National Park Service
U.S. Department of the Interior

Kenai Fjords National Park
Alaska

Finding of No Significant Impact

Exit Glacier Area Plan and General Management Plan Amendment

October 2004

Recommended: Peter J. Armato 10/28/2004
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Finding of No Significant Impact (FONSI)
Exit Glacier Area Plan
and General Management Plan Amendment
Kenai Fjords National Park
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The National Park Service (NPS) has prepared an environmental assessment (EA) that evaluates management plan alternatives for the Exit Glacier area of Kenai Fjords National Park (KEFJ), near Seward, Alaska. The purpose of the *Exit Glacier Area Plan* is to define a direction for resource preservation and visitor use in the Exit Glacier area of Kenai Fjords National Park to preserve the special experience at this unique locale, add additional visitor opportunities such as education and hiking, and manage user conflict. This plan will provide a foundation for future management and describe desired natural and cultural resource conditions and visitor experiences that are to be achieved and maintained in the Exit Glacier area over the next 15 to 20 years.

The NPS has decided to implement a modified preferred alternative with mitigation measures (see Attachment A for details).

Attachment B provides details about public comments received on the EA, NPS response to substantive comments, and clarifications, modification, or additional information added to the EA.

ALTERNATIVES

The EA evaluated four alternatives: a no-action alternative, the preferred alternative, alternative A, and alternative B.

The **no-action alternative** provides a baseline for evaluating the changes and impacts of the three action alternatives. Under this alternative, park managers would continue to manage the park as it has in the past, relying on existing plans and policies. No new construction or major changes would occur, except for already approved developments. Existing park facilities would be operated and maintained as they have in the past. No visitor carrying capacity or other new visitor management initiatives would be implemented.

The **preferred alternative** would make changes to address impacts resulting from increased levels of visitor use. The Exit Glacier area would be zoned to ensure that resources are protected and that opportunities are provided for a range of visitor experiences. The focus of this alternative would be to enhance the opportunities to view Exit Glacier, which is the main attraction of the area, and to provide for additional non-motorized recreational opportunities. The preferred alternative also is considered the **environmentally preferred alternative.**

To address carrying capacity, a long-term monitoring program would be established to preserve and protect natural and cultural resources and the visitor experience. Resource and visitor experience indicators and standards would be developed in a subsequent planning process to ensure that resources are protected and that opportunities are provided for visitor enjoyment. If monitoring

determines that conditions are deteriorating, appropriate management actions would be taken to ensure that resources and visitors' opportunities for positive recreational experiences would not be degraded or lost.

Alternative A would focus on improving interpretation, education, and non-motorized recreation, and would rely more on increased staffing and program development than on physical development to do so. The goal of this concept is to transform Exit Glacier from a "photo-op" of the glacier to an education experience. Like the preferred alternative, park managers would apply management zones to manage visitor use and would address carrying capacity through a long-term monitoring program.

Alternative B would promote increasing the infrastructure of the Exit Glacier area to accommodate a greater number of visitors and recreational activities year-round. Visitor demand and economic feasibility would determine if the key actions would be implemented. Like the preferred alternative, park managers would apply management zones to manage visitor use and would address carrying capacity through a long-term monitoring program.

PUBLIC INVOLVEMENT

The Exit Glacier Area Plan was originally initiated as an Environmental Impact Statement (EIS). The NPS determined, however, that an Environmental Assessment (EA) would suffice for the plan. Preliminary analysis of the alternatives showed that there was no potential for significant impacts to the park resources and values. Scoping conducted for the draft EIS indicated less controversy than anticipated when the project was initiated. Furthermore, changes to the proposal, specifically, dropping the proposed alternative transportation system (shuttle bus), reduced the scope of this planning effort. For these reasons, the NPS determined that the proposal would not constitute a major federal action requiring an EIS.

The scoping process for this project was initiated on July 27, 2001, when the *Federal Register* published a Notice of Intent to prepare an EIS. Subsequent scoping efforts included presentations to local groups, distribution of four newsletters (including one describing preliminary alternatives), response forms soliciting public input, a park web site with project information (http://www.nps.gov/kefj/home.htm), open interdisciplinary team meetings which the public could attend to listen to the planning process, and several public meetings and meetings with local groups. A mailing list of over 400 names was compiled and used for this planning process; all newsletters also were placed on the web site.

The EA was available for a 30-day public review and comment period from May 3 to June 1, 2004. Printed copies of the document were sent to 62 individuals and/or agencies who expressed interest or participated in the process. Flyers notifying the public of the document's availability were sent to 380 individuals and organizations. A notice announcing the availability of the plan and soliciting public comments appeared in the Seward Phoenix Log on April 29, 2004. Additionally, the EA was also posted on the KEFJ website. Also during the review period, on May 26, 2004, a public meeting was held in Seward. Twenty three individuals attended.

The NPS received a total of 33 comment letters or emails about the EA. One comment letter was received from a government agency, the State of Alaska. The remaining letters were from non-government organizations and individuals.

The commenters raised concerns about the following topics, which are addressed in more detail in Attachment B.

- Winter Activities
- Definition of "Traditional Activities"
- Resource Impacts
- Management Zones
- Other

DECISION

The NPS decision is to select a modified preferred alternative, along with mitigating measures, for the Exit Glacier area of Kenai Fjords National Park. The modified preferred alternative calls for implementing the original preferred alternative during the summer season as described in the May 2004 *Exit Glacier Area Plan EA*. However, during the winter season, the original preferred alternative will be implemented only for the Visitor Facilities and Pedestrian zones as described in the EA; the NPS will not take the actions related to winter management within the remainder of the study area. See Attachment A for a complete description of this modified preferred alternative.

Rationale for the Decision

The modified preferred alternative will meet the purpose and need for action in the following ways:

1. *Define a direction for resource preservation and visitor use in the Exit Glacier area* – this will be accomplished in all zones (except the Natural Zone) by establishing a long-term monitoring plan for natural and social indicators, setting standards for the indicators, and taking management action when standards are deteriorating or have been violated.
2. *Preserve the special experience of easily approaching a glacier on foot* – this alternative will improve the Overlook Loop Trail, which many visitors hike to view the glacier, to accommodate increasing visitation; provide access to the face of the glacier as it retreats; include a viewing platform with a spotting scope for physically challenged visitors to view the glacier; provide a groomed path to the glacier in the winter for non-motorized recreation.
3. *Add additional visitor opportunities* – a bike path and two new trails will be constructed; additional educational signs and exhibits will be installed; in winter, a snow coach will be used to improve access to the Exit Glacier area; educational activities will be scheduled at the Nature Center year round; and the bike path will be groomed in the winter for non-motorized recreation.
4. *Manage user conflict* – the Exit Glacier area will be divided into management zones. In winter, motorized use and non-motorized recreation have been separated in areas where user conflict would otherwise occur.

The original preferred alternative (also considered the environmentally preferred alternative), and the other two action alternatives, were not selected for implementation because the NPS needs additional information. Until that information is collected, the NPS has decided not to take the actions related to winter management within most of the study area (other than the Visitor Facilities and Pedestrian zones). Instead, the NPS will collect additional data on types and levels of winter visitor use, winter wildlife habitat utilization, wildlife population and distribution, wildlife responses to disturbance, forage availability, etc. Such data will allow the park to better develop winter management strategies for these areas.

Under ANILCA Section 1110(a), snowmachines may be used in conservation system units for traditional activities. The NPS intends to define the term "traditional activities" before further planning decisions are made for snowmachine use in the area. Until this term is defined, the NPS cannot determine what, if any, activities are traditional within Kenai Fjords National Park.

Significance Criteria

The modified preferred alternative will not have a significant effect on the human environment. This conclusion is based on the following examination the significance criteria defined in 40 CFR Section 1508.27.

(1) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
The modified preferred alternative will have no impacts on geologic resources, cultural resources, night sky, aircraft overflights, subsistence activities, socially or economically disadvantaged populations, threatened or endangered species, or designated wilderness. Impacts to soils, water quality, floodplains, wetlands, air quality, soundscape, vegetation, wildlife, visitor experience, the socioeconomic environment, and safety will range from minor to moderate, short-term to long-term effects (see Attachment A for specifics).

(2) The degree to which the proposed action affects public health or safety.
Under the modified preferred alternative, increased use of trails, and stream crossings to access trails, will have minor impacts on safety. Safety as related to user conflicts will improve as there will be less mixing of motorized and non-motorized activities in winter.

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetland, wild and scenic rives, or ecologically critical areas.
There are about 450 acres of wetlands in the western portions of the Exit Glacier study area. Additionally, small discrete wetland or bog areas are found throughout the study area. Under the modified preferred alternative, minor impacts to wetlands will occur due to the construction of a bike path adjacent to wetlands by altering natural wetland function in a small area of up to 0.25 acre.

(4) The degree to which effects on the quality of the human environment are likely to be highly controversial.
Successful implementation of this plan will preserve the special experience at this unique locale while providing additional visitor opportunities and managing user conflict. Scoping conducted for the project indicated less controversy than anticipated initially and, thus, resulted in an EA being prepared rather than an EIS. Public comments on the analysis of impacts in the EA also support the determination that this plan will not have highly controversial effects on the quality of the human environment.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
Implementing the modified preferred alternative will not create effects to the human environment that are highly uncertain or that involve unique or unknown risks.

(6) The degree to which the action may establish a precedent of future actions with significant effects or represents a decision in principle about a future consideration.
The modified preferred alternative does not establish a precedent for future actions with significant effects or represent a decision about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
The modified preferred alternative will not act in conjunction with other actions to produce cumulatively significant impacts.

(8) Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
An archeological survey of the Resurrection River Valley, including the study area, was conducted in 1983. No cultural sites within the study area were identified, other than the remnants of a trapper's cabin, used as recently as the 1960s. A recent observation indicates that this particular site near the confluence of Exit and Paradise Creeks has been extensively impacted by flood events, and the current integrity of the site is unknown. There would be no effects of the modified preferred alternative on cultural resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
None of the plant or animal species occurring in the Exit Glacier area are federally listed as endangered, threatened, special concern, or candidate species.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.
The modified preferred alternative does not violate any federal, state, or local environmental protection laws.

The levels of adverse impacts to park resources anticipated from the modified preferred alternative will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the natural or cultural integrity of the park.

