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.

Resource management plans are prepared to describe the scientific research, surveys, and management activities that will be conducted in each national park system unit. Information obtained from research described in the resource management plan is used by park managers to better understand the unit's cultural and natural resources and is used in making resource-related decisions and funding requests. Resource management plans are evolving documents that respond to the changing requirements of managing a unit's resources. They are reviewed at least once each year and are updated as necessary. The most elementary resource management plan is essentially a list of proposed research projects that are required to better understand the resources of a national park system unit. More fully evolved resource management plans may include detailed management strategies for addressing specific resource issues.

A resource management plan is being prepared for Denali National Park and Preserve. The National Park Service will consult with interested parties, including the state of Alaska, during the preparation and subsequent revisions of the plan. Draft plans will be transmitted to the state and will be available to the general public for a 60-day review and comment period. Adequate notification of the availability of the draft plan will be provided. If significant changes are made in the resource management plan during the annual review, the same public involvement practices as described above will be followed.

The following list of research projects is current at the time of printing of this document; however, proposals and priorities for research projects are reviewed annually and are updated as necessary.

fire study
fire plan
wildlife surveys
declining caribou herd study
wolf pack monitoring
bearproof food container study
bear aversive conditioning study
study of effects of placer mining on water quality
study for revegetation of placer mining areas
air quality monitoring
vegetation trampling study
Dall sheep study
predator protection and management

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.

FISH AND WILDLIFE

General

The National Park Service is mandated by ANILCA and other laws to protect the habitat for, and populations of, fish and wildlife within the park (ANILCA, section 201(6) and 16 USC 1). The National Park Service will strive to maintain the natural abundance, behavior, diversity, and ecological integrity of native animals as part of their ecosystems. NPS management of fish and wildlife will generally consist of baseline research and management of the human uses and activities that affect such populations and their habitat, rather than the direct management of resources.

The Alaska Department of Fish and Game, 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; and in accordance with the state constitution, the department manages fish and wildlife using the recognized management principle of sustained yield. Within conservation system units, including Denali National Park and Preserve, state management of fish and wildlife resources is required to be consistent with the provisions of ANILCA; therefore, some apsects of state management may not apply within the park.

The National Park Service and the state of Alaska will cooperatively manage the fish and wildlife resources of the park and preserve. A

memorandum of understanding between the National Park Service and the Alaska Department of Fish and Game (see appendix J) defines the cooperative management roles of each agency. The "Department of the Interior, Fish and Wildlife Policy: State-Federal Relationships" (43 CFR 24) further addresses intergovernmental cooperation in the protection, use, and management of fish and wildlife resources. The closely related responsibilities of protecting habitat and wildlife populations, and of providing for fish and wildlife utilization, require close cooperation of the Alaska Department of Fish and Game, the National Park Service, and all resource users.

Sportfishing is an allowable use throughout the park and preserve; subsistence fishing, hunting, and trapping are allowed in the new park additions where such uses are traditional (ANILCA, section 202(3)(a)); hunting, fishing, and trapping are allowed in the preserve (ANILCA, sections 1313 and 1314 and applicable state law). Trapping in national park system units can be conducted only using implements designed to entrap animals, as specified in 36 CFR 1.4 and 13.1(u). ANILCA requires that harvest activities remain consistent with maintenance of healthy populations of fish and wildlife in the preserve and natural and healthy populations in the park (ANILCA, section 815(1)).

Congress recognized that programs for the management of healthy populations may differ between the National Park Service and the U.S. Fish and Wildlife Service because of differences in each agency's management policies and legal authorities; therefore, "the policies and legal authorities of the managing agencies will determine the nature and degree of management programs affecting ecological relationships, population dynamics, and manipulation of the components of the ecosystem" (Senate Report 96-413, p. 233).

The state of Alaska, through the boards of game and fisheries, establishes fishing, hunting, and trapping regulations for the park and preserve, consistent with the provisions of ANILCA. The Park Service will cooperate with the state wherever possible to establish regulations that are compatible with park management goals, objectives, and NPS policies.

