National Park Service
U.S. Department of the Interior

Isle Royale National Park ● Michigan

Wilderness and Backcountry Management Plan and Environmental Impact Statement

ISLE ROYALE NATIONAL PARK

Isle Royale National Park
Michigan

July 2011

Final Wilderness and Backcountry Management Plan and Environmental Impact Statement

Isle Royale National Park
Michigan

EXECUTIVE SUMMARY

This document contains the final Wilderness and Backcountry Management Plan (WBMP) for Isle Royale National Park and the associated Environmental Impact Statement (EIS). The purpose of this plan is to serve as:

1. A public document that outlines steps for preserving Isle Royale's wilderness character, natural resources, and cultural resources while also providing for the use and enjoyment of the park's wilderness and backcountry by current and future generations; and
2. A management document that will provide accountability, consistency, and continuity for managing Isle Royale's wilderness and backcountry and this park's place in the National Park Service's wilderness management program.

The plan addresses issues and provides guidelines for managing the wilderness and backcountry areas of the park, which encompass all areas of Isle Royale outside of the Developed and Open Water Zones. This plan addresses a wide array of management issues, and identifies specific goals, objectives, and decision-making guidelines for administrative actions and visitor use. In many cases this plan formalizes current National Park Service (NPS) management practices in Isle Royale's wilderness and backcountry. However, several modifications and changes are proposed that are intended to bring management practices on Isle Royale into compliance with NPS policies, improve visitor services, or generally improve wilderness and backcountry management in the park. This plan does not propose any changes in the wilderness boundaries set forth in Isle Royale's 1976 Wilderness Legislation.

Adopting this plan causes some changes in how the NPS manages wilderness and backcountry in Isle Royale, some of which will be readily apparent to the public, while others will be primarily operational. The NPS will institutionalize a Minimum Requirement process to guide and document decisions on appropriate tools for maintenance activities in the park's wilderness, appropriate research projects and field methods within wilderness, and appropriate administrative actions within the wilderness. The NPS will aim to make better use of research and monitoring to guide management through the creation and implementation of a coordinated monitoring plan, and will strive to increase staff training and accountability for wilderness management.

The most obvious changes from the public perspective are those that address crowding and visitor distribution, visitor information services, and resource conditions. Several issues were presented in the draft plan with multiple alternatives for goals and management actions, which were developed with extensive public input. These issues are; 1) managing overnight camping and boating in Isle Royale's wilderness and backcountry, including permitting and information services, 2) managing day use in the park's wilderness and backcountry, 3) managing campfires, 4) maintaining or removing the fire towers in the park's wilderness, and 5) maintaining or removing picnic tables from wilderness campgrounds. Chapter 2 outlines the details of all of the previously proposed changes, and identifies the NPS preferred alternative (the final, approved action alternative) for each of these issues.

The draft WBMP proposed several changes in how Isle Royale's wilderness and backcountry is managed. The preferred alternatives were crafted with an intention of creating one cohesive management program, with management goals for each of several issues being complementary, not contradictory. The planning team's intention was to respond to public interest and the concerns of subject matter experts, and incorporate the best science available for guiding preservation of Isle Royale's resources and values. General goals included improving the quality of wilderness and backcountry experiences for visitors while still providing high public access to the park for appropriate types of recreation. Existing facilities could be used more efficiently, while unnecessary facilities would be removed from the wilderness. Table I outlines the goals and proposed management actions for all of the preferred (approved) alternatives.

The preferred alternatives in combination also strive to minimize adverse resource impacts, in many cases improving resource conditions that are currently showing degradation. Because Isle Royale is already a difficult and expensive park to visit, the preferred alternatives were also crafted with an interest in not further restricting general public access to the park. The preferred alternative for managing overnight camping and boating on Isle Royale focused on more efficiently utilizing existing camping facilities through the creation of a backcountry office and advanced permitting. The intent is to expand visitor services for trip planning and reduce campground crowding to improve social and resource conditions in campgrounds. This could result in a decrease in visitor access to the backcountry for camping during the busiest weeks of the season. The preferred alternative for managing day use was crafted with an intention to allow an increase in day use and concessions lodging throughout the visitor season. Day tours would be managed to concentrate the majority of day visitors close to developed and frontcountry areas of the park and minimize adverse impacts to wilderness character and other critical resources.

The preferred alternatives in combination also aimed to minimize or reduce the impacts of development in the park's wilderness. Although the preferred alternative for overnight use would add one additional campsite at North Desor campground and a few rustic cabins in Rock Harbor, and the preferred alternative for day use would add 3-5 miles of new trail, no new campgrounds would be constructed other than those approved in the park's General Management Plan (GMP), up to 2 fire towers would be removed, and campfire rings would be located only where resource conditions could tolerate the associated impacts.

The EIS involves analysis of current conditions in the park and the likely impacts of implementing each of the alternatives, considering impacts to visitor use and experiences, wilderness character, natural resources, cultural resources, socioeconomics, and NPS operations and administration. In general, each of the alternatives would be expected to result in both beneficial and adverse impacts to park resources and values. None of the adverse impacts would be extensive or severe enough to result in degradation of resources or values. The environmental consequences of each alternative are summarized in Table II.

Table I: Summary of the Preferred (Approved) Alternatives

	Actions Common to All	Managing Overnight Use	Managing Day Use	Campfires	Fire Towers	Picnic Tables
Goals	The NPS would avoid actions that might have no seeming physical impact but which would detract from wilderness character and the idea of wilderness as a place set apart.	Provide a range of high quality opportunities for wilderness and backcountry experiences and reduce adverse impacts to park resources and values.	Expand opportunities for high quality day activities, while also accommodating future increases in day use and minimizing adverse impacts to park resources and values.	Continue to provide an opportunity for camping with campfires, while also concentrating and minimizing adverse resource impacts.	Improve the park's wilderness character by removing substantial structures that no longer serve an administrative need.	Adhere to NPS policy for wilderness management while also utilizing effective tools for containing adverse impacts in campsites.
Desired Future Conditions	• Provide a range of quality visitor opportunities • Reduce the adverse impacts of NPS operations	• Overcrowding would be reduced in campgrounds all season • Improve camper distribution • Protect seasonal sensitivities of park resources • Provide a seasonal range of visitor opportunities, with low use in the spring and fall • Improve trip planning and information services	• Create additional opportunities, such as a new loop hiking trail for day visitors. • Improve social and resource conditions in day use areas by establishing upper limits to the size of organized day tours. • Allow for an increase in day visitors to the park.	• Visitors would have the option to camp with campfires • Visitors would have the choice of camping in areas where fires are permitted, or where fires are not permitted. • Fire rings would be located only where there are no vulnerable natural or cultural resources.	• Administrative impacts to wilderness character would be reduced by removing up to 2 of the park's 3 fire towers • Ojibway Tower would continue to be used to administrative purposes that are compatible with wilderness, such as communications, research, and monitoring	• Isle Royale would be in compliance with NPS policies for wilderness management • Adverse resource impacts would be effectively concentrated in campsites of minimal sizes. • Picnic tables would continue to be available for visitor convenience in some wilderness campgrounds

	Actions Common to All	Managing Overnight Use	Managing Day Use	Campfires	Fire Towers	Picnic Tables
Appropriate Management Actions	• Low-cost rustic cabins would be added in Rock Harbor • Cross-cut saws would be used increasingly to minimize chainsaw use • Sustainably-harvested, chemically preserved lumber would be used for trails and campgrounds • Cross-country camping and anchoring-out would continue, with monitoring of impacts • The Minimum Requirement Decision Tree would apply to all NPS activities in wilderness	• Establish a mainland-based backcountry office to coordinate information services and permitting • Implement an advanced permitting system for all overnight boaters and campers, allowing more flexibility for boaters not using campsites. • Discontinue the practice of issuing permits over the capacity of a campground • Institute a permitting fee to offset the costs associated with the backcountry office • Expand North Desor campground by 1 campsite. • Expand public education to reduce adverse impacts to park resources and values. • Continue monitoring social and resource indicators	• Explore options for creating a new 3-5 mile day trail near Windigo. • Establish group size limits for day tours, allowing larger groups to split into multiple small groups. Limits set by management zone: Frontcountry: 40 Wilderness Portal, Backcountry and Primitive: 20 Pristine: 6 *Note: Hidden Lake, Lookout Louise, and McCargoe Cove are an exception, with up to 40 people allowed.*	• Adhere to clear protocols for when and where campfires would be appropriate, based on resource conditions. • Remove or add fire rings at different campgrounds as necessary, based on resource conditions • Replace existing fire rings with smaller metal rings with adjustable grates. • A single communal ring could replace multiple individual campsite rings in some campgrounds • Increase education about low-impact fires and sensitive resources. • Include information about the locations of campfire rings for visitors at the time of permitting.	• Remove Ishpeming Tower. Review administrative needs (communication, research) for Feldtmann Tower, using the minimum tool necessary to achieve administrative functions • Restore the impacted site(s) to their natural conditions • Maintain and utilize Ojibway Tower for administrative purposes associated with managing the park's wilderness.	• Follow NPS policy, using Minimum Tool process to determine where picnic tables should remain. • Minimum Tool process shows that tables should remain in campgrounds with docks and shelters. • Remove picnic tables from campgrounds where docks and shelters are removed (i.e. Siskiwit Bay and Duncan Bay upon full implementation of the GMP)

Table II: Combination of Environmental Effects of all of the Preferred (Approved) Alternatives

	Overnight Use, Alt. B	**Day Use, Alt C**	**Campfires, Alt. B**	**Fire Towers, Alt. B**	**Picnic Tables, Alt. C**
Proposed Changes	• Implement GMP-proposed new campgrounds • New Backcountry Office • Advanced Permitting • Add 1 campsite at North Desor • Not more than 5% sharing in summer • Maintain historic low use in spring	• Group size limits, with large groups allowed to split up. • *MV Sandy* can carry up to 40 passengers total – maximum passenger numbers are consistent with Frontcountry and excepted Backcountry destinations. • Explore options for adding a new loop trail in Windigo	• Campfires would be rotated to appropriate campgrounds based on the fuel availability and resource conditions. • Resource conditions at campgrounds would be inventoried prior to installing fire rings. • Resources would be monitored for impacts.	• The Ishpeming Fire Tower would be removed. • Feldtmann Tower would be evaluated for administrative use. • The Ojibway Tower would be retained for administrative uses.	• Follow NPS policy and maintain picnic tables in wilderness areas where they meet Minimum Tool standards.
Visitor Use and Experiences	Visitation could increase from mid June through October. Advanced permitting would better distribute people to available campsites and reduce the frequency of overcrowding and give campers a greater assurance of finding an available campsite and opportunities to visit the park during low use times would be preserved; these are long-term moderate beneficial impacts to visitor use. Some people may not be able to get a permit for their preferred itinerary and public access may be limited in spring, a long-term, minor adverse impact.	Long-term, moderate, beneficial effect of high level of access to tours and group activities because of no size limits. Some visitors' experiences may be negatively affected by being part of such a large group.	Long-term, minor beneficial effect for those who enjoy campfires. Long-term minor adverse effect for those who do not.	Long-term, minor adverse impact to visitor experience from the loss of views from the Feldtmann Tower if the tower is removed. Long-term minor beneficial impact to visitor experience from the continued availability of views if Feldtmann Tower remains for administrative uses.	Long-term moderate beneficial impact to visitor experience due to the retention of this modern convenience.

	Overnight Use; Alt. B	Day Use, Alt C	Campfires, Alt. B	Fire Towers, Alt. B	Picnic Tables, Alt. C
Wilderness Character	Impacts to wilderness character would be long-term, moderate and beneficial. Overcrowding in campgrounds would be reduced. A wide range of opportunities for wilderness experiences would be protected.	Large groups can have a negative impact on the wilderness experience both for those in the group and for others. Minor, short-term adverse impacts: noise, crowding, displacing wildlife. Trampling could be short or long-term, minor to moderate.	Long-term, minor beneficial effect for those who see campfires as part of wilderness. Long-term minor adverse effect for those who do not. Long-term, minor adverse effects to naturalness.	Long-term major beneficial impact to wilderness and naturalness in the vicinity of Ishpeming and possibly Feldtmann Tower. Long-term minor adverse impact to other areas where Feldtmann Tower is visible if it remains.	Long-term moderate adverse impact on wilderness character due to the retention of these modern artifacts. Impact is reversible with the removal of tables.
Natural Resources	Impacts to natural resources would be long-term, moderate and beneficial compared to current conditions. Reduced overcrowding in campgrounds would reduce adverse biophysical and noise impacts. Maintaining low visitation in spring would minimize adverse impacts to wildlife. Long-term, minor adverse effects include adding one new campsite at North Desor and allowing an increase in fall visitation.	Adverse impacts to wildlife would be localized and short-term. Adverse impacts to vegetation and soils would be localized and could be long-term.	Long-term, minor, beneficial impacts to natural resources due to concentration of visitor impacts in campgrounds with fire rings and fewer illegal fires. Long-term, minor adverse impacts because of tree damage, social trails and loss of woody debris. Rotation should mitigate some of these adverse impacts.	Long-term minor, localized, beneficial effects on natural resources in the area of Ishpeming and possibly Feldtmann Towers. Long term minor localized adverse effects near Feldtmann Tower if it remains.	Long-term, minor to moderate beneficial impact to natural resources due to the concentration of impacts in campgrounds with picnic tables
Cultural Resources	Reducing campground overcrowding and maintaining low visitation in the spring would have long-term, minor beneficial impacts on cultural resources. Adding one new campsite at North Desor could have adverse effects on unknown cultural resources. These effects would be long-term and their severity would depend on the significance and integrity of affected resources.	Cultural objects located near the trails could suffer long-term minor adverse impacts. Cultural landscapes may suffer short-term minor adverse impact.	Long-term, minor adverse impacts from social trails created by firewood seekers and from uncontrolled fires.	Long-term, minor, adverse impacts from the removal Ishpeming and possibly Feldtmann Fire Towers. If Feldtmann Tower remains, it and Ojibway Tower would remain as examples of fire towers in island history.	Long-term, minor beneficial impact to cultural resources due to the concentration of impacts in campgrounds with picnic tables.

	Overnight Use; Alt. B	Day Use, Alt C	Campfires, Alt. B	Fire Towers, Alt. B	Picnic Tables, Alt. C
Socio-economics	Peak season backcountry visitation could decrease. If this resulted in an increase in day use, then this would be beneficial for local communities as day visitors spend more money. Cost per visitor could increase if permitting fees were implemented.	Possible minor, long-term beneficial impacts if the number of day visitors to the park increased based on continued availability of day trips for larger groups.	Long-term, minor, adverse impact to current staff workloads from assessment, monitoring and moving fire rings and restoring the sites.	No anticipated socioeconomic effects on local communities or visitors.	
Park Operations	Long-term minor adverse impact to park operations. Additional staffing required to start and run a backcountry office. Short-term costs would be moderate, long-term costs would be minor to moderate. Short-term costs of constructing a new campsite at North Desor would be minor, as would long-term costs for maintenance.	Possible long-term, minor adverse impact if increased staff were needed to minimize trampling impacts.		Short-term, major adverse impact to park operations due to the removal of up to two fire towers from the Park. Long-term, minor beneficial impact from lower maintenance cost, though could be significant for both Feldtmann and Ojibway Towers if major repairs were necessary.	Short-term, minor beneficial impact of not having to remove the picnic tables. Long-term, minor adverse impact of maintenance costs associated with tables.

How to Read the Final Plan/EIS:

After public review the NPS planning team evaluated comments from other federal agencies, tribes, organizations, individuals, and businesses regarding the draft plan and incorporated appropriate changes into a *Final Wilderness and Backcountry Management Plan and Environmental Impact Statement*. Importantly, the final plan includes substantive comments on the draft document and NPS responses to those comments. Both appear in Chapter 5: Public Comment and Responses, starting on page 235. Additionally, complete copies of written comments received can be found in Appendix K, starting on page 329.

NPS Director's Order #12 defines *substantive comments* as those that do one or more of the following:

a. question, with reasonable basis, the accuracy of information in the EIS
b. question, with reasonable basis, the adequacy of environmental analysis,
c. present reasonable alternatives other than those presented in the EIS,
d. cause changes or revisions in the proposal (National Park Service 2001a).

The revised Executive Summary captures changes that have been incorporated into the final plan, either because of recent NPS policy changes (picnic tables) or re-evaluation by the WBMP team of some aspects of Preferred Alternatives based on public comments (day use group sizes). Per requirements established in NPS Director's Order #12, the final plan now includes discussions regarding unavoidable adverse impacts, short-term uses, long-term productivity, and irreversible or irretrievable commitment of resources, sections 4.1.7 and 4.4 respectively. All changes/revisions in the Final EIS fell within the evaluated range of impacts in the Draft EIS and did not require further review prior to adoption.

As readers review this Final WBMP/EIS, they should note that the term "Preferred Alternative" now actually means "approved action." Where changes have occurred in the Preferred Alternatives, the final plan (including Chapter5: Public Comments and Responses) combined with the Record of Decision will detail the reason for, and the anticipated impact of the changes. The Record of Decision therefore should be read along with the final WBMP/EIS when the final plan is being reviewed by the public or for implementation.

After the Environmental Protection Agency publishes the Notice of Availability in the Federal Register and a subsequent 30-day no action period, a Record of Decision approving a final plan is signed by the NPS Midwest Regional Director. Sixty days after the signing of the Record of Decision, the plan can then be implemented, depending on funding and staffing. A Record of Decision does not guarantee funds and staff for implementing the approved plan.

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CHAPTER 1: INTRODUCTION

1.1 Purpose and Need for this Plan

The purpose of this Wilderness and Backcountry Management Plan (WBMP) for Isle Royale National Park is to outline steps for preserving the park's wilderness character, natural resources, and cultural resources while also providing for the use of and enjoyment by current and future generations. This involves preventing or reversing degradation of conditions within the park's wilderness and backcountry, including natural and cultural resources, high quality human experiences, and wilderness character. Additionally this plan will provide accountability, consistency, and continuity for Isle Royale and its place in the National Park Service's (NPS) wilderness management program.

Future changes in Isle Royale's recreation and visitation patterns are difficult or impossible to predict, as are trends and changes in technologies available to visitors and land managers. The goal is not to freeze Isle Royale in its current state, but to ensure that these future changes do not result in a degradation of conditions and opportunities. One intent of this management plan is to establish guidelines to help park managers in planning for unpredictable future conditions with proactive efforts to maintain desirable conditions in the park's wilderness and backcountry, and an ability to be responsive to future changes.

Several factors indicate a need for this wilderness and backcountry management plan:

1. National Park Service Policy requires that each park containing wilderness maintain an up-to-date and approved wilderness management plan that "…will identify desired future conditions, as well as establish indicators, standards, conditions, and thresholds beyond which management actions will be taken to reduce human impacts to wilderness resources" (NPS 2006, § 6.3.4.2). Isle Royale completed a Draft Backcountry Management Plan in 1985, but this plan was never approved or fully implemented, and many of the issues and recommended guidelines are now out of date. Completion and implementation of this new Wilderness and Backcountry Management Plan would bring Isle Royale into compliance with NPS policy requirements.
2. The park's 1998 General Management Plan (GMP) generally addresses management issues for the wilderness and backcountry, but deferred to a WBMP for identification of specific issues and guidelines for addressing these issues. The GMP specified that the park's WBMP "would guide management of wilderness resources and ensure consistency in such management over time. The plan would identify a process to determine the appropriate tools to use in wilderness, set priorities for campground and trail maintenance projects, and could incorporate the Visitor Experience and Resource Protection (VERP) implementation plan to address visitor use limits in wilderness, identify research and monitoring needs, outline how VERP will be implemented, and identify staffing needs." (NPS 1998a, p.29)
3. Preliminary inventory and monitoring of wilderness and backcountry resources indicates a difference between existing conditions and proposed desired conditions. Changes in

backcountry use, management actions, and associated human-caused adverse impacts suggest an underlying need to more proactively manage human activities that directly or indirectly affect wilderness and backcountry conditions. Scoping during the GMP process identified several concerns related to wilderness and backcountry management, including; visitation levels and visitor density in the wilderness and backcountry, resource impacts and crowding in campgrounds, and insufficient visitor information services.

4. The park is lacking clear Isle Royale-specific guidelines to ensure that management actions and tools are appropriate, do not compromise wilderness character and values, and adhere to applicable laws and policies. It is important that these guidelines be developed with input from the public, other government agencies, and NPS partners.

1.2 Scope of this Plan

This Wilderness and Backcountry Management Plan addresses issues and provides guidelines for managing the non-developed areas of Isle Royale National Park. This includes all of the management zones outlined in the Park's GMP, excluding the Open Water Motorized Zone and the Developed Zone, which consist of Rock Harbor, Windigo and the Mott Island Headquarters. Additionally, all visitors included in the overnight permitting system would be included in the scope of this plan. This includes all visitors staying in designated campsites, camping off-trail, staying at docks, and anchoring out.

This plan addresses backcountry as well as wilderness in the Park in order to cohesively manage all of Isle Royale's non-developed areas. Although there is no intention to expand wilderness restrictions, many goals for backcountry and wilderness management are similar. Wilderness issues in the park are rarely limited to the wilderness boundaries. For example, backcountry campgrounds found both within and outside of wilderness are similarly managed. Wilderness and non-wilderness campgrounds on Isle Royale cannot always be distinguished by facilities, types of visitors, or permitted activities. For this reason, it seems most appropriate to manage backcountry and wilderness in Isle Royale with one cohesive plan, and distinct from the management of the park's developed areas and the open motorized waters of Lake Superior.

1.3 Goals and Objectives of Wilderness and Backcountry Management for Isle Royale National Park

Isle Royale's goals and objectives are based on the park's legislation (see Appendix A and B), NPS policy, and the 1998 GMP and were drafted with input from the public. In the 1931 Congressional Record, NPS Director Albright highlighted some of the intended purposes for establishing Isle Royale as a National Park.

> *This type of scenery, utterly distinct from anything now found in our national park system, its primitiveness, its unusual wildlife and interesting flora, its evidences of*

possible prehistoric occupation, all combine to make Isle Royale and its neighboring islands of national park caliber.

1.3.1 Management Goals

The primary goal for managing Isle Royale's wilderness and backcountry is to protect its resources while also providing for the enjoyment of current and future generations. As defined in the GMP, one of Isle Royale's primary management purposes is to preserve and protect the park's wilderness character for use and enjoyment by future generations *as wilderness.* Wilderness character is the combination of biophysical, experiential, and symbolic qualities in an untrammeled and natural state that generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.

1.3.2 Objectives

- Manage Isle Royale's wilderness and backcountry consistent with the preservation of wilderness character wherein nature is the primary influence and human works are minimal and substantially unnoticeable.
- To ensure preservation of wilderness character, use only the minimal tools, facilities and management techniques necessary to meet management objectives.
- Preserve cultural resources in Isle Royale's wilderness and backcountry and foster their appreciation through appropriate programs of protection, research, education, monitoring, and treatment.
- Manage human use of Isle Royale so visitors have opportunities to experience solitude, remoteness, challenge, self-sufficiency, and discovery as appropriate in wilderness.
- Through interpretation and education, provide public and park staff education designed to promote and perpetuate awareness of, and appreciation for, wilderness character, resources, and ethics.
- Preserve the integrity of Isle Royale's unique ecological community and its natural processes, while allowing for appropriate wilderness activities including recreation, scientific research, conservation, education, and preservation of cultural resources.
- Work with other agencies, institutions, governments, tribal governments, and the public, both within and outside the Great Lakes region, to foster a better understanding and awareness of wilderness preservation issues and goals at Isle Royale. This includes adverse impacts originating outside of the park as well as within, and on both global and regional scales.

1.4 Laws, Policies, and Authorities

Management of Isle Royale National Park's wilderness and backcountry must be consistent with the laws, regulations, and policies of the Federal Government. The following summarizes the most relevant laws, policies, and authorities governing management of Isle Royale's wilderness and backcountry.

1.4.1 Federal Laws and Provisions governing Isle Royale WBMP

The Wilderness Act of 1964 (16 USC §1131 et seq.) secures "for the American people of present and future generations the benefits of an enduring resource of wilderness." By definition, wilderness is "…a tract of undeveloped federal land of primeval character without permanent improvements or human habitation; an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain; where the forces of nature predominate and the imprint of human activities is substantially unnoticeable; which provides outstanding opportunities for solitude or a primitive and unconfined type of recreation." This act allows for the designation of wilderness areas and establishes management directives that specify the preservation of wilderness character.

The National Environmental Policy Act of 1969 (NEPA) (P.L. 91-190, 42 USC §4321 et seq.) establishes "a national policy which will encourage productive and enjoyable harmony between man and his environment." NEPA requires all government agencies to develop procedures that ensure open and honest documentation of existing resources and potential effects to these resources as a result of the proposed action. NEPA fosters public involvement as a key element of the decision-making process. NEPA compliance procedures are described in NPS Director's Order 12, *Conservation Planning, Environmental Impact Analysis, and Decision Making* and the accompanying Reference Manual (NPS 2001a).

The Endangered Species Act of 1973 (16 USC 1531-1543) requires federal agencies to ensure that management activities authorized, funded, or carried out by the agency do not jeopardize the continued existence of listed endangered or threatened species, or result in the destruction or adverse modification of habitat that is critical to the conservation of the species.

The Clean Air Act of 1977 (42 USC 7401-7626) was established to improve the nation's air quality and to eliminate certain pollutants linked to problems for human health or the environment. This act establishes National Parks greater than 6,000 acres (such as Isle Royale National Park) as mandatory Class I areas with only minor degradation of air quality allowed. Managers of such lands have direct responsibility to take steps to protect the air quality and related values, including visibility. Executive Order 12088 (1978) requires federal agencies to comply with all provisions of the Act, including State Implementation Plans. This Executive Order establishes procedures and responsibilities to ensure that all necessary actions are taken to prevent, control and abate environmental pollution with respect to federal facilities and activities.

The National Historic Preservation Act of 1966 (Section 106), amended, 1976, 1980, 1992 (16 USC 470) directs the federal government to "preserve the historical and cultural foundations of the nation as a living part of our community life and development in order to give a sense of orientation to the American people". A key element of the act is the establishment of the National Register of Historic Places (NRHP). Federal agencies are directed to not inadvertently demolish, substantially alter, or allow NRHP listed properties to significantly deteriorate. Section 106 also includes criteria for designating National Historic Landmarks; directives for the Secretary of Interior to nominate properties of international significance as World Heritage Sites; and the establishment of State Historic Preservation Programs and Preservation Officers (SHPO) to direct statewide inventories of historic properties, administer the NRHP, and advise

government agencies regarding compliance with the act. Section 106 requires Federal agencies to take into account the effect of their undertakings on properties listed in or eligible for the National Register.

The Americans with Disabilities Act of 1990 (ADA) (P.L. 101-336) provides comprehensive civil rights protection to individuals with disabilities in the areas of employment, public accommodations, state and local government services, and telecommunications. Wilderness access is treated separately from access to public accommodations. Section 507(c) specifically addresses the issue of federal wilderness access stating, "Congress reaffirms that nothing in the Wilderness Act is to be construed as prohibiting the use of a wheelchair in a wilderness area by an individual whose disability requires use of a wheelchair, and consistent with the Wilderness Act no agency is required to provide any form of special treatment or accommodation, or to construct any facilities or modify conditions of lands within a wilderness area to facilitate such use."

The Clean Water Act (Federal Water Pollution Control Act of 1972, 1977 and 1987 Amendments, and E.O. 11752) is a national policy set forth to protect and enhance the quality of water resources and to prevent, control, and abate water pollution. This act requires a permit for a point source to discharge pollutants into navigable waters and a permit from the U.S. Army Corps of Engineers for any discharge of dredge or fill material into "waters of the U.S." This act prohibits discharge of oil or other hazardous materials in harmful quantities.

The American Antiquities Act of 1906 prevents the excavation and destruction of historic or prehistoric ruins or monuments on government controlled and owned lands. Persons found on government land without permission would be convicted and fined no more than five hundred dollars or would be imprisoned no more than ninety days, or could suffer both fine and imprisonment.

E.O. 11593 "Protection and Enhancement of the Cultural Environment," May 31, 1971 instructs all federal agencies to provide national leadership in historic preservation and to assure the preservation of cultural properties in federal ownership. The order directs all federal agencies to locate, inventory, and nominate all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places.

American Indian Religious Freedom Act of 1978 (AIRFA) (P.L. 95-341; 92 Stat. 469; 42 USC 1996) determines that the policy of the United States is to "protect and preserve for American Indians their inherent right of freedom to believe, express and exercise the traditional religions of the American Indian, Eskimo, Aleut and Native Hawaiians, including but not limited to site access, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites."

The Archaeological Resources Protection Act of 1979 (16 USC 470aa-470ll) defines archeological resources as any material remains of past human life or activities that are of archeological interest and are at least 100 years old. This act provides for the protection of archeological resources located on public and Indian lands, and establishes criteria for issuing

permits for any excavation or removal. Per this act, information concerning the nature and location of archeological resources may be exempt from the Freedom of Information Act.

1.4.2 National Park Service Provisions

The National Park Service Organic Act of 1916 (16 USC 1a-1) creates the NPS, and establishes its purpose: "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." It directs the NPS to promote and regulate the use of the parks by such means and measures as conform to their fundamental purposes. Congress and the courts have interpreted this act with clarification that "when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant" (NPS 2006, § 1.4.3).

The National Parks and Recreation Act of 1978 (P.L. 95-625) addressed planning in the National Parks, directing that long-term planning for parks should address the preservation of park resources, the types and general intensities of development and facilities, visitor carrying capacities, and potential boundary modifications.

Redwoods Act of 1978 (16 USC 1a-1) amends the Organic Act to reemphasize Congressional direction for all NPS lands and states, "the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these areas have been established".

National Park Service Management Policies, 2006 establishes service-wide policies for preservation, management, and use of park resources and facilities, "The National Park Service will manage wilderness areas for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. Management will include the protection of these areas, the preservation of their wilderness character, and the gathering and dissemination of information regarding their use and enjoyment as wilderness. The public purpose of wilderness in the national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition, as well as for the purposes of recreation, scenic, scientific, education, conservation, and historical use". More specific guidelines for application of the Wilderness Act in NPS areas are described in Chapter 6 of Management Policies. Topics include wilderness qualification reviews, wilderness management, wilderness use, and public education. Wilderness management policies are based on provisions of the Wilderness Act and the Organic Act, as well as the establishing legislation of individual parks within the national system.

National Park Service Management Policies, 2006, "Impairment" and "Derogation": One Standard (Section 1.4.2) further establishes guidance by referencing the fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, which begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the

National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purpose of the park. That discretion is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise. Prohibited impairment 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. Whether an impact meets this definition depends on the particular resources that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts. An impact on any park resource or value may, but does not necessarily, constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to the opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and cannot be further mitigated. Additionally, impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessioners, contractors, or other operating in the park. Impairment may also result from sources or activities outside the park. Impairment findings are not necessary for visitor experience, socioeconomics, public health and safety, environmental justice, land use and park operations, etc., because impairment findings relate back to park resources and values. The determination of impairment for the preferred alternative is found in Appendix C, beginning on page 283.

Director's Order 41 and Reference Manual 41: Wilderness Preservation and Management, Draft 2011 & 1999 respectively provides clarification and interpretation of the National Park Service's wilderness policies and establishes specific guidelines to provide accountability, consistency, and continuity to the Service's wilderness management program. Topics include wilderness management planning, management techniques, Minimum Requirement Concept, interagency coordination, interpretation and education, scientific activities, facilities, signs, fire management, cultural resources, general public use, persons with disabilities, commercial services, special events, air quality, mineral development and training requirements.

1.4.3 Provisions Specific to Isle Royale National Park

Isle Royale National Park Act, March 3, 1931 (46 Stat. 1514) established Isle Royale National Park. The purpose for establishment stated in 16 USC, Subchapter LII, Section 408 follows:"…said area shall be, and is hereby, established, dedicated, and set apart as a public park for the benefit and enjoyment of the people and known as the Isle Royale National Park." The park was officially established April 3, 1940 after all the land had been acquired.

Isle Royale Wilderness Designation, October 20, 1976 designated 98 percent of the park's land area as wilderness (later additions brought the total to 99 percent). Additional areas of the park are currently "potential wilderness." All designated and potential wilderness areas must be managed according to management directives found in the *Wilderness Act of 1964.*

Isle Royale National Park Biosphere Reserve, November 20, 1980 designation as a Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization (UNESCO). As a Biosphere Reserve, Isle Royale National Park is part of a network of outstanding examples of major ecosystems preserved for scientific research, conservation of nature and the service of man. Under the Man and the Biosphere Program, biosphere reserves provide a standard against which the effects of man on the environment can be measured.

Isle Royale National Park General Management Plan (GMP), August 1998 establishes the guidelines for the overall use, preservation, management, and development of Isle Royale National Park. The GMP articulates a management philosophy and framework for decision-making and problem solving. The GMP provides park purpose, significance and emphasis statements to guide future actions. The GMP divides the park into zones of activity to provide a separation of uses to enhance visitor enjoyment and to preserve the natural and cultural resources of the park in a way that is compatible with the Wilderness Act.

Isle Royale National Park Superintendent's Compendium, as amended, May 2011 summarizes park specific rules implemented under the discretionary authority of the park Superintendent. Serves as public notice, identifies areas closed for public use, provides a list of areas requiring either a special use permit or reservation and elaborates on public use and resource protection regulations that pertain specifically to the administration of Isle Royale National Park. The Compendium does not repeat regulations found in 36 CFR and other U.S.C. and CFR titles, which are enforced without further elaboration at the park level.

1.4.4 State Jurisdiction Over Lake Superior Waters

In 1939, the State of Michigan ceded exclusive jurisdiction of Isle Royale including any submerged lands within four and one-half miles of the shoreline of Isle Royale and immediately surrounding islands to the United States. However, as part of this agreement the State of Michigan retained the authority to regulate fishing in the Lake Superior Waters of the park. Commissioned Officers of the National Park Service, Bureau of Indian Affairs, Tribal Fish and Game Officers**,** and the Michigan DNR all have Jurisdiction and Authority to enforce fishing regulations in the Lake Superior waters of the Park. The National Park Service and the United States Coast Guard have Jurisdiction & Authority to enforce Marine Safety Regulations such as boat registration, required safety equipment, water pollution regulations, etc.

1.5 Plan Review and Update

Wilderness and backcountry management is an iterative process, with ongoing monitoring informing managers of the effectiveness of their actions and identifying when changes are needed to meet management goals and objectives. This calls for some flexibility in the WBMP,

but the specific direction and desired future conditions established in the final plan will remain as the management guideline. A WBMP is expected to have a lifespan of 10-15 years, with periodic reviews and assessments throughout that time. Environmental, social, and political conditions change, as does the information available to most effectively manage public lands, and it is not the intent of this plan to freeze conditions. Over time, changing conditions may call for a different management approach to meet Isle Royale's mission. Within 10-15 years, the WBMP will be assessed as to the need for a thorough revision. Within five years the WBMP will be updated with specific decisions and additions including indicators and standards.

1.6 Relationship between this Plan and Other Isle Royale Management Plans

Isle Royale's Wilderness and Backcountry Management Plan is to be consistent with existing, updated management plans. Additionally, it outlines detailed goals for resource, social, and managerial conditions within the park's backcountry and wilderness, which will be relevant for all management plans involving issues and actions affecting the park's wilderness and backcountry, either directly or indirectly. All of the park's plans are intended to be complementary and consistent. Full public disclosure and justification would be required where any management plan alters a decision or direction outlined in a previous plan.

Current Isle Royale Management Plans that the WBMP complements:

- General Management Plan (1998)
- Natural Resources Management Plan (1999)
- Comprehensive Interpretive Plan (2000)
- Fire Management Plan (2004)
- Aviation Management Plan (2008)
- Water Resources Management Plan (2005)

Upcoming Management Plans that will be consistent with the WBMP:

- Wilderness and Backcountry Monitoring and Implementation Plan
- Fisheries Management Plan
- Commercial Services Plan
- Cultural Resources and/or Historic Properties Management Plan

1.7 The Planning Process

The National Environmental Policy Act of 1969 (NEPA) is a national charter for protecting the environment. It applies to all federal projects or projects that require federal involvement. The purpose of NEPA is to help public officials make decisions that are based on an objective understanding of environmental consequences and to take actions that protect, restore, or enhance the environment. Another important purpose of NEPA is to inform the public of decisions being made that affect public lands. The public is then able to provide feedback to the decision-makers before the plan is implemented. To ensure compliance with NEPA, a specified process for proposed projects must be followed. The steps in this process are presented below.

1.7.1 The Visitor Experience and Resource Protection (VERP) Planning Framework

VERP is a planning framework that was developed by the NPS to help park planners and managers work within the requirements of NEPA and specifically address visitor carrying capacity and make sound decisions about visitor use management. Isle Royale initially implemented this process for the completion of the park's GMP, and continued with VERP as the guiding framework for the WBMP. The VERP framework consists of 9 primary elements, some of which Isle Royale completed through the park's GMP:

1. Assemble an interdisciplinary project team
2. Develop a public involvement strategy
3. Develop statements of park purpose, significance, and primary interpretive themes (completed in the GMP); identify planning constraints
4. Analyze park resources and the existing visitor use
5. Describe a potential range of visitor experiences and resource conditions as potential prescriptive management zones (completed in the GMP)
6. Allocate the potential management zones to specific locations in the park (completed in the GMP)
7. Select indicators and specify standards for each zone to established acceptable or desired conditions; develop a monitoring plan
8. Monitor resource and social indicators
9. Take management action to achieve specified standards or desired conditions

One of the key points of VERP is planning for a park's visitor carrying capacity, as mandated by law in the National Parks and Recreation Act of 1978 (P.L. 95-625). Within VERP visitor carrying capacity is defined as "the type and level of visitor use that can be accommodated while sustaining acceptable resource and social conditions that complement the purpose of a park" (NPS 1997a, p.8). Inherent in this process is an understanding of a park's purposes, resultant appropriate resource and social conditions, and that management will be an iterative process involving monitoring, evaluation, and taking action to achieve desired conditions. In summary, VERP is:

> *A planning and management framework that focuses on visitor use impacts on the visitor experience and the park resources, These impacts are primarily attributable to visitor behavior, use levels, types of use, timing of use, and location of use. (NPS 1997a, p.9)*

1.7.2 Interdisciplinary Planning Team

An interdisciplinary planning team was formed at the start of the process of developing a WBMP for Isle Royale. This team consists of a core of Isle Royale employees who are managers and subject matter experts with expertise relevant to the WBMP. This group had primary responsibility for all phases of the planning process and plan development. In addition to this core group, assistance and consultation were periodically requested from a planner with the NPS Denver Service Center and researchers from the Interagency Aldo Leopold Wilderness Research Institute, the University of Minnesota, University of Montana, University of Vermont, Virginia Technological University, and Michigan Technological University. The core planning team from Isle Royale included:

- Superintendent
- Assistant Superintendent
- Chief of Maintenance
- Facilities Manager
- Trails Foreman
- Program Analyst
- Chief Ranger
- West District Ranger
- East District Ranger
- Chief of Natural Resources Management
- Lead Biological Sciences Technician
- Natural Resources Specialist, Wilderness Coordinator
- Cultural Resources Program Manager
- Chief of Interpretation

1.7.3 Scoping

Public participation and input are critical aspects of a park planning effort, for identifying issues of concern, reviewing proposals, and informing the planning team and decision-makers. The first phase of public involvement in the NEPA planning process is scoping, which is designed to be an early, open public process to identify the scope, issues, and feasible actions of an environmental document. Scoping for Isle Royale's WBMP consisted of 4 newsletters sent to a mailing list of nearly 1,400 individuals and organizations with approximately 700 written responses received, postings on the park's website soliciting email comments, and several public meetings, including 3 focus group meetings on the island in the summer of 2000, and 3 public meetings in 2002 and 2003 held in Duluth, MN and Hancock and East Lansing, MI. In total, approximately 150 individuals were involved in these meetings. Additional public input relevant to the WBMP was gathered through different surveys of park visitors in 1996, 1997, 2000, and 2002 (see section 1.7.5).

The "public" who are included in this scoping are people who value Isle Royale, and may or may not be visitors. This public includes past and future visitors, researchers, people connected to the cultural history of the island, educational groups, students and researchers, local communities, business owners, and past and present employees of Isle Royale or concessions businesses. It also includes people who may never visit the park, but care about protecting Isle Royale into the future.

The public was further encouraged to review and comment on the draft Wilderness and Backcountry Management Plan. The release of the draft plan and open public comment period were announced in the Federal Register on October 21, 2005, and further announced through television, radio, print, and internet media, with press releases sent to media outlets throughout Michigan, Wisconsin, Minnesota, Illinois, Ohio, New York, Colorado, Washington DC, and Ontario, Canada. The full text of the draft plan was available on the Isle Royale National Park website, at several regional libraries, and on CD mailed to individuals and organizations, as requested. Public comments were also solicited through mailings, distribution of comment forms, and a public open house held at the park headquarters in Houghton Michigan (December 12, 2005); approximately 10 people attended. During the 60-day comment period, a total of 40 written comments were received via mail, email, fax, and in-person from individuals and organizations. The comment period ended Dec 21, 2005. After the comment period ended, the planning team reviewed comments on the draft document, identified substantive comments, and determined if revisions needed to be made to address the comments. Based on the comments that

were received, modifications to the proposed alternatives and analysis of environmental consequences were made, but no major changes were made. All written comments, substantive comments identified, and responses to these comments, including an explanation of any modifications that were made to the plan or why changes were not made based on substantive comments, are included in Chapter 5, starting on page 235 of this document.

A minimum of 30 days after the publication of this final study / environmental impact statement, a record of decision will be prepared and published in the *Federal Register*. This record of decision will document what action the National Park Service intends to take regarding implementation of a final wilderness and backcountry management plan for Isle Royale National Park.

1.7.4 Prevalent Issues and Concerns Raised by the Public

All written public comments were reviewed by the planning team. Additional comments that have been voiced to park staff throughout the scoping period were documented and shared with the planning team. All of this input was reviewed for substantive comments to be considered in developing the WBMP and EIS. Substantive comments are defined by NPS policy as those that do one of the following: a) question, with reasonable basis, the accuracy of information in an EIS, b) question, with reasonable basis, the adequacy of environmental analysis, c) present reasonable alternatives other than those presented in the EIS, or d) cause changes or revisions in the proposal. Comments that only agree or disagree with NPS policy are not considered substantive (NPS 2001a, p. 61). Several prevalent issues and concerns with direct relevance to the goals of the WBMP emerged from the public comments and were addressed in this draft plan. These issues include:

<u>Public access to the park</u>
There was mixed public opinion about whether the NPS should be encouraging more annual visitation or less. Specific discrepancies included disagreement over whether or not to encourage more people to visit the park during the lower use times, whether or not to further limit commercial groups, whether or not to include self-contained boating visitors in any use limits, and if the park should limit access during the peak in visitation or simply offer more information about busy times and areas and let people make their own choice of if and when to visit. In addition, a recurring concern was that Isle Royale is already expensive and difficult to access and the NPS should not make it more so. Each of the alternatives for overnight use of the park's wilderness and backcountry explore different options for addressing these concerns.

<u>Freedom and flexibility of travel within the park</u>
Many people expressed the opinion that maintaining the flexibility to alter travel plans is important for visitor safety and appropriate for unconstrained wilderness experiences. This was considered in drafting the alternatives for overnight use of the wilderness and backcountry, and was also considered in evaluating the implications of each alternative.

<u>Crowding</u>
Generally public comments revealed mixed opinions about crowding in the park. Of particular concern is the issue of overcrowding in campgrounds and a need to double up

when there are not enough campsites available for the number of camping parties. Many others expressed the opinion that crowding is not an issue, that meeting and interacting with other people is part of the Isle Royale experience that they value. Similarly, some suggested that the problem is in the NPS creating unrealistic expectations for visitors, and there should be less emphasis on promoting the island as a pristine wilderness. Many others expressed an opinion that current levels of crowding compromise the quality of their trip, resulting in impacts that are not appropriate for wilderness, that socializing and sharing campsites should be a choice not an expectation. More specifically, some people pointed out that the park should address crowding on trails as well as in campgrounds, that the number of visitors may be less important than their behavior, and that they would sacrifice some flexibility in planning a trip to the island if it meant that the park would be less crowded. Each of the alternatives for overnight use of the park's wilderness and backcountry explore different options for addressing these concerns, and this plan presents a range of alternatives that would offer different social conditions.

Backcountry regulations and policies

Many people offered suggestions for better managing visitation in the park's wilderness and backcountry, again with some conflicting interests. Some people suggested encouraging more camping off trail and anchoring out to alleviate pressure on campgrounds, while others were concerned that doing this would result in unacceptable impacts to pristine areas. Some people like the idea of implementing a fixed itinerary campsite reservation system for the assurance of finding a private campsite at the end of the day. Others expressed concern that a reservation system would be costly, overly restrictive, difficult to enforce, and create more visitor conflicts. There was general agreement however that regulations and any system for permitting should be kept as simple as possible. These issues were considered in evaluating current wilderness and backcountry policies and incorporated into alternatives for changes. Additionally these concerns will remain a consideration for the WBMP's implementation plan.

Protection of the park's resources

A common concern was protection of the park's resources in general, with additional concern for human impacts on specific wildlife species. Some of the specific concerns included the impact of motorboats on wildlife and water quality, adverse human impacts on loons, and concern for changes in human use that would increase wolf-human encounters and could lead to wolves becoming habituated to people. A general concern was that increased development designed to accommodate visitation demands for a small portion of the season conflicts with protecting the park's resources. Another concern was that additional information about impacts to resources was needed before people could respond to proposed actions. These concerns were all considered in developing all of the alternatives presented in the WBMP

Protection of wilderness character

Many people expressed support for the general protection of wilderness character in the park. Some comments suggested that current conditions on Isle Royale compromise wilderness character in terms of loss of opportunities for solitude, too much human contact, excessive development and size of campgrounds, off-trail impacts from camping,

regulations that limit spontaneity and flexibility, and the impacts of NPS operations. One suggestion that came of these concerns was to keep the interior of the island difficult to access for a more remote, wilderness feel. This issue was given varying weight in each of the alternatives presented and maintaining wilderness character remains a fundamental management goal for the park.

Options for a range of user groups and diverse visitors

Some people emphasized that Isle Royale is not just wilderness and it is important for the NPS to maintain options for non-wilderness visitors as well. Specific concerns expressed included maintaining access and opportunities for motor boating visitors, and increasing handicapped and elderly accessibility to the park and trails. These concerns were considered in drafting alternatives for overnight use in the wilderness and backcountry, and were a significant consideration for alternatives for managing day use in the park.

There were mixed opinions about separating different user groups, with some suggesting that park managers should increase separation of use by creating hiker-only and paddler-only campgrounds, and others requesting that the park not totally separate users to maintain motor boaters' access to the main island and trails. The issue of separation of users was primarily addressed in the GMP, but also became a consideration in the WBMP.

Maintaining appropriate facilities and services for visitors

People shared many concerns and suggestions related to the park's visitor services and facilities. Many agreed that the park should improve information and education services available for visitors, improve the design of campsites to increase privacy, reduce noise, and stop the policy of overbooking campgrounds. In other areas opinions differed. For example, some people felt there should be more campgrounds in the park, or that the existing campgrounds should be expanded, while others felt that no new campgrounds should be added or that existing campgrounds should be smaller. Some suggested that additional ferry or shuttle services should be offered to make it easier to start a trip from trailheads in the middle of the island, while others thought the middle of the island should remain remote and less traveled. These concerns and suggestions were considered throughout the WBMP and incorporated into proposed alternatives.

Cost and feasibility of implementing changes

Some people raised the concerns over the cost and feasibility of implementing different proposed changes. For example, some pointed out that effective implementation will require adequate staffing in the wilderness and backcountry and should remain realistic for staff and the park's budget, while others emphasized that management of any new permitting system should remain within the park, rather than being contracted out to an off-site organization. The cost and feasibility of alternatives proposed will be analyzed in more detail in an upcoming WBMP implementation plan.

1.7.5 Research and Data Collection

Research and data collection have been an essential part of the planning framework, contributing to a better understanding of human impacts, current resource and social conditions, a comparison between current conditions and desired conditions, and implications of proposed changes. The following research and data collection projects have most directly contributed to the development of the WBMP:

Visitor surveys 1996-1997

During the summer seasons of 1996 and 1997 the University of Minnesota surveyed 1,017 island visitors. The detailed surveys asked visitors to comment on their expectations for Isle Royale, perceptions of conditions in the park, and preferences for conditions and management actions (Pierskalla and others 1997, Pierskalla and others 1998).

Campground Monitoring 1996-2002

In 1996 Isle Royale and Virginia Technological University completed a baseline inventory of biophysical impacts in the park's campgrounds. This project was established for long-term monitoring of changing physical conditions in campgrounds. Monitoring continued with a complete survey of campgrounds in 2002. This project describes current and changing conditions in campgrounds related to human impacts, such as changes in total impacted area of campsites, amount of exposed soil, damage to trees, loss of vegetation, and erosion (Farrell and Marion 1998).

Visitor Surveys of Crowding in Campgrounds and on Trails

In 2000, 268 visitors completed trip diaries, reporting the number of encounters they had with others on trails and waterways, and the frequency of finding campgrounds full or needing to share campsites in overfull campgrounds. At the same time NPS staff collected similar data, and permit data were analyzed for accuracy and effectiveness in reporting visitor distribution and crowding. This project helped to better understand visitor distribution and areas of crowding in the park's wilderness and backcountry, as well as giving guidance for ongoing monitoring. It was completed in partnership with the University of Montana (Mayo Kiely 2001).

Common Loon Territory Atlas

A detailed atlas of nesting sites and breeding territories for Common Loons in the park was completed between 1998 and 2000. The atlas helped to identify sensitive areas in the wilderness and backcountry (Kaplan and others 2002).

Effects of Paddlers on Loon Nesting Success

Visitor surveys and field observations along Isle Royale's inland lakes and Lake Superior paddler routes studied the relationship between paddler behavior and loon nesting success. The study focused primarily on paddler travel patterns and proximity to active loon nests. This project helped to identify nesting loons' tolerance for paddler

encounters, as well as possible management actions to minimize nest failures (Kaplan et al. 2003).

Computer Modeling of Visitor Distribution in Campgrounds

In 2001 and 2002 the University of Vermont worked with Isle Royale staff to create a computer simulation model designed to project campground occupancy at different rates of park visitation. This is a valuable tool for better understanding campground use levels at different times of the season, in different years, with varying visitation levels at each of the park's entry points, and in specific areas of the park. It also helps to develop a detailed picture of visitors' travel patterns in the wilderness and backcountry. Ongoing ground-truthing has validated the model's ability to represent current conditions. Additionally, this model is a useful tool for analyzing the likely implications of management actions that would change visitors' travel patterns, visitor distribution in the park, or overall park visitation at different points in the season (Lawson and Manning 2003a).

Visitors' Stated Choice Surveys

In 2002, 150 island visitors completed surveys identifying their preferred choices for different possible management actions to address campground crowding. Visitors were asked to consider implications and trade-offs between some of the management options available. This survey asked for people's preferences between different options for reducing campsite sharing, allowing flexible or fixed itinerary permits, increasing or reducing visitation levels, and either adding new campsites or maintaining existing campground capacities. This survey helped to identify some of the more salient issues that determine people's preferences for managing camping in Isle Royale's wilderness and backcountry (Lawson and Manning 2003b).

Ongoing Natural and Cultural Resources Monitoring

Other long-term research and monitoring projects offer critical information pertinent to managing Isle Royale's wilderness and backcountry. These projects include; wolf and moose study, monitoring of eagle and osprey nests, frog and toad monitoring, songbird monitoring, atmospheric studies, terrestrial and aquatic contaminant studies, monitoring and treating invasive exotic species, monitoring rare plants and their communities, monitoring colonial shorebirds, monitoring forest structure and nutrient cycling, fire ecology, monitoring lake ecosystems and species composition, archeological surveys, monitoring cultural sites, listing classified historic structures, and ongoing cultural landscapes inventories.

Research and monitoring will continue to be critical for assessing the effectiveness of management actions at achieving goals and ongoing assessments of changing conditions and if changes are happening in a desired direction.

Survey of feasible campground expansions or additions

In 2002 NPS staff surveyed existing campgrounds and possible locations for new campgrounds. This was based on estimates of campground expansions needed to accommodate peak demand for campsites. Survey guidelines included not adding sites

that would diminish the quality of existing sites (in terms of privacy, noise and view), working within the physical limitations of topography and soil type, not adding sites in areas with sensitive and vulnerable resources, maintaining campground sizes that would be consistent with the park's management zones and adding sites in areas that would best suit visitation needs. Options were explored for adding communal sites for overflow camping, as well as individual campsites.

1.7.6 Impact Topics Included in the Environmental Impact Statement

> *NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values. (NPS 2006, p.12)*

The assessment of impacts from a proposed action must consider three types of impacts: 1) direct effects, or impacts caused at the same time and at the same place as the implemented action; 2) indirect effects, or impacts caused by the alternative but at a later time, or in a different location than the actions; and 3) cumulative effects, or additive impacts to a particular resource from a past, present, or foreseeable future action. Additionally, there must be an assessment of findings on impairment. Impairment is defined by NPS policies as "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". Impairment considers the severity, duration, and timing of the impact as well as the cumulative effects of the impact of concern and others. (NPS 2006, p.12).

The analysis of impacts evaluates the degree to which the human and natural environment will be affected by a proposed action. Impact topics are derived from specific issues of concern directly related to the proposed actions. Not every conceivable impact of a proposed action is substantive enough to warrant analysis. The list of impact topics considered in the EIS were derived from public and agency concerns raised during scoping, federal laws, regulations and orders, and National Park Service policies.

Visitor use and experience

The 1916 NPS Organic Act directs the Service to provide for public enjoyment of the scenery, wildlife and natural and historic resources of national parks "in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations." Public enjoyment, education and recreation are emphasized in Isle Royale's purpose statements. All of the alternatives proposed in the WBMP have the potential to affect visitor use and enjoyment of Isle Royale's wilderness and backcountry, and will be assessed in the EIS.

Wilderness Character

Approximately 99% of Isle Royale National Park is designated by Congress as Wilderness. Moreover, the park's wilderness character is highlighted in both its purpose and significance statements. NPS Management Policies (NPS 2006) clarified that:

> *In evaluating environmental impacts, the National Park Service will take into account wilderness characteristics and values, including primeval character and influence of the wilderness; the preservation of natural conditions (including the lack of man-made noise); and assurances that there will be outstanding opportunities for solitude, that the public will be provided with a primitive and unconfined type of recreational experience, and that wilderness will be preserved and used in an unimpaired condition.*

Human activities, including management actions and recreation, and some of the actions proposed in the WBMP's alternatives could impact these aspects of wilderness character and values-- naturalness and wilderness experiences. These impacts will be assessed in the EIS.

Natural Resources

Geology and Soils

Soils and their microhabitats are known to be affected by recreation use and construction and maintenance of trails and campgrounds. Potential adverse impacts include general disturbance, loss of ground cover, compaction of soil, and erosion. Since some of the proposed actions could alter the use and maintenance of trails and campgrounds, impacts to geology and soils are included in the EIS.

Aquatic Resources

NPS policies require protection of water resources consistent with the federal Clean Water Act. Over 75% of Isle Royale's acreage is water that includes Lake Superior and many lakes, bogs, ponds, marshes, and streams. Human activities in campgrounds and along trails adjacent to lakes and streams on Isle Royale could impact aquatic resources through soil erosion or introduction of contaminants or invasive exotic aquatic species. Some of the proposed actions in the WBMP could alter human impacts in these areas. Therefore impacts to aquatic resources adjacent to trails and campgrounds are included in the EIS.

Wetlands and Floodplains

Presidential Executive Orders mandate floodplain management and protection of wetlands. The park has numerous wetlands, including marshes, bogs, and vegetated lake and pond shores, which support considerable biodiversity. Some of the WBMP's proposed actions could impact wetlands adjacent to trails and campgrounds through direct human effects of trampling, or indirect effects of erosion or introduction of contaminants.

Vegetation

Isle Royale is located at the ecotone or transition zone between the boreal and northern hardwood forest ecosystems. Its vegetative communities and rare plant species are among its most important assets. Some of the WBMP's proposed actions, including changes in campfire policies and management of backcountry facilities, could have adverse effects on the park's vegetation.

Terrestrial Wildlife

The isolation of Isle Royale's relatively simple ecosystem limits the potency of human influences. However, human activities are known to impact wildlife species. Possible impacts from recreation and other human activities in the park's wilderness and backcountry include

habitat fragmentation, displacement of wildlife, and habituation to humans. Because some of the proposed actions in the WBMP may alter the patterns of human activities and their resultant effects on wildlife, these impacts are included in the EIS.

Threatened and Endangered Species
The federal Endangered Species Act prohibits harm to any species of fauna or flora listed by the U. S. Fish and Wildlife Service (USFWS) as being either threatened or endangered. Such harm includes not only direct injury or mortality, but also disturbing or destroying the habitat on which these species depend. Two federally Threatened species – the bald eagle and the grey wolf – inhabit Isle Royale. The Michigan Department of Natural Resources also publishes a list of species threatened and endangered within the state. NPS policies require that parks manage state and locally listed species "in a manner similar to its treatment of federally listed species, to the greatest extent possible" (NPS 2006 p. 45). Among state-listed animal species occurring on Isle Royale are the moose, common loon, and osprey. Over 75 state-listed plant species are also documented in the park. Changes in human activities proposed in some of the WBMP's alternatives have the potential to affect these species or their habitats, thus this topic is included in the EIS.

Natural Sights and Sounds
NPS management policies call for the preservation of, "to the greatest extent possible, the natural soundscapes of parks" (NPS 2006, p.56). Additionally, the preservation of wilderness character and values includes the preservation of natural sights and sounds, minimizing the visual and noise intrusions of modern human activities. Development, facilities, and tools for park maintenance and administration can impact the sights and sounds of the park, and some of the proposed alternatives could alter the current state of natural sights and sounds in Isle Royale's wilderness and backcountry. This will be assessed in the EIS.

Cultural Resources
Section 106 of the National Historic Preservation Act of 1966 provides the framework for Federal review and protection of cultural resources, and ensures that they are considered during Federal project planning and execution. One of the purposes in Isle Royale's enabling legislation is for it to "preserve and protect the park's cultural…resources…." Isle Royale contains considerable evidence of both pre-historic and historic human occupation and use dating back more than 4,500 years. These cultural resources can be affected by recreation and management actions in the park. Thus, potential impacts to cultural resources will be addressed in the EIS, specifically impacts to archeological sites, historic structures, cultural objects, cultural landscapes, and ethnographic resources.

Socioeconomics
Although the alternatives proposed in the WBMP are not expected to have any significant economic effect on local communities, some of the actions proposed could have economic implications for private businesses and organizations operating within the park. For example, changes in day use group sizes and campground access could affect tour organizations and changes in visitation could affect ferry services or ticket prices. Possible socioeconomic impacts of proposed alternatives, including the economic effects of possible changes in visitation will be assessed in the EIS.

Park Operations
Some of the potential actions proposed in the WBMP could have an effect on workloads, staffing requirements, budget needs, and facility requirements. These will be assessed in the EIS.

1.7.7 Impact Topics Considered but not Analyzed in Detail

NEPA and the Council on Environmental Quality (CEQ) Regulations direct agencies to "avoid useless bulk…and concentrate effort and attention on important issues" (40 CFR 1502.15). The National Park Service's Director's Order 12 and its accompanying Handbook give additional guidance for determining appropriate impact topics (NPS 2001a). Analysts must use their professional judgment in deciding which issues warrant consideration and to what extent. Certain impact topics that are sometimes addressed in NEPA documents on other kinds of proposed actions or projects have been judged to not be substantively affected by any of the WBMP alternatives considered in this EIS. These topics are listed and briefly described below, and the rationale provided for not considering them in any more detail.

Air Quality
In all of the alternatives presented the NPS would continue to protect and conserve the air quality of the park as a Class I air shed, which are afforded the highest degree of protection under the Clean Air Act. None of the alternatives being considered would substantially alter the park's air quality, nor would they alter the management of the park's air shed.

Water Quality
In all of the alternatives presented the NPS would continue to protect and conserve the water quality in the park. Monitoring of water quality would continue to identify associated issues of concern. None of the alternatives being considered would substantially alter the park's water quality, nor would they propose any changes in the park's management of water resources.

Waste Management
None of the WBMP alternatives will generate noteworthy quantities of either hazardous or solid wastes that need to be disposed of in hazardous waste or general sanitary landfills. Therefore this impact topic is dropped from additional consideration.

Transportation
Due to Isle Royale's isolated location in Lake Superior, with the nearest roads, railroads, and airports more than 20 miles away in Ontario, there will be virtually no adverse impacts from the various WBMP alternatives on ground or aerial transportation. The park contains no roads open to motorists. Isle Royale's harbors and marinas would not be affected by proposals in the WBMP. While a major shipping lane does pass through park waters (between Blake's Point and Passage Island), none of this plan's proposals would have any effect on these ships. Therefore, this topic is dismissed from any further analysis.

Public Utilities
Generally speaking, some kinds of projects, especially those involving construction, may temporarily impact above and below-ground telephone, electrical, natural gas, water, and sewer lines and cables, potentially disrupting service to customers. Other proposed actions may exert a

substantial, long-term demand on telephone, electrical, natural gas, water, and sewage infrastructure, sources, and service, thereby compromising existing service levels or causing a need for new facilities to be constructed. Due to Isle Royale's isolation and the complete absence of any such public utilities in the park (except those self-contained systems serving staff and visitors in the few developed areas), none of the WBMP alternatives will cause any of these impacts to any extent, and therefore utilities are eliminated from any additional analysis.

Land Use
Isle Royale National Park is completely surrounded by Lake Superior and does not border any public or private land. Nothing proposed in the WBMP would result in any change in land use patterns. Therefore, this topic is dismissed from any further analysis.

Prime Agricultural Lands
There are no agricultural lands within or bordering Isle Royale, therefore this topic will not be addressed in the analysis of environmental impacts.

Public Services
In general, some kinds of projects or programs subject to NEPA analysis can interfere with the operation of or add to the burden on public services like police, municipal fire-fighting, emergency medical, and search & rescue. Since municipal, county or state-run public services like these are all but absent at Isle Royale, this topic is not considered any further in this EIS.

Human Health and Safety
Providing for human health and safety remains a priority for the NPS, and would not be altered by any of the proposed actions in this WBMP.

Fisheries
The WBMP does not address regulations or management of fisheries in park waters, and none of the proposed actions would have foreseeable significant impacts on the park's fisheries. This issue will be addressed and thoroughly analyzed in Isle Royale's forthcoming Fisheries Management Plan; therefore this impact topic was not included in analysis of impacts for the WBMP.

Treaties, Tribal Rights, and Sacred Sites
Treaty rights are beyond the scope of this plan. However, any actions taken to implement this plan will conform to laws regarding treaty rights. The NPS will routinely consult with tribes having treaty rights and their representatives on a government-to-government basis. None of the actions proposed in the WBMP would in any way alter the government-to-government relations between the region's tribal nations and the NPS. Likewise, none of the proposed actions would alter existing treaty rights or agreements between the NPS and tribes.

Environmental Justice/ Protection of Children
Presidential Executive Order 12898 requires Federal agencies to identify and address disproportionate impacts of their programs, policies and activities on minority and low-income populations. Executive Order 13045 requires Federal actions and policies to identify and address disproportionately adverse risks to the health and safety of children. No actions proposed in this

WBMP would be expected to have a disproportionate effect on minorities, children, or those living at or below poverty level.

1.7.8 Criteria Used to Evaluate Alternatives

Certain criteria were used in evaluating each of the alternatives proposed in this WBMP. This process will be central in identifying the preferred alternatives and a final action for the park. Each alternative was evaluated for projected impacts and implications of implementation as well as its ability to achieve the specific objectives of the WBMP. The evaluation criteria are based on laws and policies and legislative guidance for Isle Royale. The evaluation criteria judge an alternative's ability to provide the following:

1. Protection of quality visitor experiences, including opportunities for solitude or a primitive and unconfined type of recreation, and a minimal chance of having to share campsites in overfull campgrounds.
2. Access and freedom of travel for visitors, including flexible travel within the park, freedom to visit the park on a date of choice, and maintaining appropriate access to the park for people wishing to visit.
3. Minimum impact to natural and cultural resources.
4. Public acceptability, including consideration of costs to visitors, transportation companies, and concessionaires.
5. Administrative and implementation feasibility, including the ability to monitor conditions effectively.
6. Adherence to policy, legal guidelines, and the goals of Isle Royale's GMP.
7. Preservation of the park's wilderness character.
8. Basing management decisions on sound scientific research and public input, incorporating new data and information, as necessary, into a dynamic management program.

1.8 Regional Context

Isle Royale National Park is located in the northwestern section of Lake Superior, within 14 miles of the Ontario (Canada) shoreline, 20 miles of Minnesota, and approximately 45 miles from Michigan's Upper Peninsula. The island itself is located 620 miles from Detroit, 570 from Lansing, 400 from Milwaukee, 320 from Minneapolis and St. Paul, and 25 from Thunder Bay, Ontario. There are no roads on or leading to the island.

The park may be accessed by ferry, seaplane, or private boat. Concessions operations run the seaplane service and 3 of the 4 ferries. The fourth ferry is operated by the NPS out of Houghton, MI for transport of personnel, cargo, and park visitors. Houghton, MI, Copper Harbor, MI, and Grand Portage, MN serve as the ferry landings on the mainland, with service primarily to Windigo and Rock Harbor on Isle Royale (Appendix D, Map 1). One of the ferries, operating out of Grand Portage, MN, circumnavigates the island, with up to 8 stops along the way to pick up or drop off passengers at docks and trailheads. The closest airports to the park's ferry services are in Houghton-Hancock, MI, and Grand Marais, MN. No private, state, or other

federal lands adjoin Isle Royale, though the park's northern boundary in Lake Superior abuts the international US-Canadian border.

Isle Royale is one of 13 National Park Units and 23 federal Wilderness areas within the three states of the Lake Superior Region: MI, WI and MN. The US Forest Service's Boundary Waters Canoe Area Wilderness in northern MN is the largest Wilderness area with 809,772 acres; Isle Royale is the second largest (132,018 acres), and the only National Park in the area with designated Wilderness. There are also many State Parks, recreational waterways, and Canadian National and Provincial Parks within the vicinity of Isle Royale. All of these offer a wide range of recreational opportunities, including highly developed and primitive camping, scenic roads, fishing and hunting, motorized or non-motorized boating, hiking, biking, and off-highway-vehicle use. They also offer a wide range of opportunities for groups of unlimited sizes.

1.9 Park Purpose, Significance, and Emphasis

Statements of purpose, significance, and emphasis outlined in Isle Royale's 1998 GMP were developed based on the park's legislation, special designations, and NPS policies, and incorporated public and staff input.

Park purpose statements are based on Isle Royale's legislation, legislative history, special designations, and NPS policies:

- Preserve and protect the park's wilderness character for use and enjoyment by present and future generations,
- Preserve and protect the park's cultural and natural resources and ecological processes,
- Provide opportunities for recreational uses and experiences that are compatible with the preservation of the park's wilderness character and park resources,
- Provide park-related educational and interpretive opportunities for the public,
- Provide opportunities for scientific study of ecosystem components and processes, including human influences and use, and share the findings with the public.

Park significance statements capture the essence of the park's importance to the nation's natural and cultural heritage:

- This maritime park, a U.S. Biosphere Reserve, encompasses a remote and primitive wilderness archipelago isolated by the size and power of Lake Superior,
- Isle Royale is world renowned for its long-term predator/prey study of wolves and moose. The park offers outstanding possibilities for research in a remote, relatively simple ecosystem where overt human influences are limited,
- Park waters contain the most productive native fishery and genetically diverse lake trout populations in Lake Superior.

Park emphasis statements flow from the park's purpose and significance and are used as broad guiding principles for park programs and priority setting:

- Self-sufficiency is a way of life on Isle Royale. Self-sufficiency is as important today for park backpackers, canoeists, and boaters as it was for those who first used and settled the

island—Native Americans, European miners, lighthouse keepers, commercial fishermen, and island summer residents,

- Wilderness has many meanings to many people. For Isle Royale National Park the meaning is defined by the Wilderness Act of 1964, which states a wilderness is an area "…affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable, [and] has outstanding opportunities for solitude or a primitive, unconfined type of recreation…"
- Isle Royale rose from the depth of Lake Superior some 11,000 years ago and remains ecologically connected to the lake; the forces of the lake still shape and nurture the landscape. The park offers visitors a chance to experience wildness, seclusion, solitude, and recreation. It restores the human spirit. It is a wilderness to be entered on its own terms. It is an adventure,
- Adventure, simple living, and solitude are important parts of an Isle Royale visit. In order to ensure these kinds of experiences, park users must have the skills and habits that foster an ethic of "Leave No Trace" on the island.
- Isle Royale is a living laboratory where plant and animal life can be studied in a relatively simple ecosystem. The theory of island biogeography is illustrated by both the limited number and variety of species to be found in the park.
- Because of Isle Royale's generally undisturbed setting, it is an important source of information about the world around us—how the world evolved, how the impacts of civilization have altered natural systems, and what the unmodified environment holds.
- Isle Royale, as a U.S. Biosphere Reserve, is a valuable asset as a natural baseline that reveals the extent of impacts elsewhere, as a site where scientists and students can study natural processes, as a gene pool helping to maintain the diversity of a northern boreal forest and Lake Superior, and as a sanctuary for certain plants and animals that cannot survive outside of isolated wilderness.
- For thousands of years people have lived an episodic existence on Isle Royale. For centuries the presence of pure copper has drawn people to the island. Similarly, people have been drawn by the island's spectacular scenery and wilderness opportunities to establish resorts and summer housing on the island. An abundant fishery attracted many. Although the remnants of mining activity, commercial fishing, and the resort era are melding into the landscape, wilderness visitors may still find traces of the park's rich history.
- Isle Royale has a rich maritime heritage. The island serves as a significant navigational reference point, a refuge from storms, and a treacherous obstacle to mariners. For well over a century its lighthouses have guided ships safely through passages. The park's waters are the final resting place for an array of shipwrecks that provide an underwater museum that includes many types and stages of maritime technology.
- The National Park Service is striving to sustain the native fishery of Isle Royale National Park—perhaps the most exceptional fishery in the Great Lakes region. For centuries Isle Royale's waters have drawn fishermen—prehistoric people, immigrant commercial fishermen, and today's sport fishermen. A relic of the past adaptive fishing lifestyle and technology still remains as a reminder of this significant island culture.

1.10 History of Wilderness and Backcountry at Isle Royale

Since its establishment in 1931, Isle Royale National Park has been managed with a focus on backcountry-based recreation in concert with protection of natural and cultural resources. The wilderness study and recommendation process for Isle Royale began in the mid to late 1960s, including public hearings in 1967. The NPS worked with the public and local and state governments to develop a plan for wilderness designation, and then submitted the plan for Presidential and Congressional approval. President Nixon recommended a large portion of Isle Royale for wilderness designation in 1971. Following Congressional hearings, this recommendation was modified slightly and signed as legislation by Congress in October of 1976.

The original designation included 131,880 acres of designated wilderness and an additional 231 acres as potential wilderness. "All lands which represent potential wilderness additions, upon publication in the Federal Register of a notice by the Secretary of the Interior that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness" (90 Stat. 2692 P.L. 94-567 §3). In 1983, 138 acres of potential wilderness were converted to designated wilderness. Table 1 outlines the remaining areas of potential wilderness and associated non-conforming uses that temporarily prevent conversion to wilderness. Upon completion of a Cultural Resources Management Plan , these areas will be evaluated. Currently 132,018 acres of the park's lands, or 99% of its total 133,788 island acres, are designated as wilderness or potential wilderness. None of the park's 438,008 acres of Lake Superior and submerged lands are designated or managed as wilderness (Appendix D, Maps 2a & 2b).

Table 1: Potential Wilderness Areas on Isle Royale, their Acreage, and Non-Conforming Uses

Location	Acres	Non-conforming use
Fisherman's Home	5	Volunteer in Park agreement allowing residence
John's Island	0.8	Special Use Permit
Wright Island	1	Volunteer in Park agreement allowing residence
Davidson Island	1	NPS and researcher housing
Johnson Island	5	Special Use Permit extending life lease use rights
Amygdaloid Island	11	Ranger station with fuel storage and NPS residence
West Caribou Island	5.6	Life lease
Passage Island	3	Boat house and trail to light house for past Coast Guard use
Edwards Island and neighboring islands	24.8	Life lease
Newman Island	0.2	Life lease (How Family)
Tobin Harbor Islands and portions of main island in vicinity	10	Life leases, Special Use Permit, Artist in Residence Program cabin, and NPS residence
Captain Kidd Island	20.6	Special Use Permit extending life lease use rights
Amygdaloid Island, Crystal Cove	5	Volunteer in Park agreement allowing residence
Total PWA	**93**	

Isle Royale's wilderness legislation allowed for the continued maintenance of docks and shelters within the park's designated wilderness, and further allowed for the addition of new docks where determined necessary for visitor safety or administration of the wilderness.

Several small land areas were excluded from wilderness designation because of existing or potential future high human use with associated development that would be inappropriate for wilderness (Table 2). Some of these areas, such as Siskiwit Bay, have not seen the anticipated development and would appear to most people to be indistinguishable from wilderness. All of the campgrounds and docks within these non-wilderness areas fall under the scope of the park's backcountry management, and with close proximity to designated wilderness are managed with consideration for impacts to wilderness.

Table 2: Acreage of Non-Wilderness Lands in Isle Royale National Park

Location	Acres
Siskiwit Bay—area including and surrounding the existing campground	100
Barnum Island	6
Washington Island- the northeastern tip including historic buildings	31
Rock of Ages Island	1
Windigo- including and surrounding the developed area and campground	400
Menagerie Island	5
Malone Bay- area including the ranger station and campground facilities	100
Moskey Basin—area including and surrounding the existing campground	100
Rock Harbor—area from Suzy's cave northeast to within about a mile of Scoville Point	322
Three Mile—area including and surrounding the existing campground	80
Mott Island	181
Daisy Farm—area including and surrounding the existing campground	160
Area including the Rock Harbor Lighthouse and Edisen Fishery	19
McCargoe Cove—area including and surrounding the existing campground	120
Passage Island- the southwestern tip, including the lighthouse	7
Blake Point- area including navigational aids	5
Belle Isle—area including and surrounding the campground	40
Total acreage of non wilderness lands on Isle Royale	**1,677**

CHAPTER 2: ALTERNATIVES, INCLUDING NO ACTION, AND THE PREFERRED ALTERNATIVES

This chapter presents the details of how the NPS proposes to manage the wilderness and backcountry of Isle Royale. The chapter begins with the philosophical and policy framework for managing the wilderness and backcountry, followed by a description of current conditions and the no action alternative, then actions common to all action alternatives, then a presentation of the range of action alternatives presented. The chapter concludes with a summary of all the preferred alternatives and what they would look like in combination.

In many cases the decisions on how to manage the wilderness and backcountry of Isle Royale have already been decided by federal laws. Other decisions are dictated by NPS policy, and other Isle Royale-specific issues were decided in the park's GMP. However, there are several important issues requiring further decision. Most of these issues were determined to have only one reasonable solution, which are listed in the "actions common to all action alternatives" section. A few issues have several feasible solutions, and in these cases multiple alternatives were developed to explore options in detail. These are the "action alternatives." The action alternatives were developed in response to public input and research on several specific issues. Because each of these issues is independent of the others they are presented individually, rather than being combined into fewer more comprehensive alternatives.

When the WBMP is finalized, we propose that the final preferred alternatives, along with the "actions common to all" would become the core of the Isle Royale's plan for managing the wilderness and backcountry of the park.

The outline below will help guide you to the issues you may be most interested in.

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2.1 Framework for Managing Wilderness and Backcountry at Isle Royale National Park

2.1.1 Wilderness Management Philosophy

Isle Royale's Wilderness and backcountry will be managed in a means that is consistent with national wilderness policies. The National Park Service would manage all designated and potential wilderness areas of Isle Royale National Park to protect physical wilderness resources as well as wilderness character, consistent with the direction of NPS Management Policies and The Wilderness Act. In order to protect and promote wilderness character, wilderness management must consider the purpose of an action and the spirit in which it was carried out. The Wilderness Act identifies two key components of wilderness character as

- Generally appearing to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; and
- Having outstanding opportunities for solitude or a primitive and unconfined type of recreation.

Providing opportunities for solitude would include managing for visitor experiences with the following characteristics:

- Freedom from the reminders of society
- Privacy and isolation in natural surroundings
- Absence of distractions such as large groups, mechanization, unnatural noise, signs, and other modern artifacts (*Federal Register*, Vol. 66, No. 10, p. 3713).

However, at its essence wilderness character is unseen and immeasurable; a unique challenge of wilderness management. Wilderness character includes the natural and scenic condition of the land, natural numbers, cycles, and interactions of wildlife, and the integrity of ecological processes. At its core though, wilderness character, like personal character, is much more than a physical condition. The character of wilderness is an unseen presence capable of refocusing our perception of nature and our relationship to it. It is that quality that lifts our connection to a landscape from the utilitarian, commodity orientation that dominates the major part of our relationship with nature to the symbolic realm serving other human needs (*Federal Register*, Vol. 66, No. 10, p. 3729-3730).

The NPS recognizes the intangible values of wilderness, and in implementing this plan and with future management actions, would with every decision forego actions that might have no seeming physical impact but which would detract from the idea of wilderness as a place set apart, a place where human uses, convenience, and expediency do not dominate; a place where we can know ourselves as part of something beyond our modern society and its creations.

2.1.2 Guidelines from Existing Laws and Policy

Existing laws that direct the management of wilderness and backcountry in the National Park system are the NPS Organic Act, the Wilderness Act, and the National Historic Preservation Act. They provide a framework for policy and directives such as NPS Management Policies, NPS Director's Orders, and Isle Royale National Park's General Management Plan. These documents clearly direct certain management actions at Isle Royale. This WBMP will not propose changes to these directions, and they are not included in the action alternatives.

Public use of Motorized and Mechanical Transport.
Consistent with the Wilderness Act and NPS Management Policies for wilderness management (NPS 2006), public use of motorized and mechanical transport, including bicycles and portage wheels, would not be permitted within Isle Royale's wilderness. This includes all of the park's inland lakes and hiking trails.

> *Public use of motorized equipment or any form of mechanical transport will be prohibited in wilderness except as provided for in specific legislation. Operating a motor vehicle or possessing a bicycle in designated wilderness outside Alaska is prohibited [36 CFR 4.30(d)(I)].*

Motorboats would continue to be permitted and appropriate in the park's Lake Superior waters, which is not designated wilderness.

Accessibility
According to the Americans with Disabilities Act, the Wilderness Act, and NPS Management Policies 2006, wheelchairs are appropriate in wilderness only if a wheelchair is a person's primary mode of locomotion, manual or electric, and is suitable for use in indoor pedestrian areas. This does not include wheelchairs that function like an all terrain vehicle. Persons using wheelchairs would be reasonably accommodated in wilderness without the need to compromise wilderness resources or character

Emergency Services/Human Health and Safety
Protecting human health and safety remains a priority for Isle Royale managers. Although wilderness is to be experienced on its own terms with inherent risks and challenges, the NPS would continue to provide emergency services for all Isle Royale visitors.

Implementation of the 1998 General Management Plan.
Full implementation of Isle Royale's GMP (1998) would continue, including the planned removal of the dock and break wall at Siskiwit Bay, removal of the docks at Three Mile and Duncan Bay, relocation of the dock at McCargoe Cove closer to the cove's entrance, and addition of new overnight docking and campgrounds at John's Island, Washington Island, Fisherman's Home, Wright Island, Crystal Cove and McCargoe Cove. Additional assessment of environmental impacts and compliance documentation would be completed before implementing these changes.

Management Zones established in the GMP would be maintained unchanged (Appendix D, Map 6). Table 3 defines these management zones. Regulations for generator use by boating parties, including designated areas closed to on-board generator and air compressor use, would not be changed.

Transportation Services
The objective of Isle Royale's transportation services is to provide public access for appropriate recreation in the park and transport personnel and cargo necessary for park operations. The GMP established that Isle Royale's transportation services would not be expanded. No new ferry entry points would be established. Rock Harbor and Windigo would remain the primary entry points,

Table 3: Park Management Zones and Goals for Resource and Social Conditions (From the 1998 Final General Management Plan for Isle Royale National Park)

Zone	Visitor Experiences	Resource Conditions or Character	Appropriate Activities and Facilities
Land and Inland Lake Zones			
Developed	Developed zones are highly developed areas with convenient and accessible facilities. Opportunities for adventure and solitude would be relatively unimportant, while encounters with other visitors and NPS staff would be high.	NPS toleration for resource degradation would be moderate. Buildings and other structures would be obvious. This zone is confined to small areas without unprotected sensitive natural and cultural resources, and is in non-wilderness	Visitor and administrative facilities are provided, including visitor centers, educational program areas, residences, and maintenance areas. Primary ferry landings, large docks, marinas, and paved paths are found here.
Frontcountry	The frontcountry zone offers structured interpretation and education activities. These areas are in a fairly natural setting within a day's hike or short boat ride from developed facilities. Opportunities offer limited challenge or adventure with little need for outdoor skills. The probability of encountering other visitors is high and encountering NPS staff is moderate.	Sights and sounds of people are evident with intensively managed sites and trails. Facilities generally harmonize with the natural environment. NPS tolerance for resource degradation would be low but this zone generally does not include sensitive natural or cultural resources. This zone includes both non-wilderness and designated wilderness.	This zone is comprised of heavily used areas adjacent to developed zones and surrounding prime park features such as high use cultural and scenic areas. Relatively large campgrounds with shelters and large group sites, hardened trails, and interpretive facilities and signs may be found in this zone. Some trails are designed for accessibility.
Wilderness Portal	These portal areas provide access and facilities needed to access or manage other zones. Larger docks, ferry landings, and large campgrounds mixing different types of visitors are found here. There are pulses of activity at different times, but solitude and quiet would be available some of the time. Adventure and challenge may be low, but there is some need for self-sufficiency.	NPS tolerance for resource degradation is low, with these areas appearing mostly natural. Included are sensitive natural and cultural resources only if they are well protected. This zone includes both non-wilderness and designated wilderness.	Only non-motorized or non-mechanized activities would be appropriate. Facilities in this zone could include moderate-sized (or the largest, in the case of Daisy Farm) campgrounds with shelters, large group sites, outhouses, trailheads, trails, and moderate-sized docks. Secondary ferry landings and some interpretive activities may be offered. Small signs marking trail directions, campsites, and resource protection needs are appropriate.
Backcountry	This zone provides a sense of being immersed in a natural landscape, removed from most modern comforts and conveniences. There are possibilities for risk, challenge and adventure, with visitors needing to have outdoor skills and exert themselves. Encounters with others are moderate, with good opportunities for solitude. Some noise is expected.	NPS tolerance for resource degradation is low. This zone includes somewhat primitive trails and campgrounds that are maintained for resource protection, visitor safety and harmony with the natural environment. This zone includes both non-wilderness and designated wilderness.	Only non-motorized or non-mechanized activities are appropriate. This zone includes moderate to high-use trail corridors. Small campgrounds with outhouses and possibly a few shelters and large group sites, small docks, and unpaved trails would be the only facilities. Small signs marking trail directions, campsites, and resource protection needs are appropriate.

Zone	Visitor Experiences	Resource Conditions or Character	Appropriate Activities and Facilities
Land and Inland Lake Zones continued			
Primitive	This zone provides a sense of being immersed fully in nature and feels farther away from modern comforts and conveniences. Opportunities for independence, closeness to nature, tranquility, solitude and the application of outdoor skills are common. Possibilities for risk, challenge and adventure are high, requiring a longer time commitment, greater outdoor skills, and a high level of physical exertion. Encounter rates with others is low, with low tolerance for noise, visual intrusions, and social interactions.	NPS tolerance for resource degradation due to human activities is low. Trails and campgrounds are lightly used and maintained in a primitive condition for visitor safety and resource protection in a manner that conforms to natural surroundings. This zone is located entirely within designated wilderness.	Only non-motorized or non-mechanized activities would be appropriate. Facilities are limited to primitive trails and small campgrounds with outhouses and individual tent sites only. Docks are not located in this zone. Creek and wetland crossings may not always have maintained bridges. Small signs marking trail directions, campsites, and resource protection needs are appropriate.
Pristine	Visitors to the Pristine zone should expect to find a pure wilderness setting free of development. Little or no signs of modern human presence are obvious. A high degree of physical exertion, time commitment, self-sufficiency, and outdoor skill are required. Opportunities for challenge, adventure, independence, solitude, closeness to nature, and tranquility are common. The probability of encountering others is very low, with little or no evidence of visitor impacts.	NPS tolerance for resource modifications or degradation would be very low. This zone offers the most natural conditions and includes areas requiring high resource protection. Much of this zone is difficult to access. Onsite management for visitor safety and resource protection is limited, with greater restrictions implemented off-site, including access and length of stay restrictions. This zone encompasses large areas and is entirely designated wilderness.	Only non-motorized or non-mechanized activities would be appropriate. No facilities are appropriate in this zone, including trails, docks, campsites and signs. Cross-country dispersed camping and hiking are permitted, with regulations to protect resources, including special permitting and area closures.
Lake Superior Water Zones			
Open Water Motorized	This zone appears predominantly natural, but there is evidence of human use and activity. There are fewer restrictions on visitor activities. The probably of encountering other visitors and seeing or hearing motorized traffic could be high, thus solitude and tranquility are limited. Skill, risk and self-sufficiency are high as lake conditions could be dangerous and unpredictable.	The character of this zone is unpredictable, changing according to Lake Superior and weather conditions. Management actions would be the minimum necessary for visitor safety and resource protection. Most Lake Superior waters within the park are included in this zone.	Boating of all types, fishing and scuba diving are appropriate and could be common.
Quiet/No-Wake	In Quiet-no-wake zones surroundings are relatively tranquil and natural. Solitude is possible with moderate encounter rates. Tolerance for noise is low.	Tolerance for noise and human-caused resource degradation is low. Relatively protected, calm waters provide increased safety and resource protection. A moderate level of management would be provided for safety and resource protection.	Human-powered and motor-powered watercraft would be found in this zone. Boats would travel at idling speed on flat water and leave no wake larger than prevailing sea conditions.

with secondary entry points at McCargoe Cove, Belle Isle, Daisy Farm, Chippewa Harbor, and Malone Bay (currently provided by the *Voyageur II*). Water taxi service would continue to be available through the Rock Harbor Lodge.

Fees
Fees would continue to be collected from all visitors. Fee collection would occur according to NPS policy for fee collection and the regulations promulgated under the Federal Lands Recreation Enhancement Act of 2004.

Operating Season
Isle Royale would continue to be open from April 16 through October 31, though exact opening and closing dates may be determined by weather and ice conditions. The island would remain closed to the public in the winter and no employees or other people would reside in the park year-round. The park's winter closure was implemented through the park Compendium in 1978 primarily to protect visitor and employee safety and the island's wildlife populations. The park's visitor center in Houghton would remain open to the public year-round to provide information services.

Personal Watercraft
Per the GMP and NPS regulations, use of personal watercraft (jet skis) are not permitted in the park, because of inconsistency with park purpose, significance, and emphasis statements. (NPS 1998, p.27)

Pets
Dogs, cats and other mammals may not be brought into or possessed in the park area, except for service dogs [36 CFR p.99 § 7.38 (c)]. Special permitting processes apply for bringing service animals to the island.

Aircraft Over-flights
Policies for aircraft over-flights and landings within Isle Royale are guided by the park's 1997 *Aviation Management Plan* (NPS 2008). This document clarifies the aviation management objectives for the park as; 1) aid in the safe, effective, and efficient management of the NPS, 2) provide emergency response capability, and 3) minimize impacts on park resources, neighbors, and visitors. Floatplane landings are permitted exclusively in portions of Tobin Harbor, Rock Harbor, and Washington Harbor (36 CFR p. 99 § 7.38 (a)), except in emergency response situations facilitated by the NPS. Appropriate uses of over-flights for NPS operations include wildfire monitoring, emergencies, and limited wildlife monitoring where such flights are determined to be the minimum tool. Aircraft over-flights are regulated by the FAA. However, the following flight restrictions apply, as outlined in the Isle Royale Aviation Management Plan:

1. The Federal Aviation Administration (FAA) has issued a 2,000 foot flight level advisory over the island. This should be strictly adhered to by NPS flights unless the mission does not allow this. (example: wildlife observations)
2. Flying directly over the main island should be avoided whenever possible to reduce noise and visual intrusion. An example is point-to-point flights from Mott to Windigo or Minnesota. These flights should fly over Lake Superior waters instead of the island.

3. Helicopter long line missions into the backcountry should be implemented during periods of low visitor use primarily in early spring or late fall.
4. Backcountry landings by rotor or fixed wing aircraft will be limited to emergencies.
5. Each proposed aircraft mission will be reviewed to determine if using aircraft with its related intrusions is the best choice.
6. Aircraft may only land in designated landing areas except in emergency cases.

Native American Treaty Rights

Several bands of Lake Superior Chippewa have rights guaranteed by various treaties in the geographic area in which Isle Royale National Park is located. The National Park Service would honor those legally established rights and cooperate with tribes holding those rights. The NPS would routinely consult with tribes and their representatives on a government-to-government basis in managing our wilderness resources.

Residential Uses

Seventeen families retain life leases, special use permits, and volunteer agreements for residential use within the park boundaries, and in several cases within potential wilderness areas. The WBMP would in no way alter the agreement of these leases and permits. However, upon the expiration of the leases the proper steps would be taken to evaluate the conversion of any associated potential wilderness to designated wilderness in compliance with Isle Royale's Wilderness Legislation. The potential continuation of non-conforming uses of these areas would be a consideration in a decision for conversion to designated wilderness.

Protection of Cultural Resources

> *There has been extensive prior human use in most areas now designated as wilderness, resulting in archeological sites, historic structures, cultural landscapes and associated features, objects and traditional cultural properties that are contributing elements to wilderness. It is important to recognize that laws, . . . intended to preserve our cultural heritage, are applicable in wilderness . . . actions involving all cultural resource types in wilderness must comply with cultural resource laws, such as compliance actions and inventory requirements mandated by NHPA [National Historic Preservation Act].(DO-41, §C.4. p.38)*

In drafting wilderness legislation Congress specifically included cultural resources as part of wilderness and historic values to be protected. Any impacts on cultural resources would be avoided if at all possible within Isle Royale's wilderness and backcountry, as protection of these resources are a critical facet of wilderness management. Cultural resources include archeological sites, historic structures, cultural landscapes, and ethnographic resources. Any actions that involve ground disturbance or possible disturbance of cultural structures or landscapes must involve mitigation measures developed by the park in consultation with the Michigan State Historic Preservation Office.

Historic properties eligible for the National Register of Historic Places that have been included in wilderness would be protected and maintained according to the pertinent laws and policies governing cultural resources, using management methods that are consistent with preservation of wilderness character and values. (NPS 1999a § 6.3.8)

Protection of Natural Resources
Isle Royale managers are required by law to protect park resources and values, and are further directed to always seek ways to avoid, or minimize to the greatest degree practicable, adverse impacts on park resources or values. The NPS is required to protect the species listed under the Endangered Species Act and their critical habitats. Policy also requires that NPS managers inventory, monitor and manage state and locally-listed Threatened and Endangered species to the same extent as federally listed species, whenever possible. Under the Clean Air Act, the NPS is required to protect Isle Royale as a Class I Airshed, with only minor degradation of air quality allowed.

Natural Light and Night Skies
The NPS recognizes the importance of protecting natural light and night skies and is committed to protecting natural darkness and other components of natural lightscapes in parks (NPS 2006). Therefore, managers would prioritize preventing or minimizing light pollution originating within park boundaries to the greatest extent possible while also providing for human safety within the developed, populated areas of the park.

Fire Management
The WBMP would remain consistent with the park's Fire Management Plan (2004), recognizing that fires are a natural part of a wilderness ecosystem, and management actions are necessary to ensure both a healthy fire system and human health and safety.