The modified preferred alternative complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 11988 and 11990. There will be no restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

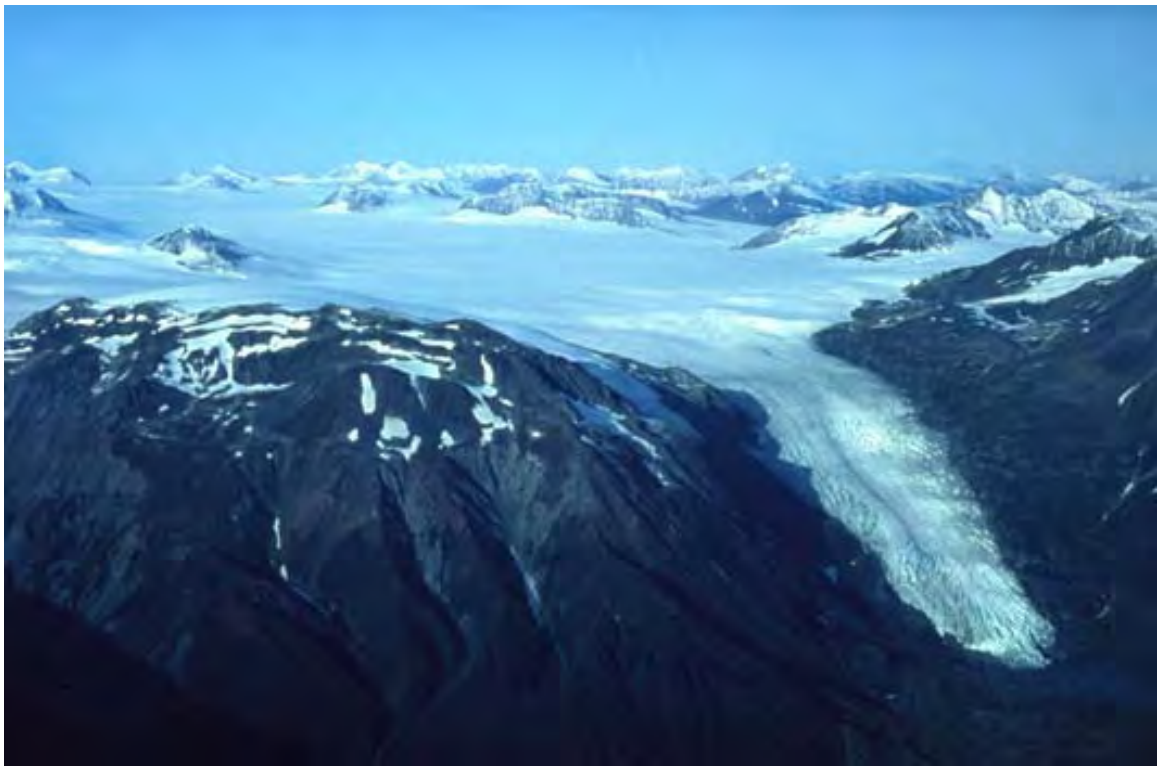
The National Park Service has determined that the modified preferred alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

ATTACHMENT A

FINAL EXIT GLACIER AREA PLAN
Modified Preferred Alternative

Final Exit Glacier Area Plan

General Management Plan Amendment



Kenai Fjords National Park

FINAL EXIT GLACIER AREA PLAN
Modified Preferred Alternative

The National Park Service will implement a modified preferred alternative for the Exit Glacier area of Kenai Fjords National Park. The modified preferred alternative calls for implementing the original preferred alternative during the summer season as described in the May 2004 *Exit Glacier Area Plan EA*. However, during the winter season[1], the original preferred alternative will be implemented only for the Visitor Facilities and Pedestrian zones as described in the EA; the NPS will not take the actions related to winter management within the remainder of the study area.

The description below is broken into the following topics: the overall concept for management of the study area; carrying capacity and visitor use management strategies; management zones; zone allocation and related actions for summer and winter; management tools; mitigation measures; costs and implementation; regulatory implementation details, and a summary of impacts resulting from the alternative. If changes in management actions are not discussed, then future management will be similar to existing management.

The actions described are those that are most likely to take place in the next 20 years in accordance with the zones as defined and considering the area's existing conditions and environmental constraints.

Plan Concept
The focus is to enhance the experience of viewing Exit Glacier, which is the main attraction of the area, and to provide for additional non-motorized recreational opportunities.

Carrying Capacity and Visitor Use Management Strategies
To address carrying capacity, the NPS will describe desired resource conditions by using the following management zone prescriptions: Visitor Facilities; Pedestrian; Hiker; Backcountry Semi-Primitive; and Backcountry Primitive. In the winter season, the Natural Zone from the 1984 *Kenai Fjords National Park General Management Plan* will continue to be used.

The management zone prescriptions set qualitative carrying capacities for the Exit Glacier area by prescribing the appropriate range of resource conditions, social conditions, visitor uses, development and management. Carrying capacity is defined as the type and level of visitor use that can be accommodated while sustaining resource and social conditions that complement the purposes of the park and its management objectives.

[1] Winter is defined as the time of year when the road into the park is closed to car traffic for the season (approximately November to May); summer comprises the rest of the year when the road is open.

Subsequent to this plan, for each management zone (except the Natural Zone from the 1984 GMP), indicators of resource condition and visitor experiences will be developed that will reflect the overall condition of the zone and allow measurement of impacts on biological, physical, and cultural resources of the Exit Glacier area, as well as measurement of the impacts on visitor experiences. Standards for each indicator will be set that establish the maximum amount of deterioration of resource or experience quality that will be allowed before management action is taken. Indicators are defined as specific, measurable physical, ecological, or social variables that reflect the overall condition of a management zone. Resource indicators measure visitor impacts on the biological, physical, and cultural resources, while social indicators measure visitor impacts on the visitor experience. Standards are defined as the minimum acceptable condition for each indicator variable. It is not a condition managers would strive to achieve. Further environmental analysis and public input will be conducted as necessary prior to formally adopting any such indicators and standards and prior to taking any management action.

Also for the management zones (except the Natural Zone from the 1984 GMP), monitoring programs that will measure the condition of resources and visitor experiences will be initiated. Effective monitoring of indicators provides feedback and documentation needed to implement meaningful management action. Monitoring will document if and when a management action is needed to keep conditions within the standards (see "Management Tools" section below for information on the types of management actions that could be taken). The intent of the management actions will be to improve the situation and achieve the intended conditions within the zone. Management actions will range from low intrusiveness (such as education and signing) to highly restrictive (such as closures or use limits). Monitoring and proactive management actions will be ongoing tasks starting with the implementation of this plan.

The section below provides the prescriptions for all of the management zones except the Natural Zone. The Natural Zone is from the 1984 *General Management Plan for Kenai Fjords National Park* (GMP) and, therefore, contains considerably less detail on desired conditions than the other management zones. The GMP describes the Natural Zone as follows:

> [The Natural Zone emphasizes] conservation of natural resources and processes and the accommodation of uses that do not adversely affect these resources and processes. Facilities in the natural zone are dispersed and have little effect on scenic qualities and natural processes. Examples of developments permissible in a natural zone include trails, trailside information displays, and primitive shelters. (GMP, page 55)

Management Zones

The Exit Glacier area will be divided into different zones. The zones are intended to protect park resources and provide a range of positive recreational experiences. The zone descriptions give visitors an understanding of the types of activities and experiences they can expect to find in each zone. Zones also tell park managers where development can

and cannot occur and the intensity of management that is appropriate. Each zone is discrete and cannot overlap with another zone. This approach considers and analyzes a diversity of appropriate experiences and underlying resource conditions, and helps structure future carrying capacity analyses and monitoring standards. A summary of the zones is presented in Table 1.

Visitor Facilities Zone (All Season)

The Visitor Facilities Zone provides basic infrastructure necessary to accommodate visitors arriving to the Exit Glacier area. Visitors arriving by motorized vehicle would park and then transition to the walking mode, orient themselves at the Nature Center, and quickly immerse themselves in the natural world by moving out of this zone. The experience would be highly social with few opportunities for solitude. Infrastructure is meant to blend in with, not dominate the environment and yet provide basic services the visitor expects at a National Park entrance area.

Natural Resource Conditions

Evidence of human use is common. Although this evidence may persist long-term, in general the landscape retains a high degree of natural features and is not dominated by man-made structures. Impacts from development and infrastructure are allowed (e.g., construction and maintenance of roads, trails, parking lot, and buildings) but must adhere to laws and policies to ensure minimal resource damage. Intrusions to the natural soundscape can be expected more often and may be of higher intensity than in any other zone. Noises often come from both inside and outside the zone, including noise from vehicles, people talking and shouting, and aircraft. Natural processes (e.g., flooding, fire) are likely to be interrupted to protect infrastructure and resources.

Social Conditions

Encounters with other visitors and with park staff can be frequent during daylight hours, but may significantly decrease at night. There is very low potential to find solitude. Large groups of 12 or more people may be frequently encountered. This zone provides a low level of challenge and adventure, and a short time commitment is needed to experience this zone.

Visitor Use

Both motorized and mechanized uses are allowed in this zone (mechanized uses include, but are not limited to, bicycles, roller skates/in-line skates, skate boards, and similar devices.) Specifically, cars and buses are allowed on the road and parking lot; bicycles are allowed on the road and bike path; and snowmachines are allowed on the road, parking lot, and on a designated winter access route through the campground to Exit Creek. Camping is allowed in designated campgrounds and may include walk-in, RV, and car camping. No ice climbing or glacial travel is allowed. Pets are allowed on a leash on the road and parking lot. In winter, dogs are allowed on a skijor harness or dogsled harness.

Facilities and Development
Roads, parking lots, and trails are paved or otherwise hardened. Roads are no wider than two lanes. Trails in this zone may be paved, hardened and compacted, cleared of obstacles, and have a smooth surface. Trail types can include major trails, minor trails, and walks (as specified in the 1991 Trail Plan for Exit Glacier) and may be accessible to people with disabilities. Structures are allowed for such purposes as resource management (e.g., fences, exclosures, plot markers), administration (e.g., staff housing, weather stations), safety (e.g., handrails, signs, emergency shelters), comfort (e.g., public use cabins, restrooms, benches) and education (e.g., signs, interpretive kiosks, ranger station). Structures can be large, highly visible, and suitable for habitation.

Management Activities
There is a very high level of road and trail maintenance. Regulatory and interpretive signs are very common. Many education and interpretation activities occur on-site, such as ranger led programs, staff providing information, wayside exhibits, and signs. Management actions give moderate priority for resource protection, high priority for visitor needs and safety issues, and low priority for a positive visitor experience in a natural setting.

