal and state regulations to ensure land protection of the area.

Recommended method of acquisition: None

Area 53

Owner: Ohio Creek Mining Corp. (Glacier Queen)
Tract AA 034579 (Fairbanks T20S R12W, sec. 18NE)
Size (acres): 20

Minimum interest needed: None

Justification: This claim will be examined for validity. If it is determined valid, any operations will be managed according to federal and state regulations to ensure land protection of the area.

Recommended method of acquisition: None

Area 54

Owner: Wilson (Don 1, 2, 9, and 10)
Tracts AA 032502-3 and AA 032510 (T20S R11W)
Size (acres): 60

Minimum interest needed: None

Justification: These claims will be examined for validity. If claims are determined valid, any operations will be managed according to federal and state regulations to ensure land protection of the area.

Recommended method of acquisition: None

Area 55

Owner: Unpatented lode claims, Kantishna Hills
Tract

Size (acres): 1,320

Minimum interest needed: None

Justification: All unpatented claims will undergo validity determinations. On any valid unpatented lode claims, land protection will be achieved through compliance with plans of operations pursuant to title 36, Code of Federal Regulations, part 9(A), and other applicable state and federal laws.

Recommended method of acquisition: None

Area 56

Owner: Unpatented placer claims, Kantishna Hills
Tract

Size (acres): 3,960

Minimum interest needed: None

Justification: All unpatented placer claims will undergo validity determinations. On any valid claims, land protection will be achieved through compliance with plans of operations pursuant to title 36, Code of Federal Regulations, part 9(A), and other applicable state and federal laws.

Recommended method of acquisition: None

APPENDIX J: ENDANGERED SPECIES ACT COMPLIANCE

FISH AND WILDLIFE SERVICE
1011 E. TUDOR RD.
ANCHORAGE, ALASKA 99503
(907) 276-3800

Mr. Roger J. Contor, Regional Director
National Park Service, USDI
2525 Gambell Street
Anchorage, Alaska 99503

Dear Mr. Contor:

This responds to your April 4, 1984, memorandum in which you requested a list of threatened or endangered species present in Denali National Park and Preserve and in three adjacent areas. Based on information currently available to us, no listed or proposed threatened or endangered species occur in the areas you identified. The only exception to this is the possible presence of the endangered peregrine falcon (Falco peregrinus anatum) during spring and fall migration.

There are currently 30 species of plants in Alaska which are considered candidates for possible future listing under the Endangered Species Act. Two of these, Smelowskia borealis var. villosa and Taraxacum carneocoloratum, are known to occur within the park/preserve. Smelowskia borealis var. villosa is associated with calcareous scree at high elevations on Sable Mountain, at Dry Creek, and at Rainbow Mountain. Taraxacum carneocoloratum is an alpine species known from Stoney Pass and two sites outside the planning area. Although not presently afforded protection pursuant to the Endangered Species Act, we urge you to consider these candidate species in the environmental planning process.

We look forward to reviewing the general management plan when it is available. Thank you for your continued interest in Alaska's endangered wildlife.

Sincerely,

Assistant Regional Director

Alaska Regional Office
2525 Gambell Street, Room 107
Anchorage, Alaska 99503-2892

D18(ARO-ONR)
(X)N1621

Memorandum

To: Regional Director, United States Fish and Wildlife Service
Anchorage, Alaska

From: Acting Regional Director, Alaska Region, National Park Service

Subject: Section 7, Informal Consultation on Denali National Park and
Preserve General Management Plan

The National Park Service is currently developing a general management plan for Denali National Park and Preserve. In order to insure that the direction of the plan would not jeopardize any threatened or endangered species within the park and preserve, input from the Fish and Wildlife Service is requested. We would appreciate a list of threatened or endangered plants or animals which occur within the park, and also those which occur within adjacent lands, specifically the Tokositna drainage, Curry Ridge and Byers Lake within Denali State Park, as the plan is considering these sites as alternatives for potential development. Thank you for your cooperation.

(sgd) Robert L. Peterson

bcc:
Joan Hirschman (DSC)

A. Lovaas:lf:04/03/84

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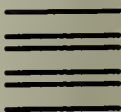
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