Hunting and Trapping
Hunting and trapping are not permitted within Isle Royale National Park.

2.2 The No Action Alternative

Current and projected conditions provide a baseline for evaluating the changes and impacts of the other action alternatives. The National Park Service would continue the present management direction, guided by the GMP. Recreational use and access patterns would continue to develop, and the agency would respond as necessary on a case-by-case basis. No new services or facilities would be developed, except those described in the GMP.

This alternative represents "no action" on this plan. It does not imply that the National Park Service would take no further management action concerning the park's backcountry. It places the National Park Service in a reactive role, responding to resource damage and user conflicts as issues arise. For all activities, the National Park Service would respond to changing use patterns as necessary to protect park resources, visitor safety, and visitor experience.

2.2.1 Wilderness Boundaries and Management
The NPS would maintain existing wilderness boundaries in Isle Royale National Park, with 131,925 acres of designated wilderness and 93 acres potential wilderness (Appendix D, Maps 2A and 2B). Designated wilderness and potential wilderness would continue to be managed as wilderness, consistent with NPS Management Policies (NPS 2006). Potential wilderness on Isle

Royale consists of areas identified as suitable for wilderness designation, but with temporary non-conforming uses such as life leases or residences. The House Report accompanying the Wilderness Act (HR13160) clarifies the intent of designating an area as Potential Wilderness:

> *National Park Service wilderness proposals have embodied the concept of "potential wilderness addition" as a category of lands which are essentially of wilderness character, but retain sufficient non-conforming structure, activities, uses, or private rights so as to preclude immediate wilderness classification. It is intended that such lands will automatically be designated as wilderness by the Secretary by publication of notice to that effect in the Federal Register when the non-conforming structures, activities, uses, or private rights are terminated.*

2.2.2 Visitor Use and Experiences, Including Facilities and Services

Appropriate and Traditional Uses

National Park Service management policies direct that wilderness areas must be managed to preserve their wilderness character and resources while providing for "appropriate" uses. Appropriate uses are those that require, yet do not degrade, the wilderness character and values, and include activities such as recreation, scientific inquiry, education, and historical use. The Wilderness Act dictates appropriate activities within Isle Royale's wilderness, but more flexibility is allowed within the park's non-wilderness backcountry, such as the use of sailboats and motors.

Existing types of recreational activities and visitor uses would continue, as would backcountry regulations (Appendix E). People visit Isle Royale for many different activities, including fishing, boating, backpacking, day hiking, canoeing, kayaking, sailing, scuba diving, observing wildlife, seeking general restorative experiences, learning about the area's natural and cultural history, and photographing wildlife, flora and natural and historical scenery. All of these activities and more take place in and may be dependent upon the park's wilderness and backcountry. Activities within the park's wilderness would continue to be limited to non-mechanized and non-motorized activities.

The current conditions and opportunities for day visitors, and overnight campers and boaters are described in greater detail in the alternatives for managing overnight use of the wilderness and backcountry (§ 2.4.1) and alternatives for managing day use in the wilderness and backcountry (§ 2.4.2). Chapter 3 (§ 3.1) describes in detail visitor use and experiences at Isle Royale visitors.

Cross-Country Camping and Anchoring Out

Cross-country, or off-trail, camping and anchoring out would remain an option for visitors seeking opportunities outside of designated campgrounds and docks. These visitors would need to be experienced with the skills required to safely and responsibly anchor out or camp in pristine, off-trail areas. Because of this, the majority of Isle Royale visitors would be encouraged to camp in designated campgrounds. The NPS would retain the right to adjust area closures and limits on where cross-country camping is permitted. Special cross-country or anchoring out permits would continue to be required, as would regulations to minimize the adverse impacts of dispersed camping (Appendix E-F).

Fishing
Fishing would continue to be recognized as an appropriate recreational activity in the park, but specific fishing regulations do not fall within the scope of the WBMP. Fishing regulations within the park's Lake Superior waters are established by the Michigan Department of Natural Resources. Fishing regulations on the park's inland lakes and streams are set by the NPS. Assessment fishing is permitted on a very limited basis within Isle Royale. The upcoming Fisheries Management Plan (expected 2012) will address the specifics of fisheries management in the park.

Concessions and Private Business Operations
Private companies would continue to provide valued services to Isle Royale visitors. Commercial activity, as well as requests for special events on Isle Royale would continue to be limited to avoid over-commercialization, excessive demand for use, and incompatibility with park goals and objectives. Private companies would continue to provide visitor services, including lodging and food through the Rock Harbor Lodge, and ferry and floatplane services. Details of these services would continue to be managed through concessions contracts.

Other commercial services that would continue under Commercial Use Authorizations (CUAs) include charter fishing, charter diving, and guided hiking and paddling. The operating requirements of these permits could be adjusted annually to manage the number of people that each permittee could bring to the island on a single visit or cumulatively during the season.

Permitting and Information Services
Backcountry Permits for Campers and Boaters
There would be no change in the permitting system at Isle Royale. This is described in detail in the No Action Alternative for managing overnight use, §2.4.1.

Information and Education Services
The NPS visitor center in Houghton, MI, would continue to provide visitor information and services year-round via phone, email, and in person. Visitor centers in Rock Harbor and Windigo would provide in-person visitor information and services during the island's operating season. Interpretive and educational services would be available through all NPS visitor centers, with the specific programs varying based on staffing levels. Visitor centers would continue to issue permits, collect fees, aid in trip planning, and offer resources about the park's natural and cultural history.

Isle Royale's Comprehensive Interpretive Plan (2000) would continue to guide the interpretive and educational programs for the park.

Group Size Restrictions
Group size limits for overnight stays in the wilderness and backcountry would continue to be maintained as no more than 10 people per group and no more than 20 associated individuals in these areas at one time. Night-by-night campground reservations with designated large group sites would continue for parties of 7-10 people. The NPS would continue to maintain 43 designated group campsites throughout the park.

There would continue to be no limitations on group sizes for day trips, as described in the alternatives for managing day use in the wilderness and backcountry, § 2.4.2.

Wilderness and Backcountry Facilities

Campgrounds

Isle Royale would continue to maintain existing campgrounds and new GMP-proposed campgrounds, and would continue a strategy of concentrating camping within designated campgrounds. Managers would maintain the current system of concentrating camping impacts within designated campgrounds with outhouses, water access, and campsites with clearly defined tent pads or shelters. This system has proven effective at "both avoiding and minimizing areal measures of camping-related resource impacts" (Marion and Farrell 2002). Campgrounds would continue to be maintained and rehabilitated with a goal of increasing privacy and natural quiet through the design of campsite spacing and screening with vegetation. Outhouses would continue to be provided at all campgrounds to best manage human waste and visitors would be required to pack out all of their other waste.

Shelters would continue to be maintained, though per the GMP no additional shelters would be added to campgrounds within designated wilderness, and shelters will eventually be removed from the Duncan Bay and Siskiwit Bay campgrounds, after the docks are removed.

Trails

Hiking and portage trails would continue to be maintained to concentrate recreation impacts, minimize erosion and impacts to sensitive resources, and meet standards for primitive or semi-primitive trails. Trails would continue to be rerouted as needed to protect resources such as nesting eagles or loons. Boardwalks would continue to be used to minimize damage to wetlands. However, trail reroutes and the use of stonework and other trail building techniques would continue where feasible to minimize reliance on lumber for trails (see treated lumber section).

Docks

Other than docks planned for removal in the GMP, all existing docks at entry points, campgrounds, and points of interest would be maintained. The GMP determined that docks would be removed from Siskiwit Bay, Three Mile and Duncan Bay and the McCargoe Dock would be relocated closer to the mouth of the cove.

Signs

Trail and campground signs would continue to be posted at junctions, with a goal to provide directional information on rustic signs consistent with the surroundings. Sign materials would be compatible with local materials, such as rough-hewn cedar posts. Signs would also be used minimally to post campsite locations and resource protection information (area closures, revegetation sites, etc.). Overlooks, side trails, and other points of interest within designated wilderness would not be posted with directional or educational signs.

Ranger Stations

The NPS would continue to maintain ranger stations with residences at Amygdaloid Island, Malone Bay, Rock Harbor and Windigo to provide for visitor safety, resource protection, public service, and support of park operations.

2.2.3 NPS Administration and Operations

Maintenance of the Wilderness and Backcountry

Administrative Use of Motorized and Mechanized Equipment

The NPS would continue to accept administrative use of motorized or mechanized equipment within Isle Royale's designated wilderness where human life is at risk, or where use of a mechanized tool is determined to be the least intrusive method on wilderness character and values. Within and outside of designated wilderness park management would continue to work toward more sustainable operations, including purchasing water- and energy-conserving systems and machinery. For example, the National Park Service would take a leadership role in using less polluting, quieter boats as current equipment is upgraded or replaced (NPS 1998 p. 27).

The NPS would continue to use chainsaws for trail and campground maintenance within Isle Royale's wilderness on a limited basis. Chainsaws are used in May and June to clear the large number of fallen and hazard trees following the winter windfall. Chainsaws may be used again for hazard tree removal in September and October. Throughout the operating season chainsaws may be used for bridge construction and maintenance. To date Isle Royale managers have accepted that this is an appropriate use of chainsaws in wilderness to protect the safety of trail crew staff and maintain desired trail and campground standards with concern for visitor safety.

The NPS would continue to use other power tools for maintenance in frontcountry zones and for dock, shelter, and outhouse maintenance in campgrounds along the Lake Superior shoreline. Generators or photovoltaic cells are used for power. A work barge with crane may also be used in dock maintenance at these campgrounds. Campgrounds outside of the developed zone are either within or in close proximity to wilderness.

Appropriate Types of Lumber for Trails, Docks, and Campgrounds

Isle Royale currently lacks a park-wide policy for the best types of lumber to use in backcountry and wilderness maintenance projects, including a decision on whether or not to use new technologies for chemical preservatives that double the lifespan of lumber. Lumber is used primarily for boardwalks over fragile wetlands, and for bridges and docks. In the past, the NPS has used arsenic-treated lumber (CCA) for trail, dock, and campground maintenance, because of the significantly longer lifespan than untreated lumber. However, environmental concerns associated with arsenic leaching into soils and water led the NPS to stop using CCA lumber in National Parks. Some CCA lumber remains on Isle Royale, and untreated lumber and new materials, such as recycled plastic "lumber", have been used for different projects. Some trail structures are currently built using local materials, such as rocks for stepping stones and drainages, and cedar logs for boardwalk supports, minimal boardwalks and bridges, drainage bars and corduroy. Trails are also continually re-routed to avoid wet areas. However, the great abundance of wetlands and wet areas on the island makes it unfeasible to entirely avoid wet areas when routing trails.

Lumber would continue to be used in trail construction and maintenance on Isle Royale as a means of minimizing human impacts on sensitive resources, as well as in dock construction and maintenance to provide access for visitors and maintenance crews. However, as aging

boardwalks, bridges and docks require replacement, decisions on appropriate trail materials would continue to be made on an ad-hoc, project-by-project basis, without park-wide continuity.

Organization

All Isle Royale divisions would continue to be involved in wilderness and backcountry management for the park. The Maintenance Division would continue to have primary responsibility for the design, development, maintenance and removal of facilities, including docks, trails, campgrounds, ranger stations, and communications facilities. The Maintenance Division would also play a central role in selecting appropriate materials and equipment for park operations.

The Interpretation and Cultural Resources Division would continue to have primary responsibility for public education, information dissemination, visitor information services, permitting, fee collection, and website design and maintenance. Within this division, Cultural Resources Management would continue to be responsible for the full cultural resources program in the park, including inventorying and monitoring cultural resources, disseminating information, overseeing cultural resources planning, cooperating with local and regional interests, and preserving the park's cultural resources.

The Protection & Emergency Services Division would continue to play a critical role in visitor education, regulation enforcement, and protecting park resources.

The Natural Resource Division would continue to be primarily responsible for coordinating research, inventorying and monitoring natural resources, assessing environmental consequences of park projects, managing park databases, collaborating with regional and national conservation efforts, and disseminating information about park resources. The wilderness coordinator position has traditionally been within this division.

All of these divisions would continue to be directly involved in wilderness and backcountry management through participation in Isle Royale's planning teams and Backcountry Management Group (BMG), an inter-divisional advisory group. The BMG consists of representatives from each of the above divisions and meets several times a year with field visits to assess backcountry and wilderness conditions, and make recommendations on needed backcountry and wilderness projects.

Resource Management and Protection

Research in Isle Royale would continue to be guided by the park's Resources Management Plan (1999), but there would be no specific coordinated guidance based on wilderness and backcountry management needs.

Protecting Species of Special Concern

The NPS would continue to take action to protect species of special concern in Isle Royale. Species of special concern on Isle Royale include Federal and State-listed Endangered and Threatened Species, as well as other species with dwindling regional populations. Species of concern that are particularly vulnerable to recreation have direct relevance to this planning effort. This includes the gray wolf, common loon, bald eagle, and coaster brook trout, as well as many

sensitive plant communities. Isle Royale managers have and will continue to take actions to minimize or eliminate human impacts to these species. Threatened and Endangered species are discussed in greater detail in Chapter 3, §3.3.6, however there are certain actions that Isle Royale managers have taken in the past and will continue as appropriate to protect sensitive species in the park.

Actions that have proven successful for protecting wolves on Isle Royale include:

- closing the park to public access in the winter,
- closing portions of the park to overnight camping during denning and rendezvous times,
- supporting research on wolf ecology and population viability, and monitoring human impacts on wolves at Isle Royale,
- educating the public about the importance of maintaining a separation between wolves and humans and reporting any interactions they have with wolves in the park.

Actions that have proven successful for protecting bald eagles on Isle Royale include:

- closing or rerouting trails adjacent to eagle nests
- closing campgrounds adjacent to eagle nests while the eagles are actively nesting
- supporting monitoring efforts and research about eagle productivity and associated human impacts on Isle Royale
- educating the public about successful conservation measures that have led to a resurgence of eagles in the park.

Actions that have proven successful for protecting loons on Isle Royale include:

- rerouting portages that are in close proximity to loon nest sites,
- temporarily closing particularly vulnerable loon nesting areas to paddling until chicks have fledged (this has proven successful at the southwestern-most end of McCargoe Cove, where loons appear to be having greater nesting success since the closure was enacted),
- supporting monitoring efforts and research about loon productivity and associated human impacts on Isle Royale,
- educating the public about research findings that indicate loons have a particular sensitivity to human intrusions during their nesting and chick-rearing periods, and how people can minimize adverse impacts on loons.

Actions that are being taken to protect coaster brook trout within Isle Royale waters include:

- working together with the MI DNR to establish and maintain viable coaster populations;
- supporting research and management partnerships with the US Fish and Wildlife Service and the State of Michigan within Isle Royale waters and the Lake Superior Region;
- educating the public about the uniqueness and importance of the Isle Royale populations of coaster brook trout.

Actions that have been taken to protect sensitive plant species and communities on Isle Royale include:

- conducting plant surveys to be aware of vulnerable areas when planning development projects;

- identifying vulnerable areas where recreation use should not be encouraged;
- considering rare plant communities in identifying areas closed to camping;
- surveying sites of proposed development such as trail reroutes, campsites, outhouses, and new buildings to avoid impacting rare plants;
- supporting research and monitoring of rare plants in the park, including mapping of known locations;
- educating the public about the rare plant communities of Isle Royale and actions they can take to minimize recreation impacts.

Isle Royale managers have utilized available information about these sensitive species and other vulnerable resources in making management decisions. This information has been helpful in locating trails and campgrounds, informing the public, and other measures to direct recreational use away from areas that are most vulnerable to human impacts.

Scientific Activities in Wilderness
One of the legal purposes of wilderness is to provide opportunities for scientific activities, and these activities would continue to be encouraged and permitted within Isle Royale's wilderness and backcountry, when consistent with the NPS's responsibilities to preserve and manage wilderness.

Isle Royale has a standing policy for establishing permanent plots with permanent or long-term physical markers. The intent is to balance the needs of long-term research projects with the desire to minimize associated physical impacts in the park's wilderness. According to this policy "the long-term significance of a research plot, along with its associated data, is the fundamental reason for nominating it for permanent marking."

Monitoring Wilderness Resources
The Natural Resource Division would continue to oversee and conduct natural resources monitoring projects, including species of concern, air and water quality, and recreation impacts. The division would continue to cooperate with the NPS Great Lakes Network for natural resources inventory and monitoring. Cultural Resources Management would continue to oversee and conduct cultural resources preservation and monitoring projects, and coordinate with local and regional interests. However, there would not be a coordinated, cohesive plan for monitoring wilderness and backcountry resources in the park and applying monitoring information to management efforts.

Area Closures
With this WBMP, park managers would retain the right to implement temporary or permanent area closures within the park's wilderness and backcountry. Closures are implemented on specific sites to protect sensitive wildlife from human disturbance, larger area closures may be implemented for habitat protection or protection of wildlife with broader area needs, other valid justifications for closures include protecting human health and safety, and protection of sensitive cultural resources. Closures may be for certain activities or for all public access.

2.3 Actions, or Changes, that would be Common to all Action Alternatives

The following actions would be taken as part of the implementation of Isle Royale's WBMP. This would be in conjunction with the preferred alternatives for changing the management of overnight use, day use, campfires, fire towers, and picnic tables in the wilderness and backcountry.

2.3.1 Wilderness Boundaries and Management

All alternatives would maintain existing wilderness boundaries and acreage, including managing PWAs as wilderness.

As part of this WBMP, all PWAs on Isle Royale where non-conforming uses have ceased would be converted to Wilderness through the proper steps. Current non-conforming uses will be evaluated in the park's upcoming Historic Properties Plan where necessary.

2.3.2 Visitor Use and Experiences, Including Facilities and Services

Appropriate and Traditional Uses

This WBMP would not propose changes in current uses or regulations (Appendix E-F) in Isle Royale's wilderness and backcountry. Appropriate and traditional uses within the park include hiking, backpacking, paddling, sailing, motorboating, sport fishing, commercial fishing with special use permits, scuba diving, charter diving and fishing with incidental business permits, and scientific research. Some of these activities are restricted within the park's designated wilderness. Although the same types of uses would continue, the levels of visitation could change, as outlined in the alternatives for managing overnight use of the wilderness and backcountry (§2.4.1) and alternatives for managing day use (§2.4.2).

Cross-country Camping and Anchoring Out

Cross-country camping and anchoring out would remain an option for visitors seeking opportunities outside of designated campgrounds and docks, continuing current regulations (Appendix E-F) and permitting requirements. Under all of the action alternatives, the NPS would have the option of managing or limiting the number of permits issued for anchoring out or cross-country camping, as necessary to prevent or correct unacceptable impacts to park resources and values.

Fishing

Any changes in fishing regulations would be addressed in the park's Fisheries Management Plan (expected 2012).

Two goals of the fishing and educational programs for Isle Royale would be to raise awareness of fishing regulations and to promote ethical practices when fishing. This would include the use of artificial lures only, proper disposal of fish remains, taking only as few fish as are needed and not more than the legal limit, safe handling of live fish, and preventing the introduction and

spread of exotic aquatic species. Educational outreach with the national Leave No Trace guidelines for fishing would be one tool used in this effort.

Concessions and Private Business Operations
Private organizations, private businesses operating under a CUA, and concession operations will continue to provide valued services to Isle Royale visitors. Park-wide changes in permitting for camping and boating presented in the action alternatives for managing overnight use in the wilderness and backcountry would apply to organizations and businesses, as well as individual visitors. Group size limits proposed for organized day tours under the action alternatives for managing day use in the wilderness and backcountry would also apply to private organizations and businesses leading day trips in the park.

Permitting and Information Services
Backcountry Permits for Campers and Boaters
Under all alternatives backcountry permits would continue to be required for all parties camping or boating overnight in Isle Royale's wilderness and backcountry. Parties of 7-10 people would still be required to make advanced reservations for group campsites. However, how and where permits are issued could change, with options presented in the alternatives for managing overnight use of the wilderness and backcountry (§ 2.4.1). These alternatives also present options for improving visitor information services. Under all alternatives, park managers would have the option of adjusting visitation levels or distribution, or modifying human activities as necessary to slow or reverse deteriorating social or resource conditions.

Leave No Trace education and explaining backcountry regulations would remain a critical part of permitting for all visitors.

Information and Education Services
Public education is a critical component of any wilderness and backcountry management program. Education is important for park visitors, the public who do not visit the park, and NPS and partner employees. The WBMP would remain consistent with Isle Royale's Comprehensive Interpretive Plan (2000) and would serve as guidance for interpretive and educational programs in the future by outlining goals and desired conditions for the future of the park. Education and interpretation would be used as a tool to foster public stewardship and minimize adverse human impacts to park resources and values.

Alternatives for managing overnight use of the wilderness and backcountry present options for improving visitor information and trip planning services within the park.

Group Size Restrictions
There would be no change in group size limits for camping parties. However, in order to preserve the appropriate conditions for solitude and tranquility, campgrounds within the Primitive Zone would be reserved for those entering the park as "individual" parties. This would provide an opportunity for visitors seeking a higher level of solitude and tranquility. To protect this opportunity, groups of 7-10 would not have the option of camping within these areas, even if they split into multiple parties. Primitive Zone campgrounds are; North Desor, Little Todd,

Pickerel Cove, Lane Cove, Intermediate Lake, Wood Lake, Lake Whittlesey, and Duncan Bay once the dock is removed.

The alternatives for managing day use in the wilderness and backcountry present options for changing group size limits for day tours.

Wilderness and Backcountry Facilities
The intention of facilities constructed and maintained within the park's wilderness and backcountry would be to maintain the minimum structures necessary to protect resources and provide for appropriate recreation access.

Additional facilities in Rock Harbor
All alternatives would include the addition of a small number (2-6) of rustic facilities for low-cost multiple night stays in Rock Harbor. Although these facilities would be added in the Developed Zone, not within the wilderness or backcountry, their addition would be intended in part to alleviate pressure on wilderness and backcountry campgrounds. Additional assessment of environmental impacts and compliance documentation would be completed prior to constructing these new facilities.

Campgrounds
Any changes in campground sizes or new campgrounds are addressed in the action alternatives for managing overnight use of the wilderness and backcountry.

Trails
The trail system and its management would remain unchanged in all proposed alternatives, except for a possible new 3-5 mile section of trail designed for day use near Windigo, as described in Alternative C for managing day use in the wilderness and backcountry.

Signs
There would be no change in the use of signs in the wilderness and backcountry, maintaining a policy of posting only those signs deemed necessary for minimal visitor service and education and resource protection along trails, at campgrounds, and at significant cultural or natural resource sites. The NPS would continue or increase efforts to use rustic, locally compatible materials for signs, such as rough-hewn cedar posts with burned lettering.

Docks
There would be no changes in docks from the current conditions, except for those changes approved in the GMP.

Ranger Stations
Existing ranger stations with residences would be maintained at Rock Harbor, Windigo, Amygdaloid Island, and Malone Bay to provide for visitor safety, resource protection, public service, and support of park operations. No additional ranger stations or other backcountry-based buildings for NPS employees and administration would be established.

Repeaters and Communications Facilities
Any changes in radio repeaters, communications facilities, or other telecommunications equipment in Isle Royale's wilderness and backcountry would require appropriate compliance to evaluate feasible alternatives and assess environmental consequences. This would include considering alternatives that would be based outside of the park's designated wilderness.

2.3.3 NPS Administration and Operations

Minimum Requirement Process
The Minimum Requirement Process with the Minimum Requirement Decision Guide (Appendix G) would be implemented and institutionalized. Isle Royale's Wilderness Coordinator would maintain a file of all documented decisions using the minimum requirement process that would be available for reference.

All management decisions and activities on Isle Royale must include a well-documented assessment of whether actions would affect wilderness resources or visitors' experiences, and if so, if the actions are necessary and appropriate, and if there are alternatives to minimize impacts. Part of this minimum requirement process is identifying the minimum tool, which is defined as the least intrusive tool, equipment, device, force, regulation, or practice that would achieve the wilderness management objective safely and with the least impact on wilderness resources. These decisions must be well documented using the Minimum Requirement Decision Guide, and be accompanied by an appropriate environmental compliance document. Assessment of adverse impacts must consider physical resources within wilderness, as well as wilderness character and values, which include: primeval character and influence, the preservation of natural conditions (including a lack of man-made noise), cultural resource values, outstanding opportunities for solitude, opportunities for primitive and unconfined recreation, and the preservation of wilderness in an unimpaired condition (NPS 1999b). Where actions take place outside of wilderness, consideration should also be given to how those actions may have indirect effects on wilderness character and values. This process does not, however, preclude impacting tools; for example, helicopters could be determined to be the minimum tool under certain circumstances.

> *The minimum requirement concept will be applied as a two-step process that determines:*
>
> - *Whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not pose a significant impact to wilderness resources and character; and*
> - *The techniques and types of equipment needed to ensure that impacts to wilderness resources and character is minimized.*
>
> *…When determining minimum requirement, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable (NPS 2006, § 6.3.5).*

The Minimum Requirement Decision Guide would also apply to all research conducted at Isle Royale, which is consistent with NPS policies. Methods and tools proposed for the research must consider impacts to, and appropriateness for, wilderness. Although research is appropriate for wilderness and is essential for managing and protecting wilderness, some proposed research projects might be better suited to non-wilderness settings or designed with alternative low-impact field methods. Additionally, analysis of existing datasets may be a better option than collecting new field data. These types of considerations will be used in assessing research proposals for Isle Royale's wilderness, weighing the benefits of what can be learned against the impacts on wilderness resources and values (NPS 2006, § 6.3.6).

Maintenance of the Wilderness and Backcountry

Administrative use of motorized or mechanized equipment

Administrative use of motorized or mechanized equipment by the NPS must meet the requirements of the Minimum Requirement Decision Guide (see Appendix G), including a recommendation by the Chair of the Backcountry Management Group and the Superintendent's signature. Acceptable uses would include emergencies where human life is at risk, or where use of a mechanized tool is determined to be the least intrusive method on wilderness character and values. Within and outside of designated wilderness park management would continue to work toward more sustainable operations, including purchasing water- and energy-conserving systems and machinery. For example, the National Park Service would take a leadership role in using less polluting, quieter boats as current equipment is upgraded or replaced (NPS 1998 p. 27).

Isle Royale managers would commit to further reducing the use of chainsaws within wilderness. However, current levels of funding for training and staffing are inadequate to pay for the personnel and expertise that would be necessary to achieve these standards with the exclusive use of hand tools in the park's wilderness. A future goal would be to increase the use of hand tools in maintaining the trails and campgrounds within Isle Royale's wilderness. Options for accomplishing this include 1) partnerships with other agencies that may offer a skill base in the use of cross-cut saws and other hand tools that could replace chainsaws, 2) trainings for maintenance crews, leaders, and supervisors in the use and upkeep of cross-cut saws, and 3) evaluation of areas of the park and sections of trails that would be best suited for cross-cut crews. Exceptions would continue to allow for chainsaw use in the case of emergencies involving human health and safety.

The National Park Service would also commit to reducing the impacts of other power tools used for maintenance on trails and in backcountry campgrounds and docks. Within 5 years of completion of this plan, maintenance projects in the wilderness and backcountry would be categorized with appropriate minimum tools for each type of project, thus the minimum tool process would not have to be applied to each individual project.

Appropriate Types of Lumber for Trails, Docks, and Campgrounds

Maintenance crews would aim to maintain current trail standards while minimizing the impacts of using local materials for construction and also using the most efficient, least contaminating materials possible. Lumber treated with chemical preservatives, and those with natural preservatives (such as cedar) have proven to have about twice the lifespan of untreated lumber. Lumber treated with chemical preservatives known to be of environmental concern, such as

CCA, would not be used in Isle Royale's wilderness and backcountry. Technological advances in lumber preservatives have lead to the development of more benign alternatives that are more economically feasible than lumber with natural preservatives. When lumber is necessary for trail construction and maintenance, the most benign chemical treatments would be acceptable for use in the wilderness and backcountry. An additional goal would be to utilize "green" lumber that is commercially managed and harvested with sustainable practices.

Maintenance crews would continue to use local materials, as well, on a limited basis for trail and campground work. Local cedar and other tree species could be utilized for corduroy, water bars, boardwalk footings, and other applications. Local rocks would continue to be used for purposes such as stepping-stones, trail stabilization, drainages, and constructing tent pads.

The amount of bridging, boardwalks and drainage structures would continue to be minimized to the greatest extent feasible through trail reroutes. Remaining signs, boardwalks and bridges within the park's wilderness and backcountry would all be constructed using a minimal amount of local materials and the most benign chemically treated lumber that is commercially available. This would maximize the lifespan of trail structures, minimizing long term costs of materials and labor. Protecting fragile habitats from trampling, trail widening, and erosion as well as minimizing hazardous trail conditions would remain a primary objective of trail construction and maintenance. The use of the most benign chemically treated lumber would minimize the risk of detrimental contamination of soils and water. Continuing the use of imported lumber would also minimize the local impacts of utilizing native materials for trail construction and maintenance.

- Trail and dock maintenance staff would continually research alternatives for treated lumber to remain abreast of the most environmentally benign options available. This lumber would be used for trail and dock construction and maintenance in the park's wilderness and backcountry.
- Trail crews would use minimal native materials in lieu of imported lumber where feasible and continue rerouting trails to avoid wet areas and fragile habitats to minimize the need for lumber.
- Trail structures and docks would be designed to be compatible with their surroundings and wilderness character.
- Options for identifying some trail sections as free from treated lumber would be explored.
- Proposals for trail and dock projects would include adequate funding and planning to include removal of any waste lumber as a part of project completion.
- Information would be gathered about threats of adverse impacts from chemicals used in treated lumber as future research became available. As need dictated in the future, mitigation measures would be taken to minimize known threats, including removal of contaminating materials.

Resource Management and Protection

The NPS is required by law and policy to protect natural and cultural resources within National Parks. Specific management decisions are developed within the park for this purpose. With this WBMP, if resource impacts were greater than expected with any natural or cultural resources, managers would combine mitigation actions that modify resources with mitigation actions that alter human behavior, visitor distribution, or numbers and locations of people in the wilderness and backcountry. Resource modifications could include such things as marked routes, signs, constructed trail sections, groomed trails, trail reroutes or closures, designated campsites, campsite closures or relocations, area closures, outhouses, and tent platforms or other structures to protect resources in campgrounds.

Cultural Resources Management

The specific details of how Isle Royale's cultural resources will be managed are beyond the scope of this WBMP. This will be developed in a forthcoming Historic Properties Management Plan, and/or a Cultural Resources Management Plan, which will be consistent with the management goals and actions in this WBMP.

Ecological restoration

Whenever facilities are removed in the wilderness or backcountry disturbed areas would be restored with native vegetation with steps taken to prevent the establishment of exotic species. This includes the removal of structures as well as the closure of campsites, trails, and other development impacts. The goal would be for full ecological restoration of the native species and ecological functions.

Exotic plant communities could be associated with cultural landscapes. In areas where exotic vegetation exists as part of a cultural landscape, the vegetation would be evaluated according to its cultural significance and threat to native species. In some cases culturally significant exotic species may be retained on a limited basis, if it is feasible to prevent the species from spreading and competing with native species.

Protection of natural resources

> *The principle of non-degradation will be applied to wilderness management, and each wilderness area's condition will be measured and assessed against its own unimpaired standard. Natural process will be allowed, insofar as possible, to shape and control wilderness ecosystems. Management should seek to sustain the natural distribution, numbers, population composition, and interaction of indigenous species. (NPS 2006, §6.3.7)*

An overriding goal of managing the natural resources within Isle Royale's wilderness and backcountry is to ensure ecosystem integrity and prevent impairment of any resources. More specifically, the NPS is also required to manage for the preservation of Threatened and Endangered plants and animals, including restoring and maintaining listed species' habitats, controlling detrimental visitor access, and re-establishing extirpated populations. State and locally listed species will be managed in a manner similar to the management of federally listed

species, "to the greatest extent possible" with a goal of maintaining natural distribution and abundance. (NPS 2006, §4.4.2.3)

The specific goals and actions for managing natural resources on Isle Royale are discussed in great detail in several resource management plans for the park, and this WBMP would remain consistent with these plans; Natural Resources Management Plan (1999), Fire Management Plan (2004), Water Resources Management Plan (2005), and Fish Management Plan (anticipated 2012).

Protecting Species of Special Concern
Efforts to protect species of special concern in the park would continue, with an additional commitment to support future research on sensitive species and their vulnerability to human impacts and apply new information as it becomes available to management decisions for resource protection.

Scientific Activities in Wilderness
Current efforts to provide opportunities for scientific activities within Isle Royale would continue. Additionally, the NPS would expand efforts to use science to improve wilderness management, and as appropriate contribute to national and global conservation efforts. To aid in maintaining a consistency between wilderness protection and fostering scientific exploration, the Minimum Requirement process would apply to all scientific activities proposed for Isle Royale, with a goal to work with researchers to develop scientific techniques that are low-impact and less intrusive. To accomplish this, Isle Royale's Minimum Requirement Decision Guide would apply to all proposed research activities.

> *Even those scientific activities (including inventory, monitoring and research) that involve potential impacts to wilderness resources or values (including access, ground disturbance, use of equipment, and animal welfare) should be allowed when the benefits of what can be learned outweigh the impacts on wilderness resources or values. However, all such activities must be evaluated using the minimum requirement concept and include documented compliance that assesses impacts against benefits to wilderness. This process should ensure that the activity is appropriate and utilizes the minimum tool required to accomplish project objectives (NPS 2006, §6.3.6.1)*

These objectives and processes would apply to all scientific activities within wilderness, including natural, cultural, and social research, monitoring, and inventories.

Organization
All Isle Royale Divisions would continue to be involved in wilderness and backcountry management for the park.

Wilderness Management Accountability and Training
As directed by NPS Director's Order 41, all positions having significant wilderness responsibilities will be supported by position descriptions that detail these responsibilities.

Actions Common to all Action Alternatives

Implementation of this WBMP will include incorporating wilderness responsibilities into position descriptions for the following positions:

- Superintendent
- Assistant Superintendent
- Chief of Natural Resources
- Cultural Resources Program Manager
- Chief of Interpretation
- Chief of Maintenance
- Facility Manager
- Chief Ranger
- East and West District Rangers
- Trails Foreman
- Campgrounds Foreman
- Lead Biological Science Technician
- Forestry Technician

Knowledge of and experience with wilderness laws, policies, ethics, and management practices will also be integrated into vacancy announcements for these positions.

Isle Royale will designate one permanent staff member to be the acting Wilderness Coordinator. Where funding allows this would be a specialist position, otherwise it would be a collateral duty. The Wilderness Coordinator will have direct responsibility for the development, coordination, communication, implementation, and accountability for the park's wilderness program. The Wilderness Coordinator will also serve as a liaison to Regional and National wilderness programs.

Other positions at Isle Royale involve significant work responsibilities that are carried out in the park's wilderness, or involve significant time working with the park's wilderness visitors. Wilderness training (described in detail below) will be a priority for these positions, as well.

Wilderness Training for Key Staff
Per NPS Director's Order 41, Isle Royale managers will ensure that each key staff person having responsibility for the management and protection of wilderness resources will receive the wilderness training necessary to ensure awareness, knowledge of, and accountability for, their specific wilderness responsibilities. Training requirements for superintendents and assistant superintendents as well as for any division chiefs or other individuals identified above will be followed as directed in DO 41 in order to preserve the delegation of authority. Isle Royale's Wilderness Coordinator will work with the National Park Service representative at the Arthur Carhart National Wilderness Training Center to ensure availability of needed training or training materials.

Wilderness training will be incorporated into seasonal training each year for all staff working primarily in the backcountry and wilderness, or working directly with wilderness visitors. This includes but is not limited to trail crew, campground crew, visitor center staff, interpretive rangers, biological science technicians, and commissioned and non-commissioned rangers. It is also recommended that wilderness training and the application of the Minimum Requirement Process be included in supervisor training. Additionally, because all island-based employees live, work, and recreate either adjacent to or in wilderness, a summary of wilderness policies and ethical considerations will be incorporated into staff orientation materials or presentations.

Recommended trainings include national-level wilderness stewardship training for the Superintendent and/or other management squad positions; Regional wilderness stewardship training for the Chief of Natural Resources, Chief Ranger, and Chief of Maintenance; and subject-matter trainings for permanent staff within the Natural Resources Division, Protection Division, and the Interpretation and Cultural Resources Division. Currently those courses are available to NPS employees through the Arthur Carhart National Wilderness Training Center in the form of on-site trainings in various locations, over the Internet, and through distance learning programs such as Tel-Net.

Additionally, it is recommended that at least one member of Trail Crew, Interpretation, Protection, and Natural Resources be up-to-date as a certified Master of Leave No Trace. Leave No Trace training is available from various sources, including independent certified instructors in Leave No Trace.

Staff Responsibilities and the Backcountry Management Group

The success of the WBMP would be largely dependent on staff accountability and clear responsibility. Isle Royale's BMG would continue to meet on a regular basis, including field visits, to discuss wilderness and backcountry management issues, identify issues in need of management attention or change, and make recommendations. This group was established to provide for a unified approach to planning, maintenance, and management of backcountry areas, and this need would continue. The BMG would continue to consist of representatives from park divisions and branches with job responsibilities directly related to management of the park's wilderness and backcountry. Standing members would continue to include cultural and natural resource management specialists, trails foreman, interpretation and education specialist, and district rangers.

With implementation of this WBMP, Isle Royale's interdisciplinary Management Team would meet annually to review wilderness management issues, discuss the current Wilderness Status Report, and assess management effectiveness and changes in management actions that may be necessary to achieve the goals of the WBMP. This team consists of the Superintendent, all ISRO division chiefs, and staff representatives from the key programs of each division.

Interagency Coordination

Although Isle Royale does not share a border with other federal land agencies, coordination with other agencies will still be important. The Michigan Department of Natural Resources retains jurisdiction over Lake Superior waters within the park's boundaries. The coastguard would remain a vital partner for many human safety and other issues. The US Fish and Wildlife Service would remain involved in the management of federally listed species and their habitats, as well as acting as an adviser in other issues of species management. The US Geological Survey and Biological Resources Division would remain important partners for research consultation. Isle Royale managers would also coordinate with other park managers in the Lake Superior and Great Lakes Region to meet the broader regional goals for backcountry and wilderness management issues. All of these partner agencies received copies of the Draft WBMP for review and input.

Wilderness and Backcountry Management Plan Implementation
Implementation of portions of this plan may be dependent on park budget and staffing. Acceptance of this plan identifies guidance and priorities and future management direction, but does not guarantee the funding that may be required for full implementation.

Monitoring Recreation Impacts
Monitoring current conditions and trends would be critical to the long-term success of wilderness management, in part to determine the effectiveness of management actions for achieving goals and tracking any unintended effects of actions. As part of the implementation of this Wilderness and Backcountry Management Plan, Isle Royale would develop and implement an accompanying monitoring plan. This would include a detailed schedule of what would be monitored, how frequently, and who would take primary responsibility, as well as an outline of an annual status report for wilderness conditions and more thorough 5-year "State of the Wilderness Report" for summarizing monitoring results and management implications. The ultimate goal of this plan would be to assess current conditions against stated goals for resource and visitor conditions and evaluate the effectiveness of management actions to achieve or maintain these goals, as well as evaluating the impacts of management on wilderness conditions. The monitoring plan would be based largely on indicators and standards established in this WBMP, but would also include general resource monitoring that is pertinent to wilderness and backcountry management. This information would be used to better inform management and direct necessary changes in management actions. This is consistent with NPS Management Policies (NPS 2006, §6.3.6.2), which states "the conditions and long term trends of wilderness resources would be monitored to identify the need for, or effects of, management actions."

Indicators that would be monitored include, but may not be limited to (to be established in the monitoring plan):

- Frequency of parties sharing campsites in overfull campgrounds
- Rates of trail encounters
- Annual visitation levels and temporal and spatial distribution of visitors
- Density of boats anchoring out in anchorage areas
- Biophysical conditions in campgrounds, including recreation impacts and screening between campsites
- Biophysical impacts of recreation and NPS activities in pristine zones (off-trail)
- Wolf-human encounters
- Loon nesting success, productivity, and population viability.
- Condition assessments of archeological sites and cultural landscapes along trails and within and adjacent to campgrounds.

Cultural resources monitoring for impacts from recreation and management activities would also be monitored as an important facet of wilderness and backcountry management, but these goals and protocols would be developed in conjunction with an Historic Properties Management Plan and/or Cultural Resources Management Plan for Isle Royale.

Isle Royale's Division of Natural Resource Management would be responsible for the completion and implementation of the monitoring plan for the WBMP, with assistance from the

park's other divisions and branches as appropriate, such as Cultural Resources Management, Interpretation and Visitor Services, and Trails and Campground management.

Adaptive Management and Additional Research Needs
Wilderness and backcountry management is an iterative process that requires adaptive management with some flexibility as new information becomes available. The intent is to retain goals and objectives while allowing for flexibility in actions taken to most effectively achieve those goals. Research and information gathering will continue to be important to better understand the effectiveness and implications of management actions. Management decisions at Isle Royale will be based on the best information available, though desired information is not always available. To date the process of planning for and managing wilderness and backcountry on Isle Royale has identified several research needs that could aid in future management decisions. This list of needs will help to seek out and prioritize future research projects in the park:

Wolf-human interactions
One critical component of protecting wolves on Isle Royale is maintaining minimum wolf-human interactions and preventing the habituation of wolves to humans. Some questions needing to be better understood include: what relationship is there between human travel patterns on the island and wolf travel patterns? Is there a trend in the frequency and nature of wolf-human encounters on the island?

Options for minimizing human impacts on loons
Research supports the conclusion that human behavior, particularly in canoes, can and does have adverse effects on the nesting success of loons on Isle Royale. Given this, what management actions are most effective in minimizing these impacts, while also allowing for appropriate recreation access to the park's waterways?

Invasive exotic species
Invasive exotic species pose a significant threat to the individual native species, as well as the integrity of terrestrial and aquatic ecosystems on Isle Royale. Fortunately, some of the most serious invasive species known in the Great Lakes Region have not yet become established on Isle Royale. Additional research is needed to identify the most effective means of preventing the introduction and establishment of these invasive species, and if established, the most effective means of eradication or containment.

Ecosystem integrity
Much of Isle Royale's natural sciences research has focused on individual species. One critical component of wilderness character is naturalness, which speaks to the health, sustainability, and natural state of an ecosystem. Better understanding ecosystem integrity and the effects that human influences have on ecological systems and functions, as well as exploring any differences between the island's current state and a natural state, are critical for long-term management.

Recreation impacts on cultural resources
Additional research is needed to monitor recreation impacts on cultural resources, and establish guidelines for acceptable levels of impacts, if any can be established within policies for maintaining the integrity of these sites. A thorough inventory of cultural resources that may be vulnerable to recreation impacts is also needed. These issues will be addressed in the upcoming Historic Properties Management Plan and or Cultural Resources Management Plan for Isle Royale.

Cross country impacts
What are the current impacts in the pristine zone from cross-country travel and camping? How do current impacts compare to desired conditions? Should current levels and distribution of cross-country use be modified, considering impacts to sensitive resources and management goals for these areas?

Aquatic contaminants
What are existing threats of contaminants in campgrounds, from treated lumber, and associated with NPS operations? How might these contaminants be controlled to minimize adverse effects to resources?

Social sciences questions
Although Isle Royale has completed a fairly thorough assessment of social conditions in the park, some important questions remain, including how to best monitor and manage for appropriate levels of trail encounters, how to better understand people's choices that result in impacts, and how to evaluate the effectiveness of educational efforts and regulations to minimize impacts.

Inventory and monitoring of cultural resources
Limited inventory of the park's cultural resources has been completed. Additional efforts would focus on identification of cultural landscapes and ethnographic resources in visitor use areas. Research is needed to evaluate the relationship between cultural and natural resources and to provide options for preservation in wilderness. A system to monitor impacts to cultural resources is needed to protect those resources and identify changes over time. Because cultural sites, such as mining remains and fishing camps, can be an important part of the wilderness experience, sites would be monitored to ensure perpetuation of that experience.

2.4 The Action Alternatives, Including the Preferred Alternatives

The alternatives presented here are based on Isle Royale's mission, purpose, significance, and objectives for wilderness and backcountry management and present different ways to manage resources and visitor use in the park's wilderness and backcountry. The alternatives were formulated by the park's interdisciplinary planning team with public input, consultation with partners and subject matter experts, and thorough review of laws, policy, relevant research, and examples from other National Parks and wilderness areas. The alternatives are divided into 5 categories of issues; 1) overnight use of the wilderness and backcountry, 2) day use of the wilderness and backcountry, 3) campfires, 4) fire towers, and 5) picnic tables in wilderness. These issues and the range of alternatives for addressing them arose during the scoping process. They are addressed individually because each stands alone and deserves specific public comment. The no action alternative for each issue serves as a baseline for comparison.

2.4.1 Description of Alternatives for Overnight Use of Isle Royale's Wilderness and Backcountry

The majority of people who visit Isle Royale (about 70%) spend one or more nights in the park's backcountry, camping, staying aboard a docked boat, or anchoring out. Changes proposed to the way visitation is managed are designed to improve conditions for these visitors, minimize adverse impacts to the park's resources caused by backcountry activities, and address issues raised by the public relevant to overnight recreation. These public issues and concerns include: 1) public access to Isle Royale, 2) freedom and flexibility of travel within the park, 3) crowding in campgrounds and having to double up in overcrowded campsites, 4) the simplicity of the park's permitting system and regulations, 5) protection of park resources, 6) protection of wilderness character, and 7) providing options for a range of user groups and diverse interests. Where some of these interests may be in conflict, compromises are necessary. The context of Isle Royale is also important, where the remoteness of the park, logistics necessary for trip planning, and costs of simply reaching the park must be considered.

One of the salient issues raised here is availability of a sufficient number of campsites to accommodate the number of parties staying in a campground for a night. When the number of parties in a campground exceeds the number of campsites, parties are asked and expected to double up, or share campsites, with multiple parties camping in a site designed to hold one party. Although many people report that sharing sites ended up being a positive experience in which they met very nice people, others point out that being forced to share when adequate sites are not available is inappropriate for the types of experiences people expect with a trip to Isle Royale's wilderness (Isle Royale 2002). People will always have the choice of socializing and meeting new people while camping at Isle Royale; the issue is whether they should be forced to do so. Adverse impacts to people's experiences such as noise, a loss of privacy and solitude, and the pressures of finding camping space are concerns, as are physical impacts associated with overcrowding in campgrounds. The goal of improving wilderness and backcountry experiences includes reducing the frequency of parties needing to share campsites. However, the goal of not

being overly restrictive or unduly limiting public access to the park suggests that some minimal level of campsite sharing may be necessary.

The alternatives presented in this chapter represent a range of feasible options for achieving these goals for overnight visitation in the park's wilderness and backcountry. Each of these action alternatives addresses the park's visitor carrying capacity by establishing goals for social conditions and the number and size of designated campgrounds. All of the alternatives are similar in that they propose managing overnight visitation based on campsite availability and a limited tolerance for parties doubling up in campsites. The goals and potential management actions proposed in each alternative are summarized for comparison at the end of this section (Table 4). Chapter 4 outlines the implications of each of the alternatives for visitor use levels and visitor experiences.

Alternative A for Managing Overnight Use: No Action, Continuation of Existing Management Direction

A.1 General Description

The National Park Service would maintain its current management direction, continuing with implementation of the GMP but making no other significant modifications to wilderness and backcountry management. Isle Royale would continue a management approach of issuing permits at the start of a trip, allowing for freedom of flexible travel in the park and maximum visitor access within the current transportation system. In effect, backcountry visitation levels would be determined by transportation capacities, as the NPS would not implement any visitation limits other than maintaining existing ferry capacity limits and schedules.

A.2 Management Goals and Actions

The current management direction of accommodating all visitors who are able reach the island would continue.

A.2.1 Visitor Use Levels

Visitor use levels would not be actively managed other than through continuation of existing ferry schedules and capacities, the existing operational season, and the advanced reservation system for groups of 7-10 people. Visitor use levels in the wilderness and backcountry would be limited only by ferry and seaplane capacities, with no limits on people traveling to the island by private boat. Therefore, visitation could increase up to the point at which ferries sell out, and as much as people are willing to travel to the island with private boats.

A.2.2 Backcountry Permits

Backcountry permits would continue to be required for all parties camping, docking, or anchoring out in the wilderness or backcountry. Permits would continue to be issued from several visitor centers in the park and on the mainland, and all parties would be required to register for a permit at the start of their trip. Backcountry permits would continue to be issued to all parties of 1-6 people who could reach the park, regardless of campground capacities and campsite availability, or dock capacities. Groups of 7-10 people would be required to register for group campsite reservations in advance of reaching the park, and group sites would not be booked beyond their availability. With a continuation of the current permitting system for small

parties it would not be possible to give accurate information about use levels at specific campgrounds on specific dates.

A.2.3 Desired Future Conditions for Social Opportunities and Resources.

The NPS would continue to monitor social and resource indicators to identify deteriorating wilderness and backcountry conditions. With the knowledge of deteriorating resource conditions managers would have the option of taking actions to slow or reverse deteriorating conditions that would focus on facility design, public education and regulations.

A.2.4 Facilities and Services

The NPS would implement GMP-approved changes in docks, campgrounds and trails, but otherwise maintain existing wilderness and backcountry infrastructure, without any additional expansions in campgrounds. The NPS would maintain the flexibility to make adjustments as necessary for resource protection. Such adjustments may include trail reroutes, temporary closures of trails or campgrounds, relocations of campgrounds, or site hardening.

Existing wilderness and backcountry services would continue, including staffing ranger stations; conducting backcountry and wilderness patrols; maintaining trails, campgrounds and docks; staffing visitor centers; and offering park information via phone, Internet, publications, and personal contacts.

A.2.5 Visitor Distribution Management and Solitude

Leave No Trace education would continue to be a cornerstone of visitor education at Isle Royale. Continued education on wilderness etiquette as well as more information on the need to share campsites during the peak season might mitigate some of the adverse impacts to visitor experience resulting from deteriorating social conditions. Under this alternative, NPS managers would continue to manage ferry schedules, ferry capacities, and camping party sizes, but otherwise would not actively manage visitor numbers.

Visitors would have the choice to visit the park at more or less busy times of the season, and visit areas of the park that are expected to be more or less heavily used. Visitor Center staff would continue to educate visitors about visitation levels at different times of the seasons, and what general levels of crowding could be expected in different areas of the park throughout the season. This would give visitors an option to choose to come during different times of the season with more or fewer visitors. However, up-to-date accurate use levels at different campgrounds would not be available. If visitation increased significantly during any time of the season, the NPS would not limit or cap visitation levels beyond the capacities of existing transportation services.

A.2.6 Appropriate Management Actions

The NPS would continue its current policy of using management actions other than limitations of visitation to address problems. Acceptable management actions would include:

- For deteriorating social conditions such as dock over-crowding, or trail or campground crowding, management actions would continue to focus on better informing the public of visitation levels in different areas of the park and different times of the season. However, with a continuation of the current permitting system it would not be possible to give site and date-specific information on dock or campground crowding. The goal would be to

modify people's expectations about the social conditions they would find on Isle Royale. Additionally, backcountry staff would focus attention on overcrowded campgrounds to assist people in finding available and appropriate camping space for the night.

- For deteriorating biophysical conditions in campgrounds, the NPS would continue to modify campsite design to better concentrate and minimize impacts. Such modifications may include relocating campsites, revegetating areas, shrinking expanding campsites with physical boundaries such as transplanted trees and buried rocks, and temporarily or permanently closing sites in need of rehabilitation.
- Add monitoring to inform managers.

Alternative B for Managing Overnight Use: Preferred Alternative

B.1 General Description

The NPS would strive to provide a broad range of opportunities for quality wilderness and backcountry recreation with varying degrees of solitude, self-sufficiency and personal challenge. Additionally, overnight recreation would be managed to protect the park's natural resources, with particular attention given to seasonal sensitivities. Establishing a mainland-based Backcountry Office with advanced permitting would improve information and services available to visitors for trip planning and improve visitor distribution to maintain quality opportunities and reduce adverse impacts from recreation.

B.2 Management Goals and Actions

The overriding goal of this alternative is to provide a range of exemplary opportunities for wilderness experiences and minimizing limits on public access to the backcountry, while also reducing adverse impacts to natural and cultural resources in the backcountry and wilderness, minimizing concerns for human safety, and improving trip planning services.

B.2.1 Visitor Use Levels

Backcountry overnight visitation would be managed as necessary to meet goals for social conditions in campgrounds;

- Spring (April 16-June 15): preserve historic visitation levels with visitation not exceeding the highest point between 1994-2003, which would limit the number of camping parties to not exceed 20% of park's total camping capacity (Table 18).
- Summer (June 16- Sept 15): reduce campground crowding during the peak two weeks of the visitor season (between mid-July and mid-August) and allow for a moderate increase in visitation outside of those peak two weeks. With this goal, visitation would be managed as necessary so not more than 5% of parties per night need to double up in overcrowded campgrounds.
- Fall (September 16-October 31): allow for an increase in visitation within the existing ferry schedules and capacities, with only one ferry transporting passengers twice a week to and from the park after September 30. This would retain the fall as a low-use time, but still allow for some increase in visitation.

Campsite occupancy rates and/or frequency of parties doubling-up in campsites would be monitored and averaged on a weekly, or bi-weekly basis, with monitoring to include field surveys, analysis of backcountry permit data, and computer modeling.

B.2.2 Backcountry Permits

A mainland-based central permitting office would be established to improve trip planning services and proactively manage recreation in the park. Under this system, visitors would be required to get backcountry permits in advance of reaching the park. This would allow for better information for advanced trip planning, including how many parties were permitted for each campground, or how many boats were permitted for a dock on a given night. People could then plan their itineraries or the dates of their trips according to where there would be available space. However, some visitors may have to alter their travel plans to find dates or routes with available camping permits, and some people might not be able to get a permit for their campground of choice. Advanced permitting would also allow the park to manage the number of permits issued for compatibility with campsite availability and goals for reducing crowding in campgrounds.

Permits would continue to be issued as flexible itineraries for parties of 1-6 people who were camping, anchoring out, or spending a night at a dock. However, permits would no longer be issued over a campground's capacity, which would help to alleviate the problem of overcrowding. Campground capacities would be estimated based on advance itineraries. Permits would only be issued for reasonable itineraries, with a goal of minimizing a party's need to alter their itinerary mid-trip. Reasonable itineraries would be determined based on a party's experience level and the feasibility of a proposed itinerary. If campsites were not available at all of the campgrounds on a party's planned itinerary they would need to either change the dates of their trip or modify their itinerary. Flexible itineraries would continue to allow for changes due to weather, injuries, and other unforeseen circumstances, and therefore a low level of campsite sharing would be expected and tolerated.

For groups of 7-10 people permits would remain as site reservations with fixed itineraries. Designated group sites would continue to be reserved to full capacity, and groups would be limited to nightly reservation availability. Throughout much of the season these large groups would have no flexibility for changing their itineraries once they reach the park.

Boaters, who are generally limited in their travel to and from the park by weather and lake conditions, would have 2 permit options. One would offer more certainty of being able to use campsites or shelters during their trip, the other would offer more flexibility to plan a trip at the last minute based on weather conditions:

1. Go through the advanced permitting system to get a permit to be able to use shelters or campsites, (permits would be for available space, not a specific site in a campground, similar to the present system) following the same permitting process as all backpacking and paddling parties, with permits limited by campsite availability; or

2. If permits for shelters or campsites are no longer available, boaters may obtain a permit for dock space (if space remains) or for anchoring out, without the option of using a campsite or shelter. Based on boat lengths and campground dock lengths, the permitting system will allow

applicants to see ahead of time whether dock space is still available at full campgrounds, and can adjust their itinerary accordingly. If dock space is still available where all campsites have been booked at a campground, then a boater will be able to obtain a permit for dock space only. If dock space and campground space appear to be full when a boater is applying for a permit, that boater can still obtain an anchoring out permit, or alter his/her itinerary based on available dock space at a different campground. If the boater decides not to follow his/her itinerary upon arrival and instead goed to the full campground/dock, he/she will be obliged to anchor out or find a willing party from which to raft off, and may not use a shelter or campsite. A planned itinerary would still be required for emergency notification purposes, annual reporting, and monitoring. Permittees who are following an itinerary that was permitted in advance based on available camping/docking space (Option 1) will have precedence over parties who obtained a permit under Option 2.

For example, Party A obtains a permit for an itinerary showing campsite and dock space at Campground A one month prior to their arrival date of July 15. Party B obtains a permit for anchoring out on July 15 one day prior to their departure for Isle Royale on July 14, but they arrive at Campground A at 9:00 am on July 15, and dock their boat, since space is available. Party A arrives at 6:00 pm on July 15, and the dock is full. Since Party A's permit was issued in advance for a campsite and dock space, Party A would have priority for dock space to access the campground.

Permits would no longer be available on the island or through the US Forest Service Visitor Center in Grand Marais, MN. People would have to get their permit through the Backcountry Office prior to traveling to the island. Options for getting a permit would include using the Internet, in person at the Backcountry Office (in Houghton), by fax, or by phone to the Backcountry Office. The Rock Harbor and Windigo Visitor Centers would not issue permits or collect fees; they would be more focused on visitor information services (including important information about trail and campground conditions and resource issues), interpretation, and NHA sales and support.

Backcountry permits would be required for all parties camping, docking, or anchoring out in the wilderness or backcountry. This would include researchers, volunteers, educational groups, and park personnel, as well as general visitors. The goal would be to manage all permitting from one Backcountry Office with information and permits available via the internet, mail, or in person. This centralized system would better coordinate permitting and information dissemination as well as create an efficient means of distributing visitors to best utilize camping facilities while meeting the goals of recreation management.

B.2.3 Desired Future Conditions for Social Opportunities and Resources.

The goal of this alternative for social conditions is to reduce campground crowding and a need to double up in campsites, while also preserving a range of visitation levels throughout the visitor season. The NPS would continue to monitor indicators to identify deteriorating wilderness and backcountry conditions. Where conditions did not meet standards or monitoring indicates deteriorating conditions, managers would take action to improve conditions.

Specific goals for social conditions in campgrounds under this alternative would be:

- No more than 5% of camping parties would need to share campsites at any time. This would be averaged park-wide on a weekly, or bi-weekly basis, and based on availability of campsites.
- Current low visitation and visitor use patterns would be maintained in the spring (April 16-June 15)
- Camping parties would more efficiently be distributed to available campsites, thereby minimizing the need to limit total backcountry overnight visitation.

Trail encounters would be monitored to inform management of changes in use on specific trails, and the effects of altering use levels in campgrounds on trail use levels. Were increases in trail encounters to become a substantial concern, standards could be developed and applied in the future.

If social or resource conditions were to deteriorate in the future, managers would have the option of adjusting visitation levels or distribution, or modifying human activities in an area as necessary to slow or reverse deteriorating conditions. Conversely, where goals were being exceeded, visitation may appropriately be allowed to increase. Other mitigative measures, such as relocating campsites or trails, or limiting overbooking at docks, would be additional options for improving conditions.

B.2.4 Facilities and Services

To improve trip-planning services a mainland-based Backcountry Office would be established, with advanced permitting for visitors planning on camping, docking, or anchoring out in the park. This Backcountry Office would also provide trip planning information and services, including information on the use levels and campsite availability at specific campgrounds.

The Backcountry Office would also be designed to improve the effectiveness and efficiency of NPS operations. This would be accomplished by centralizing coordination of the permitting system, visitor statistics management, communication between divisions involved in backcountry management, and better coordination of recreation management in the park.

The NPS would implement GMP-approved changes in docks, campgrounds and trails, but otherwise maintain existing wilderness and backcountry infrastructure. Other than this no new campgrounds would be added. One additional campsite would be added at North Desor, which currently has three campsites compared to four at Little Todd, the other campground on the west end of the Minong Trail. Other than this existing campground capacities would not be expanded. The NPS would maintain the flexibility to make adjustments as necessary for resource protection. Such adjustments may include trail reroutes, temporary closures of trails or campgrounds, relocations of campsites, or site hardening.

Existing wilderness and backcountry services would continue, including staffing ranger stations; conducting backcountry and wilderness patrols; maintaining trails, campgrounds and docks; staffing visitor centers; and offering park information via phone, Internet, publications, and personal contacts.

B.2.5 Visitor Distribution Management and Solitude

Higher visitation levels mid-season would allow for greater public access to the park's wilderness and backcountry, while lower visitation in the Spring and Fall would allow for opportunities for greater solitude, privacy, self-sufficiency and personal challenge. Spring visitation would be managed to not increase over historic levels, with a goal of protecting wildlife and resources when they are most vulnerable to recreation impacts. Fall visitation could increase within the bounds of existing ferry schedules and capacities. The centralized permitting system and Backcountry Office would be designed to manage recreation with these goals in mind.

B.2.6 Appropriate Management Actions

Certain management actions would be appropriate to meet the goals of this alternative. If impacts to resources or social conditions were greater than expected, managers would combine mitigation actions that modify and protect resources with mitigation actions that alter visitor behavior, visitor distribution, or numbers.

Acceptable management actions to accomplish the goals of this alternative would include:

- A mainland-based central permitting office would be established with an advanced permitting system to better distribute campers throughout the visitor season and between campgrounds before they reach the park. This would also offer better information to the public for trip planning.
- The NPS would explore various options for funding the Backcountry Office. Options include applying for NPS special project funding and/or instituting a non-refundable permitting fee.
- Permits may be issued below maximum campground capacities as necessary to achieve visitation goals of maintaining lower visitation in spring, and accepting not more than 5% of parties doubling-up in campgrounds. For example, if permitting to 100% of the park's camping capacity and retaining flexible itineraries resulted in more than 5% of parties doubling up in campsites, then the NPS would have the option of issuing permits below the park's full camping capacity. This would mean fewer permits would be issued, limiting access to camping in the park.
- For deteriorating biophysical conditions in campgrounds, actions could include modifying site design, restoring and replanting site borders to shrink the impacted area, temporarily closing sites for restoration, or permanently closing and relocating sites. Where overcrowding contributed to deteriorating conditions, modifying use levels in a campground may also be appropriate for improving biophysical conditions. Campsites meeting the established standard may be reduced in size to meet other resource or visitor experience objectives.
- For increasing impacts to natural and cultural resources the NPS would continue to increase visitor education about how to minimize recreation impacts on these resources. Where necessary and feasible, the NPS may also reroute trails or relocate campsites to better direct recreation away from sensitive areas. If these efforts were inadequate, voluntary and mandatory area closures could be implemented as protective buffers around sensitive resources. Closures could be temporary, for a limited portion of the season, or permanent, as deemed necessary to protect sensitive resources and abide by

legal mandates such as the Endangered Species Act and the National Historic Preservation Act.

- Monitoring of social and resource conditions would continue and could expand as needed to better understand human impacts and the effectiveness of management actions to curtail adverse impacts. Areas of particular importance for monitoring include interactions between humans and sensitive wildlife species (e.g. loons, wolves, eagles and osprey), changing conditions of the park's cultural resources, and social conditions in campgrounds and along trails.

Alternative C for Managing Overnight Use: Accommodate Current or Increasing Use Levels

C.1 General Description

The National Park Service would maintain fairly high access to Isle Royale's wilderness and backcountry, striving to accommodate current and increasing public interest in backcountry and wilderness trips. Establishing a mainland-based Backcountry Office with advanced permitting would improve information and services available to visitors for trip planning and improve visitor distribution to maintain quality opportunities and reduce adverse impacts from recreation. Visitation could further be accommodated and crowding reduced through the creation of a shuttle service in the Rock Harbor Channel, minor expansions of a few campgrounds, and the option to create a limited number of new campgrounds. Options to add new shelters adjacent to the Windigo dock would be explored.

C.2 Management Goals and Actions

The goal of this alternative is to maintain flexibility for visitors' travel plans, decrease the frequency of campsite sharing in overfull campgrounds to a more moderate level, and better accommodate current and increasing visitation through additional development of campgrounds. This alternative would allow for a slight increase in resource impacts associated with campground development, but significant irreversible or irretrievable impacts to resources would not be acceptable.

C.2.1 Visitor Use Levels

This alternative allows a higher tolerance for campsite sharing during peak season, and a lower tolerance off-peak, to provide a range of opportunities for both access and solitude. The number of permits issued per campground would be managed to not exceed campground capacities and meet goals for social and resource conditions as well as maximizing access to the wilderness and backcountry. The availability of permits may eventually limit access to the wilderness and backcountry for specific campgrounds or on specific dates. Visitor use levels would be controlled to the extent necessary to meet goals for social conditions in campgrounds;

- Spring (April 16-June 15): no more than 5% of parties would have to double up in campsites in full campgrounds. Spring visitation could increase over current levels.
- Summer (June 16- Sept 15): no more than 10% of parties would have to share campsites during the peak two weeks in visitation (between mid-July and mid-August), and no more than 5% of parties would need to share sites the rest of the time. This would require a reduction in campground crowding during the peak two weeks of the visitor season.

- Fall (September 16-October 31): no more than 5% of parties would have to double up in campsites in full campgrounds. Fall visitation could increase over current levels.

Campsite occupancy rates and/or frequency of parties doubling-up in campsites would be monitored and averaged on a weekly, or bi-weekly basis, with monitoring to include field surveys, analysis of backcountry permit data, and computer modeling.

C.2.2 Backcountry Permits

Camping permits would be managed to increase the efficient use of campsites throughout the park with moderate to high public access while also decreasing over-crowding in campgrounds. A central permitting station would be established, as outlined in Alternative B, section B.2.2., with all permits being issued in advance, before visitors reach the park. Permits would be issued up to, but not exceeding the capacity of a campground. This would not be a site reservation system for small parties of 1-6; these parties would be free to alter their itineraries mid-trip. However, the NPS would no longer permit campgrounds over their capacities. Some visitors may have to modify their travel plans to find available camping permits.

For groups of 7-10 people permits would remain as site reservations with fixed itineraries. Group sites would continue to be reserved to full capacity, and groups would be limited to nightly reservation availability. Throughout much of the season these large groups would have no flexibility for changing their itineraries once they reach the park.

Boating parties would be required to obtain advance permits for docking, anchoring out, and to use campsites or shelters, as in Alternative B. Last-minute permits (within 48 hours of the trip) for docking at full campgrounds would not be available under this alternative, but rafting off would not be restricted among willing boaters with valid backcountry permits.

Backcountry permits would be required for all parties camping, docking, or anchoring out in the wilderness or backcountry, regardless of the purpose of the trip. This would include researchers, volunteers, educational groups, and park personnel, as well as general visitors. The goal would be to manage all permitting from one Backcountry Office with information and permits available via the Internet, mail, or in person. Permits would no longer be issued on the island, aboard the *Ranger III*, or in Grand Marais. This centralized system would better coordinate permitting and information dissemination as well as create an efficient means of distributing visitors to best utilize camping facilities while meeting the goals of recreation management.

C.2.3 Desired Future Conditions for Social Opportunities and Resources

The NPS would continue to monitor indicators to identify deteriorating wilderness and backcountry conditions. Where conditions do not meet standards or monitoring indicates deteriorating conditions, managers would take action to improve conditions.

Specific goals for social conditions in campgrounds under this alternative would be:

- No more than 5% of camping parties would need to share campsites at any time outside of the two-week peak in visitation. This would be averaged park-wide on a weekly, or bi-weekly basis, and based on availability of campsites.
- No more than 10% of camping parties would need to share campsites during the two-week peak in visitation.
- Camping parties would more efficiently be distributed to available campsites, thereby minimizing the need to limit total backcountry overnight visitation.
- Trip planning and visitor information services would be improved

Trail encounters would be monitored to inform management of changes in use on specific trails, and the effects of altering use levels in campgrounds on trail use levels. Were increases in trail encounters to become a substantial concern, standards could be developed and applied in the future.

A minor level of impacts to wildlife, vegetation, and shoreline habitats would be tolerated as necessary to expand existing campgrounds and create up to three new campgrounds in the park, beyond those proposed in the GMP. Protecting rare species and their habitats would be a priority in identifying suitable sites for these expansions. Wildlife and rare plant populations would continue to be monitored to indicate changing conditions and inform relevant management decisions.

If social or resource conditions were to deteriorate in the future, managers would have the option of adjusting visitation levels or distribution, or modifying human activities in an area as necessary to slow or reverse deteriorating conditions. Conversely, where goals are being exceeded, visitation may appropriately be allowed to increase. Other mitigation measures, such as relocating campsites or trails would be additional options for improving conditions.

C.2.4 Facilities and Services

A mainland-based Backcountry Office would be established to provide advanced permitting for visitors planning on camping, docking, or anchoring out in the park. This Backcountry Office would also provide trip planning information and services, including information on the use levels and campsite availability at specific campgrounds.

The Backcountry Office would also be designed to improve the effectiveness and efficiency of NPS operations. This would be accomplished by centralizing coordination of the permitting system, visitor statistics management, communication between divisions involved in backcountry management, and better coordination of recreation management in the park.

A new shuttle service would be created to further improve visitor distribution. This shuttle could run between Rock Harbor, Mott Island, and Daisy Farm, with a schedule coordinated with ferry arrivals and departures. This would aid in alleviating congestion along the Rock Harbor Channel, which is exacerbated by hikers and paddlers being funneled through the limited trails and campgrounds as they arrive and depart from Rock Harbor. This service could be operated by any one of the following: through concessions via a contract amendment, the NPS, or under a CUA.

Isle Royale managers would explore options to add a few new shelters adjacent to the Windigo Dock to better accommodate boating parties docked there for the night.

If better management of visitor distribution failed to adequately reduce the frequency of parties needing to share campsites, additional campsites could be added to the most heavily over-used campgrounds. New sites would be located where resources and physical conditions allow for quality campsites, with consideration for resource impacts as well as aesthetics of the site. New sites may be designated as communal "overflow" tenting areas to minimize the number of site additions needed.

Where site additions are not feasible to accommodate use levels a limited number of new small campgrounds may be created. Suitable options for these new campgrounds would consider the best location within higher use areas and the limitations of sensitive resources in the park. Preliminary scouting for feasible sites identified three possibilities: paddler campgrounds on Chickenbone Lake and on the northeast end of West Caribou Island, and hiker sites on the southeast end of Tobin Harbor (Appendix D, Map 4).

Existing wilderness and backcountry services would continue, including staffing ranger stations; conducting backcountry and wilderness patrols; maintaining trails, campgrounds and docks; staffing visitor centers; and offering park information via phone, Internet, publications, and personal contacts.

C.2.5 Visitor Distribution Management and Solitude

The creation of a centralized permitting system would improve visitor distribution throughout the season and across the park to better maintain use levels within campground capacities. This improved distribution would minimize the crowding associated with parties needing to share campsites, and increase the opportunities for solitude, privacy and tranquility in campgrounds. The centralized permitting system and Backcountry Office would be designed to manage recreation with these goals in mind. Adding new campsites within existing campgrounds would be intended to further improve opportunities for solitude and privacy while camping. A shuttle service in the Rock Harbor Channel would be intended to further improve visitor distribution, making the interior of the park more accessible to visitors and easing the bottleneck of campers traveling to and from Rock Harbor as they arrive and depart on ferries.

C.2.6 Appropriate Management Actions

Certain management actions would be appropriate to meet the goals of this alternative. If impacts to resources or social conditions were greater than expected, managers would combine mitigation actions that modify and protect resources with mitigation actions that alter visitor behavior, visitor distribution, or numbers.

Acceptable management actions would include:

- A mainland-based central permitting office would be established with a system of advanced permitting to better distribute campers throughout the season and between

campgrounds before they reach the park. This would also offer better information to the public for trip planning.

- The NPS would explore various options for funding the Backcountry Office. Options include applying for NPS special project funding and/or instituting a non-refundable permitting fee.
- Permits may be issued below maximum campground capacities as necessary to achieve goals of no more than 10% of parties sharing during the peak, and no more than 5% the rest of the season. For example, if permitting to 100% of the park's camping capacity and retaining flexible itineraries resulted in more than 5% of parties doubling up in campsites, then the NPS would have the option of issuing permits below the park's full camping capacity (i.e., fewer visitor permits would be issued.)
- A shuttle service could be introduced for travel between Rock Harbor, Mott Island, and Daisy Farm.
- 2-3 new shelters could be added adjacent to the Windigo dock
- For deteriorating social conditions such as campground crowding, management actions could include adding additional communal or individual campsites or adjusting the number of permits issued per campground.
- For deteriorating biophysical conditions in campgrounds, actions could include modifying site design, restoring and replanting site borders to shrink the impacted area, temporarily closing sites for restoration, or permanently closing and relocating sites. Where overcrowding contributed to deteriorating conditions, modifying use levels in a campground may also be appropriate for improving biophysical conditions. Campsites meeting the established standard may be reduced in size to meet other resource or visitor experience objectives.
- For increasing impacts to natural and cultural resources the NPS would continue to increase visitor education about how to minimize recreation impacts to these resources. Where necessary and feasible, the NPS may also reroute trails or relocate campsites to better direct recreation away from sensitive areas. If these efforts were inadequate, voluntary and mandatory area closures could be implemented as protective buffers around sensitive resources. Closures could be temporary, for a limited portion of the season, or permanent, as deemed necessary to protect sensitive resources and abide by legal mandates such as the Endangered Species Act and the National Historic Preservation Act.
- Monitoring of social and resource conditions would continue and could expand as needed to better understand human impacts and the effectiveness of management actions to curtail adverse impacts. Areas of particular importance for monitoring include interactions between humans and sensitive wildlife species (e.g. loons, wolves, eagles and osprey), changing conditions of the park's cultural resources, and social conditions in campgrounds and along trails.

Alternative D for Managing Overnight Use: Entry Quotas

D.1 General Description

The NPS would establish entry point quotas consistent with the park's carrying capacity, with a goal of decreasing the frequency of campsite sharing in July and August while accepting an increase in visitation during the rest of the season. Access to the park may be limited or reduced during the peak visitor season, but freedom of flexible travel within the park with low frequency of over-crowding in campgrounds would be a priority. Campsite or shelter reservations would be available at a few campgrounds for people desiring an assurance that they will be able to find camping space at their preferred campground.

D.2 Management Goals and Actions

The goal of this alternative is to provide quality camping experiences in Isle Royale's wilderness and backcountry by reducing campground crowding, minimizing recreation impacts to resources, and simplifying permitting and trip planning requirements.

D.2.1 Visitor Use Levels

This alternative would aim to reduce crowding in campgrounds during July and August. Visitation would be managed through entry quotas established for the number of camping parties traveling to the park on ferries. These entry quotas could limit access to the wilderness and backcountry on the busiest dates and entry points. Quotas would be established based on achieving goals for social conditions in campgrounds:

- Spring (April 16-June 15): no more than 5% of parties would have to double up in campsites in full campgrounds. Spring visitation could increase over current levels.
- Summer (June 16- Sept 15): no more than 5% of parties would have to share campsites in full campgrounds. This would require a reduction in campground crowding compared to current conditions.
- Fall (September 16-October 31): no more than 5% of parties would have to double up in campsites in full campgrounds. Fall visitation could increase over current levels.

Campsite occupancy rates and/or frequency of parties doubling-up in campsites would be monitored and averaged on a weekly, or bi-weekly basis, with monitoring to include field surveys, analysis of backcountry permit data, and computer modeling.

D.2.2 Backcountry Permits

Visitor distribution around the park and through the season would be improved using the park's existing visitor service capabilities. Camping permits would continue to be issued to all visitors who reach the park at the start of their trip. However, entry point quotas would be established to better meet the park's campground capacities. The quotas would set average daily limits to the number of camping parties entering the park, which would be managed through the ferries. Use levels for powerboaters and sailors would be monitored to determine a future need for entry quotas for these groups. With low current use levels for these visitors, boaters and sailors would not initially be included in the quota system. Although there may be a limit or reduction in the

number of camping parties traveling on the ferries during part of the season, there would be no quota for day visitors or lodge guests.

The group reservation system would remain for groups of 7-10 people. These permits would be site reservations with fixed itineraries. Group sites would continue to be reserved to full capacity, and groups would be limited to nightly reservation availability. Throughout much of the season these large groups would have no flexibility for changing their itineraries once they reach the park.

Backcountry permits would continue to be required for all parties camping, docking, or anchoring out in the wilderness or backcountry. These would be issued from several visitor centers in the park and on the mainland, and all parties would be required to register for a permit either prior to or upon reaching the park. All visitors who reach the park would receive a camping permit and there would be no limit to the number of permits issued per campground. As in Alternatives A-C, rafting off at full docks by willing boaters with valid backcountry permits would not be restricted. However, efforts to improve communication between the permitting stations would offer better information about daily use levels at each campground, aiding visitors in planning their itineraries.

Campsite reservations (and dock space associated with reserved campsite) would be available on a limited basis for part of the visitor season. The intention would be to offer the option of reservations for people seeking assurances that a campsite (and dock space, where applicable) will be available. Smaller campgrounds would be most appropriate for this option, such as Tookers Island, Merritt Lane, Grace Island, Little Todd, and North Desor. Cultural sites may also be appropriate, such as the new GMP-approved campgrounds at Fishermans Home and Crystal Cove.

D.2.3 Desired Future Conditions for Social Opportunities and Resources

The NPS would continue to monitor indicators to identify deteriorating wilderness and backcountry conditions. Where conditions do not meet standards or monitoring indicates deteriorating conditions, managers would take action to improve conditions.

Specific goals for social conditions in campgrounds under this alternative would be:

- No more than 5% of camping parties would need to share campsites at any time. This would be averaged park-wide on a weekly, or bi-weekly basis, and based on availability of campsites.
- The current system of permitting upon arrival to the park would continue, so visitors would not be required to adapt to a new permitting system.

Trail encounters would be monitored to inform management of changes in use on specific trails, and the effects of altering use levels in campgrounds on trail use levels. Were increases in trail encounters to become a substantial concern, standards could be developed and applied in the future.

D.2.4 Facilities and Services

One additional tent site would be added at North Desor campground, increasing its capacity to 4 parties for consistency with Little Todd campground.

Existing wilderness and backcountry services would continue, including staffing ranger stations; conducting backcountry and wilderness patrols; maintaining trails, campgrounds and docks; staffing visitor centers; and offering park information via phone, Internet, publications, and personal contacts.

D.2.5 Visitor Distribution Management and Solitude

The establishment of entry quotas would improve visitor distribution and social conditions throughout the season and across the park. This would minimize the crowding associated with parties needing to share campsites, and increase the opportunities for solitude, privacy and tranquility in campgrounds. Reducing overcrowding in campgrounds would also reduce trail encounters during the high use portion of the visitor season, similarly improving social conditions while traveling in the wilderness and backcountry.

D.2.6 Appropriate Management Actions

Certain management actions would be appropriate to meet the goals of this alternative. If impacts to resources or social conditions were greater than expected, managers would combine mitigation actions that modify and protect resources with mitigation actions that alter visitor behavior, visitor distribution, or numbers.

Acceptable management actions would include:

- A limit on the average number of permits issued to camping parties each day consistent with camping capacities in the vicinity of each entry point (i.e. an entry quota).
- Campsite and/or dock reservations could be instituted for a limited number of campgrounds for people desiring an assurance of an available campsite/dock space. Smaller campgrounds such as Grace Island, Tookers Island, Merritt Lane, North Desor and Little Todd would be appropriate choices.
- For deteriorating social conditions such as trail or campground crowding, management actions could include establishing and modifying entry point quotas for camping parties on ferries and the seaplane, and as a future need arose establishing quotas for boaters and sailors who would not be included in ferry-based quotas. Entry quotas would likely result in fewer permits being issued to the busiest entry points during peak periods.
- For deteriorating biophysical conditions in campgrounds, actions could include modifying site design, restoring and replanting site borders to shrink the impacted area, temporarily closing sites for restoration, or permanently closing and relocating sites. Where overcrowding contributed to deteriorating conditions, modifying use levels in a campground may also be appropriate for improving biophysical conditions. Campsites meeting the established standard may be reduced in size to meet other resource or visitor experience objectives.
- For increasing impacts to natural and cultural resources the NPS would continue to increase visitor education about how to minimize recreation impacts on these resources. Where necessary and feasible, the NPS may also reroute trails or relocate campsites to better direct recreation away from sensitive areas. If these efforts were inadequate,

voluntary and mandatory area closures could be implemented as protective buffers around sensitive resources. Closures could be temporary, for a limited portion of the season, or permanent, as deemed necessary to protect sensitive resources and abide by legal mandates such as the Endangered Species Act and the National Historic Preservation Act.

- Monitoring of social and resource conditions would continue and could expand as needed to better understand human impacts and the effectiveness of management actions to curtail adverse impacts. Areas of particular importance for monitoring include interactions between humans and sensitive wildlife species (e.g. loons, wolves, eagles and osprey), changing conditions of the park's cultural resources, and social conditions in campgrounds and along trails.

Alternative E for Managing Overnight Use: Maximize Resource Protection

E.1 General Description

Resource protection would be the ultimate priority in managing use levels and distribution throughout the visitor season and in planning and maintaining recreation and administrative facilities. The NPS would improve social conditions and opportunities for solitude in July and August by minimizing trail encounters and the need to share campsites, while also maintaining the freedoms associated with flexible itinerary permits. The creation of a central permitting system would improve the information available to the public about use levels in specific campgrounds on specific dates, aiding in trip planning and better distributing visitors to minimize overcrowding. Issuing permits below campground capacities would aid in maximizing opportunities for solitude throughout the park.

E.2 Management Goals and Actions

The goal of this alternative is to prioritize resource protection and greater opportunities for solitude, by reducing crowding and managing visitation levels to be consistent with the park's campsite capacities, and maintaining a wide range of visitation levels throughout the visitor season.

E.2.1 Visitor Use Levels

Historic patterns of low visitation times in the spring and fall would be maintained to protect natural resources during vulnerable times and maintain opportunities for the highest quality wilderness experiences on Isle Royale. The number of permits issued per campground would be managed to not exceed campground capacities and meet goals for social and resource conditions; in the spring and fall permits would be issued well below campground capacities. The availability of permits would likely limit access to the wilderness and backcountry for specific campgrounds on specific dates. Visitor use levels would be controlled to the extent necessary to meet goals for social conditions in campgrounds;

- Spring (April 16-June 15): no more than 1% of parties would have to double up in campsites in full campgrounds. Additionally, historic use levels would be maintained by issuing permits up to, but not exceeding, 20% of the park's camping capacity (see Table 18.) Spring visitation would not increase over current levels.

- Summer (June 16- Sept 15): no more than 5% of parties would have to share campsites in overfull campgrounds during the two week peak in visitation (between mid-July and mid-August), and no more than 1% of parties would share campsites the rest of the season. This would require a reduction in campground crowding from July through August.
- Fall (September 16-October 31): no more than 1% of parties would have to double up in campsites in full campgrounds. Additionally, historic use levels in the fall would be maintained by issuing permits up to, but not exceeding, 10 % of the park's camping capacity (see Table 18.) Fall visitation would not increase over current levels.

Campsite occupancy rates and/or frequency of parties doubling-up in campsites would be monitored and averaged on a weekly, or bi-weekly basis, with monitoring to include field surveys, analysis of backcountry permit data, and computer modeling.

E.2.2 Backcountry Permits

Backcountry permits would be required to be obtained prior to arriving at the park, for camping, docking, and anchoring out. Camping permits would be managed to minimize over-crowding in campgrounds, thereby maximizing opportunities for solitude and minimizing detrimental recreation impacts in and around campgrounds. A central permitting station would be established with up-to-date information about use levels at each campground, as outlined in greater detail in Alternative B, Section B.2.6. All permits would be issued in advance, before visitors reached the park. As with Alternatives B and C, boaters would be required to log a planned itinerary for emergency and annual park reporting purposes, but they could alter their itinerary, and rafting off at full docks would not be restricted among willing boaters with valid backcountry permits. Permits may be issued below a campground's capacity as necessary to meet goals for minimizing campsite sharing. As this would not be a site reservation system parties would be free to alter their camping itineraries mid-trip. Some visitors may have to alter their travel plans to find dates with available camping permits.

The group reservation system would remain for groups of 7-10 people. These permits would be site reservations with fixed itineraries. To allow for some level of flexibility for groups once they reach the park, group sites would be reserved below full capacity. Some large groups may have to alter their travel plans to find available reservations.

The goal would be to manage all permitting from one Backcountry Office with information and permits available via the Internet, mail, or in person. This centralized system would better coordinate permitting and information dissemination as well as create an efficient means of distributing visitors to best utilize camping facilities while meeting the goals of recreation management. Backcountry permits would be required for all parties camping, docking, or anchoring out in the wilderness or backcountry.

E.2.3 Desired Future Conditions for Social Opportunities and Resources

The NPS would continue to monitor indicators to identify changing wilderness and backcountry conditions. Where conditions do not meet standards or monitoring indicates deteriorating conditions, managers would take action to improve conditions.

Specific goals for social conditions in campgrounds under this alternative would be:

- No more than 5% of camping parties would need to share campsites during the two-week peak in visitation. This would be averaged park-wide on a weekly, or bi-weekly basis, and based on availability of campsites, and require a reduction from the current levels of sharing in July and August.
- No more than 1% of camping parties would need to share campsites all season outside of the two-week peak in visitation.
- Spring and fall would remain as low use times with greater opportunities for solitude, risk, and challenge than during the summer months.
- Camping parties would more efficiently be distributed to available campsites, thereby minimizing the extent that total wilderness and backcountry overnight visitation would be reduced.
- Trip planning and visitor information services would be improved.

Trail encounters would be monitored to inform management of changes in use on specific trails, and the effects of altering use levels in campgrounds on trail use levels. If increases in trail encounters became a substantial concern, standards could be developed and applied in the future.

E.2.4 Facilities and Services

A mainland-based Backcountry Office would be established to provide advanced permitting for visitors planning on camping, docking, or anchoring out in the park. This Backcountry Office would also provide trip planning information and services, including information on the use levels and campsite availability at specific campgrounds.

The Backcountry Office would also be designed to improve the effectiveness and efficiency of NPS operations. This would be accomplished by centralizing coordination of the permitting system, visitor statistics management, communication between divisions involved in backcountry management, and better coordination of recreation management in the park.

To minimize the impacts of development in the wilderness and backcountry no new campsites would be constructed except if designated sites were lost to natural processes or existing designated campsites needed to be relocated. Such replacement campsites would only be approved for designation if they were necessary for protection of resources or the visitors' wilderness experience. There would be no net gain in the number of designated campsites, maintaining a total of not more than 244 sites plus those added with the GMP-approved new campgrounds.

One campsite would be removed from Little Todd campground, reducing its capacity to 3 for consistency with North Desor campground along the primitive portion of the Minong Trail.

Existing wilderness and backcountry services would continue, including staffing ranger stations; conducting backcountry and wilderness patrols; maintaining trails, campgrounds and docks; staffing visitor centers; and offering park information via phone, Internet, publications, and personal contacts.

E.2.5 Visitor Distribution Management and Solitude

Visitor distribution and associated wilderness conditions would be improved throughout the season and across the park. This would be accomplished through the creation of a centralized permitting system combined with issuing permits below the full capacity of campgrounds. This would allow for continued flexibility in camping itineraries while also minimizing the crowding associated with parties needing to share campsites, and increasing the opportunities for solitude, privacy and tranquility in campgrounds. Reducing overcrowding in campgrounds could also reduce trail encounters during the high use portion of the visitor season, similarly improving social conditions while traveling in the wilderness and backcountry. The centralized permitting system and Backcountry Office would be designed to manage recreation with these goals in mind.

E.2.6 Appropriate Management Actions

Certain management actions would be appropriate to meet the goals of this alternative. If impacts to resources or social conditions were greater than expected, managers would combine management actions that modify and protect resources with mitigation actions that alter visitor behavior, visitor distribution, or numbers.

Acceptable management actions would include:

- A mainland-based central permitting office would be established with a system of advanced permitting to better distribute campers throughout the season and between campgrounds before they reach the park. This would also offer better information to the public for trip planning.
- The NPS would explore various options for funding the Backcountry Office. Options include applying for NPS special project funding and/or instituting a non-refundable permitting fee.
- Permits may be issued below maximum campground capacities as necessary to achieve visitation goals of maintaining lower visitation in spring and fall, and accepting not more than 5% of parties doubling-up in campgrounds in July and August. For example, if permitting to 100% of the park's camping capacity and retaining flexible itineraries resulted in more than 5% of parties doubling up in campsites, then the NPS would have the option of issuing permits below the park's full camping capacity.
- For deteriorating social conditions such as trail or campground crowding, management actions would include modifying distribution of visitors around the park and throughout the season. Additionally, the number of permits issued per campground may be modified, as well as the number of campsites in specific campgrounds while maintaining no net increase in the number of campsites park-wide.
- For deteriorating biophysical conditions in campgrounds, actions could include modifying site design, restoring and replanting site borders to shrink the impacted area, temporarily closing sites for restoration, permanently closing and relocating sites. Where overcrowding contributed to deteriorating conditions, modifying use levels in a campground may also be appropriate for improving biophysical conditions. Campsites meeting the established standard may be reduced in size to meet other resource or visitor experience objectives.
- For increasing impacts to natural and cultural resources the NPS would continue to increase visitor education about how to minimize recreation impacts on these resources.

Where necessary and feasible, the NPS may also reroute trails or relocate campsites to better direct recreation away from sensitive areas. If these efforts were inadequate, voluntary and mandatory area closures could be implemented as protective buffers around sensitive resources. Closures could be temporary, for a limited portion of the season, or permanent, as deemed necessary to protect sensitive resources and abide by legal mandates such as the Endangered Species Act and the National Historic Preservation Act.

- Monitoring of social and resource conditions would continue and could expand as needed to better understand human impacts and the effectiveness of management actions to curtail adverse impacts. Areas of particular importance for monitoring include interactions between humans and sensitive wildlife species (e.g. loons, wolves, eagles and osprey), changing conditions of the park's cultural resources, and social conditions in campgrounds and along trails.

Alternative Considered but Rejected: Establish a Night-by-Night Reservation System for All Wilderness and Backcountry Visitors

Establishing a night-by-night camping reservation system with fixed itineraries for backcountry permits could virtually eliminate campground overcrowding and the need for parties to double up in campsites while also accommodating current or increased visitation to the park. However, this would come at the cost of flexibility and spontaneity for visitors once they reach the park. Backcountry visitors in parties smaller than 7 people would no longer have the opportunity to modify their travel plans based on weather, preference for campgrounds, or any other reason once they have begun their backcountry trip. This system would also come with an increased cost of enforcement to ensure that overcrowding was effectively eliminated.

Night-by-night reservations for all parties could be feasible, with a switch to issuing permits and campground reservations in advance of visitors reaching the park. However, visitor surveys and other public input indicate that the costs to visitors would outweigh the benefits, and this alternative would not be adequately acceptable to the public. The results of visitor surveys in 2002 suggest that prescribed, fixed itineraries are particularly unfavorable to Isle Royale visitors, despite the fact that such a system would be designed to eliminate campsite sharing (Lawson and Manning 2003). Additionally, public responses to newsletters indicated a strong opposition to night-by-night reservations, with greater support for alternative management actions. Considering the lack of public support and the requirements for enforcing a night-by-night camping reservation system for all backcountry visitors, the costs of this alternative were determined to outweigh the benefits and it was eliminated from further analysis.