Pedestrian Zone (All Season)

The Pedestrian Zone accommodates numerous visitors, many of who wish to experience the towering glacial ice of Exit Glacier up close. Social opportunities are plentiful, visitor comforts and structures are available but fewer and less concentrated than in the Visitor Facilities Zone, and the opportunity for visitor education through signs and personal contacts are abundant. Viewing of wildlife from this zone is an important activity.

Natural Resource Conditions
Evidence of human use in this zone is common. Although such evidence may persist long-term, it does not dominate the landscape. Impacts from development and infrastructure are allowed but to a lesser extent than in the Visitor Facilities Zone (e.g., trail construction and maintenance, installation of interpretive exhibits, regulatory signs, and safety barricades). Noise intrusions on the natural soundscape can be expected often from sources outside this zone (e.g., human voices, vehicles, aircraft) and can be expected less often overall than in the Visitor Facilities Zone. Natural processes (e.g., flooding, fire) may be interrupted on a limited basis to protect resources and infrastructure.

Social Conditions
Encounters with other visitors and park staff during daylight hours can occur often but are significantly reduced at night. Opportunities for solitude are low. Large groups of 12 or more people may be encountered frequently. Opportunities for challenge and adventure are low. The time commitment necessary to experience this zone is moderate.

Visitor Use
Motorized and mechanized vehicles are not allowed in this zone except for administrative purposes such as response to an emergency, for safety issues, or to conduct necessary maintenance. Camping is not allowed in this zone. Possible activities include walking, nature observation, skiing, and education. No ice climbing or glacial travel is allowed. Pets are not allowed, except in winter on a skijor harness or dogsled harness.

Facilities and Development
No roads or parking lots are present in this zone, except jeep trails that may be maintained for emergency access. Trails in this zone may be hardened and compacted, cleared of obstacles, and have a smooth surface. Trails types may include major and minor trails and may be accessible to people with disabilities, as specified in the 1991 Trail Plan for Exit Glacier. Highly visible, moderately sized structures may be present in this zone to serve the same purposes as in the Visitor Facilities Zone, but may not be used for visitor or staff habitation.

Management Activities
Maintenance activities, such as trail work, occur at a high level. Signs directing visitors or providing interpretive messages are common in this zone. On-site interpretation and education are present and may include signs, wayside exhibits, staff presence, and formal programs. Management actions give a moderate priority for resource protection, high priority for visitor needs and safety issues, and moderate priority for a positive visitor experience in a natural setting.

Hiker Zone (Summer Only)

The Hiker Zone allows visitors to access more remote locations of the study area along well maintained trails. This zone is meant to provide a mostly natural experience with moderate social possibilities, increasing opportunities for solitude, and fewer visitor comforts. Many visitors with varying outdoor skills would be able to hike into the Alaskan backcountry. While danger and hazards still exist, day hikers can access this zone with only a moderate amount of preparation and education about the area. Preservation of the natural system is a high priority, but impacts from trail development and associated use are common.

Natural Resource Conditions
Evidence of human use is occasional and may persist long-term. Although the presence of humans and impacts are not as high as in the Pedestrian and Visitor Facilities Zones, the higher levels of use in those zones can be seen from this zone. Impacts from development and infrastructure are occasionally allowed (e.g., trail construction and maintenance, installation of signs, survey markers, and safety barricades). There are periodic, low intensity noise intrusions coming from outside of the zone (e.g., vehicle and aircraft noise) but noise intrusions originating within the zone, such as human voices, are uncommon. Disturbance of natural processes is uncommon and on a small scale (e.g., ditching along trails to direct runoff).

Social Conditions
Encounters with other visitors and park staff are occasional during daylight hours, but are rare at night. The potential for finding solitude is moderate. Occasionally groups of 12 or more individuals may be encountered. A moderate time commitment is required for this zone and the level of challenge and adventure is moderate as well.

Visitor Use
Visitor activities in this zone are non-motorized and non-mechanized. Hiking and nature observation are examples of typical visitor activities. Camping is not allowed. Ice climbing and glacial travel are allowed with some restrictions, including use of appropriate access routes and seasonal limitations (i.e., no climbing allowed in the summer when glacial ice is unstable). Pets are not allowed.

Facilities and Development
There are no roads or parking lots in this zone. Trail surfaces are natural, may be uneven, and may contain obstructions such as fallen trees and rocks. Trails types may include minor trails and wilderness-type trails, as specified in the 1991 Trail Plan for Exit Glacier. Structures may exist for resource management, interpretive, administrative or safety purposes (see definitions under Visitor Facilities Zone). There are no structures for visitor comfort, such as benches. Any structures in this zone are small, moderately visible and not habitable.

Management Activities
The level of trail maintenance is moderate. Interpretive and regulatory signs are uncommon. Education conducted on-site includes ranger led walks and programs and temporary signs. Off-site publications (such as the park brochure and newsletter) and education are important tools to inform visitors about this zone. Management actions give a high priority for resource protection and a high priority for a positive visitor experience in a natural setting. Visitors would need to rely to a moderate degree on their own skills for safety and other needs.

Backcountry Semi-Primitive Zone (Summer Only)

The Backcountry Semi-Primitive zone provides better opportunities for visitors to experience wildlands and solitude than the other zones described above. As this zone is less difficult to access than the Backcountry Primitive Zone, more visitors are allowed the opportunity to experience a mostly undisturbed glacial ecosystem. Because more visitors are accommodated, the opportunity to experience solitude and the intrinsic natural values may be slightly diminished. Natural resources are afforded the same level of protection as the Backcountry Primitive Zone and there is a high probability of viewing wildlife in a mostly undisturbed state.

Natural Resource Conditions
Evidence of human use is uncommon and persists only for the short-term. However, high levels of human presence and impacts are usually evident in the distance outside the zone. Impacts from development and infrastructure are minor and seldom allowed (e.g.,

may allow installation of a small weather station, research equipment, and trail markers). Natural sounds predominate, and noise intrusions are rare, of low intensity, and mainly from outside the zone, such as vehicles and aircraft. Natural ecological processes are rarely interrupted and only in extreme cases (e.g., for protection of rare species).

Social Conditions
Visitors seldom encounter other visitors or park staff during daylight hours or at night. The potential for finding solitude is high, but not as high as in the Backcountry Primitive Zone. Groups of 12 or more individuals may be seldom encountered. The opportunity for challenge and adventure is high, as is the needed level of outdoor skills. A long time commitment is needed to access and experience this zone.

Visitor Use
Visitor activities in this zone are non-motorized and non-mechanized. Examples of typical visitor activities in this zone include hiking, nature observation, and mountaineering. Camping is allowed at a minimum distance of 1/8 mile from any trail and out of sight of the trail. Ice climbing and glacial travel are allowed anywhere in the zone except on the face of the glacier during summer months. Pets are not allowed.

Facilities and Development
No roads are present and there is little or no constructed tread on trails. Trail markers, such as blazes or cairns, are used as needed on wilderness trails. Structure purposes are only for administrative use, resource management, and safety (see definitions under Visitor Facilities Zone). Structure size is small and has very low visibility. Structures are not to be used for habitation.

Management Activities
Route markers may be occasionally maintained. Regulatory signs are rarely installed, except for extreme resource protection and safety situations. Off-site publications and education are the most common methods used to disseminate information; however, occasional interpretation by park staff may occur on-site (e.g., ranger led walks), and no interpretive signs are allowed. Management actions give a high priority for resource protection and a high priority for a positive visitor experience in a natural setting. Visitors would need to rely to a high degree on their own skills for safety and other needs.

Backcountry Primitive Zone (Summer Only)

The Backcountry Primitive Zone provides the opportunity for visitors to experience the Exit Glacier area in its most undisturbed state. The intangible values some backcountry users associate with minimally impacted areas can be experienced in this zone. Examples include solitude, challenge, the enormity/wonder of the natural world, etc. Ecosystem functions and the complex web of life are mostly undisturbed, providing an excellent research control area for comparison purposes and opportunities to view Alaskan wildlife in a natural setting.

Natural Resource Conditions

Natural resources within this zone are generally in pristine condition and rarely show evidence of human use, although the presence of humans and their impacts may be evident in the distance. Within the zone, human impacts are transient and rarely seen, although minor permanent impacts may occur for administrative purposes on a very restricted basis (e.g., survey markers, weather stations, research equipment). Impacts to natural resources from installation of structures are very rarely allowed. Natural sounds predominate and noise intrusions are rare, of low intensity, and mainly from outside the zone, such as vehicles and aircraft. Disturbance of natural processes is rarely allowed and only under extreme circumstances (i.e., for protection of rare species).

Social Conditions

Visitors to this zone rarely encounter other groups of people or park staff either in the daylight or at night. The opportunity for solitude is very high. Groups of 12 or more individuals may be rarely encountered. High degrees of challenge and adventure can be found, and a long time commitment is required for visitors to access and experience this zone.

Visitor Use

Visitor activities in this zone are non-motorized and non-mechanized. Examples of typical visitor activities in this zone include hiking, photography, wildlife observation and mountaineering. Dispersed, minimum-impact camping is allowed. Technical ice and rock climbing activities and glacial travel are allowed except on the face of the glacier during summer months. Pets are not allowed.

Facilities and Development

This zone does not contain any type of constructed road, trail or route markers. Structures may be present only for administrative and resource management purposes (e.g., plot markers or research equipment). If structures are present they are very small, have very low visibility, and are not habitable.

Management Activities

The evidence of management activities in this zone is absent or very low. Management actions are strictly for resource protection and if necessary for visitor safety. On-site structures for information or education, such as signs, are not allowed. On-site interpretation and education by park staff is minimal and the presence of ranger-led groups is rare. Off-site interpretation and education are very important for visitors to this zone. Management actions give a very high priority for resource protection and a very high priority for a positive visitor experience in a natural setting. Visitors would need to rely to a very high degree on their own skills for safety and other needs.

Table 1. Summary of Management Zones. (Note: the 1984 GMP Natural Zone is not included in this table.)