Section 805(d) of ANILCA authorizes the state to manage the taking of fish and wildlife for subsistence purposes on federal lands if state laws are enacted and implemented that satisfy specific criteria in sections 803, 804, and 805 of ANILCA.

A subsistence resource commission has been established for the park in accordance with section 808 of ANILCA. The commission is charged with devising and recommending a subsistence hunting program for the park. Submission of a program is anticipated in 1986 (see the "Subsistence" section for a more complete discussion of the commission).

Regarding customary and traditional subsistence uses in parks, monuments, and preserves in Alaska, the legislative history of ANILCA states,

> The National Park Service recognizes, and the Committee [on Energy and Natural Resources] agrees, that subsistence uses by local rural residents have been, and are now, a natural part of the ecosystem serving as a primary consumer in the natural food chain. The Committee expects the National Park Service to take appropriate steps when necessary to insure that consumptive uses of fish and wildlife populations within National Park Service units not be allowed to adversely disrupt the natural balance which has been maintained for thousands of years (Senate Report 96-413, p. 171).

The National Park Service "may temporarily close any public lands . . ., or any portion thereof, 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" (ANILCA, section 816(b)). Except in emergencies, all such closures must be preceded by consultation with the appropriate state agencies. If it becomes necessary to restrict the taking of populations of fish and wildlife in the park, nonwasteful subsistence uses will be accorded priority over the taking of fish and wildlife for other purposes.

The state has developed resource management recommendations containing management guidelines and objectives that are generally developed for broad regions. Therefore, some of the guidelines and objectives may not be applicable to the park and preserve. The state has also developed fish and wildlife management plans. The master memorandum of understanding indicates that the Park Service will develop its management plans in substantial agreement with state plans unless state plans are formally determined to be incompatible with the purposes for which the park was established.

Habitat and animal population manipulation will not be permitted within the park except under extraordinary circumstances and when consistent with NPS policy, as described in the master memorandum of understanding. Congressional intent regarding this topic is presented in the legislative history of ANILCA as follows:

> It is the intent of the Committee that certain traditional National Park Service management values be maintained. It is contrary to the National Park Service concept to manipulate habitat or populations to achieve maximum utilization of natural resources. Rather, the National Park Service concept requires implementation of management policies which strive to maintain the natural abundance, behavior, diversity, and ecological integrity of native animals as part of their ecosystem, and the Committee intends that that concept be maintained (Senate Report 96-413, p. 171).

Aquatic habitat of the park and preserve will be protected to maintain natural, self-sustaining aquatic populations. The introduction of eggs, fry, or brood stocks, and the alteration of natural aquatic habitat, will not be allowed. Artificial stocking of fish in park and preserve waters

will be considered only if necessary to reestablish species extirpated by man's activities.

In recognition of mutual concerns relating to the protection and management of fish and wildlife resources, the National Park Service and the Alaska Department of Fish and Game will continue to cooperate in the collection, interpretation, and dissemination of fish and wildlife data. The National Park Service will continue to permit and encourage the Alaska Department of Fish and Game to conduct research projects that are consistent with the purposes of the park and preserve.