Table 4: Comparison of Alternatives for Overnight Use in the Wilderness and Backcountry

	Alternative A: No Action	**Alternative B (Preferred)**	**Alternative C**	**Alternative D**	**Alternative E**
Desired Future Conditions	The NPS would maintain the current management direction, including continuing implementation of the GMP.	Provide a range of quality opportunities for wilderness and backcountry experiences while also minimizing limits on public access to the park, reducing adverse impacts to natural and cultural resources, minimizing concerns for human safety, and improving trip planning services.	Maintain flexibility for visitors' travel plans, decrease the frequency of campsite sharing in overfull campgrounds, better accommodate current and increasing visitation, and allow for minimal acceptance of increased resource impacts associated with additional campsites.	Provide quality camping experiences by reducing campsite sharing during the peak season, minimizing resource impacts, and simplifying permitting and trip planning requirements. Manage backcountry visitation with an entry quota system.	Prioritize resource protection and greater opportunities for solitude by reducing campground crowding, managing visitation levels to be consistent with campground capacities, and maintaining a range of visitation levels from low to moderate throughout the visitor season.
Management Actions:					
Permitting (note: in all cases the group reservation system would apply to parties with 7-10 people. Changes apply only to small parties.)	• Existing permitting services would continue, with multiple permitting stations, and permits issued upon arrival at the park. • Permits would not be limited by campsite availability	• Create a mainland-based central permitting system • Issue flexible-itinerary permits to parties before they reach the island. • Issue permits at or below campground capacities as necessary to minimize campground crowding	• Create a mainland-based central permitting system • Issue flexible-itinerary permits to visitors before they reach the island. • Issue permits up to, but not exceeding campground capacities.	• Maintain current island-based permitting system • No limit on number of permits issued to each campground • Offer site reservations at a limited number of campgrounds during part of the visitor season	• Create a mainland-based central permitting system • Issue flexible-itinerary permits to visitors before they reach the island. • Issue permits below campground capacities to maximize opportunities for solitude and privacy.
Visitor Use Levels	The NPS would not actively manage visitor use levels, other than maintaining existing ferry capacities and schedules. Visitation could increase throughout the visitor season.	Backcountry overnight visitation may be limited on some dates in some campgrounds by campground capacities, especially in July and August. Visitation in Fall could increase significantly. Visitors may not be able to get a permit for their preferred itinerary on their preferred dates.	Backcountry overnight visitation may be limited on some dates in some campgrounds by campground capacities. Visitation in the Spring and Fall could increase significantly. Visitors may not be able to get a permit for their preferred itinerary on their preferred dates.	Entry quotas may limit backcountry camping in July and August. Average daily quotas would be based on campground capacities. Visitation in Spring and Fall could increase significantly. Unless boaters increased significantly, quotas would apply only to campers traveling to the park by ferry, not by private boat.	During parts of July and August limited permits may reduce visitation to the park's backcountry. Visitation in Spring and Fall would be maintained at low levels. Visitors may not be able to get a permit for their preferred itinerary on their preferred dates.

	Alternative A: No Action	Alternative B (Preferred)	Alternative C	Alternative D	Alternative E
Management Actions:					
Social Indicators and Standards	• The NPS would continue to monitor social conditions, focusing on visitor education and facility design to address deteriorating conditions. • Visitation numbers would not be actively managed other than maintaining current ferry and seaplane capacities and schedules.	• No more than 5% of parties sharing campsites 6/16-9/15. • No increase in visitation in the spring (5/1-6/15). • Allow increase in visitation in fall (9/16-10/31), within current ferry schedule.	• No more than 10% of parties sharing campsites in overfull campgrounds during the 2-week peak in visitation, • No more than 5% of parties sharing campsites the rest of the season. • Allow increase in spring & fall	• No more than 5% of parties sharing campsites at any point in the season. • Allow increase in visitation in spring and fall	• No more than 5% of parties sharing campsites during the 2-week peek in visitation, • No more than 1% of parties sharing campsites the rest of the season. • Maintain low use in spring and fall.
Facilities and Services	• Existing visitor centers, permitting stations, campgrounds and trails would be maintained as the status quo. • Implementation of the GMP would continue, with addition of the GMP-approved new campgrounds.	• Create a mainland-based Backcountry Office to coordinate advanced permitting and trip planning information • Add one additional campsite at North Desor campground, expanding its capacity to 4.	• Create a mainland-based Backcountry Office to coordinate advanced permitting and trip planning information • Allow for the addition of new campsites or campgrounds as needed to accommodate backcountry visitation. • Add 2-3 new shelters in the vicinity of the Windigo Dock. • Institute a new shuttle service within the Rock Harbor Channel.	• Add one additional campsite at North Desor campground. • Offer a limited number of campgrounds with campsite or shelter reservations.	• Create a mainland-based Backcountry Office to coordinate advanced permitting and trip planning information • Remove one tent site from Little Todd campground, reducing its capacity to 3.
Visitor Distribution	The NPS would not actively manage visitor distribution between campgrounds. Permitting stations would not have information about campsite availability or be able to distribute campers away from overcrowded campgrounds.	Issuing permits in advance of visitors reaching the park, and not permitting over a campground's capacity would improve visitor distribution and minimize seasonal crowding and overcrowding in campgrounds.	Issuing permits in advance of visitors reaching the park, and not permitting over a campground's capacity would improve visitor distribution and minimize seasonal crowding and overcrowding in campgrounds.	Camping quotas established for each of the park's entry points would improve visitor distribution, thereby minimizing campground crowding.	Issuing permits in advance of visitors reaching the park , and not permitting over a campground's capacity would improve visitor distribution and minimize seasonal crowding and overcrowding in campgrounds.

	Alternative A: No Action	Alternative B (Preferred)	Alternative C	Alternative D	Alternative E
Projected Visitation Implications	• There would be no limits on future increases in visitation other than the availability of ferry tickets. • Ferry schedules would keep spring and fall as lower use times, but visitation could increase all season.	• Up to 100% camping capacity, limited based on space availability and route feasibility at time of permitting. • Expected to accommodate minor increases in visitation in summer and moderate increases in fall. Visitation could decrease during peak times. • Maintain backcountry visitation in spring at approximately 20% camping capacity.	• Up to 100% campsite capacity. • Current and moderate increased visitation could be accommodated in summer. • Moderate to major increases in visitation could be accommodated in spring and fall.	• Estimated that issuing 37 camping permits per day would reduce sharing to not more than 5%. • The above could reduce camping visitation by about 5% in July and August, but allow for a substantial increase the rest of the season.	• Up to 100% camping capacity, limited based on space availability and route feasibility at time of permitting. • Maintain backcountry visitation at approximately 20% of camping capacity in spring and 10% capacity in fall. • The ability to accommodate increased visitation would be most limited, compared to other alternatives.

2.4.2 Alternatives for Managing Day Use in the Wilderness and Backcountry

Day visitors to Isle Royale's Wilderness and Backcountry consist of people who visit the park for part of a day, or those who are staying in Rock Harbor or Windigo and take day trips along the trails or to destination sites. The range of activities available for these visitors offers valued opportunities for an important segment of Isle Royale visitors.

Actions Common to All Alternatives for Day Use

In order to expand opportunities available in the park for people with disabilities, Isle Royale managers would explore options for modifying select trail sections for wheelchair accessibility. These trails would be appropriate in the developed and frontcountry zones within the vicinity of Rock Harbor and Windigo.

All alternatives also include maintaining the concessions-operated boat tours with the stipulation established in the GMP that there would be no expansion of the tour destinations, schedule, or boat capacity. These tours are currently conducted with the *M.V. Sandy*, with a 42-person trip capacity. Destinations for these tours include; 1) the Edisen Fishery and Rock Harbor Lighthouse, Raspberry Island and Passage Island, which are in the Frontcountry Zone; 2) Hidden Lake and Lookout Louise, and McCargoe Cove and the Minong Mine in the Backcountry Zone; and 3) sunset cruises in the Rock Harbor Channel and the open waters of Lake Superior.

Alternative A for Day Use: Maintain Existing Conditions (No Action Alternative)

A.1 Management Goals and Desired Future Conditions

The goal of this alternative is to maintain the existing conditions for day use, providing maximum access to the backcountry and wilderness for day visitors. Tolerance for the impacts of noise, crowding along trails and at destination sites, and resource impacts would be moderate to high.

A.1.1 Visitor Use Levels

Access to the backcountry and wilderness for day visits would not be limited beyond boat capacities, maximizing visitors' opportunities for day activities such as hiking and boat tours. Existing group size limits for NPS-guided tours, established with a goal of manageable sizes for quality interpretive tours, would be maintained. Encounters along all trails and destination sites accessible for day trips could be high, with up to 42 passengers on existing concessions organized boat tours and no limit on many hiking tours. In 2002 NPS-guided concessions tours to backcountry trails (the Minong Mine and Hidden Lake tours) averaged 16 people per tour, with a maximum group of 34 people. Opportunities for solitude or uncongested trails and sites would range from low to high.

A.1.2 Guided Trip Opportunities

Park rangers and the Rock Harbor Lodge would continue to offer guided day trips to various destinations within the wilderness and backcountry, as would several private organizations. Popular locations for day trips would remain, including trails within the vicinity of Rock Harbor

and Windigo and boat tours to Raspberry Island, Hidden Lake and Lookout Louise, Passage Island, Edisen Fishery, Daisy Farm, and McCargoe Cove and the Minong Mine.

Opportunities for guided trips would not be limited beyond capacities of tour boats or facilities. Space availability is and would continue to be the only limitation to guided trip opportunities. As of 2003 the maximum capacity for boat tours run through the Rock Harbor Lodge was 40 people. Group sizes on these tours would be unpredictable, ranging from small to very large groups.

A.1.3 Current Management Practices

The NPS and concessions tours would maintain group size limits based on facility capacities and safety, but there would be no size limits placed on any other day trips, whether they occur in developed areas of the park or in the wilderness and backcountry. With potential high use levels in areas accessible to day visitors, the NPS would minimize adverse impacts with mitigation measures including:

- Maintain trails to accommodate high use levels, concentrating impacts to minimize trail widening, erosion, and the establishment of unofficial "social trails."
- Inform visitors to easily-accessible day use areas that they may encounter more people along the trails and at destinations than they would in more remote areas of the wilderness and backcountry. Also prepare visitors for encounters between both day and overnight hikers and boaters, altering expectations to avoid conflicts between different types of visitors.
- Work in cooperation with concessions services to schedule day tours at times that would least impact overnight backcountry and wilderness visitors.
- Provide additional day activities within the developed areas of the park rather than actively encouraging increased day use within more remote areas of the park's wilderness and backcountry.

Alternative B for Day Use: Reduce Group Sizes in Selected Areas

B.1 Management Goals and Desired Future Conditions

The goal of this alternative is to provide high quality day trip opportunities while also minimizing adverse impacts to resources and other visitors in day use areas. The priority of this alternative is to improve the experiences of day trip participants and minimize adverse impacts to resources, other visitors in day use areas, and campers seeking remoteness and solitude. Crowding along trails and at destination sites, noise, and resource impacts increase with group size and often detract from the experiences of group participants and other people in the area. However, minimizing group impacts and maximizing higher quality opportunities would come at the expense of maximum access to organized day activities.

B.1.1 Visitor Use Levels

The total number of guided day trips in the park would not be limited beyond facility capacities, but maximum group sizes would be established to maintain opportunities appropriate for each of the park's different management zones, considering opportunities for participants in organized day trips as well as other visitors in those areas. The total number of people visiting the park or the wilderness and backcountry for day trips would not be limited, but group size restrictions

may reduce opportunities for these visitors to participate in organized day activities in some areas of the park during some times of the season.

B.1.2 Guided Trip Opportunities

This alternative would aim to improve or maintain high quality experiences for guided trip participants by continuing existing options for day trip destinations while also ensuring appropriate group sizes for destinations visited. This may come at the cost of limited group sizes restricting some people's opportunities to participate in organized trips.

B.2 Appropriate Management Actions

Group size limits would be established to be consistent with the goals of management zones (Appendix D, Map 3) as follows:

Developed Zone (Rock Harbor and Windigo)—no group size limits

Frontcountry Zone (bordering developed areas and significant attractions such as Edisen Fishery, Scoville Point, Raspberry Island, Passage Island trail, and Suzy's Cave)—group size limit of 20. *M.V. Sandy* tours to these areas could carry up to 20 passengers.

Wilderness Portal, Backcountry and Primitive Zone (the majority of trails and campgrounds, including concession tours to Hidden Lake and Lookout Louise, and McCargoe Cove and the Minong Mine)—group size limit of 10. *M.V. Sandy* tours to these areas could carry up to 10 passengers.

Pristine Zone (off-trail)—group size limit of 6

These group size limits would be applied to all guided groups, including concession-led tours, NPS- guided tours, Isle Royale Institute tours, and tours with private organizations. The National Park Service would monitor trail encounters in day use areas to ensure that regulations were effective at meeting goals without being unnecessarily restrictive.

Alternative C (REVISED): Set Day Use Group Sizes to Correspond with Current Use Levels (Preferred Alternative)

C.1 Management Goals and Desired Future Conditions

This alternative seeks to maintain options for high quality day activities in the park, and includes smaller group opportunities within the park's wilderness and backcountry areas. The goal would be to accommodate future increases in the number of day visitors up to current maximum or average visitation levels (depending on the management zone), while also providing quality day activities and minimizing adverse impacts to resources by monitoring trail and day use destination conditions. This section reflects changes incorporated from the public comment period for the draft WBMP. More details can be found in Chapter 5: Public Comment and Responses, and Appendix K: Comments Received.

C.1.1 Visitor Use Levels

The total number of guided day trips in the park would not be limited beyond facility capacities, and group sizes within the developed zone would not be limited beyond transportation capacities. Maximum group sizes in other areas of the park would be established to correspond with each of

the park's different management zones, focusing on opportunities for participants in organized day trips consistent with current maximum numbers of day use groups. Groups exceeding established limits would still have the option of visiting these areas as long as they were willing to split into multiple smaller groups. The park would monitor scheduled day trips, through the Commercial Use Authorization (CUA) system, to ensure that aggregate numbers of organized groups (concession tours plus other organized groups) did not exceed total group size limits at a specific destination and time. Priority would be given to established concession tours. The total number of people visiting the park or the wilderness and backcountry for day trips would not be limited.

The defining difference between this alternative and the No Action alternative is that upper limits on organized tour group sizes are established so that uncontrolled growth in group sizes does not occur. This type of growth is foreseeable if commercial and educational tours at the park increase in the future.

C.1.2 Guided Trip Opportunities

This alternative would aim to retain the current options available to day visitors within and adjacent to the Developed, Frontcountry, and most popular sites within backcountry zones of the park. Existing options for day trips would continue, and although group size limits would apply, these limits match current maximum or average use levels (see Section 4.2.3. for details on visitor use levels.)

C.2 Appropriate Management Actions

The following actions would aid in providing more opportunities for day activities within the vicinity of Developed and Frontcountry zones, and selected backcountry zones while also maintaining the overall quality of opportunities for day activities:

- Explore options for adding a new loop trail of 3-5 miles in the Windigo area that would remain as much as possible within the non-wilderness boundary. This may entail converting a segment of the corridor where the new trail would be constructed from "Pristine Zone" to "Backcountry Zone," amending the management zones established in the GMP.
- Establish group size limits for day trips outside of the Developed Zone (no limits in Developed Zone) as follows, with the option of larger groups still visiting these areas as long as they split up with multiple leaders:

  Frontcountry Zone (bordering developed areas and significant attractions such as Edisen Fishery, Scoville Point, Raspberry Island, Passage Island trail, and Suzy's Cave)—group size limit of 40.

  Wilderness Portal, Backcountry, and Primitive Zone (the majority of trails and campgrounds)—group size limit of 20. Hidden Lake, Lookout Louise, McCargoe Cove and the Minong Mine would be exceptions, with group sizes of up to 40 people accepted. Any tours to these excepted destinations of more than 40 people would need to split into multiple smaller groups.

  Pristine Zone (off-trail)—group size limit of 6

2.4.3 Alternatives for Campfires

Many backcountry campers look forward to campfires as part of their experience, yet campfires are also associated with impacts to resources such as increased tree damage and unofficial trails, reduction in woody debris and screening between campsites, and damage to cultural resources. Isle Royale's campfire policies would attempt to best minimize adverse impacts while also allowing for desired camping experiences.

Actions Common to All Alternatives

The following would be common to all alternatives:

- NPS interpretive programs could include campfires.
- NPS would prohibit the import of any firewood to the island to prevent the introduction and spread of invasive exotic species. (The park would possibly explore options in the future to use local firewood or provide kiln-dried wood from the mainland for any visitor or NPS firewood needs.)

Alternative A for Campfires: The No Action Alternative

The goal of this alternative is to continue offering opportunities for camping with campfires while also concentrating and minimizing adverse resource impacts. To accomplish this with minimal concentrated impacts, campfires would continue to be allowed in a limited number of campgrounds with NPS-provided metal fire rings. Other than for critical resource protection needs, campfires would continue to be permitted in the existing 11 campgrounds with fire rings. Additionally, standing metal grills would be replaced with metal fire rings (except in Developed Zone), which are more compatible with the park's wilderness and backcountry setting.

A.1 Management Goals and Desired Future Conditions

A.1.1 Visitor Opportunities

Visitors would have the option to plan their trips around where fires are or are not permitted. Some campers value campfires as a means of honing outdoor skills for self-sufficiency, as well as being a part of restorative and relaxing experiences. However, other campers dislike the adverse resource impacts associated with campfires. This alternative would offer opportunities to suit both.

A.1.2 Natural and Cultural Resources

Limiting the number of campfire rings in the park, and intentionally locating those rings in areas lacking vulnerable cultural and natural resources could minimize adverse impacts to these resources. Building and maintaining a campfire inevitably has some impact on resources, though this impact can be minimized with Leave-No-Trace practices. On Isle Royale campfires have been correlated with tree damage, development of unofficial trails, scarring of rocks and soil, and loss of woody debris in the forest. Additionally, the park's cultural resources are vulnerable to fire through intentional or unintentional burning of the remains of historic structures.

A.2 Current Management Practices

- Current fire regulations would continue to be enforced including the use of only down and dead wood and the requirement that all fires be fully contained within NPS fire rings or grills.
- Maintain fire rings at the 11 campgrounds where fires are currently permitted. Over time replace fire rings with smaller rings with adjustable grates to aid in cooking and encourage appropriately small fires.
- Replace standing grills with fire rings (except at the Rock Harbor marina, where grills would be maintained)
- Increase education about low-impact fires and affected resources, and maintain and enforce regulations to minimize adverse resource impacts.
- As future need dictates, remove fires from areas with vulnerable critical resources, or areas showing unacceptable fire-associated impacts to resources. This could be accomplished through temporary or permanent removal of fire rings.

Alternative B for Campfires: Move Campfire Rings to Different Campgrounds on a Rotational Basis (Preferred Alternative)

Campfires would be allowed only within NPS-provided metal rings. These rings would be located in campgrounds with an adequate supply of down and dead wood for fuel, and without vulnerable natural or cultural resources. The specific location of fire rings could change from year to year as they are removed from campgrounds showing significant impacts and relocated to campgrounds with appropriate resource conditions to accommodate campfires.

B.1 Management Goals and Desired Future Conditions

B.1.1 Visitor Opportunities

Some campers value campfires as a means of honing outdoor skills for self-sufficiency, as well as being a part of restorative and relaxing experiences. However, other campers dislike the adverse resource impacts associated with campfires. This alternative would offer opportunities for both. However, as the specific location of fire rings may change from year to year, campers may have difficulty planning in advance to camp where fires are permitted.

B.1.2 Natural and Cultural Resources

Rotating campfire rings between campgrounds, limiting the number of campfire rings in the park, and intentionally locating those rings in areas lacking vulnerable cultural and natural resources could minimize adverse impacts to resources. Building and maintaining a campfire inevitably has some impact on resources, though this impact can be minimized with Leave-No-Trace practices. On Isle Royale, campfires have been associated with tree damage, development of unofficial trails, scarring of rocks and soil, depletion of screening between campsites, and loss of woody debris in the forest around campgrounds. Additionally, the park's cultural resources are vulnerable to fire through intentional or unintentional burning of the remains of historic structures. Under this alternative mitigation measures would be taken to minimize these adverse

impacts, including establishing clear protocols for when and where campfires would be appropriate.

These protocols include:

- Prior to implementation an analysis of fuel loading and resource sensitivity would be completed in any campgrounds that would be included in the rotation. This would require an inventory of cultural and natural resources prior to changing fire ring locations.
- Selecting locations for campfires would be based on resource conditions.
- Only shoreline campgrounds with docks would be included in the rotation because of feasibility of access for maintenance, restoration and monitoring.
- There would not be a guarantee of maintaining the current number of campfires, or a guarantee of a minimum number of campfire sites. Management would retain flexibility in establishing the appropriate number and location of campfire sites each season.
- Costs of maintaining, restoring sites, and monitoring resource conditions would be considerations in determining the number and location of campfire sites.
- If the NPS were not able to keep up on monitoring (fuel loading, resource impacts) and maintenance then campfires would not be retained.

B.2 Appropriate Management Actions

- Current fire regulations would continue to be enforced including the use of only down and dead wood and the requirement that all fires be fully contained within NPS fire rings or grills. NPS would temporarily remove fire rings from heavily impacted sites and add rings to other campgrounds with adequate fuel availability and other appropriate resource conditions. Fire rings would then be moved between campgrounds on a rotational basis as resource impacts and fuel availability necessitated.
- Replace existing fire rings with smaller rings with adjustable grates to aid in cooking and encourage appropriately small fires.
- New fire rings may be communal for a campground or located within individual campsites, with a goal of minimizing resource impacts and fuel depletion.
- Remove all standing grills, except in Developed Zone.
- Fire rings would not be added to campgrounds with sensitive cultural resources.
- Increase education about low-impact fires and affected resources.
- The permitting process would include informing visitors of where they can and cannot have fires—permits would continue to state whether fires were allowed in each campground on a party's itinerary.

Alternative C for Campfires: Remove All Fire Rings and Grills and Do Not Allow any Campfires in the Park.

Protection of natural and cultural resources and pristine conditions surrounding campgrounds would be prioritized. No campfires would be allowed in the park: campers would be prepared to cook on camp stoves or self-contained grills. All existing fire rings and NPS-provided grills would be removed from campgrounds. However, grills would remain at the Rock Harbor Marina, as they are compatible with the level of development in the area.

C.1 Management Goals and Desired Future Conditions

C.1.1 Visitor Opportunities

Visitors would have the opportunity to camp in areas unimpacted by campfires. All camp cooking would be with self-contained stoves or grills.

C.1.2 Natural and Cultural Resources

Preservation of natural and cultural resources would be prioritized by removing the impacts and threats to these resources associated with campfires. Although current natural resource impacts are judged to be generally moderate to minimal, some specific sites show noticeable degradation, including limbed trees and loss of woody vegetation around sites. Eliminating campfires entirely may lead to more pristine conditions surrounding campsites.

C.2 Appropriate Management Actions

- All fire rings and NPS-provided grills would be removed from the park, excluding the Developed Zone.
- Visitors would be educated to be prepared to camp without fires, and understand the reasons for eliminating campfires for resource protection.
- As need dictated, enforcement of the campfire ban may increase.

Alternative Considered but Rejected: Add Fire Rings or Grills at All Campgrounds

Survey data indicate a moderate degree of increased natural resource impacts in campsites where fires are permitted, including tree damage and increased number of unofficial trails, and "survey findings present no compelling evidence for restricting the current policy of allowing campfires at backcountry sites" (Farrell and Marion 1998). However, unlike most natural resources, cultural resources are irreplaceable and irreparable once damaged. Many Isle Royale campgrounds are located within or adjacent to cultural sites with structures that would be vulnerable to damage from fires. The NPS has determined that the risk to these resources outweighs the benefits of allowing campfires in all campgrounds. Thus the option of allowing campfires in all campgrounds was rejected.

2.4.4 Alternatives for Fire Towers

Currently there are three fire towers within Isle Royale's designated Wilderness: 10-foot tall Ishpeming (built in 1961), 41-foot Feldtmann (built in 1964), and 41-foot Ojibway (built in 1964). None of the towers are listed on the Historic Register and none are critical for fire monitoring at this point. Ojibway is being used for a radio repeater and research and monitoring projects. Trail crew and rangers occasionally use the other two for storage and to stay in overnight while working in the backcountry. The question is whether these facilities are necessary or appropriate for the park. According to NPS policy outlined in the NPS Reference Manual for Wilderness Preservation and Management (NPS 1999b, § 6.3.10):

> *…authorizations of NPS administrative facilities located in wilderness will be limited to the types and minimum number essential to meet the minimum requirements for the*

administration of the wilderness area. A decision to construct, maintain, or remove an administrative facility will be based primarily on whether or not such a facility is required to preserve wilderness character or values, not on considerations of administrative convenience, economy of effect, or convenience to the public or park staff. Maintenance or removal of historic structures will additionally comply with cultural resource protection and preservation policies and directives, and the concept of minimum requirement management techniques for wilderness.

Alternative A for Fire Towers: No Action, Maintain Existing Fire Towers

This alternative would maintain all three fire towers within the park's wilderness and backcountry.

A.1 Management Goals and Desired Future Conditions

A.1.1 Visitor Experiences

Fire towers would remain in the wilderness for visitors to enjoy as part of the park's history, as well as for views offered atop the towers. However, Feldtmann and Ishpeming would remain in a state of minimal repair, and the public would not have access to the cabins or the tops of the towers. This alternative would accept the cost to wilderness character of maintaining obvious structures along wilderness trails.

A.1.2 Administrative Uses

Ojibway Tower would continue to be used administratively for research and monitoring equipment, a radio repeater, and future administrative needs that cannot be met outside of wilderness. Feldtmann and Ishpeming towers would continue to be used as temporary shelters and storage for park staff working in the backcountry, and could be used for other administrative needs in the future.

A.2 Current Management Practices

- Necessary actions would be taken to maintain the three fire towers in a state that is not a safety risk to NPS staff or visitors.
- Actions may also be taken to expand the administrative use of these structures, including possible communication technologies where these needs could not be met adequately if based outside of the park's wilderness.

Alternative B for Fire Towers (REVISED): Remove Ishpeming Fire Tower and Possibly Feldtmann Fire Tower and Maintain Ojibway Tower (Preferred Alternative)

With this alternative, Ishpeming tower would be removed and the site restored to natural conditions. Ojibway tower would be maintained for present and future administrative needs associated with management of the park's wilderness and backcountry. The decision to keep or remove Feldtmann tower would be based on its utility for administrative purposes, including telecommunications and wildlife telemetry monitoring.

B.1 Management Goals and Desired Future Conditions

B.1.1 Visitor Experiences

By removing the Ishpeming tower (and possibly Feldtmann tower) and restoring the sites to natural conditions, the wilderness character of the Feldtmann Ridge Trail and the middle portion of the Greenstone Trail would be improved for visitors seeking more pristine surroundings. Removing the towers would also eliminate the potential safety hazards of deteriorating structures. Retaining one of the park's fire towers would also preserve an interesting piece of the history of the park. Retaining or removing Feldtmann tower will be based on its evaluation for administrative uses. Removing the Feldtmann tower would mean the loss of the opportunity to climb the tower for its vista. The treeline now extends above the Ishpeming tower, so there would be no loss of vista with the removal of this tower.

B.1.2 Administrative Uses

Ojibway tower, and possibly Feldtmann tower, would continue to be used for administrative purposes that are compatible with management of the wilderness and backcountry. Ishpeming tower is not meeting administrative needs that cannot be better met with a less obtrusive option.

B.2 Appropriate Management Actions

- Ishpeming (and possibly Feldtmann) tower would be removed using the minimum tool necessary to safely and effectively complete the job and the necessary environmental compliance requirements would be completed as part of the removal plan.
- Work would be done to restore the sites to their natural conditions.
- Ojibway Tower (and possibly Feldtmann tower) would continue to be maintained and utilized for administrative purposes. Administrative uses and equipment could increase in the future, as long as they satisfied the minimum tool requirements.

Alternative Considered But Rejected: Remove all Fire Towers

Ojibway is still being used for administrative purposes that are compatible with management of the wilderness and backcountry and cannot be adequately accomplished outside of the wilderness. Thus maintenance of the Ojibway Tower is determined to be in compliance with wilderness legislation and the goals of this WBMP, and was not proposed for removal.

2.4.5 Picnic Tables

Since the draft WBMP was released, the National Park Service has revised and edited its management policy with respect to picnic tables: picnic tables will not be allowed in wilderness except in those limited circumstances when they are necessary for resource protection and when documented and approved by the park through a minimum requirements analysis (NPS Policies, 2006.) The Preferred Alternative has been changed to be consistent with NPS policy.

Alternative A for Picnic Tables: The No Action Alternative

A.1 Management Goals and Desired Future Conditions

A.1.1 Visitor Experiences

The NPS would continue to provide picnic tables at shelter and tent sites at all dockside campgrounds for visitor convenience and comfort. Picnic tables would continue to provide an amenity for ease of cooking, and a place to sit and gather. Visitors seeking a more primitive atmosphere for camping would still have the option of staying in campgrounds without picnic tables or shelters, however, there would be fewer of these options along the Lake Superior shoreline; Pickerel Cove, Little Todd Harbor, and Huginnin Cove are all along the Superior shoreline and do not have shelters or picnic tables.

A.1.2 Wilderness Character

Managing for wilderness character would continue to prioritize the benefits of concentrating human impacts and minimizing impacts to natural and cultural resources over minimizing modern intrusions to create a more primitive camping atmosphere. Picnic tables would continue to be maintained as a tool for concentrating adverse impacts in campsites.

A.1.3 Natural and Cultural Resources Protection

Picnic tables would continue to be used as an effective tool for concentrating the adverse impacts of trampling, vegetation loss, and soil compaction in campsites, as well as minimizing the total area of campsites. Concentrating use in campsites would continue to be one goal for minimizing adverse impacts to natural and cultural resources.

A.2 Current Management Practices

Picnic tables are currently provided and maintained in 20 of the park's 36 campgrounds, 11 of which are within designated or potential wilderness. Picnic tables are provided at shelter sites as well as tent sites, and may also be found dockside. A picnic table is also provided at Hidden Lake, which is a trailhead within wilderness, but not a campground. These picnic tables have a metal base and brown-painted wood seats and tabletops. Continuing the current management direction would also mean failing to comply with NPS policy for wilderness management.

Alternative B for Picnic Tables: Remove Picnic Tables From All Campgrounds Within Designated or Potential Wilderness

In order to adhere to NPS directives picnic tables would be removed from all campgrounds or docks within designated and potential wilderness. The picnic tables in non-wilderness campgrounds with docks would remain and be maintained. Non-wilderness campgrounds include Rock Harbor, Three Mile, Daisy Farm, Moskey Basin, Malone Bay, Siskiwit Bay, Washington Creek (Windigo), McCargoe Cove, and Belle Isle.

B.1 Management Goals and Desired Future Conditions

B.1.1 Visitor Experiences

Removing picnic tables would remove a modern convenience for visitors and create a more primitive atmosphere for camping, as suitable for recreation within a wilderness. By retaining picnic tables in non-wilderness campgrounds, visitors who prefer such conveniences would still have those opportunities within Isle Royale's backcountry.

B.1.2 Wilderness Character

The goal of this alternative is to be in compliance with NPS management policies for protecting wilderness character by minimizing the intrusion of modern conveniences. Other modern structures within wilderness campgrounds have been justified either through specific allowances in Isle Royale's wilderness legislation (as in the case of shelters), or for the purpose of administering the area as wilderness (as in the case of outhouses, for management of human waste and the associated resource and human health impacts). Picnic tables do not satisfy an essential need for administration of these areas as wilderness, nor are they mentioned in the park's wilderness legislation.

B.1.3 Natural and Cultural Resources Protection

Picnic tables have proven to be effective in helping to concentrate human impacts in campsites, focusing activity within the boundaries of a campsite and minimizing increases in campsite sizes. However, there are other means of concentrating use and minimizing sprawl with methods that would be more compatible with wilderness goals and NPS directives. This alternative would prioritize improving the primitive atmosphere of campsites and adherence to NPS policies over utilizing all methods possible to minimize the sizes of campsites and measurable human impacts within campgrounds.

B.2 Appropriate Management Actions

With this alternative all picnic tables would be removed from campgrounds and docks within the park's designated and potential wilderness. This would include: Grace Island, Beaver Island, Hay Bay, Todd Harbor, Birch Island, Duncan Bay, Duncan Narrows, Merritt Lane, Tookers Island, Caribou Island, Chippewa Harbor, and Hidden Lake. Picnic tables would be maintained at non-wilderness lakeshore campgrounds with docks: Rock Harbor, Three Mile, Daisy Farm, Moskey Basin, Malone Bay, Siskiwit Bay, Washington Creek, McCargoe Cove, and Belle Isle. The new campgrounds proposed in the GMP all fall within designated or potential wilderness and would not have picnic tables. These include Crystal Cove, Johns Island, Fishermans Home, Wright Island, and a new dock and campground at McCargoe Cove. Upon the GMP-approved removal of docks at McCargoe Cove, Siskiwit Bay, and Three Mile (all of which are non-wilderness) the picnic tables would be removed.

Alternative C for Picnic Tables (REVISED): Maintain Picnic Tables in Wilderness Campgrounds Where Consistent With NPS Policy (Preferred Alternative)

The park has re-evaluated the placement of picnic tables in wilderness using the Minimum Requirements/Minimum Tool guidelines, consistent with 2006 revision of NPS policy. The review includes evaluating the reduction of negative human impacts (compaction, loss of vegetation), as well as the impact on wilderness character, and possible design changes to help the tables be less noticeable.

C.1 Management Goals and Desired Future Conditions

C.1.1 Visitor Experiences

This alternative would retain picnic tables in campgrounds where docks and/or shelters are currently maintained. Visitors seeking a more primitive atmosphere for camping would still have the option of staying in campgrounds without picnic tables or shelters, however, there would be fewer of these options along the Lake Superior shoreline; Pickerel Cove, Little Todd Harbor, and Huginnin Cove are all along the Superior shoreline and do not have shelters or picnic tables.

C.1.2 Wilderness Character

Managing for wilderness character with this alternative would prioritize the benefits of concentrating human impacts and minimizing impacts to natural resources over minimizing modern intrusions to create a more primitive camping atmosphere.

C.1.3 Natural and Cultural Resources Protection

As stated above, picnic tables have proven to be effective in helping to concentrate human impacts in campsites, focusing activity within the boundaries of a campsite and minimizing increases in campsite sizes. Although these benefits may not be significant on a park-wide scale of impacts and ecosystem health, they can be significant on a site-specific scale, with noticeable loss of vegetation and increase in areas of exposed soil caused by human impacts spreading beyond the intended boundaries of campsites. Retaining picnic tables in campgrounds would maintain one proven method for minimizing these impacts.

C.2 Appropriate Management Actions

With this alternative Isle Royale managers would maintain picnic tables at some of the campgrounds within the park's designated or potential wilderness. Where they meet Minimum Tool guidelines, picnic tables would be maintained at Grace Island, Beaver Island, Hay Bay, Todd Harbor, Birch Island, Duncan Bay, Duncan Narrows, Merritt Lane, Tookers Island, Caribou Island, Chippewa Harbor, Rock Harbor, Three Mile, Daisy Farm, Moskey Basin, Malone Bay, Siskiwit Bay, Washington Creek, McCargoe Cove, and Belle Isle. Picnic tables would also be added at the new campgrounds proposed in the GMP (where consistent with new NPS policy), all of which would have maintained docks and fall within designated or potential wilderness. Other than these, picnic tables would not be added at additional campgrounds.

When the docks and shelters at Duncan Bay and Siskiwit Bay campgrounds are removed (per the GMP), picnic tables will also be removed.

2.4.6 Summary of the Preferred Alternatives and Proposed Actions in Combination

This draft WBMP proposes several changes in how Isle Royale's wilderness and backcountry are managed. The preferred alternatives were crafted with an intention of creating one cohesive management program, with management goals for each of several issues being complementary, not contradictory. The planning team's intention was to respond to public interest and the concerns of subject matter experts, and incorporate the best science available for guiding preservation of Isle Royale's resources and values. General goals included improving the quality of wilderness and backcountry experiences for visitors while still providing high public access to the park for appropriate types of recreation. Existing facilities could be used more efficiently, while unnecessary facilities would be removed from the wilderness. Table 5 outlines the goals and proposed management actions for all of the preferred alternatives.

The preferred alternatives in combination also strive to minimize adverse resource impacts, in many cases improving resource conditions that are currently showing degradation. Because Isle Royale is already a difficult and expensive park to visit, the preferred alternatives were also crafted with an interest in not further restricting general public access to the park. The preferred alternative for managing overnight camping and boating on Isle Royale focused on more efficiently utilizing existing camping facilities through the creation of a backcountry office and advanced permitting. The intent is to expand visitor services for trip planning and reduce campground crowding to improve social and resource conditions in campgrounds. Because this could result in a decrease in visitor access to the backcountry for camping during the busiest weeks of the season, the preferred alternative for managing day use was crafted with an intention to allow an increase in day use throughout the visitor season. Day tours would be managed to concentrate the majority of day visitors close to developed areas, frontcountry areas, and selected backcountry destinations in the park and minimize adverse impacts to wilderness character and other critical resources.

The preferred alternatives in combination also aimed to minimize or reduce the impacts of development in the park's wilderness. Although the preferred alternative for overnight use would add one additional campsite at North Desor campground and a few rustic cabins in Rock Harbor, and the preferred alternative for day use would add 3-5 miles of new trail, no new campgrounds would be constructed other than those approved in the GMP, 1-2 fire towers would be removed, and campfire rings would be located only where resource conditions could tolerate the associated impacts. Specific management actions that would be appropriate under each of the preferred alternatives are outlined in Table 5.

Table 5: Summary of the Preferred Alternatives

	Actions Common to All	**Managing Overnight Use**	**Managing Day Use**	**Campfires**	**Fire Towers**	**Picnic Tables**
Goals	The NPS would forego actions that might have no seeming physical impact but which would detract from wilderness character and the idea of wilderness as a place set apart.	Provide a range of high quality opportunities for wilderness and backcountry experiences and reduce adverse impacts to park resources and values.	Expand opportunities for high quality day activities, while also accommodating future increases in day use and minimizing adverse impacts to park resources and values.	Continue to provide an opportunity for camping with campfires, while also concentrating and minimizing adverse resource impacts.	Improve the park's wilderness character by removing substantial structures that no longer serve an administrative need.	Adhere to NPS policy for wilderness management by using effective tools for concentrating adverse impacts in campsites.
Desired Future Conditions	• Provide a range of quality visitor opportunities. • Reduce the adverse impacts of NPS operations.	• Overcrowding would be reduced in campgrounds all season. • Improve camper distribution. • Protect seasonal sensitivities of park resources. • Provide a seasonal range of visitor opportunities, with low use in the spring and fall. • Improve trip planning and information services.	• Create additional opportunities, such as a new loop hiking trail, for day visitors. • Improve social and resource conditions in some day use areas by limiting the growth of organized day tours to current levels. • Allow for an increase in day visitors to the park.	• Visitors would have the option to camp with campfires. • Visitors would have the choice of camping in areas where fires are permitted, or where fires are not permitted. • Fire rings would be located only where there no vulnerable natural or cultural resources.	• Administrative impacts to wilderness character would be reduced by removing 1-2 of the park's 3 fire towers. • Ojibway Tower would continue to be used for administrative purposes that are compatible with wilderness, such as communications, research, and monitoring.	• Isle Royale would be in compliance with NPS policies for wilderness management. • Adverse resource impacts would be effectively concentrated in campsites of minimal sizes. • Picnic Tables would continue to be available for visitor convenience in some wilderness campgrounds

	Actions Common to All	Managing Overnight Use	Managing Day Use	Campfires	Fire Towers	Picnic Tables
Appropriate Management Actions	• Low-cost rustic cabins would be added in Rock Harbor. • Cross-cut saws would be used increasingly to minimize chainsaw use. • Sustainably-harvested, chemically preserved lumber would be used for trails and campgrounds. • Cross-country camping and anchoring-out would continue, with monitoring of impacts. • The Minimum Requirement Decision Tree would apply to all NPS activities in wilderness.	• Establish a mainland-based backcountry office to coordinate information services and permitting. • Implement an advanced permitting system for all overnight boaters and campers, allowing more flexibility for boaters not using campsites. • Discontinue the practice of issuing permits over the capacity of a campground. • Institute a permitting fee to offset the costs associated with the backcountry office. • Expand North Desor campground by 1 campsite. • Expand public education to reduce adverse impacts to park resources and values. • Monitor social and resource indicators.	• Explore options for creating a new 3-5 mile day trail near Windigo. • Establish group size limits for day tours, allowing larger groups to split into multiple small groups. Limits set by management zone: Developed : no limit Frontcountry: 40 Wilderness Portal, Backcountry and Primitive: 20 Pristine: 6 *Note: Hidden Lake, Lookout Louise, and McCargoe Cove would be exceptions, with 40 people allowed.*	• Adhere to clear protocols for when and where campfires would be appropriate, based on resource conditions. • Remove or add fire rings at different campgrounds as necessary, based on resource conditions • Replace existing fire rings with smaller metal rings with adjustable grates. • A single communal ring could replace multiple individual campsite rings in some campgrounds • Increase education about low-impact fires and sensitive resources. • Include information about the locations of campfire rings for visitors at the time of permitting.	• Remove Ishpeming Tower. Review administrative needs (communication, research) for Feldtmann Tower, using the minimum tool necessary to achieve administrative functions • Restore the impacted sites to their natural conditions • Maintain and utilize Ojibway Tower for administrative purposes associated with managing the park's wilderness.	• Retain picnic tables within some of the park's wilderness campgrounds where consistent with revised NPS policy, using the Minimum Tool evaluation process. • Remove picnic tables from campgrounds where docks and shelters are removed (i.e. Siskiwit Bay and Duncan Bay upon full implementation of the GMP).

2.5 The Environmentally Preferred Alternative

The Environmentally Preferred Alternative is one that (DO-12, §2.7.D):

- Fulfills the responsibilities of each generation as trustee of the environment for succeeding generations;
- Ensures for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- Preserves important historic, cultural, and natural aspects of our national heritage and maintains, wherever possible, an environment that supports diversity and variety of individual choice;
- Achieves a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- Enhances the quality of renewable resources and approaches the maximum attainable recycling of depletable resources.

For Isle Royale's WBMP, the Environmentally Preferred Alternative is the combination of alternatives that together would best achieve the above criteria. Throughout the planning process only those options that were determined to be environmentally sound were considered for inclusion in alternatives. Management actions that were not thought to be environmentally sound were not considered to be viable options for Isle Royale. However, in identifying preferred alternatives for all of the issues raised in this WBMP, the NPS strived to not only cause the least damage to park resources and values, but actually protect, preserve, and enhance those resources and values, while also enhancing public benefits from the park. The preferred alternatives, in combination, meet the above goals of an Environmentally Preferred Alternative to the greatest extent by protecting and enhancing park resources while also providing a high degree of public access and high quality public opportunities at Isle Royale.

CHAPTER 3: AFFECTED ENVIRONMENT

This chapter describes the existing natural and human components of the environment that could be affected by the implementation of any of the alternatives. Under NEPA, "affected environment" means resources expected to experience environmental impacts. Only those areas that could be affected by proposed actions are included.

3.1 Visitor Use and Experiences

The Wilderness Act dictates appropriate activities within Isle Royale's wilderness, but more flexibility is allowed within the park's non-wilderness backcountry, such as the use of sailboats and motors. National Park Service management policies direct that wilderness areas must be managed to preserve their wilderness character and resources while providing for "appropriate" uses. Appropriate uses are those that require, yet do not degrade, the wilderness character and values, and include activities such as recreation, scientific inquiry, education, and historical use.

3.1.1 Visitor Experiences and Opportunities

With no roads on Isle Royale, visitors travel through the park by boat or by foot and visit with many shared and different interests. Common recreation activities include hiking, motorboating on Lake Superior, canoeing, kayaking, sailing, observing wildlife, fishing, and photography. Visitors also spend much time learning about and exploring the park's natural and cultural treasures. Visitors come to Isle Royale seeking restorative experiences such as relaxing, observing the scenic beauty, being in a natural setting, observing and hearing wildlife, personal challenges, and developing outdoor skills (Pierskalla and others 1997). Figure 1 illustrates the breakdown of island visitors by general user groups.

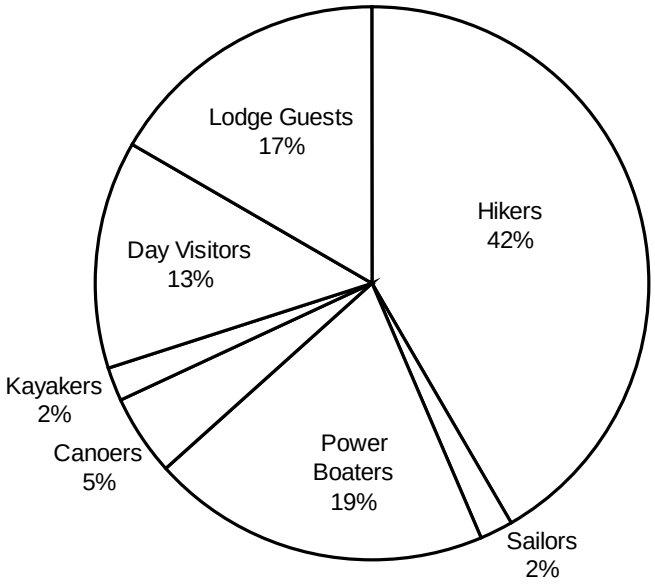


Figure 1: Types of Visitors to Isle Royale National Park (based on average 1997-2001)

The range of opportunities in Isle Royale's wilderness and backcountry may vary at different times of the season and in different areas of the park. Currently, visitors to the park in July and August will find more fellow campers, boaters and hikers, as well as more amenities with the store, visitor centers, ranger stations, and maintenance activities in full operation. Those choosing to visit in May or October will find more challenging weather conditions, fewer NPS staff available for assistance, greater opportunities for solitude in the campgrounds and on trails, and in general, the need to be more self-sufficient. Camping within Rock Harbor and Windigo offers access to more developed modern conveniences such as formal interpretive programs, restrooms, shower and laundry facilities, a store and restaurant, boat rentals, and proximity to the park's busiest dock and entry point. On the opposite end of the spectrum, obtaining a cross-country camping permit offers the opportunity to travel and camp off-trail. This requires greater self-sufficiency and skill with few chances of encountering other people, the challenges of orienteering across rugged terrain with abundant swamps and thick forests, and the difficulty of finding a hospitable camping spot. There are also many options of how to visit the park, including guided trips, traveling with family or friends, or traveling solo. This range of opportunities offers options suitable for first-time campers, highly experienced backcountry travelers, and everyone in between.

3.1.2 Visitor Use Patterns and Trends

Isle Royale's visitors are typical of most National Park visitors in that they tend to travel in family or peer groups of 2-4 people and are usually highly educated. They differ from visitors to many parks in that most have more experience in backcountry settings, place high value on wilderness attributes, and stay longer than visitors to most National Parks. With the difficulty in reaching the island, the vast majority of visitors stay for more than one day.

In 1970, at the time of the park's wilderness recommendation, approximately 10,000 people visited the island annually. Annual visitation has since increased to approximately 15,000. Total island visitation (including all visitors to the island) peaked in the 1970s and again in the mid 1990s with annual visitation approaching 18,000 island visitors (Figure 2). The distribution of visitors throughout the park's operating season has been fairly consistent, with the majority of visitors coming in July and August (Figure 3). Visitors come to Isle Royale from all over the US, as well as from other countries. The majority of island visitors who stay in the wilderness or backcountry come from Michigan (41%), Minnesota (20%), Wisconsin (13%), and Illinois (6%).

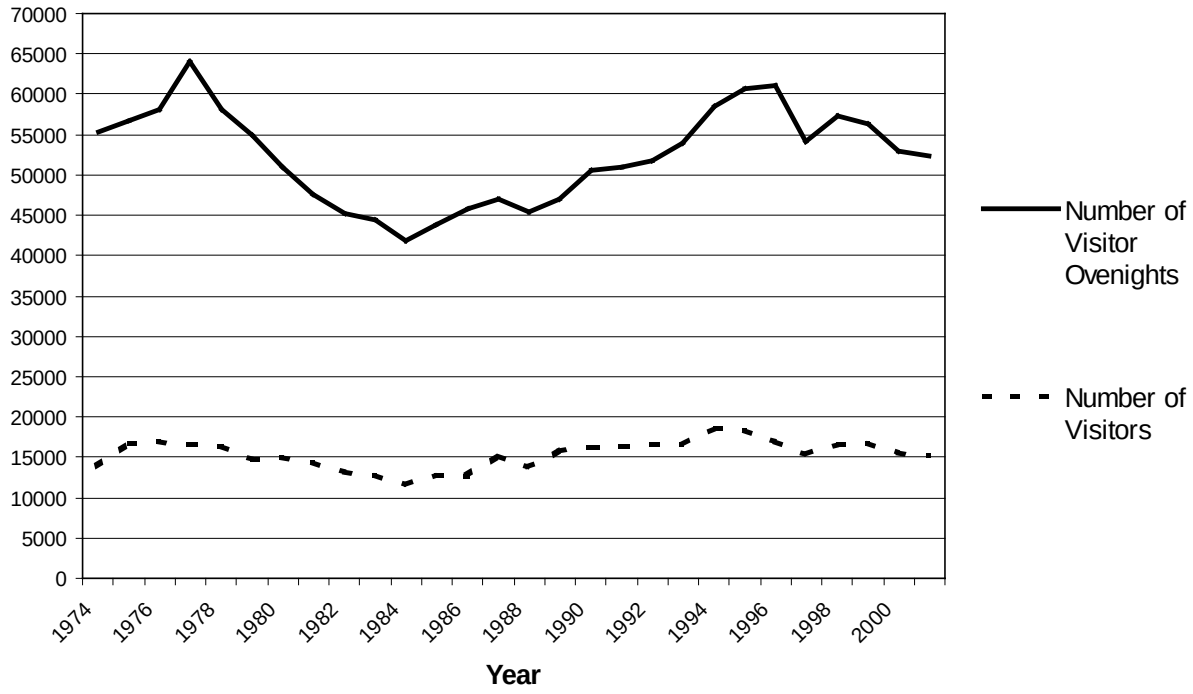


Figure 2: Annual Island Visitation and Total Annual Visitor Overnights to Isle Royale

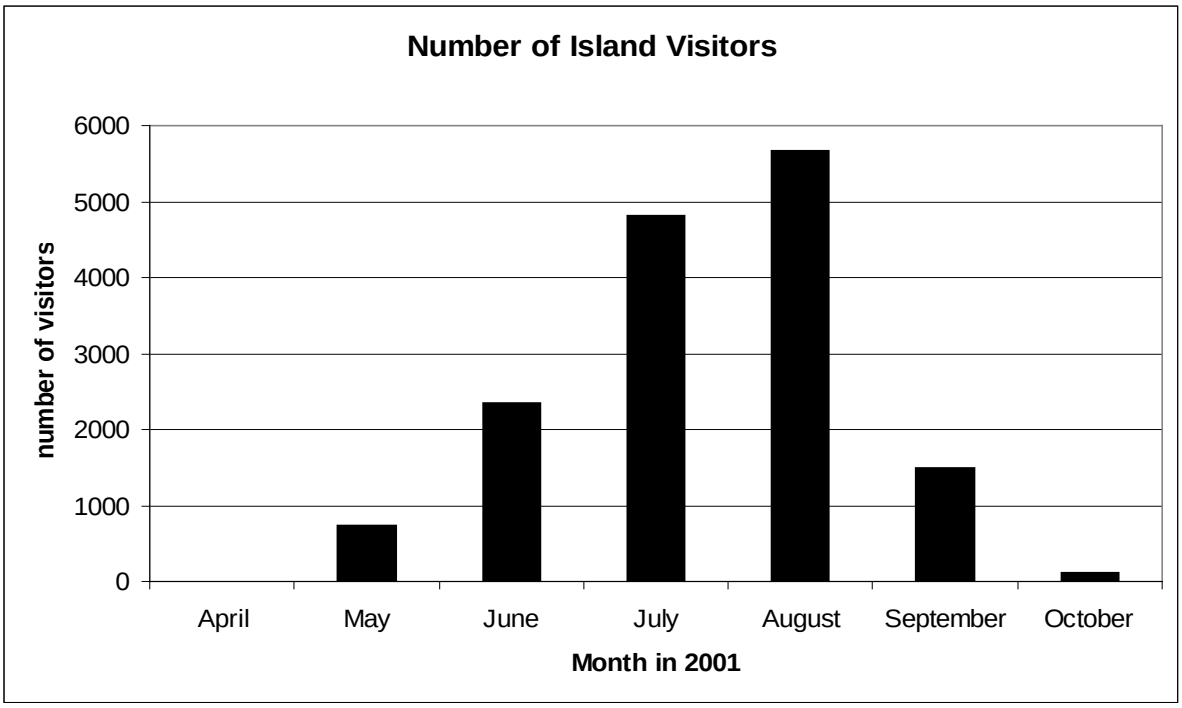
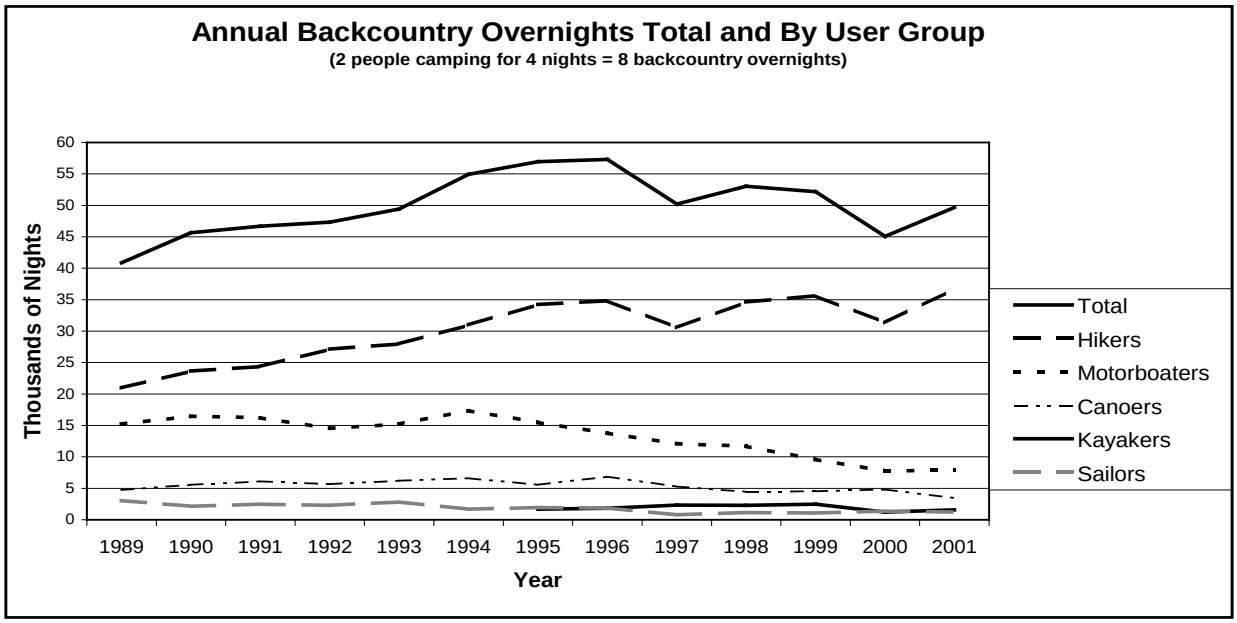


Figure 3: Seasonal Distribution of Isle Royale Visitors.

The average length of stay for overnight visitors parkwide is 4.5 nights (including lodge guests). In the backcountry, hikers and paddlers average 5.3 nights, power boaters and sailors 4.5 nights. Figure 4 depicts the trend in annual visitation by backcountry overnights for different user groups over the last 30 years (Number of people x Number of nights they spent in the park's wilderness and backcountry = Backcountry overnights).

Figure 4: Backcountry Overnights by User Group



Visitor use patterns at Isle Royale are influenced in part by ferry schedules and capacities. The *Isle Royale Queen III* has a maximum capacity of 100 passengers but voluntarily carries no more than 80 and infrequently sells out at that point (pers. com., The Isle Royale Line, March 23, 2004). The *Voyageur II* carries up to 39 passengers and ran to maximum capacity 29 times in 2003, and the *Wenonah* carries up to 100 passengers and rarely if ever sells out (pers. com., June Lapp, the Isle Royale Line, March 26, 2004). The *Ranger III* carries up to 126 passengers, including park personnel and their guests, and typically sells out about a half dozen times each year between mid-July and mid-August. Because ferries schedule fewer trips to and from the island in Spring and Fall than in July and August (Table 6), visitation would always be somewhat lower during those times.

Table 6: Ferry Schedules and Capacities (from 2004, with schedules comparable other years)

	Capacity	May	June	July	August	September	October
Voyageur II	39	M, W, Sat (5/8-31)	M, W, Sat	M, W, Sat	M, W, Sat	M, W, Sat (9/1-9/18) W & Sat (9/22-9/30)	W & Sat
Wenonah	100	No trips.	Daily (6/19-6/30)	daily	daily	Daily (9/1-9/19)	No trips.
Isle Royale Queen III	70-80	M & F (5/14-5/31)	M, T, Th, F, Sat.	M, T, Th, F, Sat., Sun.	daily	Daily (9/1-9/5) M & F (9/6-9/27)	No trips.
Ranger III	126	No passengers	Tues. & Fri.	Tues. & Fri.	Tues. & Fri.	Tues. & Fri. (9/1-9/11)	No passengers

Overnight Backcountry and Wilderness Use

The majority of people who visit Isle Royale National Park spend one or more nights in the park's wilderness and backcountry camping, anchoring out, or docking. Backpackers are the largest user group, followed by powerboaters; other visitors travel by canoe, sailboat, or kayak. Historically, visitation to the island has been limited only by ferry capacities. During the peak visitor season ferries may sell out periodically, limiting access for people who are not traveling to the island by private boat or do not have flexibility in when they can visit. There is no limit on the number of private boats traveling to the park. However, the cost of reaching the park, either for a ferry ticket or the cost of a personal boat and fuel, may make Isle Royale inaccessible for some people, which limits public access to some extent.

The majority of backcountry overnight visitors enter the park through Rock Harbor (55%) or Windigo (35%), with 10% entering at one of several remote entry points. Consistent with this, campsites are more heavily concentrated on the east and west ends of the island, with fewer and smaller campgrounds in the center of the main island. The vast majority of backcountry and wilderness visitors stay in one of the park's designated campgrounds. Approximately 40% of parties traveling by powerboat or sailboat plan on sleeping onboard their boat at a campground's dock rather than camping.

The average group size for backcountry parties in 2003, a fairly representative year, was 3; the most common group size was 2 people. Six percent of parties were large groups (7-10 people) falling under the group reservation system, the majority of which are associated with organized trips through camps, outfitters, schools, or scout troops. In general, visitors to the park in May, September, and October travel in smaller groups than those visiting in June, July and August. About 70% travel in parties of 1 or 2 people, compared to less than 60% from June through August. Similarly, very few large groups (7-10 people) visit the park in May, September, and October.

It is difficult and risky to try to predict future trends in visitation at Isle Royale. At certain points in the past it appeared that the trend line in visitation was decreasing, while at others it appeared to be increasing. However, in general, visitation to National Parks and Wilderness Areas has been increasing over recent decades and is predicted to increase as more people have free time with retirement and more have adequate income for such vacations. Some factors that may affect future visitation increases or decreases at Isle Royale include: the price of gas for boaters, the general popularity of wilderness-based recreation such as backpacking and kayaking, and

political and economic factors that determine whether international or local travel is preferable for vacationers.

Day Use in the Wilderness and Backcountry

People who visit Isle Royale just for a day comprised 13% of annual visitation to the island from 1997-2003. In 2003 this was 1,912 people. The majority of these people (80-90%) visited Windigo and the west end of the island. The ferry from Minnesota to Windigo is the shortest trip and allows for the longest day visit to the island. Because day visitors are in the park for at most 4 hours, they have little opportunity to travel far into the park's wilderness and backcountry. People staying overnight at the Rock Harbor Lodge or within developed areas of the park and taking day excursions into the wilderness and backcountry are also considered day visitors for the purposes of wilderness and backcountry management. Day visitors who do not spend a night within the park account for approximately 10% of total island visitors; guests at the Rock Harbor Lodge account for 15-20%.

Day excursions and formal day tours often use the same trails used by backpackers, paddlers and boaters who spend multiple days and nights in the park's backcountry. Areas of the park frequented by day visitors include the trails and waterways in the vicinity of Windigo and Rock Harbor, as well as the destinations served by Rock Harbor Lodge's organized tours aboard the *M.V. Sandy*. The NPS has offered ranger-led day hiking trips on several trails including the Windigo Natural Trail, Scoville Point Trail, Rock Harbor Trail, and Tobin Harbor Trail. With the *M.V. Sandy* the Lodge offers tours that may or may not be led by NPS rangers to several destinations in different management zones of the park. Tours within the Frontcountry include the Edisen Fishery, Rock Harbor Lighthouse and Raspberry Island; Backcountry zone tours include the Minong Mine in McCargoe Cove, Passage Island Trail, and the Hidden Lake and Lookout Louise Trail. The M.V. *Sandy* carries a maximum of 40 passengers. The NPS keeps statistics on group sizes for the tours that are led by rangers. A recent 3-year average of the Hidden Lake/Lookout Louise tours showed 17 trips per season, 19 people per trip, and a maximum of 42 people on one tour. A similar look at Passage Island showed 11 trips per season, 21 people per trip, and a maximum of 38 people on one tour (pers. com., Smitty Parratt, NPS Chief of Interpretation).

3.1.3 Social Conditions

To date visitation to Isle Royale's wilderness and backcountry has never been limited by the NPS, though visitation may be limited to some extent when ferries sell out during the peak season. Parties of 7-10 people are required to secure reservations for designated group campsites before traveling to the park. Once they reach the park, parties with fewer than 7 people have received backcountry permits to camp in the campground of their choice, regardless of campsite availability. People are limited in where they can camp outside of designated campsites to protect sensitive wildlife, habitats, and cultural areas. In general, visitor freedom and flexibility has been maximized over management of visitor distribution to efficiently use camping space. Under the existing permitting system, current real-time information is not available on the number of parties permitted for each campground. Technological limitations prevent linking the permitting stations for real-time updates of when and where permits have been issued. Two permitting stations are located on the island, one in Houghton, one in Grand Marais, MN, and one aboard the Ranger III ferry, with none of the permitting computers connected.

Visitor surveys conducted in 1996 and 1997 revealed minor problems and areas where backcountry and wilderness conditions could be improved on Isle Royale, including: motorboat noise, too many other hikers in campgrounds, difficulty in finding dock space or a vacant campsite or shelter, and too many watercraft on Lake Superior (Pierskalla and others, 1997 and 1998). This information led the NPS to further explore conditions related to crowding and noise in the wilderness and backcountry, in an attempt to better understand when, where, and to what extent there were problems, and what actions might effectively improve conditions. This has become one of the primary focuses of the WBMP.

Campground Crowding

Isle Royale managers have defined crowding in campgrounds as a campground being overfull, with parties who cannot find an available campsite needing to either share a site with another party or break regulations and camp outside of a designated site. Permit data, visitor surveys, reports from NPS backcountry staff, and more recently, computer simulation modeling have been used to quantify this problem over the course of several years (Pierskalla and others, 1997 and 1998; Mayo Kiely, 2001; Lawson and Manning, 2002 and 2003).

Detailed analysis of backcountry overnight visitor distribution in 2001 has shed some light on these issues. During the 2 week peak in visitation in 2001 an average of 50 camping permits were issued per day, resulting in 203 permitted parties staying in campgrounds each night and on the busiest night, 231 parties were in campgrounds. With 244 campsites in the park, this is an average of campsite use at 83% of capacity and a maximum use at 95% of capacity. Under these conditions an average of 24% of those parties would have needed to double-up campsites in overfull campgrounds on a nightly basis. This estimate is consistent with data collected from visitors and NPS backcountry personnel on the frequency of campsite sharing in 1997 and 2000 (Pierskalla and others, 1998; and Mayo Kiely, 2001). Table 7 summarizes campground crowding conditions at different visitation levels, based on average number of permits issued per day.

Table 7: Frequency of Parties Sharing Campsites at Different Visitation Levels (based on computer simulation modeling with actual 2001 visitation levels)

Time of Season	Average number of permits issued per day in 2001	Average % of parties sharing campsites
Off-season (May, June, September and October)	12	0.4
July and August	39	8.7
2 week peak in visitation	50	24.1
July and August excluding the peak 2 weeks	36	6.4

How does this happen when the total numbers of camping parties is below the park's total camping capacity? Campers are permitted for campgrounds based on their itinerary preferences, not based on site availability; in fact, under the current permitting system the park does not have accurate information about site availability at the time of permitting. Additionally, permits are issued for flexible itineraries so visitors may change their camping itineraries at any time throughout their trip, without changing their permits. As a result, more parties may end up in a campground than there are campsites, while other campgrounds may have empty campsites. For

example, 8 parties may arrive for the night at a campground with 6 campsites. Two parties cannot find empty campsites and 4 parties end up doubling-up for the night. Meanwhile, at another campground with 5 campsites, only 3 parties arrive for the night. Although there are empty campsites available on even the busiest nights, visitors are not effectively dispersed to campgrounds with available space, and may end up in overfull campgrounds. Continuing on to the next campground may not be an option given time and distances between campgrounds, and there are no assurances that space would be available at the next campground.

Surveys and computer modeling have also helped to identify where in the park crowding is an issue. In general, campgrounds within the Rock Harbor Channel tend to be more heavily used, and more over-crowded than others in the park. However, during the peak 2 weeks in visitation most campgrounds appear to be used up to their capacities (although many may not be overfull, they are full with little or no space to accommodate additional use.) In 2002 NPS personnel used this information to scout for feasible campground expansions or options for creating new campgrounds. This scouting was guided by several goals, including: 1) maintain or improve the quality of existing campsites, considering privacy, view, and shelter from human sounds; 2) avoid impacts to sensitive cultural and natural resources; 3) consider appropriate campground sizes based on management zones; 4) locate new campsites in suitable terrain, considering soils, slope, and screening; and, 5) consider communal campsites as well as individual tent sites, and options for tent platforms. Table 8 illustrates to what extent different campgrounds were permitted over their capacities in 2001, the expansions in campground capacities that would have been required to accommodate demand that year, and feasible options for new campsites that would adhere to the five goals listed above.

Park staff inform visitors of the likelihood of finding overcrowded campgrounds during the busy times, warning visitors of the probability of needing to double-up in campsites if they choose to visit during these busier times. However, this issue remains one of the consistent problems raised by the public. People may choose to socialize with other campers, or to share their campsites, but the concern is when parties are forced to double-up for lack of available campsites.

Aside from the sheer numbers of parties in campgrounds, other factors are also important in how crowded people feel, or what level of privacy and solitude they can find in Isle Royale's campgrounds. People's behavior and the design of campsites are important factors. Leave-No-Trace is a focal point of Isle Royale's educational program, sharing with visitors the importance of being aware of and minimizing their impacts on other people. Some of Isle Royale's campsites are well spaced, with abundant screening between sites and private water access points. Other sites are within sight and sound of other campers, dramatically reducing privacy and feelings of solitude. Improving the quality of campsites with adequate screening, spacing, and distance from docks is an ongoing goal of campground maintenance.

Table 8: Frequency and Extent of Campgrounds Permitted Over their Capacities in 2001 and Feasible Campsite Additions (from 2001 permit data, based on individual parties and shelters or tent sites only, not groups or group sites)

Campground	Number of Individual tent sites and shelters	Number nights permitted over capacity in 2001	Number campsite additions needed to meet peak demand	Number of known feasible campsite additions (including new GMP campgrounds)
Beaver Island	3	3	1	3 (Washington I., per GMP)
Belle Isle	7	3	3	3 (Crystal Cove, per GMP)
Birch Island	2	9	3	3 (new McCargoe Cove, per GMP)
Caribou Island	3	26	9	0
Chickenbone East	3	21	4	2
Chickenbone West	6	26	6	0
Daisy Farm	22	4	9	3
Desor North	3	23	8	1
Desor South	7	2	2	3
Duncan Bay	3	10	2	0
Duncan Narrows	3	4	5	0
Feldtmann Lake	5	24	13	3
Grace Island	2	14	7	3 (Johns I., per GMP)
Hatchet Lake	5	15	6	3
Hay Bay	1	39	8	3 (Wright I., per GMP) + 3 (Fishermans Home per GMP)
Huginnin Cove	5	8	3	
Intermediate Lake	3	0	0	0
Island Mine	4	25	5	4
Lake Richie-Canoe	3	6	5	0
Lake Richie-Hike	4	17	6	0
Lake Whittlesey	3	0	0	0
Lane Cove	5	19	6	0
Little Todd	4	4	2	0
Malone Bay	5	6	4	
McCargoe Cove	9	18	11	3
Merritt Lane	2	14	4	0
Moskey Basin	8	25	7	0
Pickerel Cove	1	7	1	0
Rock Harbor	20	6	9	0
Siskiwit Bay	6	18	7	5
Three Mile	12	9	7	5
Todd Harbor	6	11	7	
Tookers Island	2	18	4	0
Washington Creek	15	1	1	0
Wood Lake	3	3	1	0

Crowding at Docks in the Backcountry

Currently, Isle Royale allows rafting off at docks when dock space is unavailable and docked boaters are willing to have another boater (with a valid backcountry permit) raft off their boat. While on the whole, docks throughout the park are not usually crowded, there are specific campgrounds with docks that are more apt to run out of dock space than others, including Caribou Island, Grace Island, and Hay Bay (see Table 9.) In order to determine visitor concern about crowding at docks, Isle Royale included questions in its 1996 and 1997 visitor surveys, and in one of its WBMP Newsletters.

1996 Visitor Survey
During the 1996 visitor survey at Isle Royale, backcountry visitors, powerboaters, and day visitors were asked to identify and rank the importance of perceived problems at the park. A total of 190 powerboaters, and 798 backcountry visitors were surveyed. 50.8% of the powerboaters surveyed identified "finding an available docking spot at docks" as a moderate to serious problem. In addition, 18.6% believed that "having to allow unknown boats/parties to raft off of my docked boat at night" was a moderate to serious problem. Over 72% of powerboaters who responded to these two questions had boated to Isle Royale more than once. 5.8% of powerboaters surveyed felt that "noisy people at campgrounds with docks" was a moderate to serious problem, and 5% felt the same about "motorboat noise in narrow harbors and bays." 19.4% of the powerboaters supported "limit(ing) the number of boats so they do not exceed available dock and anchorage space." 77.7% of the respondents to this management question had been to Isle Royale more than once (Pierskalla et al, 1997.)

Over 96% of the 798 backcountry visitors (non-powerboaters) surveyed felt that finding available dock space, and having to allow rafting off were not problems. However, 20.9% felt that "noisy people at campgrounds with docks" was a moderate to serious problem, versus 5% who felt the same about "noisy people at campgrounds without docks." In addition, 29.8% felt that motorboat noise in narrow bays and harbors was a moderate to serious problem (Pierskalla et al, 1997.) While it is not surprising that the majority of backcountry visitors would not be concerned with dock space and rafting off per se, it is also fair to say that the indirect impacts of crowding at campground docks (noise levels where boats congregate) may be a moderate to serious concern to 20-30% of them

1997 Visitor Survey
The 1997 Visitor Survey asked questions and divided respondent groups in a similar manner to the 1996 survey. One difference in the 1997 survey was the division of user groups by zone (Frontcountry, Backcountry, Wilderness Portal, and Primitive). In the Backcountry group, 8% of powerboaters felt that the park should "limit the number of boats so they do not exceed available dock space." 29.6% felt that the park should "limit the number of dock spaces available." In both the Backcountry and Wilderness Portal groups, the majority of powerboaters felt that the number of boats at the same dock, number of boats rafting off their own boat, and the amount of noise generated by other boaters docked near them were all within acceptable limits (Pierskalla et al, 1998.)

Non-powerboaters responded to survey questions quite differently. 84.8% felt that to "limit the number of boats so they do not exceed available dock space" ranked as acceptable to very acceptable as a management action. Likewise, 87.7% felt that not allowing boat numbers to exceed available anchorage space was acceptable to very acceptable. 77.9% thought that it would be acceptable to very acceptable to limit the number of dock spaces available. When interviewed about their current experience at the park however, the majority of non-powerboaters across all use zones felt that the number of powerboats docked and anchored out during their campground stay was acceptable, and that the number of encounters with powerboaters docked at campgrounds where non-powerboaters spent the night was no more than expected (Pierskalla et al, 1998.)

Table 9: Overcrowding at campgrounds with only water access, 2001

Campground	# Nights >Capacity, 2001	Max # of Parties Permitted (# over capacity)	Capacity (Individual Sites)
Beaver Island	3	4 (+1)	3
Belle Isle	3	10 (+3)	7
Birch Island	9	5 (+3)	2
Caribou Island	26	12 (+9)	3
Duncan Bay	10	5 (+2)	3
Duncan Narrows	4	8 (+3)	3
Grace Island	14	9 (+7)	2
Hay Bay	39	9 (+8)	1
Merritt Lane	14	6 (+4)	2
Tookers Island	18	6 (+4)	2

Table 9 above shows campgrounds that are accessible only from the water. While some campsites would have been occupied by paddlers, it can be safely assumed that dock capacity was exceeded (rafting off occurred) at least a portion of the nights where a campground capacity was exceeded.

Campgrounds with docks that can also be accessed by trail were not included, because campground crowding by hikers versus boaters could not be separated. Visual observation by park staff, however, has verified that docks at these campgrounds also occasionally exceed capacity during busy periods (pers. com., Kangas, 2005.)

In another attempt to assess visitors' feelings about crowding at docks, WBMP Newsletter #4 requested that respondents give their opinions on rafting off (whether they ever had, and if so, was it a positive or negative experience.) The number of responses was low. Of those who had rafted off and did respond, 15 said that rafting off was a positive experience, 11 said that they

had no opinion either way, and 5 had a negative experience (Isle Royale WBMP Newsletter, 2002.)

Trail Crowding

Trail crowding appears to be a less salient public concern than campground crowding, which is consistent with general research in wilderness recreation (Manning 1999). However, crowding along trails, quantified through the number of trail encounters, does remain an important factor in social conditions in the park's wilderness and backcountry. Table 10 summarizes known trail encounter rates by management zone (Mayo Kiely 2001). Managing over-crowding in campgrounds may also serve to manage crowding along trails, depending on the management action taken. The NPS will continue to monitor trail encounters to test this.

Table 10: Rates of Trail Encounters Reported by Hikers and NPS Rangers in 2000 (see Appendix D, Map 6 for Management Zones)

Management Zone(s) that trail section passes through	Number of parties encountered per day	Number of people encountered per day
Backcountry		
Average	2.9	8.1
Minimum	0	0
Maximum	19.0	58
Backcountry & Primitive		
Average	3.1	8.7
Minimum	0	0
Maximum	9	32
Backcountry & Frontcountry		
Average	5.0	14.0
Minimum	0	0
Maximum	20.0	48.0
Primitive		
Average	1.1	2.5
Minimum	0	0
Maximum	5	15.0

3.1.4 Visitor Facilities and Services

Currently the NPS maintains 36 campgrounds at Isle Royale with an additional 5 planned with implementation of the GMP. Each campground has designated campsites and an outhouse, some have a dock, shelters, and picnic tables. The campgrounds range in size from 1 to 25 campsites. Table 11 outlines each campground and facilities available.

Campsites within the campgrounds consist of either a rustic shelter or tent pads and a flattened eating area. Shelters and individual tent sites are designed to hold one party with up to 6 people. Tent sites have (2-3) 12 by 12 foot tent pads clustered within a few feet of each other. Designated large group sites are designed with 4 or 5 closely clustered 14 by 14 foot tent pads for one group with 7-10 people. Although campsites can and do hold more than one party when campgrounds are overfull, typically there is no screening between tent pads and they sit within a

few feet of each other so there would be little to no privacy for multiple parties sharing sites. Similarly, shelters are one open area with 3 wood walls and one screen wall and do not offer any privacy for parties sharing a single shelter.

Table 11: Campgrounds and Associated Facilities ([1] Potential Wilderness, [2] planned for removal per the GMP)

Campground	**Management Zone**	**Wilderness ?**	**Consecutive Night Stay Limit**	**# Individual tent sites**	**# Shelters**	**# Group Sites**	***Dock ?***	***Picnic Tables?***	**Campfires permitted?**	**Boat generators permitted?**
Beaver Island	Backcountry	Yes	3	0	3	0	Yes	Yes	No	Yes
Belle Isle	Wilderness Portal	No	5	1	6	0	Yes	Yes	Yes	Yes
Birch Island	Backcountry	Yes	3	1	1	0	Yes	Yes	No	No
Caribou Island	Backcountry	Yes[1]	3	1	2	0	Yes	Yes	No	Yes
Chickenbone East	Backcountry	Yes	2	3	0	1	No	No	No	No
Chickenbone West	Backcountry	Yes	2	6	0	3	No	No	No	No
Chippewa Harbor	Wilderness Portal	Yes	3	2	4	1	Yes	Yes	Yes	No
Daisy Farm	Wilderness Portal	No	3	6	16	3	Yes	Yes	No	No
Desor North	Primitive	Yes	2	3	0	0	No	No	No	No
Desor South	Backcountry	Yes	2	7	0	3	No	No	No	No
Duncan Bay	Backcountry	Yes	3	1	2[2]	0	Yes[2]	Yes	Yes	No
Duncan Narrows	Primitive	Yes	3	1	2	0	No	No	Yes	No
Feldtmann Lake	Backcountry	Yes	2	5	0	2	No	No	No	No
Grace Island	Backcountry	Yes	3	0	2	0	Yes	Yes	No	Yes
Hatchet Lake	Backcountry	Yes	2	5	0	3	No	No	No	No
Hay Bay	Backcountry	Yes	3	1	0	0	Yes	Yes	No	Yes
Huginnin Cove	Backcountry	Yes	3	5	0	0	No	No	No	No
Intermediate Lake	Primitive	Yes	2	3	0	0	No	No	No	No
Island Mine	Backcountry	Yes	3	4	0	2	No	No	Yes	No
Lake Richie Canoe	Backcountry	Yes	2	3	0	0	No	No	No	No
Lake Richie Hike	Backcountry	Yes	2	4	0	2	No	No	No	No
Lake Whittlesey	Primitive	Yes	2	3	0	0	No	No	No	No
Lane Cove	Primitive	Yes	3	5	0	0	No	No	No	No
Little Todd	Primitive	Yes	2	4	0	0	No	No	Yes	No
Malone Bay	Wilderness Portal	No	3	0	5	2	Yes	Yes	Yes	Yes
McCargoe Cove	Backcountry	No	3	3	6	3	Yes	Yes	Yes	No
Merritt Lane	Backcountry	Yes	3	1	1	0	Yes	Yes	No	No
Moskey Basin	Backcountry	No	3	2	6	2	Yes	Yes	No	No
Pickerel Cove	Primitive	Yes	2	1	0	0	No	No	No	No
Rock Harbor	Frontcountry	No	1	11	9	3	Yes	Yes	No	Yes
Siskiwit Bay	Backcountry	No	3	4	2[2]	3	Yes[2]	Yes	Yes	No
Three Mile	Backcountry	No	1	4	8	3	Yes[2]	Yes	No	No
Todd Harbor	Backcountry	Yes	3	5	1	3	Yes	Yes	Yes	No
Tookers Island	Backcountry	Yes	3	0	2	0	Yes	Yes	No	No
Washington Creek	Frontcountry	No	3	5	10	4	No	No	No	Yes
Wood Lake	Primitive	Yes	2	3	0	0	No	No	No	No

The overall size of a campsite is a combination of official tent pads, unofficial tent pads that have become established by repeated use, and other areas trampled by repeated use for things like cooking, sitting, and storing gear. The cumulative area of campsites increased by approximately 10% from 1996 to 2002. The estimated area of exposed soil within these sites increased by approximately 50% in the same period. These changes, outlined in Table 12, are caused primarily by people using areas outside of the intended campsite boundary. However, there are likely several contributing factors, such as maintenance and design of campsites that do not clearly establish the campsite boundaries, more than one party doubling up in a site intended for 1 party, and tent pads that may be unappealing to campers because of being wet, uneven, or some other reason.

Table 12: Area and Exposed Soil of Isle Royale Campsites 1996-2002. Measurements are in square feet.

Type of site	Number	Mean Area		Mean Amount Exposed soil		Range of site area		Range of amount exposed soil		Cumulative area	
		1996	2002	1996	2002	1996	2002	1996	2002	1996	2002
Individual tent site	113	650	730	250	390	160-1520	140-1680	6-1060	3-1440	73,440	82,120
Group tent site	43	1570	1670	620	940	710-2570	660-2500	28-1910	30-2180	67,500	71,740
Shelter	88	420	480	130	180	130-1270	200-1380	8-560	8-650	37,030	42,300

In total there are 165 miles of trails and portages on Isle Royale. All but a few miles of trail are within designated wilderness. All trails are maintained within standards that minimize erosion and trail widening, concentrating foot traffic while still providing reasonable access. Trails are designed and maintained with an 18 inch tread, or up to 26 inches on a side slope, and brushed out with a 6 foot wide trail corridor. Water bars, corduroy, stepping stones, turn pike, retaining walls, check dams, boardwalk and bridges are all used to control erosion and minimize trail widening. Portions of the Ishpeming and Minong Trails are maintained to a more primitive standard with narrower trail corridors, more frequent wet trail crossings across beaver dams and wetlands, and sections of trail that may be more challenging to follow across ridge tops.

Two remote ranger stations are maintained in the park's backcountry, at Malone Bay and Amygdaloid Island. Facilities at these stations include docks, fuel storage, visitor shelters with park information, and ranger residences with associated utilities support (solar power, water treatment, and gas-powered generators for pumping boat fuel). Services offered include medical and emergency assistance and park information. Backcountry permitting and payment of visitor fees are not available at these remote ranger stations.

Three fire towers are within the park's wilderness; all were built in the 1960s. The NPS no longer relies on these towers for fire monitoring, but they continue to be maintained to varying degrees for research equipment, a radio repeater, and temporary storage of equipment or shelter for backcountry personnel. Two of the towers, Ojibway and Feldtmann, offer expansive island and lake views for visitors interested in climbing the towers, though the tops of the towers are

only open in the presence of NPS personnel. Ishpeming Tower no longer reaches above the treetops, so the view from this tower is limited.

The NPS maintains communications structures within Isle Royale's wilderness and backcountry. Communication facilities are critical for park operations and providing for human safety in a park such as Isle Royale where communication often depends on radios, cell phones, and satellite phones. Currently the Mount Ojibway fire tower, within designated wilderness, includes a radio repeater and satellite transmitter powered by photovoltaic cells. Communications technology at a remote monitoring station on Mount Ojibway also relays monitoring data.

The NPS maintains contracts with private businesses and organizations to provide many public services to Isle Royale visitors. These are managed through concessions contracts and Incidental Business Permits. Four ferries and one seaplane provide transportation to the island for visitors not traveling by private boat or plane. The Ranger III ferry is operated by the NPS. The Rock Harbor Lodge offers several services in addition to lodging and dining: 1) water taxi service, transporting visitors between Rock Harbor and various docks throughout the park's backcountry, 2) fishing charters; 3) boat tours to cultural and scenic sites; 4) canoe, kayak and motorboat rentals; and 5) small stores and showers in Windigo and Rock Harbor. Other private businesses offer fishing charters, dive charters, and guided recreational trips in the park. In 2003 the NPS issued 44 Incidental Business Permits for Isle Royale, with the majority of those going to backpacking organizations such as camps and outfitters.

3.2 Wilderness Character

> *The character of wilderness is an unseen presence capable of refocusing our perception of nature and our relationship to it. It is that quality that lifts our connection to a landscape from the utilitarian, commodity orientation that dominates the major part of our relationship with nature to the symbolic realm serving other human needs…Every management decision against an action or technology that might degrade the wilderness condition serves to uphold and strengthen the character it is seen to have. Every decision to forgo actions, technologies, or conveniences that have no seeming physical impact but detract from our commitment to wilderness as a place set apart enhances wilderness and agency character more, because sacrifice for an ideal is the strongest gesture of respect. (Federal Register/ Vol. 66, No. 10/ 2001 p. 3729-3730)*

Although difficult to measure, wilderness character consists of multiple components, including a state of naturalness and an "untrammeled" state, as well as conditions for solitude, primitive and unconfined experiences, personal challenge, self sufficiency, and an escape from the reminders of our modern society. As well as a state, wilderness character denotes an intention and a commitment to the spirit of an intangible.

3.2.1 Naturalness

Naturalness in wilderness refers to the area being influenced primarily by the forces of nature, rather than human efforts to manipulate, control or direct in attempts to provide particular benefits. This would consider the systems and functions on an ecosystem scale as well as a

micro scale by habitat. On a species level, naturalness considers the numbers, populations, cycles, and interactions of individual species in a self-willed manner. Relevant human influences on naturalness may be direct or indirect, and may result from actions taken within or outside of the wilderness.

There are several examples of intentional and unintentional human actions that have influenced the natural ecology of Isle Royale. During the park's mining period, fires were intentionally started to expose bedrock and minerals. More recently, through the mid 1980's the NPS followed a policy of suppressing wildfires. Both of these policies have had a significant effect on the forest ecology of the island, influencing forest structure, composition, and function throughout the park. The unintentional introduction of canine parvovirus is credited with the crash in the island's wolf population in the 1980's, with associated effects seen in the moose population and the island's forest ecology. The unintentional introduction and spread of invasive exotic species has the potential to have significant ecosystem impacts in the future.

On a smaller scale, the development of trails and campgrounds significantly alters the vegetation, wildlife and soils within the impacted areas. Additionally, research practices within the park that include trapping and radio collaring wolves, capturing and banding loons, handling bats and eaglets, and other invasive research methods detract from the "self-willed manner" and wildness of individual wildlife. This WBMP addresses these issues by identifying means of minimizing such impacts or outlining guidelines for making decisions that may impact wilderness character; research practices would be included in the Minimum Tool Decision Tree (Appendix G).

Naturalness also considers the effects of external human influences. Relevant concerns on Isle Royale include air pollution, influences on the mainland that may limit species recruitment to the island, and impacts to migratory species in their wintering grounds. All of these may have an effect on the interactions between wildlife and their habitats, the natural cycles of populations and succession, and long-term changes in the island's ecosystem. However significant, these external influences are beyond the scope of the WBMP, though the NPS is committed to fostering research and partnerships that will continue to address these issues into the future.

3.2.2 Wilderness Experiences

Wilderness experiences are largely self-directed and will be individual, based on one's state of mind. However, wilderness managers have an obligation to provide a setting in which people may find opportunities for solitude, primitive and unconfined experiences, risk, challenge, and self-sufficiency. Important components which can be managed include privacy, isolation, freedom from constraints, and an absence of the reminders of modern society and human distractions such as noise, large groups, and mechanization.

Although the majority of visitors to Isle Royale's backcountry and wilderness hike on trails and camp in designated campgrounds with bridges, signs, outhouses, established tent pads, and other conveniences, the majority of the park's land base is within the Pristine Zone where recognizable human influences and reminders are minimal; where it is possible to travel for days without encountering another person. Even within the designated trail system and in designated campgrounds, it is possible to find superlative opportunities for solitude. With unpredictable weather, few ferries, and limited services provided by the NPS or concessions, early Spring and

late Fall offer options of traveling for days alone with the added challenges of increased self-sufficiency, less maintained trails and potentially severe weather conditions.

Isle Royale offers a range of wilderness opportunities throughout the visitor season and around the park, with options available for those seeking more social or more solitary experiences, the conveniences of well maintained trails and campgrounds or the challenges of off trail travel, and options for traveling around the park by motorboat, by foot, or by paddle. Additionally, the lodge, day trips on ferries, and 2 campgrounds adjacent to developed areas offer opportunities to experience the park's wilderness on day trips without the need for wilderness camping skills.

Existing NPS regulations and developments may detract from the wilderness character of recreation opportunities on Isle Royale, to some extent limiting unconfined experiences and self-sufficiency while adding reminders of modern society. Regulations that limit human activities within Isle Royale's wilderness include fire bans, prohibitions on collecting plants and minerals, area closures, and required permitting. Such regulations were enacted to protect vulnerable natural and cultural resources in the park, as well as to protect appropriate wilderness experiences and wilderness character. Campgrounds with shelters and outhouses, and trails with bridges and signs succeed in making the wilderness more accessible and minimizing the extent of human impacts, but also compromise wilderness character as human developments. Human noises may also detract from the natural sounds of a wilderness. On Isle Royale such noises include the sounds of motorboats, generators, aircraft over-flights, and mechanized maintenance equipment, which can carry a great distance into the park's wilderness. All of these concerns are within the scope of the WBMP.

3.3 Natural Resources

Isle Royale National Park is a forested archipelago surrounded by the deep, cold waters of the largest of the Great Lakes. It is located in a zone of transition, or ecotone, between two major North American ecosystems or biomes – the boreal forest and northern hardwood forest. Boreal forest vegetation dominates the northeastern part of the island where forest vegetation is strongly influenced by lake effect climate, shallow soils, and windthrow. Northern hardwoods are more dominant on Isle Royale's southwestern portion, where soils are deeper and inland areas are less affected by Lake Superior influences than the exposed ridges and peninsulas of the northeastern end.

Detailed data of historical weather patterns at Isle Royale are sparse. Generally speaking, the climate of the park, strongly affected by Lake Superior, is characterized by short, cool summers and long, cold winters. Due to the moderating influence of the lake, summers are cooler and winters are warmer than the nearby mainland. Precipitation falls year-round, mostly as rainfall, averaging approximately 30 inches per year. Snow typically accumulates from mid-November through April. Fog is frequent near the lakeshore, especially in the spring.

Isle Royale's biodiversity (except for birds) is generally lower than that of the mainland because the islands' isolation has restricted migration of terrestrial organisms from outside populations. For

example, there are approximately 18 species of mammals documented on Isle Royale, far fewer than the number of mammals on the adjacent mainland. In addition, the limited land area of the archipelago likely impedes the long-term survival of viable populations of larger organisms with larger home ranges or territories. Isle Royale is thus a fascinating case study testing theories of island biogeography that attempt to explain lower species numbers (particularly mammals) and genetic change in some taxa (like fish in inland lakes) due to long-term isolation from other populations. Wolf and moose populations, together on the island only since the late 1940's, have become a classic study in predator/prey relationships. Other significant wildlife studies include studies of mercury contamination, the life history and conservation of loons, the life history of boreal chorus frogs, and monitoring of beaver, songbird, frog and toad, and raptor populations. For many people these wildlife populations and their conservation are at the essence of Isle Royale's wilderness character.

Adversely impacted natural resources are of concern for ecological health and integrity as well as for park visitors' perceptions. Visitors have varying tolerances for noticeably impacted resources, and at some point degraded conditions will negatively affect their experiences in the park.

3.3.1 Geology and Soils

The rocks seen on the Isle Royale archipelago today bear witness to over a billion years of geologic processes, including successive volcanism, sedimentation, uplift, and erosion. The islands' bedrock sequence consists of thick layers of lava and sedimentary rocks that have been tilted toward the southeast; linear ridges oriented along a northeast-southwest axis are the eroded edges of individual layers of the sequence. Significant minerals in Isle Royale are copper, greenstones, datolite, and agates. The oldest rocks in the archipelago date back to the Precambrian era.

Igneous rocks, in particular volcanic ones, dominate the geology of Isle Royale, but sedimentary deposits of sandstones and conglomerates are exposed on the southwestern end of the island. Evidence of Pleistocene glaciation is visible throughout the island and includes bedrock abrasions and striations, deposits of glacial till and landscape features like drumlins and moraines. This extensive Pleistocene glaciation has left a legacy of thin soils and numerous lakes, swamps, and bogs. Higher water levels in Lake Superior in the geologic past are evidenced by inland beach ridges.

Fifteen soil series and 14 distinct soil associations have been mapped and described at Isle Royale (Shetron and Stottlemeyer, 1991). By and large, the soils on Isle Royale are derived from deposits and outwash left by retreating glaciers and meltwater. Glacial till deposits vary in thickness across the island and are much deeper toward the southwestern end. Soils in the northeastern portion of the island are thin and highly organic; these shallow soils are a major influence in the dominance of boreal forest vegetation in the northeastern part of Isle Royale. This thin mantle of organic soil, plus erosion and soil-burning fires, have combined to expose large expanses of bedrock, especially along ridges. The absence or paucity of soil is probably a limiting factor for vegetation in rocky areas. In contrast, toward the southwestern end of the park, soils are deeper, better developed and less organic. These conditions favor northern hardwoods.