	Visitor Facilities (Year-Round)	Pedestrian (Year-Round)	Hiker (Summer Only)	Backcountry Semi-Primitive (Summer Only)	Backcountry Primitive (Summer Only)
Resource Conditions					
Evidence of Human Use	Common, apparent year-round, long-term but does not dominate landscape	Common, apparent year-round, long-term but does not dominate landscape	Occasional, long-term; high levels of human use are evident nearby	Uncommon, short-term; human use usually evident in the distance	Rare, impacts are transient; human use may be evident in the distance
Impacts from Development and Infrastructure	Allowed	Allowed	Occasionally allowed	Seldom allowed	Rarely allowed
Intrusions on Natural Soundscape	Can be expected often inside and outside the zone	Can be expected often from outside, but of lower intensity and less often from inside the zone	Periodic, low intensity intrusions from outside the zone; uncommon from inside the zone	Natural sounds predominate; intrusions are rare, of low intensity and mainly from outside the zone	Natural sounds predominate; intrusions are rare, of low intensity and mainly from outside the zone
Natural Processes	May be disturbed to protect infrastructure and resources	May be disturbed on a limited basis to protect infrastructure and resources	Disturbance is uncommon and of small scale	Disturbance is rare and only in extreme cases	Disturbance is rare and only in extreme cases
Social Conditions					
Encounters with Other Visitors and Staff	Frequent during daylight hours; significantly decreased at night	Often during daylight hours; significantly decreased at night	Occasional during daylight hours; rare at night	Seldom during daylight hours and at night	Rare during daylight hours and at night
Potential for Solitude	Very low	Low	Moderate	High	Very High
Group Size (a large group is 12 or more)	Frequently encounter large groups	Frequently encounter large groups	Occasionally encounter large groups	Seldom encounter large groups	Rarely encounter large groups
Challenge and Adventure	Low	Low	Moderate	High	High
Time Commitment	Short	Moderate	Moderate	Long	Long
Visitor Use					
Motorized Use	Yes, on pavement, on the designated access route in winter, and for administrative purposes	No, except for administrative purposes	No	No	No
Mechanized Use	Yes	No	No	No	No
Camping	Yes in designated campgrounds	No	No	Yes, with restrictions	Yes, dispersed
Ice Climbing and Glacial Travel	No	No	Yes, with restrictions	Yes	Yes

	Visitor Facilities (Year-Round)	Pedestrian (Year-Round)	Hiker (Summer Only)	Backcountry Semi-Primitive (Summer Only)	Backcountry Primitive (Summer Only)
Pets	Yes, on leash on road and parking lot	No (except in winter on a skijor or dogsled harness)	No	No	No
Development					
Trails	Paved or hardened, free of obstacles, smooth surface	Hardened or compacted, free of obstacles, smooth surface	Natural surface, obstructions may be present, surface may be rough	No constructed trails, but routes may be marked	None
Roads and Parking Lots	Paved	None	None	None	None
Structure Purposes	Resource management, administration, safety, comfort, education	Resource management, administration, safety, comfort, education	Resource management, administration, safety, education	Resource management, administration, safety	Resource management, administration
Structure Size	Large	Medium	Small	Small	Very small
Structure Visibility	High	High	Moderate	Very low	Very low
Structure Habitability	Habitable	Not for habitation	Not for habitation	Not for habitation	Not for habitation
Management Activities					
Trail Maintenance	Very high	High	Moderate	Markers occasionally maintained	None
Signs	Very common	Common	Uncommon	Rarely, for extreme resource protection and safety situations	None
Interpretation	On-site, may include exhibits, staff presence, formal programs, signs	On-site, may include exhibits, staff presence, formal programs, signs	On-site consists of staff presence, formal programs, and temporary signs; off-site education is important	Off-site is important; occasional on-site interpretation by park staff may occur	Off-site is very important; rare personal on-site
Mgmt. Actions for Resource Protection	Moderate priority	Moderate priority	High priority	High priority	Very high priority
Visitor Self-Reliance for Safety and Other Needs	Low	Low	Moderate	High	Very High
Mgmt. Actions for a Natural/Pristine Visitor Experience	Low priority	Moderate priority	High priority	High priority	Very high priority

Zone Allocation and Related Actions – Summer
In summer, the Backcountry Semi-Primitive and the Backcountry Primitive Zones will cover most of the Exit Glacier study area (48.9% and 39.3% respectively). The Hiker Zone will cover 9.3% of the area, the Pedestrian Zone 1% and the Visitor Facilities Zone 1.5%.

Based on current legislation, entrance fees at Exit Glacier will continue to be collected at least until 2006.

The *Visitor Facilities Zone* will encompass the existing road with a corridor wide enough to allow for pullouts and a bike path. It also will encompass the Nature Center, picnic area, campground, cabins, restrooms, and parking lot. Beyond the parking lot, the zone will follow the existing paved trail to the Harding Icefield Trail junction, a location where visitors can get a good view of the glacier. Key actions in this zone:

- A bike path will be located on the north side of the entrance road starting at the vehicle bridge over the Resurrection River and ending at the parking lot, approximately 1.5 miles long. The bike path could connect with a path that is being planned for construction by the State and USFS in the Exit Glacier Road corridor. The bike path will hug the shoulder of the road (separated by a safety barrier) where it traverses through the wetlands near the vehicle bridge. Past the wetlands in the lowland forest, the path will curve away from the road several meters to provide for a more scenic and quiet experience. A spur trail that crosses the road will be added near the campground to connect the campground to the bike path.
- A trailhead for the new Paradise Valley Trail will be located on the south side of the entrance road just inside the park boundary near the vehicle bridge. The only amenities at the trailhead will be a sign marking the start of the trail and a bulletin board with visitor safety information.
- New educational signs and exhibits will be installed near the Nature Center using themes from the Long-Range Interpretive Plan (NPS 2001c.) These themes include the ability to witness the continuing forces of glaciation, the fragile mountain ecosystem and the opportunity to learn how the Harding Icefield and its outflowing glaciers provide a window to past ice ages that helped shape our world.
- A gathering pavilion, as identified in the 1996 DCP, will be constructed near the Nature Center on the site of the old ranger station.
- One of the existing cabins (Cottonwood) will be remodeled and enlarged. An addition will be constructed behind the cabin, with a footprint increase of 30-40%. The cabin will continue to be used for housing two park employees in summer.
- A gray water disposal area will be installed at the campground. The disposal area will most likely consist of a hole in the ground lined with concrete and a metal screen to catch food scraps.

The *Pedestrian Zone* will be located in the outwash plain of the glacier terminus, encompassing the Nature Trail and the Overlook Loop Trail. This zone will be dynamic, as it will increase or decrease with glacial retreat or advancement, so as to always be located adjacent to the face of the glacier. Key actions in this zone:

- The Overlook Loop Trail will be improved as needed, in accordance with a type A trail in the Trail Plan for Exit Glacier (NPS 1991), to accommodate increasing visitation. Improvements could include widening the trail up to 48", providing steps in steep areas, and erecting barriers to prevent shortcuts and erosion between switchbacks.
- As the glacier retreats, the park will continue to provide safe, low impact access to the face of the glacier, for example, existing trails may be extended as needed.
- Additional educational signs and exhibits will be installed along the trail to the outwash plain, the Nature Trail, and the Overlook Trail explaining biological succession, wildlife in its natural setting, and a naturally-functioning ecosystem.
- A viewing platform (consisting of a hardened gravel pad) will be constructed on the edge of the outwash plain within view of the glacier and a spotting scope installed to provide an opportunity for physically challenged visitors to view the glacier. Some vegetation will be cleared to improve the vista.

The *Hiker Zone* will be applied as a 0.25 mile wide (0.125 mile on each side of a trail) corridor along hiking trails. Key actions in this zone:

- Construct a new trail through Paradise Valley that could in future connect to the trail system of Caines Head State Recreation Area. Connecting trails outside of the Exit Glacier study area could be designated through a future Backcountry Management Plan. This trail will be a type B minor trail, 18" to 24" wide, constructed of native materials with a natural appearance, and may have rocks or other low obstacles (NPS 1991). Hikers will be required to ford Exit Creek at the trailhead since there will be no bridge for crossing. This trail will be 2.5 miles long and located close to the eastern park boundary (see approximate location on map).
- The Unnamed Peak Trail, starting at approximately mile 1.25 on the Paradise Valley Trail, will be constructed leading to an alpine peak. This trail will be a type B trail as described for the Paradise Valley Trail and will be 2.25 miles long.

Terrain that is not suitable for trails or structures due to steepness, unstable rock, and avalanches will be included in the *Backcountry Semi-primitive zone*; this is the majority of the Exit Glacier area. The *Backcountry Primitive Zone* will be applied to include the entire Harding Icefield portion of the Exit Glacier area and part of the glacier along the summer snow melt line because these areas are not suitable for trails or marked routes due to shifting ice and snow. No actions are proposed for these two zones.

Zone Allocation and Related Actions – Winter

In winter, the Pedestrian Zone and the Visitor Facilities Zone will essentially remain the same as in summer at 1% and 1.5% respectively. The remainder of the study area will be zoned as a Natural Zone per the 1984 GMP.

The *Visitor Facilities Zone* will be allocated the same as in summer but will not include the paved trail from the parking lot to the glacier. Key actions in this zone:

- Snowmachines will be authorized on the road, parking lot, and designated access route from the campground to Exit Creek.
- Snowcoaches will be allowed only on the entrance road and parking lot.
- Motorized vehicles used for administrative purposes such as trail grooming and emergency response will be allowed where necessary throughout the zone.
- Signs and/or increased staffing will be in place to direct visitors.
- The bike path will be groomed and designated for non-motorized winter recreation, such as skiing, snowshoeing, and skijoring. Activities such as skiing, snowshoeing, dog mushing, and skijoring will be allowed anywhere in the zone.
- One existing cabin will remain open to public use, as under current management, and another existing cabin could be made available if demand increases. The third existing cabin will continue to be used by the winter caretakers. The vault toilets will continue to be available for use in winter.
- Activities will be scheduled for the general public and for organized groups at the Nature Center. Based on demand, activities could be scheduled as often as every day or only once a week, such as ranger-led snowshoeing to observe animal tracks, indoor programs about winter ecology, and winter ecology programs especially for students.
- A park owned and/or a concessionaire operated snow coach will be used to bring groups, such as school children and Elder Hostel, to the Exit Glacier area in winter to participate in educational programs at the Nature Center and to improve access to the Exit Glacier area for individuals and families to participate in winter recreation activities and educational programs. The use of modern over the snow vehicles implementing the latest technology such as the Mattrack system or another environmentally approved systems designed to lessen the noise created will allow use of a standard van or other such vehicle. An example of the latest access vehicles for over snow use is shown below on the left versus a more traditional snow coach, on the right, with a diesel engine and tank-like tracts that move over the snow. No decision has been made at this time about which type of snow coach will be used.