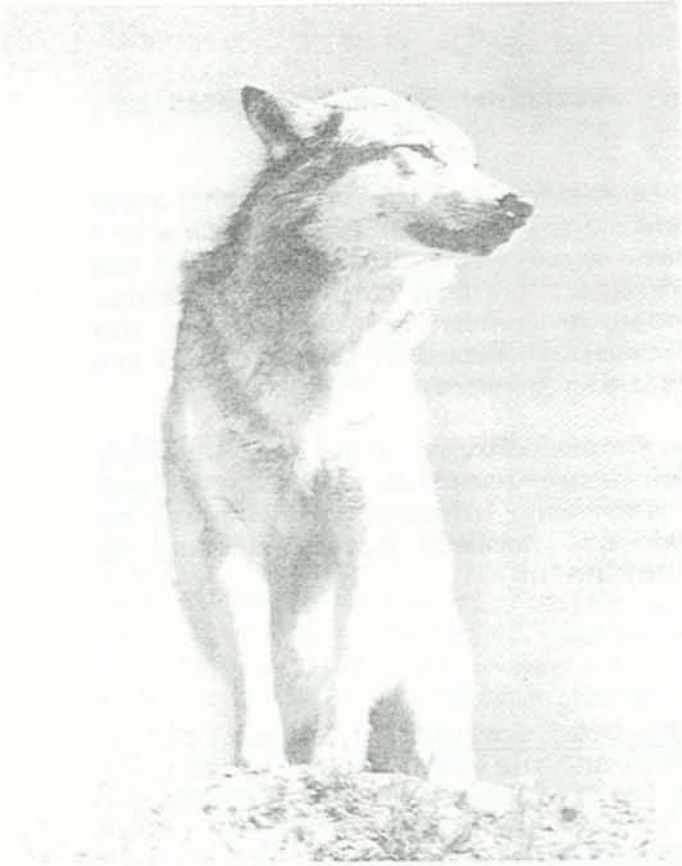
The park's informational programs will inform visitors about the allowable uses of the park and preserve, including consumptive uses of fish and wildlife, to prevent or minimize user conflicts. Information will also be provided to visitors about ways to avoid or minimize adverse effects on fish and wildlife populations and their habitats.

Specific NPS Concerns

Decreasing Visibility of Wildlife along the Road Corridor. 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. The park's funding requests currently list "biological monitoring of traffic-wildlife interactions" as first priority.

Human/Bear Conflicts. 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 number of encounters and incidents of property damage might signify a change in the natural behavior of bears. Recently, however, the upward trend in encounters has been reversed through management action. In the period 1972-1980 the number of human/bear encounters increased three to five times 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 through 1981 indicated that Denali's backcountry human/grizzly incident rate was the highest reported in the national park system.

In 1982 the park staff implemented a comprehensive human/bear conflict-management program to minimize encounters within the park. As



part of that program 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.

The program has been successful in reducing problems. Between 1982 and 1985 parkwide conflicts were reduced by 30 percent, and the incidence of bears obtaining food in the backcountry was reduced by 74 percent. Prior to these findings the National Park Service was considering campground closures to reduce the potential for human/bear encounters. Based on the success of the bear management program, the National Park Service is no longer actively considering the removal of campgrounds along the park road. However, if the incidence of human/bear encounters increases in the future, the issue of campground removal will be reevaluated. The campgrounds along the park road are particularly desirable accommodations; however, an adequate number of campsites are now available outside the park entrance to meet visitor demand. Additional campgrounds are proposed for the south side of Denali. Campground development in the lowlands on the south side of Denali could increase human/bear encounters in that area.

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.

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 either returns or 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 could lead 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).

Decline in Denali Caribou Herd. 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, declined to a possible low of 900 to 1,200 individuals in 1976. It currently appears to be on the rise and

numbers approximately 2,600 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 by eligible subsistence users in the park additions, and both subsistence and sport harvests by all properly licensed hunters and trappers 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).

SHORELANDS, TIDELANDS, AND SUBMERGED LANDS

The Submerged Lands Act of 1953, the Alaska Statehood Act of 1958, and the state constitution provide for state ownership of the water (subject to the reservation doctrine discussed below in the "Water Rights" section), shorelands (the beds of navigable waters), tidelands (lands subject to tidal influence), and submerged lands (lands seaward from tidelands).

Determinations of what waters are navigable is an ongoing process in Alaska at both the administrative and judicial levels. A 4-mile segment of the Tokositna River (Seward Meridian, T30N, R6W) has been determined navigable by the Bureau of Land Management. The matter of navigability of portions of the Kantishna and Muddy rivers is still in adjudication. Other water bodies may be determined navigable in the future. There are no tidelands or submerged lands within the unit.

The National Park Service will work cooperatively with the state to ensure that existing and future activities occurring on shorelands underlying the waters within and adjacent to the unit boundary are compatible with the purposes for which the unit was created. Any actions, activities, or uses of nonfederal lands that will alter these lands or result in adverse effects on water quality or on the natural abundance and diversity of fish and wildlife species will be opposed by the National Park Service. The National Park Service will manage the unit uplands adjacent to shorelands to protect their natural character.