Human impacts to soils on a localized scale (on and adjacent to trails and campsites) include abrasion and loss of organic matter, exposure of soil through vegetation loss, compaction of soil, sterilization of soils beneath campfires, and changes in soil chemistry from human waste and organic waste (including food scraps, dishwater, and toothpaste). These impacts would affect soil porosity, biota, and/or nutrient cycling, which in turn impact vegetation, water absorption and runoff, and erosion. Park visitors may also perceive visible erosion or exposed soil as aesthetically undesirable. These impacts have been well researched and documented in recreation areas around the country and can be reasonably inferred to conditions in Isle Royale's designated and undesignated trails and campgrounds (Leung and Marion 2000, Hendee and Dawson 2002). Although these adverse impacts would affect a very small portion of Isle Royale's total acreage, the effects would be significant in and adjacent to the 165 miles of trails and 244 campsites in the park. From the perspective of healthy soils, compacted trail tread and campsite pads at a minimum alter drainage patterns and at maximum lead to barren or severely eroded conditions.

3.3.2 Aquatic Resources

Aquatic habitats account for more than three-quarters of Isle Royale National Park's area, and encompass a wide spectrum of environments, from the cold, deep waters of Lake Superior to inland streams, beaver ponds, lakes, marshes, swamps, wet meadows, and bogs. The park includes 438,008 acres of Lake Superior, in addition to about 200 inland lakes and ponds totaling some 9,050 acres. There are approximately 158 linear miles of perennial streams on Isle Royale.

In spite of the ecological importance of aquatic environments, data documenting their condition in the park have been rather scarce to date, although this is beginning to change. Baseline inventories of some inland lakes' fish communities and limited native freshwater mussel surveys have been completed, and recommendations for additional data collection and studies will be included in the park's upcoming Fish Management Plan, and its Water Resources Management Plan.

Despite Isle Royale's remoteness and the lack of industrial or municipal discharges into its inland waters, several air-borne pollutants, capable of being transported long distances in the atmosphere, have been documented in the park's waters, sediments, flora, and fauna. These include sulfur and zinc, mercury, organochlorines, and herbicides. Mercury, for example, has been found in the park's Common Loons, although at levels lower than those documented in loons in most other parts of the country. Several of these heavy metals and organic compounds are subject to biomagnification; that is, reaching increasingly greater concentrations in organisms higher on the food chain.

Levels of toxic contaminants in the park's inland lakes are a major concern. Fish monitored in 1992-94 did not exceed State of Michigan advisory levels for human consumption, but in a 1995-96 fisheries inventory, some of the fish sampled in six of the park's inland lakes did exceed state advisory levels for mercury in particular (Kallemeyn, 2000.)

The Lake Superior portions of the park, particularly its bays and channels, are used by motorboats. Motors are prohibited on the park's inland lakes. Accidental oil, fuel and sewage discharges from boats can all damage water quality locally. Improper hygiene and human waste (i.e. fecal matter) disposal methods on the part of backcountry users can also cause localized

bacteriological contamination on inland streams, ponds, and lakes. Of additional concern are contaminants associated with current and past maintenance activities, such as leaching from chemically treated lumber used for boardwalks and bridging, and spills of bar oil and fuel from chainsaws. Vegetable-based products have been used to minimize adverse impacts.

The park has experienced minor infestations from alien aquatic species, such as the sea lamprey (*Petromyzon marinus*) and zebra mussel (*Dreissena polymorpha*) and potentially the ruffe (*Gymnocephalus cernuus*). However, the spiny water flea (*Bythotrephes cederstroemi)* is observed almost annually in the vicinity of Rock Harbor, and is a concern for spreading and altering the aquatic food chain, especially if it were to reach the inland lakes. The park has identified the introduction and spread of exotic species as an issue of serious concern for the park and deserving of preventative measures.

Fisheries and Aquatic Life

Isle Royale's Lake Superior and inland lakes fisheries may well be the most nationally significant natural resources of the park; 61 species are known to be present. The park's lake trout (*Salvelinus namaycush namaycush*) population is acknowledged as the best example of a rehabilitated lake trout stock in all of Lake Superior. This population is now regarded as the healthiest as well as the most genetically diverse in the Lake. It is also the object of most fishing efforts in the Lake Superior portion of Isle Royale.

The Isle Royale population of the extremely rare coaster brook trout (*Salvelinus fontinalis*) is one of only two to three known reproducing populations in U.S. waters. In fact, eggs from this population have been used by the U.S. Fish and Wildlife Service (USFWS) in efforts to re-establish the coaster brook trout elsewhere in the Great Lakes (USFWS, 1998).

Information on the other fish species in the park's Lake Superior waters, particularly the non-game species, is scanty. Species known to be present include herring, whitefish, suckers, sturgeon, northern pike, walleye and yellow perch. Lake herring (*Coregonus artedii arcturus*) appeared to be making a strong comeback in the early 1990's, but by 2000 appeared to have dipped again.

The most common sport-fishing fish species in the park's inland waters are northern pike, yellow perch, walleye, rainbow trout, and brook trout. The most recent assessment of fish communities in the park's inland lakes occurred in 1995-1997. Recently, surveys and inventories have also been undertaken for zooplankton and native mussels within Isle Royale's inland waters, initially identifying unusually large populations of native mussels, in what are thought to be a relatively pristine state in comparison to mainland populations.

Human impacts to the park's fish populations include the direct impact of fishing and removal of individual fish. Fishing is allowed in the park's Lake Superior waters and inland lakes and streams. Indirect effects on fish and other aquatic life include contaminants from boating, air pollution and human waste (including dish water, soap, and other human waste at campgrounds). Of additional concern are human-transported exotic aquatic species that may become established in park waters with grave consequences for the aquatic food chain and native species. Most of these issues are beyond the scope of the WBMP and have been addressed or are being addressed

in the Isle Royale Water Resources Management Plan (2005) and the forthcoming (2012) Isle Royale Fisheries Management Plan, respectively.

3.3.3 Wetlands and Floodplains

Executive Order 11988 on Floodplain Management requires all Federal agencies to take action to reduce the risk of flood loss, to restore and preserve the natural and beneficial values served by floodplains, and to minimize the impact of floods on human safety, health, and welfare. Because many wetlands are located in floodplains, Executive Order 11988 has the secondary effect of protecting wetlands.

Executive Order 11990, Protection of Wetlands, states an overall wetlands policy for all agencies managing Federal lands, sponsoring Federal projects, or providing Federal funds to State or local projects. It requires Federal agencies to first avoid, then minimize adverse wetland impacts, with public input before proposing new construction projects.

A formal determination of floodplains on Isle Royale has never been conducted. In general, the short, low-gradient streams on the islands pose few flooding concerns, and the only facilities and developments near those watercourses are campgrounds and trails. Beaver dam washouts occasionally cause flash flooding in particular stream segments.

According to the National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service, conducted in the 1970's, a number of wetlands are present in the park, with emergent, forested, and scrub-shrub wetlands most common. This nationwide survey of wetlands and aquatic habitats is based on interpretation of high-altitude aerial photographs, not a ground survey, and its criteria differ somewhat from those used in jurisdictional wetlands delineations for permit evaluations by the Army Corps of Engineers under Section 404 of the Clean Water Act (Cowardin, et al., 1970). In addition, natural fluctuations occur that cause changes in the type and boundaries of the park's wetlands (i.e. beaver damming, or dam blowouts.)

3.3.4 Vegetation

Isle Royale and the adjacent lake country of Minnesota, with their continuous forest mantle, abundant wetlands and lakes, and sense of vastness and isolation, are perhaps closer to the true sub-arctic environment than any other region of the United States outside Alaska. Lake Superior moderates this arctic influence, and arctic-induced coolness provides a zone of tension between the boreal forest and the northern hardwood forest.

Two major biomes occur at Isle Royale: the boreal coniferous forest and the northern hardwoods forest. The former generally occurs in the cooler, damper areas of the park, which tend to be found toward the northeast. Balsam fir (*Abies balsamea*) and white spruce (*Picea glauca*), interspersed with pockets of paper birch (*Betula papyrifera*), comprise the so-called "climax" of the boreal coniferous forest. Seral stages of this forest type, that is, earlier phases, are dominated by quaking aspen (*Populus tremuloides*) and paper birch; these areas, typified by the 1936 burn site, cover about 20% of the main island. Frequent natural disturbance in the boreal forest from windthrow, insect and fungus attack, preferential feeding by herbivores like moose, fire, drought, etc., make it a highly dynamic community.

The northern hardwoods forest biome is found on warmer, drier sites with adequate soil; these tend to be in the southwestern areas of the park. Sugar maple (*Acer sacharum*) and yellow birch (*Betula alleghaniensis*) are dominant here. This community is more stable and less disturbance-prone, including to fire, than the boreal forest. Xeric (drier) ridges are occupied by small, open stands of northern red oak (*Quercus rubra*), white pine (*Pinus strobus*), jack pine (*P. banksiana*), spruce (*Picea* sp.), red maple (*Acer rubrum*), or occasionally red pine (*P. resinosa*). In swamps and wetland forests of the park, black spruce (*Picea mariana*) and white cedar (*Thuja occidentalis*) are dominant with the occasional occurrence of non-dominant eastern tamarack (*Larix laricina*).

Non-forested areas on the ridges support patchy grasses and shrubs, primarily common juniper *(Juniperus occidentalis)*, serviceberry *(Amelanchier spp.)*, honeysuckle *(Lonicera spp.*), hazelnut (*Corylus americana*) and blueberry (*Vaccinium sp*.). These areas, prone to lightning because of their exposure, have burned frequently, leaving little organic soil and thwarting forest encroachment.

Bogs and beaver meadows are dominated by dense stands of sedges, rushes, grasses, and shrubs such as alder at the margins. Two kinds of bogs exist at Isle Royale. Sphagnous bogs are dominated by the sedge *Carex limosa*, and have little or no drainage. Other common species in sphagnous bogs are sphagnum moss (*Sphagnum sp*.), Labrador tea (*Ledum groenlandicum*), black spruce, and tamarack. Cyperaceous bogs are dominated by the sedge *C. lasiocarpa* and often have an active water outlet. They tend to have less Labrador tea and sphagnum moss ground cover, but support larch and white cedar as an overstory.

Overall, approximately 700 species of vascular plants have been recorded at Isle Royale, of which slightly more than 100 species are exotics. At least 30 different vegetation alliances have been identified on the island, within the two broad communities or biomes described above.

Broad characteristics of Isle Royale's forests appear to have changed relatively little over time. Boundaries of contemporary forest communities generally correspond to those present in the park at the time of the first General Land Office survey by William Ives in 1847. Ninety percent or more of the park is in the same forest type as in 1847, differing only in seral stage, despite extensive Euro-American human use and exploitation. Yet several forest types are now undergoing significant changes. There is widespread paper birch mortality in older stands due to drought-induced stress and insect/disease attack. Balsam fir is rapidly declining on the west end due in part to intensive moose browsing, while substantial growth continues on the east end. Aging white spruce stands are also experiencing insect/disease mortality (Janke et al., 1978).

Moose browsing is creating considerable impact on several tree species, primarily balsam fir, white birch, and aspen; the Canada yew (*Taxus canadensis*), an understory bush favored as moose browse, has almost vanished from the main island. The issue of moose browsing and its effects on vegetation composition and forage quality is complex.

Researchers have postulated a "spruce-moose-savanna effect," whereby intense browsing pressure by moose suppresses replacement trees, opening up the forest canopy and possibly the island's fire patterns by reducing forest flammability. Few balsam fir, the preferred winter browse species of moose, are able to escape the extreme browsing and make it into the canopy over much of the park. In recent years, the overall quality of moose forage has declined, especially on the southwestern end of Isle Royale. Browse activity has changed the composition, not just the density, of the understory of the park's boreal forests as well; the principal understory plant described by the Ives survey in 1848 was the Canada yew (also known as American yew, ground hemlock, or sometimes "moose candy" in reference to its popularity with these large herbivores) a highly flammable "ladder fuel." Today the yew is rare, limited to pockets of low moose density. Thimbleberry (*Rubus parviflorus*), the most common understory shrub in the park now, was not even mentioned in the 1848 Ives report. Moose do not eat it, and normally it will not carry fire because of its high moisture content. These factors combine to create what may be a less fire prone forest than what was found prior to the arrival of moose on the island.

Passage Island, approximately 4 miles northeast of the main island in the park, offers a study of Isle Royale's forests in the absence of moose. Moose have never colonized Passage Island, so Canada yew, which they have over-browsed on the main island, is still quite plentiful. Most of Passage Island's vegetation is composed of wind-dispersed species and its vegetation is very different from the rest of the park. There is virtually no white spruce on Passage Island; in contrast it includes a large mountain ash component. This island is one of the most unique forest habitats in all of Michigan. Public access to Passage Island is afforded through a public dock and guided tours of the island. No overnight camping is allowed.

In 1936, human-caused fires burned approximately 20% of the forest on Isle Royale's main island. The burned area furnished abundant forage for moose in the years following the fire, so much so that the moose population could not increase fast enough to avail itself of this surplus food, and a number of trees were thus able to "escape" over-browsing and mature. Aging birch and aspen forests now characterize this area.

Approximately 95% of the park is now designated as a Wildland Fire Use Zone, meaning lightning-caused fires are allowed to burn under most circumstances. In theory, this policy should allow fire to regain its stature as an ecological force on the island; yet very little acreage actually burned in the 1990's, despite some dry summers. The combination of forest types (hardwoods, birch, and aspen) and moose browse impacts may have tempered the typical heavy build-up of fuels associated with decades of earlier fire suppression. Many fire-dependent species, such as jack pine and white pine, will decline without its return.

Most insect and disease impacts appear to be natural events, with the notable exception of blister rust on the island's white pines; with no method of control for the blister rust, an important resource on the island may eventually disappear from this alien disease. The park experienced widespread outbreaks of native tree pests in the dry years of the 1990's, including Tortrix (*Archips conflictana*), which affected aspen and birch, and spruce budworm (*Choristoneura fumiferana*) which affected balsam fir and white spruce.

Serious concerns exist about alien species of flora at Isle Royale. Spotted knapweed (*Centaurea biebersteinii*) has been found in several places in the park, and is aggressively treated and mapped wherever it is found. Other invasive species of concern that have been documented within the park include mountain bluet (*Centaurea montana*), creeping bellflower (*Campanula rapunculoides*) and garlic mustard (*Alliaria petiolata*). The park is actively inventorying, mapping, monitoring and treating these invasive exotics annually.

Known human impacts to the park's vegetation occur on a large and small scale. The predominant large-scale impacts are the result of human caused fires followed by decades of fire suppression, as discussed above. On a smaller scale, the construction of trails and campgrounds, and human trampling, have significant localized effects on vegetation. These impacts are most relevant to recreation and the issues being addressed in this WBMP, and more specifically include changes in plant composition, damage to and loss of vegetation, the loss of woody debris for campfires, and the creation of ideal conditions for the establishment of exotics.

Vegetation composition in and adjacent to trails and campsites shifts in response to increased light intensities from clearings, increased trampling, increased moisture from runoff, compacted soils, and the possible introduction of exotic or other disturbance-tolerant species. Most if not all vegetation is eliminated in the construction and use of designated trails and campsites. Generally, broad-leaved herbs, lichens, small shrubs, and tree seedlings have little tolerance for trampling and are quickly eliminated where people stray from designated trails and campsites. Plants in forested shady areas also appear less resilient than those in open sunny sites. A loss of original species may expose soils to increased erosion as well as creating favorable conditions for new, invading species (Hendee and Dawson 2002). The establishment and subsequent spread of invasive exotic species under these conditions is of particular concern.

Vegetation is particularly vulnerable to the impacts associated with trampling in the spring. Soils are heavily saturated following the snow-melt, creating muddy conditions that exacerbate erosion. This is compounded by trail widening due to hikers avoiding wet and muddy patches on trails, and campsite expansions resulting from people pitching their tents outside of wet or muddy tentpads. The damage caused by trampling may be longer lasting when plants are damaged before going to seed.

3.3.5 Terrestrial Wildlife

Isle Royale's terrestrial wildlife is a classic example of island biogeography theory, which predicts that biodiversity on islands is less than on mainland areas, as a result of both distance from the mainland (that limits colonization) and the constrained ability of an island of a given size to support viable and genetically healthy populations. For instance, only 18 species of mammals are known to breed in the park, compared to about three times that number on the north shore of Lake Superior. Many species of mammals cannot swim across Lake Superior and will not cross the ice if the lake freezes. Colonization of the island is by chance dispersal with the constant possibility of natural extinction. Caribou, coyote and lynx have all disappeared from Isle Royale since the arrival of Euro-Americans.

Mammals include the red fox, snowshoe hare, mink, short-tailed weasel, beaver, deer mouse, red squirrel, muskrat, river otter, American marten, and six species of bats (little brown myotis,

northern long ear, silver haired, red bat, hoary bat, and big brown bat). The two best-known mammals on Isle Royale are the moose and the timber wolf, the subject of the longest-running, predator-prey research and monitoring project in the history of wildlife management. Professor Durward Allen and his graduate students initiated this project in 1958; since the mid-1970's, Dr. Rolf Peterson of Michigan Technological University has continued the studies. Moose colonized Isle Royale in the early 1900s, either by swimming or crossing the ice from the Canadian mainland. Before wolves arrived in the late 1940's, the moose population exploded, over-browsed the vegetation, and collapsed twice. The second population boom was aided by the production of vast amounts of new browse after the 1936 fire (Peterson, 1977).

No animal symbolizes the essence of Isle Royale wilderness more than the timber wolf. Its widely fluctuating numbers range annually from 12 to 50 with some dramatic dips and rises in the 1990s. Studying these population dynamics increases our knowledge and awareness of the park ecosystem. In the late 1980s concern over a rapidly dwindling population led to radio collaring and extracting blood samples from a few wolves on Isle Royale for the first time. With this, researchers discovered that canine parvovirus had infected the population and was partially to blame for the decline. Since then a few wolves have been trapped, collared and tested for disease and general health every few years. Although the population has rebounded somewhat with successful reproduction since then, concern for the park's wolf population continues. The isolated population remains vulnerable to inbreeding and disease.

There is also growing concern with the possibility of wolves losing their fear of humans. Wolves have been well protected on Isle Royale in large part because they have maintained their fear of people, avoiding encounters and maintaining a separation. There would be serious repercussions if wolves were to lose this fear and become habituated to people on the island. Wolves that have lost their fear of people and approach people, frequent campsites, or begin associating people with food pose a very serious safety risk. In Algonquin Provincial Park, Ontario, "tame" wolves in campgrounds have bitten people on multiple occasions and there are a growing number of similar incidents elsewhere in North America; all of these cases have resulted in the death of a wolf (Peterson and Vucetich 2002, McNay 2002). To prevent this at Isle Royale a primary goal is to maintain a separation between wolves and people, and provide plenty of space for wolves to escape human presence. One means of accomplishing this is to maintain the status quo in terms of where campgrounds and trails are located, where and how frequently people travel off trail, and where wolves can consistently avoid people.

The park's moose herd increased slowly over the five years following the population crash during the winter and spring of 1995-96, but began to drop to historically low numbers from 2002 onward. Major challenges for Isle Royale moose are winter ticks and the poor winter food supply, especially on the southwest end of the island, where these herbivores often must survive on lichens. Moose on the northeast end do better because of the large balsam fir stands growing there.

Little is known about Isle Royale's reptiles and amphibians, but their occurrence is doubtless influenced profoundly by island biogeography as well. Three species of reptiles have been documented – the western painted turtle, red-bellied snake, and garter snake – as have seven

amphibians – the blue-spotted salamander, mud puppy, American toad, spring peeper, chorus frog, green frog, mink frog, and wood frog.

Due to migration and their much greater mobility and ability to disperse, birds are less affected by the isolation of Isle Royale than the foregoing taxa. Bird diversity tends to mirror that of nearby mainland areas in Michigan, Minnesota and Ontario. Two notable absences are the ruffed grouse and the spruce grouse, which are non-migratory and unable to make the flight across the open waters of Lake Superior to the park. Historically, the park did have a sharp-tailed grouse population, which gradually disappeared (there have only been two reported sightings in over 20 years.) Bald eagle and osprey populations continue to rebound at Isle Royale; in the 1960's and 1970's pesticide poisoning eliminated nesting of these two majestic raptors in the park. Both birds began nesting again at Isle Royale in the 1980's. By 2000, 14 fledglings were produced from twelve eagle nests and seven fledglings were produced from seven osprey nests (Romanski, 2000). Nesting eagles and ospreys are sensitive to human intrusions and on Isle Royale area closures have proven effective at preventing adverse impacts from human encounters near nests.

Another raptor recovering from pesticides across North America is the peregrine falcon (*Falco peregrinus*). From 1987-91 the park released 50 young peregrine falcons from two locations on the island. Although peregrines are occasionally sighted, it is not believed that any successful nesting has yet occurred.

Isle Royale has the only known Common Loon nesting territories on the shorelines of the Great Lakes, and loons are synonymous with Isle Royale as they may be heard and seen throughout the park by virtually all visitors. The State of Michigan identified the park as one of only two management zones (out of six) maintaining a sizeable loon population, though loons were once common throughout the state and known to breed in all of the state's counties. Loons play a vital ecological role in the aquatic food chain as a top predator by regulating the structure of aquatic communities. The NPS and research partners have monitored Isle Royale's loon population and fledging rates since 1990. When fledging rates appeared to be lower than would be expected in an area protected as a National Park and wilderness, additional research was begun to explore loon territories in the park and mechanisms that may be influencing nesting success. There are approximately 100+ known territories within the park, including inland lakes as well as protected Lake Superior shorelines. Fledging rates are estimated at 0.34 park-wide. There are a limited number of published monitoring efforts with comparable methodologies and duration that would offer valid comparison for the fledging success of Isle Royale loons. Table 13 lists known comparable studies, which includes study sites that may be expected to have lower levels of protection afforded loons than on Isle Royale (e.g the state of New Hampshire) and areas of greater protection (e.g. Seney Wildlife Refuge where no recreation is allowed on the lakes).

Table 13: Fledging Rates (per territorial loon pair) at Selected Long-term Monitoring Sites (with permission from Kaplan and others 2003)

Site	Years	Fledging Rate	Source
Isle Royale National Park, MI	1990-2002	0.34	Kaplan and others 2001
New Hampshire (state-wide)	1977-1999	0.51	Taylor and Vogel 2000
Massachusetts	1975-1990	0.51	McIntyre 1994
Stillwater Reservoir, NY	1977-1990	0.58	McIntyre 1994
Vermont	1978-1990	0.59	McIntyre 1994
Seney National Wildlife Refuge, MI	1987-2002	0.69	Unpublished data; Evers and others 2000

Several mechanisms likely influence Isle Royale fledging rates. Of primary relevance to this WBMP is the observed impact of human interactions and intrusions into loon nesting areas. Loons are known to be sensitive to a human presence on the water, especially proximity to nests. On Isle Royale and elsewhere loons have been observed flushing off their nests when paddlers approach in canoes or kayaks. Preliminary research (Kaplan and others 2003) revealed that from 1990 through 2002 as the number of permits issued to canoers on Isle Royale increased the number of chicks fledged per loon pair decreased. This research also revealed that under certain circumstances there appears to be a correlation between the number of paddlers who approach within 20 meters of a loon nest and the probability of a nest failing. More research is needed to better understand the mechanisms influencing the fledging rates of Isle Royale loons as well as the viability of the population in the park. However, this preliminary research reinforces the importance of public education and informing people of how their behavior may affect the park's wildlife positively or negatively.

Some 58 species of forest songbirds have been documented at Isle Royale from monitoring begun in 1994. The most abundant are the white-throated sparrow, Nashville warbler, ovenbird and red-eyed vireo. Park staff have begun an annual monitoring program for neotropical migratory birds based on accepted protocols An average of 1,424 individuals representing 57 species was detected annually. Eighty-five species from twenty-five families were identified during a 13-year period from 1996 to 2008 (Egan 2009). The majority of these species are neotropical migrants, which comprise about half of the breeding songbirds on Isle Royale. Neotropical migrants winter in Central or South America. Studies of recreation impacts on birds reveal concern in several areas: 1) trails affect the composition of bird species by creating edge habitats that favor generalist species and are unfavorable for specialist species, 2) nest predation rates are higher along trails, and 3) intentional and unintentional wildlife feeding in campsites leads to attraction behavior and unhealthy food dependencies, a common occurrence with species of jays in particular (Leung and Marion 2000).

There are specific concerns for wildlife species during different seasons of the year. Spring and fall are times of high sensitivity for many species in boreal areas such as Isle Royale with a narrow window for breeding and rearing young. Animals that hibernate or migrate have particularly short periods of time to establish territories, attract mates, establish nesting or denning areas, and reproduce. If disturbances upset their nesting or denning periods, there is less of a chance in these northern climates that they could start again and successfully rear young before the onset of winter. Spring is also a critical period for animals such as moose and wolves

that have already produced young and are focused on protecting these young. Fall offers other unique challenges, with wildlife storing up food or body fat in preparation for winter. Fall is a particularly critical time for moose, as they enter the rut. Protecting wildlife from human disturbances during these sensitive seasonal periods is one goal of resource management on Isle Royale.

3.3.6 Threatened and Endangered Species

This section, and Appendix H, summarizes information on species of plants and animals at Isle Royale National Park listed by the Federal government (USFWS) or the State of Michigan as Threatened or Endangered. In addition, species of special concern designated by the state are listed in Appendix H.

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1544) provides the legal framework by which imperiled species of plants and animals are designated and protected by the Federal government. The Endangered Species Act of the State of Michigan (Part 365, PA 451, 1994 Michigan Natural Resources and Environmental Protection Act) provides the parallel authority for the state. The current state list became effective on March 20, 1999.

A current list exists at the park for Federally-listed flora and fauna, which includes the Threatened grey wolf and bald eagle. No park plant species are on the Federal list. The State of Michigan list of endangered and threatened species and species of special concern includes many animal species found on Isle Royale, including six species of fish and 20 species of birds, in addition to more than 60 plant species (Michigan State University, 1999a and 1999b).

Federal Endangered Species

An "Endangered species" is one that is threatened with extinction throughout all or a significant portion of its range. No Federally-listed Endangered plants or animals are known to be resident at or frequent visitors to Isle Royale. The gray wolf (*Canis lupus)*, which has been found in the park since the late 1940s, was reclassified from Endangered to Threatened by the US Fish and Wildlife Service in April of 2003. The peregrine falcon (*Falco peregrinus*), which is found in the park but not known to nest, was listed as an Endangered species in 1970, but was de-listed in 1999 as a result of recovery of its populations from successful efforts at captive breeding and reintroductions.

Federal Threatened Species

Threatened species are assumed to be vulnerable to become Endangered, and so are offered protection similar to that for Endangered species. Two Federally-Threatened species occur at Isle Royale:

- **Gray wolf** (*Canis lupus*) –Originally, the gray wolf resided over most of the eastern United States, but it was widely extirpated as human populations grew, habitats were modified, prey species dwindled, and aggressive predator control programs targeted wolves. The wolf was officially listed as Endangered by the Federal government in 1974, then reclassified as Threatened in 2003. Wolves have been at Isle Royale since the late 1940's, having arrived naturally by crossing Lake Superior when it was frozen one

winter. Their population size fluctuates from about a dozen to several dozen and they feed primarily on Isle Royale's moose herd.

- **Bald Eagle** (*Haliaeetus leucocephalus*) was also down-listed from Endangered to Threatened by the USFWS in 1995 and delisted in 2007 bird as a result of its increasing numbers around the country. The reason for historic declines in bald eagle populations in the 1950's and 1960's included PCBs, DDT, DDE, mercury, and disturbance and displacement by humans. DDT was the primary cause and the banning of DDT in the early 1970's has led to resurgence in numbers throughout the U.S. as well as in the park. Bald eagles began nesting again at Isle Royale in the 1980's. By 2000, a maximum of s14 fledglings were produced from twelve eagle nests (Romanski, 2000), while the long-term average is between 8-10 fledglings.

State-Listed Species

A number of species listed by the State of Michigan as Endangered, Threatened, or Species of Special Concern are found at Isle Royale. These species and sub-species are not afforded the same formal protection provided by the Endangered Species Act, but NPS policy grants them similar protection through a commitment to "inventory, monitor, and manage state and locally listed species in a manner similar to its treatment of federally listed species, to the greatest extent possible" (NPS 2006). Isle Royale species listed by the State of Michigan are presented in full in Appendix H.

- **State-Endangered plants:** There are seven species of state-endangered plants at Isle Royale.
- **State-Endangered animals:** There are no state-endangered mammals at Isle Royale. Of state-endangered birds, both the peregrine falcon and the short-eared owl have been at the park, but there is no known nesting by either species within park boundaries.
- **State-Threatened plants:** There are 40 species of state-threatened plants at Isle Royale.
- **State-Threatened animals:** The gray wolf in the only state-threatened mammal known to reside and breed at Isle Royale. There are three species of state-threatened fish at Isle Royale, the lake sturgeon, lake herring, and shortjaw cisco, and nine state-threatened birds; long-eared owl, red-shouldered hawk, yellow rail, merlin, common loon, bald eagle, osprey, Caspian tern, and common tern. Of these, the merlin, common loon, bald eagle, and osprey are known to breed within Isle Royale National Park.
- **Plants of Special Concern:** There are 18 plant species of special concern in the park.
- **Animals of Special Concern:** There are three fish species and/or sub-species of special concern at Isle Royale, the Siskiwit Lake cisco, kiyi, and spoonhead sculpin, and one mammal of special concern, the moose. There are nine bird species of special concern: Cooper's hawk, northern goshawk, American bittern, black tern, northern harrier, black-crowned night heron, black-backed woodpecker, dickcissel, and yellow-headed blackbird.

In addition to the federally listed species, several state-listed species—the common loon and state-listed plants—are of particular concern to the WBMP, because of the known impacts of human activities and recreation on these species. Management actions are known to influence where people travel through the location of trails and campgrounds. The locations of loon nests

and rare plants, as well as federally listed species and their habitats were considered in exploring and evaluating any changes in the location of trails and campgrounds. These were also considered in exploring changes in public education and park regulations.

3.3.7 Natural Sounds and Sights

The natural sounds of Isle Royale's wilderness may be compromised by human-generated mechanical noises. The natural sights may be compromised by light pollution from residential areas within the park and Thunder Bay to the north, and the sights of human developments visible from many locations throughout the park's backcountry, including wilderness.

Measuring Levels of Sound and Noise

NPS policy considers natural sound to be an integral part of visitors' experiences in backcountry and wilderness areas of National Parks. Many visitors to National Parks place high value on natural sound for its novelty and marked contrast to most people's everyday experiences as well for its restorative effects. Natural soundscapes can be protected in part by controlling the intrusion of motorized and human-generated noises into protected areas (Gamann 1999.)

A logarithmic unit known as the decibel (dB) is used to represent the intensity of sound. The decibel scale is similar to the Richter scale used to measure earthquakes. On the Richter scale a 7.0 earthquake is ten times stronger than a 6.0 earthquake. On the decibel scale, an increase of 10 dB is equivalent to a 10-fold increase in intensity or power. Therefore, a sound registering 80 dB is ten times louder 70 dB sound. To give an example of the range of audible sounds: a whisper has an intensity of 20 dB and can just be heard; 140 dB (a jet aircraft taking off nearby) is the threshold of pain. In wilderness the typical sound level would be 30-40 dB (MPCA, 1999; EPA, 1974), with louder intervals of sound, such as birds singing nearby and geographic variations such as sound from a waterfall.

The perceived intensity of sound is not only a function of volume; certain frequencies of sound appear louder to the human ear than do other frequencies, even at the same volume. Decibel measurements of noise are therefore often "A-weighted" to take into account the fact that some sound wavelengths are perceived as being particularly loud. A soft whisper is 20 dB but on the A-weighted scale the whisper is 30 dBA. Normal speech has a sound level of about 60 dBA. Sound levels above 120 dBA begin to be felt inside the human ear as discomfort and eventually pain at still higher levels (DOD, 1978). Examples of dBA levels from some common sounds can be found in Table 14.

Table 14: Common Noise Levels and Their Effects on the Human Ear		
Source	Decibel Level (dBA*)	Exposure Concern
Soft Whisper	30	Up to 70 dBA Normal safe levels
Isolated Wilderness	30-40	
Quiet Office	40	
Average Home	50	
4-stroke outboard boat motor at idle	58	
Conversational Speech	66	
Busy Traffic	75	Up to 90 dBA May affect hearing in some individuals depending on sensitivity, exposure length, etc.
Noisy Restaurant	80	
4-stroke outboard boat motor cruising	88.5	
Average Factory	80 – 90	
Rock Harbor Generator	85-105	Over 90 dBA Continued exposure to noise over 90 dB may eventually cause hearing impairment.
NPS Diesel Boats	90-100	
Inboard Motorboat	110	
Propeller aircraft	120	
Automobile Horn	120	
Chainsaw	90-125	

*Indicates A-weighted decibel levels
(DOD, 1978 and ISRO 1997, MPCA 1999)

Soundscapes and Noise

"In most environments today, soundscape signatures are comprised of two natural components, *biophony* and *geophony*, and a probable human component that includes the third, *anthrophony*. ***Biophony*** is the combined sound that living organisms produce in a given habitat. ***Geophony*** is comprised of geophysical sounds in the environment, such as the effect of wind in trees or grasses, thunder, water flow, earth movement, etc. ***Anthrophony*** is usually comprised of human-generated mechanical sounds, such as signals from aircraft, automobiles, generators, snowmobiles, jet-skis, radios, television sets, boom boxes, or automobile sound systems." (Krause and Gage, 2003).

Noise is defined as unwanted sound (INCE, 1995). In a National Park setting, much of the human – generated sound (anthrophony) would be considered noise. In other circumstances, such as an orchestra concert or a conversation, human-generated noise can be pleasing. In some recreational settings such as an amusement park or a sports stadium a high-volume of human-generated noise is expected. But National Parks are among those quiet settings more sensitive to noise intrusions. Examples of these "sensitive receptors" include places such as schools, churches, hospitals, retirement homes, campgrounds, and hiking trails. Some living things are also sensitive receptors including Threatened or Endangered species, other wildlife and some people.

Even in "quiet" settings like churches and schools, a certain level of human-generated sound is expected, tolerated and even enjoyed. Sound becomes noise only when it is unwanted. Therefore a school orchestra practicing at 70 dBA would not be considered noise by the students, while a radio playing outside a classroom at just 60dBA would likely be considered noise. Determining which sounds are "noise" has to do with more than just volume. In a wilderness area, such as Isle Royale, complete silence is not required. The sounds of birds, frogs, insects, and mammals combine to form the biophony. Waves against the shore, wind in the trees, flowing water, and thunder are elements of the geophony. These sounds are expected in a wilderness and form the natural soundscape. Even at higher-than-normal decibel levels these sounds may not be considered noise because they are part of the wilderness experience.

By contrast, human-generated noise, even at low decibel levels, can have a negative impact on a visitor's wilderness experience. While the sounds of birds and waves are expected in a wilderness, the sounds of mechanical devices are not. Lower decibel noises may seem louder in the wilderness because the soundscape is not crowded with the human-generated mechanical noises that fill modern life. An average home might have a background noise level of 50 dBA; this level is much louder than in the wilderness where 35 dBA is more typical. In these quiet conditions, a hiker on the Greenstone Trail might hear a boat motor at cruising speed in the Rock Harbor channel, miles away. This could be more disturbing to the hiker in wilderness than a much louder engine noise would be in a residential area where such noises are more common and the general background noise of the area is much louder.

Current Noise Conditions at Isle Royale

Detailed research on noise levels and natural landscapes has not been completed at Isle Royale. However, there are many known sources of noise penetrating the park's wilderness. These sounds originate from sources both within and outside of designated wilderness and include:

- Human voices can be heard for long distances in the park, especially across the water, from a height, or in the evening when the wind dies. Large group sizes, and alcohol-influenced behavior can contribute to this.
- Motorboats traveling on Lake Superior can be heard for long distances in the park. Four-stroke engines (like those used on many NPS boats) are quieter than two-stroke engines, which can often be heard well into the interior of the island. Motorboats are the primary means of transportation for park personnel working throughout the park. In addition to the NPS fleet, between 1,000 and 2,000 private motorboats travel to and around Isle Royale each year.
- A commercial seaplane flies regularly to the island and along the length of the park's border between Windigo and Rock Harbor, landing in Tobin Harbor and Washington Harbor up to three times per day. Private planes also fly to and around the park, though rarely. These planes fly directly over wilderness when landing and taking off and can be heard well into the interior of the island.
- Aircraft over-flights for resource monitoring and administrative use fly at low levels during the visitor season. Over-flights are for surveys of park resources (for example raptor counts and fire monitoring) and for administrative purposes and occur about five times per visitor season with about 2 hours directly over the island for each flight.

- During winter study aircraft over-flights are used for monitoring and researching the island wolves and moose. These flights take place when the park is closed to visitors and number about 35 per year.
- Helicopter flights are used for medical emergencies and infrequent administrative projects. People with medical emergencies may be transported by helicopter to mainland hospitals. Flights typically land outside of wilderness on the Mott Island main dock, but can also land in other designated zones. An average of about six emergency flights are needed per year. Administrative uses of helicopters in the past have included flying and hovering over wilderness for projects such as supplying batteries to a radio repeater, hauling materials for trails construction, and transporting opening crews to the island before ice-out in the spring. The frequency of these helicopter operations varies from year to year, with some years having no administrative use of helicopters.
- TheVoyageur II ferry travels around the island, particularly into McCargoe Cove and its engines can be heard several miles into the interior of the island (depending on the wind direction). The Voyageur II makes three complete trips around the island each week and operates six days per week. All ferries sound horns to announce their arrival and departures; this can be heard in the wilderness daily within the vicinity of Rock Harbor and Windigo, and periodically at secondary ferry landings at McCargoe Cove, Daisy Farm, Chippewa Harbor, and Malone Bay.
- Generators power operations at Windigo, Rock Harbor and Mott Island. Diesel generators run constantly and can be heard from Tobin Harbor and Rock Harbor with the noise penetrating beyond the shore in both locations. Depending on weather conditions and seasons of the year, generators can also be heard from atop ridges on the northeast and southwest ends of the island.
- Tractors and other heavy equipment operating at Mott Island, Rock Harbor and Windigo can be heard in the interior of the island. Such equipment operates frequently throughout the visitor season depending upon the current projects.
- Power tools, cranes and barges may be used for dock maintenance adjacent to designated wilderness areas; noise levels vary with project and location.
- Power tools are used for maintaining shelters and outhouses in shoreline campgrounds both within and adjacent to wilderness.
- Chainsaws are used in designated wilderness, primarily in May and June to clear trails and campgrounds from winter windfall trees, and in September and October to clear hazard trees. Chainsaws are also used outside of designated wilderness for general maintenance.
- Trail maintenance with hand tools such as pick ax and rock bars. Noise travels well, especially from a height and across water. For example, work on the Greenstone Trail can be heard at Malone Bay under the right conditions.
- Lighthouses at Passage Island and Rock of Ages. These lighthouses constantly produce a “foghorn” type sound twice per minute. This sound can be heard at the far Northeast and Southwest ends of the park.

Noise Impacts on Wildlife

Beyond affecting human visitors and NPS employees, higher-volume noise could also negatively impact wildlife in the backcountry and wilderness. Most researchers agree that noise can affect

an animal's psychology and behavior, and if it becomes a chronic stress, can be detrimental to an animal's energy budget, reproductive success and long-term survival (Radle, 1998).

The Noise Pollution Clearinghouse has assembled the findings of several important studies on the effects of noise on wildlife. The studies they cite find that "Long-term exposure to noise can cause excessive stimulation to the nervous system and chronic stress that is harmful to the health and reproductive success of wildlife species (Fletcher, 1990)." "Behavioral and physiological responses have the potential to cause injury, energy loss (from movement away from the noise source), decrease in food intake, habitat avoidance and abandonment, and reproductive losses (National Park Service, 1994)." And "Studies have documented hearing loss caused from motorcycle noise in the desert iguana (Bondello, 1976) and the kangaroo rat, an endangered species (Bondello and Brattstrom, 1979)."

Mechanical noise might even cause certain species to abandon an area. In tests conducted at Sequoia/ King's Canyon National Park, sponsored by the NPS and conducted by researchers from Wild Sanctuary and Michigan State University, detailed analysis of soundscapes revealed that species developed a system of audio niches so that, in general, different species did not use calls of similar frequencies in the same soundscape. The system of audio niches had also adjusted to the presence of white noise from streams and other geophonic features (Krause and Gage, 2003). This research has implications for human-generated noise, especially constant mechanical noise such as that created by generators used at Isle Royale. If species' calls were cancelled out by the frequencies of human-generated noise, those species would likely either have to adjust the frequency of their calls, or if that were not possible, relocate to areas beyond the reach of the anthrophonic noise.

The impacts of noise on wildlife needs much more research, especially the long-term effects of medium to low-level noise intrusion, with an emphasis on endangered species. The synergistic effects of noise with other stressors on animals also need investigation (Cornman, 2001).

National Park Service Policy on Noise

The 1970 Clean Air Act authorized, and the 1972 Noise Control Act established an Office of Noise Abatement and Control in the Environmental Protection Agency. The office conducted research, coordinated the work of other agencies, and directly set noise standards for trucks, motorcycles, air compressors, truck-mounted garbage compactors, and railroads. More standards would have followed, but in 1981 Congress ended funding for the effort. In 1997, Representative Nita M. Lowey of New York, sponsored a bill to reauthorize the EPA's Office of Noise Abatement and Control. The bill never emerged from committee and was not debated on the floor of the House of Representatives. Representative Lowey has re-introduced the bill four times, most recently in 2003 and in each case the bill died in committee.

With the EPA no longer working to establish standards for noise control the task of controlling noise has fallen to states and localities. Most cities have noise ordinances and states like Colorado and Minnesota are working to establish standards of maximum acceptable noises for different settings throughout the state (i.e., rural, residential, industrial). For example, the State of Minnesota also found that sound levels in isolated wilderness are typically 30 dBA, while, at

night, in residential areas it is permissible for sound levels to exceed 50 dBA about thirty minutes of each hour (MPCA, 1999).

Without national standards on noise pollution, noise in the National Parks has become a controversial issue in recent decades. Many parks retain their historical appearance, but, due to the widespread proliferation of human-generated mechanical noise, parks no longer sound as they once did. In response, NPS management policies call for the preservation of, "to the greatest extent possible, the natural soundscapes of parks" (NPS, 2006; Section 4.9). Human activities that generate noise are to be monitored, and it is NPS policy to prevent or minimize noise that affects the natural soundscape or exceeds levels appropriate for visitor uses. Additionally, 2006 Management Policies, Section 8.2.3 directs the NPS "to restore the natural quiet and natural sounds associated with the physical and biological resources of parks." Where use of motorized equipment is necessary and appropriate, the "least impacting" equipment and vehicles should be used, consistent with public and employee safety.

Some conservationists argue that auditory solitude, that is "quietude," was recognized by the drafters of the 1964 Wilderness Act and is implied by the act's language (Matzner, 2001). NPS policy on wilderness management explicitly recognizes the incompatibility of man-made noise with wilderness. Since 99% of Isle Royale National Park is Congressionally-designated Wilderness, and managed so as not to impair its wilderness attributes, park management must consider potential impacts of motorized equipment to the character, aesthetics, and traditions of wilderness (NPS 2006, §6.3.4.3), even where the noise originates outside of the designated wilderness. The NPS relies heavily on motorboats, chainsaws and generators for park maintenance and operations, with occasional use of airplanes for research and transporting personnel. Some visitors to the park use motorboats and airplanes both for access and recreation.

Passing outboard motors can reach sound levels in excess of 80 dBA when heard from shore, while chainsaws and propeller aircraft can reach 120 dBA at the source. The noise from these sources, while intermittent (not constant) may occur on a daily basis and penetrate well into the backcountry and wilderness areas of the park. The extent to which the sound penetrates depends upon a variety of factors: weighted decibel level (dBA) of the noise at the source, distance of visitor from the source, number of sources operating at one time, presence of screening provided by hills or trees, and proximity to reflective materials like a wall, hillside, or to some extent, water (MPCA, 1999). Sound travels in waves and anything that absorbs or lessens the waves, such as distance or insulation, will decrease the decibel level, while anything that increases the power of the sound waves, such as additional sources of noise or reflective surfaces, will increase the decibel level. Wind speed and direction can also affect the intensity or even the detection of sound.

Therefore the noise of chainsaws operated in a dense section of forest may not travel as far as when that same equipment is operated on top of a ridge. Sound from motorboats and airplanes can travel particularly far. The noise from airplanes generally cannot be blocked much by screening because the waves are coming from above. Airplanes move very quickly and, as opposed to stationary noise sources, they travel great distances bringing their noise to large sections of a park. Finally, airplanes can fly over the most remote sections of a National Park to places where mechanical noise is a particularly unwelcome reminder of civilization. In

recognition of the ability of airplane noise to affect the entire park, Isle Royale has voluntary flight restrictions to minimize the number of low flights directly over the island.

Like airplanes, powerboats also move, potentially carrying noise to an entire lakeshore. Boat motors generally have lower decibel levels than airplanes, especially 4-stroke engines such as those used in most park boats at Isle Royale. Water is a reflective surface and sound waves bounce off of water carrying more sound to listeners in kayaks, canoes or on land, as well as to wildlife. Even a boat traveling well offshore can sometimes be heard by hikers miles away. Under certain wind conditions motorboat noise at Isle Royale can be heard from ridge tops far into the interior of the island. Conversely, an offshore wind can greatly diminish motorboat noise reaching the island.

The park's designated Wilderness faces significant noise impact problems from aircraft over-flights, motorboat noise, mechanized maintenance equipment, noise from large groups and adjacent visitors in campgrounds, and portable generators at docks. Of additional concern is the noise related to park management, coming from operations at Mott Island, Windigo, and Rock Harbor. Large diesel generators support visitor services and park operations at these locations, and these generators may be heard from the Greenstone Ridge and other wilderness and backcountry areas. Noise impacts may be one of the greatest threats to the integrity of Isle Royale Wilderness.

In addition to intruding on wilderness solitude, another potential impact of human and motorized noise is on wildlife. Some scientists believe that around the world, noise pollution is contributing to the depletion of wildlife populations, although this is very difficult to quantify and has not been documented at Isle Royale in particular. Research into the effects of noise on wildlife has been growing rapidly since the 1970s, yet often presents contradictory results because of the complexity of factors and the difficulty of isolating variables; nevertheless, most researchers agree that noise can affect an animal's physiology and behavior, and if it becomes a chronic stress, can be detrimental to an animal's energy budget, reproductive success and long-term survival (Radle, 1998). The long-term effects from medium to low-level noise intrusion need much more research, with emphasis on Threatened and Endangered species. The synergistic effects of noise with other stressors on animals also need investigation (Cornman, 2001).

3.4 Cultural Resources

3.4.1 Historical Overview

Evidence of human use and habitation can be found throughout Isle Royale and in the surrounding waters. As a rich source of fish, wildlife, plants and minerals, Isle Royale has attracted human visitors and residents for millennia. Evidence of human activity is found throughout the island and in the surrounding Lake Superior waters. Cultural resources ranging from lithic scatters of chipped stone to lighthouses trace a rich story of human use spanning from Archaic Times (ca. 3000 BC) to the present. Stone tools, mining pits, shipwrecks, vernacular boats, fishing camps, summer cabins, domestic flowers and medicinal plants are all part of the cultural resources of the island.

Many sites and resources still exist from prehistoric and historic use of the island, including periods of use by Native Americans, voyageurs and fur traders, and from extensive commercial fishing and mining, Lake Superior shipping, vacationing and resort development. These cultural resources are categorized as archeological sites, historic structures, cultural objects, cultural landscapes and ethnographic resources. Many of these cultural resources are located in designated wilderness and potential wilderness additions.

The first evidence of human use of Isle Royale was left by Archaic- period aboriginal copper miners. Shallow pits remain throughout the island as testimony to the special purity of Isle Royale's copper deposits. Native groups also came to harvest the island's other natural resources through hunting, fishing and gathering plants and berries. Fur-bearing animals became important as European traders and trappers entered the area in the 1600s and 1700s. Explorers and missionaries of the time wrote the first historic accounts of the island.

Three phases of copper mining punctuated the nineteenth century history of the island. Coming thousands of years after prehistoric miners, historic entrepreneurs often mined the same sites that had attracted native peoples. Three phases of mining occurred in 1843-1855, 1873-1881 and 1889-1893. Success was very limited because of the high cost of operation at Isle Royale. Initial profits ended when pure copper veins pinched out. Eventually all of the copper mining companies went out of business.

Abundant trout and whitefish populations supported a century of commercial fishing. More than 100 fishing families were based on the island at the peak of the industry in the early 1900s. However, fish populations declined severely when the arrival of the decimating lamprey compounded the pressures of commercial fishing. Even though fish populations rebounded in later decades the establishment of Isle Royale National Park meant an end to widespread commercial fishing operations.

Many of Isle Royale's early visitors were drawn by natural resources but found that the isolation and wilderness of the area limited their ability to access those resources. Around the turn of the twentieth century, tourism began to blossom at Isle Royale. The isolation and rugged nature of the area that draws visitors today appealed to Americans a century ago, as they sought escape from hot, crowded and dirty cities, as well as hay fever. Transportation companies, looking for

additional passengers, fostered the growth of tourism to Isle Royale, as they had successfully done in places like Yellowstone and Yosemite. Lodges and resorts opened at Washington Island, Belle Isle, Tobin Harbor and Rock Harbor; commercial fisherman operated other, smaller sites. The clean air and healthful attributes of the rustic setting as well as opportunities for rugged forms of recreation were advertised themes to Americans learning to cope with the changing reality of modern life. Resort tourism thrived in the first three decades of the twentieth century and helped give rise to the idea of a making the island a National Park.

Many who visited Isle Royale found that they wanted a more permanent relationship with the island. The area had been surveyed in the early years of the century and land was available for purchase. Families began to build summer cabins in places like Tobin Harbor, Washington Harbor and Rock Harbor. Other people, who could not afford to or did not choose to purchase land, constructed cabins or fish camps and occupied the areas anyway. Small, protected islands or pieces of lakeshore were popular purchases and soon dozens of cabins were built on the main island and on islands in the surrounding archipelago. When the National Park was established many cabin owners were given a unique opportunity to sell their land and stay on as "life lessees." Some of their families still live in those cabins today. Those who occupied lands without ownership were paid to relinquish their rights but most were not given the opportunity to stay.

The Civilian Conservation Corps (CCC) played an important role in the construction of trails and facilities on the island. CCC camps were located at Siskiwit Bay, Rock Harbor (Daisy Farm) and Washington Harbor. Between 1935 and 1941 they were an important presence on the island and were instrumental in fighting the 1936 fire.

As an island archipelago in the world's largest body of fresh water, Isle Royale has a rich maritime history. The story of Isle Royale is the story of fishing boats, passenger liners and commercial shipping. To steer ships through treacherous reefs four lighthouses were established at Isle Royale. The island could be both a safe haven during storms and a deadly obstacle that has claimed numerous vessels over the years. Boat traffic brought occasional tragedy and Isle Royale is well known for its many shipwrecks. Ten major ships and many smaller vessels have sunk in Isle Royale waters and the island is an important destination for experienced divers.

Cultural sites are an important part of Isle Royale National Park. These sites document the diverse human uses of the island over thousands of years. They give perspective to the power of Lake Superior and the isolation of this wilderness island. The visitor can better understand the natural environment when confronted by past human experience at Isle Royale.

3.4.2 Archeological Sites

The earliest evidence of human use of the island is found in the 186 designated archeological sites found in the park. These sites include copper mining pits, native/European contact and trade sites, historic settlements and lighthouse sites. Archaic period peoples (approximately 2500 to 1000 BC) are connected to at least twelve identified archeological sites. Initial (1000 BC to 700 AD) and Terminal or Late (600 – 1650 AD) Woodland people are associated with many more sites. In all more than 1000 mining pits scattered throughout the park are attributed to these native groups.

The Minong Mine site is presently listed on the National Register of Historic Places and the majority of the other 186 archeological sites have been recommended for nomination. These sites contain potential information about the island's earliest uses and may be determined eligible for the National Register.

Archeological sites also contain historic remnants along with prehistoric evidence. Mining pits and settlements and lighthouse-associated sites have all been identified from the historic period. Fur trade and Native/European contact goods have been found in various places. Many historic activities such as commercial fishing and fur trading occurred on or near prehistoric sites.

Many known archeological sites have been identified as a result of NPS trail and campsite construction. The location of campgrounds – primarily along the coast of Lake Superior and the inland lakes – is also the natural location of historic and prehistoric activity. Additionally, much of the park's interior has not been surveyed and may contain numerous undiscovered sites.

3.4.3 Historic Structures

The park contains approximately 180 structures that are more than 50 years old, most of which are located within the park's wilderness and backcountry. These structures are from the various historic eras of island use and development. Some of the structures are representative of the island's maritime heritage, such as lighthouses and fishery sites. Many cabins, hotels and associated buildings are from the resort era and the early development of the park idea at Isle Royale.

Three of the four lighthouses within the boundaries of Isle Royale National Park are listed on the National Register of Historic Places. The 1855 Rock Harbor Lighthouse is the oldest existing structure in the park and under NPS jurisdiction. Control of the three additional lighthouses (Isle Royale Lighthouse at Menagerie Island, Passage Island Lighthouse and Rock of Ages Lighthouse) is in the process of being transferred from the Coast Guard to Isle Royale National Park. Two of these structures, Isle Royale and Rock of Ages, are listed on the National Register, while the Passage Island Lighthouse has been determined eligible but has not been nominated, yet.

Two other locations are also listed on the National Register - the Edisen Fishery in Rock Harbor and Johns Hotel in Washington Harbor. Together these locations have a total of thirteen structures listed on the Register. While these are the only structures currently listed on the Register, the Michigan State Historic Preservation Officer (SHPO) has declared another approximately 145 structures eligible for listing.

The Edisen Fishery is only one of the many sites used as commercial fishing camps. For a century, from the 1830s until the establishment of the National Park, Isle Royale was a base for commercial fishing. Other sites include Wright Island, Crystal Cove, Fisherman's Home, Barnum Island and Washington Island. At many of these sites buildings (fish houses, net houses and cabins) along with boats and docks remain intact. However, with the exception of the Edisen Fishery, the fishermen are gone and at several of the historic fishing camps the buildings are rapidly deteriorating.

Many of the summer cabins built during the resort era remain, some of them still occupied by the families of the original occupants. Eight life leases are currently in effect, as are five Special use Permits issued to the children of lessees. Most of these leases and permits are for cabins in Tobin Harbor. Some historic buildings (including former lessee cabins and Civilian Conservation Corps facilities) have been converted to park use. Volunteer-in-Park agreements help the park manage the difficult task of maintaining this array of historic structures. Many of these structures are located in potential wilderness additions.

3.4.4 Cultural Objects

Many of the archeological items found at Isle Royale are kept at the Midwest Archeological Center in Lincoln, Nebraska. Isle Royale's own museum collection is housed in a storage facility in Houghton. This collection contains a general representation of the island's cultural and natural resources. Shipwreck artifacts, commercial fishing gear and household goods, summer home items and archeological artifacts are all part of the collection. The majority of archives and artifacts located in the park are found at Mott Island, with a few items kept at the Rock Harbor and Windigo Visitor Centers, the Edisen Fishery and Rock Harbor Lighthouse.

3.4.5 Cultural Landscapes

Cultural landscapes are geographic areas of the park that include natural and cultural resources and that have cultural significance when taken as a whole. This includes areas associated with an historical event, activity or person and areas that exhibit cultural or aesthetic values. The cultural landscape program at Isle Royale is new. Currently, only the Edisen Fishery, Rock Harbor Lighthouse, Barnum/Washington Island, Fisherman's Home and Crystal Cove have been identified as cultural landscapes, but several other areas around the park need to be evaluated for cultural significance. With control over the remaining lighthouses (Isle Royale, Rock of Ages and Passage Island) being transferred to the NPS these sites should be evaluated as cultural landscapes.

The summer cottages area of Tobin Harbor has the potential to be recognized as a cultural landscape. Many of the original cottages remain, including several that are still occupied by the families who owned the land when Isle Royale became a National Park. Two of the summer cottages in Tobin Harbor are being preserved and used by the NPS, one for the artist-in-residence program and one as a park residence. Tobin Harbor with its protected waters and many small islands was a popular choice for resort-era families looking to build a cottage at Isle Royale. It is the best-preserved example of the summer cottage community at Isle Royale.

Washington Harbor also had summer cabins but was better known for its thriving commercial fishing community. During the 1920s and 1930s over 20 fishing families lived in Washington Harbor. The entire harbor area should be evaluated for possible cultural landscape status. Aside from Edisen Fishery, the best-preserved examples of commercial fishing are Crystal Cove at the Northeast End of Amygdaloid Island and Fisherman's Home in Siskiwit Bay. These sites retain a high degree of historical integrity and are mentioned in the General Management Plan as high priorities for restoration efforts. Other fishing sites on the north shore of the park should also be considered for cultural significance. These sites should all be evaluated as cultural landscapes.

Historic mining sites, including mine shafts, rock piles, partial structures, dams, stamp sand, wells, roads and tramway remains have the potential for cultural significance. Locations to be evaluated as cultural landscapes include Siskowit Mine, Minong Mine, Island Mine, Wendigo Mine and Todd Harbor's Haytown Mine.

3.4.6 Ethnographic Resources

Ethnographic resources have significance to native peoples or historic island communities and include prehistoric and historic sites, structures, landscapes, fauna and objects as well as natural resources like rivers, watersheds and plant species. At present few ethnographic resources have been documented at Isle Royale National Park. The only detailed ethnographic study completed so far has been that of the culture of Scandinavian commercial fisherman in the first half of the twentieth century. A study of the vernacular boat-building traditions of the fisherman has documented their cultural traditions and use of island resources.

The NPS has documented hundreds of plant species used historically or currently by the Ojibway/Chippewa Indians. The occurrence and distribution of these plants at Isle Royale is unknown. Known examples of ethnobotanic species significant to native peoples and found at Isle Royale are sugar maple, used for sugar production and pearly everlasting, used in medicines. It is possible that the Ojibway people of the north shore of Lake Superior still use the island's resources, however the park staff has no knowledge of such use. It is likely that additional ethnographic resources exist in the park.

3.5 Socioeconomic Environment

The affected economic region includes Houghton and Keweenaw Counties in Michigan and Cook County in Minnesota. These areas have harsh and long winters, limited economic opportunities, and a significant economic reliance on tourism and recreation. There are no major metropolitan areas in any of these counties. The largest community is the city of Houghton, MI, with a population of 7,010 (2000). The socioeconomic factors most relevant to this WBMP would be: 1) consideration for the communities of Copper Harbor and Houghton, MI, and Grand Portage, MN, where ferries to Isle Royale are based; 2) communities surrounding these areas that may offer services to Isle Royale visitors; 3) changes in NPS staffing or contracting that may affect local jobs and associated economics, and; 4) changes in NPS policies that may affect Isle Royale-dependent businesses.

3.5.1 Surrounding Communities

Keweenaw and Houghton Counties, MI, and Cook County, MN, share a similar history of a once profitable reliance on resource extraction, followed by years of economic and population decline in the mid to later 1900s, and a transition to the more recent significant economic reliance on tourism and outdoor recreation. All three counties are sparsely populated compared to the rest of their states. Population estimates in 2001 list 35,698 residents in Houghton County, 2,257 in Keweenaw County, and 5,170 in Cook County.

Income, Employment, and Poverty

Table 15 outlines the annual per capita income for each of the surrounding communities, and state and national averages from 1997-2001. All 3 counties consistently fell below the national and state averages. This region also falls below falls below national and state averages for wages per job (Table 16). The major individual employer in the Keweenaw region (Houghton and Keweenaw Counties) is Michigan Technological University, followed by health care providers and local school systems. The major employers in Cook County are government and the service and retail industry. Table 17 outlines the region's unemployment and poverty rates.

Table 15: National, State and County Per Capita Personal Incomes 1997-2001.

	1997	**1998**	**1999**	**2000**	**2001**
US average	25,412	26,893	27,880	29,760	30,413
Michigan	25,509	26,860	27,906	29,408	29,629
Houghton County	17,863	18,326	19,180	20,135	21,141
Keweenaw County	17,525	17,389	18,360	18,856	18,991
Minnesota	27,086	29,092	30,194	32,231	33,059
Cook County	23,070	24,423	25,745	27,036	28,257

Table 16: National, State and County Average Wage per Job 1997-2001

	1997	**1998**	**1999**	**2000**	**2001**
US average	29,805	31,336	32,715	34,647	35,550
Michigan	32,105	33,766	35,024	36,251	36,661
Houghton County	21,144	21,603	22,335	22,889	25,112
Keweenaw County	15,602	16,208	17,296	18,351	16,549
Minnesota	29,599	31,312	32,650	34,582	35,736
Cook County	18,808	19,416	20,046	20,566	20,634

Source for both tables: Regional Economic Information System, Bureau of Economic Analysis, Economic and Statistics Administration, U.S. Department of Commerce, 2004 (http://www.bea.gov/regional/reis)

Table 17: Unemployment and Poverty Rates (2000 census data)

	Unemployment	Below Poverty
Michigan	5.8	10.5
Houghton County	7.9	16.8
Keweenaw County	11.1	12.7
Minnesota	4.1	7.9
Cook County	6.2	10.1

Source: US Census Bureau http://quickfacts.census.gov

Visitor Services

The Keweenaw Peninsula, MI, and Cook County, MN, are promoted as tourist destinations with a focus on outdoor recreation. Hiking, boating, camping, fishing, and hunting are promoted in

the Spring, Summer and Fall, and snowmobiling and skiing are promoted in the Winter. All three counties include multiple state parks and other recreational lands, in addition to access to Isle Royale National Park. Many visitor services are available in the area to support this tourism industry, for the most part focusing on more rustic accommodations rather than heavily developed destination sites. These services include camping and lodging facilities, restaurants, grocery stores, gift shops, outdoor equipment retail and rental shops, automotive services, emergency and medical services, and visitor and information services. With a larger population center, there are more of these services available in Houghton County than Keweenaw and Cook Counties. Visitors to Isle Royale National Park may use these services before and after trips to the island, especially those visitors requiring accommodations the night before leaving on a morning ferry.

3.5.2 Business/Economic Activities Related to Wilderness and Backcountry

Several private companies operate under concessionaire contracts with the NPS to provide visitor services on Isle Royale. These include the sea plane, 2 ferry companies operating 3 of the 4 ferries, and the Rock Harbor Lodge with 2 stores, laundry and shower facilities, a restaurant, boat rentals, water taxi service, fishing charters, a tour boat, and lodge with motel and housekeeping units. All of these are associated with backcountry and wilderness visitors and services.

There are several smaller business operations associated with Isle Royale that operate under incidental business permits (IBPs). Outfitters, camps, backcountry guide services, fishing and dive charters, and sailing outfits are some of these permittees. To date IBPs have been issued based on the compatibility of services offered with Isle Royale's mission and management goals and the business's ability to adhere to park regulations. There has not been an allocation quota or any limit on the number of businesses operating within the park, or the number of trips each business may take. The number of permits issued is, however, limited by demand for the services offered by these businesses. In 2003, 44 businesses or other organizations held permits, with a total of 95 overnight trips in the park, 774 associated visitors, and 4267 backcountry overnights. This represents less than 3% of all the backcountry permits issued in 2003, and less than 10% of total backcountry overnights. The majority of these permit holders (70%) were organizations leading backpacking trips, primarily as large groups of 7-10 people.

3.5.3 Economic Contributions of Isle Royale to the Region

It is estimated that visitors to Isle Royale spend approximately $1.7 million annually in the local communities, with the bulk of this being spent on ferries, motels, and gas. It is further estimated that the direct effects of this spending in the three gateway communities is $695,000 in wages and salaries. Most of the related local jobs are with the ferry companies and motels. The tax effects of direct sales and income total $51,000 in sales tax and $134,000 in income taxes (Strong and Solomon 2004).

3.6 Park Operations

3.6.1 Organization

Isle Royale's Superintendent is responsible for overall management and operation of the park. Park operations are organized into five divisions: Administration, Maintenance, Ranger Activities, Interpretation and Cultural Resources Management, and Natural Resources Management. The Division of Ranger Activities carries out programs that include emergency services, SCUBA diving, law enforcement, concessions management, public education, and resource protection. Natural Resources Management is responsible for natural and social sciences research, data collection, inventory and monitoring, data analysis, visitor statistics management, and report writing. Interpretation and Cultural Resources Management is responsible for cultural resources research and monitoring, public education and information services, operation of the visitor centers, issuing backcountry and incidental business permits, collecting park fees, *Ranger III* and group camping reservations and leading guided hikes in the park. The Maintenance Division includes trails and dock crews, and is responsible for planning, design, construction, operation, and maintenance of all facilities and infrastructure within the park's wilderness and backcountry.

All divisions share the various facets of wilderness and backcountry management. For example, the Division of Interpretation issues backcountry permits, while the Resources Management Division manages the permitting database, visitor statistics, and related monitoring. Further, backcountry permits are issued from 5 locations; Houghton, Rock Harbor, Windigo, the *Ranger III*, and the US Forest Service Visitor Center in Grand Marais, MN. Due to technological challenges on the island, none of these permitting stations are electronically linked. All of these factors hinder communication and coordination of backcountry services and recreation management in the park.

3.6.2 Staffing and Budget

The park as a whole is allotted approximately 56 FTE's (Full Time Equivalency positions), which include all permanent staff as well as seasonal and field positions. Only about ¼ of the positions work year-round. Between May and September the majority of Isle Royale employees are stationed on the island, based out of Rock Harbor, Mott, and Windigo. From November through April year-round employees are based out of the Houghton headquarters.

In 2003 Isle Royale's annual base budget, allocated from Congress, was $3.2 million. The majority of this covered personnel and park operations such as utilities operations on the island, and the operation, upkeep, and fueling of park boats and generators. Additional funding comes from visitor fees, fees from businesses operating within the park, and short-term special project funds. Annual spending breaks down by functional areas as follows: 1) 28% for facility operations; 2) 25% for maintenance; 3) 20% for management and administration; 4) 18% for visitor experience and enjoyment, which includes visitor center operations and visitor safety services; and 5) 9% for resource protection (ISRO Business Plan 2001). Isle Royale has access to additional project funds, which are awarded to parks on a competitive basis for anything from

construction or maintenance projects to research. Some of the changes proposed in the WBMP may affect Isle Royale's staffing and budget to some extent.

3.6.3 Existing Facilities

Isle Royale has a visitor center in its administrative headquarters in Houghton, MI, at the point of embarkation on the *Ranger III* park boat that carries visitors across Lake Superior to Isle Royale. The park's summer headquarters are on Mott Island, about four miles southwest of Rock Harbor. Mott Island facilities include a boat repair/carpenter shop, warehouse/maintenance building, central office building, generator powerhouse, bulk fuel storage tanks, water treatment facility, and employee housing (duplexes, single-family houses, and dormitories). Most park operations are conducted or supported by employees living and working at Mott Island. NPS facilities are also located at Malone Bay, Amygdaloid Island, Windigo and Rock Harbor. Both Windigo and Rock Harbor have a generator powerhouse, bulk fuel storage tanks, water treatment facility and employee housing.

Rock Harbor, near the northeast end of Isle Royale, contains a number of visitor facilities, including docks, gas pumps, a store, restrooms, showers, laundry facilities, sewage pump-out services, ranger station, contact center, campground, auditorium, and lodging facilities. A concessionaire operates 20 housekeeping cabins, 60 motel units, restaurant, public showers, and other facilities at Rock Harbor. Full service operations run from mid June to early September every year. The concession company employs about 60 workers during peak summer season, most of whom are housed in a large dormitory. Tobin Harbor, adjacent to Rock Harbor, offers boat docks, boat rentals, and a sea plane dock.

The Windigo ranger station and visitor center are located near the southwestern end of Isle Royale. Facilities here include a dock, sea plane landing, campground, restrooms, sewage pump-out services, gas pump, general store and amphitheatre. A concession company operates the general store as well as showers, laundry, gasoline pump, and limited canoe and small boat rentals. There are no overnight concession accommodations available at Windigo.

A limited number of other visitor facilities are available at Daisy Farm, Edisen Fishery, the Malone Bay Ranger Station, and Amygdaloid Ranger Station.

Isle Royale's network of about 20 hiking trails is approximately 165 miles in total length. The trails include approximately 14,000 maintained erosion control devices (drainage, water bars, etc.), six miles of bridging, and 160 trail and campground signs. There are 36 campgrounds in the park, over half of which are located along the Lake Superior shoreline. These campgrounds include a total of 90 pit toilets, 88 shelters, and 112 individual tent sites. Slightly less than half of the campgrounds contain group campsites, for which reservations are required. Trail and campground maintenance is conducted by a seasonal trail crew along and several volunteer groups. Insufficient maintenance and recreation management in recent years has led to increased erosion and development of informal, unauthorized trails and campsites.

The park has 70 boat docks that vary considerably in size; two-thirds are available for use by visitors. Almost half of them are associated with campgrounds along the Lake Superior shore. Some of the docks are more than 30 years old and need significant repair or replacement. Isle

Royale's marine operations depend on its fleet of 30+ boats, which range from 16 to 165 feet in length, with both diesel and gasoline fueled vessels.

3.6.4 Emergency Response Services

Without any road access to Isle Royale, emergency services rely on boats, helicopters, and seaplanes. Isle Royale's Law Enforcement Division maintains an island-based staff of well-trained EMTs and an ongoing partnership with Keweenaw and Houghton County hospitals. Helicopter flights for emergency evacuations are available through hospitals in Thunder Bay, Ontario and Duluth, MN, with suitable landing pads located on Passage Island, Mott Island, and Windigo. The US Forest Service Beaver out of Ely, MN has also assisted the NPS in emergencies. Emergency response time is dependent on resource availability and weather, with lake and visibility conditions limiting boat, helicopter, and seaplane response times. Emergencies occurring inland further require travel by foot from the nearest dock or boat-accessible shoreline. Isle Royale's thick forests, rugged terrain and narrow trails preclude motorized emergency response to most land areas of the park.

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

The National Environmental Policy Act (NEPA) requires that an assessment of environmental impacts be completed for proposed federal actions and feasible alternatives to those actions. This includes full disclosure of any adverse environmental effects that cannot be avoided if a proposed action is implemented. Effects on historic properties are also considered in accordance with the National Historic Preservation Act (NHPA). Environmental effects and impacts for these purposes are changes in the condition of a resource or environment due to a proposed action. This analysis is the basis for comparing the beneficial and adverse effects of implementing alternative actions, allowing decision-makers to determine which approach would create the greatest benefits with the fewest adverse effects. This environmental impact statement for the WBMP is on a general, programmatic level where proposed actions are general and conceptual in nature. Specific proposed actions such as new cabins in Rock Harbor, any new campsites or campgrounds, or any new trails, that would come as part of the implementation phase of this plan would require additional more detailed analysis of environmental impacts once the precise location and extent of actions is determined. These analyses may take the form of Categorical Exclusions, Environmental Assessments, or Environmental Impact Statements, depending on the scope and nature of potential impacts and will be tiered off of this document.

Following the NPS guidelines for NEPA (Director's Order 12), there are several categories of impacts to be considered:

- **Direct effects** are caused by an action and occur at the same time and place as the action.
- **Indirect effects** are caused by an action and occur later in time, or in a different location than the action itself, but are still reasonably foreseeable.
- **Duration of the impact** may be short or long-term. If an impact were short-term within a short period of time (less than five years) a resource would return to its predisturbance condition. A long-term impact would change a resource to such an extent that it would not return to its predisturbance condition and for all practical purposes would be considered a permanent change.
- **Type of impact** may be beneficial or adverse.
- **Intensity of impact** may be negligible (barely detectable with little discernible effect), minor (a slight but noticeable effect with a small scale of impact), moderate (clearly noticeable, widespread appreciable effect), or major (highly noticeable, widespread effect causing substantial change).
- **Cumulative impacts** are incremental impacts of an action when added to other past, present, and reasonable foreseeable future actions, regardless of who takes the other action.

A final step in assessing the environmental consequences of each of the alternatives is to identify the environmentally preferred alternative. This is the alternative that will promote the national environmental policy as expressed by NEPA.

4.1 Methodology

A variety of methods were used to assess probable impacts of each alternative. Published and unpublished literature discussing the impacts of human activities on each of the resources was reviewed. This included a review of literature and data specific to Isle Royale as well as more general literature from relevant fields. Additionally, similar planning efforts and assessments of environmental consequences from other national parks and wilderness areas were reviewed. Particular attention was given to research from similar ecosystems or areas facing similar management issues.

In addition to literature reviews, relevant subject-matter experts were consulted for their professional opinions of environmental consequences of possible actions and feasible mitigative measures throughout the planning process. Some of this consultation led to additional research. The personal observations of experienced Isle Royale employees, interest groups, individual visitors, and park partners were also incorporated into the assessment process.

4.1.1 Impacts to Visitor Use and Experiences

Analysis of impacts to visitor use and experience considered: 1) annual and seasonal changes in visitation with implications for access to the park and quality of experiences; 2) opportunities for a range of appropriate recreation experiences; and 3) safety of park visitors. Isle Royale's visitor use statistics from 1978 through 2003, permitting databases from 2001 and 2003, and Isle Royale's backcountry travel simulation model were used in analyzing past visitor use patterns and projecting possible future scenarios.

Judging whether changes to people's experiences are positive or negative is subject to personal preferences; what may be viewed as desirable change by some people could be considered undesirable by others. Therefore this analysis focused on quantifying impacts to visitor use levels and experiences caused by the actions proposed in each alternative, rather than subjectively determining whether these impacts would be adverse or beneficial. The 1996 survey of visitors to Isle Royale offered guidance in this area by highlighting the opportunities that were most important to visitors (Pierskalla and others 1997):

- Backcountry hikers and paddlers prioritized restorative opportunities such as observing scenic beauty, being in a natural setting, observing and hearing wildlife, and relaxing. They also sought perceptual orientations to the park (satisfying curiosity, enjoying the smells and sounds of nature, and getting to know the park), personal development (developing skills and abilities and improving physical health), and learning about nature (especially wolves and moose).
- Powerboaters and sailors who visit Isle Royale's backcountry similarly prioritized restorative opportunities such as relaxing, observing scenic beauty, and being in a natural setting. They also sought perceptual orientations to the park (satisfying curiosity, enjoying the smells and sounds of nature, and getting to know the park), as well as opportunities to powerboat and catch fish.

More general guidance is available through NPS policies and provisions. The 1991 Vail Agenda addressed access and enjoyment as one of six strategic objectives for improving NPS stewardship and management into the 21st century, clarifying NPS goals:

> *While public access and enjoyment are essential elements of the purpose of the park system, it should not be the goal of the National Park Service to provide visitors with mere entertainment and recreation. Rather, the objective should be to provide the public with enjoyment and enlightenment attendant to those park attributes that constitute each unit's special meaning and contribution to the national character. This is use and enjoyment on the* ***park's*** *terms. It is entertainment, education, and recreation* ***with meaning****.* (NPS 1991 p. 20)

Impacts to visitor use and experiences were determined considering the best available information, including several years of visitor surveys, visitation data and annual reports, and visitor distribution modeling, all of which are specific to Isle Royale. Additionally, literature from wilderness and recreation research was reviewed for applicability and guidance.

The anticipated changes in visitor use levels were quantified wherever possible. However, the expected changes in visitor experiences are conceptual in nature, and therefore these impacts were assessed in general qualitative categories.

Negligible — Visitors would likely be unaware of any effects associated with implementation of the alternative.

Minor — Changes in visitor use and/or experience would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance experiences identified as fundamental to the park's purpose and significance.

Moderate — Some characteristics of visitor use and/or experience would change, and many visitors would likely be aware of the effects associated with implementation of the alternative; some changes to experiences identified as fundamental to the park's purpose and significance would be apparent.

Major — Multiple characteristics of visitor experience would change, including experiences identified as fundamental to park purpose and significance; most visitors would be aware of the effects associated with implementation of the alternative.

4.1.2 Impacts to Wilderness Character

Working from the definitions given in the Wilderness Act and clarification under the Wilderness Management section of the WBMP (Chapter 3 §3.2), the following qualities or values of wilderness character and impacts from proposed actions can be compared in each of the alternatives:

Naturalness

- Surroundings that generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable

Wilderness Experiences

- Opportunities for solitude, privacy and isolation
- Opportunities for primitive and unconfined recreation, with personal challenge and self-sufficiency
- Freedom from the reminders of society
- Absence of distractions such as large groups, mechanization, unnatural noise, signs, and other modern artifacts

Additionally, the analysis considers whether any actions in the alternative would have the potential to change the legal wilderness status of all or a portion of Isle Royale.

Analysis of the environmental consequences of each of the alternatives focused on the threats posed by administrative and visitor activities probable in each alternative. The authoritative text *Wilderness Management* (Hendee and Dawson 2002, pp. 355-369) provides an overview of the most significant potential threats to wilderness character. The threats most relevant to the actions proposed in this WBMP were the focus of assessing the consequences of each of the alternatives:

- Administrative access, facilities, and intrusive management: the extent to which managers use motorized and mechanical equipment affects how visitors view these devices and their views of what wilderness should be. The use of motorized equipment dilutes wilderness solitude and natural quiet and can damage resources.
- Increasing public and commercial recreational use and efforts to control them: overuse of wilderness areas has both social and ecological impacts. Concerns with recreational use may include overall increases in visitation, increases in certain areas, increases at certain critical times, as well as changes in travel patterns. The efforts to control recreational use impacts are also a threat, because regulation of activities takes away from the freedom and spontaneity that many visitors associate with a wilderness experience.

Additional serious threats to wilderness are being addressed in other management plans for Isle Royale, and are beyond the scope of the specific actions proposed in this management plan. These include:

- Invasion of exotic and nonnative species—addressed in the Natural Resources Management Plan (1999), with ongoing efforts to better understand specific species, and effective measures for control.
- Wildland fire suppression—addressed in Isle Royale's Fire Management Plan (2004).
- Aircraft noise and airspace reservations—addressed in Isle Royale's Aviation Management Plan (2008)
- Lack of political and financial support for wilderness protection and management—addressed in Isle Royale's Business Management Plan (2002) and Isle Royale Strategic Plan.

Trade-offs between often competing goals are additional considerations in assessing the implications of proposed actions in each of the alternatives. David Cole (2000) outlined conflicts between wilderness attributes of wild, natural, uncrowded and free. Most relevant to the issues being addressed in the alternatives of this WBMP is the potential conflict between managing for uncrowded conditions and managing for freedom of access and spontaneity and freedom from excessive behavioral restrictions. Cole warns that compromises that establish restrictions to limit use may not fully achieve uncrowded conditions, but result in displacing people to locations or times that had not been previously crowded. The danger is that this would result in conditions that are more homogeneous and neither very uncrowded nor very free. Projected implications of these types of compromises will be assessed for each alternative.

The severity of impacts was also assessed. Negligible impacts would have no discernible effect on naturalness, wilderness character, or other wilderness values. Minor impacts would be detectable and affect a limited area that meets wilderness criteria. Moderate impacts would be apparent and affect a limited area that meets wilderness criteria. Major impacts would substantially alter the naturalness, wilderness character, and/or other wilderness values, eliminating the characteristics that meet the criteria for wilderness.

4.1.3 Impacts to Natural Resources

The types of impacts to natural resources that could occur as a result of visitor and administrative activities in Isle Royale's wilderness and backcountry were assessed by first identifying the vulnerable resources within the park, then looking at the types of activities that may have impacts. The planning team assessed impacts to natural resources by reviewing relevant literature and data, consulting with subject matter experts, and applying professional judgment and experience. Isle Royale-specific data that were analyzed and incorporated into this assessment included raptor monitoring, loon monitoring, wolf and moose monitoring, the quantification and monitoring of biophysical impacts in campsites, rare plant surveys and monitoring, and recreation travel patterns related to wildlife impacts in the park.

The following threats are those most relevant to the actions proposed and were the focus of assessing the consequences of each of the alternatives:

- The impacts of recreation, research, management activities and other human actions on Threatened and Endangered species and their habitats.
- Damage to vegetation and soils associated with camping and hiking.
- The impacts of constructing and maintaining facilities on vegetation, soils, wetlands, and wildlife movement.
- Changes in visitor use patterns (both temporal and spatial) caused by management actions, and associated impacts to wildlife and seasonal vulnerabilities in other resources.

Where the condition of or threats to natural resources in Isle Royale National Park have not been studied sufficiently to quantitatively assess impacts, impacts of the alternatives were assessed qualitatively, using the following definitions for categorical severity of impacts. Negligible impacts would be at the lowest levels of detection and would have no appreciable effect on resources, values, or processes. Minor impacts would be perceptible, but slight and localized. If mitigation were needed to offset any adverse effects, it would be relatively simple to implement and would likely be successful. Moderate impacts would be readily apparent and widespread, and would result in a noticeable change to resources, values, or processes. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful. Major impacts would be readily apparent and widespread, and would result in a substantial impact to or loss of resources, values, or processes. Mitigation measures to offset adverse effects would be needed and extensive and their success could not be guaranteed.

The severity of impacts to specific resources of concern in this WBMP are defined as:

1. **Soils:**

   Negligible—the impact on soils would not be measurable. Any effects on productivity or erosion potential would be slight.

Minor—An action would change a soil's profile in a relatively small area, but it would not appreciably increase the potential for erosion of additional soil.
Moderate—An action would result in a change in quality or alteration of the topsoil, overall biological productivity, or the potential for erosion to remove small quantities of additional soil. Changes to localized ecological processes would be of limited extent.
Major—An action would result in a change in the potential for erosion to remove large quantities of additional soil or in alterations to topsoil and overall biological productivity in a relatively large area. Significant ecological processes would be altered, and landscape-level changes would be expected.

2. **Threatened and Endangered Species**

No effect—The action would cause no effect on the species status or critical habitat.
Not likely to adversely affect—The action would be expected to result in discountable effects on a species or critical habitat, or it would be completely beneficial.
Likely to adversely affect—The action would result in a direct or indirect adverse effect on a species or critical habitat, and the effect would not be discountable or completely beneficial.

3. **Vegetation**

Negligible—The impact on vegetation (individuals and/or communities) would not be measurable. The abundance or distribution of individuals would not be affected or would be slightly affected. Ecological processes and biological productivity would not be affected.
Minor—An action would not necessarily decrease or increase the area's overall biological productivity. An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations or communities.
Moderate—An action would result in a change in overall biological productivity in a small area. An action would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.
Major—An action would result in a change in overall biological productivity in a relatively large area. An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the communities or population would not be likely to return to its/their former level (adverse), or would return to a sustainable level (beneficial). Significant ecological processes would be altered.

4. **Visual Resources**

Negligible—An action that would introduce only the perception of some additional movement by boats, vehicles, or people traveling by foot. The change to the viewshed would be so small or localized that it would have no measurable or perceptible consequence to the visitor experience of the viewshed.
Minor—An action that would introduce perceptible modern human additions to the viewshed. These actions would include structures that affect a relatively small portion of the viewshed, either the foreground, middleground, or background, and have barely perceptible visual consequences to the visitor experience of the viewshed.

Moderate— An action that would introduce perceptible modern human additions to the viewshed. These actions would include facilities, parking, and other human-made structures that would affect a moderate portion of the viewshed. This might include the foreground and middleground, or the foreground and background. These actions would not completely alter the viewshed, but would be a visual addition to the existing conditions.
Major—An action would include major facilities and parking plus other human-made structures that would completely alter the foreground, middleground, and background of the existing viewshed.

5. **Water Resources**
Negligible-- An action would have no measurable or detectable effect on water quality.
Minor—An action would have measurable effects on water quality. Water quality effects could include increased or decreased loads of sediment, debris, chemical or toxic substances, or pathological organisms.
Moderate—An action would have clearly detectable effects on water quality and potentially would affect organisms or natural ecological processes. Alternatively, an impact would be visible to visitors.
Major—An action would have substantial effects on water quality and potentially would affect organisms or natural ecological processes. Alternatively, an impact would be easily visible to visitors.

6. **Wildlife**
Negligible—The impact would not be measurable on individuals, and the local populations would not be affected.
Minor—An action would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations.
Moderate—An action would affect a local population sufficiently to cause a minor change in abundance or distribution but would not affect the viability of the regional population.
Major—An action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population would not be likely to return to its former level (adverse), or would return to a sustainable level (beneficial).

4.1.4 Impacts to Cultural Resources

The types of impacts to cultural resources that could occur as a result of human activities in Isle Royale's wilderness and backcountry were assessed by identifying vulnerable resources, areas where the activities occur, and types of probable threats. The planning team assessed impacts to cultural resources by reviewing relevant literature and data, consulting with subject matter experts, and applying professional judgment and experience.

There has not been a lot of research done on the possible impacts of various kinds of visitor use on cultural resources at Isle Royale. Many of the cultural resources themselves are still being identified. As more research is done, the nature of the impacts will become more certain, but for the purposes of this document we have included possible impacts to cultural resources as a way

to aid park staff and the public in understanding the effects of the various alternatives on the unique cultural resources of Isle Royale.

Where the condition of or threats to cultural resources in Isle Royale National Park have not been studied sufficiently to quantitatively assess impacts, impacts of the alternatives were assessed qualitatively, using the following definitions for categorical severity of impacts. Negligible impacts are those at the lowest level of detection, barely measurable with no perceptible consequences, either adverse or beneficial and with no adverse effect that would influence eligibility for the National Register of Historic Places. Minor impacts would result in little, if any change in character-defining features or loss of significance or integrity, and would not affect eligibility for the National Historic Register. A beneficial effect would include maintenance and /or preservation of a site or object. A Moderate impact would not alter character-defining features or diminish the integrity of a site or object to the point of jeopardizing eligibility for the National Historic Register. A beneficial effect would include stabilization of a site. A Major impact would diminish the significance and integrity of a site or object, and/or would jeopardize its eligibility for the National Register of Historic Places. A beneficial effect would include active intervention to restore or preserve a site. In the case of ethnographic resources a beneficial effect would encourage traditional access and/or accommodate a group's practices or beliefs.

4.1.5 Impacts to the Socioeconomic Environment

An economic impact analysis model known as MGM2 (Money Generation Model, Version 2) was used to estimate the economic impacts of visitors to Isle Royale National Park under a base case, maximum utilization of ferryboat capacity, and four other scenarios (Strong and Solomon 2004). MGM2 is a 2003 revised version of a model that was originally developed by the National Park Service, and has been updated at Michigan State University, available in spreadsheet format. In the application to Isle Royale, several assumptions and levels of detail have been modified to determine the most accurate assessment of the overall economic effects of tourism at Isle Royale and on the three gateway communities.

The economic impacts assessed are expressed as direct or primary and secondary sales, income, jobs, and value added. These impact categories are based on up to 12 sub-categories (lodging in motel or campground, food and beverage purchase, transportation, etc.) and sector specific multipliers to capture direct, indirect and induced effects through an input-output model of the regional economy. Direct effects are the positive economic impacts on the businesses or government agencies that initially receive the tourist spending. Indirect effects are changes in sales, income and jobs that occur for those firms that supply goods and services to the businesses and agencies that sell directly to the Park visitors. Finally, induced effects are changes in regional economic activities that occur from household spending of income earned through a direct or indirect effect of the visitor spending. In addition to these economic effects the model also determines the income and sales tax revenues that can be attributed to the tourism spending.

Several steps are followed to trace through the effects of tourism spending to determine the overall regional economic impacts with MGM2. First, seasonal visitation levels must be determined, as well as their origin from the three gateway communities and by specific transportation mode. Next, visitation data are used to determine average group size and party

nights, and these trips are attributed to visitation segment (backcountry camping, motel in the Park or local gateway community, etc.) including a small number of day visitors. Spending levels are then customized based on geographic origin and trip type, and allocated to specific categories for the primary, secondary and total economic effects, as well as the fiscal (state and federal tax) effects.

Additionally, impacts to businesses operating within the park were considered. This would include concessions operations running the Rock Harbor Lodge and associated services, transportations concessionaires, and Commercial Use Authorizations (CUAs).

Where possible, impact levels were quantified. However, in cases where impacts would be more general, they were categorized:

Negligible — Effects on socioeconomic conditions would be below or at the level of detection. There would be no noticeable change in any defined socioeconomic indicators.
Minor — Effects on socioeconomic conditions would be slight but detectable.
Moderate — Effects on socioeconomic conditions would be readily apparent and result in changes to socioeconomic conditions on a local scale.
Major — Effects on socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions in the region.

With respect to type of impact for economic and social effects, few standards or clear definitions exist as to what constitute beneficial or positive changes, and those considered adverse or negative. For example, rising unemployment is generally perceived as adverse, while increases in job opportunities and average per capita personal income are regarded as beneficial. In many instances, however, changes viewed as favorable by some members of a community are seen as unfavorable by others. For example, the impact of growth on housing markets and values may be seen as favorable by construction contractors and many homeowners, but adverse by renters and by local government officials and community groups concerned with affordability. Consequently, some of the social and economic impacts of the alternatives may be described in such a manner as to allow the individual reviewer to determine whether they would be beneficial or adverse (impact is indeterminate with respect to "type").

4.1.6 Impacts to Park Operations

Impacts from actions proposed in alternatives were evaluated by assessing changes to Park Service operations that would be required to implement the proposal. Discussions of impacts are for those operations that would be new, undergo major changes, or show susceptibility to increases or decreases in operational activity. Impacts to staffing and Isle Royale's operational organization, existing facilities, implementation and maintenance costs, and the staff's ability to provide services to visitors were all considered.

The analysis was conducted in terms of how park operations and facilities might vary under the different management alternatives. The analysis is generally qualitative rather than quantitative because of the conceptual nature of the alternatives. Consequently professional judgment was used to reach reasonable conclusions as to the intensity, duration, and type of potential impact.

Duration of Impact. Short-term impacts would be less than one year since most construction is generally completed within a year's timeframe and would last only until all construction-related action items are completed. Long-term impacts would extend beyond one year and have a permanent effect on operations.

Intensity of Impact.

Negligible —Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.

Minor — The effects would be detectable, but would be of a magnitude that would not have an appreciable effect on park operations.

Moderate —The effects would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public.

Major — The effects would be readily apparent and would result in a substantial change in park operations in a manner noticeable to staff and the public and be markedly different from existing operations.

Type of Impact. Beneficial impacts would improve NPS operations and/or facilities. Adverse impacts would negatively affect NPS operations and/or facilities and could hinder the staff's ability to provide adequate services and facilities to visitors and staff. Some impacts could be beneficial for some operations or facilities and adverse or neutral for others.

Financial costs of implementing proposed actions were analyzed in general terms. Minor costs would be those in the thousands of dollars, moderate costs would be in the tens of thousands of dollars, and major costs would exceed $100,000. One-time implementation costs were considered as well as long-term, on-going costs. Adverse impacts were considered to be changes that would increase operational costs and workloads for the Park Service, while beneficial impacts would decrease operating costs and workloads.

4.1.7 Unavoidable Adverse Impacts

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. In all of the proposed alternatives efforts were made to avoid or minimize actions that would have adverse impacts. Where adverse impacts could not be avoided or mitigated to meet the objectives of the alternative, they are explained in the following sections.

4.2 Assessment of Impacts (Organized by Alternative)

The assessments of impacts likely to result from proposed actions are organized by alternative, starting with the actions common to all alternatives. Because the alternatives vary widely in potential area of impact, all of the impact topics are not relevant to all of the alternatives. Removing or retaining picnic tables, for example, would not have the same range of impacts as modifying how overnight use of the park's wilderness and backcountry is managed. Only those impact topics relevant to any actions proposed in the alternative are discussed.

All of the alternatives presented would achieve the objectives of wilderness and backcountry management for Isle Royale with varying degrees of compromise and prioritization of objectives (see p. 2-3). For example, the range of alternatives present different degrees of emphasis on providing broad public access for recreation and/or managing human use so visitors have opportunities to experience solitude, remoteness, challenge, and self-sufficiency.