The *Pedestrian Zone* will be applied the same as in summer to include the entire outwash plain as well as the paved trail from the parking lot to the glacier. An exception to this zone description will allow motorized use for administrative purposes (see first bullet below). Key actions in this zone:

- Motorized uses will be allowed only as necessary for administrative purposes such as trail grooming and emergency response; no snowmachine use will be allowed.

- The paved trail to the glacier will be groomed for non-motorized recreation and educational programs.
- Activities such as skiing, snowshoeing, dog mushing, and skijoring will be allowed anywhere in the zone.

In winter, the remainder of the Exit Glacier study area will continue to be managed as a *Natural Zone* based on the 1984 General Management Plan. The *Natural Zone* boundary will follow the contours of the lowland forest and the glacier terminus and will include the glacier and the portion of the Harding Icefield that is in the study area. Terrain that is not suitable for trails or structures due to steepness, unstable rock, and avalanches also will be included in this zone; this is the majority of the Exit Glacier area.

Management Tools

Regardless of the season, the National Park Service is committed to ensuring reasonable access for visitors for all appropriate recreational activities in the park. The National Park Service will encourage access to the Exit Glacier area by means of facilities (e.g. trails and marked routes), and will allow independent, cross-country travel although limitations may be imposed as necessary to achieve the desired future conditions for each management zone and protect visitor safety. If and when it becomes necessary to limit independent, cross-country travel, the National Park Service will use the least restrictive mechanism or "tool" necessary to accomplish the goal.

The following are the tools that may be used to manage access when necessary, arranged in rough order from the least restrictive to the most restrictive. However, the park Superintendent is free to pick whichever tool is required as long as the "least restrictive" criterion is heeded. There is no implication that the tools must be tried in the listed order and a failure elicited before trying the next one.

1) Education

The National Park Service will provide printed material, public presentations, targeted presentations to user groups, and Internet-based programs with the goal of actively involving visitors in helping the park achieve the desired future conditions for all management areas.

2) Additional enforcement of existing regulations

The National Park Service will emphasize enforcement of existing regulations to assist in achieving desired future conditions for management areas. For example, additional enforcement of the existing snowmachine speed limit or the sound level limits on motorized equipment could assist in achieving desired conditions for sound quality.

3) Voluntary restrictions

The National Park Service will ask visitors to voluntarily restrict their use. Examples of such measures could include use of low-impact equipment, avoidance of certain areas of the study area, or avoidance of areas during particular seasons or times of day.

4) Technology requirements or other requirements governing means of access
The National Park Service will place requirements on the means of access, such as requiring four-stroke engines for snowmachines, in order to achieve desired conditions.

5) Manage commercial activity
The National Park Service will adjust concession contracts and other commercial use permits to govern use levels or direct authorized commercial activity to locations, seasons, or times of day as necessary to achieve desired future conditions.

6) Limit numbers of visitors
The National Park Service will establish quotas for visitor numbers when the volume of use is high enough that other mechanisms are unlikely to achieve desired future conditions. Visitors will be required to register and carry a permit, and the number of available permits will be limited.

7) Temporary closures
The National Park Service will temporarily close areas to visitor use or to certain modes of access to protect resource values and for other purposes. Access will be restricted to particular times of day, days of the week, months, or other unit of time, or the duration of access could be limited.

8) Permanent closures
The National Park Service will permanently close areas to visitor use or to certain modes of access to protect resource values consistent with all applicable laws.

Mitigation Measures
The following mitigation measures will be implemented to eliminate or reduce impacts.

Soils
Construction impacts such as soil loss and erosion will be minimized by salvaging and reusing the native soils. Sprinkling water on construction areas will minimize soil loss from dust.

Trail construction will be planned and designed to minimize erosion and sedimentation. Alignment of trails will avoid disturbing fragile wetland soils or intercepting and diverting seeps and stream channels. These areas will be accessed and traversed by boardwalks or bridges to prevent compaction, churning, or rilling of soils. Trails will be constructed in a manner to avoid or minimize steep treadways, reducing the potential for soil erosion due to formation of water rills, gullies, and outboard trail tread failure. The bike path be wide enough to allow hikers and bicyclists to pass each other safely without leaving the path tread, which will minimize localized impacts to soils flanking the margins of the path. Hiking trails will also be designed to prevent development of social trails or other off trail uses.

Removal of vegetation will be minimized when possible, and areas disturbed during construction will be re-vegetated to preserve or enhance the restoration of natural soil properties. Denuded soils will be revegetated immediately after construction activities are completed.

Impacts to soils including compaction from visitor use will be mitigated by installing barriers to minimize off trail use through areas of sensitive or erodable soils. Where appropriate, natural rock trail borders will be installed to delineate trails and encourage users to remain on the trail/path tread, thus reducing soil impacts to adjacent off path areas. Soils will be monitored for compaction and erosion impacts and measures will be taken to prevent and repair further impacts.

Wetlands and Floodplains

Trails, including bicycle and hiking trails, will be routed to avoid wetlands. Existing structures in wetlands, such as the road levee will be used to the fullest extent to support a bicycle path and to eliminate or minimize further fill placement. Siltation fencing will be used during construction activities to prevent sediments in disturbed areas from entering wetlands.

Alteration of floodplain structure or function will be avoided whenever possible in order to protect infrastructure, although some alteration, such as culvert placement and diverting runoff may be unavoidable. In these instances, non-structural measures will be employed as much as possible to reduce hazards to property.

Air Quality and Visibility

Buses will not be allowed to idle in the parking areas in order to decrease emissions and odors.

Soundscape

For bike and hiking trail construction, hand tools will be used in lieu of power tools as much as possible in order to lessen noise. Small diameter trees and shrubs will be cut or removed with handsaws or machetes. Efforts will be made to limit power tool use to times of low visitation, such as 0700-1100 and 1700-2100 hours, as daylight permits.

Visitors will be provided with information on the natural soundscape of the area as part of the overall natural experience via educational materials, school programs, signs, interpretive talks or other methods. Visitors will be educated on the importance of preserving soundscape as a natural resource.

Furthermore, buses will not be allowed to idle in the parking area and delivery trucks for fuel will arrive after peak visitor hours.

Vegetation

Work on trails and other visitor facilities in the study area will be planned so as to reduce impacts on vegetation. Proposed locations for infrastructure such as signs will be surveyed for possible special status plant species. Areas disturbed during construction

will be revegetated with native plant species and restored to duplicate natural conditions. Trails will be designed and maintained to discourage social trail development. A dedicated program of exotic species control will be implemented to insure minimal negative impacts to native vegetation. The main components of the program will be to prevent spread of known exotic species populations and survey to detect new infestations, increase public awareness, manage existing exotic plant populations (e.g., techniques could include hand pulling plants), and monitor to determine population levels and effectiveness of control treatments.

Revegetation plans will be developed for areas impacted by construction activities, and will continue to require the use of native species, as well as plant and topsoil salvage. Revegetation plans will specify such features as seed and plant sources, seed mixes, soil preparation, fertilizer, and mulching. Salvaged vegetation, rather than new planting or seeding, will be used to the extent possible. To maintain genetic integrity, all seeds used in restoration will be collected in the project area. Plant material will be propagated from seeds or plant stock collected in the project area. Use of nonnative species or genetic materials will be considered only where deemed necessary to prevent severe resource damage, and will be approved by the park's ecologist. Restoration activities will be instituted immediately after construction was completed. Monitoring will be carried out to ensure that revegetation was successful, plantings were maintained, and unsuccessful plant materials were replaced.

Wildlife

To the extent possible, construction activities will be timed to avoid sensitive periods, such as nesting season. New or rehabilitated facilities will be sited to avoid the following sensitive wildlife habitats:

- Wildlife travel corridors
- Foraging areas
- Denning sites
- Nesting or brood-rearing areas

Measures will be taken to reduce the potential for wildlife to get food from humans. Bear-proof garbage containers will be required in developed areas (including visitor centers, picnic areas, trails, interpretive waysides, and campgrounds). Visitors, park staff, and contractors will be required to secure all food and garbage in cabins, vehicles, or bear-proof containers. Visitors will continue to be educated about the need to refrain from feeding wildlife through the use of signs attached to picnic tables and posted on kiosks in campgrounds and picnic areas. Park staff will be instructed in the use of pepper spray and encouraged to carry it at all times while on duty.

Visitor use and park operational activities will be discouraged in sensitive wildlife habitats such as winter moose foraging areas. Selected wildlife populations may be monitored to detect adverse impacts.

Socioeconomic Environment

Mitigation measures for operation of the snow coach will include undertaking careful planning and coordination with stakeholders to develop schedules and protocols that minimize impact to other user groups, developing and publicizing a reasonable limited schedule for snow coach service so that other users can plan their recreation around it, and pricing and scheduling these services in such a way as to maximize its use by as many different user groups as possible.

Safety

Overall safety in the study area may be improved via education, including brochures, interpretive talks and displays. In addition to the bear safety brochures currently available, safe backcountry travel brochures stressing preparedness will be developed and distributed.

Costs and Implementation

The actions included in the modified preferred alternative will be implemented over the next 20 years, as funding becomes available. The initial cost estimate (year 2007 dollars) for constructing new facilities and other elements included in the modified preferred alternative is approximately $625,000 – 650,000. Additional staffing needs will require $800,000 – 825,000 per year:

- Maintenance: four seasonals and convert two part-time employees to full time
- Resource Management: two permanent full time employees and two seasonals
- Ranger Operations: convert one part-time ranger to full time
- Interpretation: one permanent seasonal employee and four seasonals

The figures are intended to give a general indication of costs, and should *not* be used for budgeting purposes. Actual costs to the National Park Service will vary depending on if and when actions were implemented, the size and location of facilities, and contributions by partners and volunteers. The cost figures are only intended to give a rough idea of the relative costs of this alternative compared to the other alternatives.

Because of the limited financial resources available, the park staff will need to pursue various means to fully implement the modified preferred alternative, such as seeking additional funding sources and developing cooperative agreements. The actual cost of implementing the modified preferred alternative will ultimately depend on funding by the National Park Service and Congress over the life of the plan.