Additionally, the National Park Service recommends that the state close these areas to new mineral entry or to extraction of oil, gas, sand, and gravel resources, and the Park Service will apply to the state for these closures. The National Park Service will also pursue cooperative agreements with the state for the management of lands under navigable water bodies.

MANAGEMENT OF WATERCOLUMNS

Sections 101 and 201 of ANILCA and 16 USC la-2(h) and 1c direct the National Park Service to manage all waters within the boundaries of Denali National Park and Preserve. The state of Alaska has authority to manage water, based on the laws cited in the previous section. These laws provide for water management by both the state and the National Park Service.

The National Park Service will oppose any uses of waterways that will adversely affect water quality or the natural abundance and diversity of fish and wildlife species in the unit. The National Park Service will work with the state on a case-by-case basis to resolve issues concerning the use of the various waterways where management conflicts arise. Cooperative agreements for the management of uses on the water will be pursued if a case-by-case resolution of management issues proves unacceptable to the National Park Service and the state.

WATER RIGHTS

In Alaska, two basic types of water rights doctrines are recognized: federal reserved water rights and appropriative water rights. The reservation doctrine established federal water rights on lands reserved, withdrawn, or set aside from the public domain for the purposes identified in the documents establishing the unit. State appropriative rights exist for beneficial uses recognized by the state, including instream flows, and they are applied to lands where federal reserved water rights are not applicable. No appropriative rights (federal or state) have been applied for in the unit.

For waters available under the reservation doctrine, unless the United States is a proper party to a stream adjudication, the National Park Service will quantify and inform the state of Alaska of its existing water uses and those future water needs necessary to carry out the purposes of the reservation. When the reserve doctrine or other federal law is not applicable, water rights will be applied for in accordance with Alaska laws and regulations. In all matters related to water use and water rights, the National Park Service will work cooperatively with the state of Alaska.

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 because it would increase traffic on the park road or require another access route (see "Visitor Use and General Development"). 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 667 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.

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 and the University of Alaska, Fairbanks, are currently renegotiating their agreement to jointly study the Stampede Mine area for environmentally acceptable mining methods and associated activities. A minerals management plan and EIS discussing the cumulative effects of mining will be prepared for Denali. The plan will implement the overall management objectives outlined in this general management plan by describing in detail the operating standards for mining operations, the reclamation standards, the NPS standards, policies, and procedure on approving or denying mining plans, and other management actions that will be employed within the park to ensure that mining activities are conducted in a manner compatible with the purposes of the unit.

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. The park is also involved in the Mat-Su Borough fire plan.

BACKCOUNTRY MANAGEMENT

A "Backcountry Use Plan" was developed and implemented in 1976 and updated in 1984 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 a "Backcountry Management Plan."

The park intends to maintain primarily a "no formal trails" policy for the designated Denali wilderness area. 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. The trails near the park entrance and the short loop trails along the park road corridor will be maintained for continued use. A formal trail plan will be developed for the Riley Creek/hotel area. The McGonagall Pass trail from Wonder Lake will be retained. The feasibility of building and maintaining trails in the southern additions to the park will be studied as part of the south-side development concept plan.

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 (42 USC 7401 et seq.) designated the Denali National Park wilderness as a federal class I air quality area. The 1980 additions to the park and preserve are class II airsheds. At the present time air quality in the park is considered excellent. The park and preserve will be managed to achieve the highest

attainable air quality levels and visibility standards consistent with the applicable Clean Air Act designations and the mandates specified by ANILCA and the NPS organic act. 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 to ensure that resource values are not impaired.

The policy for trash removal in the park and preserve will continue to be "pack in, pack out." Visitors will be informed of the policy and asked to adhere to it.

The removal or discard of human waste from administrative sites and visitor use sites within the park and preserve will be accomplished with applicable regulations of the Alaska Department of Environmental Conservation and the Environmental Protection Agency.