4.2.1 Impacts of Actions Common to All Alternatives

Many of the actions outlined in the "Actions Common to all Alternatives" chapter would have no measurable environmental consequences. The actions that could have an effect are:

- The continued limited use of chainsaws for trail maintenance in wilderness and a goal to reduce use by increasing the use of crosscut saws.
- The use of motorized equipment for maintenance and construction projects in the wilderness or backcountry campgrounds, including power tools such as drills, saws and gas-powered punjar (jackhammer)
- The proposed addition of new low-cost rustic cabins in Rock Harbor
- Continuation of cross-country camping and anchoring out policies
- Application of the Minimum Tool Decision Process for maintenance, research and management activities within Isle Royale's wilderness.

Chainsaws and Crosscut Saws in the Wilderness

The approved use of chainsaws and the goal of increasing the use of crosscut saws within Isle Royale's wilderness would be expected to affect visitor experiences, wilderness character, natural resources, and park operations. The continued use of chainsaws or an increased use of crosscut saws is not expected to have an effect on the park's cultural resources. The main concerns with chainsaws concern noise and fuel and oil spills. The main concerns with increasing use of crosscuts involve associated changes in trail standards that may affect the accessibility of trails and trail conditions.

Effects on Visitor Experiences

Decreasing reliance on chainsaws and increasing the use of crosscut saws would be likely to leave some trails in a more primitive condition. This may include fallen trees to step over or walk around and more cut logs remaining in sight of the trail. This may be a beneficial change for people seeking more challenging conditions, or an adverse change for people who felt these conditions would make the trails inaccessible. Additionally, these changes may lead to increased

trail widening and informal trails developing around fallen trees. These effects could be long-term and wide-spread on the park's trails and in campgrounds, depending on the extent of increased crosscut use and decreased chainsaw use. These effects would be direct and indirect, short-term, and range from minor to major.

Effects on Wilderness Character
The noise of chainsaws adversely affects wilderness character; the impacts are short-term and localized. Chainsaws produce noise levels from 90-125 decibels. In 1974 the EPA recommended that noise in wilderness areas should not exceed 40 decibels. A change of 10 decibels is 10 times louder, and is considered to be dramatic. Therefore, the noise impacts of chainsaws would be considered to be minor to major, depending on proximity to the worksite. As chainsaw use is primarily limited to the spring and fall, the impact would be felt by a small percentage of wilderness and backcountry visitors, though these visitors may be people who place greater value on wilderness character than those choosing to visit during the park's busier months. The increased use of crosscut saws and other hand tools would be expected to beneficially affect wilderness character through a demonstration of primitive skills and significantly lower noise levels.

Effects on Natural Resources
The noise and fuel contaminants associated with chainsaw use is likely to adversely affect natural resources on a localized scale, with impacts expected to be minor and short-term. Spills of bar oil and fuel would be expected to some extent with the use and transport of chainsaws, though using vegetable-based oils would reduce adverse impacts to soil and vegetation. Mechanical noise is known to displace wildlife, though this displacement would not be expected to be permanent. Motorized equipment would not be used in Pristine Zones (where there are no trails or campgrounds) or areas closed for sensitive resources, thereby minimizing adverse impacts on the park's Threatened wildlife species and their habitats. The air pollution associated with chainsaw use would be expected to be minor and short-term.

Crosscut sawyers may carry a small amount of kerosene for cleaning the crosscut blade, but less would be expected to enter the surrounding environment than fuels used continuously to run chainsaws. No air pollution is associated with the use of crosscut saws. On the whole, there are fewer negative effects on natural resources from using crosscut saws than using chainsaws.

Effects on Park Staffing
Significantly more people and more time are required to maintain comparable trail standards with crosscut saws compared to chainsaws. Thus a goal of replacing some chainsaw use with crosscuts in Isle Royale's wilderness would require either an increase in trail crew staff and time spent clearing trails, or a modification in trail standards to more primitive conditions. In many areas of the park, with abundant hardwood trees, it would be unrealistic to expect that trails could be kept open without some use of chainsaws. An increase in trail crew staff could have a moderate, long-term adverse effect on Isle Royale's staffing and budget allocation. Both chainsaws and crosscut saws have safety risks associated with them. Because the park currently uses chainsaws for trail clearing, there would be a period of time before novice sawyers became experienced with crosscut saws, and during this learning period, there would be an increased possibility of repetitive motion and other injuries (just as with inexperienced chainsaw operators,

there is a greater chance for injury.) Novices would require thorough training and supervision by experienced sawyers to minimize the chances of injury.

Conclusion
Overall, increasing the use of crosscut saws and decreasing the use of chainsaws for trail maintenance in Isle Royale's wilderness would help to preserve wilderness values and protect natural resources, but there could be both adverse and beneficial impacts on visitor experiences and access to trails. Additionally, trail crew staffing and workloads would need to increase to maintain acceptable trail standards, even with an acceptance of more primitive trail conditions.

Unavoidable Adverse Impacts
Continuing to use chainsaws to maintain Isle Royale's trails could have an adverse impact on vegetation, soils, and wilderness character on an isolated local scale. Short-term high levels of noise and the likelihood of some soil and air contaminants through accidental fuel spills and emissions would continue. Additionally, trampling of vegetation and some loss of vegetation on a very small scale would be expected with an increased frequency of hikers walking off trail to avoid fallen trees.

Power Tools in the Wilderness and Backcountry
Power tools such as drills, saws, and gas-powered jackhammers are used to maintain shelters, docks and outhouses at shoreline campgrounds. Some of these campgrounds are within designated or potential wilderness; those that are non-wilderness are adjacent to designated wilderness. The primary concerns with using power tools in these areas is the impact of noise, and the implications for staffing, workloads, and maintenance standards if these tools were not used.

Effects on Visitor Experiences
The use of power tools by staff on park infrastructure, including maintenance and repair of historic structures, can occur where it is observed or heard by visitors. Short-term minor adverse impacts would be limited to the sight or sound of power tools being used. Visual impacts would be more limited, for example someone kayaking past an historic structure and seeing tools used that were not available historically might be disappointed. These impacts would be to the value of the cultural resource experience more than to the wilderness or backcountry as a whole.

Noise concerns would still be short-term and minor, but impacts could be broader. Power tools make a distinctive noise and with the natural quiet of Isle Royale, that noise can carry for a considerable distance, especially in the right geographic and wind conditions. Someone hiking in the wilderness, who is unable to see the work being performed on an historic property or at a campground would not be impacted visually by the use of power tools but may still hear the tools. When the tools are no longer in use, the associated impact ends quickly. The negative impacts of both the sight and sound of power tool use on are short-term and minor.

Effects on Wilderness Character
Power tools may be used to maintain campgrounds that have docks and shelters. Some of these are within designated or potential wilderness; Beaver Island, Grace Island, Todd Harbor, Birch Island, Duncan Bay, Duncan Narrows, Merritt Lane, Tookers Island, Caribou Island, Chippewa

Harbor, and Hay Bay. The use of power tools in these areas with their associated noise and reminders of modern society have direct short-term adverse impacts on wilderness character. The non-wilderness dockside campgrounds where power tools are used are adjacent to wilderness, and the use of power tools here will have indirect adverse effects on wilderness character; mechanized noise that can be heard a distance from the worksite. Power tools other than chainsaws (discussed above) are not used in wilderness campgrounds that do not have docks or shelters. Where the worksite is within wilderness the effects would be direct; where the worksite is in non-wilderness the effects on wilderness character would be indirect. Limiting the use of power tools, substituting quieter, battery-powered tools for generator-driven tools, and reducing the use of power tools during the times of peak visitation could lessen these adverse impacts.

Effects on Cultural Resources

Many historic structures are located in the backcountry at Isle Royale, including structures in wilderness, potential wilderness and non-wilderness. Historic structures in non-wilderness include Edisen Fishery, Barnum Island and all four of the lighthouses. Historic structures in potential wilderness include the life lessee cabins in Tobin Harbor, as well as Crystal Cove, Wright Island and Fisherman's Home. Historic structures in designated wilderness include a cabin at Chippewa Harbor, the Coast Guard cabin at Minong Island, the Bangsund Fishery, the boathouse at Savage Island, the cabin at Horner Island, the remains of the powder house at Senter Point, and the remains of the cabin at Long Point (Franks, 1999).

The positive impacts to cultural resources of power tool use range from short-term minor to long-term major. A short-term minor positive impact would be clearing the weeds around Edisen Fishery with a trimmer. A long-term major positive impact would be using power tools to stabilize an historic structure. If power tools were forbidden, some repairs to these cultural resources located outside of wilderness might be too costly to complete. Historic structures and cultural landscapes might experience beneficial impacts from the Park Service continuing to use power tools in maintenance. Power tools are not generally used in archeology and the use of such tools should not have any effect on cultural objects or ethnographic resources.

Effects on Park Operations

Using power tools is often the most efficient means of completing maintenance work in campgrounds. Relying exclusively on hand tools would increase the time required to complete a project. Therefore, continuing to use power tools in dockside campgrounds would have a long-term minor to moderate beneficial impact on park operations, aiding in meeting maintenance standards with existing staffing levels

Conclusion

Although using power tools to maintain facilities in the wilderness and backcountry does have short-term adverse effects on wilderness character, natural and cultural resources, and visitor experiences, these impacts are infrequent and transitory in nature and would not significantly alter any park resources or values.

Unavoidable Adverse Impacts
There would be unavoidable adverse environmental impacts to natural soundscapes and wilderness resources in areas where powertools were used, with the duration of impacts short-term and reversible.

Treated Lumber in the Wilderness and Backcountry

The current policy on Isle Royale is to follow NPS policy to not use arsenic-treated lumber, commonly referred to as CCA (chromated copper arsenate) lumber. However, there is no approved policy for either using untreated lumber or using the latest technologies for more benign chemically-treated lumber, such as ACQ (alkaline copper quaternary). Lumber is used in Isle Royale's wilderness and backcountry for trail and campground structures such as bridges, boardwalks, and docks.

Changes that could occur under this alternative that may have measurable environmental consequences include:

- Using chemically treated lumber in the construction of trail structures such as boardwalks and bridges.
- Maintenance crews would remove unused or replaced treated lumber from the backcountry as part of project completion.

Using chemically-treated lumber in wilderness trails and campgrounds could have measurable consequences for wilderness character, natural resources, cultural resources, and park operations.

Effects on Visitor Experience
Visitors regularly see and use structures made of chemically-treated lumber in Isle Royale's backcountry, and the effects on visitors can be classified in these two terms. Some visitors may be disappointed to see structures such as boardwalks and bridges in the wilderness and backcountry that are made of mass-produced, machined lumber. They may also prefer the challenge of wilderness experiences such as crossing streams without the convenience of human-made structures. Other visitors may either not notice the structures or they may not find them incongruous to the setting. Some visitors may appreciate the relative convenience of having bridges and boardwalks for travel over or through wet areas. Therefore, the effects of treated lumber on visitors are expected to be minor, short-term, and either positive or negative based on personal preferences.

Effects on Wilderness Character
The introduction of chemical preservatives, however benign, will have some effect on the naturalness of Isle Royale. These impacts will be localized, it is unknown if they would be long-term or short-term, and the severity of impacts on the local level are unknown, though thought to be minor to insignificant. Use of treated lumber is expected to have both adverse and beneficial effects on people's wilderness experiences. Using lumber with a long life span reduces the long-term quantity of lumber needed to maintain bridges and boardwalks in the park, a beneficial effect. However, the knowledge of materials being artificially preserved and uncertainty over localized ecological impacts may be in conflict with some people's wilderness values-- an adverse effect.

Effects on Natural Resources
Isle Royale maintenance crews have made significant efforts to re-route trails to avoid wet areas and minimize the need for bridges and boardwalks. However, the island's abundant wetlands are impossible to avoid entirely with the existing trail system. Even with the re-routes, trail crews maintain approximately 5.3 miles of bridging and boardwalk on Isle Royale's trails. These bridges and boardwalks effectively allow hikers to cross wetlands and creeks without trampling fragile vegetation and habitats. Importing lumber rather than relying on local materials for this amount of boardwalk and bridging would have a beneficial effect on the island's natural resources. These benefits would be localized, long-term, moderate on a park-wide scale, and potentially major on a local scale (where relying on local materials would require removal of a substantial number of trees and a large percentage of bigger trees). Using chemically treated lumber is expected to double the life-span of the lumber, further aiding natural resource protection by reducing the amount of lumber consumed in the long run.

However, even the most benign chemical treatments are known to leach contaminants into soil and wetlands. Research conduct by USDA Forest Service research laboratories found that copper leached from ACQ-treated wood, with elevated levels of copper detected in rainwater, soil, and sediment collected adjacent to treated wood. In their study ACQ treated wood released the highest levels of copper in the first six months, but the levels released did not appear to have measurable negative effect on populations of aquatic invertebrates. These researchers recommended using treated wood that is produced in accordance with best management practices as a means of minimizing copper release and associated adverse effects (Lebow and others 2000). Beyond this one study there has been very little research on copper leaching and biological impacts of these more recent wood preservatives, though, so the full risk of adverse impacts and their severity is unknown. One area of particular concern that perhaps warrants further research on Isle Royale is the fact that unionids, freshwater mussels, and all mollusks are very sensitive to copper concentrations (Nichols and others 2001). Further research would be needed to determine if levels of copper that could potentially be released from ACQ lumber would be of concern for Isle Royale's pristine populations of unionids.

Effects on Cultural Resources
Treated lumber can have positive impacts on historic structures if it is used for structural support where untreated lumber is susceptible to rotting quickly. Treated lumber would never be used for the exterior of historic buildings, or in any readily observable areas because this is not in keeping with the historic integrity of the structures. Treated lumber used in bridges and docks that are part of a cultural landscape would not look historic and might be detrimental to the landscape.

The use of treated lumber would have no predicted impacts on archeological resources, cultural objects/ museum collection or ethnographic resources.

Effects on Park Operations
Relative to using untreated lumber or local materials, using treated lumber would have the lowest staff and time requirements over the long-term, and therefore be the least costly to the NPS. Chemically treated lumber and "green" certified, sustainably harvested lumber would be

expected to cost more initially, but would be expected to have long-term savings. Removing unused lumber would add time and safety risks to each project; employees risk injury during transport of lumber into and out of the wilderness on fairly primitive trails.

Conclusion
Using chemically treated and sustainably-harvested lumber for maintenance projects in the wilderness and backcountry would be expected to have both adverse and beneficial effects on park resources and values. However, nothing proposed in this alternative is reasonably expected to result in significant impacts to any park resources or values.

Unavoidable Adverse Impacts
A decision to use chemically treated lumber could have unavoidable adverse impacts on soils and water resources, through leaching of chemical preservatives. Although any adverse impact would be expected to be localized and small-scale, the potential severity and full implications of these impacts are unknown.

Low-cost Rustic Cabins in Rock Harbor

In all alternatives a few low-cost rustic cabins would be planned for construction in Rock Harbor. The intention is to provide additional options for people wishing to spend multiple nights in Rock Harbor. If this action were approved, additional on-site assessments would be necessary to determine impacts of constructing the cabins once suitable sites were identified. Thus, this assessment focuses on the more general effects of adding cabins in Rock Harbor. The general issues relevant to adding these cabins are the effects on cultural resources and visitation in the Rock Harbor area, socioeconomic effects, and effects on NPS operations. A detailed assessment of impacts to natural and cultural resources will be a critical component of future compliance once suitable sites for the cabins have been selected and prior to any construction, and would be part of a project-specific environmental review tiered off this document.

Because these cabins would not be located within wilderness, nor would they be expected to create a significant change in visitation to the park's wilderness, they are not expected to have an effect on wilderness character.

Effects on Visitor Use and Experiences
Adding low-cost rustic cabins to Rock Harbor, with the option to rent the cabins for multiple nights would create a new option for park visitors. Currently the Rock Harbor Lodge with modern motel units and housekeeping cabins offer the only option for visitors to spend multiple consecutive nights in Rock Harbor. The Rock Harbor campground, and nearby Three Mile campground are limited to one consecutive night stay. The closest option for campers to stay in one place for more than one night is the Daisy Farm campground. Further, the cost of the Rock Harbor Lodge may preclude it as an option for many people, especially when combined with the cost of traveling to the island. These new cabins would be a long-term beneficial change for people interested in basing their visit to the park from Rock Harbor.

A small number (2-6) of new cabins would be constructed. Thus the impact to total park visitation would be negligible and any increase in the number of people in Rock Harbor and

using the trails and waterways in the area would be expected to be a long-term minor adverse impact. However, there would be expected to be a greater number of people within the immediate vicinity of Rock Harbor. There is also a likelihood that these cabins could lead to more people in Rock Harbor during the shoulder season when the lodge is closed. This could have an adverse effect on solitude during these historically quieter periods.

Effects on Natural Resources
Constructing new buildings in Rock Harbor with the associated ground disturbance, trails and human presence would unavoidably have some long-term adverse effects on vegetation, soils, and wildlife. The extent and severity of these impacts would be determined in future assessments once a suitable site was selected.

Effects on Cultural Resources
The new cabins at Rock Harbor would be located adjacent to, though not in the Tobin Harbor Historic District, an important cultural landscape. The area does have known archeological sites, but not in the locations being considered for the cabins (Clark, 1995). Additional project-specific compliance will determine the exact impact of this development on the park's cultural resources.

Socioeconomic Effects
Because the new cabins would be intended for an experience very different from the Rock Harbor Lodge, this change would be expected to have a negligible or minor adverse economic impact on the concessions operation. This service would be very rustic, catering to people who would not be expected to be lodge customers.

Effects on Park Facilities and Operations
Adding new rustic cabins in Rock Harbor would have the short-term minor to moderate costs of construction. Over the long-term maintenance and upkeep of the cabins would have a minor adverse impact on the cost and workload of maintenance in Rock Harbor. These cabins would not require additional long-term staff. Additionally, there would be expected to be a modest increase in the use of utilities in Rock Harbor associated with these cabins. This could also increase the workload of maintenance staff in Rock Harbor.

Conclusion
Although adding new low-cost rustic cabins in Rock Harbor could result in adverse impacts to natural and cultural resources in a localized area, this action would not cause significant impacts to park resources or values.

Unavoidable Adverse Impacts
Constructing new cabins in the developed area of Rock Harbor would result in unavoidable loss of vegetation and soils within the construction area, a small-scale potentially severe impact to natural resources.

Cross-Country Camping and Anchoring-Out

All alternatives propose maintaining Isle Royale's current policies for cross-country camping (dispersed camping off-trail) and anchoring out. Camping outside of designated campgrounds and anchoring out within park waters would continue to be permissible with special permits required and certain areas of the island closed to camping. This policy has ongoing implications for wilderness character, natural resources, cultural resources, visitor use and experiences, and park operations. Cross-country camping is intended exclusively for people seeking the unique challenges and opportunities of traveling and camping off-trail; it is not intended as an overflow for people who cannot find space in designated campgrounds. Therefore existing policies for cross-country camping are not known or expected to affect visitation numbers or business operations in the park and there are no expected socioeconomic effects.

Effects on Visitor Experiences
In 2003, 139 cross-country permits were issued. While cross-country camping can negatively affect wilderness character and natural resources, at present use levels, it is unlikely to have a measurable effect on visitors in the frontcountry or visitors on trails or at backcountry campgrounds. This presumes that cross-country campers are practicing Leave No Trace principles, and are not camping near established trails or campgrounds, and therefore other park visitors would not be aware of their presence during hikes or while camping. It is also likely that negative effects to natural resources would be the limiting factor if cross-country travel increased, and therefore the number of cross-country permits would be limited before visitors noticed any negative effects of cross-country travel. In frontcountry areas, the presence of cross-country campers would not make a discernible difference to day visitors.

Anchoring out could negatively impact those visitors who preferred unobstructed views of bays and nearshore areas, or if the noise from parties anchored out could be heard at shoreline campgrounds or at cross-country campsites. Conversely, some boaters feel that anchoring out adds an important element to their park experience. The 1997 Visitor Survey asked powerboaters and non-powerboaters how they felt about a management action that would limit the number of boats to not exceed available anchorage space. 87.7% of non-powerboaters felt that this would be an acceptable management action, while only 24.1% of powerboaters felt that it would be acceptable. The majority of hikers and powerboaters surveyed in the Primitive, Backcountry, and Wilderness Portal zones did not feel crowded by the numbers of powerboats anchored out during their overnight stays, and most likewise felt that numbers of boaters anchored out were at or below what they expected to see (Pierskalla and others, 1998.)

Effects on Wilderness Character
Cross-country camping and anchoring out offer the most primitive of the range of opportunities available for recreation at Isle Royale. The greatest degree of skill and self-sufficiency are required, and the greatest degree of solitude, tranquility, and primitive and unconstrained experiences may be attained. Maintaining these opportunities would have a beneficial effect on wilderness opportunities. However, were use in these areas to increase significantly, the effect could become adverse, with increasing signs of human impacts on park resources (an adverse effect on naturalness) and a decrease in opportunities for solitude and tranquility (an adverse effect on wilderness experiences). Area closures could be seen as an adverse impact to some

visitors, reducing access to some of the park's most pristine areas, while other visitors would see this step to protect the park's wilderness as a beneficial impact. Managing and potentially limiting how many permits are issued for cross-country camping and anchoring out could prevent or minimize these adverse impacts. Ongoing inventories and monitoring of impacts from cross-country camping will alert managers to a need to make changes in area closures, the number of permits issued, special regulations, and/or public education efforts.

Effects on Natural Resources

Regulations are in place to direct cross-country campers to minimize their adverse impacts on natural resources, including a fire ban, a limit of one night camping at each site, and a requirement to camp a minimum of 100 feet away from water. Where these regulations are disregarded adverse impacts are expected.

Cross-country camping is known to have an adverse impact on vegetation and possibly on soils as well, due to trampling, damage to or loss of vegetation, loss of duff, and exposure of mineral soils. Recreation research has demonstrated that physical impacts from recreation occur rapidly and recover slowly. Initial recovery of an impacted site, with restoration efforts, is expected to take 5-10 years, with full recovery requiring up to 30 years (Cole 1997, Cole and Marion 1985). The full extent and severity of impacted sites are not fully known on Isle Royale, though few sites impacted to the point of exposed soil have been recorded. Illegal fires at these sites have also been recorded, with the adverse impact of scarring and sterilization of soils beneath the fire. Until a more thorough inventory of cross-country camping impacts is completed, it is thought that adverse impacts are localized and minor to moderate. Area closures could reverse these impacts and allow for site restoration.

The continuation of cross-country camping and anchoring-out would likely have no adverse effect on Federally Threatened species in the park, since the most sensitive areas for these species are closed to camping, with closures evaluated and updated annually. However, if there were a significant increase in the number of people camping off-trail there could be an adverse effect on wolf travel patterns and their aversion to people. For this reason the frequency and locations of cross-country camping, as well as all wolf-human encounters in the park should be closely monitored. Because State- Endangered and Threatened species are widespread in the park, area closures have not been instituted to protect all known species and their habitats. However, area closures have been and will continue to be implemented to protect known highly sensitive areas, such as all small islands in the park. Impacts to State-protected species and rare and sensitive features from cross-country camping and anchoring out would likely be localized and not on a population level, though the severity of impacts to individuals within a population is unknown. Disruption of wildlife travel patterns, feeding and breeding would be expected to have an adverse impact on systems, as well. Ongoing inventories and monitoring of impacts from cross-country camping will alert managers to a need to change these policies.

Were cross-country camping or anchoring out to increase, there could be an adverse effect on natural quiet with increased human noise and associated displacement of songbirds and other wildlife that contribute to the natural sounds of an area. Adherence to Leave-No-Trace principles would minimize this impact, and it is expected that the adverse effect would remain minor, localized and short-term.

Effects on Cultural Resources
Isle Royale National Park has many areas that have not yet been surveyed but are expected to contain archeological sites and cultural objects. Cross-country camping could have varied impacts on these cultural resources. Off-trail campers and hikers may discover unknown artifacts and objects, possibly even new archeological sites. If they leave these sites undisturbed and report them to the NPS, cross-country campers could add to Park Service knowledge of the island's cultural resources; a long-term, minor to moderate beneficial impact. Public education about cultural resources, how to identify them, and why they should be left onsite could increase the potential beneficial effect of cross-country travelers finding previously unknown cultural sites.

However, cross-country campers could also have a long-term minor to moderate adverse impact on archeological sites and cultural objects. They could unknowingly damage sites or objects when hiking or camping. They could also intentionally remove interesting artifacts including those unknown to park staff. Staff can mitigate this potential negative impact by informing the public of the importance of cultural artifacts and archeological sites and explaining how to recognize and respect these resources.

Anchoring out presents a limited possibility of disturbing unknown underwater archeological resources. There are no known submerged sites in areas that are currently used for anchoring out. Continuing the cross-country camping and anchoring out policies is not expected to have any new impacts on historic structures, cultural landscapes or ethnographic resources.

Effects on Park Staffing
Maintaining current policies for cross-country camping and anchoring-out, with area closures and no limit on the number of permits issued for open areas will require a commitment to monitor impacts. Knowledge of changing conditions in cross-country and anchorage areas will be vital to inform managers of the effectiveness of policies and any future need to alter these policies. This commitment will require staff time for field monitoring, data analysis, and interpretation for management applications, though on its own this commitment would not require new staff positions.

Conclusion
Continuing existing policies for anchoring out and cross-country camping on Isle Royale would not be reasonably expected to impact of park resources and values, since the NPS retains the discretion to implement area closures and modify regulations for these types of uses if conditions were to degrade.

Unavoidable Adverse Impacts
Cross country hiking and camping could have unavoidable adverse impacts to vegetation and soils, though monitoring of commonly used areas, effective Leave-No-Trace education, and adaptive management as described above would minimize these impacts, and shorten their severity and duration.

Application of the Minimum Requirement Decision Guide

The Minimum Requirement Decision Guide for Isle Royale is outlined in Appendix G. Applying the Minimum Requirement Decision Guide to maintenance, research, and management activities within Isle Royale's wilderness could have effects on the park's wilderness character and natural resources. This decision would not be expected to affect cultural resources, visitor use or experiences (other than wilderness experiences), socioeconomics, or park operations.

Effects on Wilderness Character
Applying the Minimum Requirement Decision Guide to maintenance, research, and administration activities is expected to have a major long-term beneficial effect on Isle Royale's wilderness character; both wilderness experiences and naturalness. This would ensure that impacts to wilderness character are considered in identifying appropriate methods and tools for NPS activities and NPS-sponsored activities. Adverse impacts to wilderness visitors, adverse impacts to naturalness, and adverse impacts to the long-term integrity of the park's wilderness are given due priority in determining the appropriateness of a project, its location, tools, and methods of completion.

Effects on Natural Resources
Applying the Minimum Requirement Decision Guide to scientific activities in wilderness would be expected to affect scientific research in the park to some extent, specifically the methodology that would be appropriate for approved research proposals. This process would not preclude the use of invasive methodologies that may have an adverse effect on wilderness character, but it may require some projects to alter their methodologies to be less invasive. This process also could determine that some proposals are more appropriate to be conducted outside of wilderness. This process is intended to ensure that impacts to wilderness character as well as long-term benefits to the park's natural resources and wilderness are considered in determining the appropriateness of research proposals. Invasive methodologies could still be determined to be appropriate, where the knowledge gained would have long-term benefits to wilderness resources and values that outweigh the short-term adverse impacts of the methodologies. Therefore, applying this process to scientific activities in the park is expected to have long-term beneficial impacts to the park's natural resources, though there could be some short-term adverse impacts to scientific activities.

Unavoidable Adverse Impacts
Implementing the Minimum Requirement Decision Guide to maintenance, research, and management activities within Isle Royale's wilderness would not be expected to have unavoidable adverse impacts effects on the park's wilderness character or natural resources.

4.2.2 Impacts of Alternatives for Managing Overnight Use of the Wilderness and Backcountry

Alternative A for Overnight use: Maintain Current Management Direction

The details of Alternative A for overnight use are outlined in Chapter 2, p.56-58. Changes that could occur by continuing the status quo and may have measurable environmental consequences include:

- Visitation could increase throughout the visitor season, and would be limited only by ferry capacities.
- Over-crowding in campgrounds could increase, with an associated increase in campsite sharing and physical impacts in campsites.
- Under the current permitting system, the NPS would not have the ability to direct campers to campgrounds with available camping space, or give visitors accurate information about campground use levels.

Maintaining the current management direction with no changes in how overnight recreation is managed in Isle Royale's wilderness and backcountry and no active management of annual visitation could affect visitor use and experiences, wilderness character, natural resources, cultural resources, area socioeconomics, and park operations. The main concerns with likely impacts are primarily related to unmanaged changes in visitation and visitor distribution, and inadequate visitor services for trip planning. It is impossible to accurately predict a future trend in visitation under this alternative. However, since this alternative would allow for a substantial increase in visitation and crowding in campgrounds, it is assumed that this could occur.

Effects on Visitor Use and Experiences
Continuing the current management direction would mean that ferry capacities and schedules would be the only limit on the total number of island visitors and their distribution throughout the season and between entry points. To date Isle Royale managers have taken the approach of accommodating all visitors who could reach the island and were interested in appropriate types of recreation. Rather than managing number of visitors, the NPS has managed impacts by concentrating recreation use on designated trails, and in designated campgrounds. This policy has had both beneficial and adverse effects on visitor use and experiences.

Chapter 3, §3.1 outlines past Isle Royale visitation in detail. In general the majority of backcountry and wilderness visitors come to the park in July and August. Backpackers are the largest visitor group in the backcountry, and the one group of visitors that appear to be on an increasing trend when the length of stay is combined with numbers of people. Since the mid 1990s motorboaters have been decreasing in number. It is unknown if these trends will continue.

Ferries do sell out periodically during late July and August, so there would be the greatest opportunity for increased visitation outside of this peak visitor season. However, it is expected that factors such as weather, bugs, and school schedules would preclude dramatic increases in visitation in the spring and fall. Ferry tickets are sold on a first come, first served basis, so increases in lodge guests or day visitors could limit the number of campers riding ferries, and visa versa.

Because of all of the complicated variables such as visitors' willingness to visit the park outside of July and August, changes in the percent of ferry passengers who are lodge guests or day visitors as opposed to campers, and uncertainties in realistic projections for boating trends it is very difficult to predict or quantify the extent to which Isle Royale backcountry visitors could reasonably be expected to increase. However, under this alternative the NPS would take no action that would preclude a significant increase in visitation at any point in the visitor season.

Current policies have the beneficial effect of high public access to the island for people interested in appropriate types of recreation, and who can afford transportation to the island. An additional beneficial effect is freedom of travel within the park. Travel is limited to some extent by regulations such as area closures, encouragement to camp within designated campgrounds, required site reservations for groups of 7-10 people, and a prohibition on motors within designated wilderness. However, flexible camping permits for parties with fewer than 7 people allow for a high degree of freedom and flexibility regarding where the majority of backcountry visitors choose to travel and camp.

These policies have resulted in periods of overcrowding in campgrounds, with parties needing to double up in campsites when all sites are occupied. Visitor surveys indicate the need to share campsites and the sheer number of people in campgrounds as concerns (Pierskalla and others 1997 and 1998). Continuing current or increasing levels of campsite sharing would be an adverse effect of this alternative. Because up to 25% of backcountry visitors are affected during the peak visitor season and because campground crowding would be expected to continue or increase, this would be a moderate, long-term adverse effect to visitor experience.

Currently, boaters in the backcountry may raft off when dock space is not available. Based on the results of the 1996 and 1997 visitor surveys, it appears that there is not a consensus among boaters or among non-boaters about whether rafting off is a concern, and whether the park should limit the number of boats at docks (Pierskalla et al, 1997, and 1998). See Section 3.1.3 for detailed survey results. It is also true that, based on review of past permits, dock usage is not evenly distributed throughout the park (see Table 8.) If boaters' use of backcountry docks increased under the current management scheme, it is possible that it could have an adverse impact on boaters who do not want to raft off, and on boaters and non-boaters who are seeking a more solitary camping experience. Because dock crowding is a function of boater numbers, it is difficult to predict if the need for rafting off under the current permitting system will increase or decrease. Therefore it may be a minor to moderate adverse effect to visitor experience, based on future visitation levels.

Unmanaged changes in visitation associated with this alternative could result in increased visitation in the spring and fall. This would have the adverse effect of narrowing the range of visitor opportunities available. Currently spring and fall offer exemplary opportunities for wilderness experiences during low use times. Ferry schedules would maintain October visitation at relatively low numbers, but could allow for a significant increase in late May and June. This would be an adverse effect for visitors seeking greater solitude and lower encounter rates with other people on trails and in campgrounds.

Effects on Wilderness Character

With no change from the current management direction, visitation could increase up to full ferry capacities. There would also be no limit on increases in boaters other than the limiting factors of fuel costs and numbers of visitors with suitable private boats. This would mean high public access to the park (a beneficial effect), but with the potential for adverse impacts to wilderness character. Continuing or increasing visitor use levels in July and August would continue or exacerbate the current problems with campground overcrowding. This would be an adverse impact to wilderness character as overcrowding reduces people's opportunities for solitude and tranquility. It further compromises wilderness character by making many campers feel a need to rush to a campground to find an available campsite (Isle Royale 2002). Continued or increased overcrowding and the associated impacts to campsite size and soil and vegetation impacts are further expected to adversely affect the naturalness of campsites.

Were visitation to increase significantly in the spring and fall, there could be a reduction in the range of opportunities for wilderness experiences available in the park, with a loss of the lowest use times and their greatest opportunities for exemplary wilderness opportunities.

Effects on Natural Resources

With this alternative it is expected that campground crowding would continue and may increase. Because of this, campsite area and amount of exposed soil is expected to continue increasing, at least to some extent. Maintenance and redesign of some campsites may help to slow the increase.

This increased sprawl of campsites is of concern to natural resources because of associated loss of vegetation, change in vegetation composition, compaction of soil and associated changes in soil microhabitats, erosion, and potential increase in disturbance-tolerant exotic plants (Hendee and Dawson 2002). Degradation of these conditions has negative implications for aquatic resources, soil microorganisms and their role in broader ecosystem health, expansion of edge habitats favoring generalist over specialist species of birds, and the potential establishment of exotic species. These adverse impacts could be reversible with remedial action, but in the mean time would be expected to be moderate to major in the immediate vicinity of campsites, and minor to moderate on a park-wide scale.

Of additional concern to natural resources would be increasing visitation in the spring when many natural resources are more vulnerable than later in the visitor season. High water levels and saturated soils, bird nesting periods and mammals with young all contribute to high resource sensitivity in the spring. Impacts such as disturbance of nesting loons and human encounters

with wolves or wolf pups could result in moderate to major adverse impacts, whereas trail widening associated with muddy conditions would be minor to moderate and very localized.

Effects on Cultural Resources
Many known archeological sites are located in and near campgrounds (Clark, 1995). Maintaining the status quo will continue to have an adverse impact on archeological resources. If an overall increase in visitation or an increase during the peak period resulted in expansion of campsites and related adverse impacts to soil and vegetation this could exacerbate adverse impacts to archeological sites. The extent of this impact could range from short-term and minor, to long-term and major depending upon the extent of the impacts and the significance and integrity of the resource affected. Archeological sites are non-renewable resources, therefore any damage to these sites or objects within them are irreversible.

Several of the new campgrounds established by the GMP are located near historic structures and within cultural landscapes. If these campgrounds became overcrowded due to unregulated increases in visitation, historic structures could suffer long-term adverse impacts resulting from visitors camping outside of designated campsites or using historic buildings for shelter. These impacts could range from minor to major, depending on the significance and integrity of the affected resource.

An inventory of ethnographic resources is ongoing. The park service does not presently know of any impacted resources, but there could be an impact to unidentified resources associated with overcrowded campgrounds and expanding campsites. This alternative, which would not limit overcrowding in campgrounds and expanding campsites could also result in long-term adverse impacts to ethnographic resources, though these resources are not yet well understood in the park.

This alternative would also allow for a significant increase in visitation in spring. Soil and vegetation, as well as archeological sites, are most vulnerable in spring. Therefore, adverse impacts to cultural resources associated with use levels in campgrounds could increase. Remedial measures such as educating campers about Leave-No-Trace principles and protection of cultural resources could minimize adverse impacts.

Socioeconomic Effects
Isle Royale visitors are estimated to spend $1.7 million a year in the three local areas surrounding Copper Harbor and Houghton, MI, and Grand Portage, MN. If visitation were to increase under this alternative, there could be a beneficial effect on local economies. It is estimated that backcountry camping and boating parties spend an average of $102 per day in the local communities, day visitors $150-$168 per day, and guests at the Rock Harbor Lodge spend $330 per party per day (including money spent on the island at the Lodge). Therefore, any increase in visitation would be expected to have a beneficial effect on local economies (Strong and Solomon 2004). However, the extent of this economic benefit is unknown with this alternative. Although annual visitation would not be actively managed by the NPS with this alternative, it is unknown to what extent visitation would increase in the future.

Effects on Park Facilities and Operations
No necessary increases in park staffing would be expected if Isle Royale were to continue in its current management direction. However, an increase in the maintenance workload associated with minimizing sprawling campsites would be expected, a long-term minor adverse effect. The limitations of the current permitting system would continue with an inability to provide visitors with up-to-date information about space availability at campgrounds. Peak visitation periods result in higher numbers of visitor complaints to rangers and emergency responses by rangers. The rangers' workload could be expected to rise if visitor numbers increased, especially during already high visitation periods. The challenges of coordinating permitting, database management, public education, and managing visitor statistics would continue with multiple divisions involved in managing backcountry permitting. The technological and logistical problems of managing permitting from 5 unconnected permitting stations would also continue.

Conclusion
This alternative offers the greatest possibility of increases in visitation along with increases in overcrowding in campgrounds. It offers a high degree of public access and a high likelihood of adverse impacts to the park's natural and cultural resources.

Unavoidable Adverse Impacts
As documented in other sections of this chapter, maintaining the current management direction for managing overnight use would have unavoidable adverse impacts to many park resources including the quality of visitor experiences and wilderness character with continued or increased overcrowding in campsites during parts of the year, damage to and loss of vegetation and soils within and around heavily used campgrounds, and damage to archaeological resources and historic structures in and near over crowded campgrounds. These adverse impacts could be mitigated or avoided through future actions similar to those proposed in other alternatives for managing overnight use proposed in this plan.

Alternative B for Overnight Use: Prioritize Providing a Broad Range of Quality Backcountry Opportunities and Protecting Resources (the Preferred Alternative)

The details of this alternative are outlined in Chapter 2, p. 58-63. Changes that could occur under this alternative that may have measurable environmental consequences include:

- A Backcountry Office with advanced permitting would be established on the mainland.
- Some visitors may not be able to get a permit for the campground of choice on their date of choice.
- One new campsite would be added to North Desor. No new campgrounds would be added, beyond those proposed in the GMP.
- Visitation would be managed to maintain low use in the spring, allow minor to moderate increases in visitation in summer, and allow significant increases in visitation in the fall.
- Backcountry camping would be managed to decrease the frequency of campsite sharing to not more than 5% in summer (6/16-9/15).

This alternative divides the visitor season into 3 categories: 1) Spring, defined as the park's opening on April 16 through June 15; 2) Summer, defined as June 16 through September 15; and

3) Fall, defined as September 16 through October 31. These three time periods have different concerns for visitor experiences, natural and cultural resources, and park operations.

Implementing this alternative would be expected to affect visitor use and experiences, wilderness character, natural resources, cultural resources, area socioeconomics, and park operations. The main concerns with likely changes are primarily related to maximum public access and improving public services for backcountry trip planning.

Effects on Visitor Use and Experiences
In general this alternative would be expected to have a beneficial effect on visitor experiences in the park, but may have an adverse impact on visitor access during the peak visitor season. One goal of this alternative is to improve the distribution of backcountry visitors to more efficiently use the park's campsites. The intention is to better distribute parties to available campsites, thereby accommodating current levels or increased visitation levels while also reducing crowding and the frequency of campsite sharing. Improving visitor distribution through advanced permitting, as proposed in this alternative, would be expected to result in some visitors not being able to get a permit for their preferred campgrounds on their preferred dates. During the peak visitor season, this may also mean that fewer camping parties would be able to come to the park.

Outside of the busiest 2-week period, the number of parties permitted to stay in campgrounds falls well below the park's camping capacity, or number of campsites (Table 18). It is thus presumed that better distributing campers to campgrounds with adequate available campsites would alleviate overcrowding in campgrounds while also accommodating current or moderate increases in visitation. This would be accomplished by issuing backcountry permits from one centralized permitting station before visitors reach the island, telling visitors how many parties are already permitted for a campground, and no longer issuing permits over a campground's capacity.

Table 18: Number of backcountry parties in campgrounds and % campsite occupancy park-wide in 2001, a high year for backpackers in the park (this does not include the GMP-approved new campgrounds, which would reduce both the occupancy rates and the % sharing).

Time of Visitor Season	Daily average number of parties permitted for campgrounds	Park-wide campground occupancy rate (percent of 244 campsites)	Estimated % of parties sharing sites
Spring (opening-6/15)	45	19%	<1%
Summer (6/16-9/15)	139	57%	4.5%
July and August	155	64%	9.7%
Peak 2 weeks (between mid-July & mid-August)	203	83%	24.1%
Fall (9/16-10/31)	25	10%	<1%

There are several likely implications for visitors. Permitting would be completed prior to reaching the island, either by phone, through the Internet, or in person at a Backcountry Office at the park's Houghton headquarters. Therefore, campers would no longer have to wait to receive a permit upon reaching the island. Some people may not be able to get a permit for their preferred

campgrounds on their preferred dates. For some people this would require more advanced planning. There would be more information for trip planning than is currently available, namely the number of permits already issued for specific campgrounds. Once in the park, visitors in July and August in particular would have a much greater chance of finding an available campsite, regardless of how late in the day they reached a campground. However, for some people this change from the current permitting system may be confusing or inconvenient and be seen as a short-term adverse effect.

The two permitting types under this alternative for boaters who wish to dock overnight at a campground give them an option for a planned or unplanned trip. By planning and obtaining a backcountry permit early, boaters, like hikers, would be able to arrange an itinerary that optimized on less-crowded campgrounds ahead of time. Like hikers, boaters would not be able to exceed acceptable campsite sharing capacities. They would, however, have the benefit of being able to see how crowded or uncrowded the docking would be before ever arriving at the campground. For last minute trips, boaters would not be able to stay in the campground, but could obtain a docking or anchoring-out permit, and raft off with other willing boaters if no dock space was available. This system is expected to have minor, short-term and long-term positive effects for boaters who do not mind rafting off, and the same minor, short-term and long-term negative effects as Alternative A for boaters who prefer to dock without rafting off.

Impacts of overfull campground dock space on non-powerboaters (hikers and paddlers) would be marginally more beneficial than under the current system (Alternative A.) The benefits would occur because, with advance permitting, there would be less campsite sharing (as with other hikers), and last-minute boat arrivals would not be issued a campsite permit if no open campsites existed. This alternative would not change the current practice of allowing dock capacities to be exceeded, however, and so for those campers who feel indirect adverse effects of overfull docks (increased foot traffic through the campground, increased use of campground outhouses, increased noise), those effects would remain.

Visitors would still have the option of altering their itineraries at any point during their trips (except for groups). However, if this were to result in the frequency of campsite sharing exceeding 5%, then the number of camping permits issued may be reduced, which would reduce camping access to the park.

This alternative also proposes adding one new campsite at North Desor. Increasing this campground to 4 campsites would be consistent with Little Todd, the other campground along the west end of the Minong Trail. Under the current conditions, North Desor is one of the campgrounds most consistently used over its capacity (Table 8, Chapter 3 §3.1.3). Advanced permitting would help to prevent this overcrowding, and adding one site would increase the number of parties who could camp in the Minong Trail's primitive campgrounds, while also retaining it as a low use area.

Under this alternative, spring visitation would be maintained at levels compatible with backcountry staffing levels, which would aid in minimizing threats to human safety. However, visitation could increase substantially in the fall, which may have an adverse effect on visitor safety. Backcountry staffing is at its lowest levels in late September and October, with few

people staffing visitor centers and ranger stations and conducting backcountry patrols. Backcountry visitors during the fall face challenging weather conditions and must be more self reliant, since once they leave Windigo or Rock Harbor they are unlikely to find NPS personnel who could assist in an emergency. People choosing to visit at this time would need to be informed of these risks and the need for a great deal of self-sufficiency.

Overall, this alternative would be expected to have long-term beneficial effects on visitor use and experiences when compared to current conditions, and when compared to Alternatives C, D, and E.

Effects on Wilderness Character
Compared to the current management direction, this alternative is expected to better preserve a range of opportunities with variable visitation levels and associated opportunities for solitude. It would establish a threshold of not more than 5% of parties needing to double up in overcrowded campgrounds as well as maintaining low visitation in the spring. This would be expected to have a long-term moderate beneficial effect on the wilderness experiences available on Isle Royale by increasing solitude and privacy for campers, reducing pressures to rush to find a campsite, and reducing noise in campgrounds. Adding one additional campsite at North Desor would be expected to have the beneficial effect of increasing privacy and solitude for some parties camping there. However, making the campground bigger could also be seen as an adverse effect for people who prefer very small campgrounds.

Effects on naturalness would also be expected to be long-term and minor to moderately beneficial. Reducing impacts to vegetation and soils associated with overcrowded campsites would improve the naturalness of areas surrounding campsites. A commitment to not construct any additional campgrounds in the park would also be a beneficial effect, though adding one new campsite to North Desor campground would have a moderate adverse effect on the naturalness of that area.

Overall, this alternative would be expected to have long-term beneficial effects on wilderness character when compared to current conditions, and when compared to Alternatives C and D.

Effects on Natural Resources
Compared to current conditions, implementing this alternative would be expected to have a beneficial effect on natural resources by reducing the adverse impacts to soils, vegetation, and increases in total impacted area associated with overcrowding in campsites.

Adding one new site to North Desor, proposed in this alternative, would have the long-term adverse effect of creating a new impacted area with lost vegetation, compacted soils, a disturbed site vulnerable to exotic plants becoming established, and fragmented forest habitat. These impacts would be minor to moderate on site, but negligible to minor on a park-wide scale. Detailed plant and wildlife surveys as a part of site selection would minimize the severity of impacts.

Maintaining low visitation in spring would have a long-term moderate beneficial effect on natural resources in the park, relative to current conditions. Maintaining spring as a low

visitation time would be expected to minimize adverse effects to natural resources that are particularly sensitive in spring. High water levels and saturated soils make areas in and around campsites and trails more vulnerable to long-term damage from trampling. Wildlife mating and rearing young in the spring are highly sensitive to human disturbance. For example, low paddler numbers on the inland lakes in the spring appears to be beneficial to nesting loons (Kaplan and others 2004). Maintaining low human impacts such as disturbance of nesting loons and human encounters with wolves or wolf pups could result in moderate to major beneficial impacts, whereas minimizing trail widening associated with muddy conditions would be minor to moderate and very localized.

This alternative could allow for a significant increase in fall visitation, which could have adverse effects on some wildlife species. The moose rut takes place in the fall, as does spawning in several fish species. Wildlife in general are preparing for winter; storing up food and body fat at this period is critical for surviving either winter on the island or migration to wintering grounds. Human disturbances at this time and associated stresses could drain critical energy. Unless there were to be a dramatic increase in fall visitation these effects would be expected to be minor to moderate and easy for wildlife to escape.

Overall, this alternative would be expected to have long-term beneficial effects on natural resources when compared to current conditions.

Effects on Cultural Resources

An overall reduction in sharing campsites and especially a reduction in sharing at peak times could lessen impacts related to campsite expansion, including adverse impacts to archeological sites. Increasing amounts of vegetation loss and exposed soil in campsites are of particular concern to archeological resources, as this increases the likelihood of exposing cultural objects with a subsequent threat of losing or damaging these objects. The extent that reducing campground crowding would reduce impacts to cultural resources depends on the proximity of sensitive archeological resources to campgrounds. Since many campgrounds are located on or near important archeological sites, any reduction in overcrowding is predicted to decrease the probability of related adverse impacts to archeological resources; a long-term beneficial effect.

This alternative does propose the addition of one new campsite at North Desor. An archeological survey prior to site selection and avoidance of any sensitive cultural areas would minimize the threat of adverse impacts to cultural resources associated with expanding this campground.

Several of the new GMP-approved campgrounds are located near historic structures and within cultural landscapes. If these campgrounds became overcrowded due to unregulated increases in visitation, historic structures could suffer serious long-term impacts resulting from visitors camping outside of campgrounds or using historic buildings for shelter. This alternative would help decrease the extent of overcrowding on the main island and therefore lessen the possible negative impact on historic structures and concurrently the cultural landscapes near the GMP campgrounds.

An inventory of ethnographic resources is ongoing. The park service does not presently know of any impacted resources, but there could be an impact to unidentified resources associated with overcrowded campgrounds and expanding campsites. This alternative, which limits overcrowding, would limit the possibility of negative impacts to currently unknown ethnographic resources.

This alternative features a low threshold for overcrowding combined with lower spring visitation numbers. Soil and vegetation, as well as archeological sites, are most vulnerable in spring, due in part to increased risk of erosion and exposure of buried objects.

Socioeconomic Effects

With this alternative, annual visitation could continue at current levels, or may decrease. It is expected that this alternative may not be able to fully accommodate current peak visitation levels in August, so the number of camping parties coming to the park could decrease to some extent if they were not able to come at a different time. If the number of camping parties coming to the park during the peak time were to decrease, there could be more room available on the ferries for day visitors and lodge guests. An increase in day visitors would be expected to have a minor beneficial effect on local communities, as day visitors are estimated to spend more money locally than camping parties. Strong and Solomon (2004) calculated that parties visiting Isle Royale for a day trip spend an average of $150-168 per day, while camping parties spend an average of $102 per day. The bulk of this money is spent on transportation to the island and food and lodging prior to traveling to the island. Any decrease in visitation as a result of this alternative would be expected to be minor at most, so the economic impacts to the local communities would also be expected to be minor.

With advance permitting in place, concession ferry operators would require all overnight visitors to have valid permits in order to purchase ferry tickets (the same requirement that is currently in effect for groups coming out to the park now.) It is unlikely that the ferries will experience adverse effects from this system. Although visitors will be required to obtain their permits through the park's Backcountry Office first, they will be made aware at that point of all possible ferry options, not just the NPS's Ranger III. It is also true that each of the private ferry concessions offers unique options to potential passengers including mainland launch location, scheduling, and length of trip, so requiring an advance permit would not be expected to shift passenger numbers to the Ranger III, away from the other ferries. In addition, during peak visitation periods when the number of permits issued could be lower than under current practices, there will also be the chance to increase day-use trips aboard the ferries. Therefore, the adverse effect on concession ferries under this alternative is expected to be negligible to minor, and long term.

If the increased cost of creating a Backcountry Office were to be offset by either a permitting fee or an increase in the daily user fee, the costs to visitors of a trip to Isle Royale would increase, a minor to moderate adverse economic effect on visitors. A permitting fee would limit the costs to backcountry campers and boaters, while an increased daily user fee would increase costs to all island visitors (day visitors and lodge guests as well as campers and boaters). Currently the cost to visitors consists of the transportation fee ($130 round trip per adult for ferries, $290 round-trip

per person for the seaplane, and gas money for private boaters), daily user fee ($4 per person per day), and any incidental expenses.

Small businesses and CUAs would use the same system of permitting as all other backcountry visitors. As the availability of backcountry permits became limited, there could be adverse impacts to these businesses.

Effects on Park Facilities and Operations
Implementing this alternative would be expected to have a moderate short-term cost and minor to moderate long term cost to the park. Establishing a Backcountry Office, with necessary office space, permitting computers and other equipment, creation of web-based permitting, and public notices of changes in permitting and planning for a trip to Isle Royale would be a moderate short-term adverse impact on Isle Royale's budget, workload, and staffing. Running the Backcountry Office and central permitting would have minor to moderate long-term costs of additional staffing. Staffing a Backcountry Office could involve new positions and/or shifting existing visitor center positions to the new office.

The creation of the Backcountry Office would also be expected to have a beneficial effect on NPS operations, by improving coordination of all activities related to managing backcountry recreation. One central office would improve communication between divisions involved in the various facets of backcountry management. Management of the permitting system and its associated database, analysis of visitor statistics and recreation monitoring, and long-term development of effective backcountry education and regulations would be coordinated within this single office. Over the long-term this would be expected to improve the park's ability to apply backcountry data to management, and improve the efficiency of visitor services and recreation management in the park. This long-term improved efficiency would be expected to outweigh the short-term costs of establishing the Backcountry Office.

This alternative also proposes adding one new campsite to the North Desor campground, which would have a minor adverse effect on park workloads and budget. Creation of one new campsite would add to the workloads of existing staff, and not in itself require any new positions.

As with all alternatives proposing changes from the current conditions, the success of this alternative depends largely on an effective monitoring program with an associated assessment of the effectiveness of management actions for meeting goals. With this alternative it will be critical to determine whether advanced permitting and the permitted campground occupancy rates are effectively meeting the goals for reduced campground overcrowding. Such a monitoring program is expected to have a minor to moderate adverse effect on park operations, particularly the Natural Resources Management Division, which is responsible for monitoring natural resources and social conditions in the park. Collection of monitoring data, data analysis, and interpretation for management implications would require either an increase in the workloads of existing staff or additional staff.

Conclusion
This alternative would be expected to have both adverse and beneficial effects on park resources and values. Relative to current conditions, visitor services and backcountry management would

improve, and adverse impacts to natural and cultural resources would decrease. Increased visitation could be accommodated during part of the season while also reducing crowding in campgrounds and maintaining historic low use times during part of the visitor season. However, compared to current conditions, some people may have less flexibility in where they camp, and would likely need to plan further in advance for a trip to Isle Royale. This alternative would also have the long-term benefit of improving the efficiency of NPS operations for backcountry recreation management.

Unavoidable Adverse Impacts
As outlined above, implementing the preferred alternative for managing overnight use of Isle Royale's backcountry would be expected to have some unavoidable adverse impacts. Limiting camping permits to the availability of campsites could make the park's backcountry less accessible to some campers during parts of the busiest times of the year; some people would not be able to camp in their preferred campgrounds on their preferred dates. The productivity of natural resources on a small scale would be impacted by the loss of vegetation and compaction of soils in establishing a new campsite at North Desor campground.

Alternative C for Overnight Use: Accommodate Current or Increasing Use Levels While Improving Social Conditions

The details of this alternative are outlined in Chapter 2, p. 63-67. Changes that could occur under this alternative that may have measurable environmental consequences:

- A Backcountry Office with advanced permitting would be established on the mainland.
- Visitation could increase all season, especially in Spring.
- A new shuttle service would be created in the Rock Harbor Channel.
- 2-3 new shelters would be constructed adjacent to the Windigo Dock.
- New campgrounds could be constructed, or existing campgrounds could be expanded on the east end of the island to better accommodate camping demands.
- The goal would be to reduce campsite sharing to not more than 10% sharing during the peak in visitation, and not more than 5% the rest of the season.

Implementing this alternative with its associated changes from the current condition would be expected to affect visitor use and experiences, wilderness character, natural resources, cultural resources, area socioeconomics, and park operations. The main issues with proposed changes are primarily related to visitor distribution and use levels, services offered to backcountry and wilderness visitors, and potential infrastructure changes (campground expansions and additions).

Effects on Visitor Use and Experiences
Similar to Alternative B, one goal of this alternative is to improve the distribution of backcountry visitors to more efficiently use the park's campsites. The details of the Backcountry Office and implications for visitors would be the same as those outlined above in Alternative B, with two exceptions. Higher campsite occupancy rates may be permissible during the peak visitor period since up to 10% of parties sharing would be acceptable in this alternative, as opposed to not more than 5% sharing in Alternative B. Higher occupancy rates would also be permissible in Spring under this alternative. This would allow for both higher visitation rates and higher frequencies of campsite sharing than would be likely with Alternative B. This alternative could also result in a

narrower range of visitor opportunities for solitude related to varying visitation levels throughout the visitor season, as there would be no certainty that current low use times in Spring and Fall would continue.

Although higher visitation levels for camping could be accommodated under this alternative than Alternative B, there is still a strong possibility that some visitors would not be able to get a permit for their preferred campgrounds on their preferred dates. Because campgrounds would not be permitted over their capacities, compared to current conditions there could be a reduction in visitation to parts of the park during the busiest parts of July and August.

Increased visitation in May and October, possible under this alternative, may not satisfy those people who would prefer to visit in the summer, but were unable to get camping permits. Backcountry staffing is at low levels in May and October, and staffs are typically involved in training through early June. Consequently there are few people staffing visitor centers and ranger stations, and conducting backcountry patrols. Additionally, trail crews work through June to open up trails and campgrounds, clearing fallen trees from the winter and felling hazard trees. Backcountry visitors during the spring and fall face more challenging conditions and must be more self reliant, and willing to do without many services and amenities. Some people who could not get a permit during the summer may not want to come to the park during the more challenging times of Spring and Fall.

The shuttle service proposed in this alternative would offer more flexibility and options to reach the interior of the park, at a lower cost than the water taxis. New shelters at the Windigo dock would offer a new option for boaters or others who wish to camp near the dock, and could help to alleviate crowding at nearby Washington Creek campground. Expanding existing campgrounds or adding new campgrounds would allow more parties to camp on Isle Royale without increasing overcrowding in campgrounds. However, this also would increase the cumulative footprint of campgrounds and fragment previously undeveloped areas of the backcountry. People who prefer smaller, quieter campgrounds, may see these expansions and an increase in the total number of people in a campground at one time as an adverse change.

Boaters would also obtain advance permits through the Backcountry Office, and effects on boaters are expected to be the same as Alternative B, except that under this alternative, no last-minute backcountry docking-only permits would be available. As under Alternatives A-C, the park would not restrict rafting off by willing, permitted boaters.

Impacts of overfull campground dock space on non-powerboaters (hikers and paddlers) would be marginally more beneficial than under the current system (Alternative A.) The benefits would occur because, with advance permitting, there would be less campsite sharing (as with other hikers), and last-minute boat arrivals would not be issued a campsite permit if no open campsites existed. This alternative would not change the current practice of allowing overbooking at docks, however, and so for those campers who feel indirect adverse effects of overbooked docks (increased foot traffic through the campground, increased use of campground outhouses, increased noise), those effects would remain.

Impacts of Alternatives for Overnight Use

In general, this alternative would affect visitor use levels and visitor experiences by accommodating more people during the busy season with more campgrounds, easier access to the interior of the island, and a tolerance for a higher level of campsite sharing. It would also allow for a greater increase in visitation in Spring than would be allowed with the Preferred Alternative (Alternative B). Compared to current conditions, this alternative would be expected to be able to accommodate existing or greater annual visitation levels, but may not be able to fully accommodate existing peak visitation if visitors were not willing or able to alter their preferred itineraries based on campsite availability.

Effects on Wilderness Character
Overall, this alternative would be expected to have long-term beneficial effects on wilderness character when compared to current conditions. There would also be adverse impacts to wilderness character associated with this alternative. When compared to Alternative B, the Preferred Alternative, this alternative could result in a narrower range of wilderness experiences related to visitor use levels throughout the visitor season, as well as a greater degradation of naturalness associated with the extent of campground development in the park. Adding a shuttle service in the Rock Harbor Channel to transport campers would give more people access to the interior of the park. This may be a beneficial change for people wishing to visit the interior on short trips to the park, but an adverse change for people who feel greater ease of access compromises the wilderness character of the park's more remote areas.

Effects on Natural Resources
Similar to Alternative B, the Preferred Alternative, this alternative would be expected to have a beneficial effect on natural resources by reducing the adverse impacts associated with overcrowding in campsites. However, this alternative proposes the greatest likelihood of increasing the number of campsites in the park, with the option to expand existing campgrounds and create new campgrounds in previously undeveloped areas. Accordingly, the adverse impacts associated with campsites could increase throughout the park in this alternative. New campgrounds pose the potential for additional adverse impacts such as fragmenting habitats, expanding edge habitats, disturbing previously undeveloped sites, expanding conditions suitable for the introduction and establishment of exotic plant species, and introducing consistent human traffic in areas that previously may have seen infrequent traffic. Areas that were initially identified as possible sites were chosen to avoid adverse effects to Federally Threatened species, but it is unlikely that adverse impacts to both Federally and State-listed species could be avoided entirely. Therefore, this alternative would accept a minor to moderate impact to State-listed populations in the park.

This alternative also would allow for a significant increase in spring visitation. Although high rates of overcrowding and parties doubling up in campgrounds would not be a concern, there are other visitation-related concerns for natural resources in the spring. This alternative would have the same likelihood of minor to moderate adverse impacts to natural resources that are more sensitive to human impacts in the spring as those outlined in alternative A, the current conditions.

Overall, this alternative would be expected to have long-term beneficial effects on natural resources when compared to current conditions. However, as this alternative would allow an

increase in the number of campsites and campgrounds in the park and significant increase in visitation in the spring, the likelihood and scope of adverse impacts are greater with this alternative than with the Preferred Alternative, Alternative B.

Effects on Cultural Resources
The probable effects to cultural resources with this alternative are similar to those outlined in the Preferred Alternative, Alternative B, but with a greater probability of adverse impacts to cultural resources.

This alternative proposes adding a few shelters in the vicinity of the Windigo Dock, adding new campsites to expand existing campgrounds, and possibly adding a few new small campgrounds. This would likely expand the cumulative footprint and impacted area of campsites in the park. With this expansion would come a possible adverse impact on cultural resources, increasing the likelihood of damage to or loss of previously unknown archeological sites and cultural objects. However, the likelihood of this adverse impact could be reduced or eliminated with a thorough archeological survey in proposed sites for these new developments. Mitigation actions such as site hardening (e.g. tent platforms or site capping) and removal of significant objects to the park museum could further reduce the severity of adverse impacts.

This alternative would also allow for a significant increase in visitation in Spring. Soil and vegetation, as well as archeological sites, are most vulnerable in Spring. Therefore, adverse impacts to cultural resources associated with use levels in campgrounds could increase. Remedial measures such as educating campers about Leave-No-Trace principles and protection of cultural resources could minimize adverse impacts.

Similar to the Preferred Alternative, this alternative, which limits overcrowding, would limit the possibility of negative impacts to currently unknown ethnographic resources. However, by allowing expansion of current campgrounds and possible new campgrounds this alternative would result in a long-term minor adverse impact to ethnographic resources.

Overall, this alternative would be expected to have long-term beneficial effects on cultural resources when compared to current conditions. However, as this alternative would allow a significant increase in visitation in the spring, the likelihood of adverse impacts are greater with this alternative than with the Preferred Alternative (Alternative B). Because archeological resources and cultural objects are a non-renewable resource, any damage to or loss of archeological resources would be long-term, irreversible, and adverse. Damage to cultural landscapes and historic structures may be reversible, depending on the specific resource affected and the nature of the impact.

Socioeconomic Effects
With this alternative some visitation may shift from the peak season to other times of the season, but overall visitation could increase, which could have a beneficial effect on tourism-dependent businesses. Isle Royale visitors are estimated to spend $1.7 million in the 3 local communities and surrounding areas of Copper Harbor and Houghton, MI and Grand Portage, MN (Strong and Solomon 2004). With this alternative this level of spending would be expected to continue, or could increase.

The effects on concession ferries are expected to be the same as under Alternative B.

If the increased cost of creating a Backcountry Office were to be offset by either a permitting fee or an increase in the daily user fee, the costs to visitors of a trip to Isle Royale would increase, a minor to moderate adverse economic effect on visitors. A permitting fee would limit the costs to backcountry campers and boaters, while an increased daily user fee would increase costs to all island visitors (day visitors and lodge guests as well as campers and boaters). Currently the cost to visitors consists of the transportation fee ($130 round trip per adult for ferries, $290 round-trip per person for the seaplane, and gas money for private boaters), daily user fee ($4 per person per day), and any incidental expenses.

Small businesses and CUAs would use the same system of permitting as all other backcountry visitors. As the availability of backcountry permits became limited, there could be adverse impacts to these businesses.

Effects on Park Facilities and Operations
Implementing this alternative would have the same short and long-term minor to moderate adverse effect on park staffing and budget associated with creating a Backcountry Office as outlined in Alternative B, above. It would also have the long-term beneficial effects of improving the efficiency of NPS operations for backcountry management and services.

There would be additional costs to the park associated with adding new shelters near the Windigo dock (a minor short-term adverse effect), and possibly adding up to three new campgrounds (a moderate short-term adverse effect). Creating a shuttle service between Rock Harbor, Mott Island, and Daisy Farm could be a minor to moderate long-term adverse effect on park budget and staffing, or a negligible effect if the service were run through a concessionaire.

As with all alternatives, the success of this alternative depends largely on an effective monitoring program with an associated assessment of the effectiveness of management actions for meeting goals. With this alternative it will be critical to determine whether advanced permitting and the permitted campground occupancy rates are effectively meeting the goals for reduced campground overcrowding. Such a monitoring program is expected to have a minor to moderate adverse effect on park operations, particularly the Resources Management Division, which is responsible for monitoring natural resources, cultural resources, and social conditions in the park. Collection of monitoring data, data analysis, and interpretation for management implications would require either an increase in the workloads of existing staff or additional staff.

Conclusion
This alternative could have both adverse and beneficial effects on park resources and values. Compared to the Preferred Alternative, a greater number of backcountry campers could be accommodated throughout the visitor season and campers would have more options, but there could also be an increase in development in the backcountry and wilderness, a higher level of campground crowding, and a greater likelihood of adverse impacts to cultural and natural resources. This alternative may not be able to accommodate future increases in visitation as well

as the current management practices, but it would be expected to better provide quality visitor experiences, and better protect park resources.

Unavoidable Adverse Impacts
As outlined above, implementing this alternative for managing overnight use of Isle Royale's backcountry would be expected to have some unavoidable adverse impacts associated with expanding existing campgrounds, creating new campgrounds in previously undeveloped areas, and adding shelters near the Windigo dock. New campsites and shelters result in decreased productivity on a small, site-specific scale, with a loss of vegetation, compaction and exposure of soil, and habitat loss and fragmentation. The combination of new human use in previously unused areas and potential changes in use patters through possible increased spring and fall visitation could have unavoidable adverse impacts on wildlife.

Alternative D for Overnight Use: Improve Social Conditions Through the Use of Entry Quotas

The details of this alternative are outlined in Chapter 2, p. 68-71. Changes that could occur under this alternative that may have measurable environmental consequences:

- Entry quotas would be established for hikers and boaters on ferries (private boaters would be included in the future only as increasing boating necessitated)
- Crowding would be decreased in July and August, with a possible increase the rest of the season, by applying a standard of not more than 5% of parties sharing campsites at any point in the season.
- One new campsite would be added at North Desor.
- Campsite or shelter reservations would be offered at a limited number of campgrounds.

Implementing this alternative with its associated changes from the current condition would be expected to affect visitor use and experiences, wilderness character, natural resources, cultural resources, area socioeconomics, and park operations. The main issues with proposed changes are primarily related to visitor distribution and use levels, and services offered to visitors.

Effects on Visitor Use and Experiences
Alternative D proposes establishing a standard of not more than 5% of parties needing to share campsites in overfull campgrounds, accomplished through an entry quota system. This would reduce overcrowding during the peak season and allow for an increase in visitation and concurrent increase in campground crowding outside of July and August. Further, this alternative would not add any new campsites, with the exception of one site at North Desor and the GMP-approved new campgrounds, and there would be no significant change in the current permitting system. Over the short-term this would be beneficial in that people would not have to learn a new system for permitting. People would receive a backcountry permit at the start of their trip, and there would not be reliable information available about future campground use levels. Once they reached the island, people would retain full freedom to camp in or dock at the campgrounds of their choice, and to change their itinerary at any point.

This alternative would also establish campsite and shelter reservations on a limited basis. This would be a beneficial change for people who value an assurance of campsite availability, and for

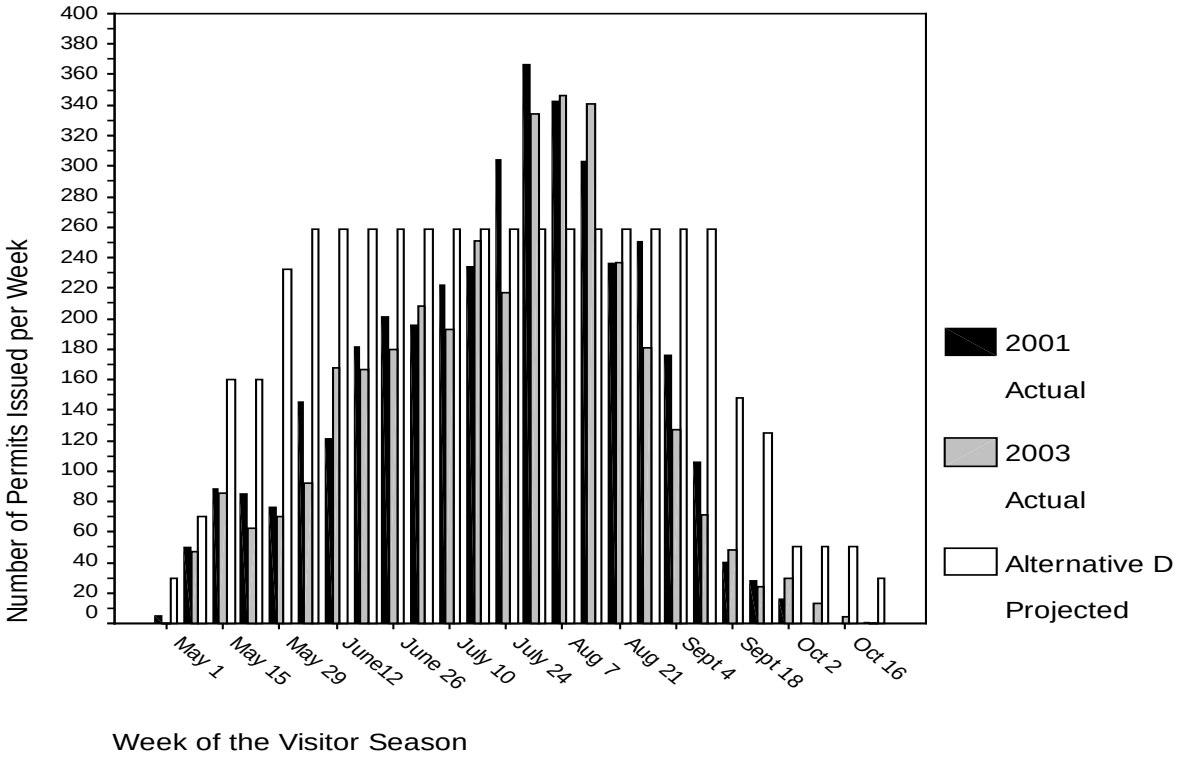
people who would prefer to plan ahead for where they will be camping or docking for the night. Because this would be implemented in a limited number of campgrounds, the majority of campers would retain flexibility in changing their itineraries at any point in their trip and selecting campsites on a first-come, first-served basis.

Establishing a standard of not more than 5% of parties needing to double up in overcrowded campgrounds would require changes in backcountry visitation. For the past several years it is estimated that up to 25% of parties needed to share campsites during the peak 2 weeks of the season. Additionally, in 2001, a peak year for backpacking on the island, in July and August outside of the peak 2 weeks, the frequency of parties needing to share sites averaged 6.4%. The rest of the season the frequency of sharing averaged less than 1%. To lower this number without either controlling visitor distribution and what campgrounds people stay in or significantly expanding campgrounds would require reducing visitation during part of the season. Some of the July and August visitors would have to come at a different time, or not come to the island at all.

Use levels for powerboaters and sailors would be monitored to determine a future need for entry quotas for these groups. With low current use levels for these visitors, boaters and sailors would not initially be included in the quota system. Boaters would be required to obtain a backcountry permit, either prior to or at arrival time. As with Alternatives A-C, dock space would not be regulated, the exception being that in this alternative, there would be a few campgrounds where reservations would be allowed for part of the season. This alternative would have the same effects as Alternative A, where boaters would not be able to pre-plan an itinerary with information on expected campground/dock capacities by using an advance, centralized permit system. By having a small number of campgrounds with a reservation system, boaters would have the assurance that a campsite and dock space (where applicable) would be available at a specified date and location. This would be a minor to moderate, long term positive effect. Boaters who enjoy the camaraderie of rafting off would still be able to do so for most of the season, at most docks. Non-powerboaters who prefer a more solitary camping experience at campgrounds with docks would also register a minor long term positive effect for a portion of the season at selected campgrounds.

Using the travel simulation model it is estimated that if the park issued an average of 37 backcountry permits per day or 259 per week, 5% or fewer parties would need to share campsites. This includes all backcountry parties, boaters as well as hikers. This also assumes that the additional campsites would be added at the GMP-proposed campgrounds and at North Desor, as proposed in this alternative. It is also assumes that some boaters would be sleeping onboard their boats rather than occupying campsites, where sufficient dock space is available. Figure 5 illustrates the actual number of permits issued by week in 2001 and 2003, as well as projections of visitation patterns with a limit of 37 permits per day and maintaining 2003 ferry capacities and schedules. In 2001, 4 weeks exceeded 259 permits issued, with 283 too many permits being issued in this period. In 2003, 3 weeks exceeded the limit by a total of 244 permits. These excess permits could easily be absorbed during the rest of the season, as long as the excess people seeking permits could be flexible in their travel dates. Overall backcountry visitation could increase above current levels outside of the peak time.

Figure 5: Actual numbers of backcountry permits issued per week in 2001 and 2003 and projected numbers issued with a cap of 37 permits per day, or 259 per week, while maintaining 2003 ferry capacities and schedules.



Implementing this alternative could result in some visitors not being able to visit the park on their preferred dates. The number of camping parties entering the park would be limited to not more than an average of 37 per day (i.e. 259 per week). The result would be reduced crowding in campgrounds and on trails during the peak visitor season (between mid-July and mid-August). However, one cost of this is expected to be an increase in visitation during the rest of the season and an overall decrease in the range of opportunities available throughout the season on Isle Royale.

Increased visitation in May and October, possible under this alternative, could have an adverse effect on visitor safety. Backcountry staffing is at low levels in May and October, and staffs are typically involved in training through early June. Consequently there are few people staffing visitor centers and ranger stations, and conducting backcountry patrols. Additionally, trail crews work through June to open up trails and campgrounds, clearing fallen trees from the winter and felling hazard trees. Backcountry visitors during Spring and Fall face more challenging conditions and must be more self reliant, increasing visitation during these times would increase risks to human safety in the backcountry.

Compared to the Preferred Alternative and current conditions, this alternative would be expected to limit access to the park for camping to a greater extent, but with a benefit of maintaining maximum freedom and flexibility once reaching the park's wilderness and backcountry. Because only the number of backcountry camping parties would be capped on ferries, there

could be additional space on ferries available for day visitors and lodge guests, increasing access to the park for these visitors.

One of the goals of this alternative is to keep the permitting and trip planning logistics as simple as possible, with the thought that establishing entry quotas by limiting the number of camping parties each of the ferries could carry would be the simplest system for visitors. If this alternative were implemented a certain portion of the permits issued per day would be allocated for campers traveling on ferries, with the remaining available for private boaters planning on utilizing campgrounds.

Effects on Wilderness Character
This alternative proposes managing visitor use levels by establishing an entry quota, thereby limiting access prior to reaching the park. Compared to Alternatives B, C and E, this may allow people to travel more freely to the campgrounds of their choice, since permits would be issued upon arrival to the island, and would not be limited by campground capacities. This may be better for wilderness experiences than allowing more people to come to the park for wilderness trips but restricting the choices they have in where to travel. Compared to current conditions, this alternative would aim to reduce campground crowding during July and August; a long-term moderate beneficial effect on wilderness character and opportunities for solitude and tranquility. Compared to the Preferred Alternative, there is less likelihood of preserving the low use times in the spring, which could be a moderate adverse impact on spring visitors who are seeking more exemplary wilderness experiences.

Compared to current conditions this alternative would have the beneficial effect of reducing sprawl in campgrounds and biophysical impacts associated with overuse of campsites, similar to the other alternatives. This would be a long-term beneficial effect on wilderness character.

Effects on Natural Resources
Similar to the Preferred Alternative, implementing this alternative would be expected to have a beneficial effect on natural resources by reducing the adverse impacts to soils, vegetation, and increases in total impacted area associated with overcrowding in campsites.

Also similar to the Preferred Alternative, this alternative would have the same adverse impacts of adding an additional campsite at North Desor. These impacts would be minor to moderate on site, but negligible to minor on a park-wide scale.

In contrast to the Preferred Alternative, this alternative could allow for increased visitation in the spring, with associated concern for adverse impact to sensitive resources. Impacts such as disturbance of wildlife could result in moderate to major adverse impacts, whereas trail widening associated with muddy conditions would be minor to moderate and very localized.

Effects on Cultural Resources
This alternative features entry quotas for backcountry campers, which would reduce campground overcrowding, and would likely reduce the overall number of visitors on the island during the peak visitation period. There would likely be corresponding decreases in adverse impacts associated with overcrowding and high visitation. An overall reduction in sharing campsites and

especially a reduction in sharing at peak times could lessen impacts related to campsite expansion, including negative impacts to archeological sites. The extent of the impact reduction depends on the proximity of sensitive archeological resources to campgrounds. Since many campgrounds are located on or near important archeological sites, any reduction in overcrowding is predicted to decrease the probability of related impacts to archeological resources.

Several of the new GMP campgrounds are located near historic structures. If these campgrounds become overcrowded due to unregulated increases in visitation, historic structures could suffer serious long-term impacts resulting from visitors camping outside of campgrounds or using historic buildings for shelter. This alternative would help decrease the extent of overcrowding on the island and therefore lessen the possible negative impact on historic structures near the GMP campgrounds.

Similar to the Preferred Alternative, this alternative, which limits overcrowding, would limit the possibility of negative impacts to currently unknown ethnographic resources.

Overall, this alternative would be expected to have long-term beneficial effects on cultural resources when compared to current conditions. However, as this alternative would allow a significant increase in visitation in the spring, the likelihood of adverse impacts are greater with this alternative than with the Preferred Alternative, Alternative B.

Socioeconomic Effects

Under this alternative, it is estimated that there would be a 5% reduction in camping parties in July and August. If those people chose to visit the park at a different time, it is expected that the socioeconomic effect of this alternative on the local communities would be negligible. If fewer camping parties riding on ferries resulted in more day visitors coming to the park during the peak time, there could be a beneficial effect on the local communities. Currently ferries sell out periodically during the peak visitor season. Entry quotas could result in fewer camping parties and more space available for day visitors. Day visitors are estimated to spend more money per day in local communities than campers. A party of day visitors is thought to spend on average $150-168 per day, while a party of backcountry campers is thought to spend an average of $102 per day. The bulk of direct local spending goes to ferry companies, gas, and motels (for those who would stay in a motel prior to traveling to the island). If total visitation to the island were to decrease, there could be a minor adverse impact to local mainland communities, including ferry services. The *Isle Royale Queen*, from Copper Harbor, and the *Wenonah*, from Grand Portage, are the only ferries that carry day visitors, so any increase in day visitors would affect Copper Harbor and Grand Portage most directly (Strong and Solomon 2004).

Reducing the number of camping parties riding on ferries during the peak visitor season could also allow more room for people staying at the Rock Harbor Lodge. This could have a minor to moderate beneficial effect on the concessionaire operating the lodge. These visitors may be more likely to spend more money in the local communities than campers, as they may stay in motels and eat in restaurants more frequently. Thus increasing the number of lodge guests traveling to the island could also have a minor beneficial effect on local communities.

Impacts of Alternatives for Overnight Use

This alternative proposes implementing a small-scale campsite reservation system, limited to a few of the park's small campgrounds. This system would be similar to the large group camping system currently in effect. Advanced reservations would be available through the park's Houghton Headquarters, and a permitting fee required (a non-refundable $25 fee). Thus it is expected that this alternative could increase the cost of a trip for those visitors opting to use the reservation system.

This alternative would be expected to have negligible to minor effects on small businesses operating within the park. Camps, outfitters, and all small businesses would be included in the entry quotas, similar to all camping parties. These organizations could be adversely affected if they were not able to come to the park on their preferred dates. However, for organizations that already work through the large group permitting system, there would be no change from current conditions. Fishing and dive charters would not likely be affected.

Effects on Park Facilities and Operations

Implementing this alternative would have a minor short-term adverse effect due to the costs of constructing one new campsite at North Desor. This may also result in a long-term minor increase in maintenance workload associated with the upkeep of campsites. Both of these would likely require an increased workload for existing staff rather than hiring additional staff.

Implementing this alternative would create a new reservation system for a small number of campgrounds in the park, which would increase the workload of Houghton Visitor Center staff. This would be a minor long-term adverse effect on park operations.

As with all alternatives, the success of this alternative depends largely on an effective monitoring program with an associated assessment of the effectiveness of management actions for meeting goals. With this alternative it will be critical to determine whether entry quotas are unduly restrictive or insufficient to reduce the frequency of campsite sharing to 5%. Such a monitoring program is expected to have a minor to moderate adverse effect on park operations, particularly the Natural Resources Management Division, which is responsible for monitoring natural resources and social conditions in the park. Collection of monitoring data, data analysis, and interpretation for management implications would require either an increase in the workloads of existing staff or the need for additional staff.

This alternative would be expected to have a lower short-term implementation cost than Alternatives B, C and E. However, the long-term costs may be comparable, with this alternative requiring increased coordination with the ferry companies to manage the quota system, ongoing management of the limited site reservation system, and ongoing monitoring necessary to determine the appropriateness of quota levels.

Conclusion

In general this alternative would be expected to have both beneficial and adverse effects on park resources and values. Relative to other alternatives, this alternative could result in the greatest decrease in peak season visitation, but it would allow for a large increase in visitation in the spring and fall. Campground crowding and the associated adverse impacts to park resources

would decrease, but adverse impacts to resources that are most sensitive to human impacts in the spring or fall could increase.

Unavoidable Adverse Impacts
As outlined above, implementing this alternative for managing overnight use of Isle Royale's backcountry would be expected to have some unavoidable adverse impacts associated with adding a new campsite at North Desor campground, and limiting the number of camping parties entering the park. The park's backcountry could become less accessible to some campers during parts of the busiest times of the year, with some people not being able to camp on their preferred dates. The productivity of natural resources on a small scale would be impacted by the loss of vegetation and compaction of soils in establishing a new campsite at North Desor campground. Allowing for an increase in backcountry visitation in the Spring, this alternative could also have unavoidable adverse impacts to wildlife, with increased human disturbance during a particularly vulnerable time for wildlife (e.g. nesting birds and moose with calves).

Alternative E for Overnight Use: Maximize Resource Protection and Opportunities for Solitude

The details of this alternative are outlined in Chapter 2, p. 71-75. Changes that could occur under this alternative that may have measurable environmental consequences:

- Establish Backcountry Office—staffing and budget implications, advanced permitting for campers and boaters.
- Decrease crowding to not more than 5% of parties needing to double up during the 2-week peak in visitation, and not more than 1% sharing the rest of the season.
- Maintain historic low visitation in Spring and Fall.
- Remove one campsite from Little Todd.
- No new campgrounds would be added, beyond those approved in the GMP.

Implementing this alternative with its associated changes from the current condition would be expected to affect visitor use and experiences, wilderness character, natural resources, cultural resources, area socioeconomics, and park operations. The main issues with proposed changes are primarily related to visitor distribution and use levels, and services offered to visitors.

Effects on Visitor Use and Experiences
This alternative would be expected to result in changes to visitor use levels and opportunities that could be viewed as adverse or beneficial effects, depending on one's perspective. Similar to Alternative B, the preferred alternative, one goal of this alternative is to improve the distribution of backcountry visitors to more efficiently use the park's campsites by creating a Backcountry Office with advanced permitting. However, this alternative is expected to allow for the least increase in visitation of all the alternatives. This alternative has a lower tolerance for campground crowding and a need to double up in campsites, and a goal of maintaining existing low backcountry visitation in the spring and fall. More evenly distributing campers between campgrounds and throughout July and August could accommodate current visitation levels, if visitors were to adhere to their permitted camping itineraries. People straying from their camping itineraries would require permitting below campgrounds' capacities in order to achieve

goals for reduced campground crowding, which would reduce the likelihood of accommodating current visitation levels.

There are several likely implications for visitors of instituting advanced permitting. Permitting would be completed prior to reaching the island, either by phone, through the internet, or in person at a Backcountry Office at the park's Houghton headquarters. Some people may not be able to get a permit for their preferred campgrounds on their preferred dates. For some people this would require more advance planning. There would be more information for trip planning than is currently available, namely the number of permits already issued for specific campgrounds. Once in the park, visitors in July and August would have a much greater chance of finding an available campsite, regardless of how late in the day they reach a campground.

The effects of this alternative on boaters would be identical to those under Alternative C. Advance permitting would enhance a boater's ability to avoid crowded docks if he/she chose, but rafting off in the case of overcrowded docks would not be restricted. The effects of this alternative will vary based on boater preference. The adverse effects of overfilled dock space on boaters and non-powerboating campers is expected to be minor to moderate, and short-term to long-term. (See Effects on Visitor Use and Experiences section under Alternative C for more detail.)

This alternative also proposes removing one campsite from Little Todd, making it consistent with the 3 campsites at North Desor, the other campground along the primitive western section of the Minong Trail. Although removing one site would be expected to reduce public access to this section of trail somewhat, it would also provide for one section of hiking trail with very small campgrounds and very low encounter rates along the trail, a long-term beneficial effect for those people who do receive permits for these campgrounds.

Under this alternative, spring and fall visitation would be maintained at levels compatible with backcountry staffing levels, which would aid in minimizing threats to human safety.

Compared to current conditions, this alternative would be expected to improve visitor experiences. Relative to the other alternatives, this alternative would be expected to have the long-term adverse effect of limiting visitor access to the primitive western section of the Minong Trail, and access to the entire backcountry and wilderness for camping in Spring and Fall. Overall this alternative would be expected to have the adverse effect of maintaining lower visitor use levels than may be possible with the other alternatives, but at the same time have the beneficial effect of providing opportunities for higher quality wilderness and backcountry experiences.

Effects on Wilderness Character

In reducing overcrowding in campgrounds and a need to share campsites, as well as preserving low visitation times in Spring and Fall, this alternative would have a long-term beneficial effect on wilderness character compared to current conditions. Compared to all the other alternatives, this alternative would have the greatest likelihood of maintaining a broad range of wilderness opportunities, including exemplary opportunities for solitude and self-sufficiency during low use times in Spring and Fall. Although this may make public access to the park more difficult in

Spring and Fall, access for appropriate types of recreation would remain high in the summer months.

A commitment to not increase the number of campsites in the park beyond those approved in the GMP would, in concert with efforts to reduce overcrowding in campgrounds, be expected to have a long-term beneficial effect on the naturalness of the park and areas immediately surrounding campsites.

Overall, this alternative would be expected to have the greatest beneficial effect on wilderness character, when compared to current conditions and the other alternatives.

Effects on Natural Resources
The effects on natural resources of actions proposed in this alternative would be the same as those outlined in the Preferred Alternative (Alternative B) with two exceptions. This alternative proposes removing one campsite from Little Todd and would not expand any existing campgrounds. This would be a moderate beneficial effect for the area in the immediate vicinity of Todd Harbor and a minor beneficial effect park-wide. This is the only alternative that proposes any reduction in the number of campsites. Additionally, this alternative is the only alternative that proposes maintaining current low use in the fall. Preserving low visitation in the fall would have a long-term beneficial effect on wildlife species that are sensitive to human disturbance. This could be a minor, long-term beneficial impact on wildlife species that require low stress periods to build up food and fat stores to survive Winter.

Overall, this alternative would be expected to have long-term beneficial effects on natural resources when compared to all other alternatives. The beneficial effects to natural resources would be slightly greater with this alternative compared to Alternative B, the Preferred Alternative, because in this alternative the cumulative footprint of campsites would be expected to decrease with the removal of one campsite at Little Todd, as opposed to adding one new site at North Desor, and low visitation would be preserved in Fall.

Effects on Cultural Resources
The probable effects to cultural resources with this alternative are the same as those outlined in the Preferred Alternative, Alternative B, with minor to major long-term beneficial effects associated with reduced crowding in campgrounds and maintaining low visitation times in the spring. Overall this alternative is predicted to decrease possible adverse impacts to archeological resources by the greatest extent.

Similar to the Preferred Alternative, this alternative, which limits overcrowding, would limit the possibility of negative impacts to currently unknown ethnographic resources.

Socioeconomic Effects
Relative to all other alternatives, this alternative has the greatest likelihood of resulting in decreasing the number of camping and boating parties visiting the park annually, which could have a minor adverse effect on local tourism-dependent economies. With this alternative, visitation could be reduced during the peak use times and Spring and Fall would be maintained with low use levels. Fewer camping parties traveling on ferries during the peak times may allow

greater access for day visitors who otherwise would not have gotten a ticket on sold-out ferries. Any increased day use would offset any adverse economic effects of reduced camping visitation.

As with Alternatives B and C, with advance permitting in place, concession ferry operators would require all overnight visitors to have valid permits in order to purchase ferry tickets (the same requirement that is currently in effect for groups coming out to the park now.) It is unlikely that the ferries will experience adverse effects from this system. Although visitors will be required to obtain their permits through the park's Backcountry Office first, they will be made aware at that point of all possible ferry options, not just the NPS's Ranger III. It is also true that each of the private ferry concessions offers unique options to potential passengers including mainland launch location, scheduling, and length of trip, so requiring an advance permit would not be expected to shift passenger numbers to the Ranger III, away from the other ferries. In addition, during peak visitation periods when the number of permits issued could be lower than under current practices, there will also be the chance to increase day-use trips aboard the ferries. Therefore, the adverse effect on concession ferries under this alternative is expected to be negligible to minor, and long term.

Similar to Alternatives B and C, if the increased cost of creating a Backcountry Office were to be offset by either a permitting fee or an increase in the daily user feel, the costs to visitors of a trip to Isle Royale would increase, a minor to moderate adverse economic effect on visitors. A permitting fee would limit the costs to backcountry campers and boaters, while an increased daily user fee would increase costs to all island visitors (day visitors and lodge guests as well as campers and boaters). Currently the cost to visitors consists of the transportation fee ($100 round trip per adult for ferries, $230 round-trip per person for the seaplane, and gas money for private boaters), daily user fee ($4 per person per day), and any incidental expenses.

Small businesses and Incidental Business Permit holders would use the same system of permitting as all other backcountry visitors. As the availability of backcountry permits became limited, there could be adverse impacts to these businesses.

Effects on Park Facilities and Operations

Implementing this alternative with establishment of a Backcountry Office on the mainland would be expected to have the same effects outlined under the Preferred Alternative (Alternative B); a moderate short-term cost and minor to moderate long-term cost to the park. It would also have the long-term beneficial effects of improving the efficiency of NPS operations for backcountry management and services.

Removing one campsite at Little Todd would have a minor short-term adverse effect on staff workloads and spending, and long-term negligible beneficial effect of one less campsite to maintain.

As with all alternatives, the success of this alternative depends largely on an effective monitoring program with an associated assessment of the effectiveness of management actions for meeting goals. With this alternative it will be critical to determine whether advanced permitting and the permitted campground occupancy rates are effectively meeting the goals for reduced campground overcrowding. Such a monitoring program is expected to have a minor to moderate

adverse effect on park operations, particularly the Resources Management Division, which is responsible for monitoring natural resources and social conditions in the park. Collection of monitoring data, data analysis, and interpretation for management implications would require either an increase in the workloads of existing staff or the need for additional staff.

Conclusion

Relative to the other alternatives, this alternative would offer the least opportunity to accommodate increased public interest in backcountry and wilderness camping, but would offer the greatest opportunities for solitude and tranquility while camping throughout the visitor season. Actions proposed in this alternative could have long-term minor to moderate beneficial effects on natural and cultural resources. This would be the only alternative to preserve low use times in Spring and Fall, with associated benefits to resources that are more vulnerable during these times of the year.

Unavoidable Adverse Impacts

As outlined above, implementing this alternative for managing overnight use of Isle Royale's backcountry would be expected to have some unavoidable adverse impacts associated with limiting visitors' access to backcountry camping. Limiting camping permits to the availability of campsites could make the park's backcountry less accessible to some campers during parts of the busiest times of the year; some people would not be able to camp in their preferred campgrounds on their preferred dates.