Regulatory Implementation

Changes to rules and regulations may be required to implement the plan and achieve desired future conditions. These changes may involve the elimination, relaxation, or other modification of existing regulations. Promulgation of new regulations may be required (see Table 2 for possible future regulations). Before new rules or regulations are promulgated, the park will explore other means to achieve the desired conditions, including education, improved signing, changes in staffing, and voluntary compliance.

Existing federal regulations, found in Title 36 of the Code of Federal Regulations (CFR), provide the Superintendent with authority to make designations or impose public use restrictions or conditions. These designations are reviewed at least annually and are contained in a document commonly referred to as the "Superintendent's Compendium" or simply "Compendium". The compendium is available at the park headquarters and from the park web page. The designations and restrictions are communicated to visitors in a variety of ways.

Pursuant to 36 CFR § 1.5(b), a closure, designation, use or activity restriction or condition, or the termination or relaxation of such, which is of a nature, magnitude, or duration that will result in significant alteration in the public use pattern of the park, adversely affect the park's natural, aesthetic, scenic, or cultural values, require a long-term or significant modification in the resource management objectives of the park, or is of a highly controversial nature will be published as rulemaking in the Federal Register, with the required public notice and review.

The park proposes to designate, through special regulation, the "Exit Glacier Developed Area" to include all areas zoned as "Visitor Facilities" or "Pedestrian" in the modified preferred alternative of this plan.

A "developed area" is defined in 36 CFR § 1.4 as "roads, parking areas, picnic areas, campgrounds, or other structures, facilities, or lands located within development and historic zones depicted on the park area land management and use map".

Special regulations specific to the Exit Glacier Developed Area will be proposed as needed to implement the management prescriptions of the final plan. Examples include regulations regarding snowmachine use, camping, fires, bicycles, parking, and similar activities which require more intensive management within the developed area than in the park as a whole.

SUMMARY OF IMPACTS FROM MODIFIED PREFERRED ALTERNATIVE

The NPS has determined the modified preferred alternative can be implemented with no significant adverse impacts to soils, water quality, floodplains, wetlands, air quality, soundscape, vegetation, wildlife, visitor experience, the socioeconomic environment, and safety. The environmental consequences of the modified preferred alternative are summarized below.

<u>Soils</u>
Construction of new routes and trails and trampling along trail margins will cause minor impacts to soils. The actions associated with the implementation of this alternative will add an estimated 5.3 acres (2.1 ha) of impacted soils to the existing 30 acres (12 ha) that are already impacted.

Table 2. Possible future regulations required to implement proposed actions.

COMMON ACTIONS	EXISTING REGULATIONS & COMPENDIA	PLAN IMPLEMENTATION
Overnight Camping	Within the Exit Glacier Study area, camping is currently prohibited within ½ mile of any road or trail except in designated sites in the Exit Glacier campground from March 1st – November 1st. Camping outside of the campground is restricted to areas covered with snow or unvegetated rock. Camping in the campground is limited to no more than 14 nights in a 6 month period. No more than 6 persons and/or two tents may occupy a single campsite in the campground.	Regulation of camping in the Exit Glacier campground will essentially remain unchanged. The Pedestrian and Hiker zones may be closed to camping if the existing prohibition of camping within ½ mile of roads or trails does not achieve the desired conditions. Group size limits or similar conditions may be established in the Backcountry Semi-primitive and Primitive zones.
Overnight Occupancy of Recreational Vehicles	Overnight occupancy of vehicles is prohibited within the study area.	This prohibition will remain unchanged
Airplane Landings and Overflights	Operation of fixed wing aircraft is allowed in accordance with 43 CFR 36.11(f).	No changes in this activity are envisioned in this plan. The park management will continue to work cooperatively with aircraft operators to minimize visual and auditory intrusions where possible.
Snowmachines	Snowmachine use, subject to various restrictions [see 36 CFR 2.18(a), (b), (d), and (e); 43 CFR 36.11(a)(2)(c), and state law] is allowed.	Snowmachine use within the Pedestrian and Visitor Facility Zone would be allowed on the existing road, parking lot, and a winter access route through the campground to Exit Creek.
Non-Motorized Winter Recreation	Non-motorized winter recreation is generally unrestricted at this time.	Propose restrictions if needed to mitigate user conflicts.
Bicycle and Other Mechanized Uses	Bicycle use is allowed on park roads and parking areas by 36 CFR 4.30.	Propose restrictions if needed to limit bicycle use or designate routes.
Fires	Campfires, cooking, and warming fires are currently restricted to fire rings in the campground and picnic area.	Extend the current restriction to all zones.
Guided and Commercial Operations	No concessions contracts exist currently. All commercial operations are managed under Incidental Business Permits as required by 36 CFR 5.3	Permits are issued to qualified operators providing approved visitor services. The current restrictions on shuttle and taxi services may be eliminated. Permit conditions may be modified to achieve the desired conditions in some zones.
Research and Administrative Uses	Administrative activities, as defined at 36 CFR 1.4, are allowed in accordance with 36 CFR 1.2(d). Research is allowed in accordance with 36 CFR 2.5, 43 CFR 3.3.	Administrative and research activities will continue in accordance with management plans
Ice Climbing and Glacier Travel	Climbing on, in, and under Exit Glacier within ½ mile of the terminus from April 1 through November 1is prohibited.	No change is foreseen under any of the proposed alternatives.
Pets	Pets are allowed, on a leash not to exceed 6 feet or other under physical control, in the parking lot and entrance road but are prohibited beyond these areas . This restriction does not apply to service animals nor to harnessed dogs utilized as part of a mushing or skijoring team.	No change is foreseen under any of the proposed alternatives.

<u>Water Quality</u>

This alternative will have minor impacts to water quality from the addition of new hiking trails bringing visitors in greater contact with surface waters. Temporary changes in water quality may result from unconfined human waste entering streams that may be used for drinking water or recreation. Increased vehicular traffic may result in increased airborne exhaust particulates and concentrated hydrocarbon pollution.

Floodplains
Moderate impacts to floodplains will occur due to actions that will prevent flooding of infrastructure, such as diverting stream channels, placing culverts, or building berms.

Wetlands
Minor impacts to wetlands will occur due to the construction of a bike path adjacent to wetlands by altering natural wetland function in a small area of up to 0.25 acre.

Air Quality
Impacts to air quality will be minor as caused by wood burning firepit/ fireplaces. A net decrease in emissions will result from a decrease in motorized use in winter and from visitors arriving via snow coach, which will have substantially lower emissions than two-stroke snowmachines.

Soundscape
This alternative will have minor impacts on soundscape from construction activities, from new trails bringing more people into naturally quiet areas, and from an increase in winter visitors arriving by snow coach. Reducing motorized use in winter will decrease seasonal engine noise.

Vegetation
Moderate impacts on vegetation will occur from construction of new trails, a bike path, and a viewing platform with a spotting scope. Social trails associated with new trails could develop, although large amounts of visitors are not anticipated on proposed new trails. Impacts to vegetation associated with use of snowmachines in winter will include breaking of limbs of woody plants, compacting vegetation under snow, or damaging vegetation where there is inadequate snow cover.

Wildlife
An expanded trail system, actions designed to promote increased winter visitation, and continued use of snowmachines in winter will have moderate impacts on wildlife.

Visitor Experience
Minor impacts on visitor experience will occur from opening of the Paradise Valley area to visitor access by means of new backcountry trails, limiting snowmachine activity in the Visitor Facilities and Pedestrian zones, and the implementation of a new winter interpretive program. Approximately 200 of the estimated 465 snowmachiners that visit the study area in winter could be displaced by closing the outwash plain to motorized use. The vast majority of visitors will experience only little change to their experience at Exit Glacier; the greatest impacts will be to winter visitors.

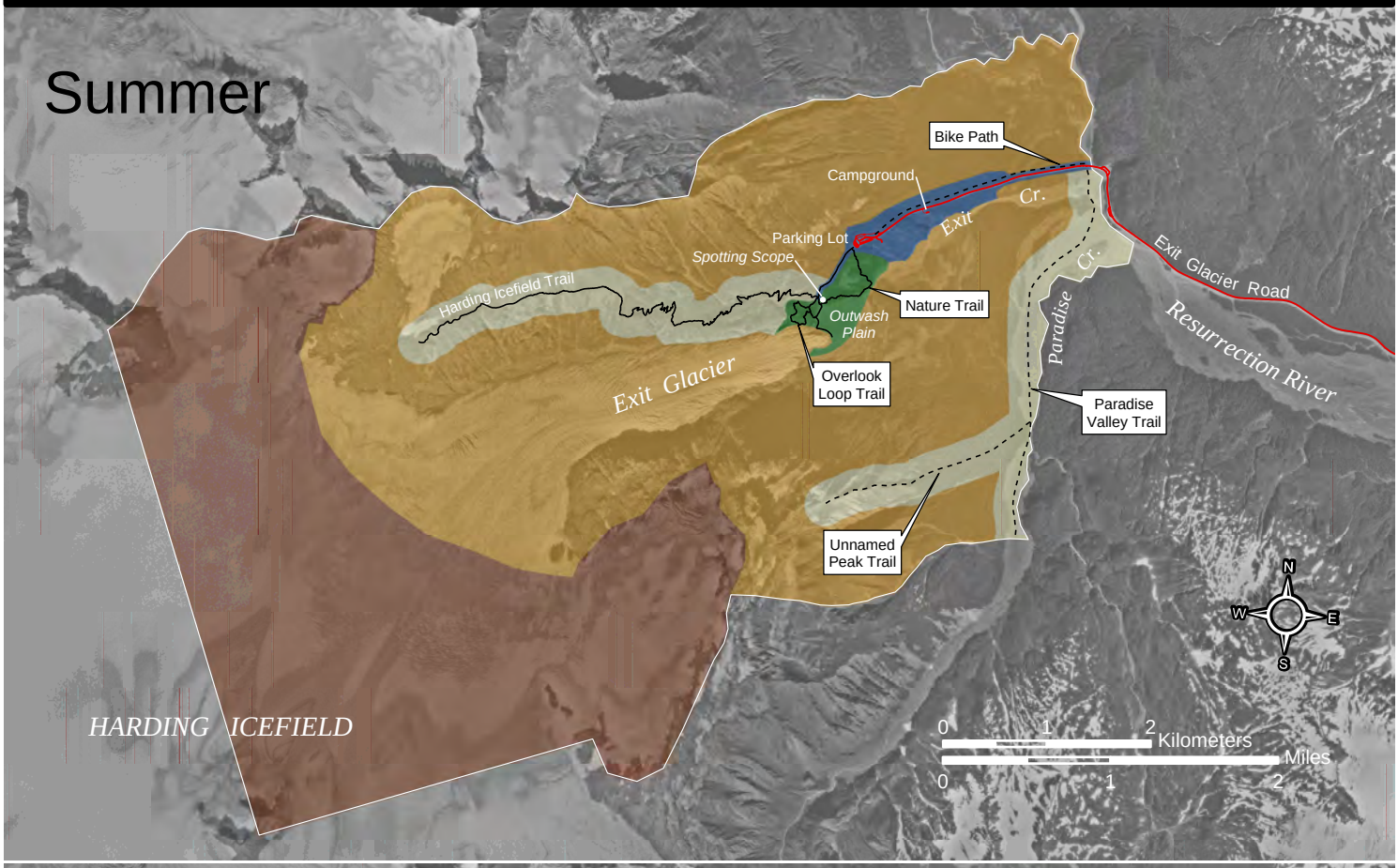
Socioeconomic Environment
Minor impacts to the socioeconomic environment will result with changes seen in the retail sales and federal government economic sectors. Actions contributing to these