Impacts of Alternatives for Overnight Use

Table 19: Comparison of Environmental Consequences for Alternatives for Overnight use of the Wilderness and Backcountry

	Alt A: Current	Alt. B: Preferred	Alt C	Alt D	Alt E
Proposed Changes	• Implement GMP by installing proposed new campgrounds	• Implement GMP by installing proposed new campgrounds • Employ new Backcountry Office with Advanced Permitting • Add 1 campsite at North Desor • Institute no more than 5% sharing in summer • Maintain historic low use in spring	• Implement GMP by installing proposed new campgrounds • Employ new Backcountry Office with Advanced Permitting • Institute no more than 10% sharing during peak, 5% sharing or less rest of season • Possible installation of new campsites and/or campgrounds • Add shuttle service in Rock Harbor	• Implement GMP by installing proposed new campgrounds • Implement entry quota system • Limited site reservations • Add 1 campsite to North Desor • Institute no more than 5% sharing all season	• Implement GMP by installing proposed new campgrounds • Employ new Backcountry Office with Advanced Permitting • Institute no more than 5% sharing during peak, 1% sharing or less rest of season • Maintain historic low visitation in spring and fall
Visitor Use and Experience	A long-term moderate beneficial impact to visitor use is that public access would remain high, with significant increases in visitation possible outside of the peak few weeks of the season. A long-term, moderate, adverse impact to visitor experience would be diminished opportunities to visit the park at low use times. Information would not be available to avoid overcrowded campgrounds and overcrowding would continue and could increase.	Long-term moderate beneficial impacts to visitor use include: visitation could increase from mid June through October, advanced permitting would better distribute people to available campsites and reduce the frequency of overcrowding, as well as, give campers a greater assurance of finding an available campsite, and opportunities to visit the park during low use times would be preserved. Conversely, some people may not be able to get a permit for their preferred itinerary and public access may be limited in spring, both long-term, minor adverse impacts.	An expected long-term, minor beneficial impact compared to current conditions due to decreased campsite sharing. A long-term, moderate beneficial impact compared to the preferred alternative because of greater public access. However, long-term, moderate adverse impacts include: greater likelihood of sharing, higher levels of campground crowding, larger campgrounds, and a potential loss of the very low use times in spring and fall.	Long-term, minor beneficial impact compared to current conditions with reduced campground crowding, but long-term, moderate adverse impact with decreased public access to the park. Compared to preferred, this alternative has a lower likelihood of accommodating July and August visitation and greater likelihood of increased visitation in Spring, with decreased opportunities for solitude and isolation.	Long-term, minor beneficial and adverse impacts equivalent to those outlined in the preferred alternative, with the addition of maintaining low use in the fall and spring, limiting the ability to accommodate increased visitation but allowing opportunities for solitude and isolation. This is a long-term, moderate adverse impact to visitor use and a long-term, moderate beneficial impact to visitor experience.

Table 19 (continued): Comparison of Environmental Consequences for Alternatives for Overnight use of the Wilderness and Backcountry

	Alt A: Current	Alt. B: Preferred	Alt C	Alt D	Alt E
Wilderness	The impacts to wilderness character would be expected to be long-term, moderate and adverse. Overcrowding in campgrounds would continue or increase. Access to the wilderness and backcountry would be high, but increased visitation could lead to a reduction in opportunities for solitude and tranquility.	Impacts to wilderness character would be long-term, moderate and beneficial. Overcrowding in campgrounds would be reduced. A wide range of opportunities for wilderness experiences would be protected. Beneficial impacts to wilderness character would be greater than with current conditions or alternative C.	Long-term, minor beneficial impacts realized when compared to the No Action alternative. Adverse impact of higher use levels and more frequent sharing compared to preferred alternative. Greater access to remote backcountry with new shuttle service would be a long-term, moderate adverse impact to wilderness character.	Long-term, minor beneficial impacts as compared to current conditions. A long-term, minor adverse impact compared to the preferred alternative due to a greater likelihood of increasing visitation in spring and decreased opportunities for solitude and isolation.	Same long-term, moderate beneficial impacts as the preferred alternative, with the added beneficial impact of maintaining extremely low visitation in the fall and spring providing increased opportunities for solitude, isolation, and self-sufficiency.
Natural Resources	Impacts to natural resources would be expected to be long-term, adverse, and moderate to major on a localized scale. Continued campground crowding would mean continued campsite sprawl and associated habitat change. Increasing spring and fall visitation could adversely impact wildlife at sensitive times.	Impacts to natural resources would be long-term, moderate and beneficial compared to current conditions. Reduced overcrowding in campgrounds would reduce adverse biophysical and noise impacts. Maintaining low visitation in spring would minimize adverse impacts to wildlife. However, long-term, minor adverse effects include adding one new campsite at North Desor and allowing a substantial increase in fall visitation.	Long-term, moderate adverse impacts from an increase in total footprint area and physical disturbance from campgrounds (increased number of campsites and campgrounds), Long-term, moderate adverse impact on wildlife from changes in travel patterns, and increased use possible in spring and fall	A long-term moderate beneficial impact compared to the No Action Alternative by reducing impacts associated with crowding. Potential adverse impacts when compared to the preferred alternative with increased visitation in spring and fall affecting wildlife.	Similar long-term, moderate beneficial impacts as the preferred alternative with the added benefits of maintaining low visitation in the fall. This would have a long-term minor beneficial impact on wildlife. Additionally, removing one campsite from Little Todd is a long-term minor beneficial impact on vegetation and wildlife habitat in the immediate surrounding area.

Table 19 (continued): Comparison of Environmental Consequences for Alternatives for Overnight use of the Wilderness and Backcountry

	Alt A: Current	Alt. B: Preferred	Alt C	Alt D	Alt E
Cultural Resources	Impacts would be short or long-term and minor or major, depending on the significance and integrity of affected resources. Adverse effects to cultural resources associated with campsite sprawl could continue or worsen. Damage to archeological resources would be irreversible.	The following effects would be long-term and their severity would depend on the significance and integrity of the affected resources. Reducing campground overcrowding and maintaining low visitation in the spring would have long-term, minor beneficial impacts on cultural resources. Adding one new campsite at North Desor could have adverse effects on unknown cultural resources.	Potential long-term, minor to major adverse impacts to unknown archeological sites with increased development of campgrounds. However, long-term, minor beneficial impacts are expected when compared to current conditions by decreased sharing and sprawl.	A long-term, minor beneficial impact is expected when compared to current conditions with reduced impacts from overcrowding in campgrounds. Less beneficial impact as compared to the preferred alternative because of the likelihood of increased spring visitation.	Impacts are the same as those outlined in the preferred alternative.
Socioeconomic Effects	Long-term, minor beneficial effects on the economies of local communities are expected with increased visitation.	A potential minor, beneficial effect for local communities if peak season backcountry visitation decreased and this resulted in an increase in day use visitors as they typically spend more money. Long-term negative impacts could include increased cost per visitor if permitting fees were implemented.	Long-term, minor beneficial impacts to local communities if annual visitation increased. Long-term negative impacts could include increased cost per visitor if permitting fees were implemented.	A potential for minor, beneficial and adverse impacts to local communities if peak season backcountry visitation decreased and the rest of the season increased, day use increased, annual visitation decreased.	Long-term, adverse impacts to local communities from the likelihood of decreased annual visitation and long-term negative impacts could include increased cost per visitor if permitting fees were implemented.
Park Operations	Long-term, minor adverse impact to park operations is expected. No additional staffing or facilities would be necessary. There would likely be an increased maintenance workload associated with rehabilitating and restoring sprawling campsites.	Long-term minor adverse impact to park operations is expected. Additional staffing would be required to initiate and run a backcountry office. Short-term costs would be moderate, and long-term costs would be minor to moderate. Short-term costs of constructing a new campsite at North Desor would be minor, as would long-term costs for maintenance.	Long-term, minor adverse impact to park operations is expected. Minor to moderate increase in maintenance workload with new campsites and/or campgrounds. Potential minor to moderate costs associated with operating a shuttle in the Rock Harbor Channel.	Long-term minor, adverse impact to park operations is expected. Minor increase to workload anticipated with constructing and maintaining a new campsite, managing the new site reservations system for a limited number of campsites and coordinating with the ferries to manage the entry quota system.	Long-term, minor adverse impact to park operations is expected. Short-term increased workload of removing and rehabilitating one campsite at Little Todd, and long-term increased workload associated with running the backcountry office is anticipated.

4.2.3 Impacts of Alternatives for Managing Day Use in the Wilderness and Backcountry

Alternative A for Day Use: No Action, Maintain Current Management Direction

The details of this alternative are outlined in Chapter 2, p. 79-80. Maintaining the status quo for managing day use in the wilderness and backcountry could result in measurable environmental consequences. Actions that could result in impacts include:

- Visitors would have the option of participating in day tours organized and led by the NPS and the Rock Harbor Lodge, including hikes in and around Windigo and Rock Harbor, and tours with the *M.V. Sandy*. Access to these tours and group sizes would be limited only by tour boat capacities (currently 40 people).
- Private organizations leading groups on day trips (such as educational groups) would not be limited in group sizes or tour destinations.

Maintaining current policies for day use of Isle Royale's wilderness and backcountry would be expected to have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, and socioeconomics. Impacts would primarily be related to the numbers of people on organized tours and the locations of these tours. The assessment of impacts is based on current conditions and an assumption that day use would either continue at current levels or increase.

Effects on Visitor Use and Experiences
The *M.V. Sandy* carries a maximum of 40 passengers. The NPS keeps statistics on group sizes for the tours that are led by rangers. A recent 3-year average of the Hidden Lake/Lookout Louise tours showed 17 trips per season, 19 people per trip, and a maximum of 42 people on one tour. A similar look at Passage Island showed 11 trips per season, an average of 21 people per trip, and a maximum of 38 people on one tour (Parratt 2003*)*. These numbers would be expected to continue, or possibly increase up to the maximum boat capacity of 40 people per trip in the future under this alternative. Visitor access to formal day tours would be limited only by tour boat capacities. There are no limits to the sizes of day tours organized by other organizations visiting the park. Therefore continuing the current management direction would retain high access to day tours.

This alternative would also be expected to have the beneficial effect of providing educational programs for a large number of visitors on day tours.

Effects on Wilderness Character
Currently the concessions-operated *M.V. Sandy* conducts tours to three areas that include designated wilderness—Hidden Lake/Lookout Louise, Passage Island, and the Minong Mine and Pine Mountain. Group sizes may be as large as 40 people on these tours, though tours this large are infrequent, as average groups are closer to 20 people. The NPS and other organizations also lead hikes within wilderness in the vicinity of Rock Harbor. Continuing high access to the park's wilderness through a variety of organized day tours would have a beneficial effect of maintaining current opportunities for day visitors, lodge guests and other people taking day trips into the wilderness. However, large groups can have an adverse effect on the wilderness experiences of tour participants and others in the area. Noise, physical impacts, and crowding

associated with large groups can detract from wilderness experiences and naturalness. Noise, crowding, and displacement of wildlife in the area would be minor to moderate short-term adverse effects, while the trampling associated with large groups at destination sites could be a short or long-term minor to moderate impact, depending on the resilience of the impacted site.

The NPS does not collect information on day groups traveling independent of concessions or NPS-led tours. Therefore, it is not known how common it is for day groups to travel off trail. Under current conditions, day tours of any size could travel off trail with no restrictions. Were this to occur, or even become popular, there could be adverse effects on the naturalness of the park's most pristine wilderness areas, including displacement of wildlife, trampling of sensitive plants and habitats, and reductions in natural sounds.

Effects on Natural Resources
Continuing current practices for day tours would be expected to have adverse impacts on soils, vegetation, wildlife, and natural quiet. Large day tours gathered around an attraction site can lead to expanded areas of impact beyond official trails, with vegetation trampling, loss of ground cover, compacted soils, and increased erosion. As noise and duration of human presence increases with group size, larger groups would also be expected to have a greater adverse effect on wildlife, displacing wildlife that is sensitive to human presence. These impacts would be expected to be localized to the immediate vicinity of the day tours. Impacts to wildlife would be expected to be short-term where tours are infrequent, while impacts to vegetation and soils could be long-term.

Effects on Cultural Resources
Large groups of unregulated size could expand beyond the trails and impact archeological sites along and near trails. Historic structures at Edisen Fishery, Rock Harbor Lighthouse, and Passage Island Lighthouse (Franks, 1999) would be expected to could possibly be damaged if large groups expand beyond acceptable areas. There is no predicted impact on cultural objects located in the museum collection, but cultural objects located near the trails would be impacted if large groups extend beyond the trails.

Cultural landscapes at Edisen Fishery, the four lighthouses and Washington and Barnum Islands could be negatively impacted if large groups expand beyond the trails. The Park Service does not presently know of impacted ethnographic resources but unidentified resources near trails may be impacted if large groups expand beyond the width of the trails.

Socioeconomic Effects
Continuing or increasing the number of visitors traveling to the park on day trips would be expected to have minor, long-term economic benefits on the local communities. Day visitors spend money in the local communities on ferry passage, and may also spend money on food, lodging, and souvenirs. Maintaining high access to formal day tours could also help to increase the annual number of guests at the Rock Harbor Lodge, an economic benefit for that private business as well as the local communities those visitors travel through to reach the park. Lodge guests are expected to spend money in the local communities on ferry passage, food, lodging, and other incidental expenses. Day visitors are estimated to spend an average of $150-168 per party per day in the local communities, while Lodge guests spend $330 per party per day

(including food and lodging at the Rock Harbor Lodge). Any increase in these visitors would be seen as a benefit to the tourism-dependent local economies.

Effects on Park Operations
If maintaining current conditions for day use were to result in increased trampling and erosion at attraction sites, it could necessitate site restoration and maintenance work to minimize the spread of impacted areas. This would be a minor adverse impact on park operations, as it would not be expected to require additional staffing. No other measurable effects on park operations would be expected.

Conclusion
Maintaining the status quo for managing day use on Isle Royale would be expected to have the beneficial effect of providing high access to formal day tours. Adverse effects to wilderness character, natural resources, and cultural resources associated with crowding and trampling at destination sites and along trails would also be expected, as would the adverse effects associated with crowding and large groups of people along wilderness and backcountry trails.

Unavoidable Adverse Impacts
As outlined above, maintaining the current management direction for day use would be expected to have some unavoidable adverse impacts to natural and cultural resources and wilderness character associated with large tour groups (up to 40 people) visiting wilderness and historic destinations in the backcountry and congregating off of trails. Within small localized areas near tour destinations, trampling off trails could result in damage to or loss of vegetation and archeological resources, and compaction and exposure of soil. Additionally, the wilderness experiences of hikers and paddlers in the vicinity of tours visiting remote backcountry destinations (such as McCargoe Cove and Pine Mountain) would be adversely affected by the noise and visual disturbance of large tour groups for the limited duration of the tour.

Alternative B for Day Use: Maximize High Quality Experiences in Day Use Areas

The details of this alternative are outlined in Chapter 2, p. 80-81. Changes that could occur under this alternative that may have measurable environmental consequences include:

- The possible destinations of day tours would continue, but group sizes would be limited based on location of the tour.
  Developed areas (Rock Harbor and Windigo)—no group size limits
  Frontcountry areas (bordering developed areas and significant attractions such as Edisen Fishery, Scoville Point, Raspberry Island, Passage Island trail, and Suzy's Cave)—group size limit of 20.
  Wilderness Portal, Backcountry and Primitive areas (the majority of trails and campgrounds, including concessions tours to Hidden Lake and Lookout Louise, and McCargoe Cove and the Minong Mine)—group size limit of 10.
  Pristine Areas (off-trail)—group size limit of 6

Implementing the changes proposed in this alternative for day use of Isle Royale's wilderness and backcountry could have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, socioeconomics, and park operations.

Impacts of Alternatives for Day Use

Impacts would primarily be related to the numbers of people on organized tours, the locations of these tours, and impacts on other visitors in day use areas.

Effects on Visitor Use and Experiences
Implementing this alternative is expected to result in either a reduction in the number of participants in day use activities or a change in the types of activities offered relative to current conditions. For example, NPS-led tours with the *M.V. Sandy* to Passage Island average about 21 participants with tours offered twice a week, and under this alternative not more than 20 people would be permitted per tour. Hidden Lake and Lookout Louise tours average about 19 participants on tours up to twice a week, and under this alternative the maximum size would be 10 people. There is a possibility that it would not be economically feasible to continue tours to some parts of the park with the small group sizes established in this alternative (e.g. McCargoe Cove or Hidden Lake, which would be limited to 10 people per group). If this were the case, there would be fewer organized activities for day trips, and day visitors would lose reasonable access to some areas of the park.

The adverse effect of reduced opportunities for visitors to participate in organized day activities could be offset by expanding the types of activities offered, such as an increase in NPS-led activities out of Rock Harbor. However, visitors may not consider these tours to be comparable to the boat tours in other areas of the park.

The NPS does not keep statistics on privately organized groups, so it is unknown to what extent implementing these day group limits would have an effect. However, this would be a change from current unlimited group sizes for these day tours, with an expected reduction in access to these activities. Thus it is expected that this alternative could have a long-term adverse effect on public access to day tours on Isle Royale.

This alternative would also be expected to have the long-term beneficial effect of improving the experiences of participants on day tours, and other visitors in the area of the tours. The small group sizes proposed in this alternative are compatible with group size limits for camping parties in the area of day tours, and are compatible with the appropriate opportunities within each management zone.

Effects on Wilderness Character
The group size limits proposed for day tours in this alternative would be expected to reduce crowding, noise, and trampling along the trails and destination sites used for day tours within the park's wilderness. This would be expected to improve the quality of wilderness experiences for tour participants as well as other visitors in the area and reduce impacts to the naturalness of the areas; a long-term beneficial effect. However, these limits would also restrict access to these tours, reducing the number of visitors benefiting from such opportunities: a long-term adverse effect.

Effects on Natural Resources
This alternative would be expected to have the greatest beneficial effect on natural resources. Implementing this alternative would be expected to have the beneficial effect of reducing the number of people gathered at destination areas, with associated reduction in trampling.

Compared to current conditions, this would be expected to have a beneficial effect on vegetation and soils. Reducing the group sizes of day tours in the park's wilderness and backcountry would also be expected to have the beneficial effect of reducing noise in these areas, a benefit to wildlife. However, if this alternative were to result in a decrease in the total number of visitors participating in organized day tours each year, then it could have the adverse effect of reducing the number of people participating in educational programs. Public education is an important aspect of any conservation program. Because the NPS would have other options for public education, including outreach programs, publications, and programs focused on visitors prior to reaching the park, this would be a minor adverse impact.

Effects on Cultural Resources

This alternative limits the possible negative impacts from large groups of unregulated size expanding beyond the trails. Appropriate group size limits could lessen possible impacts to historic structures and to archeological sites located along and near trails. Possible adverse impacts to cultural landscapes at Edisen Fishery, the four lighthouses and Washington and Barnum Islands could also be minimized with group size limits. The park service does not presently know of impacted ethnographic resources but with the size limits proposed in this alternative unidentified resources near trails would be expected to experience less negative impact from large groups expanding beyond the width of the trails.

This alternative would be expected to be effective in lessening impacts to cultural resources because it establishes limits on the number of day users in a single group. It is very large groups, rather than a high total number of visitors, that are liable to expand beyond trails and acceptable areas thereby damaging cultural resources. By limiting the size of single groups this alternative limits the potential negative impacts to sensitive cultural resources, and would be expected to have the greatest beneficial effect on protecting cultural resources. However, limiting day tour sizes and the number of people able to visit cultural sites on guided day tours may limit public education about the park's cultural resources. Incorporating off-site cultural education into the park's interpretive programs and public outreach efforts could offset this adverse effect.

Socioeconomic Effects

Limiting group sizes may adversely affect how tour groups operate and the financial viability of operating day tours within Isle Royale's wilderness and backcountry. Additionally, if establishing these group size limits were to result in a reduction in day visitors, Lodge guests, or other visitors who would participate in day trips, then this alternative could have a long-term adverse effect on local communities. Day visitors and lodge guests are estimated to spend more money in the local communities than backcountry visitors.

Effects on Park Operations

Implementing group size limits could result in the NPS increasing the types of organized day activities offered in the park to accommodate visitors interested in these activities. If this were the case, the NPS workload could increase, with a possible need to increase Rock Harbor or Windigo interpretive staff during the summer season. This could be a long-term minor adverse impact on park-wide operations, and a moderate impact on interpretive operations.

Conclusion
Relative to the other alternatives, this alternative would be expected to have beneficial effects on wilderness character, natural and cultural resources, and the experiences of visitors on day tours or in the vicinity of day tours. However, it would also be expected to have an adverse effect on pubic access to organized day activities. This alternative could result in the greatest decrease in the number of people participating in organized day activities, and possibly an elimination of some existing tours.

Unavoidable Adverse Impacts
As outlined above, implementing this alternative for managing day use would be expected to have some unavoidable adverse impacts on visitors' opportunities to participate in guided tours in the backcountry, and on the financial feasibility of businesses continuing to offer guided tours. Reducing maximum tour group sizes from 40 to 10 or 20 people for some of the more popular tour destinations it is likely that visitors would have significantly less access to day tours. Fewer spaces would be available for tours and it is likely that it would not be financially feasible for businesses to run tours with such small groups.

Alternative C for Day Use: Expand Opportunities for Quality Day Use Activities (The Preferred Alternative)

The details of this alternative are outlined in Chapter 2, p. 81-82. Changes that would be expected under this alternative that may have measurable environmental consequences include:

- The possible destinations of day tours would continue, but large groups would need to split into multiple groups in some areas of the park to not exceed group size limits in those areas:
  Developed areas (Rock Harbor and Windigo)—no group size limits
  Frontcountry areas (bordering developed areas and significant attractions such as Edisen Fishery, Scoville Point, Raspberry Island, Passage Island trail, and Suzy's Cave)—group size limit of 20.
  Wilderness Portal, Backcountry and Primitive areas (the majority of trails and campgrounds, including concessions tours to McCargoe Cove and the Minong Mine)—group size limit of 10. Hidden Lake and Lookout Louise, in this zone, would be an exception, allowing group with up to 15 people.
  Pristine Areas (off-trail)—group size limit of 6
- A new trail would be constructed in Windigo

Implementing the changes proposed in this alternative for day use of Isle Royale's wilderness and backcountry could have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, socioeconomics, and park operations. Impacts would primarily be related to the numbers of people on organized tours, the locations of these tours, and impacts on other visitors in day use areas.

Effects on Visitor Use and Experiences
With this alternative, the same opportunities currently available for day tours would continue, as long as the tour organizers were able to provide multiple tour leaders for larger groups. If tour organizers were unable to provide an adequate number of leaders, then access to guided day

hikes could be limited, as with Alternative B. It is thought that the quality of experiences for tour participants would improve with smaller sizes, and experiences would be more appropriate for backcountry and wilderness settings. With smaller groups, tour participants would be expected to be able to hear the guide better, have a greater opportunity to interact with the guide, and generally stay together as one cohesive tour better.

Smaller tour sizes could also have a beneficial effect on other visitors in the area of the tours, as noise, and other adverse impacts associated with large groups would decrease. However, splitting large tours into multiple groups on the same trail could increase the duration and frequency of encounters and noise, a potentially adverse effect compared to the current condition of one encounter with a larger group.

Group size limits are expected to primarily affect day activities in the Rock Harbor area. The new trail in Windigo proposed in this alternative would provide an opportunity for a loop hike into the backcountry for day visitors. The majority of visitors who visit the park for part of a day visit Windigo with just a few hours to experience Isle Royale, and the trail would be intended for their benefit. Any new organized tours on this trail would be compatible with a backcountry trail and not exceed 10 people.

Effects on Wilderness Character

Compared to current conditions, this alternative would be expected to have the same beneficial effects on the experiences of tour participants and others in the area associated with smaller groups along the trail and at destination sites as described in Alternative B. However, unlike Alternative B, this alternative would likely result in a greater number of tour groups. This would result in the beneficial effect of greater opportunities for visitors to participate in day tours in the wilderness, but could also have adverse effects for other visitors in the area. An increase in the number of tours groups at a given time on a trail could increase the frequency of encounters and the duration of noise associated with the tour group, though these impacts would be expected to be short-term.

Similar to Alternative A, smaller groups would be expected to have the beneficial effect of reducing trampling off trail and at destination sites associated with large groups, and reducing the threat of adverse impacts in pristine areas associated with large groups. However, splitting into multiple groups could increase the extent and duration of wildlife displacement associated with human presence and noise. These adverse effects are expected to be short-term and reversible.

This alternative also proposes the creation of a new trail in Windigo, specifically designed as a loop trail for day visitors. This trail would create an opportunity for a loop trail with a more remote, backcountry feel than the Windigo Nature Trail. This would also provide an option other than hiking on the trails used by backpackers. This trail would have the long-term adverse impact of expanding development in the park. It would also have the beneficial effect of providing opportunities for higher quality wilderness and backcountry experiences on day visits to the park. It would also be intended to reduce day use along backpacker routes out of Windigo, a beneficial effect on the wilderness experience of backpackers.

Impacts of Alternatives for Day Use

The proposed new trail would be constructed in what is currently zoned Pristine, requiring conversion of the trail corridor to Backcountry Zone. Efforts would be made to keep the trail corridor within non-wilderness, but portions could extend into designated wilderness, development that would be a localized moderate to major adverse impact to naturalness.

Overall, this alternative is expected to have both beneficial and adverse effects on wilderness character compared to current conditions and Alternative B. The beneficial effects would be expected to be long-term and the adverse effects would be expected to be short-term. The severity of these effects are unknown, but are expected to be minor to moderate.

Effects on Natural Resources
Compared to current conditions, this alternative would be expected to have less adverse effects on vegetation and soils associated with trampling at destination areas, because fewer people would be gathered at destination sites at one time. This alternative would likely result in a greater number of groups on a trail, though these groups would be smaller. Compared to current conditions with all of the tour participants traveling in one concentrated group, this could have an adverse effect on some wildlife. Adverse effects, though less severe, could be longer lasting or more widespread, depending on whether the tours split up along the same trail or on different trails. For example, human noise, which displaces wildlife, would be expected to be longer lasting if large groups were to split up and hike down the same trail than if they all traveled as one consolidated group.

Creating a new trail near Windigo for day use could have the adverse effects of fragmenting habitat, expanding development, and increasing the disturbances associated with human presence. On a local scale these impacts could be moderate to major, but park-wide would be minor. Natural resource surveys in the area would help to minimize these adverse impacts by selecting a route for the trail that would have the least impact possible on sensitive resources.

Effects on Cultural Resources
This alternative limits the possible negative impacts from large groups of unregulated size expanding beyond the trails. Appropriate group size limits could lessen possible impacts to historic structures and to archeological sites located along and near trails. Possible impacts to cultural landscapes at Edisen Fishery, the four lighthouses and Washington and Barnum Islands could also be minimized with group size limits. The park service does not presently know of impacted ethnographic resources but unidentified resources near trails may experience less negative impact from large groups expanding beyond the width of the trails with the size limits proposed in this alternative.

An archeological survey along the proposed route of the new trail in Windigo would prevent adverse impacts to cultural resources associated with construction of the trail.

This alternative could be effective in lessening impacts to cultural resources because it establishes limits on the number of day users in a single group. It is very large groups, rather than a high total number of visitors, that are liable to expand beyond trails and acceptable areas thereby damaging cultural resources. By limiting the size of single groups this alternative limits the potential negative impacts to sensitive cultural resources. Additionally, allowing boat tours

to carry multiple smaller groups this alternative would provide better access to cultural resources than would Alternative B, while also improving conditions over the current conditions (Alternative A).

Socioeconomic Effects
Requiring large groups to split up would require multiple group leaders, which could affect how tour groups operate and the financial viability of operating day tours within Isle Royale's Wilderness and backcountry. If this alternative were to result in some organizations no longer being able to operate in the park, that would be considered a long-term adverse effect. However, one intention of this alternative is to provide more high-quality activities for day visitors to Isle Royale's wilderness and backcountry. Increasing options for trips and improving the quality of activities could result in increased day visitation to the park. If this were the case it would be a long-term beneficial effect for local communities and their economies.

Effects on Park Operations
Requiring large tour groups to split into multiple groups for guided hikes could have an adverse impact on NPS operations. Some NPS-led tours would require more staff to accommodate current or increased interest in day tours. For example, groups on Hidden Lake/Lookout Louise tours average 19 people, and under this alternative two rangers would be needed to lead two distinct groups to comply with the 15-person size limit. This could have a long-term moderate adverse impact on the Rock Harbor interpretive program.

Creating a new trail near Windigo would have a minor to moderate short-term adverse effect on park operations, associated with the costs of construction. This would require either hiring additional staff or removing staff from other trail projects. Additionally, there would be an increased workload for the trail crew with additional miles of trail to maintain; a minor long-term adverse effect.

Conclusion
Relative to current conditions (Alternative A) and Alternative B, this alternative would be expected to maintain high access to organized day activities while also improving the quality of experiences for tour participants. Some adverse effects on wilderness character and natural resources would continue, but beneficial effects on cultural resources and public education would increase over current conditions.

Unavoidable Adverse Impacts
As documented above, implementing this preferred alternative would be expected to have unavoidable adverse impacts on natural resources. Establishing a new trail in the previously undisturbed area of a Pristine Zone near Windigo, a portion of which would be within designated Wilderness, would result in a loss of vegetation, compaction and exposure of soil, and fragmentation of habitat along the trail corridor. Splitting large tour groups into multiple groups at tour destinations could increase the extent and duration of wildlife displacement and disturbance of wilderness character associated with human presence and noise, especially where tours visit backcountry areas (e.g. Hidden Lake, Passage Island and Pine Mountain).

Impacts of Alternatives for Day Use

Table 20: Comparison of Environmental Consequences for Day Use Alternatives

	Alt A: No Action Alternative	**Alt. B**	**Alt C: (Preferred)**
Proposed Changes	• Maintain existing access with no limitations on group size • Access to tours would only be limited by the capacity of the *MV Sandy* (40 passengers)	• Institute group size limits ranging from 6-20 by management zone, for all except the developed zones of Windigo and Rock Harbor • No guided tours over 20 in the wilderness and backcountry, lower limits in some areas of the park.	• Group size limits, with large groups allowed to split up. • *MV Sandy* can carry up to 40 passengers total – split into multiple groups at destination • Explore options for adding a new loop trail in Windigo
Visitor Use and Experiences	Long-term, moderate beneficial effect of high level of access to tours and group activities because of no size limits. Some visitors' experiences may be negatively affected by being part of such a large group.	Long-term, moderate adverse impact to visitor access to tours and group activities because of low size limits. Long-term, moderate, beneficial impact to quality of tours due to smaller group sizes.	Long-term minor adverse impact to visitor access to tours and group activities due to size limitations. Long-term, moderate, beneficial impact to quality of tours due to smaller group sizes.
Wilderness	Large groups can have a negative impact on the wilderness experience both for those in the group and for others. Minor, short- term adverse impacts include noise, crowding, and displacement of wildlife. Trampling could be a short or long-term minor to moderate impact.	Smaller groups are more compatible with wilderness experiences both for group members and others. Minor, short-term beneficial impacts include less noise, crowding and displacement of wildlife. Less trampling could be a short or long-term minor to moderate impact.	Smaller groups are more compatible with wilderness experiences both for group members and others. Minor, short-term beneficial impacts include less noise, crowding and displacement of wildlife. Less trampling could be a short or long-term minor to moderate impact.
Natural Resources	Adverse impacts to wildlife would be localized and short-term. Adverse impacts to vegetation and soils would be localized and could be long-term.	Beneficial impacts to wildlife would be localized and short-term. Beneficial impacts to vegetation and soils would be localized and could be long-term.	Beneficial impacts to wildlife would be localized and short-term. Beneficial impacts to vegetation and soils would be localized and could be long-term.
Cultural Resources	Cultural objects located near the trails could suffer long-term minor to moderate adverse impacts. Cultural landscapes may suffer short-term minor adverse impacts.	Cultural objects located near the trails would gain a minor to moderate beneficial impact from the smaller groups. Cultural landscapes would see a minor, short-term beneficial impact.	Cultural objects located near the trails would gain a minor to moderate beneficial impact from the smaller groups. Cultural landscapes would see a minor, short-term beneficial impact.
Socio-economic Effects	Possible minor, long-term beneficial impacts if the number of visitors to the park were to increase based on the continued availability of day trips.	Possible minor, long-term adverse impacts if the number of day visitors to the park decreased with decreased access to guided day trips. Possible long-term adverse impact to organizations providing day trips, with fewer participants.	Possible minor, long-term adverse impacts if the number of day visitors to the park decreased based on availability of day trips. Possible long-term adverse impact to organizations providing day trips, as additional leaders may be required.
Park Operations	Possible minor adverse impact if increased staffing were required to minimize the spread of impact from trampling	Possible long-term, minor adverse impact to park-wide operations and a moderate impact to interpretative operations based on the need for additional staff to lead more, smaller tours	Possible long-term, minor adverse impact to park-wide operations and a moderate impact to interpretative staff based on the need for additional staff to provide multiple leaders for guided tours

4.2.4 Impacts of Alternatives for Campfires in the Wilderness and Backcountry

Alternative A for Campfires: No Action, Maintain the Current Management Direction

The details of this alternative are outlined in Chapter 2, p. 83-84. Continuing the status quo for campfires would be expected to have measurable environmental consequences for the following reasons:

- Impacts to resources associated with campfires would continue or increase in the areas within and surrounding campsites where fires are permitted.
- Opportunities for visitors to camp with fires would continue at some campgrounds.

Maintaining the current policies for campfires in Isle Royale's wilderness and backcountry would be expected to have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, and park operations. Impacts would primarily be related to the opportunities available for campers, impacts associated with collecting and burning locally collected firewood, and maintenance associated with campfires. Because campfires are not known or expected to have any effect on park-dependent businesses or economies, there are no known socioeconomic concerns.

Campfires are permitted within NPS-provided metal fire rings or grills only. To minimize the introduction of exotic species to the island no imported firewood is permitted, campers collect firewood locally. Campfires are currently permitted within NPS fire rings and grills at 11 campgrounds; Caribou Island, Chippewa Harbor, Malone Bay, Siskiwit Bay, Island Mine, Little Todd, Todd Harbor, McCargoe Cove, Belle Isle, Duncan Narrows, and Duncan Bay.

Effects on Visitor use and Experiences
Retaining or removing campfire rings would not be expected to have a measurable effect on park visitation, though the locations of permissible campfires could influence where some parties travel. Because some campers value campfires as an important part of a backcountry experience they may seek out those campsites where campfires were allowed. However, overall the policy of allowing campfires at some campgrounds, and not at others is expected to have both beneficial and adverse effects on visitors' experiences. Public comments reveal that while some people value the opportunity for campfires and think this opportunity should be more widely available at Isle Royale, others report that the impacts to natural resources associated with campfires detract from their experiences (Isle Royale 2002). Locating campfires based on suitable resource conditions and removing fire rings to allow for resource recovery is expected to alleviate some of these adverse consequences.

Effects on Wilderness Character
Continuing to allow campfires at some Isle Royale campgrounds would be expected to continue to have minor adverse effects on the naturalness of the areas surrounding those campgrounds, and possible minor beneficial or adverse effects on wilderness experiences, depending on a visitor's viewpoint. Current conditions and visitor comments are reported by the park's Wilderness Rangers. The development of informal trails, loss of woody debris and damage to trees associated with collecting firewood (e.g. limbing, scarring, and pealed bark detracts from the naturalness of areas surrounding campsites where campfires are allowed.) These adverse

effects are currently noticeable at sites allowing fires and would be expected to increase the longer fires were permitted at a specific site. The opportunity to build and cook with campfires, a valued wilderness skill, and the social value of gathering around a campfire could have a beneficial effect on people's wilderness experiences. However, the increased noise commonly associated with groups of people gathered around a campfire at night may have an adverse impact on other campers seeking tranquility and natural quiet. Campers do have the option of choosing campgrounds where campfires are or are not allowed.

All of these effects would be minor to moderate, depending on the extent to which Leave-No-Trace practices were followed, and limited to the vicinity of campgrounds allowing fires. Loss of woody debris, the development of informal trails, and the social impacts associated with campfires are reversible, though damage to trees is irreversible.

Effects on Natural Resources

Allowing campfires at specific campgrounds is known to have both beneficial and adverse impacts on natural resources in and surrounding campsites. Campsite monitoring on Isle Royale suggests that the presence of campfire rings may concentrate visitor activities, with smaller areas of vegetation trampling and soil exposure within a campsite; a beneficial effect. However, campsites with fire rings also have marginally greater tree damage adjacent to campsites and more informal trails, which are attributed to firewood gathering (Farrell and Marion 1998). The loss of firewood from these areas is also an adverse impact, in that this wood is important as woody debris associated with nutrient cycling, ground cover, and habitat for small animals. Some of this damage is temporary, but tree-limbing, scarring, and other damage that often goes hand-in-hand with campfires is permanent damage for a tree. These effects would be expected to continue as localized to the campsites with fires, and would be expected to be minor to moderate to the extent that campfire regulations and Leave-No-Trace practices were followed. Temporarily prohibiting campfires would allow for recovery from non-permanent damage at a campsite.

The above effects are evident at some of the campgrounds that currently have fire rings or grills. For example, the lower limbs of many of the coniferous trees in and around Little Todd campsites have been removed, reducing screening between sites and the naturalness of the area. At Island Mine although there is abundant coarse woody debris in the maple forest of the area, much of the coarse woody debris is gone within the immediate vicinity of the campsites. In general, where there are fire rings, some people also tend to attempt to burn their trash instead of packing it out, which results in greater amounts of trash left behind in campsites with fire rings.

Isle Royale does not maintain detailed records on illegal campfires, but wilderness rangers report cleaning up the remains of illegal campfires consistently at some of the campgrounds with fire bans. Illegal fires are generally more common in spring and fall. Illegal fires have an adverse impact on natural resources, including sterilizing soils, damaging tree roots, and scarring rocks. There is also a concern for the more serious adverse effect of human-caused wildfires. Since 1994, there have been at minimum 3 known cases of illegal campfires spreading and requiring NPS suppression action (pers. com., Valencia, March 23, 2004).

Effects on Cultural Resources
Campfires are currently allowed at eleven campgrounds. Under this alternative campfires would continue to be allowed at the same campgrounds unless resource conditions merit the removal of fire rings from a particular campground. Campfires and visitors seeking firewood have the potential to negatively impact cultural resources near these campgrounds. People establishing social trails in their search for firewood could impact archeological sites near campgrounds. Campfires in campgrounds near historic structures at Chippewa Harbor and Belle Isle (Franks, 1999) could impact the structures if people used them as a convenient source of fuel or if an uncontrolled campfire burned the structures. Cultural objects located in the park and near campgrounds could be impacted by firewood seekers. Campfires are not allowed in cultural landscapes. Park staff do not know of any ethnographic resources impacted by campfires, but unidentified resources could be impacted by firewood gathering or uncontrolled fires. Ground fires could also limit the ability of archeological researchers to use remote sensing technology to look for archeological sites. These technologies rely on differences in either magnetism or density between archeological resources and the surrounding materials. Fire can change the magnetism and density of ground and thereby make such remote research very difficult in the future.

Effects on Park Operations
Maintaining the current policies for campfires would continue the NPS workloads and time associated with maintaining and cleaning up fire rings, picking up trash burned illegally, educating the public about Leave-No-Trace practices, and enforcing fire regulations. There would not be an expected increase in staffing. The NPS would also continue monitoring resource conditions related to campfires, and retain the discretion to remove fire rings where resource impacts became unacceptable.

Conclusion
Continuing with the status quo for campfires in the park would be expected to have both beneficial and adverse effects on wilderness character and visitor experiences. Minor to moderate long-term adverse effects on natural and cultural resources would be expected within the vicinity of where campfires are permitted.

Unavoidable Adverse Impacts
Maintaining the status-quo for campfires would have unavoidable adverse effects on vegetation through continued impacts to vegetation associated with firewood collection; primarily decrease in woody debris, damage to standing trees, and vegetation trampling.

Alternative B for Campfires: Rotate Campfire Rings Between Campgrounds Based on Resource Conditions (the Preferred Alternative)

The details of this alternative are outlined in Chapter 2, p. 84-85. Changes that could occur under this alternative that may have measurable environmental consequences include:

- Campfires would be allowed in a limited number of designated campgrounds, based on appropriate resource conditions, which could change from year to year.
- The NPS would make a commitment to monitor resource conditions associated with campfires to determine if impacts to resources were acceptable.

Implementing this alternative and rotating campfires between a limited number of campgrounds within Isle Royale's wilderness and backcountry could have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, and park operations. Impacts would primarily be related to the opportunities available for campers, impacts associated with collecting and burning locally collected firewood, and NPS workloads required to monitor conditions and maintain rotating campfires. Because campfires are not known or expected to have any effect on park-dependent businesses or economies, there would be no socioeconomic concerns.

Effects on Visitor Use and Experiences

Retaining or removing campfires would not be expected to have a measurable effect on park visitation, though the locations of permissible campfires could influence where some parties travel. Because some campers value campfires as an important part of a backcountry experience they may seek out those campsites where campfires were allowed. Overall, however, the policy of allowing campfires at some campgrounds, and not at others is expected to have both beneficial and adverse effects on visitors' experiences, depending on personal preference. Public comments reveal that while some people value the opportunity for campfires and think this opportunity should be more widely available at Isle Royale, others report that the impacts to natural resources associated with campfires detract from their experience. Locating campfires based on suitable resource conditions and removing fire rings to allow for resource recovery is expected to alleviate some of the adverse consequences.

Effects on Wilderness Character

Allowing campfires at some Isle Royale campgrounds would be expected to have adverse effects on the naturalness of the areas surrounding those campgrounds, and possible beneficial or adverse effects on wilderness experiences. The development of informal trails, loss of woody debris and damage to trees associated with collecting firewood would detract from the naturalness of areas surrounding campsites with campfires. The opportunity to build and cook with campfires, a valued wilderness skill, and the social value of gathering around a campfire would be a beneficial effect on people's wilderness experiences. However, the increased noise commonly associated with groups of people gathered around a campfire at night may have an adverse impact on other campers seeking tranquility and natural quiet. Under this alternative campers would have the option of choosing campgrounds where campfires were or were not allowed.

All of these effects would be minor to moderate, depending on the extent to which Leave-No-Trace practices were followed.

Effects on Natural Resources
Allowing campfires could have both beneficial and adverse impacts on natural resources in and around campsites. Campsite monitoring on Isle Royale suggests that the presence of campfire rings may concentrate visitor activities, with smaller areas of vegetation trampling and soil exposure within a campsite; a beneficial effect. However, campsites with fire rings also have marginally greater tree damage adjacent to campsites and more informal trails, which are attributed to firewood gathering. The loss of firewood from these areas is also an adverse impact, in that this wood is important as woody debris associated with nutrient cycling, ground cover, and habitat for small animals (Farrell and Marion 1998). Some of this damage is temporary where woody debris would re-accumulate in the absence of fires. However, tree-limbing, scarring, and other damage that often goes hand-in-hand with campfires is permanent damage for a tree. These effects would be localized to the campsites with fires, and would be expected to be moderate to the extent that campfire regulations and Leave-No-Trace practices were followed. Rotating campfires to different campsites would allow for recovery from non-permanent damage, but would also spread the extent of permanent damage.

A further beneficial effect of allowing campfires within NPS-provided fire rings appears to be success in discouraging illegal fires at those sites (Reid and Marion 2002). Allowing fires within NPS-selected areas in metal fire rings is expected to have less adverse impact on natural resources than multiple illegal fire sites that would cumulatively spread scarring, vegetation and duff loss, and soil sterilization.

Effects on Cultural Resources
Under this alternative campfires would be rotated to campgrounds that met certain basic requirements. Campfires and visitors seeking firewood have the potential to negatively impact cultural resources near these campgrounds. People establishing social trails in their search for firewood might impact archeological resources near campgrounds where fires have not been allowed and firewood seekers have not impacted the surrounding area and vegetation. Campfires in campgrounds near historic structures (Chippewa Harbor and Belle Isle) could impact the structures if people used the structures as a convenient source of fuel or if an uncontrolled campfire burned the structures. Other campgrounds near historic structures would not be included in the rotation of fire rings.

Cultural objects located in the park and near campgrounds where fires have not previously been allowed could be impacted by firewood seekers. Campfires are not allowed in cultural landscapes and campgrounds in cultural landscapes would not be included in the rotation of fire rings. Park staff do not know of any ethnographic resources impacted by campfires, but unidentified resources could be impacted by firewood gathering or uncontrolled fires. Ethnographic resources might experience less negative impact under this alternative because fire rings would be rotated away from campgrounds where available fuel has been used. However, unknown ethnographic resources near campgrounds where fires are not currently allowed might be subject to negative impacts from firewood gathering under this alternative.

Ground fires could also limit the ability of archeological researchers to use remote sensing technology to look for archeological sites. These technologies rely on differences in either magnetism or density between archeological resources and the surrounding materials. Fire can change the magnetism and density of ground and thereby make such remote research very difficult in the future. Completing surveys prior to installing fire rings could mitigate this.

Effects on Park Operations
Rotating campfire rings between campgrounds and the associated monitoring necessary to determine when fire rings need to be moved would require a minor to moderate increase in NPS workload and associated spending. The additional maintenance work would be associated with moving fire rings and restoring the sites where fire rings were removed. Site restoration would involve removing remains of fires and rehabilitating areas damaged by campfires.

Conclusion
Relative to current conditions (Alternative A) and Alternative C, this alternative would be expected to balance a beneficial effect on wilderness and visitor experiences with a minor to moderate adverse effect on natural and cultural resources. Impact monitoring and careful site selection, cornerstones of this alternative, would be designed to minimize these adverse effects.

Unavoidable Adverse Impacts
Establishing a rotational system for campfires would be expected to lead to a greater incidence of permanent damage to trees (scarring, limbing and bark removal). Because these impacts are irreversible and strongly associated with allowable campfires, it is expected that these adverse impacts would become more wide-spread as campfires were allowed in more campgrounds over time.

Alternative C for Campfires: Eliminate all Campfires from the Wilderness and Backcountry

The details of this alternative are outlined in Chapter 2, p. 85-86. Changes that could occur under this alternative that may have measurable environmental consequences include:

- All campfires would be banned in the park, and fire rings and grills would be removed from campgrounds.

Implementing this alternative and banning all campfires in Isle Royale's wilderness and backcountry could have measurable consequences for visitor use and experiences, wilderness character, natural resources, cultural resources, and park operations. Impacts would primarily be related to the opportunities available for campers, impacts associated with collecting and burning locally collected firewood. Because campfires are not known or expected to have any effect on park-dependent businesses or economies, there would be no socioeconomic concerns.

Effects on Visitor Use and Experiences
Banning campfires on Isle Royale would not be expected to substantially affect visitation to the park. However, visitors would no longer have the opportunity to camp with campfires. This may be an adverse effect for people who value campfires as part of their camping experiences.

Other visitors may view a campfire ban as a beneficial effect for protecting park resources and the naturalness of areas surrounding campsites.

Effects on Wilderness Character
Removing all campfires from Isle Royale campgrounds would be expected to have beneficial effects on the naturalness of the areas surrounding those campgrounds, and possible beneficial or adverse effects on wilderness experiences. The development of informal trails, loss of woody debris and damage to trees associated with collecting firewood detract from the naturalness of areas surrounding campsites with campfires. Thus eliminating campfires would be expected to be a beneficial effect on naturalness. However, building and cooking with campfires is a valued wilderness skill, and gathering around a campfire a valued social experience, so banning campfires could have an adverse effect on people's wilderness experiences. Conversely, without campfires the increased noise commonly associated with groups of people gathered around a campfire at night would be gone which would have a beneficial impact on other campers seeking tranquility and natural quiet.

Although this alternative would eliminate the opportunity to camp with campfires on Isle Royale, there are many other recreation and wilderness areas in the Lake Superior Region where campfires are allowed and where people may find this opportunity. Therefore, the adverse effects of banning campfires on Isle Royale would be considered minor.

Effects on Natural Resources
Banning campfires could have both beneficial and adverse impacts on natural resources in and surrounding campsites. Campsite monitoring on Isle Royale suggests that the presence of campfire rings may concentrate visitor activities, with smaller areas of vegetation trampling and soil exposure within a campsite. Removing campfires could result in wider areas of vegetation trampling and loss of duff and the organic soil layer, an adverse effect. Campsites with fire rings do have marginally greater tree damage adjacent to campsites and more informal trails, which are attributed to firewood gathering. Removing fire rings would likely have the long-term beneficial effect of reducing tree damage in the vicinity of campsites (Farrell and Marion 1998). A loss of coarse woody debris is also associated with campfires, so this alternative would be expected to have the positive effect of restoring and preserving woody material that is ecologically valuable for nutrient cycling, ground cover, and habitat for small animals. The build-up of fine and coarse woody debris in the absence of campfires may also result in increased intensity of natural fires or escaped illegal fires.

A possible adverse impact of this alternative is that the frequency of illegal campfires may increase with a greater chance of people building fires in sensitive habitats where fires would be inappropriate. Were campfires allowed on a limited basis it is expected that fewer people would disregard fire regulations, since they would have some opportunity to build fires and the NPS would have the opportunity to focus educational efforts on low-impact fires. A comparison of impacts of fires from protected areas with different campfire policies, showed that restrictive campfire policies such as prohibitions do not appear to prevent campfire impacts (Reid and Marion, 2002.)

Impacts of Alternatives for Campfires

Effects on Cultural Resources
Under this alternative campfires would not be allowed at Isle Royale. Campfires and visitors seeking firewood have the potential to negatively impact cultural resources located near campgrounds. If fires were no longer allowed at Isle Royale these potential negative impacts might be avoided. However, if an increase in illegal campfires resulted from removing all of the fire rings from the island there could be other negative consequences. Illegal campfires might have a greater chance of becoming uncontrolled and affecting larger areas of natural and cultural resources. Under the other alternatives the Park Service decides which campgrounds will have fire rings and could take into account sensitive natural and cultural resources. Under this alternative, there would be no fire rings at any campground and more visitors might decide to make illegal fires. Possible impacts to archeological resources, historic structures and cultural objects associated with firewood gathering should be less with this alternative. Under all of the alternatives, campfires would not be allowed in cultural landscapes. Unknown ethnographic resources might experience less negative impact from firewood gathering under this alternative because the resources would not be trampled or used for fuel.

Effects on Park Operations
Removing campfires would initially have the adverse effect of minor to moderate cost increases to remove fire rings and restore old fire sites. Long-term the effect would be beneficial to park workloads and costs, eliminating the maintenance load associated with managing campfires, a minor beneficial effect. However, were this alternative to result in increased illegal campfires, there would be a minor adverse effect of increased workloads and costs to backcountry staff associated with regulation enforcement and cleanup of fire remains.

Conclusion
This alternative would be expected to result in both beneficial and adverse impacts to wilderness character, natural and cultural resources, and visitor experiences.

Unavoidable Adverse Impacts
Removing all permissible campfires from campgrounds could result in adverse impacts associated with illegal campfires, including fire scars, damage to trees, and damage to cultural resources.

Table 21: Comparison of Environmental Consequences for Campfire Alternatives

	Alt A: Current Conditions	**Alt. B: Preferred**	**Alt C**
Proposed Changes *Note: in all cases standing grills would be replaced with fire rings, except at the Rock Harbor Marina.*	• Campfires would continue to be allowed at 11 campgrounds were they are currently allowed	• Campfires would be rotated to appropriate campgrounds based on the fuel availability and the sensitivity of resources	• Campfires would not be allowed at any campgrounds in the park
Visitor Use and Experiences	Long-term, minor beneficial effect for those who enjoy campfires. Long-term minor adverse effect for those who do not	Long-term, minor beneficial effect for those who enjoy campfires. Long-term minor adverse effect for those who do not	Long-term, minor adverse effect for those who enjoy campfires. Long-term minor beneficial effect for those who do not
Wilderness	Long-term, minor beneficial effect for those who see campfires as part of wilderness. Long-term minor adverse effect for those who do not. Long-term, minor adverse effects to naturalness.	Long-term, minor beneficial effect for those who see campfires as part of wilderness. Long-term minor adverse effect for those who do not. Long-term, minor adverse effects to naturalness.	Long-term, minor adverse effect for those who see campfires as part of wilderness. Long-term minor beneficial effect for those who do not. Long-term, minor beneficial effects to naturalness.
Natural Resources	Long-term, minor, beneficial impacts to natural resources due to concentration of visitor impacts in campgrounds with fire rings and fewer illegal fires. Long-term, minor adverse impacts because of tree damage, social trails and loss of woody debris.	Long-term, minor, beneficial impacts to natural resources due to concentration of visitor impacts in campgrounds with fire rings and fewer illegal fires. Long-term, minor adverse impacts because of tree damage, social trails and loss of woody debris. Rotation should mitigate some of these adverse impacts.	Long-term, minor beneficial impacts to natural resources due to less tree damage, fewer social trails and more woody debris allowed to decompose. Long-term, minor, adverse impacts due to greater chance of illegal fires in sensitive habitats.
Cultural Resources	Long-term, minor adverse impacts from social trails created by firewood seekers and from uncontrolled fires.	Long-term, minor adverse impacts from social trails created by firewood seekers and from uncontrolled fires.	Long-term, minor beneficial impacts from fewer social trails created by firewood seekers. Possible long-term, minor adverse impacts from increased illegal fires
Park Operations	No expected increases in staffing or maintenance costs.	Long-term, minor, adverse impact to current staff workloads from assessment, monitoring and moving fire rings and restoring the sites.	Short-term minor to moderate adverse impact to work loads from removing fire rings, long-term minor beneficial impact of less work when rings are removed, unless the number of illegal fires increased.

4.2.5 Impacts of Alternatives for Fire Towers in the Wilderness

Alternative A for Fire Towers: No Action, Maintain the Existing Fire Towers

The details of this alternative are outlined in Chapter 2, p. 87. This alternative would maintain the status quo, retaining the park's three fire towers, all of which are located within designated wilderness. Ishpeming and Feldtmann towers would be minimally maintained for visitor and staff safety, but would not be generally open to the public. Retaining Isle Royale's three fire towers could have measurable consequences for visitor experiences, wilderness character, natural resources, cultural resources, and park operations. Impacts would primarily be related to the physical presence of towers, and safety related to their disrepair. Retaining the fire towers would not be expected to have any socioeconomic impacts on park-dependent businesses or economies.

Effects on Visitor Experiences
Although all of the fire towers are kept locked at the top, visitors do have the option of climbing the stairs of the towers for a view. On a clear day, climbing the Feldtmann Tower or Ojibway Tower offers an extensive view of the park and distant mainland. Trees currently block the view from the Ishpeming Tower. Retaining all of the fire towers would make this opportunity available to visitors on both ends of the island, a beneficial effect of this alternative.

Effects on Wilderness Character
Isle Royale's three fire towers are located directly on wilderness trails (see Map 3, Appendix D). They are all metal towers ranging in size from 10 to 65 feet (not including the cabin height). As such they are unavoidably obvious to hikers in those areas as permanent structures and modern artifacts. Originally built for fire monitoring, they no longer serve that purpose, though they do serve to house NPS backcountry personnel intermittently for short periods of time. The Ojibway Tower additionally serves as an atmospheric monitoring station and communications tower. As such these towers may fit under the "administrative uses" exception, which makes some permanent facilities permissible under the Wilderness Act. However, the current use of the Feldtmann and Ishpeming towers are not considered essential for administration of the park's wilderness and backcountry. Additionally, the visual intrusion of a modern artifact and reminder of modern society could be an adverse impact on both wilderness experiences and naturalness. The impact would be major in the local vicinity of the towers, but minor to moderate on a park-wide scale where the Ojibway and Feldtmann towers are visible from a great distance.

Effects on Natural Resources
There is no known research on the effects of fire towers on natural resources, so the full implications of retaining Isle Royale's three fire towers are unknown. However, NPS personnel have observed some bird mortality from birds hitting the towers. Therefore, retaining the towers could have some adverse effects on birds. Any effects on natural resources would be expected to be localized and minor.

Retaining Ojibway Tower as a monitoring and research site for the collection of atmospheric and other data is expected to have the long-term beneficial effect of contributing to the state of scientific knowledge and better understanding external human influences on the Isle Royale ecosystem. Retaining the Feldtmann tower could provide an option to expand atmospheric

monitoring to the west end of the island. There could, however, be other options for such monitoring that would be outside of wilderness, so the beneficial effect of retaining Feldtmann tower for these purposes would be negligible.

Effects on Cultural Resources
The fire towers at Isle Royale are not considered historic structures and are not part of any cultural landscape. Retaining one or more of the towers would represent a part of the history of Isle Royale and removing all three towers may have a long-term minor adverse impact to cultural resources. There are no predicted impacts to cultural resources from the maintenance of the Ojibway, Ishpeming and Feldtmann fire towers.

Effects on Park Operations
Retaining all three fire towers in the park would eventually require maintenance to prevent deterioration of the towers to the point of becoming a safety hazard. This would have a long-term minor adverse effect on NPS operations. Were significant repairs needed there could be moderate short-term adverse effects on NPS operations.

Retaining all three towers could have a beneficial effect on park operations if a future need arose that could utilize these structures for administrative needs, such as environmental monitoring stations, or telecommunications equipment.

Conclusion
Retaining all three of Isle Royale's fire towers would be expected to have both adverse and beneficial effects on the park's resources and values.

Unavoidable Adverse Impacts
The adverse impact of the visual intrusion of prominent human-made structures in wilderness us the only anticipated unavoidable significant adverse impact of retaining all three of Isle Royale's fire towers.

Alternative B for Fire Towers: Remove Ishpeming and Feldtmann Towers and Maintain Ojibway Tower

The details of this alternative are outlined in Chapter 2, p. 87-88. Changes that could occur under this alternative that may have measurable environmental consequences include:

- Remove the Ishpeming and Feldtmann fire towers.
- Retain the Ojibway tower as an example of the island's cultural history, and for communications and research and monitoring equipment.

Removing 2 of Isle Royale's 3 fire towers, Ishpeming and Feldtmann, could have measurable consequences for visitor experiences, wilderness character, natural resources, cultural resources, socioecomonics, and park operations. Impacts would primarily be related to the physical presence or absence of the towers, and the logistics and cost of removing two towers. There would be no anticipated effect on visitor use levels.

Impacts of Alternatives for Fire Towers

Effects on Visitor Experiences
This alternative would be expected to have both beneficial and adverse effects on visitor experiences, depending on the visitor's perspective. Removing the Ishpeming and Feldtmann towers would eliminate the opportunity for visitors to climb those towers. Although both towers are kept locked at the top, visitors currently have the option of climbing most of the way to the top. On a clear day climbing the Feldtmann tower offers an extensive view of the park and distant mainland. Trees currently block the view from the Ishpeming Tower. The loss of this opportunity may be an adverse effect for some visitors, but people would still have this opportunity with the Ojibway Tower. Other visitors may see this as a positive change, reducing the signs of human impact on the park's landscape.

Effects on Wilderness Character
Removing Ishpeming and Feldtmann fire towers would have a moderate long-term beneficial effect on the wilderness character of the park. These two fire towers are permanent human improvements that no longer serve an essential administrative purpose that could not be met by more minimal means. The towers are both situated directly on trails, clearly visible to hikers in fairly remote areas of the park. The Feldtmann tower stands well above tree line and is visible from a great distance, adversely impacting the naturalness of the park's view shed. The Ishpeming tower no longer stands above tree line, so its removal would have a negligible effect on naturalness of the park's view shed.

Were helicopter support necessary to remove the towers, the noise and visual intrusion would have a short-term moderate adverse effect on wilderness experiences and naturalness. However, the adverse impacts associated with removal would be short-term, while the adverse impacts associated with maintaining all three towers would be long-term.

Effects on Natural Resources
There is not any known research on the effects of fire towers on natural resources, so the full implications of removing Feldtmann and Ishpeming towers are unknown. However, NPS personnel have observed some bird mortality from birds hitting the towers. Therefore, removing two towers could have a beneficial effect on birds. Any long-term effects on natural resources would be expected to be localized and minor.

The process of removing Feldtmann and Ishpeming towers would be expected to have a short-term adverse effect on natural resources. Helicopter support and a substantial demolition ground crew would be required. The trampling, noise, and human presence associated with this effort would be expected to have a localized, short-term minor to moderate adverse effect.

Retaining Ojibway Tower as a monitoring and research site for the collection of atmospheric and other data is expected to have the long-term beneficial effect of contributing to the state of scientific knowledge and better understanding external human influences on the Isle Royale ecosystem. Retaining the Feldtmann tower could provide an option to expand atmospheric monitoring to the west end of the island. There could, however, be other options for such monitoring that would be outside of wilderness, so the adverse effect of removing Feldtmann tower and losing the option to use it for scientific studies in the future would be negligible.

Effects on Cultural Resources
The fire towers at Isle Royale have not been in place long enough to be considered historic structures and are not part of any cultural landscape. However, they do represent an era of NPS management, and are of interest to some visitors. Retaining the Ojibway Tower would maintain one example from this era within the park. There are no predicted impacts to cultural resources from the maintenance or removal of the Ishpeming and Feldtmann fire towers. The Ojibway fire tower would be maintained and would preserve the history of the important role fire towers played in the fire suppression efforts at Isle Royale.

Socioeconomic Effects
If the work required to remove the Ishpeming and Feldtmann Towers were contracted out with local workers or a local business, then this alternative could have a beneficial effect on the socioeconomics of the local communities. The contracted jobs would be expected to pay higher salaries than the typical tourism jobs in the local communities, but these jobs would be short-term. No long–term effects on the local economies would be expected.

Effects on Park Operations
Removing two fire towers from Isle Royale's wilderness would be expected to have a short-term major adverse effect on NPS operations. Removal would require contracting for helicopter assistance as well as significant labor time and the cost is expected to exceed to $100,000. Removal would also have a long-term minor beneficial effect of reducing maintenance workloads. This alternative is not expected to result in a change in park personnel.

Conclusion
Removing two of Isle Royale's three fire towers would be expected to have short-term adverse impacts and long-term beneficial impacts on the park's wilderness character and natural resources. Similarly, there would be major short-term adverse effects and long-term beneficial effects on park operations. There could be both adverse and beneficial effects on visitor experiences.

Unavoidable Adverse Impacts
No unavoidable significant adverse impacts to the park's natural, cultural, or wilderness resources or visitor opportunities are expected with this alternative.

Table 22: Comparison of Environmental Consequences for Alternatives for Fire Towers

	Alt A: No Action	Alt. B: Preferred Alternative
Proposed Changes	• Fire Towers would be retained at all three present locations • Only minor maintenance would be preformed to Feldtmann and Ishpeming Towers	• The Feldtmann and Ishpeming Fire Towers would be removed • The Ojibway Tower would be retained for administrative uses
Visitor Use and Experiences	Long-term, minor beneficial impact to visitor experience from the continued availability of views from the Feldtmann Tower.	Long-term, minor adverse impact to visitor experience from the loss of views from the Feldtmann Tower.
Wilderness	Long-term major adverse impact to wilderness and naturalness in the vicinity of the Feldtmann and Ishpeming Towers. Long-term minor adverse impact in other areas of the park where the Feldtmann Tower is visible.	Long-term major beneficial impact to wilderness and naturalness in the vicinity of the Feldtmann and Ishpeming Towers. Long-term minor beneficial impact to other areas where the Feldtmann Tower is visible
Natural Resources	Long-term minor, localized, adverse effects on natural resources in the area of the Feldtmann and Ishpeming Towers.	Long-term minor, localized, beneficial effects on natural resources in the area of the Feldtmann and Ishpeming Towers.
Cultural Resources	Long-term, minor, beneficial impacts from the retention of the Feldtmann and Ishpeming Fire Towers.	Long-term, minor, adverse impacts from the removal of the Feldtmann and Ishpeming Fire Towers. Ojibway Tower would remain as an example of fire towers in island history
Park Operations	Long-term, minor adverse impacts to park operations due to limited maintenance of Feldtmann and Ishpeming Towers. Possible short-term major adverse impact if significant repairs were necessary.	Short-term, major adverse impact to park operations due to the removal of two fire towers from the Park. Long-term, minor beneficial impact from lower maintenance costs.

4.2.6 Consequences of Alternatives for Picnic Tables in Wilderness Campgrounds

Alternative A for Picnic Tables: No Action

The details of this alternative are outlined in Chapter 2, p. 89. No changes would be made from the current conditions. Isle Royale managers would be unable to reach their management goals of complying fully with NPS policies for wilderness, continuing to retain and maintain picnic tables within some of the park's wilderness campgrounds:

- Picnic tables would be retained at all Lake Superior campgrounds with docks; Rock Harbor, Daisy Farm, Moskey Basin, Chippewa Harbor, Malone Bay, Hay Bay, Grace Island, Beaver Island, Washington Creek, Todd Harbor, McCargoe Cove, Birch Island, Belle Isle.

Maintaining picnic tables at wilderness campgrounds could have measurable consequences for wilderness character, natural resources, cultural resources, and park operations. Impacts would

primarily be related to the amenity of picnic tables and a means of concentrating impacts in campgrounds. There would be no anticipated effect on visitor numbers or the socioeconomics of park-dependent businesses or economies.

Effects on Visitor Use and Experience

The overall effect of picnic tables in the wilderness on visitors as a whole would be minor, long-term, and positive or negative, based on individual preference. Some visitors appreciate the convenience of having a stable, elevated surface for cooking, eating, and socializing. Some visitors, however, do not want to see human-made structures in the wilderness, and consider these structures an intrusion on their wilderness experience.

Effects on Wilderness Character
The NPS has clearly determined that picnic tables are incompatible in wilderness. This determination is consistent with other wilderness areas, as well. Picnic tables provide a human amenity and are a modern artifact that detracts from the wilderness character of an area. This adverse effect would be moderate and localized to campsites with tables, but it would also be reversible with the removal of the picnic tables.

Effects on Natural Resources
Farrel and Marion (1998) found that campsites on Isle Royale with picnic tables were significantly smaller in area of disturbance than those without tables. The size, area of vegetation loss, and exposed soil for sites with picnic tables were consistently between 100-250 ft^2 smaller than comparable sites without picnic tables. For example, in 1996 the mean size of individual campsites with picnic tables was 549 ft^2, compared to 717 ft^2 for sites without picnic tables. In 2002 the mean size of individual sites with picnic tables was 581 ft^2, compared to 831 ft^2 for sites without picnic tables. The presence of picnic tables in campsites appears to concentrate physical impacts such as vegetation loss, soil exposure, and total area of a campsite. This suggests that picnic tables are effective tools for concentrating physical impacts in campsites. As a result, retaining tables in wilderness campsites where they are currently found would have beneficial effects on natural resources. These effects would be long-term and minor to moderate.

Effects on Cultural Resources
Picnic tables help to concentrate use. Retaining the picnic tables might help limit impacts to archeological resources located near campgrounds. Historic structures and cultural landscapes located near GMP campgrounds might have less possibility of minor negative impacts resulting from spreading of use and from the use of historic structures in place of picnic tables. The retention of picnic tables is not predicted to impact cultural objects or the museum collection. The park inventory of ethnographic resources is ongoing, the park staff is not currently aware of any impacted ethnographic resources.

Effects on Park Operations
Continuing the current management direction for picnic tables at Isle Royale would mean failing to achieve the management goal of complying with NPS policy for wilderness management. Maintaining picnic tables would require more NPS staff time over the long-term than removing

picnic tables. However, this would be a minor effect on staffing and costs to the NPS as no additional staffing would be required.

Conclusion
Retaining picnic tables in some wilderness campgrounds would be expected to have some adverse effects associated with modern conveniences in wilderness, and beneficial effects associated with effectively concentrating human impacts. However, under this alternative, Isle Royale managers would continue to fail to comply with NPS policies for wilderness.

Unavoidable Adverse Impacts
Retaining picnic tables would have an unavoidable adverse impact on wilderness character. Picnic tables provide a human amenity and are a modern artifact that detracts from the wilderness character of an area, and Park Service Wilderness Policy has consistently supported minimizing such intrusions.

Alternative B for Picnic Tables: Comply with NPS Policy and Remove all Picnic Tables from Wilderness Campgrounds

The details of this alternative are outlined in Chapter 2, p. 89-90. Changes that could occur under this alternative that may have measurable environmental consequences include:

- All picnic tables would be removed from a total of 33 campsites and shelters in the following campgrounds within designated or potential wilderness: Caribou Island, Chippewa Harbor, Hay Bay, Grace Island, Beaver Island, Todd Harbor, Birch Island, Duncan Bay, Duncan Narrows, Merritt Lane, and Tookers Island. The tables would also be removed from the picnic area at Hidden Lake.
- Picnic tables would be retained at campgrounds in non-wilderness; Rock Harbor, Three Mile, Daisy Farm, Moskey Basin, Malone Bay, Siskiwit Bay (only until the dock is removed), Washington Creek, McCargoe Cove, and Belle Isle.
- Isle Royale would then be in compliance with NPS wilderness policy.

Removing picnic tables from these campgrounds could have measurable consequences for wilderness character, natural resources, cultural resources, visitor experiences, and park operations. Impacts would primarily be related to the physical presence of picnic tables as well as the associated concentration of resource impacts. There would be no anticipated effect on visitor use levels or the socioeconomics of park-dependent businesses or economies.

Effects on Visitor Use and Experience

As with Alternative A, the effects on visitors of removing picnic tables would be long-term, minor, and either positive or negative, depending on personal opinions. Some visitors would view it as a positive action that restores a more natural setting to campgrounds, with fewer reminders of human interference in the wilderness. Some visitors would also believe that since it is against NPS policy to have these structures in the wilderness, that they should not be present. On the other hand, some visitors may miss the convenience of having an elevated surface for

eating and socializing. Still others may be disturbed if there is evidence that natural resource damage has increased at a campground where picnic tables have been removed.

Effects on Wilderness Character
Removing picnic tables from wilderness campsites would have a long-term beneficial effect on wilderness character in these areas. Picnic tables are modern human structures that serve as an amenity for camping and picnicking convenience, in contrast to a primitive atmosphere that is appropriate for wilderness. NPS policy clearly states that only facilities that are determined to be the minimum necessary for the health and safety of wilderness users, or for the preservation of wilderness resources and values are appropriate. This policy further states, "picnic tables will not be allowed in wilderness" (NPS 2006 §6.3.10.3). This alternative would bring Isle Royale into compliance with NPS policy.

Effects on Natural Resources
As outlined above under Alternative A for picnic tables, the presence of picnic tables in campsites appears to concentrate physical impacts such as vegetation loss, soil exposure, and total area of a campsite. Removing picnic tables from campsites could have an adverse effect on natural resources. Research on Isle Royale suggests that picnic tables are effective tools for concentrating biophysical impacts in campsites. Therefore removing the tables would be expected to have the adverse effect of increasing the area of vegetation loss and exposed soil as well as the total area of campsites where picnic tables would be removed.

Effects on Cultural Resources
Picnic tables help to concentrate use and impacts in campsites (Farrell and Marion 1998). If picnic tables were removed, use might spread and could damage archeological resources near campgrounds. Historic structures are located near GMP-proposed new campgrounds at Crystal Cove, John's Island, Fisherman's Home and Wright Island, all within wilderness or potential wilderness. These campgrounds would have their picnic tables removed or they would not be added under this alternative. Without picnic tables, people might sit on the historic structures or use them as tables. Because picnic tables concentrate use, the removal of the tables might have some adverse impact on the cultural landscapes associated with trampling, loss of duff, and exposure of soil, all of which could expose or damage hidden and buried cultural objects. The severity of this impact would depend on the significance and integrity of the damaged resource. The park inventory of ethnographic resources is ongoing, the park staff is not currently aware of any impacted ethnographic resources.

Effects on Park Operations
Removing picnic tables would have a short-term adverse effect, increasing workloads to remove all picnic tables from wilderness campsites. The effect would be minor as it would not be expected to require an increase in staffing, but would add to the workloads of existing staff. Over the long-term removing picnic tables would have the beneficial effect of reducing the work associated with maintaining picnic tables by reducing the number of picnic tables in the park. Picnic tables within non-wilderness campgrounds would still be maintained.

Conclusion
Removing picnic tables from wilderness campgrounds would be expected to have both beneficial and adverse effects on park resources and values.

Unavoidable Adverse Impacts
Removing picnic tables would be expected to have unavoidable adverse impacts on natural and cultural resources. Picnic tables have been shown to concentrate trampling, and without them it is likely that damage to vegetation and soils would increase in severity and extent within campsites.

Alternative C for Picnic Tables: Seek a Waiver to Retain Picnic Tables in Some Wilderness Campgrounds (the Preferred Alternative)

The details of this alternative are outlined in Chapter 2, p. 91. Changes that could occur under this alternative that may have measurable environmental consequences include:

- Picnic tables would be retained at all Lake Superior campgrounds with docks; Rock Harbor, Daisy Farm, Moskey Basin, Chippewa Harbor, Malone Bay, Hay Bay, Grace Island, Beaver Island, Washington Creek, Todd Harbor, McCargoe Cove, Birch Island, Belle Isle, and could be added to the new GMP-approved campgrounds.

Maintaining picnic tables at wilderness campgrounds could have measurable consequences for wilderness character, natural resources, cultural resources, and park operations. Impacts would primarily be related to the aesthetic of picnic tables and associated means of concentrating impacts in campgrounds. There would be no anticipated effect on visitor numbers or the socioeconomics of park-dependent businesses or economies.

Effects on Visitor Use and Experience

The effects of this alternative on visitors would be the same as under Alternative A, with the possible exception that those visitors knowledgeable about NPS policy may also appreciate that Isle Royale would be technically in compliance with a waiver in place. Overall, the effects would be long-term, minor, and positive or negative, depending on personal preference.

Effects on Wilderness Character
The NPS has clearly determined that picnic tables are incompatible in wilderness. This determination is consistent with other wilderness areas, as well. Picnic tables provide a human amenity and are a modern artifact that detracts from the wilderness character of an area. Although receiving a waiver from the NPS to retain picnic tables within Isle Royale's wilderness would bring the park into compliance with NPS policy, it would still be considered an adverse effect on wilderness character. This adverse effect would be moderate and localized to campsites with tables, but it would also be reversible with the removal of the picnic tables.

Effects on Natural Resources
As outlined above under Alternative A for picnic tables, the presence of picnic tables in campsites appears to concentrate physical impacts such as vegetation loss, soil exposure, and

total area of a campsite. As a result, retaining tables in wilderness campsites where they are currently found would have beneficial effects on natural resources relative to removing tables as proposed in Alternative A. These effects would be long-term and minor to moderate.

Effects on Cultural Resources
Picnic tables help to concentrate use. Retaining the picnic tables might help limit impacts to archeological resources located near campgrounds. Historic structures and cultural landscapes located near GMP campgrounds might have less possibility of minor negative impacts resulting from spreading of use and from the use of historic structures in place of picnic tables. The retention of picnic tables is not predicted to impact cultural objects or the museum collection. The park inventory of ethnographic resources is ongoing, the park staff is not currently aware of any impacted ethnographic resources.

Effects on Park Operations
Maintaining picnic tables would require more NPS staff time over the long-term than removing picnic tables. However, this would be a minor effect on staffing and costs to the NPS as no additional staffing would be required.

Conclusion
Retaining picnic tables in some wilderness campgrounds would be expected to have some adverse effects associated with modern conveniences in wilderness, and beneficial effects associated with effectively concentrating human impacts.

Unavoidable Adverse Impacts
In campsites where picnic tables were retained there would be an unavoidable adverse impact on wilderness character. Picnic tables provide a human amenity and are a modern artifact that detracts from the wilderness character of an area, and National Park Service Wilderness Policy has consistently supported minimizing such intrusions. In campsites where picnic tables were removed there would be an adverse impact to natural and cultural resources through increased tramping of vegetation and soils.

Table 23: Comparison of Environmental Consequences for Picnic Table Alternatives

	Alt A: No Action	Alt B	Alt C: Preferred
Proposed Changes	• Picnic Tables would remain in wilderness in violation of NPS policy	• Picnic Tables would be removed from all campgrounds within designated wilderness	• Request a waiver to maintain picnic tables within wilderness campgrounds
Visitor Use and Experiences	Long-term minor beneficial or adverse impact to visitor experience, based on personal preference, due to the retention of this modern convenience.	Long-term minor beneficial or adverse impact to visitor experience, depending on personal preference, due to the removal of this convenience.	Long-term minor beneficial or adverse impact to visitor experience, depending on personal preference, due to the retention of this modern convenience.
Wilderness	Long-term moderate adverse impact on wilderness character due to the retention of these modern artifacts. Impact is reversible with the removal of tables.	Long-term minor beneficial impact on wilderness character due to the removal of this modern convenience	Long-term moderate adverse impact on wilderness character due to the retention of these modern artifacts. Impact is reversible with the removal of tables.
Natural Resources	Long-term, minor to moderate beneficial impact to natural resources due to the concentration of impacts in campgrounds with picnic tables	Long-term, minor adverse impact to natural resources due to the removal of picnic tables which tend to concentrate impacts	Long-term, minor to moderate beneficial impact to natural resources due to the concentration of impacts in campgrounds with picnic tables
Cultural Resources	Long-term, minor beneficial impact to cultural resources due to the concentration of impacts in campgrounds with picnic tables.	Long-term, minor adverse impact to cultural resources due to the removal of picnic tables which tend to concentrate impacts.	Long-term, minor beneficial impact to cultural resources due to the concentration of impacts in campgrounds with picnic tables.
Park Operations	Short-term, minor beneficial impact of not having to remove the picnic tables. Long-term, minor adverse impact of maintenance costs associated with tables.	Short-term, adverse impact from the increased workload associated with removing the picnic tables. Long-term, beneficial impact as picnic tables would not be maintained.	Short-term, minor beneficial impact of not having to remove the picnic tables. Long-term, minor adverse impact of maintenance costs associated with tables.

4.3 Cumulative and Combined Effects of the Proposed Alternatives

4.3.1 Cumulative Impacts

Cumulative impacts, according to CEQ Regulations §1508.7, "result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions." These are actions that may be minor on their own, but taken collectively would be significant over a period of time. Analysis determined that there would be no reasonably foreseeable cumulative impacts from any of the actions proposed in this WBMP, for several reasons:

- Isle Royale National Park has no bordering lands, and the Lake Superior resources that do overlap with the jurisdiction of other state or federal agencies are beyond the scope of this plan.
- Nothing proposed in any of the alternatives in this WBMP is reasonably expected to result in the loss of significant regional resources or public services.
- None of the alternatives proposes significant new developments or new infrastructure, when compared to current baseline conditions.
- Changes in tourism in the mainland communities are not reasonably expected to affect visitation to the park, due to the logistics and planning required for visiting Isle Royale. Additionally, none of the alternatives are reasonably expected to affect tourism in the mainland communities or to cumulatively produce any impacts when combined with tourism initiatives at port cities.
- Isle Royale's resources are geographically isolated; therefore terrestrial management practices on the mainland do not impact terrestrial resources on Isle Royale.
- An overriding focus of managing Isle Royale is protecting wilderness, natural, and cultural resources, and 99% of the park's land base is designated wilderness. Therefore, any reasonably foreseeable management actions within the park would not reasonably be expected to result in cumulative adverse impacts when combined with the outcome of this plan.

Therefore it was determined that no past, ongoing, or reasonably foreseeable future actions by others would, in combination with the impacts described in this chapter, result in cumulative impacts on wilderness character, natural resources, cultural resources, visitor experiences, socioeconomics, or NPS operations when viewing Isle Royale in a larger regional context. However, the proposed actions taken in combination could result in impacts within the park that are more significant than each action taken individually. The range of possible effects of the proposed actions in combination is discussed in the next section.

4.3.2 Combined Effects

Combining alternatives that propose the highest degree of development or the greatest change in visitation, for example, could result in impacts within the park that would be greater than when the actions are taken individually. Therefore, the combined effects of those alternatives that could result in the greatest increase in development, the greatest decrease in development, and the greatest likely change in visitation were assessed. Similarly, all of the preferred alternatives were assessed for their combined impacts.

Highest Development Combination of Alternatives
If combined, Alternative C for overnight use, Alternative C for day use, Alternative B for campfires, Alternative A for fire towers, and Alternative B for picnic tables would, together, result in actions with the greatest possibility of development in the park's wilderness and backcountry. The combination would result in the following:

- Some existing campgrounds could be expanded by adding a few communal campsites or additional individual campsites (Table 8, p.104 outlines feasible campground expansions).
- Up to three new campgrounds could be added in the park's wilderness, including within the Pristine Zone (Appendix D, Map 3).
- A shuttle service would be created in the Rock Harbor Channel with service to Rock Harbor, Mott Island, and Daisy Farm.
- A new Backcountry Office would be established (on the mainland, this would not add to development in the wilderness and backcountry).
- A new trail would be created within the Pristine Zone adjacent to Windigo, intended as a loop hike for day visitors (Appendix D, Map 5).
- New fire rings would be added to campgrounds on a rotational basis.
- Three fire towers would be maintained in the park's wilderness.
- Existing picnic tables would be maintained in some wilderness campgrounds.

The combination of all of these actions and new developments would be expected to impact park resources and values to a greater extent than each of these actions taken individually and result in a greater increase in development than any other combination of alternatives in this plan.

Increasing trails and campgrounds in the park, combined with the effects of adding a shuttle service, and retaining picnic tables and fire towers would be expected to have a moderate long-term adverse effect on wilderness character. The extent of modern artifacts and conveniences would expand, as would the cumulative footprint of development in the wilderness. Access to some remote areas of the park would be easier, which could adversely affect the feel of solitude and isolation. Additionally, these adverse effects, in combination, would be more widespread throughout the park than the localized impacts of individual actions.

The increased cumulative footprint of development in the park would increase the likelihood of adverse impacts to both natural and cultural resources associated with ground disturbance. There would also be greater impact to species that are sensitive to human presence. Rotating campfire rings may add to these adverse effects. The addition of a new trail and new campgrounds would add to habitat fragmentation in the park, likely result in increased establishment of social trails, and shrink the areas where wildlife may be undisturbed by human presence. All of these impacts would be adverse, minor to moderate, and long-term.

These alternatives, in combination, could allow for a substantial increase in annual visitation throughout the season. However, ferry capacities would continue to limit increases in camping parties as well as day visitors and lodge guests during the busiest times. Options for some visitors would increase, with a new trail for day hikes in the Windigo area, and more campgrounds within easy reach for campers beginning their trips in Rock Harbor. Options for

visitors seeking solitude and isolation may decrease. These impacts would be minor, long-term and beneficial or adverse, depending on a visitor's priorities for access and solitude.

The combined increase in maintenance workload associated with maintaining campgrounds, trails, and backcountry facilities would be expected to be moderate and long-term. Taken individually, none of these actions would be expected to require an increase in personnel. However, implementing all of these changes in combination would likely require an increase in personnel or contracted services for both short-term implementation and long-term maintenance.

Establishing a Backcountry Office would require an initial start-up investment of funding and staff time. There may also be an associated minor increase in park staffing required. However, over the long-term this Backcountry Office would be expected to improve park operations by improving staff efficiency, communication regarding recreation management in the park, visitor services and information dissemination, management of the permitting system, and monitoring backcountry conditions.

Lowest Development Combination of Alternatives

Implementing the combination of Alternative E for overnight use, Alternative B for day use, Alternative C for campfires, Alternative B for fire towers, and Alternative A for picnic tables would result in the greatest decrease in development in the park. This combination of alternatives would also have the greatest likelihood of resulting in either no increase in visitation, or possibly reduced visitation to the park's wilderness and backcountry. The actions proposed in these alternatives that would result in the decreased development in the Park's wilderness and backcountry are:

- No new campgrounds would be added (other than the GMP-approved campgrounds).
- One campsite would be removed (from Little Todd).
- No new trails would be added.
- A new Backcountry Office would be created (on the mainland, this would not add to development in the wilderness and backcountry).
- All fire rings would be removed and campfires would be banned in the wilderness and backcountry.
- Ishpeming and Feldtmann fire towers would be removed.
- Picnic tables would be removed from campgrounds within wilderness and potential wilderness.

The actions proposed in these alternatives that could result in decreased visitation to the wilderness and backcountry are:

- The number of backcountry permits issued would not exceed campsite availability, while the camping capacity of the park would decrease by one campsite.
- Historic low visitation would be maintained in Spring and Fall.
- Day tour sizes would be limited to small groups in much of the wilderness and backcountry.

The combination of all of these actions and changes in park services would be expected to impact park resources and values to a greater extent than each of these actions taken individually. However, this particular combination of alternatives demonstrates the greatest reduction in

development of all possible combinations of alternatives in this plan. It also demonstrates the greatest possible limitation on visitation.

The combination of removing one campsite from Little Todd, banning campfires, removing 2 fire towers, removing picnic tables from wilderness campgrounds, and making a commitment to not add any new campsites, campgrounds (beyond those approved in the GMP), or trails would be expected to have a positive long-term effect on wilderness character. Preventing an increase in development and associated impacts within the park's wilderness would be beneficial for both naturalness and wilderness experiences park-wide.

Curtailing development in the wilderness and backcountry would similarly have a moderate long-term beneficial effect on natural and cultural resources. Not adding new trails or campgrounds would prevent the adverse impacts associated with ground disturbance and human activities. Reducing overcrowding in campgrounds at the same time as reducing the size of tour groups in day use areas would be expected to result in minor to moderate long-term beneficial impacts on these resources. Trampling associated with crowding in campgrounds and along trails that damages both natural and cultural resources would be reduced, as would noise that may displace wildlife. However, removing picnic tables would be expected to result in an increased area of trampling in campsites, as research has shown that picnic tables effectively concentrate human use and impacts in campsites (Farrell and Marion 1998).

Although these combined actions could have beneficial effects on wilderness character and park resources, they could result in moderate long-term adverse impacts to visitors. Reducing overcrowding in campgrounds could result in lower backcountry visitation with fewer people able to get camping permits during the busy use times. Maintaining historic low use times in spring and fall would limit the options for people who were not able to get a permit in the busy times to come at a different time. Additionally, limiting the size of tour groups below the current average tour sizes would be expected to reduce access to day activities. Limits on backcountry parties under the new permitting system could allow for more space on ferries for lodge guests and day visitors, but limiting access to organized day activities may discourage these visitors. All of these actions in combination could effectively reduce visitation in the park, or at least prevent any future increases in visitation. This could have a moderate long-term adverse effect on public access to the park. Long-term impacts to visitor opportunities within the park's wilderness and backcountry could be positive or negative, depending on a visitor's priorities for access or solitude.

Reducing the infrastructure within the park's wilderness and backcountry would initially have a short-term major adverse impact on park operations, with the substantial cost of removing 2 fire towers combined with removing fire rings, picnic tables, and one campsite. Over the long term, this reduction in facilities would be expected to have a minor beneficial effect on park operations. The substantial cost of removing facilities would be compounded by the moderate cost of creating and staffing a mainland Backcountry Office.

Combination of Preferred Alternatives
Implementing all of the preferred alternatives would mean implementing Alternative B for overnight use, Alternative C for day use, Alternative B for campfires and Alternative B for picnic tables.

The actions in these alternatives that would affect development in the wilderness and backcountry are:

- No new campgrounds would be added (other than the GMP-approved campgrounds).
- One new campsite would be added to North Desor.
- A new Backcountry Office would be established (on the mainland; this would not add to development in the wilderness and backcountry).
- A new trail would be constructed within the Pristine Zone adjacent to Windigo, intended as a loop hike for day visitors (Appendix D, Map 5).
- New fire rings would be added to some campgrounds and removed from others on a rotational basis.
- Ishpeming and Feldtmann fire towers would be removed.
- Picnic tables would be maintained in some wilderness campgrounds.

The actions in these alternatives that could affect visitation in the wilderness and backcountry are:

- The number of backcountry permits issued would not exceed campsite availability. The camping capacity of the park would be expanded by one campsite (at North Desor).
- Historic low visitation would be maintained in the spring, while an increase in Fall visitation would be possible.
- Multiple tour guides would be required for large day tours, because these groups would be required to split into multiple smaller groups. This may affect the availability of tours.

The combination of all of these actions and new developments would be expected to impact park resources and values to a greater extent than each of these actions taken individually. This particular combination of alternatives falls between the range of the greatest increase in development, and the greatest decrease in development.

The combination of these alternatives would result in removing some facilities from the park's wilderness while adding others. Two of the park's fire towers would be removed, picnic tables would be retained, fire rings would be retained on a rotational basis, one new trail would be created, one new campsite would be added, and there would be a commitment to not add any new campgrounds (beyond those approved in the GMP). Overall, these changes, in combination with a reduction in campground crowding and the size of day groups, would be expected to have a moderate long-term beneficial effect on wilderness character on a park-wide scale. Preserving low use times in Spring would further aid in protecting opportunities for greater solitude and self-sufficiency than is readily available to visitors during the busier times of the season.

Adding a new trail near Windigo and implementing a rotational system for campfires could have a minor to moderate long-term adverse effect on natural and cultural resources. This could be mitigated by resource surveys to identify locations of sensitive resources to avoid impacts and to find a means of restoring resources. However, limiting campground expansion to one new

campsite at North Desor, not creating additional new campgrounds, reducing overcrowding in campgrounds, reducing the number of people at one time at day use destinations, and maintaining existing picnic tables in wilderness campgrounds would be expected to have a park-wide moderate long-term beneficial effect on these resources.

The intent of this alternative would be to accommodate current visitation levels while also reducing overcrowding in campgrounds, which would be accomplished by issuing advanced permits to better distribute campers to available campsites. However, since permits would not be issued over a campground's capacity, visitation in specific areas of the park, or park-wide, would be limited to some extent during the busiest months. Additionally, low use would be preserved in Spring, so there would be limited options for visitors to come at different times of the year. This could result in a minor reduction in visitation, or more likely limiting the possibility for backcountry overnight visitation to increase in the future. This combination of alternatives would also allow for large day tours to split into multiple groups in the same area, and would add a new trail for day visitors at Windigo. The intent would be to improve visitors' experiences in day use areas while also allowing opportunities for day use to increase. If the new permitting system were to limit backcountry overnight visitation, it would be expected that there would be more space on ferries for day visitors and lodge guests. With this combination of alternatives backcountry overnight visitation may be limited during the peak season, but visitors could better be accommodated with organized day trips in the backcountry and wilderness, as long as tour organizations were able to supply additional leaders. These impacts would be long-term, minor, and positive or negative, depending on visitor preferences.

Changes in facilities within the park's wilderness and backcountry would initially have a major adverse impact on park operations, with the substantial cost of removing up to two fire towers combined with removing and/or relocating fire rings, and creating one new campsite. The major cost of removing facilities would be compounded by the moderate cost of creating and staffing a mainland Backcountry Office. Over the long term, this change in facilities would be expected to have a minor to moderate adverse effect on park operations associated primarily with maintenance of fire rings, monitoring resource impacts associated with campfires, and staffing a Backcountry Office. However, over the long-term establishing a Backcountry Office would be expected to improve park operations by improving staff efficiency, communication regarding recreation management in the park, visitor services and information dissemination, management of the permitting system, and monitoring backcountry conditions.

Table 24: Combination of Environmental Effects of all of the Preferred Alternatives

	Overnight Use; Alt. B	**Day Use, Alt C**	**Campfires, Alt. B**	**Fire Towers, Alt. B**	**Picnic Tables, Alt. C**
Proposed Changes	• Implement GMP-proposed new campgrounds • New Backcountry Office • Advanced Permitting • Add 1 campsite at North Desor • Not more than 5% sharing in summer • Maintain histories low use in spring	• Group size limits, with large groups allowed to split up. • *MV Sandy* would carry up to 40 passengers total – split into multiple groups at destination • Explore options for adding a new loop trail in Windigo	• Campfires would be rotated to appropriate campgrounds based on the fuel availability and resource conditions. • Resource conditions at campgrounds would be inventoried prior to installing fire rings. • Resources would be monitored for impacts.	• The Feldtmann and Ishpeming Fire Towers would be removed • The Ojibway Tower would be retained for administrative uses	• Request a waiver to maintain picnic tables within wilderness campgrounds
Visitor Use and Experiences	Visitation could increase from mid June through October. Advanced permitting would better distribute people to available campsites and reduce the frequency of overcrowding and give campers a greater assurance of finding an available campsite and opportunities to visit the park during low use times would be preserved; these are long-term, moderate beneficial impacts to visitor use. Some people may not be able to get a permit for their preferred itinerary and public access may be limited in spring, a long-term, minor adverse impact.	Long-term, minor adverse impact to visitor access to tours and group activities due to size limitations. Long-term, moderate, beneficial impact to quality of tours due to smaller group sizes.	Long-term, minor beneficial effect for those who enjoy campfires. Long-term minor adverse effect for those who do not	Long-term, minor adverse impact to visitor experience from the loss of views from the Feldtmann Tower.	Long-term moderate beneficial impact to visitor experience due to the retention of this modern convenience.