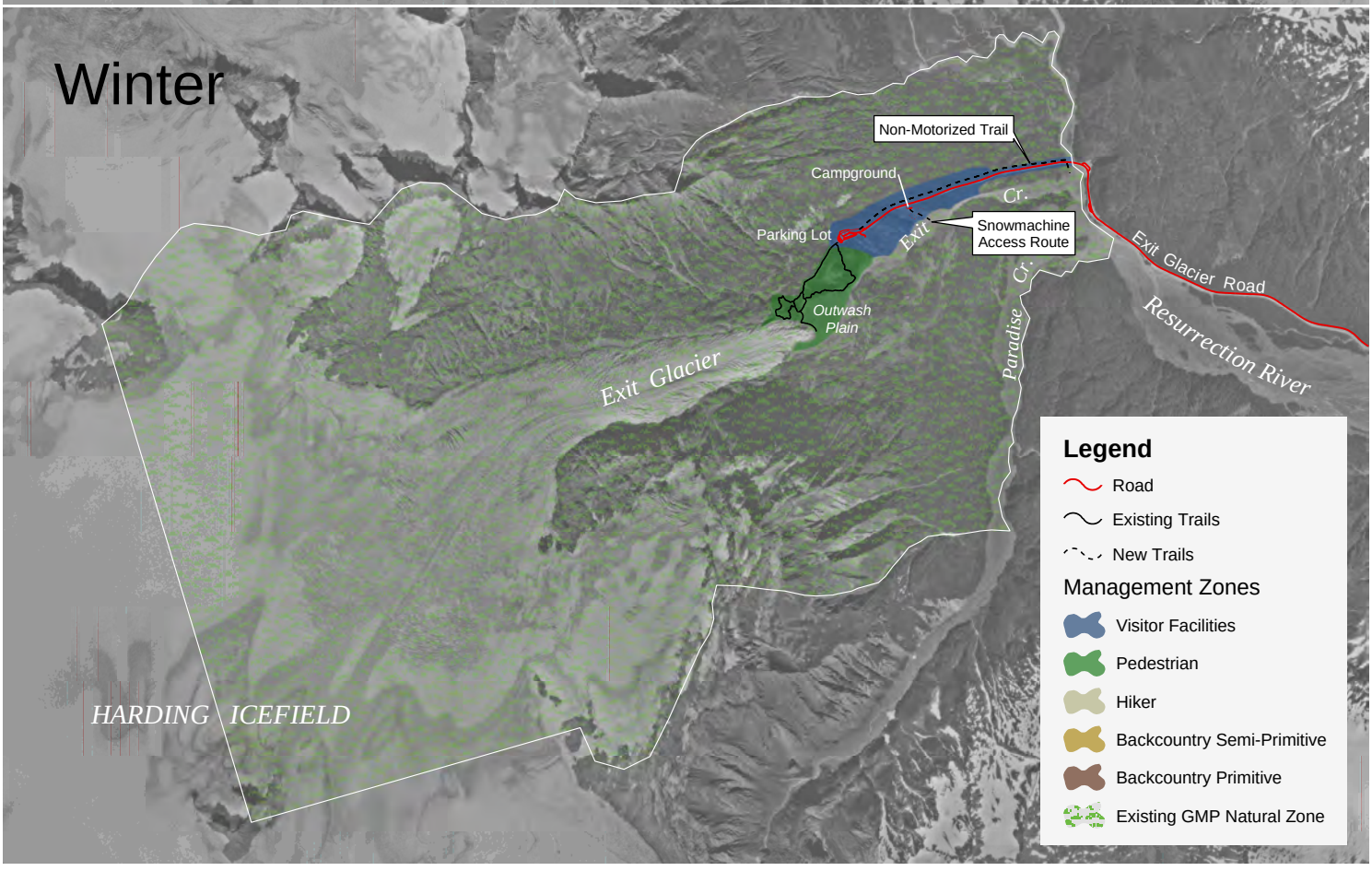
impacts will be construction of new trails and a bike path, operation of a winter snow coach, and changes in winter use patterns.

Safety

Increased use of trails, and stream crossings to access trails, will have minor impacts on safety. Safety as related to user conflicts will improve as there will be less mixing of motorized and non-motorized activities in winter.

Modified Preferred Alternative





ATTACHMENT B

NPS RESPONSES TO PUBLIC COMMENTS AND ERRATA
For The
EXIT GLACIER AREA PLAN / EA and GMP AMENDMENT

In response to the Exit Glacier Area Plan, the NPS received 33 comment letters/statements. Described below are the substantive comments and the NPS responses. The comments include the initials of the parties making the comment (the names and initials of commenters are found at the end of this document).

WINTER ACTIVITIES

Comment 1.
Unlike ANILCA 1110(a), the nationally applicable regulation at 36 CFR 2.18 (c) authorized the use of snowmachines for recreational travel on designated routes and waterways. The correct regulatory authority to allow recreational snowmachine use on the park road is through 36 CFR 2.18(c). (ACE, NPCA, TWS)

The modified preferred alternative calls for promulgation of a special regulation to designate the road for snowmachine use.

Comment 2.
The Seward community and the winter visitor numbers that currently access the Park would not support winter interpretive activities on a frequent basis as described in the preferred alternative. A monthly program would suffice and may represent a decreased cost of the alternative by decreasing the need for staffing. (SC)

An actual schedule for winter interpretive activities has not yet been decided. A monthly program may indeed suffice, or more frequent programs may be scheduled if demand increases.

Comment 3.
"I am concerned about allowing motorized use of the Paradise Valley trail. If motorized use was limited to the road, it becomes a very clear black and white policy. Enforcement, not to mention visitor understanding of the regulations is more difficult when there are exceptions to the rules. I would suggest making the Paradise Valley trail non-motorized along with the surrounding areas." (SC)

During the winter season, the original preferred alternative will be implemented only for the Visitor Facilities and Pedestrian zones as described in the EA; the NPS will not take the actions related to winter management within the remainder of the study area. (see description in the modified preferred alternative). No decisions about types of use in this area will be made until additional winter data is collected.

Comment 4.
The plan says others would find similar areas in which to ride their machine outside of the study area. Where is that similar area that you can go to teach someone how to ride easily? (PI)

Snowmachiners may learn how to ride on the road, both inside and outside the study area.

Comment 5.
If snowmachine use is not allowed on the outwash plain, riders will be pushed into the alders. The result will be damage to the alders and disturbance of moose that use the alders. (PI)

Most riders voluntarily choose not to use vegetated areas due to risk of damage to their snowmachines, the illegality of causing damage to vegetation, and /or the risk of encounters with wildlife. Given the options for continued riding in the areas listed, it is unlikely that a significant amount of snowmachine use will be displaced into the alders.

Comment 6.
"If safety of groups on the Exit Glacier trail were a concern I would recommend using an alternate trail or constructing a new winter access route to Exit Glacier and the Exit Glacier outwash plain. This trail could connect from the road through the existing campground to the outwash plain. This would separate potential pedestrians from motorized users in this area." (PI)

The modified preferred alternative plans to designate a commonly used route from the campground to Exit Creek. Safety for all user groups is a concern on the outwash plain as well as on the trail.

Comment 7.
"So what I'd suggest and like you to consider is somewhere, like maybe in the campground area which now is a traditional access to the Exit Creek area, is have a narrow corridor, just like the road, 10 feet wide or however you want to make it through the campground out on to the Exit Creek area, so that we can access Exit Creek, come back down because it is possible to get around through the woods and through that area early in the winter when there is adequate snowfall, 18-20 inches of snow on the ground and we can access the Paradise Valley." (PI)

The modified preferred alternative plans to designate a commonly used route from the campground to Exit Creek.

Comment 8.
Extend the snowmachine closure to the entire area. (PI)

See response to Comment 3.

Comment 9.
As for requiring 4 stroke, great goal, but go really really slow. A four-stroke sled suitable for a kid is a long time and a lot of dollars away. And there just aren't nearly enough users to constitute such a measure. If it looks like the NPS is using 4 stroke requirements as an all-around ban, there will be a lot opposition to that, too. (PI)

The plan does not state that 4-stroke engines on snowmachines would be required. Technology requirements, such as a 4-stroke engine, is one of the tools that could be used to manage access as necessary to achieve desired zone conditions.

Comment 10.
We need more access such as a non-motorized trail up the south side of Resurrection River. (PI)

This proposed action is outside the scope of the Exit Glacier study area.

Comment 11.
Let only the quiet snowmachines into the Exit Glacier area. (PI)

Existing regulations (36 CFR 2.18(d)(1)) prohibit the operation of snowmachines that make excessive noise. Technology requirements, such as a 4-stroke engine, are tools that could be used to manage access to achieve desired zone conditions.