	Overnight Use; Alt. B	Day Use, Alt C	Campfires, Alt. B	Fire Towers, Alt. B	Picnic Tables, Alt. C
Wilderness Character	Impacts to wilderness character would be long-term, moderate and beneficial. Overcrowding in campgrounds would be reduced. A wide range of opportunities for wilderness experiences would be protected.	Smaller groups are more compatible with wilderness experiences both for group members and others. Minor, short-term beneficial impacts include less noise, crowding and displacement of wildlife. Less trampling could be a long-term minor to moderate impact.	Long-term, minor, beneficial effect for those who see campfires as part of wilderness. Long-term minor adverse effect for those who do not. Long-term, minor adverse effects to naturalness.	Long-term, major beneficial impact to wilderness and naturalness in the vicinity of the Feldtmann and Ishpeming Towers. Long-term minor beneficial impact to other areas where the Feldtmann Tower is visible	Long-term, moderate adverse impact on wilderness character due to the retention of these modern artifacts. Impact is reversible with the removal of tables.
Natural Resources	Impacts to natural resources would be long-term, moderate and beneficial compared to current conditions. Reduced overcrowding in campgrounds would reduce adverse biophysical and noise impacts. Maintaining low visitation in spring would minimize adverse impacts to wildlife. Long-term, minor, adverse effects include adding one new campsite at North Desor and allowing an increase in fall visitation.	Beneficial impacts to wildlife would be localized and short-term. Beneficial impacts to vegetation and soils would be localized and could be long-term.	Long-term, minor, beneficial impacts to natural resources due to concentration of visitor impacts in campgrounds with fire rings and fewer illegal fires. Long-term, minor adverse impacts because of tree damage, social trails and loss of woody debris. Rotation should mitigate some of these adverse impacts.	Long-term minor, localized, beneficial effects on natural resources in the area of the Feldtmann and Ishpeming Towers.	Long-term, minor to moderate beneficial impact to natural resources due to the concentration of impacts in campgrounds with picnic tables
Cultural Resources	Reducing campground overcrowding and maintaining low visitation in the spring would have long-term, minor beneficial impacts on cultural resources. Adding one new campsite at North Desor could have adverse effects on unknown cultural resources. These effects would be long-term and their severity would depend on the significance and integrity of the affected resources.	Cultural objects located near the trails would gain a minor to moderate beneficial impact from the smaller groups. Cultural landscapes would see a minor, short-term, beneficial impact.	Long-term, minor, adverse impacts from social trails created by firewood seekers and from uncontrolled fires.	Long-term, minor, adverse impacts from the removal of the Feldtmann and Ishpeming Fire Towers. Ojibway Tower would remain as an example of fire towers in island history	Long-term, minor, beneficial impact to cultural resources due to the concentration of impacts in campgrounds with picnic tables.

	Overnight Use; Alt. B	Day Use, Alt C	Campfires, Alt. B	Fire Towers, Alt. B	Picnic Tables, Alt. C
Socio-economics	Peak season backcountry visitation could decrease. If this resulted in an increase in day use, then this would be beneficial for local communities as day visitors spend more money. Cost per visitor could increase if permitting fees were implemented.	Possible minor, long-term adverse impacts if the number of day visitors to the park decreased based on availability of day trips. Possible long-term adverse impact to organizations providing day trips, as additional leaders may be required.	No anticipated socioeconomic effects on local communities or visitors.	No anticipated socioeconomic effects on local communities or visitors.	No anticipated socioeconomic effects on local communities or visitors.
Park Operations	Long-term minor adverse impact to park operations. Additional staffing required to start and run a backcountry office. Short-term costs would be moderate, long-term costs would be minor to moderate. Short-term costs of constructing a new campsite at North Desor would be minor, as would long-term costs for maintenance.	Possible long-term, minor adverse impact to park-wide operations and a moderate impact to interpretative staff based on the need for additional staff to provide multiple leaders for guided tours	Long-term, minor, adverse impact to current staff workloads from assessment, monitoring and moving fire rings and restoring the sites.	Short-term, major adverse impact to park operations due to the removal of two fire towers from the Park. Long-term, minor beneficial impact from lower maintenance costs.	Short-term, minor beneficial impact of not having to remove the picnic tables. Long-term, minor adverse impact of maintenance costs associated with tables.

4.4 Other Required Impact Topics

4.4.1 Short-term Uses and Long-Term Productivity

Under all of the alternatives the majority of the park would be protected in a natural state and would continue to be used for recreation and resource protection. The National Park Service would continue to manage the area under all the alternatives to maintain ecological processes and native and biological communities, and to provide for outdoor recreation activities consistent with the preservation of natural and cultural resources. Any actions the National Park Service takes in the park would be intended to ensure that uses do not adversely affect the productivity of the biotic communities.

4.4.2 Irreversible and Irretrievable Commitment of Resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long-term (e.g., the regrowth of an old-growth forest). Irretrievable commitments are those that are lost for a period of time (e.g., if a road is constructed, the vegetative productivity is lost for as long as the road remains). There would be no irreversible commitment of resources made under any of the proposed alternatives. The alternatives proposing the addition of a new trail in Windigo, new campsites or campgrounds, and cabins in Rock Harbor (including the Preferred Alternative) would result in the long-term loss of vegetation along the trail corridor and within the footprint of campsites and cabins. This loss of vegetation productivity would be reversible with restoration of impacted areas if the trail, campsites or cabins were to be removed in the future. No actions proposed would result in the consumption of nonrenewable natural resources or the use of natural resources that would preclude other uses for a period of time.

CHAPTER 5: PUBLIC COMMENT AND RESPONSES

5.1 Characterization of Comments Received

National Park Service staff at Isle Royale National Park received responses from over 50 individuals, organizations, and agencies on the Draft Wilderness and Backcountry Management Plan and Environmental Impact Statement during the 60 day comment period between October 21 and December 21, 2005 and the Open House held on December 12, 2005. From these 50 individuals or entities, 40 provided written comments and 10 attended the Open House. National Park Service staff identified 130 comments addressing varying aspects of the plan and environmental impact statement. Substantive comments are provided in full in Appendix K, page 329 of this document. Comments and their respective responses were organized into subject matter categories (see below).

5.2 Substantive Comments and Responses

Below is the list of topics and subtopics addressed in this section. Under each of these topics individual substantive comments are numbered and responses, immediately following the numbered list, address comments jointly.

5.2.1 Overall Plan and Actions Common to All
- A. Monitoring Impacts
- B. Research Impacts
- C. Park Regulations
- D. Wilderness
- E. Park Operations
- F. Transportation
- G. Chainsaws
- H. Treated Lumber
- I. Historical References

5.2.2 Overnight Alternatives
- A. General Permitting
- B. Visitor Surveys
- C. Overall Plan Content
- D. Permitting and Transportation
- E. Campgrounds, Shelters
- F. Visitation
- G. Wilderness Zones

5.2.3 Day Use Alternatives
- A. Trails
- B. Visitor Groups

5.2.4 Campfires
5.2.5 Fire Towers
5.2.6 Picnic Tables

5.2.1 Overall Plan and Actions Common to All

A. MONITORING IMPACTS

COMMENTS
1. Please explain why the natural and cultural resource indicators proposed in Newsletter 3 (March of 2001) were not included in the WBMP, especially where there is abundant data to support the development of appropriate indicators and standards related to loons and paddler impacts on breeding success… Additionally, there is no commitment to quantifiable goals for resource conditions committed to in this plan, other than goals for campsite sharing. Without a dependable commitment to monitoring or a definition of desired resource conditions (i.e. standards for the many indicators to be monitored), one does not have sincere adaptive management. The public deserves a commitment of what resource conditions are desired and what improvements may be achieved by the various management actions proposed in this plan. Without this commitment of desired resource conditions, the WBMP lacks any real depth and management commitment… I would request that the final WBMP address interim steps to improve conditions where full implementation of each of the many elements of this plan will be financially unrealistic for the foreseeable future This plan heavily promotes the idea of adaptive management, and lays out an ambitious monitoring plan. However, current budget trends suggest park managers will be hard-pressed to maintain current levels of resource monitoring, let alone follow-through on the ambitious expansion of monitoring proposed in the plan… The public also deserves an explanation of the implications of how management decisions will be made if park staff are unable to complete and maintain the desired monitoring program. I would argue that the park's current allocation of staffing resources is woefully inconsistent with a sincere commitment to adaptive management.

2. Page 53 - The NPS acknowledges that canoes have an "adverse effects on the nesting loons on Isle Royale". Page 12 - The scope of the plan included adverse human impacts on loons. The combination of both credible research of canoe impacts on loons coupled with the scope of the plan including impacts on loons compels the NPS to include this loon impact in the management alternative as related to canoes. This impact is not discussed in this plan... The environmental consequences section does not describe succinctly how the natural resources will be impacted for each specific area of the park by each proposed action...

3. Policies: There is no evidence that Park managers are likely to achieve many of their stated goals through the policy prescriptions that are offered. Furthermore the secondary and feedback effects from the preferred and other Action options may result in counter-intuitive and undesirable long-term consequences. These might include further loss of interest in the park, decreased availability of transportation services, closing of lodging facilities, lowered Park budgets, loss of cultural assets, and more.

4. There is some mention of monitoring resources and conditions upon implementation of the preferred alternative, but that remains vague as to how and what will get done. The monitoring component of this plan is critical to knowing whether you are having any success or not, or most importantly, how the wilderness resource is faring at the hands of NPS management and visitor use. I urge you to commit to pursuing development of a good monitoring plan.

RESPONSE
Resource management decisions are currently made using the best available professional knowledge, and research/monitoring results, when available. While the draft WBMP does not set forth a quantitative monitoring plan for the Preferred Alternative, it does state that such a plan would be developed and implemented as part of the alternative. The Preferred Alternative cannot be implemented without the development of an extensive, ongoing monitoring plan and financial commitment to implement it. The monitoring plan would be developed if the Preferred Alternative is chosen, and prior to implementation of the Preferred Alternative. Funding and staffing constraints are severe at Isle Royale, and this is not expected to change in the near future, which effectively leaves the park in the No Action phase until such time as funds become available for both implementation and monitoring of the components as they are implemented. However, we anticipate an increase to park operating funds within the next three to five years that is specifically intended to acquire staffing and resources to develop and implement a monitoring plan.

The Preferred Alternative is based on finding a balance between visitor preferences and protection of natural and cultural resources at the park. This draft plan was written after conducting extensive surveys, soliciting several seasons' worth of public input, and consulting with other national parks that have completed wilderness plans (see Appendix J and References sections.) Based on the result of this research, we do not agree with your assertion that our goals are not achievable. While any of your predictions for the park's future could occur, we do not believe that the proposed plan would be the cause of them. On-going monitoring will result in adaptive changes if projected results are not achieved.

The park is committed to being able to support adaptive management (or show that no adaptations/changes are necessary) as a result of sound data gathered both qualitatively and quantitatively. The Preferred Alternative depends on feedback from a comprehensive monitoring program, therefore the park is committed to developing such a program. We will implement components of the Preferred Alternative as funding becomes available for them and their respective monitoring components. Implementation of portions of the monitoring plan, will be based on impacts and significance of the need for change. Part of the monitoring plan will be to establish monitoring priorities and pursue funding accordingly. Different fund sources will have their individual priorities established within the overall priorities context.

We are still committed to developing indicators and standards that adequately address potential resource impacts because of changes in management. During the course of developing the draft plan and alternatives, the National Park Service Great Lakes Network has been developing an inventory and monitoring program to assess the health and trends of natural systems and species across the Great Lakes parks. ISRO will incorporate its development of indicators and standards

to be consistent with this larger program, where specific network "vital signs" can inform the park's indicators and standards, or vice versa. We have already developed campground survey methods to assess some visitor impacts, and are completing the development of cyclic monitoring of cross-country camping impacts. Where species-specific monitoring (such as loons) is a good fit as an indicator, we will pursue it. We need additional data analysis regarding loon breeding success and dynamic environmental factors other than visitor use (ie, nests on Lake Superior shores, and changing water levels or storm events) before we can determine whether loons will be an adequate species-specific indicator. However, early indications are that loons may be responsive to management of visitor use patterns in some situations (a small number of voluntary closures seems to be helping with nest success in certain locations.)

Regardless of whether loons are incorporated as a wilderness management plan indicator, we are mandated by policy to monitor state listed species as we would federally threatened species. We have a long-standing loon monitoring program which will continue. Research and monitoring will continue to provide population and trend data, and information regarding loons and human impacts (including visitors, park staff, and researchers.)

The Environmental Consequences section of the draft EIS/Plan does in fact describe the anticipated consequences of each proposed alternative, to the extent that the research and professional knowledge exist to help predict the consequences. See for example pages 193 (effects in the immediate vicinity of Todd Harbor) and 204 (effects of a new trail near Windigo). The plan acknowledges that research in the park indicates that paddlers can have a negative impact on loon nest productivity. None of the alternatives has a specific focus on paddlers, and none of the alternatives would likely significantly alter paddler numbers or routes. The information on loons is included as part of the Affected Environment section, as is a summary of all relevant research and background information for wildlife that may potentially be affected by how we manage the wilderness.

B. RESEARCH IMPACTS

COMMENT

The NPS and the moose/wolf researchers may be violating the Wilderness Act on Isle Royale since it became a national park. Park planners of the GMP did not discuss the impact of research on Isle Royale. The NPS and the moose/wolf researchers have been taking (as far as the public knows) all the moose and wolf remains from the wilderness areas of the island for many years and using them for their own means. These animal remains are one of the natural and short term historic landscapes of the island. Because of these actions, by the NPS and the researchers, visitors are denied the opportunity to view the remains of wildlife in the wild. In addition, the taking of these artifacts alters the natural resources and landscape as the remains contain nutrients for other wildlife and are a part of the natural process of the island. Isle Royale prides itself on the moose and wolf relationship and visitors should be allowed to view the remains of these magnificent creatures as a part of their wilderness experience on Isle Royale. Suggestions to mitigate this violation of the wilderness act may be to: 1) begin to prevent NPS personnel and researchers from taking these remains from sites on Isle Royale. Limit the researchers to taking only small samples of the remains for scientific research. 2) inform visitors of sites where some of these remains are so they can see them if they choose to do so.

RESPONSE
Research is one of the opportunities provided within national parks, and is a stated purpose for Wilderness areas in the Wilderness Act. The National Park Service has a required permit procedure for all research that occurs within parks. Research projects at Isle Royale undergo review to determine that they are consistent with park regulations and legislative mandates. This includes reviewing research projects using the Minimum Tool Process to minimize impacts to resources.

The wolf/moose study does not collect all wolf and moose remains in the park. Approximately 30% of moose skeletons are found as part of the study, and from each only a few bones, necessary for data collection, are removed. Most measurements are completed in situ, without significantly disturbing the carcass. The bulk of the moose remains that are found are left where they are, for all visitors to discover as part of their own wilderness experiences. Research results for this long-term project are available in an annual report that can be accessed at http://www.isleroyalewolf.org/. We periodically reassess research goals, protocols, and procedures as part of the permit process for long-term research projects. We acknowledge the concerns illustrated in the above comment about the wolf/moose study, and will review those concerns as part of the reassessment process.

Isle Royale's wolf-moose study is unique throughout the world and the results from almost 50 years of research have informed wildlife managers, ecologists and biologists as they attempted to protect and restore an endangered species. In a larger context, the study has revealed significant and previously unknown factors in predator-prey ecology, and has been responsible for important advances in wildlife research.

C. PARK REGULATIONS

COMMENT
As a general comment: Don't create so many rules that it will be difficult to enforce them consistently and equitably, or so many rules that the visitor will have difficulty learning what rules apply.

RESPONSE
The park will continue its efforts to balance the need for some regulations and voluntary restrictions while trying not to hinder the visitor's experience. Existing and new regulations regularly receive internal scrutiny in an attempt to be consistent, user-friendly, and to be enforceable.

D. WILDERNESS

COMMENTS
1. The Chapter 3, "3.2 Wilderness Character," on page 112, admits to being difficult to measure and is a somewhat quasi-religious intangible in its own right. Without getting into "an unseen presence capable of refocusing our perception," etc., we can measure sights, sounds, smells,

people, developments and so forth, and can plan for and manage these impacts. The statement, "an intention and a commitment to the spirit of an intangible," falls in the same "not measurable" realm. We should manage measurable qualities or factors and avoid the intangible. While there is a religious dimension to wilderness thinking, management plans should be science-based and the basic objectives should address biodiversity, health and sustainability. The 1.3.1 Management Goals statement "Wilderness character is a combination of biophysical, experiential, and symbolic qualities in an untrammeled and natural state . . ." is esoteric and could be revised. Visitors come to parks equipped with their own "state of mind."

2. There is no justification of not expanding wilderness designation to those areas that were excluded, but where non-conforming uses are no longer an issue- particularly those places where with full implementation of the GMP docks will be removed (Siskiwit Bay and Three Mile), or ferry service relocated (McCargoe Cove). In these cases it would be appropriate for the WBMP to propose wilderness designation for consistency with the rest of the park. I would also propose including Moskey Basin for consistency and no existing non-conforming use. With the changes in the GMP and any changes proposed in this WBMP there would be no non-conforming uses that would preclude wilderness designation in these areas.

3. I request a commitment in the Final WBMP that all Potential Wilderness areas where non-conforming uses (e.g. life leases) have ceased be immediately converted to wilderness, per the legislation. This includes areas with volunteer agreements that are within the realm of appropriate administrative uses for wilderness, such as Fisherman's Home, Wright Island, Johnson Island, John's Island, Captain Kid and Crystal Cove. Additionally, upon departure of the USCG from Passage Island, that PWA should be converted, as well. If these extended special uses are not appropriate for wilderness, then they should cease anyway as PWAs are legally to be managed as wilderness.

4. Acquire all inholdings, eliminate all cabins, and manage the park as a pristine wilderness. Designate all of Isle Royale National Park as Wilderness… so that we may fully preserve our nation’s heritage.

RESPONSE
“Wilderness character” is defined in the Wilderness Act of 1964 (16 USC §1131 et seq.) using subjective, qualitative terms in an effort to define the feelings and perceptions that wilderness can evoke. It is the “spirit” of the law. The Park agrees that “wilderness character” is not definitive in an objective sense. For management purposes, the park commits to and focuses on monitoring and managing ecological and aesthetic impacts to the wilderness that are quantifiable. Some examples of quantifiable attributes that contribute to or impact “wilderness character” would be trail locations, campground locations, establishment (and control) of exotic species, and human-caused impacts to wildlife.

In the Actions Common To All Alternatives section, the draft plan states that where non-conforming uses have ceased in Potential Wilderness Areas (PWAs), those PWAs would be converted. The nonconforming uses of historic structures needs to be further analysed through the historic properties planning process. If a decision is made to keep a non-conforming use then the park would take appropriate action at that time to reconcile differences between designations

and any inconsistencies in authorizing legislation to wilderness legislation and the GMP and Wilderness Plan. In the meantime, current inconsistencies were not deemed significant enough to impact overall wilderness management on the Island in the absence of historic significance evaluation. Future analysis should provide direction based on all relevant law and policy for cultural resources with these resources in context with historic features in the great lakes and the island. The trade-offs related to these resources and wilderness values will then be evaluated through a NEPA document and acted on accordingly.

Expansion of the wilderness area is beyond the scope of the WBMP. As stated on p.1 of the document, the purpose of the WBMP is to describe actions being taken to manage the existing wilderness area. There are no more inholdings within Isle Royale.

E. PARK OPERATIONS

COMMENTS

1. The Park has to reduce its own overhead costs. Reduce the number of boats, docks (do not create new campsites when you cannot maintain the ones you have now), allow volunteer groups to maintain/repair lighthouses, campgrounds, etc.

2. Since so much of the sound violation of wilderness space is from the daily operations of boats and equipment at Park Service locations such as Mott Island, Windigo, and Rock Harbor, I think the Park needs to take a harder look at what they can do to minimize their impacts. Today, the NPS operates more boats and equipment than ever before, yet visitation has not markedly increased. Perhaps there are more effective ways to operate on a daily basis. Currently, the Park is operated on a “do as I say, not as I do” basis. A minimal impact Park operation should be the good example that the visitor follows.

3. On p. 22 and elsewhere this document discusses the fishery of Lake Superior waters. In Sec. 1.9 on p. 22 of this plan it is stated that the NPS is "striving to sustain the native fishery". If that is so why doesn't this document even mention the recent and dangerous recurrence of the lamprey eel in Isle Royale waters? Lake trout should be added to fish of concern on p.125. There was ample evidence of increased lamprey predation during the recent summer of 2005. Just ask the fishing guides at Rock Harbor and other seasoned fishermen such as Dr. Ted Fritche from Marshall, MN, who fishes every summer at the eastern end of the island, and Steve, Tom and Chris Gale as other regular and long-time fishermen from Tobin Harbor.

RESPONSE

The park continues to look for ways to reduce its overhead costs, and utilizes volunteers whenever feasible. The park regularly uses the services of volunteer crews to help maintain the trail system, for example. The plan proposes the establishment of one new campsite, as part of an overall strategy in the preferred alternative and computerized trip planning to optimize on the current camp grounds during peak season to reduce overcrowding. The park’s 1998 General Management Plan/Environment Impact Statement Preferred Alternative guides the park’s decision-making with respect to new campgrounds, docks, and other facilities. Implementation

of park management plans are in turn affected by available funds. The park does utilize volunteers for trail maintenance, and for some repairs on park infrastructure.

We agree with your position on minimizing noise impacts from park operations. For example all of our 2-stroke outboard motors were replaced by 4 stroke engines. We continue to seek and implement techniques and practices that reduce the "footprint" of the park staff on the park. Unfortunately, many innovations require substantial funding to be initiated, so we continue to look for opportunities to gain funds for purchasing more environmentally friendly equipment, or for instituting more environmentally friendly practices.

As noted in the draft plan, in-depth review of the park's fish communities is outside the scope of this plan, and none of the alternatives is expected to impact the park's Lake Superior fishery. However, the park's forthcoming fish management plan will review both native and non-native species in Lake Superior and the park's inland waters. The park has a lamprey monitoring program in cooperation with the U.S Fish and Wildlife Service. Juvenile lamprey monitoring in 2005 showed that no breeding lamprey population is currently present in park streams. (Monitoring and treatment occur in juvenile lamprey populations.) Adult lamprey are present in Lake Superior, but they are spawning outside of the park, and therefore control efforts would need to focus on non-park spawning and juvenile rearing sites. For more information on lamprey populations in Lake Superior, go to the U.S. Fish and Wildlife Service website, http://www.fws.gov/midwest/Marquette/.

F. TRANSPORATION

COMMENT
Transportation by Ferry: The private firms that supply transportation service to the island must operate profitably in order to continue. Profits are sensitive to fuel costs and to revenues and especially to patronage. Policies which discourage visitation, or are perceived by potential customers to be unfriendly can have serious effects for transportation providers. The risks of operating in these waters is considerable. The season is short, and most Action policy choices propose to shorten the season further for dubious reasons. Action plans which propose substantial changes in the business environment bring new risks to bear, risks which often seem to be discounted, minimized, or ignored by Park management. Furthermore the private transportation operators must compete with a subsidized government competitor…If visitation drops, is the National Park Service prepared to offer comparable subsidies to its competitors, the private operators? Because of the profound effects upon this critical infrastructure service, adequate care in policy choices ought to be exercised. This degree of care is absent in the Action plans, which are generally dismissive of transportation effects…Critical Times: These are critical times, and major changes in visitor policies that affect the relative attractiveness of Isle Royale as a visitation venue should be undertaken with the utmost caution. No such caution toward the transportation services is evident in the proposals. On the contrary, statements that it is unlikely that ferries will experience adverse effects are without sound basis.

RESPONSE
None of the proposed alternatives suggest implementing a shorter operating season. The Preferred Alternative simply allows for more informed choices by visitors when planning their

overnight trips. Likewise, the Preferred Alternative for day trips does not in any way restrict passenger numbers on ferries. As far as competition with a "subsidized government competitor" is concerned, this is a national park, which in itself is "subsidized" by the government and taxpayers, and providing a means of entry via a federal vessel is part of the public service offered by the park (see pp 29, 32 and 79.)

The park expects that while overnight visitation numbers may drop slightly during the peak season, the majority of these potential visitors will opt for scheduling overnight trips either before or after the peak season. In addition, the reason for fluctuations in visitation can be caused by many factors, including increased fuel and travel costs to reach ferry locations. Each of the private ferries offers a unique service, whether it is the scheduled trip times, departure and arrival locations, or time spent en route. The Park has allowed concession operators to increase their day use capacity on a trial basis with good results for the Copper Harbor run. The backpacker numbers remained relatively steady and the day use had a significant increase. Therefore, the park does not expect significant changes in the total numbers of passenger use on the ferries beyond normal fluctuations experienced to date.

We are not proposing major changes in visitor policies, or making major changes in transportation services in this plan. As noted on p.178 for impacts of the preferred alternative, concession ferry operators would require all overnight visitors to have valid permits in order to purchase ferry tickets. That is the same requirement that is now in effect for groups coming to the park. Thus we believe it is true that it is unlikely ferries will experience adverse effects from this system. It is true that annual camping visitation may decrease under the preferred alternative. But as the text notes if this does occur, there could be more room available on the ferries for day visitors and lodge guests. The text also notes visitors will be made aware of all possible ferry options, not just the NPS' Ranger III, and that the private ferry concession operations offer unique options to passengers. Thus, we believe there is a good basis to indicate that any adverse effects of the preferred alternative on concession ferries would be negligible to minor in magnitude.

G. CHAINSAWS

COMMENTS

1. I think the use of power tools (chainsaws, etc.) is fine. After a bad storm or in the beginning of the summer, clearing blowdowns etc., with cut saws would take forever.

2. Chainsaw Usage: The actions common to all alternatives call for reducing chainsaw usage in favor of crosscut saw usage, a direction we applaud. We would urge the Park Service to move more aggressively in this direction, recognizing that in a wilderness are trees in all their forms and conditions are part of the experience. One option to offset the reduction of chainsaws would be to encourage more service trips through organizations like Sierra Club, working to train more volunteers to assist with trail maintenance. Chainsaws for emergency use would continue to be appropriate.

3. I request that you make a greater commitment and effort to consult with other wilderness areas that manage their trails without the use of chainsaws in revising your chainsaw policy and come closer to eliminating chainsaw use. The Boundary Waters Wilderness boreal forest and Shenandoah National Park with eastern hardwoods would be a comparable forest types to the two ends of the island- both areas with a much stronger commitment to using hand tools over chainsaws.

RESPONSE
The use of mechanized equipment in the wilderness is subject to review under Minimum Requirement Decision Guide. In some cases, this may mean that the use of a chainsaw for a short period of time may be less of an impact than using a larger crew with crosscut saws for a longer period of time (blowdown events, etc.) Overall, the park is committed to reduce the use of chainsaws in the wilderness where it reduces impacts, and when staff is properly trained to avoid injury.

The use of crosscut saws (as with chainsaws) requires specialized staff training and experience in order to operate safely. Currently the expertise does not exist in the park to widely institute the use of crosscut saws. The park will continue to look for ways to incorporate crosscut saws into its trails program, both through NPS and non-NPS fund sources. Exactly how the park would develop and implement its crosscut program is an operational question, but it is likely that we would look to other parks, like those you suggested, as a guide.

The park currently uses volunteers wherever possible to maintain trails. We will continue to do so as appropriate and in a manner that provides safe, productive opportunities for volunteers.

H. TREATED LUMBER

COMMENT
1. The use of treated (ACQ) wood should not be used until the long-term affects have been learned. The leaching of copper into the lake, especially from a government agency, should not be allowed. There is already too much mercury in the food chain. As for economics, if it is determined in the future, that there is a problem with ACQ, the cost incurred in replacing the wood added on to the initial cost of the installation now is doubled. I work as a carpenter. The use of ACQ will cause many problems in the future due to insufficient research as to the proper means of attachment with both fasteners and brackets. There has already been issues raised about the use of galvanized fasteners vs. stainless steel and this will only continue to be a problem.

2. I am also concerned that the data used to justify the use of chemically treated lumber is insufficient to justify its use in wilderness ecosystems. The proof should be in proving beyond a reasonable doubt that there will be no harm caused many years down the line, not in proving that harm would be caused. It was not too long ago that this standard for proof resulted in the widespread use of arsenic in treated lumber at a high cost to human and environmental health. I would request reconsidering the decision to use chemically treated lumber in wilderness. I am opposed to the use of chemically treated lumber in wilderness, no matter how "benign" it is though to be.

RESPONSE
The park will continue to search for construction materials that have the fewest adverse environmental impacts. Where possible, we use island materials or redesign projects to reduce the amount of non-native materials needed. We will use the most environmentally benign materials commercially available as the plan is implemented. See p.46-47 for details.

I. HISTORICAL REFERENCES

COMMENTS
1. I will confine my comments to one area I feel is incomplete and that is "prehistoric occupation." It is well documented that the Ojibwa, and/or other earlier Indians, occupied Isle Royale (or Minong) for over 4,000 years and that they extracted copper from pits using hammer-stones in areas like McCargo Cove. In Chapter 3, page 113, is the statement, "During the park's mining period, fires were intentionally started to expose bedrock and minerals." I suggest that is is "more likely than not" that Native Americans also exposed a lot of bedrock through fire for the mining and other activities, and did so for an extended period. Fire was used for a multitude of reasons. There has been a lot written in the past few decades that attests to the extensive use of fire by Native Americans. An excellent reference is "America's Ancient Forests," 2000, Thomas M. Bonnicksen, John Wiley and Sons. Too frequently, the influences (on the natural ecology of Isle Royale was likely determined by these people (who were undoubtably the keystone species).

2. Minor but important needed corrections are, first, Table 1 on p. 23 lists Newman Island as a life lease property. To my knowledge, the Newman family did not take a life lease on this island which is located due northeast of the Gale island…Second, the text on p. 134 implies that Isle Royale commercial fishermen who did not hold warranty deeds were paid before they were removed, or in a couple of cases, given special use permits. To my knowledge these fisher folks were not paid anything if they did not hold warranty deeds as did the Mattsons of Tobin Harbor and Emil Anderson of Johnson Island in Belle Isle.

3. I notice an error in the WBMP on Page 151 in the writer's interpretation of the condemnation history. The Plan states that many cabin owners were given a unique opportunity to sell their land and stay on as Life Lessees. This makes it sound like the Life Lessees were able to double dip from the Federal trough. In reality, as part of the condemnation process of lands held by private citizens, the Federal Government exercised their police power. When the land buyers of Michigan approached the landowners of Isle Royale, there was an either/or choice. You could EITHER get the value of your land and buildings at that time, OR you could stay on as a life lessee. There were no payments made to those who chose to stay on as life lessees. This is neither unique nor an opportunity. It is not unique since there is a long history of condemnation of private lands for the good of many, in our National Parks. It is not an opportunity, since the value of the land, is the land itself, and that was taken. While several following generations have had the ability to use the land, if the back taxes could be paid in exchange for clear title, I suspect that most would do so.

RESPONSE
With respect to historic use of fire on the island, Cole et al (1995) examined sediment cores from several of Isle Royale's inland lakes, and found charcoal layers indicating that periodic fires occurred in both pre- and post-settlement times. The 1995 study also showed that fire was less prevalent at the southwest end of the island than at the northeast end.

We thank the commenter for clarification regarding Newman Island. The information for the Potential Wilderness Areas chart on page 24 comes from the Isle Royale Wilderness Description of Boundaries, October 20, 1976. It lists as a Potential Wilderness Addition the life lease of Mac Ewen and How, lot 11 of Island #14 (Newman Island) in Rock Harbor. It is possible that the description is in error and that island #14 is not Newman Island. The property included as the PWA is the How life lease. The text reference on page 25 of this document has been clarified to read as "How Lease."

In a few cases, families who did not own land but had some legal agreement to occupy the land were paid to relinquish their rights on that land. This may have only happened in a couple of instances. Generally, the commercial fishermen were only offered life leases if they owned the property they were using, the rest were issued Special Use Permits to continue operations from their sites.

The comment regarding condemnation history at the park is not correct. Many families did get either a life lease or payment, but some families were paid for their land and also received a life lease; it depended on the valuation of their land and buildings compared to the value of the life lease.

5.2.2 Overnight Alternatives

A. GENERAL PERMITTING

Alternative A (No Action Alternative)

COMMENTS
1. Conclusion: Option A. No Action is the necessary choice at the present time. It is responsive, rather than proactive, which is proper given management's inability to forecast the consequences of the Action policies it has offered. All the other choices ask us to accept ever more restrictions as an answer to a largely perceptual problem. The other Action plans involve considerable inconvenience, unappreciated risk, and seem to be based upon faulty or incomplete evidence and insufficient reasoning.

2. It is our view, however, that the best way to achieve the goal of maximum availability of these activities is through Alternative A rather than the parks preferred Alternative C. As stated in the draft WBMP on p. 79, all alternatives include maintaining the concession-operated boat tours with the stipulation established in the GMP that there would be no expansion of the tour destinations, schedule, or boat capacity. We believe that it would not be possible to implement the preferred Alternative C under these conditions.

RESPONSE
The No-Action Alternative is not proactive to known concerns. The Preferred Alternative is based on offering more real-time information to visitors so that they can knowledgeably plan an itinerary with realistic expectations of whether a specific campground will be crowded or not. Visitors still have the freedom to establish any realistic itinerary they choose, and may vary from the established itinerary once they are at the park. All of the alternatives, including the Preferred Alternative, were drafted based on extensive public input over several seasons. The park is attempting to be responsive to long-standing visitor concerns and comments, while at the same time protecting the resources which draw visitation to the park.

The Preferred Alternative works within parameters that are consistent with the Park's GMP. The GMP states that modifications in both visitor transport and private tours could occur to control island access and visitor spatial and temporal distribution if necessary to protect park resources. (GMP p. 28, 39, 117.)

Alternatives B, C, and D

COMMENTS
1. Alternative B for managing overnight use needs clarification on option 1 for boaters. Can boaters permit for docks only? If a boater permits for a particular campground does the boater get permitted for the dock? …Option 2 is clear. The name for alternative "B" 'Managing Overnight Use: Provide a Broad Range of Quality Backcountry Opportunities and Protect Resources' is not accurate, misleads the public, and consequently, should be restated as 'Modify Social Conditions Through The Use Of A Reservation System To Limit Visitation'. This title is

more in line with the other alternatives. The public should decide whether this alternative will provide a broad range of quality backcountry opportunities and protect resources. The NPS should just state that it is their preferred alternative and not try to sway the public into believing that the statement is true. In fact, the NPS provides just an opinion and provides no data to justify that this alternative can in fact do what the title says. …Alternative C states that permitting for boaters would be as it is for alternative B. However, this is not the case according to the NPS (Jean Battle 12/12/05 and 12/14/05). Hence alternative C is not written properly to explain the actions intended by the NPS. This is a significant point because the people need to make an informed decision for this alternative and as written they are misled as to what will actually occur.

2. I am concerned with the inconsistency of data required to support different decisions. Section D.2.2 states that there would not be an entry quota set for powerboaters until a future need is determined. However, in several places the plan references data that identifies a conflict with noise and crowding in wilderness, which is partially associated with boating visitors.

RESPONSE
Under the Preferred Alternative, Option 1 for boaters is to receive a permit for both a campsite and dock space.

Alternative C states that, for boaters, it would function in the same manner as Option 1 for boaters in the Preferred Alternative, but that it would not offer Option 2 for boaters (last minute permits) for full campgrounds. We feel that this point is clearly made in the draft document on page 64.

Alternative D does not set a quota for powerboats and sailboats because use levels are currently low. The alternative does state that a quota could be determined later, if the need were present. Issues of noise and crowding were identified as part of the visitor surveys (see 3.1.3, Affected Environment, Social Conditions.) Each alternative addresses potential crowding at campgrounds and docks in different ways.

We have changed the titles of the overnight alternatives in the final plan as follows:
No Action Plan (Alternative A); Preferred Alternative (Alternative B); Alternative C; Alternative D; Alternative E. Likewise, descriptive titles have been removed from all alternatives in other sections, except to be designated alphabetically, and as either No Action or Preferred Alternative.

B. VISITOR SURVEYS

COMMENT
Surveys--Terms such as "many people commented" or "others said" which occur in the document are merely descriptive. Until an analysis of the methodology and results is undertaken they remain anecdotal and as such offer no scientific validity. The survey methodology used to gather overcrowding data was not presented in the ISRO WBMP. Valid survey methodology is critical to the conclusions presented. A) Were the questions properly framed or were they leading to a desired answer? B) Were the all the choices presented? C) Was the sampling statistically acceptable and what was the margin of error in the results? D) Was the year for the survey typical? For example, since 2002 when one survey was conducted, we alone have a steady drop

in backpackers from a 2002 total of 3674 to 3006 in 2005 a 19% drop in hikers. Until we have a copy of all methodology used, we cannot make a valid assessment of the problems presented in the ISRO WBMP. In addition, the results of the survey were not presented in the ISRO WBMP. Without these data, it is not possible for us to determine if the permitting system is inconveniencing the vast majority of hikers throughout the season to satisfy the few who may wish to travel in the peak month. Until these data are presented, we are unable to make a valid argument for or against the need for a NPS permitting system.

RESPONSE
In the "Affected Environment" section, we discuss in detail the results of surveys, review of park visitation records, and private ferry ridership records. The study citation is included in the plan, and study methodology and results are available at university libraries. The information presented in the draft plan is a summary of the results of surveys and review of historic records.

C. OVERALL PLAN CONTENT

COMMENT
We feel the Draft WBMP plan follows the biosphere concept as advocated by the NPS and many environmental advocacy groups and fails to evaluate the true resources of the park and further hinders park use by the American Public. Could this be the reason that the Pristine Zone was not addressed in the plan?

RESPONSE
Comment noted. We are not familiar with the "biosphere concept" you noted and are not advocating the concept. We believe the draft document evaluated all pertinent resources likely to be affected by the alternatives. All alternatives were developed to not hinder use of the park but rather to provide additional flexibility and information to visitors while protecting park resources (e.g., see p.55). This includes providing additional opportunities for day trips (see Alternative C). The Pristine Zone also was covered in the plan.

D. PERMITTING AND TRANSPORTATION

Conflicts with Concession Ferries

COMMENT
Most importantly, we believe that an appearance of and actual conflict of interest exists in the NPS adopting a reservation system that affects all transportation services to the park while the NPS competes against those services with the Ranger III.

RESPONSE
The Preferred Alternative is not a reservation system. Advance permitting would apply equally to passengers on the Ranger III as well as concession ferries. Any new central permitting system will take into consideration all concerns including our partners, the concession operated ferries that transport overnight users to the park. The park will work with ferry concessions so that people seeking permits can easily check with concessions for ferry tickets.

Ferry Prices

COMMENT
The preferred solutions offered by some Action plans suggest that a form of price rationing be imposed. A permit fee, plus higher daily fees would be instituted. Restrictions on transportation would require higher fares. Infrastructure taxes would need to be raised to defray fixed expenses over fewer visitors. These policies seem to be tantamount to regulating visitation by imposition of planning obstacles and higher costs of visitation.

RESPONSE
The possibility of increased user fees is only one of several possible options for helping to defray the cost of implementing this draft plan. In order to help readers understand how the park could feasibly finance the undertaking, we have listed all possible funding methods, but we are not specifying any one particular method. Concession operators have been allowed to implement peak season pricing which also helps achieve minor re-distribution of users.

Loss of Visitors

COMMENT
Critical Times: These are critical times, and major changes in visitor policies that affect the relative attractiveness of Isle Royale as a visitation venue should be undertaken with the utmost caution. No such caution toward the transportation services is evident in the proposals. On the contrary, statements that it is unlikely that ferries will experience adverse effects are without sound basis.

RESPONSE
We are not proposing major changes in visitor policies, or making major changes in transportation services in this plan. As noted on p.178 for impacts of the preferred alternative, concession ferry operators would require all overnight visitors to have valid permits in order to purchase ferry tickets. That is the same requirement that is now in effect for groups coming to the park. Thus we believe it is true that it is unlikely ferries will experience adverse effects from this system. It is true that annual camping visitation may decrease under the preferred alternative. But as the text notes if this does occur, there could be more room available on the ferries for day visitors and lodge guests. The text also notes visitors will be made aware of all possible ferry options, not just the NPS' Ranger III, and that the private ferry concession operations offer unique options to passengers. Thus, we believe there is a good basis to indicate that any adverse effects of the preferred alternative on concession ferries would be negligible to minor in magnitude.

Local Economies

COMMENT
Because the ISRO WBMP "Mainland Based Permitting System" will have a dramatic and possibly devastating economic impact on our business and the community of Copper Harbor and because the ISRO WBMP makes no estimate of any impact either to our business or the community, we request additional time to further study the proposals before the implementation

of any system. Given the data we need to make a reasoned comment, 30 days would seem to be a adequate time to analyze the need for the proposed permitting system. Incidentally, this is not the first time we have asked for the survey methodology and resultant data.

RESPONSE
The public comment period was open for 60 days, which provided adequate time for plan review. In addition, ferry operators and all other interested parties were supplied pre-planning information in various formats and encouraged to submit comments and concerns during the scoping process conducted via newsletters and at scoping meetings. The summary of the current socioeconomic environment can be found on p.138-140; an explanation of the methodology used to estimate socioeconomic impacts for alternatives is on p.153; the estimated socioeconomic impacts for each of the overnight and day use alternatives are described in pages 169-208 (impacts for the preferred alternative are on p.178.)

The park will involve concerned parties such as ferry concessions during the development of the specific process and procedures for a new permitting system. This is a routine way to help insure that the way an administrative action is implemented does not cause unexpected negative impacts to participants.

Limiting Campsite Sharing

COMMENTS
1. Is anyone seriously suggesting that backcountry visitors are deciding not to return to Isle Royale on account of over crowding? If so, how should such a problem be addressed? Is restricting access the only Actionable approach that has undergone serious consideration, other than minor changes in campsites and rustic cabin additions? Apparently management is only calculating the disappointment costs of those who place a premium on solitude, those who didn't expect to have company at their planned campsite. How does management calculate the lost opportunity cost of those potential visitors who are denied permits at their preferred times because of a policy designed to assuage other visitors disappointments? Why, when more amiable visitors might find occasional doubling up to be quite tolerable, why are they to be denied access? It would be different if no other seasons of summer offered an absence of crowding. But visitors can choose less visited weeks in order to find fewer human encounters, and many do. What is wrong with this simpler and less restrictive solution?... The policy prescriptions offered in the plans might be appropriate for a park that had serious overcrowding conditions. But such is not the case on Isle Royale, and it is unlikely to become the case anytime soon… Most of the backcountry visitors to Isle Royale are experienced visitors who have visited the island in the past and are aware of the crowding situation during the peak weeks of mid-July to mid-August. While they might prefer less crowding, they are prepared to experience what they find, or else they wouldn't come at that time. The Action option plans address a misperceived situation with a non-solution course of actions, for the most part… Park management appears to have accepted as a premise the view that doubling up is inappropriate for the type of expectations that visitors to Isle Royale are thought to have. The salient point is that these visitors are being forced to do so, as stated on p. 55. Of course they are not really being forced to do anything; they can continue up the trail and camp cross-country, etc. [This option may be arbitrarily ruled out as

a solution. See p.] Some visitors' expectations of sole occupancy of a campsite aren't being met, and somehow this is regarded by park management as a serious matter, one that demands changes in visitation policies, especially when it seems it might occur more than 5% of the time during the peak season…Bandwagon: If the unstated objective of the reduced visitation policies is to adopt a downtrend, while making it appear to be a management objective, then things will only get worse for visitors and the for the park's assets and resources.

2. I don't think we need to reduce the number of times someone should go (to the island) because I haven't seen any overcrowding anywhere there. Last summer every place (docking area) was either empty or spots plentiful available.

RESPONSE
Visitor preferences have been solicited during visitor surveys as part of the scoping process for this draft plan. Visitors say crowding can be a problem (p. 11, pp.103-108). Visitors report sharing sites over 24% of the time during the peak season, which the park believes is significant enough to attempt to reduce current crowding and prevent it from becoming more prevalent. Even so, the Preferred Alternative does not try to totally eliminate crowding but allows for visitor flexibility in creating and changing their itineraries.

Overcrowding, apart from reducing the quality of visitors' experience, also results in resource degradation through increased soil compaction, the establishment of social trails, and increased noise levels. Because Isle Royale's land mass is almost completely federally-designated wilderness, the park functions under a mandate that includes ensuring that"…the imprint of human activities is substantially unnoticeable…"and providing "…outstanding opportunities for solitude or …primitive…recreation."

The point of this plan is to provide quality experiences for visitors, maintain the integrity of the wilderness, and protect park resources. We are not trying to define the point at which visitors stop coming to the park because of their dissatisfaction; rather, we are proactively attempting to identify those aspects of a wilderness/backcountry experience that draw visitors to Isle Royale and assess various tradeoffs under different alternatives.

The park is over 99% wilderness, therefore significantly expanding infrastructure in wilderness areas to accommodate overflow visitors is not a feasible option (and not supported by wilderness legislation or the park's 1998 General Management Plan.) Similarly, cross-country camping is not a solution to overcrowded campgrounds, but rather is intended to provide wilderness experiences away from the influence of human impacts such as designated campgrounds and trails. A different set of skills is required for cross-country camping (as shown by the separate permit requirement). Unacceptable damage to natural and cultural resources would result from overflow campers being allowed to expand campgrounds by camping adjacent to, or near, existing campgrounds.

Our efforts are focused on managing visitation in a way that is acceptable to the majority of visitors. Four of the five alternatives allow room for increased visitation over current numbers. Four of the alternatives attempt to reduce crowding during peak visitor season by shifting use away from the peak visitation weeks by various means. By adopting a permitting procedure that

supplies the widest array of informed choices to visitors, and still allowing them to change their itineraries when they arrive at the park, we believe that the negative impact to visitors will be minor (again, our assumptions are based on survey responses from visitors themselves.) Occasional campsite sharing will still occur, but the number of occurrences would be fewer. In addition to providing a quality experience to visitors, we also will be reducing negative impacts of overcrowding to the natural and cultural resources in and adjacent to campsites.

Requiring Advance Permitting

COMMENTS
1. With the Central Permitting system, there will be winners and losers. The winners will be the ones who already know four months in advance exactly what dates they are able and wish to visit, and are already familiar with the Island from previous experience, so that they know where they wish to go. The losers will be the first-timers and others who don't yet 'know the ropes,' and in particular those for whom it is impossible to determine that very narrow window of opportunity to visit the Island until very close to that time. An example is our attempting to find a week that three grandchildren, one from each of three of our children's families, are available at the same time.

2. Unique Isle Royale: Isle Royale is the least visited national park. Because of isolation, the vagaries of weather and other causes, visitation plans must often be modified. Isle Royale has been a venue where freedom to change plans has been a valued feature. It may not be worthwhile to toss this freedom away.

3. Methodology and results aside, a mainland based permitting system will only add to the difficulty is an already difficult and expensive trip. Our fear is that at some point, passengers may simply abandon the trip altogether. For the past 15 years, the overwhelming complaints we receive about both the National Park Service and our reservation system is the inability to get through to anyone in person without having to make multiple calls. To solve some of these complaints, we offer an 800 toll-free number for all call-backs to our office. Passengers have repeatedly said how much they appreciate this convenience. In addition, we have determined that a web-based reservation system may be a feasible choice to relieve the vast majority of bottlenecks. We can imagine numerous situations when a hiker goes through the NPS permitting system office to clear a reservation and then finds that the ferry is full (we have a self-imposed backpacker limit already) only to return to the NPS system and back again. This type of completely dual reservation system is, we believe, unprecedented in the NPS. Hikers unfamiliar with the degree of hiking difficulty posed by the island terrain, will find it very difficult to prepare an itinerary on the telephone. Campgrounds are spaced miles apart. Each reservation will take great time and care to give hikers feasible alternatives for their trip. We cannot imagine the NPS providing the permitting staff to discuss the 80-100 calls per day that they will receive during late June, July and early August Furthermore, unless the NPS operates on weekends, we will lose walk-in business that arrives unannounced and unexpected to go to the island. Without the ability to make an island reservation, we will be required to turn them away and thereby lose all our walk-up passengers.

4. The permitting/reservation system needs to be defined in detail, in this plan, in order to make an informed decision of the alternatives. This plan calls for a specific action; a permitting/reservation system. The specific details of how the reservation system will work are not presented in this document. Some examples are: 1) When will permitting start for a given season? 2) How often can a person permit? 3) Are there restrictions with respect to the number of reservations a person can make? 4) Would it not seem that this reservation system relies on the visitors to carry out the enforcement? An example may be: A hiking party comes to Daisy Farm campground late at night and has a reservation and has to kick out someone who is at a camp site. Which campsite does he/her kick out? This person seems to have the right to go to every campsite at Daisy Farm and ask each camper if they are permitted for that night. This would appear to create more social conflict than with the present permitting system. A common scenario with a boater, with a reservation, would be traveling to the island near dusk (possibly running late due to rough seas, motor problems, helping another boater) and pulling up to a dock and finding it full. Then the boater would have to somehow contact the people on the shore to move so they could get their reservation. These types of scenarios are going to be prevalent if a reservation system is adopted. With respect to social conditions, a reservations system would create more animosity among visitors and again puts the enforcement in the hands of the visitor. That is why for the past 50 years, the permitting system on Isle Royale has worked very well. In addition, it is not fair the public would have to pay for a reservation system… Page 64 paragraph 6: Why can't permits be issued by phone with a credit card and mailed out to the visitor? There are many people that are not computer savvy and rely on the use of the phone instead. A suggestion would be to allow for phone permitting as well. How will park personnel and people that work at the concessions on the island get a permit? The plan as written needs to be more clearly stated.

RESPONSE
The advance permitting system attempts to address overcrowding at campgrounds while leaving visitors with the greatest level of flexibility in designing their itinerary. There will be negative impacts to the small number of visitors who do not plan their trip in advance, and wish to visit the park during its two-week peak visitation period. Historic use levels indicate there is room to accommodate most off peak use. This is not unlike planning to visit many popular Parks during peak season. We expect that the majority of visitors will be positively impacted by the ability to know what the camping conditions at a given campground will be, ahead of time. See pages 59-60 for more details.

ISRO is not the least visited national park in the National Park Service. According to 2004 NPS statistics, Isle Royale NP was ranked 316 out of 357 park units. Certainly ISRO is less visited than many National Parks; however, overcrowding at specific campgrounds during specific times of the year occurs just the same, and distributing visitors more evenly among available campgrounds remains a critical part of preventing overcrowding.

We agree that freedom to change plans is a valued feature of park. The Preferred Alternative for overnight use emphasizes making information available to visitors so that they can make informed choices about their itinerary, with the fewest restrictions possible. Even after they

arrive at the park, they are still free to alter their itinerary. By voluntarily staying consistent with their itineraries, visitors will help to lessen overcrowding.

In order to successfully implement advanced permitting, the park will have to improve its current communications systems to aid visitors in obtaining permits. The centralized permit system will include an Internet option, and we will use current technology to provide as much easy access to the public as possible. It is in the visitor's best interest to have a relatively seamless process to access the island and that will be a primary objective during implementation. The park will work with ferry concessions to create a workable system.

Some of the concerns are actually implementation or operational questions that we will address and try to resolve during the design of the permit system. The system would be designed so that permits could be obtained via Internet, telephone, FAX, in person at the central permit office in Houghton, or by mail. The main difference with advance permitting is that no permits would be issued at the island. The new system would not require the use of a computer to obtain a permit; it would be one of several options. Permitting for park employees and concessions staff stationed on the island is an operational issue that would be resolved during implementation of the new system.

With respect to the suggested scenarios, campers would still be expected to share campsites where necessary because of overcrowding, just as they are now. Currently, campers are asked to double up and share empty tent pad space when sites are full. The Preferred Alternative is not a reservation system, but a means to encourage better distribution of overnight visitors by providing them with the necessary information to set up an itinerary that would reduce the likelihood of sharing a campsite, not entirely eliminate it. Tolerance for sharing is based on human interactions at the time. Currently the majority of issues that come to our attention relative to sharing usually involve other factors: noise, wilderness ethics or personal behavior. Law enforcement will continue to act on code violations. The issue of sharing a campsite is similar to a decision to allow someone to raft off: what is your comfort level with the individuals and how valid is the rationale for the need? In addition, as stated in the plan, if social conditions (such as crowding) were to deteriorate in the future, the NPS could implement suitable management actions to address them (p. 61.)

NPS will investigate all possible methods or combinations thereof, to finance the new permitting system. Passing a portion of the cost of the new permitting system on to the visitor is only one of several ways that the park could fund implementation of this plan.

Boating Safety

COMMENTS
1. Safety is of the utmost concern for boaters traveling to the island. Most of the boating public that travels to Isle Royale are from around the Lake Superior Basin. Most of these boaters make decisions on weekend trips and extended weekend trips to Isle Royale on a days notice because of weather concerns. The reservation system as framed in this plan is a failure to boaters because of the comments mentioned above coupled with not knowing how this reservations system is

going to work as stated in the WBMP Draft. Again, the current permitting system is flexible enough for all boaters seeking visitation to Isle Royale.

2. As for advanced permitting, it would be difficult due to weather conditions (back and forth.) I had to cancel Isle Royale trips several times due to bad weather. An appointment system would not work for me. I watch for good weather before I can make any plans.

RESPONSE
As noted on pp. 59-60, there is an option for boaters to provide flexibility for planning a trip at the last minute based on weather conditions. Boaters and others will be able to cancel permits just as they do now. Safety is also of paramount concern to the National Park Service and we believe the options provided address your concerns. Prior to implementing any changes, we will provide information on how the advanced permit system will work so that boaters will be prepared.

Crowding At Docks

COMMENT
Mainland permitting enforcement may be difficult, and if there are violations, it will create confrontational situations that create other issues. How about offering priority of locations for those with mainland permits. No permit then no guaranteed dock space.

RESPONSE
Some of the concerns expressed focus on procedural or operational issues that will be addressed as part of implementation. The establishment of a centralized permitting office would facilitate "enforcement" because real-time information on campground occupancy rates and individual permit information would be more readily available to rangers for double-checks. Permittees would still carry hard-copy permits in the backcountry that contained their itinerary information to assist with ranger checks as well. Permits would still be required for docking.

Location of Central Permitting Office

COMMENT
The plan mentions a permitting office in Houghton. Park Management should not be restricted to this statement, as all options should be explored that might satisfy the needs of the park and visitors, such as the off sight National Park Service reservation system. The system should also not become an undo burden to the ferry services and passengers making reservations. Last minute boater needs which are often weather related would need to be provided for as well.

RESPONSE
The Houghton location is the logical year-round choice under current conditions for centralized permitting, however, the main point as described on pp.59-60, is an advance permitting system, intended to improve trip planning and proactively manage recreation in park. Implementation specifics include how to implement so as not to become burdensome to concessions, the location of the central permit office, designing a user-friendly system, will be critical to the system's

success. As you noted, we would envision the use of a computer system and the internet to keep people up-to-date on campgrounds and dock use.

Enhancing Current System

COMMENT
Page 57, last paragraph; "For deteriorating social conditions such as dock over-crowding, or trail or campground crowding, management actions would continue to focus on better informing the public of visitation levels in different areas of the park and different times of the season. However, with continuation of the current permitting system it would not be possible to give site and date-specific information on dock or campground crowding." Comment: Before a reservation system is implemented, the should NPS considered enhancing the present permitting system with a central computer system and program that could be used to continually monitor and inform visitors making reservations of the present permits issued for the various campgrounds and docks. The system could also be accessed by visitors on the internet to inform them of how busy the various campgrounds and docks may be at the time they make their reservation and before their trip… Some suggestions here would be to: 1) Improve the present permitting system without a reservation system with a central computer that updates the permits in real time and informs the visitor of the present campground capacity levels that the visitor is interest in staying at on the island. A web site that shows the information to the visitor may help the visitor in the planning process would be valuable. This may help distribute the overnight stays and reduce the crowding… Page 64 paragraph 6: Why can't permits be issued by phone with a credit card and mailed out to the visitor? There are many people that are not computer savvy and rely on the use of the phone instead. A suggestion would be to allow for phone permitting as well. How will park personnel and people that work at the concessions on the island get a permit? The plan as written needs to be more clearly stated.

RESPONSE
The Preferred Alternative is not a reservation system: the proposed system should operate in the manner you described for advance trip planning. Visitors pre-plan itineraries using available information on predicted campground occupancies via the centralized permitting system, and by obtaining their permits, they in turn allow the park and subsequent visitors accessing the system to know how full campgrounds will be on given dates. The system will aid each visitor in trip planning, help prevent overcrowding and the need to share sites, allow the park to predict overnight visitation at a specific campground, and help visitors to make informed decisions about setting up an itinerary, based on those predictions. Itineraries will still be flexible for parties of 1-6 once they reach the island.

The mainland location allows permitting in the winter months and is less likely to suffer communication problems associated with an isolated remote island. All computer accessible sites on the Island should be able to access it for updates on campground use levels.

User Fees

COMMENT
Raise the daily user fee at the busiest time of the summer. This may cause some people to use the Park at off peak times.

RESPONSE
The NPS currently has a new national initiative for visitor fees, and our fees may change in order to be compliant with the initiative. Isle Royale's fees are based on user capacity as a relatively stable factor; fees are not based on economic or price fluctuations because of their volatility. The NPS policy on setting visitor fees can be found at http://www.nps.gov/feedemo. The park concessionaires have already implemented peak season fares for their operations.

E. CAMPGROUNDS, SHELTERS

Rock Harbor

COMMENTS
1. Building rustic cabins at Rock Harbor seems to be a good idea as long as there is a fee associated to recover the cost of building and maintaining the cabins. There would also need to be limits on length of stay in the cabins.

2. We suggest instead the park consider adding a number of additional Adirondack style shelters to the Rock Harbor campground and designate them for multi-night use as a way to meet the desire to offer more multi-night accommodations.

3. Pertaining to the time to build 2-6 rustic cabins for rent at R.H., I can certainly understand why you may have heard many in favor of that; I have even had such thoughts myself, at times. But then, I think about all it would bring, and my conclusion is that I don't think we want to go there. It would, I think, be very much out of Island character. There's no question that they would be heavily sought after. The question would be how to contend with the pressure for More! More! More!? This would introduce (some, at least) a new type of visitor to Isle Royale, having different expectations with respect to simplicity and self-sufficiency, quite possibly with increased levels of consumption and waste.

4. How much more development are we willing to (accept? encourage?) in the Snug Harbor area? It would be tragic if our efforts to save the wilderness were compromised by our failure to protect the entrance to the wilderness.

RESPONSE
The park is working toward a Rock Harbor development plan that will encompass all new and replacement structures in the developed area at Rock Harbor. The idea of low-cost rustic cabins is popular with visitors, and construction of a small number of these units will be explored as part of the overall plan. Prior to building rustic cabins at Rock Harbor, several scenarios will be analyzed, including options for fees and length of stay, and market viability. This is consistent

with the GMP, which included the possibility of adding low maintenance, sustainable rustic structures to accommodate a maximum of 24 people (p. 38, ISRO GMP, 1998.)

Windigo

COMMENTS

1. Alternative C offers 2-3 shelters in the vicinity of the Windigo Dock. Providing additional camping opportunities here would benefit boaters staying on the dock at Windigo and/or other visitors. Maintenance of camping facilities here would be more cost effective than expansion at Washington Island, which would interfere with the historic scene and associated activities that might take place there in the future. These might be good candidates for reservations during the busier periods of July and August.

2. Other Alternatives: Why are some alternatives not considered at all? Visitor crowding at the Rock Harbor area could be relieved by reconstruction of the lodging facilities at Windigo. It could also be improved by building at least a dozen or so rustic cabins there. Construction of campsites near the Windigo dock area would also be of help.

RESPONSE

A new campground at Washington Island is not part of the Preferred Alternative in the WBMP. This action was proposed in the approved 1998 *General Management Plan* (p.36), provided the campground could be added in a way that would not detract from other uses.

Adding 2-3 shelters near the Windigo dock, and potentially increasing the size of the most heavily used campgrounds was included in Alternative C in the WBMP (p.66.) Construction of campsites within the developed zone at Windigo would need additional marketing analysis and are discussed in Alternative C. The review of potential impacts can be found on p.176-180.

Only feasible alternatives in keeping with the GMP are addressed in the draft plan. Construction of a lodging facility at Windigo is outside the scope of this plan.

Campgrounds- General

COMMENTS

1. Additional campsite or campsites at Merrit Lane would be desirable.

2. Two of the potential proposals- adding the trail in Windigo and constructing new campgrounds to spread out use- flies directly in the face of the intense public review process the park went thru in the GMP process. Much thought and discussion went into the rationale and locations of the various zones in the GMP, and the Pristine Zone was established for the significant purpose of keeping new development out. In neither case is there sufficient analysis to aid the reader in understanding if the impacts are significant or not, and this is a serious shortcoming in the document.

3. When you start talking zones I am concerned that any of the existing trails or campgrounds would be downgraded in zone class. For example removal of a shelter or the dock at Siskiwit to

move it from a zone of Wilderness portal or Backcountry to Primitive would be a downgrade in usability. I believe there is currently far more Pristine area on the island then will ever be used. The reason I say this is that most hikers I know prefer the campgrounds with a shelter if they are going to stay in a campground. For example Feldtmann Lake or Huginnin campground could actually use an upgrade in zone so that they did have shelters… Wilderness and Backcountry Facilities section: Shelters would continue to be maintained, though per the GMP no additional shelters would be added to campgrounds within designated wilderness, and shelters will eventually be removed from the Duncan Bay and Siskiwit Bay campgrounds, after the docks are removed. This is my example of a down grade. The concept of removing that dock from Siskiwit drives me crazy. I love that dock when I am out on a backpack trip. I can only imagine what the boaters must have to say about its removal as well as the other dock changes in the GMP. They should all stay as well as the shelter. For example my wife and daughter can now say their first swim in Lake Superior came as a result of jumping off the dock at three mile. It part of the experience. Take it away and it is lost forever.

4. Reference page 54. How can the Park construct a campground on Johns Island when there are no established guidelines associated with the impact on Johns Island Cultural resources? Also, you don't define what an "acceptable impact" is.

RESPONSE

The park's General Management Plan/EIS (1998) contains plans to add 1-2 campsites at Merritt Lane to improve opportunities for paddlers to camp there. GMP approved campgrounds and campsite additions to campgrounds that were field verified for viability were included in the total numbers of the Preferred Alternative. Before a campground is established at Johns Island, the park will complete a review and analysis of the proposed action according to the National Environmental Policy Act and the National Historic Preservation Act. This review will take into account the impacts on the environment as well as potential impacts to the cultural resources at the site.

While expansion of campgrounds to alleviate crowding not included in the GMP is explored in this plan, the Preferred Alternative does not extend beyond the GMP. (More discussion about trails and the Pristine Zone can be found under the "Day Use" comments and responses.)

The establishment of zones occurred under the 1998 General Management Plan. We are not proposing (with the possible exception of the establishment of a Windigo loop trail-see Day Use comments and responses) any revision of zones. The GMP also discusses those areas where the park plans to remove or place structures including docks and shelters. Those issues are not part of this plan. The comment on amount of Pristine Zone area in the park exceeding visitor use misses the basic point about Wilderness designation. Wilderness areas are set aside as premier examples of areas "…where the earth and its community of life are untrammeled by man…" Part of preserving wilderness character and the natural and cultural resources found within it means that it is preserved in as undisturbed a state as possible for current and future generations.

Anchoring Out

COMMENT
Clarification Needed: Page 42 paragraph 6; Can the NPS define what they mean by unacceptable impacts to park resources and values for boater's that are anchoring out? Please provide specifics.

RESPONSE
In the section, Actions Common to All Alternatives, the park specifies that, if in the course of monitoring, it determines that resource damage is occurring due to cross-country camping or anchoring out, it maintains the ability to regulate use to reduce or eliminate resource damage. This is not a new concept: the park always has the ability (and the responsibility) to protect resources from damage. The reason this statement is included here is to clarify that while cross-country camping and anchoring out will continue under all alternatives, they are still subject to the same management considerations that they have always been. An example of a potential restriction on anchoring out would be a protective perimeter established off a section of shoreline where bald eagles or common loons were nesting.

F. VISITATION

Visitor Distribution

COMMENT
Provide more than two entry corridors for hikers and paddlers so as to reduce congestion at Windigo, Rock Harbor and surrounding campsites. This could be done by increasing the taxi service capacity or using the MV Sandy to ferry visitors to other locations. A trial study should be performed such as providing this service during the peak visitation times and maybe use two entry points such as McCargo Cove on the north shore and Chippewa or Malone Bay on the south shore. The impacts of the visitor redistribution throughout the island should be monitored to evaluate the social and environmental impacts. This is in line with suggestions made by researchers (Mayo 2001),3) A model should be developed using GIS and visitor information to evaluate the best possible ways of managing ferry service with campground crowding during the peak visitation times to minimize congestion and improve visitor experiences. Similar to Alternative C suggestion by NPS.

RESPONSE
Currently, the park maintains 2 points of entry for new visitor arrivals because the majority obtain their permits there and receive their island orientation there. If the concession proposed additional ferry runs to other parts of the park, we would consider that request when received. As it stands now, visitors are already able to hire a water taxi or ride the MV Sandy to reach other parts of the park more quickly than if they were hiking from Rock Harbor or Windigo. In addition, the Voyageur II already offers the option of reaching other parts of the park via an established ferry route.

The park is not limiting itself from future consideration of altering ferry routes or schedules. In the event a ferry route was altered, the park would determine if and what type of environmental review was needed.

Shoulder Season Visitation

COMMENTS
1. Some suggestions here: 1) Provide no restrictions on visitation in the spring on the trails and in the campgrounds, 2) Over the next 5 years, design a study that addresses these issues and collect data to substantiate or refute the statements made on page 176…For example: page 176 last paragraph: "Maintaining low visitation in spring would have a long-term moderate effect on natural resources in the park, relative to current conditions" "For example, low paddler numbers on inland lakes in the spring appears to be beneficial to loon nesting (Kaplan and others, 2004). Maintaining low human impacts such as disturbance of nesting loons and human encounters with wolves or wolf pups could results in moderate to major beneficial impacts, whereas minimizing trail widening associated with muddy conditions would be minor to moderate and very localized." These statements seem to be opinions that serve to restrict visitation on the island... Page 58 visitor use levels: Setting the spring visitation level at 20 percent of the park's total camping capacity seems arbitrary and not justified with respect to visitor social conditions or the affected environment. The GMP or the proposed WBMP provides no data to show that the visitor social conditions or the affected environment are being harmed and seems to only be an opinion by the NPS and some researchers.

2. Also significantly lacking in the impacts analysis is the use of real numbers for the reader to understand the potential for increased use in the Fall season, or in some cases the Spring season. For example, on Page 58, under B.2.1, Alternative B talks about allowing increased use in the fall “within the existing ferry capacities and schedules”-why not provide the reader with some real numbers as to what this might mean? Similarly, for spring use is the comment “visitation not exceeding the highest point between 1994-2003”-why not provide those numbers and relate what it means to total visitor numbers, visitor use on the inland lakes as it relates to loon nesting, campsite sharing, etc?.. Having spent 11 Fall seasons on the island, I believe that season is far and away the best opportunity for a superior wilderness experience in the park. The combination of fall colors, low visitation, wildlife activity, and crisp weather provides a superb wilderness experience that cannot be found during the summer months, and that is why that precious period needs to be protected. These temporal aspects of the wilderness quality/character of Isle Royale need attention, for in the end that is one way to provide a range of wilderness experiences to a range of users. If the net result of managing the peak season is to spread the use out and degrade the superb experiences found in the Fall season, then overall the park has failed to manage its wilderness resource…Protect the natural resource-sensitive Spring season by keeping visitor use low, and protect the Wilderness Character-sensitive Fall season by keeping visitor use low. Do not compromise these two use seasons, they are each highly unique for what they provide the park as the foundation of the overall wilderness character of the park…Do not allow for increases in Fall use that potentially match the ferry capacities and schedules- for I do not know what % increase that might be (the document doesn't say) nor is there any logic to managing it to those numbers. If you have to find a number to cap it at, then be consistent and use the same logic you use for spring use, and cap it at the highest Fall use level you've had between 1994-

2003. We should not be so shortsighted and assume that visitation will never rise to the numbers in the Fall that are possible under the maximum ferry capacities and schedules that presently exist- it could happen. There are numerous examples where shortsighted thinking such as that has created real headaches (Yellowstone winter use, for example)...What is most important to protect the wilderness values of Isle Royale, it is those Spring and Fall seasons- I urge you to not compromise them. The document does not adequately evaluate the potential impacts of increasing the visitor use in those periods…Manage the peak season use by spreading it out throughout the summer season better. This may or may not mean lower overall numbers, but the public will adapt.

3. On retaining low use in the spring: The plan doesn't say whether it means boaters as well as backpackers. Backpackers will be limited by the GMP which indicated ferry service schedules will not be expanded, so this caps them on the max end. To keep them at current low levels, ferries would then need to be restricted to historic use. Lake Superior storms and its cold waters have effectively maintained low use for boaters in the spring and fall. They should not be restricted (issuing less permits then the demand) through the permitting process during spring & fall, but rather allow the lake to continue its natural influence on boaters. The same should likewise hold for the fall. (Management action is not necessary, when the lake has and will continue to be such a limiting and controlling factor- Also, I can't see this changing for the life of this current plan.)

RESPONSE
Ferry capacity and schedule data are included in Table 6, Ferry Schedules and Capacities, page 100. Visitation data are included throughout the draft plan, including Tables 7-10, and Figures 2-5. Loon nesting data are found on pages 123-124, including Table 13: Fledging Rates (per territorial loon pair) at Selected Long-Term Monitoring Sites.

Suggested spring visitation numbers are based on historic use patterns, and various levels of spring visitation are reviewed across the range of overnight alternatives. There is no plan to limit boater access to the park any time within its open season. (Park data show a decline overall, thus there is no current need to limit boaters.)

As noted on p.176, there is a need to manage use to ensure that the use of trails and campgrounds does not adversely impact resources. The NPS is obligated to protect resources, and the spring is a time when resources are more vulnerable. We base our choice for maintaining historic use during the spring in the Preferred Alternative on research and Park data that are available, on known life history of park flora and fauna, on professional judgement and on observation of conditions over the history of the park. Studies conducted at the park are cited in the plan (for example, see Chapter 3.3- Affected Environment, Natural Resources, where several studies are cited.) The Preferred Alternative does not propose to restrict or reduce spring visitation, but only to hold it to historic high spring use levels to avoid potential impacts.

Long-term implementation and continuance of the Preferred Alternative would rely heavily on data collected from an extensive and on-going impacts monitoring program to be developed, in

order to facilitate adaptive management and therefore accomplish the objectives identified by the park.

Shoulder season visitation has fluctuated throughout the history of the Park and is limited by current ferry schedules and capacity which are unaltered by this plan. The park has no data to support negative cumulative effects to resources or visitor experience as a result of past peaks in visitor numbers during spring and fall shoulder seasons, or benefits as a result of dips. A thorough, extensive, and ongoing monitoring plan will be developed to test hypotheses regarding impacts of shoulder season use. A commitment to using sound monitoring data for adaptive management is a critical part of the Preferred Alternative to track future issues that may occur as both natural and human influenced impacts on biological processes for both flora and fauna. It will be especially important to monitor if/when usage starts to exceed the past peaks. We have added a more detailed explanation about how we will develop monitoring for individual and cumulative impacts in the respective sections of this document.

Peak Season Visitation

COMMENTS
1. If visitation drops, is the National Park Service prepared to offer comparable subsidies to its competitors, the private operators? Because of the profound effects upon this critical infrastructure service, adequate care in policy choices ought to be exercised. This degree of care is absent in the Action plans, which are generally dismissive of transportation effects.

2. Manage the peak season use by spreading it out throughout the summer season better. This may or may not mean lower overall numbers, but the public will adapt.

3. Further, The Isle Royale Line, Inc. has made extraordinary effort to limit hikers in the peak period by economic means. We charged higher prices during peak period and eliminated group discounts. Yet, the NPS offers a significantly lower price in general ($108 vs. our $116) but an even lower group rate ($90 vs. our $116). We find it disingenuous to decry overcrowding but remain unwilling to try to bring economics to bear on problem-and also to offer discounts to groups. In short The Royale Line has already adopted a number of good-faith policies to limit backpacker traffic in the park during the island's peak period, and we have met with some success. The 19% drop in backpackers since 2002 (the year of the most recent survey of 150 hikers) attests to the success of that endeavor.

4. The NPS has not provided information to the public that shows decreasing the campground or dock crowding significantly impacts the resources or degrades the social conditions to a level that warrants a reservation system. Consequently, it is difficult to make a decision as to whether a reservation system is needed at this time and whether this alternative is a viable option for the public, especially when as the WBMP points out, that during peak visitation, the park campground capacity is at only 68 percent. More information is needed for the public to make a better informed decision.

RESPONSE
The Preferred Alternative would mostly focus on better distribution of visitors during the peak season. The park expects that while overnight visitation numbers may drop slightly during the peak season, that the majority of these potential visitors will opt for scheduling overnight trips as close to the peak period as possible, which will result in highest visitation still in the summer.

The reason for fluctuations in visitation can be caused by many factors, including increased fuel and travel costs to reach ferry locations. Each of the private ferries offers a unique service, whether it is the scheduled trip times, departure and arrival locations, or time spent en route. The Park has allowed concession operators to increase their day use capacity on a trial basis with good results for the Copper Harbor run. The backpacker numbers remained relatively steady and the day use had a significant increase. Therefore, the park does not expect significant changes in the total numbers of passenger use on the ferries beyond normal fluctuations experienced to date. The park may experiment with a peak/shoulder season pricing structure.

The impacts of existing campground or dock crowding are described on pages 102-108, and the impacts of continuing current management into the future on visitor experience conditions are described on pages 165-169. Crowding also was identified as a public concern during scoping for the plan (see p.12) and in previous visitor surveys (see p.15). We believe an advance permit system would improve the visitor experience and therefore is warranted, as described on pp. 174-176.

G. WILDERNESS ZONES

Pristine Zone

COMMENTS
1. CROSS-COUNTRY CAMPING: The potential for harm to the natural resources of IRNP from cross-country camping raises concerns about the decision common to all alternatives to continue with the existing regulations for cross-country camping. The analysis in the EIS explains a variety of the possible negative effects of cross-country camping, but does not address how the Park Service will be able to monitor the impacts of cross-country camping. While the numbers of parties are relatively few per year, we have a concern that parties as large as six may cause damage to the remote areas of the park. We would suggest limiting the size of cross-country camping parties to three or four in the interests of limiting the impacts.

2. Where is the discussion of the incorporation of off trail camping in the pristine zone? THIS DOCUMENT DOES NOT INCLUDE A PERTINENT DISCUSSION OF HOW THE OFF TRAIL USE OF THE PRISTINE ZONE (INCLUDING CAMPING AND HIKING) MAY EFFECT (sic) THE ISSUE OF CROWDING IN THE CAMPGROUNDS, IN ANY OF THE ALTERNATIVES IN A MEANINGFUL WAY. For example, what is the carrying capacity of the pristine zone? How many permits are allowed in this zone and how would this offset crowding in the campgrounds? Not only was the Pristine Zone ignored in the Alternatives Section, the Affected Environment Section does not contain a description of the Zone, and as it would be expected the Environmental Consequences section has no mention of it. The scope of

this plan included the Pristine Zone and as such, alternatives must include this zone along with Affected Environment and Environmental Consequences sections…We support the expansion of certain campgrounds that experience crowding. We advocate the use of the pristine zone for hikers and paddlers that want solitude and we feel the NPS needs to better inform and educate the public of the opportunities and use of the pristine zone…As a background, one must first consider the size of the affected area that is in question with respect to the WBMP. The total wilderness area reported by the NPS is approximately 131,925 acres of land. If we assume that trails are 6 feet wide and there are 165 miles (5280 ft/mi) of trails then there are 5,227,200 ft2 of trail area utilized by visitors. The campground area affected as report by the NPS in Table 12 of the WBMP is 196,160 ft2. The total land area affected is 5,423,360 ft2 or 124.5 acres. So the percentage of wilderness land mass that is used by the vast majority of the visiting public is only 0.0944 percent. This plan only addresses this 0.0944 percent. All the alternatives presented in this document do not incorporate a plan for visitor utilization of the pristine zone which is 99.906 % of the land mass of Isle Royale… In addition, the Draft WBMP fails to provide the carrying capacity of the pristine zone and does not address how the utilization of the pristine zone can alleviate crowded campgrounds during peak seasonal visitation even though the park campgrounds as a whole have never been exceeded.

3. Do not create new development within the Pristine Zone, be it campgrounds or trails.

RESPONSE
The park's zones, and what is appropriate "visitor use" within each, is defined in the GMP (p.30-33). Visitors to the pristine zone experience a pure wilderness setting, free of development, without facilities or trails, with little or no sign of humans or their impacts evident. No facilities are appropriate, and only regulated cross country hiking and camping would be permitted (ISRO GMP, 1998.) Cross-country camping (also referred to as "off-trail camping") has never been intended as a way to alleviate overcrowding in campgrounds. Cross-country hiking and camping require a special set of skills, as well as a special permit, to ensure that no resource damage occurs as a result of this activity. None of the alternatives in this draft plan contain any changes to the current cross-country use regulations (see pp. 31 & 42, and Appendices D &E.) The park's Pristine Zone will continue to offer cross-country hiking and camping opportunities for those who have the requisite backcountry skills and prefer that type of wilderness experience

We disagree with the comment that the WBMP does not fully address visitor use of the wilderness area. First, with regard to the lands in the wilderness used by visitors, statistics must take into account that visitors also access the wilderness area by water, and not necessarily rely on campgrounds or trails. Some people also travel cross country on the island. Thus, the area used by the public is larger than the percentage you cited. The alternatives focus on the major wilderness area issues, which mostly are not in the pristine zone. But the plan does address management of the entire wilderness area, including the pristine zone — the framework for managing wilderness (§2.1, p.28), the description of the land zones (pp.30-31), the no action alternative (§2.2., pp. 34-42), actions common to all alternatives (§2.3, pp. 42-54) cover all of the wilderness area, including the pristine zone.

Isle Royale completed a systematic camping survey in the Pristine Zone over the 2004 and 2005 seasons to locate cross country campsites, determine the extent of cross country camping

impacts, and to develop an effective methodology for future monitoring to compare to the 04-05 baseline survey. The inventory and data analysis methodology used in this inventory of undesignated campsites were adapted from monitoring methods for designated campgrounds created by Dr. Jeffrey Marion for Isle Royale in 1996. The findings showed that currently the majority of cross country campsites had no or minor resource damage, and therefore there continues to be no limit on the number of permits allowed in the pristine zone . The number issued currently is an operational question and varies depending on how many people apply for permits, where they wish to go in the wilderness area, on what day, for how long.

One of the recommendations in the final draft report was that the park should perform a portion of the monitoring each year so that the entire survey was complete every 5 years. These data would then inform future decision making on managing cross country camping. The draft of the final report was not available until after the printing of the draft WBMP/DEIS, and therefore was not cited. Detailed information on the pristine zone survey will be included in the monitoring plan, to be developed subsequent to this plan being finalized.

We are not proposing a significant increase in use of the Pristine Zone in the Preferred Alternative, therefore it does not receive extended discussion in the draft WBMP (for further response to comments on the proposed Windigo Trail, see Day Use comments.) The Pristine Zone, and all areas that fall within the federally designated Wilderness areas of the park, are being and will continue to be managed in ways that are consistent with the Wilderness Act of 1964. The park is not required to consider adding campgrounds under this plan.

Alternative C does include the option of adding campsites and possibly new campgrounds. The Preferred Alternative, with the exception of one new campsite proposed for North Desor and campsites listed in the general management plan, does not consider new campgrounds.

5.2.3 Day Use Alternatives

A. TRAILS

COMMENTS

1. Meanwhile, the Friends opposes the preferred Alternative (Alternative C) because it would create a three- to five-mile trail at Windigo and allows more ferry passengers to reach wilderness areas than is allowed. According to the EIS, the proposed trail "…would remain as much as possible within the non-wilderness boundary." Lacking assurances that all of the new trail would remain out of the wilderness area, where a new trail is incompatible, renders Alternative C as an unfavorable option.

2. Day use management-Additional short day trails make sense. Limit the numbers on ferries during August.

3. On my many trips to I.R., I noticed the main trails out of Rock Harbor and Windigo would be broad from overuse. Tree roots were exposed and surface soils were compacted. As I ventured deeper the trail would narrow and the damage would be less. Your idea to create a 3-5 mile loop near Windigo would improve the quality of the main trails if you made a concerted effort to narrow the broad main trails near the Harbor. I support smaller groups that might use such a loop trail because it will lessen the overall impact on I.R.

4. While it is good that only the new trail gets lumped into one of the Preferred Alternatives, there is insufficient analysis to determine the impacts- what are the impacts to soils and vegetation, to wolf use patterns, to the very rare marten population on the West end?... Two of the potential proposals- adding the trail in Windigo and constructing new campgrounds to spread out use- flies directly in the face of the intense public review process the park went thru in the GMP process. Much thought and discussion went into the rationale and locations of the various zones in the GMP, and the Pristine Zone was established for the significant purpose of keeping new development out. In neither case is there sufficient analysis to aid the reader in understanding if the impacts are significant or not, and this is a serious shortcoming in the document. .. Do not create new development within the Pristine Zone, be it campgrounds or trails…In terms of day-use, I have no particular favorite other than strongly disagreeing with the idea of a 3-5 mile loop trail in Windigo. Nowhere in the document do I see a logical rationale for it, nor have I ever heard a call from the public for such a trail. There presently exist good options for day-hiking in the Windigo area that can accomplish the very same purpose. The notion of needing to separate the backpacking hikers from the day-hikers in Windigo is a very weak justification, nor can I even imagine that situation- day-hikers mingling with backpackers just starting out or leaving Windigo- would be a concern for either group. I never heard this issue raised in the GMP process nor the early days of the WBMP process, and the issue is not expressed in the Section 1.7.4. issues section, nor in the issues associated with the park's GMP. I seriously question whether the typical day-users to Windigo would even use this trail- what is the general makeup of the day-users, and how likely is it that they would pursue a 3-5 mile-day hike during the layover of the ferry boats in question, which supply most day-users? The additional fact that the trail would pass through the Pristine Zone violates the core premise of that zone- the lack of park infrastructure/human development in the zone. A mere few years after the

completion of the park's GMP and there are already efforts to revise the zones to accommodate further development is very troubling.

5. However, the issue does raise some unanswered questions about the location and design of the proposed 3 to 5 mile trail at Windigo. The WBMP indicates an amendment would be made to the General Management Plan to reassign some of the Pristine zone to Backcountry zone, but the EIS suggests the proposed trail might be entirely in the Backcountry zone. The EIS discusses the expected impacts of the proposed trail in a very general way which raises many of the key issues of concern, but doesn't explain how the trail would be designed and how public input would be garnered. While we understand that the initial decision needs to be made among alternatives prior to planning the trail, some guidance on the process used for public input and analysis of the proposed trail would be helpful.

6. We feel the preferred alternative for day use fails to meet the requirements of NEPA. Specifically, the proposed trail. The trail is a site specific action and needs to be addressed as such. This includes specific description of the trail location, specific description of the affected environment and specific consequences to the environment. None of these requirements of NEPA are present.

7. On the other hand, the preferred alternative for day use proposes establishing a new trail within both the Pristine Zone and designated wilderness, with associated major adverse impacts to wilderness on a local scale. Yet there is no data supporting a need for such a new day option in Windigo-no data demonstrating that either the current day hiking options are insufficient or that a significant conflict between day hikers and backpackers exists in the Windigo area. Nor is there any data presented that would support a concern that day use may increase in the Windigo area to the extent that additional trail options would be necessary. A stronger case with sound data supporting that there is a demonstrated need for the trail and the benefits of the new trail would outweigh the costs is needed to justify including this in the final preferred alternative. I am opposed to the creation of this trail.

RESPONSE
The rationale for the new trail is described on p.82. The trail is intended to provide more opportunities for day activities within the vicinity of developed and frontcountry zones, while also improving the overall quality of opportunities for day activities. It would not be built to separate backpackers from day hikers as the comment suggests. We also stated on p.82 that the trail would remain as much as possible within the non-wilderness boundary. We should also point out that the WBMP does not state that a trail necessarily will be built. Rather, the text notes that we will explore options for such a trail. The non-wilderness area surrounding Windigo encompasses approximately 400 acres. The proposed trail location would be primarily in the non-wilderness zone. We are exploring approximately a 224 yard segment of the trail extending into the Pristine Zone. The impacts sections (under Day Use and under Cumulative Impacts-Day Use) have been revised to include additional information pertaining to the proposed loop trail. The park will review all possible non-wilderness zone options for the trail before placing any portion of it in the Pristine Zone, and will not propose more than a 1% incursion into the Pristine Zone. Potential reasons for locating a small portion of the trail in the Pristine Zone include: to avoid sensitive natural or cultural resources discovered in the non-wilderness area; providing an

outstanding opportunity to view a unique natural resource or cultural resource feature that can't otherwise be seen; the need to avoid steep grades. The park will complete all required NEPA compliance for any trail design, tiering the additional compliance work off of the final WBMP.

B. DAY USE VISITOR GROUPS

COMMENTS

1. This proposed arrangement would we believe pose an ongoing challenge for all entities involved. NPS budget constraints in recent years seem to make it unlikely that more NPS interpreters could be made available for the additional staffing required. Tour operators in our experience would be hard pressed to add additional personnel to meet this proposed extra staffing. Isle Royale Resorts fields a two person crew on the M. V. Sandy consisting of a U.S.C.G. licensed captain and deckhand, both of whom have provided some degree of interpretation when needed. Aside from the specific skills needed to operate the boat safely, each crew member is also enrolled in both company required and U.S.C.G. required drug and alcohol testing programs, making the casual addition of lodge provided crew for temporary interpretative duties a difficult prospect.

2. Elderly Visitors: Where is the consideration for elderly visitors in the management plans? Handicapped visitors are mentioned. Up until the closing of Windigo's dining room by fiat of superintendent, there were many days when dozens of middle aged and elderly visitors enjoyed a meal of local fish in the Windigo dining room, while enjoying a view of the harbor, often with moose grazing. Why are not these types of visitors of concern, as opposed to worrying about campers who complain of doubling once in a while? Perhaps your surveys failed to find the elderly because they are mostly gone from visitor samples, victims of errant policy decisions of the past? Why then are these Action policy preferences worthy of reliance if based on incomplete information that ignores some formerly important user groups?

Clarification Needed: Page 43 paragraph 1; Both the Isle Royale Historical Society and the Isle Royale Boater's Association hold annual meetings at Rock Harbor Lodge. Both organizations hold one day meetings to support various activities related to helping the NPS promote various activities on Isle Royale that benefit both the NPS and the public. Will placing the limit on the size of the groups in the park impact the activities of these organizations?

3. Day use--I understand Edison Fishery is designated frontcountry, w/ group size 20. I'd like some guidance on group size for those who walk to Bangsund--some guided (IRI), some not. RH lodge is interested in more formal advertising of the option to hike to Bangsund for Sandy passengers. Usually only guided trips exceed 10, but family groups may exceed 6. It appears Bangsund is in a pristine zone, so we need consideration for appropriate group size. There is a distinct advantage in keeping organized groups together (saves time for researchers, especially). People do no make that hike (Edisen-Bangsund) for a wilderness experience, rather to learn about wolves and moose. Finally, I understand the advertising the "Bangsund option" would be cleared through NPS, as Greenstone would be the venue--all I know is RH lodge is interested.

RESPONSE
First, to clarify: overall day use numbers will not be limited. Limitations were proposed for day use tour groups, not unrelated visitors who may incidentally arrive at the same time at a given site from various other parts of the park (off ferries or off private boats, or on foot.) Also, no restrictions were proposed for use of developed areas.

Based on some of the concerns raised during the comment period, we re-designed the day use tour size limits under Preferred Alternative C. as follows: Frontcountry Zone: group size limit of 40 (includes all previously listed destinations in draft plan, plus now includes Lookout Louise, Hidden Lake, and McCargoe Cove.) Wilderness Portal, Backcountry, and Primitive Zones (excluding those listed above): group size limit of 20. Pristine Zone: group size limit of 6. The park will manage other commercial use based on trip dates and activities to avoid exceeding these numbers at a particular site by organized groups, giving concession tours precedence because of their established schedules within the park. The potential impacts of this revision fall within the range of impacts in the No Action Alternative, where no limits exist in any of the zones.

The final plan includes a more detailed discussion on the above changes under all areas pertaining to the Preferred Alternative for Day Use, as well as in the Cumulative Impacts section for the combination of all preferred alternatives.

Based on the comment regarding Bangsund Cabin's location in the Pristine Zone, we re-examined the GMP mapping and determined that in fact, Bangsund Cabin should have been mapped as a Backcountry Zone. It does not meet the definition of Pristine Zone, and it appears that mappers made an error during the development of GMP maps by not designating it correctly as Backcountry. The organized group size for Bangsund Cabin is 20 under the revised Preferred Alternative.

Regarding consideration of elderly visitors, we conducted surveys across all of our user groups to determine what visitors perceived as problems or concerns (Pierskalla and others, 1997 and 1998.) It is our responsibility to be responsive to our user groups, and while we welcomed (and solicited via various accepted means) public comment from anyone who had substantive comments to make, it is not feasible (or even appropriate) for us to target one particular demographic group which may normally be underrepresented at the park. We are aware that certain user group are underrepresented for various reasons (including logistical difficulty and expense of reaching the park), and we are trying to increase opportunities where possible. For example, the Park has been working with Isle Royale Institute to enhance programming and opportunities for underrepresented groups, including the elderly.

5.2.4 Campfires

COMMENTS
1. At no time did I think that my wilderness experience was diminished because of a lack of a camp fire. Please increase the area and time frame where campfires are not permitted. I don't believe campfires are in use very much as a cooking method. I don't believe that the aesthetics of a campfire are worth the local resource impacts that results.

2. Campfires- In the 1970's, the Park loaded up the landing craft and put pulp sticks at every lakeshore campground. The Park also provided a saw and axe at every campground. Visitors were invited to cut trees. In effect, the visitors were trained to expect fires. Now, policy has changed-we all have the right to get smarter. While rotation of sites sounds reasonable, I think this will be hard to manage. I would limit to very few locations, and ban during fire seasons.

3. Our members observe that the importance and attractiveness of campfires is likely to be significantly greater in the spring and fall when the weather is more likely to be cold, and it would be advisable to use the Backcountry permitting office to assure that visitors are aware of whether their routes take them to campsites with fire rings.

4. NPS should prohibit the importation of firewood to the island to prohibit introducing invasive species such as the Ash borer or japanese beetle creating more problems with the island.

RESPONSE
The Preferred Alternative balances some visitors' desire for campfires with the need to minimize resource damage. The park would maintain the flexibility to remove fire rings or rotate the location of fire rings among campgrounds. Rotation of fire ring sites is based on the ability of the park to maintain adequate monitoring of resource damage at sites/campgrounds with fire rings, and the analysis of fuel loading and resource sensitivity in any campgrounds to be included in the rotation cycle. If the park was not able to devote adequate staff time to resource sensitivity assessment and monitoring, campfire use would be eliminated. In effect campfires are limited by this policy.