DEFINITION OF "TRADITIONAL ACTIVITIES"

Comment 12.
The Alaska National Interest Lands Conservation Act (ANILCA) does allow snowmachines in national parks for access to "traditional activities" but not for recreation. Title XI provides for transportation to a traditional activity or village or homesite. The snowmachine, motorboat, or airplane is the transportation; it is not the activity in and of itself. Just as a motorboat cannot be used for waterskiing, a snowmachine cannot be used for recreation. At Exit Glacier there are no true traditional activities that we are aware of. Neither sport hunting nor subsistence hunting is allowed. There is no ice fishing. There are no traplines. Berry picking does not occur in winter and there are no villages or homesites. "Jumping snowcovered glacial moraines" (Exit Glacier Plan, p. 83) and other recreational uses is not a traditional activity. Therefore, the current use of snowmachines is illegal at Exit Glacier. By not defining traditional activities Kenai Fjords is perpetuating a park service wide avoidance of clarifying this provision of ANILCA and is essentially allowing all types of snowmachining including recreation. Kenai Fjords should recognize ANILCA's congressional intent and adopt a clear definition of traditional activities. Until a definition is in place, it is totally unclear what snowmachine usage is allowed. In the absence of a definition, it would appear that the park is considering recreational snowmachining to be a traditional activity. (ACE, AQRC, NPCA, TWS, PI)

Since the term "traditional activities" has not been defined for Kenai Fjords National Park, we have not determined what if any activities are traditional. NPS will define the term in the future after additional data is gathered.

Comment 13.
The definition of "traditional activities" adopted for snowmachine use in the Old Park of Denali should be adopted for Kenai Fjords during the upcoming backcountry management planning process. The Park Service stated that it intended to apply the Denali definition to other parks. In the current EA, the Park Service is deviating from this planned approach. (TWS)

See response to Comment 12.

RESOURCE IMPACTS

Comment 14:
"A 1999 Summary Report on the Alaska Moose Fecal Glucocorticoid Project which analyzed stress hormones from moose fecal samples in areas with or without frequent snowmachine use demonstrates that moose in high snowmachine use areas experience significantly greater physiologic stress, on average, than moose in areas of low snowmachine use. Winter motorized use could well be a factor in the decline of the Kenai Peninsula moose population, given that snowmachines may cause displacement and create other stress factors for moose in winter. The EA fails to provide a substantive and conclusive analysis of impacts from motorized recreation on moose populations." (TWS)

NPS disagrees that we failed to provide substantive and conclusive analysis of impacts to wildlife. We discussed potential impacts and explained why they would constitute a moderate impact. The study cited in the comment is similar to those cited in the impact analyses (see last paragraph on p.132 in the EA).

Comment 15.
"Possibly set aside a corridor of non-motorized use for wildlife to travel between habitats. Paradise Valley would be a known travel corridor for local wildlife and a logical choice." (EKPEAA)

See response to Comment 3.

Comment 16:

"While we are pleased the Park Service acknowledges its responsibility to preserve the wilderness character of the suitable wilderness within the planning area, we believe science and public opinion support our conclusion that dispersed recreational snowmachine use impairs wilderness values and therefore violates Park Service law and policy." (TWS)

Temporary activities, such as snowmachine use, will not affect wilderness suitability.

Comment 17:

"The suggested management tools and protocol outlined on page 21 of the EA tailor management in response to impacts. The Park Service is empowered by the strongest conservation legislation and management regulations existing in the Nation and the world, yet the management tools in the EA are only triggered when impairment surpasses desired future conditions. Only after impairment has occurred are managers instructed to use the "least restrictive" mechanism or tool. This course is not only questionable under the law, but TWS feels that it is poor public policy. TWS continues to urge the Park Service to act proactively to prevent damage to park resources, consistent with Organic Act mandates and NPS Management Policies." (TWS)

The plan does not state that NPS will wait for impairment, or even impacts, to occur prior to using the management tools. The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. As stated throughout the Environmental Consequences chapter of the EA in the conclusion sections of each impact topic, none of the actions proposed would result in an impairment of park resources. The long-term monitoring of natural and social indicators will help insure that desired conditions are met. Standards for each indicator will be established that, when maintained, will ensure the perpetuation of acceptable conditions. Step 9 of the VERP process calls for taking management action if standards are deteriorating or have been violated (see page 5 of the EA). Through this process, NPS will be managing the Exit Glacier area proactively rather than reactively.

MANAGEMENT ZONES

Comment 18:

"The Plan indicates that zones and the proposed carrying capacity study will not be applied to the whole park—It will occur only in the most visited area of the park, approximately 10,000 acres (pages 4-5). We request clarifying this fact in the *Summary* and wherever other references to zones convey a meaning of potential limitation. This intensive management tool, as currently described, would not be appropriate in the remainder of this park." (AK)

As this comment notes, the plan indicates that zones and the carrying capacity study apply only to the Exit Glacier area. The first sentence of the ***Summary*** *states that this plan will "provide guidance on the management of the Exit Glacier area of Kenai Fjords National Park".*

Comment 19:

"The following phrase is not reflective of ANILCA intent: "*in winter, it (motorized use) is allowed for traditional activities as long as zone conditions are met*." The "zone conditions" listed are the descriptive conditions (social conditions, natural resource conditions, visitor use, facilities and development, and management activities) for each

management zone. In order to be effective, the plan must provide information on the monitoring program, and specify indicators and standards to determine whether snowmachine uses are exceeding the proposed zone conditions. The 43 CFR 36 regulations implementing ANILCA's access protections provide a process for limiting snowmachine use. Permanent (annual) limits cannot be implemented unless the Service provides a finding of detriment to resource values and formal rulemaking." (AK)

The language referenced in this comment was part of zones that are no longer being applied in winter (see modified preferred alternative). We agree that development of a monitoring program including indicators and standards is necessary; however, the development of a monitoring program and indicators and standards is beyond the scope of this planning process. NPS fully intends to follow all laws, including those for closure of areas to the use of snowmachines for traditional activities. As the plan indicates on page 5, the process of developing indicators and standards will consider public involvement.

Comment 20:
Application of the "Zone Allocation" (page 35) in the preferred alternative to the majority of the 10,000 acre study area appears to involve the potential to limit snowmachines in the future. Without additional information, this intent has three fundamental problems: (1) Monitoring information does not show that the number of snowmachine users "*is inconsistent with the desired conditions*" in the affected zone. (2) "Desired conditions" is not defined. (3) Closures and limitations must be consistent with the previously referenced 43 CFR 36 regulations." (AK)

The language referenced in this comment was part of zones that are no longer being applied in winter (see modified preferred alternative). Desired conditions are generally defined in the EA on page 19 and specifically for each zone on pages 22 to 27, and summarized in the table on pages 28 and 29. Also see response to Comment 19.

OTHER

Comment 21:
"Some sections, however, are inconsistent with this management intent, for example the *Summary* discussion of the *preferred alternative* (page iii), the Introduction (pages 20-21) and the Concept discussion (page 32). These statements may cause readers to incorrectly interpret the Service's goal is to increase non-motorized recreational opportunities at the expense of motorized activities. We request the final plan clarify our understanding that improved safety and opportunities for increasing use in the developed area necessitates a small area closure to motorized use (150 acres) with minimal impact on the legitimate and popular motorized uses that occur throughout the undeveloped areas of the park (607,805 acres). The inappropriate wording, e.g., "*to provide for additional non-motorized recreational opportunities,*" is inconsistent with ANILCA protections of motorized access." (AK)

It is not the goal of the NPS to increase non-motorized opportunities at the expense of motorized use within the Exit Glacier study area. The plan does not state that additional non-motorized opportunities would limit motorized opportunities, and we do not believe that readers would interpret it as such. To provide for additional non-motorized recreation is not inconsistent with ANILCA. This plan does not address the remainder of Kenai Fjords National Park.

Comment 22:
"The "management constraints" listed on page 7 need to be modified to explain that their application is modified by ANILCA. The State of Alaska's review of these national policies noted many significant inconsistencies with statutory direction in ANILCA; but the final 2001 Policies were not clarified; thereby leaving federal managers in Alaska with insufficient or conflicting guidance. The Policies cannot supercede statute; thus, the Plan needs to be corrected to reflect that appropriate ANILCA guidance supercedes national policies." For example, the first bullet states that "actions would not be taken that would affect wilderness character" of the area found suitable for wilderness designation. This is inconsistent with ANILCA section 1317(c) that directs areas to be managed consistent with the ANILCA provisions, not the Wilderness Act, until Congress takes action." (AK)

NPS recognizes the State's concerns and agrees that policies cannot supersede statute; however, we do not believe that our statements imply otherwise.

Comment 23:
"We are very concerned about the "Existing Regulations" listed under bicycles on page 55 of the plan stating bicycles are allowed as "non-motorized surface transportation for traditional activities". This is an error that needs to be corrected. There is nothing in ANILCA or 43 CFR 36.11(e) that implies non-motorized surface transportation includes bicycles. The regulation states it is for non-motorized surface transportation "such as domestic dogs, horses and other pack or saddle animals." It is clear the intent is animals, not mechanized transport such as bicycles." (ACE, NPCA)

The referenced statement has been deleted.

Comment 24:
"Under NEPA, the Park Service is required to analyze a full range of reasonable alternatives. With respect to motorized uses, the EA fails to satisfy this standard. All of the action alternatives allow for motorized use on the planning area even though the public expressed interest in a non-motorized alternative during the scoping phase. In order to analyze a full range of alternatives, the Park Service must consider an entirely non-motorized alternative. The explanation found on pages 49-50 of the EA does not provide a substantive explanation in support of the Park Service's decision to ignore this alternative." (TWS)

The National Park Service evaluated a full spectrum of reasonable alternatives in the EA by fully analyzing four alternatives, including the no action. The suggested non-motorized alternative was an alternative action considered but not analyzed further for

the reasons stated on page 49 of the EA, "Return the area to the way it was before vehicle bridge was constructed." A non-motorized alternative would not meet plan objectives.

Comment 25.
"Please consider an alternative to current access with all users utilizing the same roadway (possible speed limitations to increase safety of all)." (EKPEAA)

There is already a speed limit on the road and the modified preferred alternative proposes a bike path that will parallel the road.

LIST OF COMMENTERS

AGENCY LETTERS
(With Substantive Comments)

1. State of Alaska (AK)

ORGANIZATION LETTERS
(With Substantive Comments)

1. Alaska Center for the Environment (ACE)
2. Alaska Quiet Rights Coalition (AQRC)
3. Eastern Kenai Peninsula Environmental Action Association (EKPEAA)
4. National Parks and Conservation Association (NPCA)
5. The Wilderness Society (TWS)
6. The Sierra Club (SC)

INDIVIDUAL COMMENT LETTERS (12 received)
(With Substantive Comments)
Private Individuals (PI)

INDIVIDUAL COMMENT LETTERS (14 received)
(Without Substantive Comments)