Under the Preferred Alternative, the centralized permitting process would inform visitors where campfires are allowed. The visitors' permits would continue the current practice of stating whether campfires were allowed in each campground on a party's itinerary.

All alternatives in the WBMP include a prohibition on transport of firewood into the park from outside sources. The purpose is to prevent the introduction and spread of invasive exotic species.

5.2.5 Fire Towers

COMMENTS

1. I enjoy climbing the firetower at Feldtmann. I would think with the Park Service upgrading communication and the use of wifi, the towers would be a logistical choice instead of having to install the required tower for cell service for instance.

2. Fire Towers-Like other cultural resources, these reflect a past period in the Park's history. I would leave in place, and when maintenance and safety become an issue, dismantle and leave on the ground in place. Just like the boiler at Daisy Farm, or the ore car in McCargoe Cove or the house on Newman Island, or the boathouse on Savage Island. Save the taxpayers $100,000, or use the money for another valuable interpretive need at the Park. I think the firetowers reflect a different period, one that has equal value in the history of the island.

3. It is not prudent at this point to make any decisions on the fate of the Fire Towers because they are cultural resources and should be discussed in the cultural resources plan.

4. I would like to see Feldtmann Tower remain. 1. It's too expensive to dismantle and remove. 2. It may be a very fine interpretive site in the future, when Isle Royale puts more resources into interpretation rather than law enforcement. 3. It is at present useful for research--monitoring radio signals, for example.

5. This situation is not only a jarring intrusion to the wilderness experience but is also a serious danger to hiker safety. Because the tower is so low and the view obscured by trees, a tall crows nest was added on top of the roof. We know from a number of accounts from other hikers, that people climb up onto roof and up into the crows nest. Even when the gate is down and locked, people scramble up and over the catwalk fence. An accident is waiting there to happen…If the whole fire tower can't be removed soon, at a minimum the crows nest should be taken down right away. The radio antenna tower, which provides access from the catwalk to the roof, should also be removed. In addition, until the tower can be removed, the cabin should be secured from unauthorized entry or perhaps any entry at all. This would have to include covering the broken windows (or perhaps all the windows) and getting a real lock on the door or rendering it unopenable…. Contrary to what the Wilderness and Backcountry Management Plan asserts, the tower is NOT always kept locked. In early May of 2004 the catwalk gate was unlocked and open and the door to the cabin was unlocked and open as well. In early May of 2005 the catwalk door was down and locked but the cabin door stood wide open. And in October of 2005 we talked to hikers who had recently gone past and who said that both the gate and the door were open and furniture from the cabin was outside underneath the tower…

6. While dismissed as an option, the Friends indeed prefers the removal of the island's third tower, the Ojibway. It is incompatible for a wilderness area to have a 41-foot structure, particularly one that is no longer used for its intended purpose, fire monitoring. Leaving one tower for administrative purposes is counter to the intent of the Wilderness Act of 1964, which defines wilderness as an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements. The Forest Service is able to maintain campsites,

trails, and portages in the Boundary Waters Canoe Area Wilderness without permanent structures in the wilderness, and the Park Service should be able to perform comparable duties without such structures in Isle Royale's wilderness area.

RESPONSE
Leaving one tower in place, the Ojibway Tower, allows visitors to see an example of how fire towers were placed during the island's history, while also facilitating current park needs. The Ishpeming Tower currently serves no essential administrative purpose for the park, and stands as a non-historic permanent artificial structure in the wilderness. Under the Wilderness Act, structures that are not essential to the park's operation should not remain in wilderness areas.

Since the release of the draft WBMP/DEIS however, a telecommunications study at the park has shown that using the Feldtmann Tower may be an alternative to building a new structure for radio and telephone transmission equipment. In addition, Feldtmann Tower is used to assist with telemetry tracking in certain research projects. If as a result of using the Minimum Tool Process, we determine that retaining Feldtmann Tower for either of these uses results in less impact to the backcountry than other technological or structural solutions, the park may decide to keep Feldtmann Tower intact for administrative purposes. Unless this is the case, the previous direction of the park is to remove the tower. This analysis has allowed for review of that decision with public comment.

Vandalism at the towers does occur, despite that fact that the park has tried several different potential solutions (everything from leaving them open to locking them). Patrols, repairs, keeping gates shut and locked, are all part of management, however the towers' isolation makes enforcement difficult. Enforcement is not the critical question for removal, however: it is the need for the tower for administrative purposes and cultural resource values. The park would use the Minimum Tool Process and NEPA compliance to determine how to remove one or more towers. Dismantling and leaving the structural debris in place is an option that can be evaluated. Management concerns with this option would include the chance for visitor injury, and the effect of the debris on the wilderness character in the park.

5.2.6 Picnic Tables

COMMENTS
1. Picnic tables- Either leave in place until they need maintenance and then remove, or remove all tables now.

2. We urge that where the Park Service moves forward with removing docks and structures at campgrounds, picnic tables should also be removed from those sites.

3. Under this scenario, human use (of picnic tables) will trump that of a remote experience and yield a look that more resembles a park than a wilderness area.

4. I therefore propose all picnic tables be removed and in their place I propose that you institute a plan to add on to the shelters (which have an wilderness exemption) and make a deck extension that would be part of the shelter itself in the front length of the shelter that would go out to within 2" of the drip line of the overhanging eave. People could sit naturally on this deck as nature intended, cook their meals, place gear on it and even sleep out there at night if they so desire. This is my natural solution to picnic tables. The deck would be part of the shelter itself and exempt from wilderness standards. The upkeep of the shelters would also include the deck. I believe it would be a great change that would be acceptable to all.

5. I believe the reason the park is doing this is that the GMP calls for taking out the dock on Birch Point and, therefore, the picnic table must go. I find both of these removals unnecessary. Such removals would have the effect of taking away a very nice day or half day boat trip and picnic place. People of Isle Royale are able to access the beautiful headwaters of Duncan Bay, i.e. the "solitude and remoteness" of that location, which is convenient to Tobin and Rock Harbors. My family and I have enjoyed numerous excursions to this beautiful spot where we have often observed wildlife and birds such as eagles, osprey, loons, and moose in the headwaters. Having the dock is a ready shelter in the event of a sudden storm, and the picnic table has enabled us and many other visitors to enjoy a picnic in this picturesque place as well as a rest afterwards. Children are able to play and cast off the dock for a possible pike.

RESPONSE
Since this draft plan was released, the National Park Service has revised and edited its policy with respect to picnic tables: picnic tables will not be allowed in wilderness except in those limited circumstances when they are necessary for resource protection and when documented and approved by the park through a minimum requirements analysis (NPS Policies, 2006.) The park has re-evaluated the placement of picnic tables using the minimum tool guidelines. The review included reduction of negative human impacts (compaction, loss of vegetation), as well as the impact on wilderness character, and possible design changes to help the tables be less noticeable. The Preferred Alternative has been changed to be consistent with NPS policy.

The park does not plan to increase infrastructure in the wilderness, so the alternatives were limited to maintaining or eliminating picnic tables. Currently visitors have an option of sleeping

in shelters or camping at non-shelter sites. Picnic tables offer a structure on which to place food, and a place to sit (a deck is not a comparable amenity.)

Farrel and Marion (1998) found that campsites on Isle Royale with picnic tables were significantly smaller in area of disturbance than those without tables. The size, area of vegetation loss, and exposed soil for sites with picnic tables were consistently between 100-250 ft^2 smaller than comparable sites without picnic tables. For example, in 1996 the mean size of individual campsites with picnic tables was 549 ft^2, compared to 717 ft^2 for sites without picnic tables. In 2002 the mean size of individual sites with picnic tables was 581 ft^2, compared to 831 ft^2 for sites without picnic tables. The presence of picnic tables in campsites appears to concentrate physical impacts such as vegetation loss, soil exposure, and total area of a campsite. This suggests that picnic tables are effective tools for concentrating physical impacts in campsites.

Based on the results of the Minimum Tool flowchart as a decision tool (Appendix I, p. 320), retaining picnic tables at the campgrounds listed under the Preferred Alternative is consistent with current NPS policy.

The removal of the dock at Duncan Bay (Birch Point) was a decision made in the 1998 General Management Plan, and is not being revisited in the WBMP. (See p. 37 and pp. 34-37 in the General Management Plan). However, your comment that the picnic table would be automatically removed is incorrect. We will review the continued presence of the existing picnic table consistent with the new NPS policy requirements.

GLOSSARY

Adaptive management: a process for continually improving management policies and practices based on monitoring and ongoing assessments of management effectiveness.

Affected environment: resources expected to experience environmental impacts as a result of a proposed action or actions.

Alternatives: Options for different management actions that would be expected to achieve the general purpose of a project. For the purposes of this WBMP and EIS, the alternatives propose different means of accomplishing park goals, while at the same time protecting or minimizing impacts to some or all resources.

Archeological sites: sites containing physical evidence of historic or prehistoric human use of an area, including mining, trade, residences, travel routes, and other human activities.

Carrying capacity: as it applies to National Parks, carrying capacity is the type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that are consistent with the purpose of a park and its management objectives.

Cultural landscape: geographic areas that include natural and cultural resources and that have cultural significance when taken as a whole, including areas associated with a historical event, activity, or person and areas that exhibit cultural or aesthetic values.

Cultural objects: Objects of historic or prehistoric cultural significance, including archeological artifacts, shipwreck artifacts, and objects remaining from past human uses of an area.

Cultural resources: an aspect of a cultural system that is valued by or significantly representative of a culture or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural practice.

Cumulative effects: additive impacts to a particular resource, including impacts in the past, present and reasonably foreseeable future.

Designated wilderness: *See Wilderness*

EIS: Environmental Impact Statement, which is an examination of a range of federal actions and their potential effects on the environment.

Endangered species: a plant or animal that is in danger of becoming extinct throughout all or part of its range and has been listed under the Endangered Species Act by the federal government or is listed by the State as endangered, and therefore receives special protection.

Ethnographic resources: resources related to cultural systems or lifestyles that have significance to native peoples or historic communities; including prehistoric and historic sites, structures, landscapes, fauna and objects as well as natural resources like rivers, watersheds, and plant species.

General Management Plan (GMP): the broadest level of planning used by the National Park Service to provide an overall direction for a park's future management and a framework for managers to use when making decisions about things such as park resources, visitor use, and facilities.

Historic property: a district, site, structure, or landscape that is significant in American history, architecture, engineering, archeology, or culture; an umbrella term for all entries in the National Register of Historic Places.

Impacts: effects, both beneficial and adverse, of an action on the environment. Direct effects are those occurring at the same time and place as the action. Indirect effects occur later in time or are farther removed in distance from the action, yet are reasonably foreseeable.

Impairment: 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 future enjoyment of these resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

Minimum Tool: the management actions, administrative practices, proposed special uses, scientific activities, and equipment used in wilderness that would have the minimum impact on wilderness character and resources, with economic efficiency and convenience given significantly less weight. If a compromise of wilderness resources or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable.

Mitigation: an activity designed to avoid, minimize, rectify, eliminate, or compensate for the impacts of a proposed project. A mitigative measure should be a solution to an identified environmental problem.

Monitoring: a systematic means of measuring resource and social conditions repeatedly over time to evaluate whether existing conditions or the nature of changing conditions meet management goals.

National Environmental Policy Act (NEPA): This act requires full disclosure of the impacts that would result from a proposed federal action that would have a major effect on the quality of the environment.

National Register of Historic Places: The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state and local significance in American history, architecture, archeology, engineering, and culture. This list is maintained by the National Park Service under authority of the National Historic Preservation Act of 1966.

Natural resources: Things that occur in their natural state—wildlife, water, vegetation, soils, etc. Features and values that include plants and animals, water, air, soils, topographic features, geologic features, paleontologic resources, natural quiet, and clear night skies.

Potential wilderness: lands that were identified in wilderness legislation as qualifying for future, but not immediate designation as wilderness due to a temporary, non-conforming or incompatible condition. When the non-conforming use ceases these areas would become designated wilderness upon determination by the Secretary of Interior.

Scoping: an publicly open planning process that solicits people's opinions about the management of the park, including their opinions and concerns about the value of the park, desired experiences as visitors, desired resource conditions, and appropriate management actions. Scoping aids in identifying important issues, defining objectives, and defining a range of appropriate alternatives.

Soundscape: The natural soundscape is the aggregate of al the natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials.

Threatened species: a plant or animal species that is at risk of becoming endangered and has been listed under the Endangered Species Act by the federal government or is listed by the State as threatened, and therefore receives special protection.

U.S.C.: *United States Code* contains the general and permanent laws of the United States.

Visitor experience: the perceptions, feelings, and reactions a person has while visiting a park, as well as certain conditions that influence the quality of the visitor experience, including the condition of natural and cultural resources and visitor services.

Wilderness: *also Designated Wilderness*. An area that has been legislatively included within the national wilderness preservation system by acts of the Secretary of Interior, a Presidential recommendation, and congressional approval, and therefore falls under the legal guidelines of The Wilderness Act and policies of the NPS for wilderness management.

Wilderness character: an often intangible entity consisting of multiple components such as a state of naturalness, an untrammeled state, and opportunities for certain human experiences including solitude, primitive and unconfined experiences, personal challenge, self sufficiency, and an escape from the remainders of out modern society. Wilderness character also denotes a human intention with a commitment to the spirit of the intangible wilderness character.

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7. Isle Royale National Park

An Act To provide for the establishment of the Isle Royale National Park, in the State of Michigan, and for other purposes, approved March 3, 1931 (46 Stat. 1514)

Isle Royale National Park, Mich.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That when title to all alienated lands within Isle Royale in Lake Superior, Keweenaw County, Michigan, and immediately surrounding islands as shall be designated by the Secretary of the Interior in the exercise of his judgment and discretion as necessary or desirable for national-park purposes, shall have been vested in the United States and exclusive jurisdiction over the same shall have been ceded by the State of Michigan to the United States, said area shall be, and is hereby, established, dedicated, and set apart as a public park for the benefit and enjoyment of the people, and shall be known as the Isle Royale National Park: *Provided*, That the United States shall not purchase by appropriation of public moneys any lands within the aforesaid area, but such lands shall be secured by the United States only by public or private donation. (U.S.C., 6th supp., title 16, sec. 408.)

Establishment, etc.

Proviso. Lands to be secured without Federal cost.

SEC. 2. The Secretary of the Interior is hereby authorized, in his discretion and upon submission of evidence of title satisfactory to him, to accept on behalf of the United States title to any lands located on said islands offered to the United States, without cost, as may be deemed by him necessary or desirable for national-park purposes. (U.S.C., 6th supp., title 16, sec. 408a.)

Acceptance of title.

SEC. 3. The administration, protection, and development of the aforesaid park shall be exercised under the direction of the Secretary of the Interior by the National Park Service, subject to the provisions of the Act of August 25, 1916 (39 Stat. 535), entitled "An Act to establish a National Park Service, and for other purposes," as amended: *Provided*, That the provisions of the Act approved June 10, 1920, known as the Federal Water Power Act, shall not apply to this park. (U.S.C., 6th supp., title 16, sec. 408b.)

Administration by National Park Service.

Vol. 39, p. 535. See p. 9.

Proviso. Federal Water Power Act not applicable. Vol. 41, p. 1063.

11. Isle Royale

An Act to designate certain lands within units of the National Park System as wilderness; to revise the boundaries of certain of those units; and for other purposes. (90 Stat. 2692) (P.L. 94-567)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), the following lands are hereby designated as wilderness, and shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act.

* * * * * * *

(f) Isle Royale National Park, Michigan, wilderness comprising one hundred and thirty-one thousand eight hundred and eighty acres, and potential wilderness additions comprising two hundred and thirty-one acres, depicted on a map entitled "Wilderness Plan, Isle Royale National Park, Michigan", numbered 139-20,004 and dated December 1974, to be known as the Isle Royale Wilderness.

* * * * * * *

SEC. 4. The boundaries of the following areas are hereby revised, and those lands depicted on the respective maps as wilderness or as potential wilderness addition are hereby so designated at such time and in such manner as provided for by this Act:

(a) Isle Royale National Park, Michigan:

The Act of March 6, 1942 (56 Stat. 138; 16 U.S.C. 408e-408h), as amended, is further amended as follows:

(1) Insert the letter "(a)" before the second paragraph of the first section, redesignate subparagraphs (a), (b), and (c) of that paragraph as "(1)", "(2)", "(3)", respectively, and add to that section the following new paragraph:

"(b) Gull Islands, containing approximately six acres, located in section 19, township 68 north, range 31 west, in Keweenaw County, Michigan.".

(2) Amend section 3 to read as follows:

"SEC. 3. The boundaries of the Isle Royale National Park are hereby extended to include any submerged lands within the territorial jurisdiction of the United States within four and one-half miles of the shoreline of Isle Royale and the surrounding islands, including Passage Island and the Gull Islands, and the Secretary of the Interior is hereby authorized, in his discretion, to acquire title by donation to any such lands not now owned by the United States, the title to be satisfactory to him.".

SEC. 2. A map and description of the boundaries of the areas designated in this Act shall be on file and

available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the office of the Superintendent of each area designated in the Act. As soon as practicable after this Act takes effect, maps of the wilderness areas and descriptions of their boundaries shall be filed with the Interior and Insular Affairs Committees of the United States Senate and House of Representatives, and such maps and descriptions shall have the same force and effect as if included in this Act: *Provided*, That correction of clerical and typographical errors in such maps and descriptions may be made.

SEC. 3. All lands which represent potential wilderness additions, upon publication in the Federal Register of a notice by the Secretary of the Interior that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness.

SEC. 6. The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

* * * * * * *

Approved October 20, 1976.

APPENDIX C: DETERMINATION OF IMPAIRMENT

Isle Royale National Park Wilderness and Backcountry Management Plan / EIS

A determination of impairment is made for each of the resource impact topics carried forward and analyzed in the environmental impact statement for the preferred alternatives. The description of the park significance in Chapter 1 was used as a basis for determining if a resource is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park , or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

Impairment determinations are not necessary for visitor experience, socioeconomics, public health and safety, environmental justice, land use and park operations, etc., because impairment findings relate back to park resources and values. These impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired the same way that an action can impair park resources and values.

NATURAL RESOURCE TOPICS

Geology & Soils

The geologic history of Isle Royale began roughly 1.2 billion years before the present. Over millions of years a series of lava flows built a lava bed 10,000 feet thick which then began to bend at the sides forming the Lake Superior basin. The soils of Isle Royale have been strongly influenced by the underlying bedrock topography and by the last glacial advance. They were later modified by higher lake levels and eolian deposits. In general, the upland soils are loamy in texture, have a high percentage of coarse fragments and are relatively shallow to bedrock. The lowland soils of the island are found in the valley portion of the ridge-valley landscape of the island. They are dominantly very poorly drained and were either formed from woody or herbaceous vegetation or a combination of the two. Most of the soils at Isle Royale are very sensitive to disturbance, with erosion being the main concern on the shallow upland soils, and soil displacement (rutting) or instability being common on the lowland soils.

Soils and their microhabitats are known to be affected by recreation use and construction and maintenance of trails and campgrounds. Geologic features may have scientific, historic, and/or aesthetic significance. Potential adverse impacts include general disturbance, loss of ground cover, compaction of soil, alteration of geologic features, and erosion. Actions in the preferred alternatives would result in negligible and short-term adverse impacts to the soils associated with the construction of one additional campsite at North Desor campground and a day use hiking trail near Windigo. Minor, localized soil impacts may also be expected where campfire rings are installed as social trails are likely to develop at these sites. Rotation of campfire rings to

different campgrounds should mitigate these adverse impacts. A long-term beneficial impact is expected by retaining picnic tables in campgrounds where currently present by concentrating soil erosion around the area immediately adjacent to the picnic table. Because these impacts are short-term, slight, and localized, the preferred alternatives would not result in impairment. No impacts to geologic resources are expected.

Aquatic Resources

The diverse fishery of Lake Superior and inland waters of Isle Royale represent one of the most nationally significant natural resources in the park. The importance of the park's native fishery is highlighted as a park significance statement in the General Management Plan (GMP, 1999), "Park waters contain the most productive native fishery and genetically diverse lake trout populations in Lake Superior. The lake trout is recognized as the best example of a rehabilitated lake trout population in Lake Superior. The coaster brook trout population, considered to be rare, is one of two known reproducing populations in U.S. waters. Twenty-eight species of fish, including sub-species of the whitefish, fathead minnow, striped-nose shiner and pearl dace have been recorded. The fisheries provide an outstanding opportunity for recreational fishing for many park visitors.

Isle Royale is known to be rich in aquatic resources with 42 named lakes, and 233 kilometers of perennial streams. Isle Royale's inland lakes harbor an abundant and healthy assemblage of fresh water mussels and sponges not readily seen elsewhere within the region. Additionally, shoreline splash pools along the Lake Superior shoreline of the northeastern portion of the park have garnered considerable scientific attention because of their ecological simplicity, ecological interactions and population dynamics of boreal chorus frogs, blue spotted salamanders and dragonflies.

NPS policies require protection of water resources consistent with the federal Clean Water Act. Over 75% of Isle Royale's acreage is water that includes Lake Superior and many lakes, bogs, ponds, marshes, and streams. Human activities in campgrounds and along the trails adjacent to lakes and streams on Isle Royale could impact aquatic resources through soil erosion or introduction of contaminants or invasive exotic aquatic species. Healthy fisheries, and aquatic resources and their associated communities are necessary to fulfill the purposes for which Isle Royale was established and essential to the natural integrity and preservation of the park's ecosystem. Those actions outlined in the preferred alternatives are not expected to impact aquatic resources and therefore, will not result in impairment.

Wetlands and Floodplains

Presidential Executive Orders mandate floodplain management and protection of wetlands. There is an estimated 7,000 hectares of wetlands in the park. These wetlands support numerous wetland taxa, several of which are Endangered, Threatened, or of Special Concern as listed by the State of Michigan. Furthermore, it is believed that the aquatic plant communities in Isle Royale wetlands may have been considerably altered due to intense moose herbivory. Numerous wetlands, including marshes, bogs, and vegetated lakes and pond shores, support considerable biodiversity and in addition to providing areas for unique groups of plants, wetlands provide

required food, habitat, and cover for fish, birds, mammals, and a host of invertebrates. Actions outline in the preferred alternatives mainly take place in upland habitat or sufficient distance from shorelines. As such, the preferred alternatives would not result in impairment to wetlands.

Vegetation

Isle Royale is located at the ecotone or transition zone between the boreal and northern hardwood forest ecosystems. The southwestern end of the island completes the northern extent of the hardwood forest and is populated by sugar maple, yellow birch and to a lesser degree, red oak. The white spruce and balsam fir forest form the southern limit of the boreal forest. Its vegetative communities and rare plant species are among its most important assets. Isle Royale has over 700 vascular plant species—24 kinds of trees, 28 species of ferns, 32 varieties of orchids, over 100 types of forbs and grasses, and 40 species of lichens (non-vascular). There is also one endemic plant, the Isle Royale ragwort. The southern shoreline of the northeastern portion of Isle Royale is home to several species of arctic-alpine disjunct plant species. Forest succession is greatly influenced by moose herbivory and secondarily, the activities of beaver.

The preferred alternatives would result in primarily long-term, moderate beneficial impacts by: reducing campground overcrowding, maintaining low visitation in spring when wet conditions increase trail widening and thus vegetation impacts, and rotating campfire rings and retaining picnic tables to concentrate visitor impacts. Long-term minor adverse effects would be realized with the construction of a new campsite at North Desor and a new hiking trail near Windigo. In total, these impacts would not result in impairment.

Terrestrial Wildlife

The isolation of Isle Royale affects the relatively simple ecosystem and limits the potency of human influences. Many species common to the mainland, a little over 20 miles away, are not found on Isle Royale. With just 18 mammalian species, the principles and paradigms of island biogeography are at work on the island. Less affected by isolation, greater than 200 bird species have been documented. Notably, the park is home to an estimated one third of the state-threatened common loon population with greater than 100 breeding pairs. This simplified ecosystem is accentuated by the paucity of reptiles, only 3 species, and amphibians, 9 species.

Human activities are known to impact wildlife species and possible impacts from recreation and other human activities in the park's wilderness and backcountry include habitat fragmentation, displacement of wildlife, and habituation to humans. Construction of the trail near Windigo and the additional campsite at North Desor could have long-term, moderate adverse impacts but minor impacts are projected at the population level. Long-term beneficial impacts are expected by the concentration of visitor activities around campfire rings and picnic tables, and the removal of the Feldtmann and Ispheming Fire Towers. However, long-term, minor adverse impacts to wildlife may be associated with the collection of campfire wood (e.g., tree damage, social trails, loss of woody debris adjacent to the campfire). Because the preponderance of impacts are minor to moderate and not expected to impact any species at the population level, actions associated with the preferred alternatives would not result in impairment.

Threatened and Endangered Species

The federal Endangered Species Act prohibits harm to any species of fauna or flora listed by the U. S. Fish and Wildlife Service (USFWS) as being either threatened or endangered. Such harm includes not only direct injury or mortality, but also disturbing or destroying the habitat on which these species depend. One federally threatened species – the grey wolf – inhabits Isle Royale. The Michigan Department of Natural Resources also publishes a list of species threatened and endangered within the state. NPS policies require that parks manage state and locally listed species "in a manner similar to its treatment of federally listed species, to the greatest extent possible" (NPS 2006 p. 35). Among state-listed animal species occurring on Isle Royale are the moose, common loon, and osprey. Over 75 state-listed plant species are also documented in the park.

Viable populations of special status species are necessary for the park to fulfill its mandates prescribed by policy. Moreover, viable populations perform critical ecosystem services and are key to the natural integrity of the park. Actions in the preferred alternatives are not expected to impact threatened or endangered species. Prior to implementation, surveys and habitat assessments will be completed to determine presence, particularly plant species, and potential impacts and mitigations for special status species. Long-term, moderate beneficial impacts will be realized by concentrating visitor use with campfire rings and picnic tables, and the removal of two fire towers. As such, the preferred alternatives would not result in impairment.

Natural Sights and Sounds

NPS management policies call for the preservation of, "to the greatest extent possible, the natural soundscapes of parks" (NPS 2006, p.44). Additionally, the preservation of wilderness character and values includes the preservation of natural sights and sounds, minimizing the visual and noise intrusions of modern human activities. Development, facilities, and tools for park maintenance and administration can impact the sights and sounds of the park, and some of the proposed alternatives could alter the current state of natural sights and sounds in Isle Royale's wilderness and backcountry. Because of its isolation, the natural sights and sounds on Isle Royale are only minimally impacted by boat and commercial airplane traffic, and a visitor has opportunities to experience the call of a wolf or loon, the distinct rustling of wind through aspen trees, and the awesome power of a storm on Lake Superior. These and other natural sights and sounds expected in a Northwood's environment are preserved at the park in large part by the island's isolation and secondarily the lack of development.

Preservation of natural sights and sounds on Isle Royale are necessary to fulfill the purposes for which the park was established. Although chainsaw use, an action common to all alternatives analyzed, will in some ways help preserve other resources from impacts, continued use in the park will have moderate impacts on the soundscape. These impacts will be mitigated by the continued practice of not permitting chainsaw use in the wilderness areas of the park from mid-June through mid-September, as well as, the goal of increasing crosscut use. Because the nature of chainsaw use is high level, short-term and localized, the preferred alternatives will not constitute impairment. No other actions outlined in the preferred alternatives are expected to adversely impact the natural sights and sounds of Isle Royale.

CULTURAL RESOURCE TOPICS

Archeological Sites

The earliest evidence of human use of the island is found in the 186 designated archeological sites documented in the park. These sites include copper mining pits, native/European contact and trade sites, historic settlements and lighthouses. Archaic period peoples (approximately 2500 to 1000 BC) are connected to at least twelve identified archeological sites. Initial (1000 BC to 700 AD) and Terminal or Late (600 – 1650 AD) Woodland people are associated with many more sites. In all more than 1000 mining pits scattered throughout the park are attributed to these native groups.

The Minong Mine site is presently listed on the National Register of Historic Places and the majority of the other 186 archeological sites have been recommended for nomination. These sites contain potential information about the island's earliest uses and may be determined eligible for the National Register.

Archeological sites also contain historic remnants along with prehistoric evidence. Mining pits and settlements and lighthouse-associated sites have all been identified from the historic period. Fur trade and Native/European contact goods have been found in various places. Many historic activities such as commercial fishing and fur trading occurred on or near prehistoric sites. Many known archeological sites have been identified as a result of NPS trail and campsite construction. The location of campgrounds – primarily along the coast of Lake Superior and the inland lakes – is also the natural location of historic and prehistoric activity. Noting that the Lake Superior basin has featured numerous shorelines over the past 10,000 years, there is reason to believe that some of the archaeological contexts are now submerged. Additionally, much of the park's interior has not been surveyed and may contain numerous undiscovered sites.

Shipwreck sites and other submerged cultural features are now preserved as submerged archaeological sites in the park, and 10 of the wrecks are listed on the National Register of Historic Places.

Under the preferred alternative, archaeological features (terrestrial and submerged) would continue to be surveyed, inventoried and evaluated under National Register of Historic Places criteria, and the National Park Service would implement resource management policies that preserve the natural resource values and culturally significant archaeological settings and contexts that have been listed, or determined eligible. Some slight impacts from visitation could occur if visitation to archaeological sites were to increase or if the Windigo day use hiking trail and North Desor campground installations are situated in archaeological settings. However, because of protective efforts and continued monitoring, the preferred alternatives would not result in impairment to these resources.

Historic Structures

The park contains approximately 180 structures that are more than 50 years old, most of which are located within the park's wilderness and backcountry. These structures are from the various

historic eras of island use and development. Some of the structures are representative of the island's maritime heritage, such as lighthouses and fishery sites. Many cabins, hotels and associated buildings are from the resort era and the early development of the park idea at Isle Royale.

Three of the four lighthouses within the boundaries of Isle Royale National Park are listed on the National Register of Historic Places. The 1855 Rock Harbor Lighthouse is the oldest existing structure in the park and under NPS jurisdiction. Control of the three additional lighthouses (Isle Royale Lighthouse at Menagerie Island, Passage Island Lighthouse and Rock of Ages Lighthouse) is in the process of being transferred from the Coast Guard to Isle Royale National Park. Two of these structures, Isle Royale and Rock of Ages, are listed on the National Register, while the Passage Island Lighthouse has been determined eligible but has not yet been nominated.

Two other locations are also listed on the National Register - the Edisen Fishery in Rock Harbor and Johns Hotel in Washington Harbor. Together these locations have a total of thirteen structures listed on the Register. While these are the only structures currently listed on the Register, the Michigan State Historic Preservation Officer (SHPO) has declared another approximately 145 additional structures eligible for listing.

The Edisen Fishery is only one of the many sites used as commercial fishing camps. For a century, from the 1830s until the establishment of the National Park, Isle Royale was a base for commercial fishing. Other sites include Wright Island, Crystal Cove, Fisherman's Home, Barnum Island and Washington Island. At many of these sites buildings (fish houses, net houses and cabins) along with boats and docks remain intact. However, with the exception of the Edisen Fishery, the fishermen are gone and at several of the historic fishing camps the buildings are rapidly deteriorating.

Many of the summer cabins built during the resort era remain, some of them still occupied by the families of the original occupants. Eight life leases are currently in effect, as are five Special Use Permits issued to the children of lessees. Most of these leases and permits are for cabins in Tobin Harbor. Some historic buildings (including former lessee cabins and Civilian Conservation Corps facilities) have been converted to park use. Volunteer-in-Park agreements help the park manage the difficult task of maintaining this array of historic structures. Many of these structures are located in potential wilderness additions.

Although the three firetowers are not historic and therefore not eligible for listing on the National Register, they are important reminders of previous management activities on Isle Royale. Since three like-examples presently exist, it would be beneficial to retain at least one for interpretive purposes along with any benefit to the administration fo the park (i.e., communications).

The historic structures of Isle Royale are valuable resources that convey varied aspects of human presence on the island and are key to the cultural integrity of the park. The actions in the preferred alternatives would result in impacts on historic structures and buildings that would be long-term and generally minor. Because the adverse impacts would be minor, and because many

similar examples are present island-wide, the preferred alternatives would not result in impairment.

Cultural Objects

Many of the archeological items found at Isle Royale are kept at the Midwest Archeological Center in Lincoln, Nebraska. Isle Royale's own museum collection is housed in a new storage facility in Houghton. This collection contains a general representation of the island's cultural and natural resources. Shipwreck artifacts, commercial fishing gear and household goods, summer home items and archeological artifacts are all part of the collection. The majority of archives and artifacts located in the park are found at Mott Island, with a few items kept at the Rock Harbor and Windigo Visitor Centers, the Edisen Fishery and Rock Harbor Lighthouse.

Under the preferred alternative, cultural objects would continue to be researched, collected and stored with no foreseeable increase or decrease in number. A slight chance exists that the installations of the Windigo loop trail and North Desor campground may result in the discovery of archaeological material; however, related objects would likely be scant and therefore of no consequence to the Park's collection facilities. Because there would be no adverse effects on cultural objects, the preferred alternatives would not result in impairment.

Cultural Landscapes

Cultural landscapes are geographic areas of the park that include natural and cultural resources and that have cultural significance when taken as a whole. This includes areas associated with an historical event, activity or person and areas that exhibit cultural or aesthetic values. The cultural landscape program at Isle Royale is new. Currently, only the Edisen Fishery, Rock Harbor Lighthouse, Barnum/Washington Island, Fisherman's Home and Crystal Cove have been identified as cultural landscapes, but several other areas around the park need to be evaluated for cultural significance. With control over the remaining lighthouses (Isle Royale, Rock of Ages and Passage Island) being transferred to the NPS these sites should be evaluated as cultural landscapes.

The summer cottages area of Tobin Harbor has the potential to be recognized as a cultural landscape. Many of the original cottages remain, including several that are still occupied by the families who owned the land when Isle Royale became a National Park. Two of the summer cottages in Tobin Harbor are being preserved and used by the NPS, one for the artist-in-residence program and one as an employee residence. Tobin Harbor with its protected waters and many small islands was a popular choice for resort-era families looking to build a cottage at Isle Royale. It is the best-preserved example of the summer cottage community at Isle Royale, and may require evaluation in the context of a cultural landscape.

Washington Harbor also had summer cabins but was better known for its thriving commercial fishing community. During the 1920s and 1930s over 20 fishing families lived in Washington Harbor. The entire harbor area should be evaluated for possible cultural landscape status. Aside from Edisen Fishery, the best-preserved examples of commercial fishing are Crystal Cove at the Northeast End of Amygdaloid Island and Fisherman's Home in Siskiwit Bay. These sites retain a

high degree of historical integrity and are mentioned in the General Management Plan as high priorities for restoration efforts. Other fishing sites on the north shore of the park should also be considered for cultural significance. These sites should all be evaluated as cultural landscapes. Historic mining sites, including mine shafts, rock piles, partial structures, dams, stamp sand, wells, roads, and tramway remains have the potential for cultural significance. Locations to be evaluated as cultural landscapes include Siskowit Mine, Minong Mine, Island Mine, Wendigo Mine and Todd Harbor's Pittsburg and Isle Royale Mine.

Under the preferred alternative, potential landscapes would continue to be surveyed, inventoried and evaluated under National Register of Historic Places criteria, and the National Park Service would implement resource management policies (forthcoming Cultural Resource Management Plan) that preserve the natural resource values and culturally significant character-defining patterns and features of listed, or determined eligible, landscapes. Some slight impacts from visitation could occur if visitation to cultural landscapes were to increase. Because of protective efforts and continued monitoring, the preferred alternatives would not result in impairment.

Ethnographic Resources

Ethnographic resources have significance to native peoples or historic island communities and include prehistoric and historic sites, structures, landscapes, fauna and objects as well as natural resources like rivers, watersheds and plant species. At present few ethnographic resources have been documented at Isle Royale National Park. The only detailed ethnographic study completed so far has been that of the culture of Scandinavian commercial fisherman in the first half of the twentieth century. A study of the vernacular boat-building traditions of the fisherman has documented their cultural traditions and use of island resources.

The NPS has documented hundreds of plant species used historically or currently by the Ojibway/Chippewa Indians. The occurrence and distribution of these plants at Isle Royale is unknown. A known example of an ethnobotanic species significant to native peoples and found at Isle Royale is the sugar maple, used for sugar production and pearly everlasting, which was medicinal. It is possible that the Ojibway people of the north shore of Lake Superior still use the island's resources; however, the park staff has no knowledge of such use. It is likely that additional ethnographic resources exist in the park.

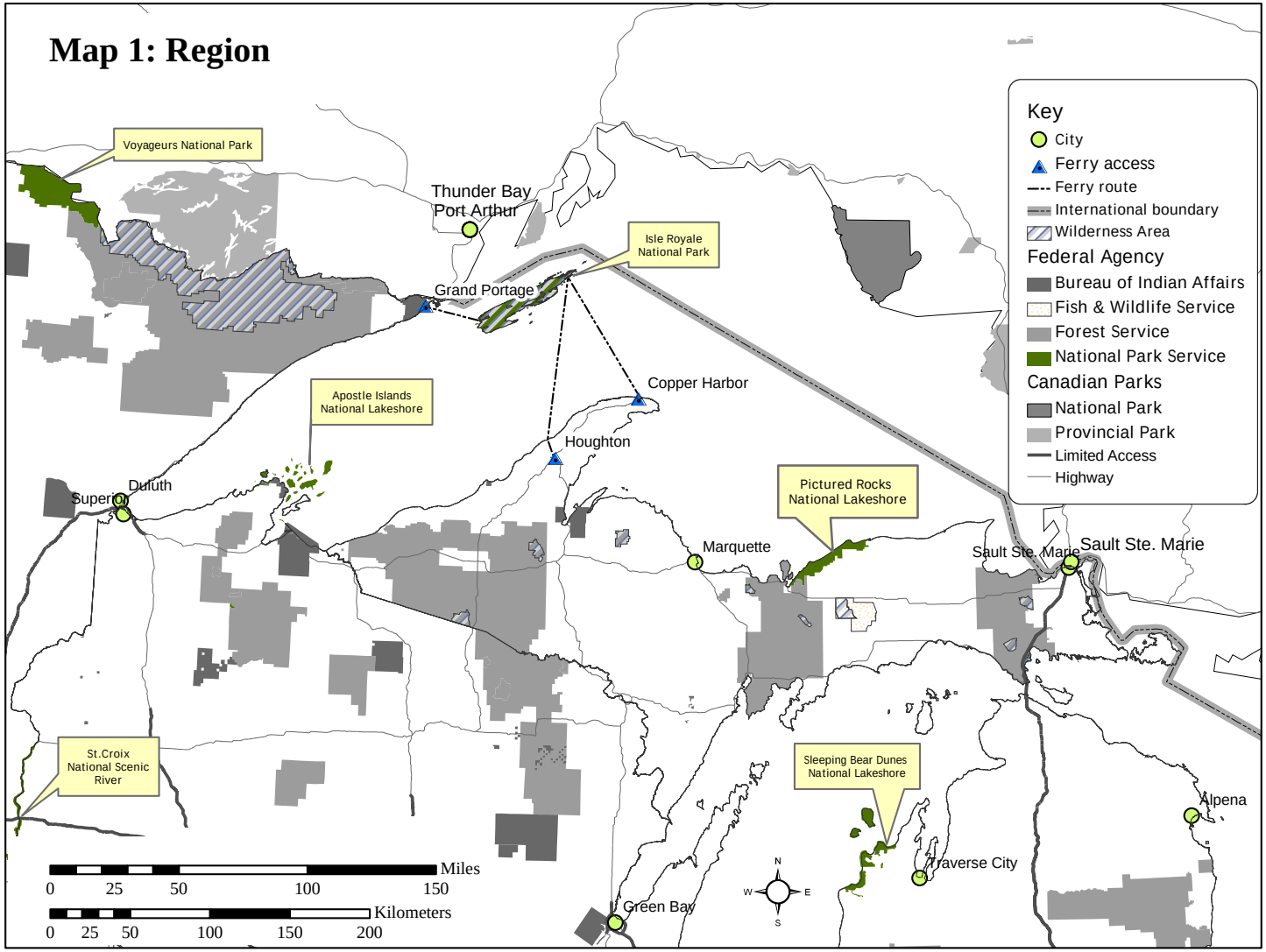
Under the preferred alternative, potential ethnographic resources would continue to be researched and evaluated under National Register of Historic Places criteria. Because there would be no known adverse effects on the existing ethnographic resources, the preferred alternatives would not result in impairment.

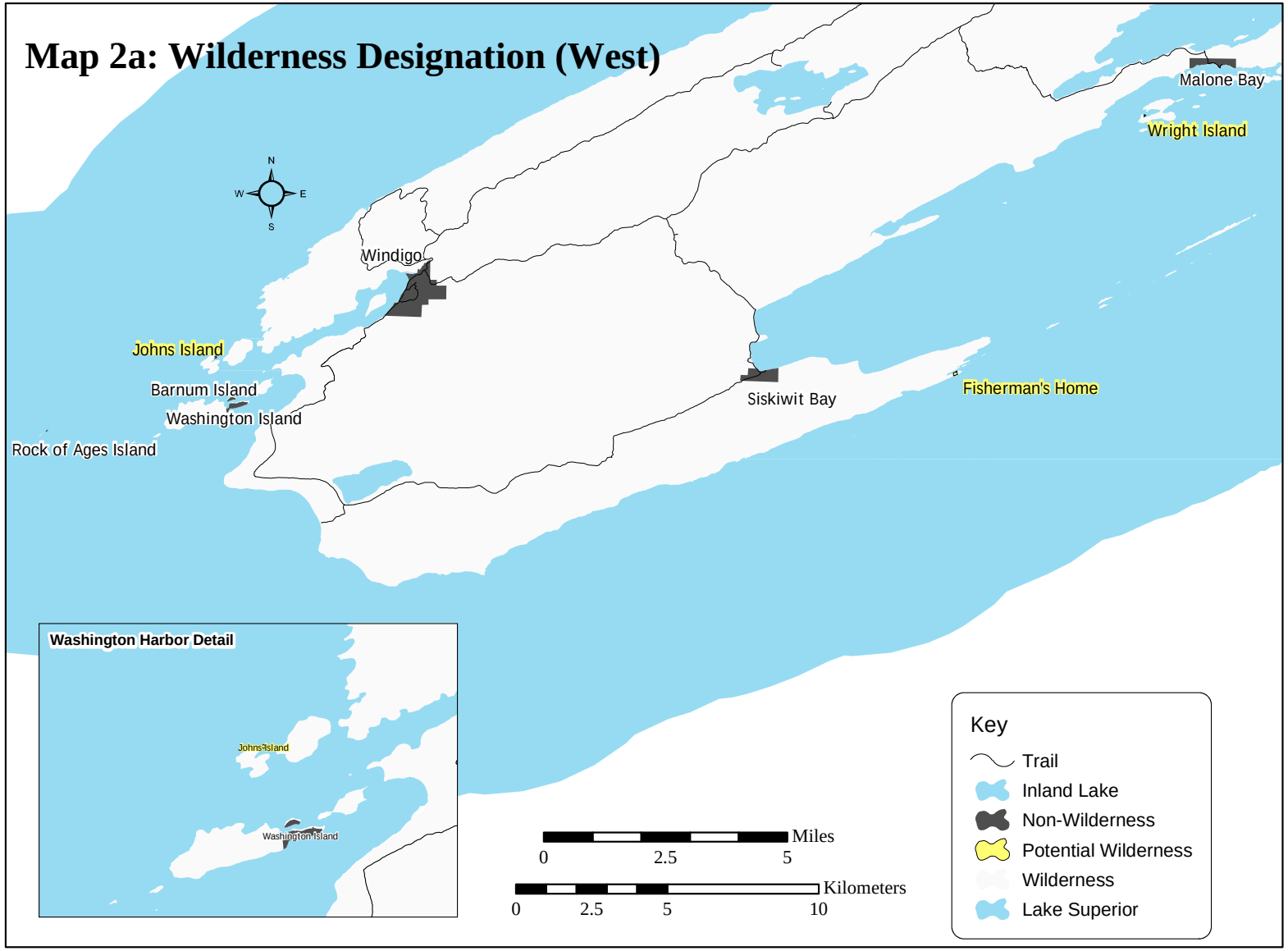
Summary

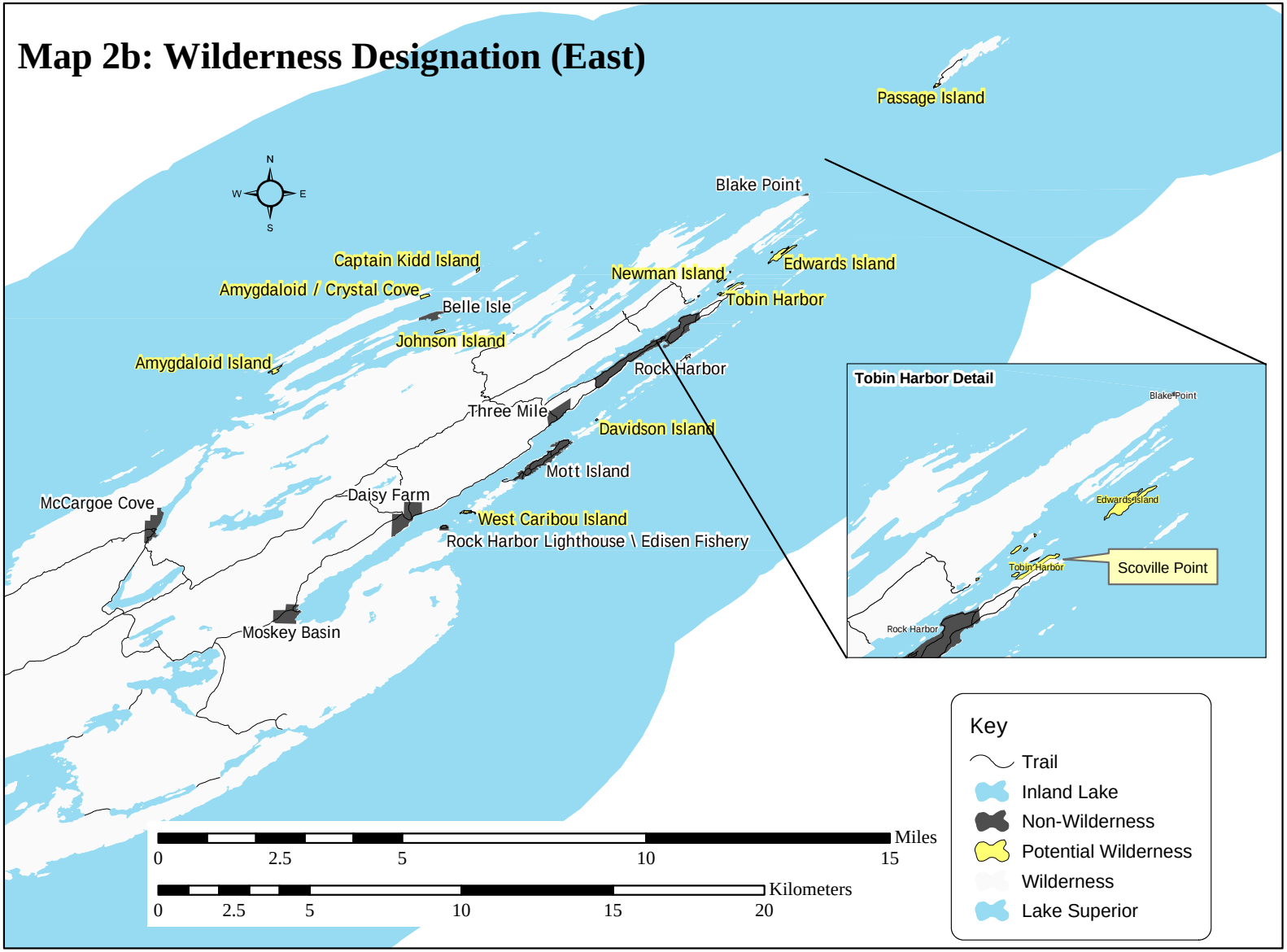
As described above, adverse impacts anticipated as a result of implementing the preferred alternatives on any resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or identified as significant in the park's general management plan or other relevant NPS planning documents, would not rise to the levels that would constitute impairment.

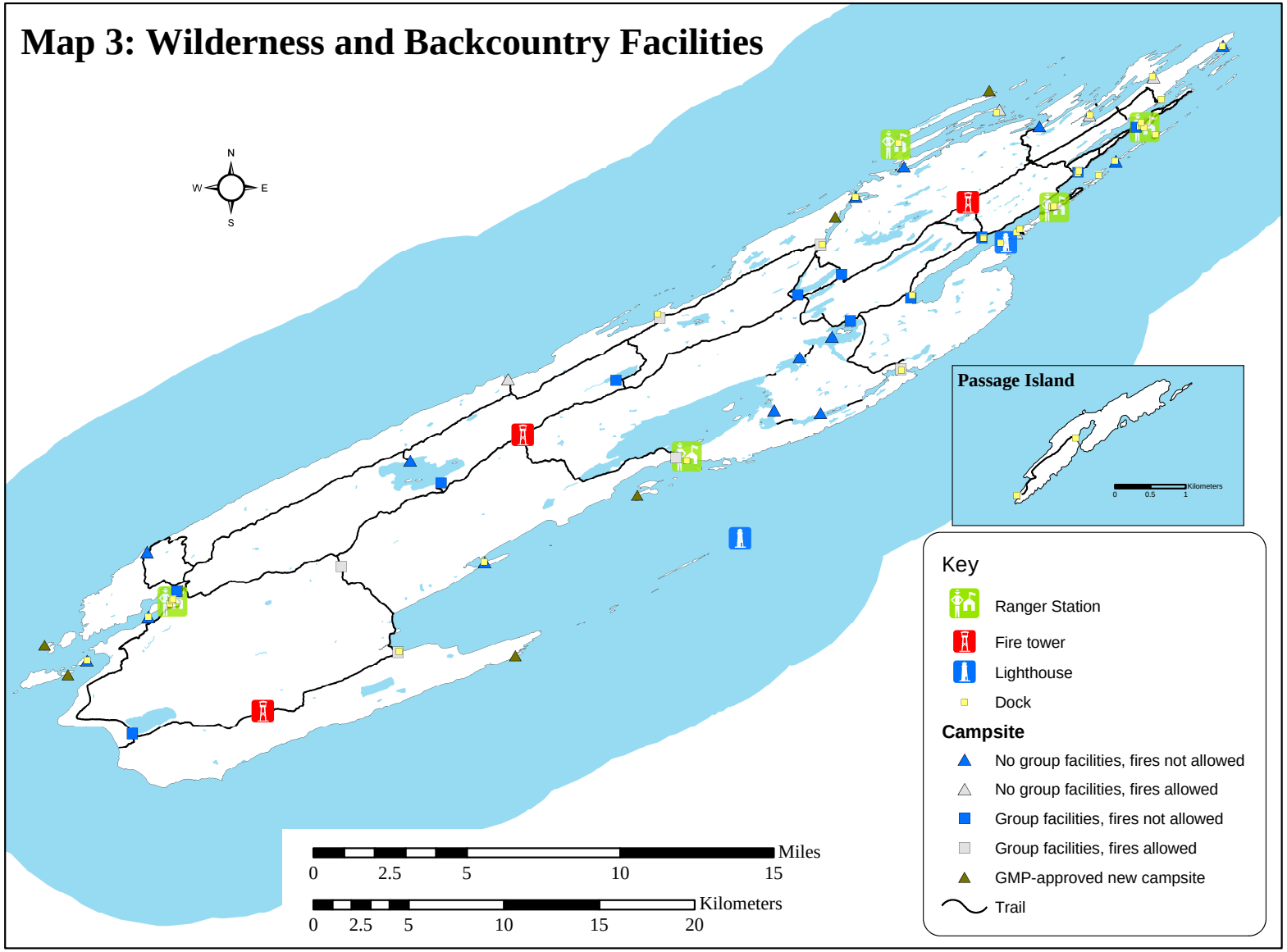
APPENDIX D: MAPS

Map 1: Region
Map 2: Wilderness Designation at Isle Royale National Park
Map 2b: Wilderness Designation at Isle Royale National Park - East
Map 3: Wilderness and Backcountry Facilities
Map 4: Potential New Campgrounds (Alternative C for Overnight Use)
Map 5: Potential New Trail (Alternative C for Day Use)
Map 6: Management Zones

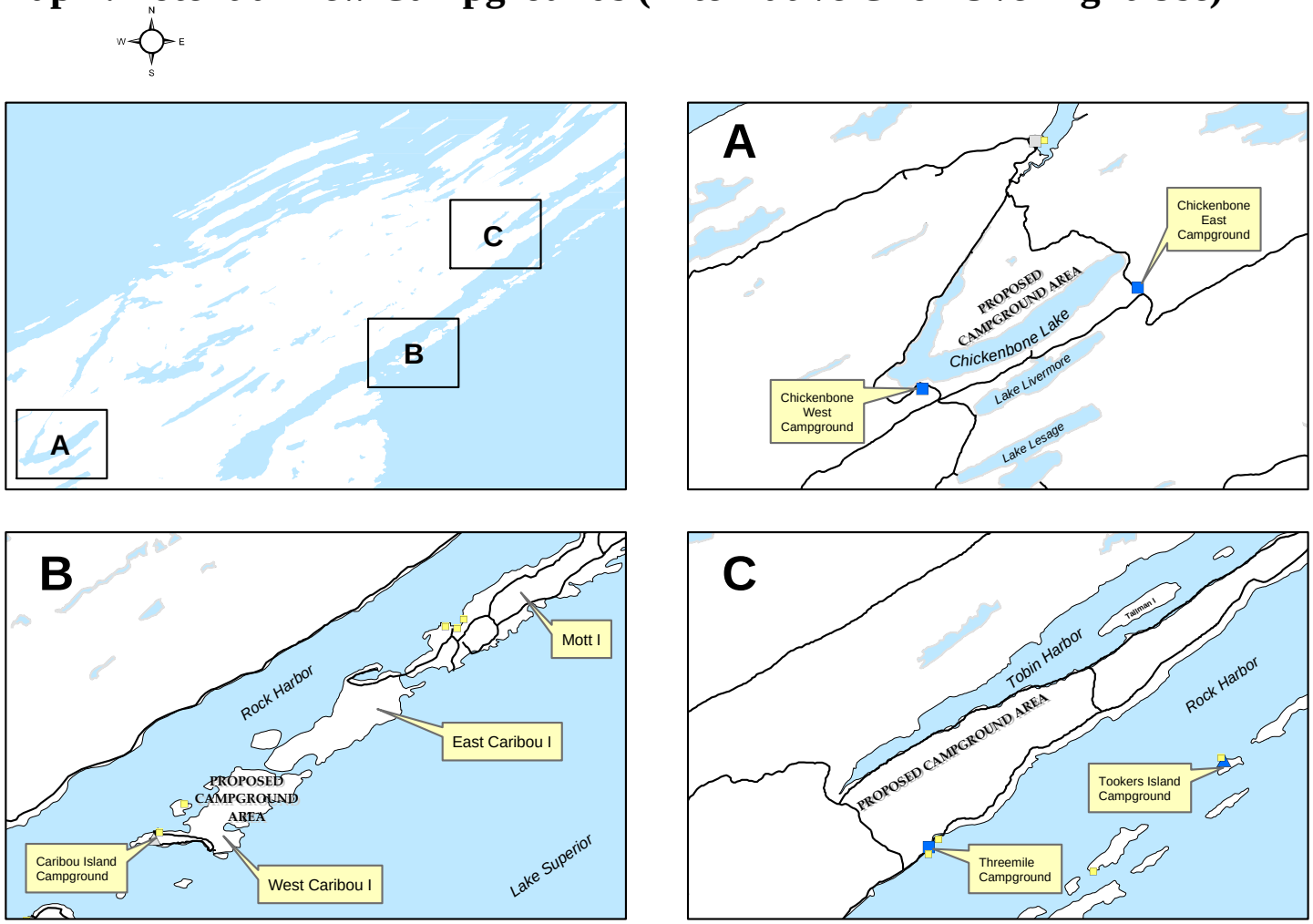

Map 1: Region
Key
City
Ferry access
Ferry route
International boundary
Wilderness Area
Federal Agency
Bureau of Indian Affairs
Fish & Wildlife Service
Forest Service
National Park Service
Canadian Parks
National Park
Provincial Park
Limited Access
Highway
Voyageurs National Park
Thunder Bay
Port Arthur
Isle Royale National Park
Grand Portage
Copper Harbor
Apostle Islands National Lakeshore
Houghton
Duluth
Superior
Pictured Rocks National Lakeshore
Marquette
Sault Ste. Marie
Sault Ste. Marie
St.Croix National Scenic River
Sleeping Bear Dunes National Lakeshore
Alpena
Traverse City
Green Bay
Miles
0 25 50 100 150
Kilometers
0 25 50 100 150 200
N
W
E
S


Map 2a: Wilderness Designation (West)
N
W
E
S
Malone Bay
Wright Island
Windigo
Johns Island
Barnum Island
Washington Island
Rock of Ages Island
Siskiwit Bay
Fisherman's Home
Washington Harbor Detail
Johns Island
Washington Island
Miles
0
2.5
5
Kilometers
0
2.5
5
10
Key
Trail
Inland Lake
Non-Wilderness
Potential Wilderness
Wilderness
Lake Superior

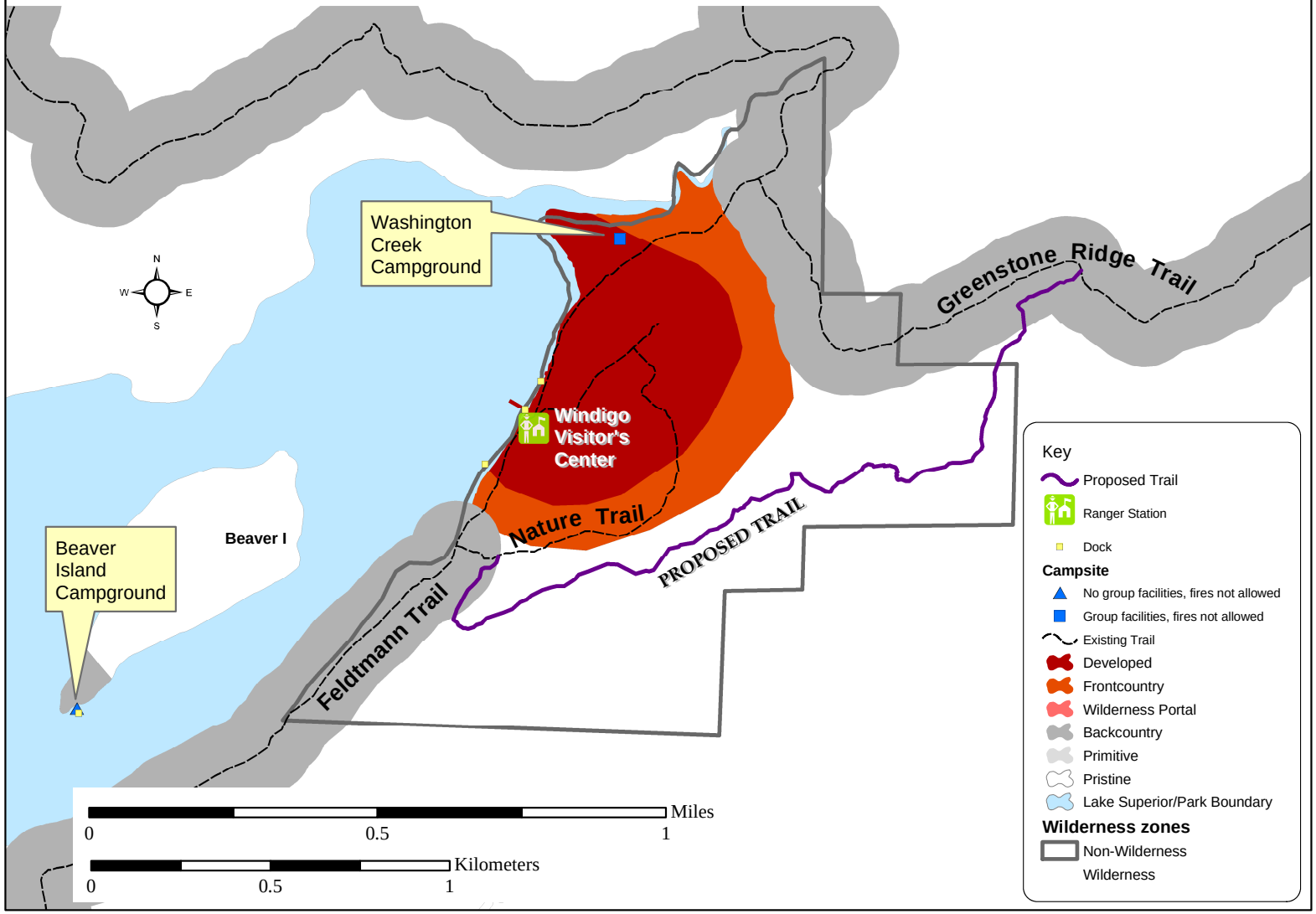

Map 2b: Wilderness Designation (East)
Passage Island
Blake Point
Captain Kidd Island
Amygdaloid / Crystal Cove
Belle Isle
Johnson Island
Amygdaloid Island
Newman Island
Edwards Island
Tobin Harbor
Rock Harbor
Three Mile
Davidson Island
Mott Island
Daisy Farm
McCargoe Cove
West Caribou Island
Rock Harbor Lighthouse \ Edisen Fishery
Moskey Basin
N
W
E
S
Tobin Harbor Detail
Blake Point
Edwards Island
Tobin Harbor
Scoville Point
Rock Harbor
Key
Trail
Inland Lake
Non-Wilderness
Potential Wilderness
Wilderness
Lake Superior
Miles
0
2.5
5
10
15
Kilometers
0
2.5
5
10
15
20

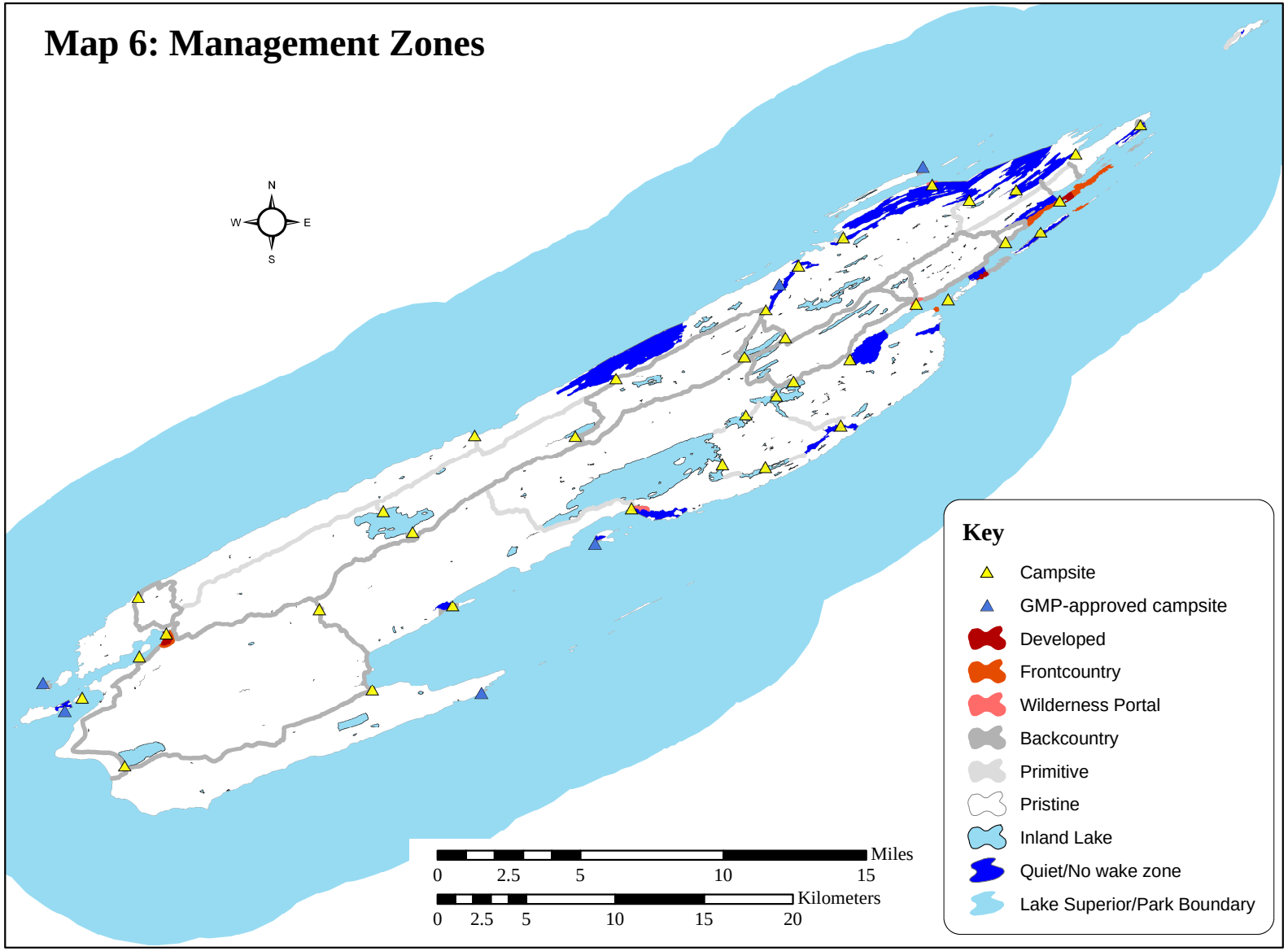

Map 3: Wilderness and Backcountry Facilities
N
W
E
S
Passage Island
Kilometers
0
0.5
1
Key
Ranger Station
Fire tower
Lighthouse
Dock
Campsite
No group facilities, fires not allowed
No group facilities, fires allowed
Group facilities, fires not allowed
Group facilities, fires allowed
GMP-approved new campsite
Trail
Miles
0
2.5
5
10
15
Kilometers
0
2.5
5
10
15
20

Map 4: Potential New Campgrounds (Alternative C for Overnight Use)



Map 5: Potential New Trail (Alternative C for Day Use)




Map 6: Management Zones
N
W
E
S
Miles
0
2.5
5
10
15
Kilometers
0
2.5
5
10
15
20
Key
Campsite
GMP-approved campsite
Developed
Frontcountry
Wilderness Portal
Backcountry
Primitive
Pristine
Inland Lake
Quiet/No wake zone
Lake Superior/Park Boundary

APPENDIX E: ISLE ROYALE NATIONAL PARK BACKCOUNTRY CAMPING REGULATIONS

1. Fires are permitted only in designated grills and metal fire rings as indicated on your permit. Use only dead and down wood.
2. Carry out all of your trash and litter, including cigarette butts and foil. Burning trash, or discarding trash or litter into pit toilets, is prohibited.
3. In campgrounds, tents must be pitched in designated sites only. Tents are prohibited in shelter sites.
4. Cross-country camping is permitted only if pre-registered with Park Ranger for zone and date on permit. Special rules apply.
5. Never feed wildlife. Keep a clean camp. Keep wildlife away from food and garbage and vice-versa.
6. Keep all soap- even biodegradable soap- out of lakes and streams. Do all washing and bathing at least 100' away from water's edge.
7. Where there is no fish cleaning station, cut remains into small pieces and dispose in deep water (>50 ft depth in Lake Superior and as deep as possible in inland lakes.) If disposal by boat is not possible, move at least 200 feet from campground and throw remains out into deep water.
8. Dogs, cats, and other domestic mammals are prohibited on the land and waters of Isle Royale National Park.
9. Quiet hours are between 10 p.m. and 6 a.m Eastern Time. During this time, generators are prohibited. Special rules apply in Quiet/No Wake Zones.
10. When fishing on inland lakes use artificial lures and barbless hooks only. On Lake Superior, a Michigan fishing license is required.
11. Streams and creeks are open for fishing with barbless hooks from the last Saturday in April through Labor Day. Special rules apply for Brook Trout-amended in 2005.
12. Possession of fish filets is prohibited, unless filets are being prepared for immediate consumption.
13. Groups (7-10 people) must have advanced camping registration and follow the itinerary specified on the permit.
14. Removing, disturbing, or possessing living or dead wildlife or parts of them (such as antlers), or plants, is prohibited. Disturbance of paleontological specimens, or any cultural or archeological resources, is prohibited. Collecting and removing mineral resources such as agates, datolite, or greenstones, including those in Lake Superior, is prohibited.

My signature below signifies that I understand and agree that my party/group will abide by these conditions and other regulations specified in park brochures and posted at park ranger stations. Trip leaders and/or participants can be cited for violating these conditions and regulations.

Signature of Trip Leader _____

APPENDIX F: ISLE ROYALE NATIONAL PARK CROSS-COUNTRY CAMPING REGULATIONS

CROSS-COUNTRY CAMPING PERMIT
Isle Royale National Park
US Department of Interior, National Park Service

Cross-country campers are required to follow special regulations designed to protect the park's wilderness resources and visitor experiences. All trip participants should practice Leave No Trace ethics and must understand and observe the following cross-country camping regulations:

1. Individual parties of 1-6 only are permitted to camp in cross-country areas.
2. Camping is permitted only in zones identified on your camping permit and the attached cross-country zone map.
3. All islands on inland lakes and islands in Lake Superior (excluding the main island of Isle Royale) are closed to cross-country camping.
4. Your campsite must be at least ¼ mile away from any trail and at least ½ mile away from all developed areas, designated campgrounds and fire towers.
5. Your campsite must be at least 200 feet (or 75 paces) away from all bodies of water, and out of sight of the water. You must also camp out of sight and sound of other cross-country campers.
6. Maximum stay at any one location is one night. Tents and camping gear must be moved at least ½ mile from the previous night's stay.
7. No fires are permitted.
8. Carry out all of your trash.

Special fishing regulations:

- Artificial lures and barbless hooks only on all inland lakes and streams.
- Brook Trout/Coaster Brook Trout – Catch and release only. No possession allowed.

Complete fishing regulations listed in park newspaper.

My signature below signifies that I understand and agree that my party will abide by these regulations. Trip leaders and/or participants can be cited for violating these regulations and conditions:

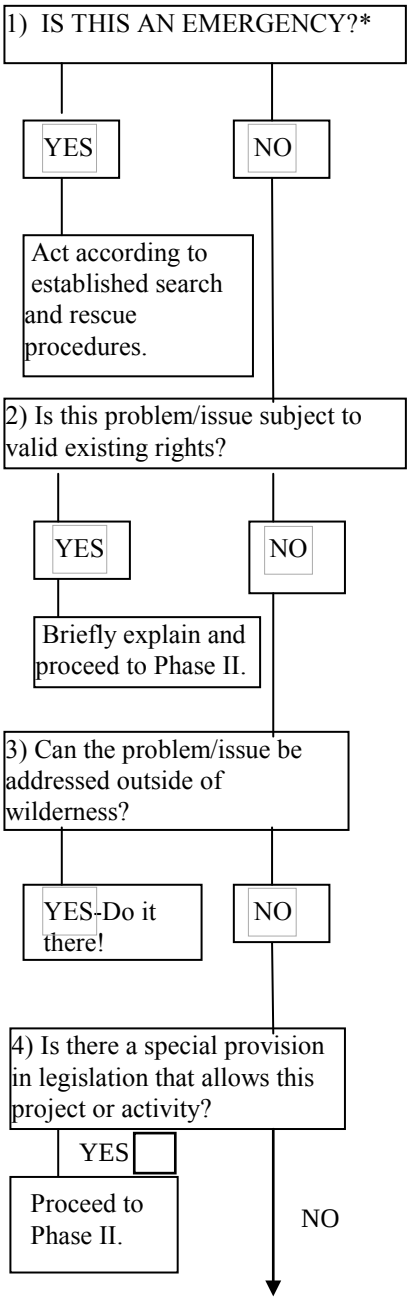
Signature of Trip Leader _____

Cross-country camping is intended for those seeking a higher level of solitude, adventure, self-sufficiency, and low impact camping in a wilderness setting. Cross country camping is not intended for overflow camping or to shorten travel between campsites, and is recommended for experienced backpackers or paddlers who are familiar with Isle Royale. The terrain is rough, there are many swamps and the vegetation is thick. Day hiking off trail may be a preferred alternative for those who haven't cross-country camped before.

APPENDIX G: ISLE ROYALE NATIONAL PARK
MINIMUM REQUIREMENT DECISION GUIDE

Phase I: Is Administrative Action Necessary?-The Minimum Requirement

What is the problem/issue that *may* require administrative action? (Briefly describe below.)



*Emergency: a situation that involves inescapable urgency and temporary need for speed beyond that available by primitive means (For example: loss of human life or serious injury, law enforcement efforts involving serious crime or fugitive pursuit, retrieval of the deceased, fire suppression).

NOTES:

"In our culture, when everything new is automatically assumed to be better, it is considered a kind of blasphemy to argue for traditional ways of doing things. But sometimes the old ways are the best ways. Sometimes we need to be gloriously impractical. Sometimes we need to find the soul in things before we can find the soul in ourselves." Jerry Dennis, Canoe Magazine-1993

Form Revised 2011, ISRO

PHASE I: IS ADMINISTRATIVE ACTION NEEDED? (continued): The questions below are provided to evaluate whether resolving the issue protects wilderness character and values identified in the Wilderness Act. Answer the questions in terms of need to resolve the issue/problem. If the answer to most of the questions is yes, then the issue/problem probably requires administrative action, and Phase II should be implemented. **Please check Yes or No and briefly explain to the right of the question.**

1) If the issue/problem is not resolved, or action is not taken, will the natural processes of wilderness be adversely affected?

Yes **No**

Why/How?

2) If the issue/problem is not resolved, or action is not taken, will the values of solitude or primitive and unconfined types of recreation be threatened?

Yes **No**

Why/How?

3) If the issue/problem goes unresolved or action is not taken, will evidence of human manipulation, permanent improvements, or human habitation be substantially noticeable?

Yes **No**

Why/How?

4) Does addressing the issue/problem or taking action protect the wilderness as a whole as opposed to a single resource?

Yes **No**

Why/How?

5) Does addressing the issue/problem or taking action contribute to protection of an enduring resource of wilderness for future generations?

Yes **No**

Why/How?

6) Is this an issue for reasons other than convenience or cost of administration?

Yes **No**

Why/How?

"You can measure the soil, water, and trees, but intangibles never." Sigurd F. Olson, Reflections from the North Country

Form Revised 2011, ISRO

PHASE II: DETERMINING THE MINIMUM TOOL

Identify and describe a range of alternatives including those that utilize traditional tools, and non-motorized and mechanized means as well as others. Fill out the questions and information below for each alternative. Copy this page for subsequent alternatives.

ALTERNATIVE #_____

1) **Check Yes or No:**
Does this alternative involve:

Use of a temporary road/trail	Y N
Use of motor vehicles	Y N
Use of motorized equipment	Y N
Use of motorboats	Y N
Landing of airplanes	Y N
Landing of helicopters	Y N
Use of mechanical transport	Y N
Creating a structure or installation	Y N
Other impacts to wilderness character _____	Y N

2) Describe the adverse/beneficial effects of this alternative on the following:

-Biophysical Environment

-Visitor Opportunities and Experiences

-Societal and Political Concerns

-Health and Safety Concerns

-Park Administration and Operations

-Cultural Resource Considerations

3) Evaluate this alternative by answering the eight questions to the right.
Affirmative answers protect and preserve the wilderness!

Briefly describe alternative below or attach description:

Briefly describe the adverse/beneficial effects below or attach description:

1) Does this alternative ensure that wilderness is not occupied or modified by humans?
2) Does this alternative maintain or move wilderness toward minimal human influence, within legal constraints?
3) Does this alternative allow wilderness to retain solitude and elements of surprise and discovery?
4) Did you ensure that this alternative was not primarily based on economy, convenience, comfort, or commercial value?
5) Does this alternative look beyond the short term to ensure that future generations will be able to enjoy the benefits of an enduring resource of wilderness?
6) Does this alternative support the wilderness resource in its entirety rather than maximizing an individual resource within the wilderness?
7) Does this alternative recognize the unique character of Isle of Isle Royale wilderness?
8) Does this alternative ensure that the effects of human activities do not dominate natural conditions and processes?

Form Revised 2011, ISRO

SELECTION OF THE MINIMUM TOOL ALTERNATIVE

What is the method or tool that will allow the issue/problem to be resolved or an action to be implemented with minimum impacts to the wilderness?

The Selected Alternative is #_____.

Describe the rationale for selecting this alternative:

Describe the specific operating requirements for the action. Include information on timing, locations, type of actions, etc. (Use this space or attach a separate sheet)

What are the maintenance requirements?

What standards and designs will apply?

Develop and describe any mitigation measures that will apply?

What will be provided for monitoring and feedback to strengthen future effects and preventative actions to taken to help in future efforts?

Prepared By Date Recommended By Division Chief Date

Recommended By Backcountry Management Group (BMG), Chairperson Date

Approved By Superintendent, Isle Royale National Park Date

Form Revised 2011, ISRO

PHASE II: DETERMINING THE MINIMUM TOOL - Additional Alternative(s) Worksheet

Identify and describe a range of alternatives including those that utilize traditional tools, and non-motorized and mechanized means as well as others. Fill out the questions and information below for each alternative.

ALTERNATIVE #_____

Briefly describe alternative below or attach description:

1) **Check Yes or No:**
Does this alternative involve:

Use of a temporary road/trail	Y N
Use of motor vehicles	Y N
Use of motorized equipment	Y N
Use of motorboats	Y N
Landing of airplanes	Y N
Landing of helicopters	Y N
Use of mechanical transport	Y N
Creating a structure or installation	Y N
Other impacts to wilderness character _____	Y N

2) Describe the adverse/beneficial effects of this alternative on the following:

-Biophysical Environment

-Visitor Opportunities and Experiences

-Societal and Political Concerns

-Health and Safety Concerns

-Park Administration and Operations

-Cultural Resource Considerations

Briefly describe the adverse/beneficial effects below or attach description:

3) Evaluate this alternative by answering the eight questions to the right.
Affirmative answers protect and preserve the wilderness!

1) Does this alternative ensure that wilderness is not occupied or modified by humans?
2) Does this alternative maintain or move wilderness toward minimal human influence, within legal constraints?
3) Does this alternative allow wilderness to retain solitude and elements of surprise and discovery?
4) Did you ensure that this alternative was not primarily based on economy, convenience, comfort, or commercial value?
5) Does this alternative look beyond the short term to ensure that future generations will be able to enjoy the benefits of an enduring resource of wilderness?
6) Does this alternative support the wilderness resource in its entirety rather than maximizing an individual resource within the wilderness?
7) Does this alternative recognize the unique character of Isle of Isle Royale wilderness?
8) Does this alternative ensure that the effects of human activities do not dominate natural conditions and processes?

Form Revised 2011, ISRO

STATE LISTED PLANT SPECIES OF ISLE ROYALE NATIONAL PARK

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS[1]	
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Wild chives	*Allium schoenoprasum*	G5	S2		T	uncommon
rock shore						
Round-leaved orchid*	*Amerorchis rotundifolia*	G5	S1		E	rare
cedar swamps						
Little leaf pussytoes ***	*Antennaria microphylla*					
Rosy pussytoes*	*Antennaria rosea*	G5	SH		T	rare
Big leaf sandwort	*Arenaria macrophylla*	G4	S1		T	rare
mixed woods						
Dragon's mouth, Arethusa**	*Arethusa bulbosa*				SC	rare
bogs						
Heart-leaved Arnica	*Arnica cordifolia*	G5	S1		E	
rocky, mixed forest						
Great northern aster	*Aster modestus*	G5	S1		T	rare
grassy,						
Slough grass	*Beckmannia syzigachne*	G5	S2		T	rare
gravel shore,						
Low northern rock-cress	*Braya humilis*	G5	S1		T	
exposed shoreline						
Northern reedgrass	*Calamagrostis lacustris*	G3Q	S1		T	rare
rock opening						
Narrow-leaved reedgrass****	*Calamagrostis stricta*	G5	S1		T	
rocky shoreline						

[1] Source: Michigan State University, Michigan Natural Features Inventory. Michigan's Special Plants: Endangered, Threatened, Special Concern and Probably Extirpated. March 1999.

APPENDIX H: ISLE ROYALE NATIONAL PARK STATE-LISTED FLORA AND FAUNA (CONT.)

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Autumnal water starwart	*Callitriche hermaphroditica*	G5	S2		SC	rare
aquatic						
Calypso orchid	*Calypso bulbosa*	G5	S2		T	uncommon
boreal forest						
Sedge	*Carex atratiformis*	G5	S2		T	uncommon
rock shore, beaches						
Sedge*	*Carex media*	G5	S2S3		T	frequent
rock shore						
Sedge***	*Carex norvegica*					
Richardson sedge	*Carex richardsonii*	G4	S3S4		SC	
grassland communities						
Ross's sedge	*Carex rossii*	G5	S2		T	
bedrock outcrops						
Eastern paintbrush	*Castilleja septentrionalis*	G5	S2S3		T	common
aspen woods, rock openings						
Purple clematis	*Clematis occidentalis*	G5	S3		SC	uncommon
dry woods						
Small blue-eyed mary	*Collinsia parviflora*	G5	S2		T	rare
rock ridges						
Douglas's hawthorn	*Crataegus douglasii*	G5	S3S4		SC	rare
rock openings						
Ram's head lady-slipper	*Cypripedium arietinum*	G3	S3		SC	rare
boreal forest						
American rock brake***	*Cryptogramma acrostichoides*	G5	S2		E	uncommon
rock shores & ridges						

APPENDIX H: ISLE ROYALE NATIONAL PARK STATE-LISTED FLORA AND FAUNA (CONT.)

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
American rock brake***	*Cryptogramma crispa*					
Slender rock brake	*Cryptogramma stelleri*	G5	S3S4		SC	rare
rock openings						
Wild oat grass	*Danthonia intermedia*	G5	S1S2		SC	
bedrock shoreline						
Rock whitlow-grass	*Draba arabisans*	G4	S3		SC	uncommon
rock shore &						
Smooth whitlow-grass	*Draba glabella*	G4G5	S1		E	rare
rock shore						
Twisted whitlow-grass	*Draba incana*	G5	S1		T	rare
rock shore						
English sundew	*Drosera anglica*	G5	S3		SC	rare
bogs, rock shore pools						
Fragrant cliff woodfern****	*Dryopteris fragrans*	G5	S3		SC	
Fleabane	*Erigeron acris*	G5	SR		SC	
rocky areas, clearings						
Hyssop-leaved fleabane	*Erigeron hyssopifolius*	G5	S1		T	
fens, swamps						
Blue wild rye	*Elymusglaucus*	G5	S3		SC	
near Lake Superior						
Black crowberry	*Empetrum nigrum*	G5	S2		T	rare
rock shore						
Moor rush****	*Juncus stygius*	G5	S1S2		T	
Blue lettuce	*Lactuca pulchella*	G5	SH		T	rare
openings, burns						

APPENDIX H: ISLE ROYALE NATIONAL PARK STATE-LISTED FLORA AND FAUNA (CONT.)

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Auricled twayblade	*Listera auriculata*	G3	S2S3		SC	rare
boreal forest						
Involucred honeysuckle	*Lonicera involucrata*	G4G5	S2		T	rare
trails						
Small-flowered wood-rush	*Luzula parviflora*	G5	S1		T	uncommon
Plains muhly	*Muhlenbergia cuspidala*	G4	SX		X	
dry bluffs						
Mat muhly	*Muhlenbergia richardsonis*	G5	S2		T	
Water-milfoil	*Myriophyllum alterniflorum*	G5	S2S3		SC	uncommon
aquatic (inland lks.)						
Pygmy water-lily	*Nymphaea tertagona*	G5	S1		E	rare
stream deltas						
Devil's club	*Oplopanax horridus*	G4	S2		T	uncommon
swamps, openings						
Sweet cicely	*Osmorhiza depauperata*	G5	S2		T	frequent
mixed woods						
Marsh grass-of-parnassus	*Parnassia palustris*	G5	S2		T	rare
swamps, lake shores						
Franklin's phacelia	*Phacelia franklinii*	G5	S1		T	uncommon
rock openings						
Mountain timothy	*Phleum alpinum*	G5	SX		X	
Butterwort	*Pinguicula vulgaris*	G5	S3		SC	uncommon
rock shore, mossy						
Alpine bluegrass	*Poa alpina*	G5	S1S2		T	rare
rock shore						
Canby's bluegrass	*Poa canbyi*	G4G5	S1		E	rare
rock outcrop						

APPENDIX H: ISLE ROYALE NATIONAL PARK STATE-LISTED FLORA AND FAUNA (CONT.)

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Alpine buckwheat	*Polygonum viviparum*	G5	S1S2		T	uncommon
rock shore, beaches						
Prairie cinquefoil	*Potentilla pensylvanica*	G5	S1		T	uncommon
rock shore						
Macoun's buttercup	*Ranunculus macounii*	G5	S1		T	rare
swamp forests						
Prairie buttercup	*Ranunculus rhomboideus*	G4	S2		T	uncommon
rock ridges						
Gooseberry	*Ribes oxyacanthoides*	G5	S3		SC	frequent
clearings, beaches						
Pearlwort	*Sagina nodosa*	G5	S2		T	uncommon
rock crevices						
Satiny willow	*Salix pellita*	G5	S2		SC	rare
rock shore						
Tea-leaved willow	*Salix planifolia*	G5	SH		T	uncommon
rock shore, islands						
***	*Salix pyrifolia*		SC			
Encrusted saxifrage	*Saxifraga paniculata*	G5	S1		T	rare
rock shore						
Prickly saxifrage	*Saxifraga tricuspidata*	G4G5	S2		T	uncommon
rock shore						
Rayless mountain ragwort	*Senecio indecorus*	G5	S1		T	uncommon
rock openings						
Awlwort	*Sublaria aquatica*	G5	S1		E	rare
aquatic						
False Asphodel	*Tofieldia pusilla*	G5	S2		T	uncommon
rock shore pools						

COMMON NAME	SCIENTIFIC NAME	RANK[1]		2004 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Downy oatgrass	*Trisetum spicatum*	G5	S2S3		SC	frequent
rock shore						
Dwarf bilberry*	*Vaccinium cespitosum*	G5	S1S2		T	absent?
Alpine blueberry	*Vaccinium uliginosum*	G5	S2		T	rare
rock shore						
Mountain-cranberry	*Vaccinium vitis-idaea*	G5	S1		E	extirpated
Squashberry	*Viburnum edule*	G5	S2S3		T	common
boreal, mixed forests						

* Species on rare plant list and state list but not on Slavick and Janke (1993) list.
** Listed by Slavick and Janke (1993) and rare plants list but not on state list.
*** Species listed by Slavick and Janke (1993) but not on state list or rare plant list.
**** Species listed by Slavick and Janke (1993) and state list. Not on rare plant list.

STATE-LISTED FISH SPECIES OF ISLE ROYALE NATIONAL PARK

COMMON NAME	SCIENTIFIC NAME	RANK[2]		1999 STATUS[2]		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Lake sturgeon	*Acipenser fulvescens*	G3	S2		T	
Lake Superior						
Cisco or Lake herring*	*Coregonus artedi*	G5	S3		T	
Lake Desor						
Siskiwit Lake cisco**	*Coregonus bartlettii*	G1Q	S1		SC	
Siskiwit						

[2] *Source*: Michigan State University, Michigan Natural Features Inventory. Michigan's Special Animals: Endangered, Threatened, Special Concern and Probably Extirpated. July 2004.

COMMON NAME	SCIENTIFIC NAME	RANK		1999 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Kiyi	*Coregonus kiyi*	G3	S3		SC	
Lake Superior						
Shortjaw cisco	*Coregonus zenithicus*	G2	S2		T	
Lake Superior						
Spoonhead sculpin	*Cottus ricei*	G5	S3		SC	
Superior, Inland lakes						

*Subspecies
**Species

Fish list taken from "Wildlife of Isle Royale" revised by Dr. Peter Jordon 1981.

STATE-LISTED MAMMAL SPECIES OF ISLE ROYALE NATIONAL PARK

COMMON NAME	SCIENTIFIC NAME	RANK		1999 STATUS		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Moose	*Alces alces*	G5	S4		SC	
Gray Wolf	*Canis lupus*	G4	S3	LT	E	

Mammal list taken from "Wildlife of Isle Royale" revised by Dr. Peter Jordon 1981.

STATE-LISTED BIRD SPECIES OF ISLE ROYALE NATIONAL PARK

COMMON NAME	SCIENTIFIC NAME	RANK[2]		1999 STATUS[2]		
		GLOBAL	STATE	US	MI	ABUNDANCE
HABITAT(S)						
Cooper's hawk	*Accipiter cooperii*	G5	S3S4		SC	O,T
Northern goshawk	*Accipiter gentilis*	G5	S3		SC	R
Short-eared owl	*Asio flammeus*	G5	S1		E	A,T
Long-eared owl	*Asio otus*	G5	S2		T	A,T
American bittern	*Botaurus lentiginosus*	G4	S3S4		SC	R
Red-shouldered hawk	*Buteo lineatus*	G5	S3S4		T	A
Piping plover	*Charadrius melodus*	G3	S1	LE	E	H
Black tern	*Chlidonias niger*	G4	S3		SC	A
Lark sparrow	*Chondestes grammacus*	G5	SX		X	A
Northern harrier	*Circus cyaneus*	G5	S3		SC	O,T
Yellow rail	*Coturnicops noveboracensis*	G4	S1S2		T	H
Merlin	*Falco columbarius*	G5	S1S2		T	R
Peregrine falcon	*Falco peregrinus*	G4	S1		E	A,T
Common loon	*Gavia immer*	G5	S3S4		T	R
Bald eagle	*Haliaeetus leucocephalus*	G4	S4	LT	T	O
Black-crowned night-heron	*Nycticorax nyticorax*	G5	S2S3		SC	A
Osprey	*Pandion haliaetus*	G5	S4		T	O
Black-backed woodpecker	*Picoides arcticus*	G5	S2		SC	R
Dickcessel	*Spiza americana*	G5	S3		SC	A
Caspian tern	*Sterna caspia*	G5	S2		T	A
Common tern	*Sterna hirundo*	G5	S2		T	O
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	G5	S2		SC	A

LEGEND FOR BIRDS LIST:

R = regular occurence
O = occasional occurence
A = accidental occurence
H = hypothetical occurence
T = breeds on adjacent mainland

Species list and abundance based on "Wildlife of Isle Royale," revised 1981 by Dr. Peter Jordon.

No listed amphibians or reptiles are known to inhabit Isle Royale. In 1977 there was one inconclusive photo taken of what may have been a Black rat snake (Elaphe obsoleta obsoleta) which is listed as Special Concern in Michigan.

No comprehensive inventories of insects, snails, or mussels have ever been done for Isle Royale.

LEGEND FOR ALL LISTS

MI 2004 Current species status under the Michigan Endangered Species Act reviewed during 1996-98. Endangered and Threatened designations are legally effective as of July 2004.

U.S. 2004 Species status under the Federal Endangered Species Act as of July 2004. LE, LT (Listed Endangered, Listed Threatened) = Species has been officially listed as either Endangered (E), or Threatened (T). P (Proposed) = Species has been officially proposed for listing.

( ) Common synonyms of species names accepted by the State Technical Committee.

GLOBAL RANKS

G1 = critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 = either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4 = apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GH = of historical occurrence throughout its range, i.e. formerly part of the established biota, with the expectation that it may be rediscovered (e.g. Bachman's Warbler).

GU = possibly in peril range-wide, but status uncertain; need more information.

GX = believed to be extinct throughout its range (e.g. Passenger Pigeon) with virtually no likelihood that itwill be rediscovered.

STATE RANKS

S1 = critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.

S2 = imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3 = rare or uncommon in state (on the order of 21 to 100 occurrences).

S4 = apparently secure in state, with many occurrences.

S5 = demonstrably secure in state and essentially ineradicable under present conditions.

SA = accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or thousands of miles outside their usual range.

SE = an exotic established in the state; may be native elsewhere in North America (e.g. house finch or catalpa in eastern states).

SH = of historical occurrence in state and suspected to be still extant.

SN = regularly occurring, usually migratory and typically nonbreeding species.

SR = reported from state, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.

SRF = reported falsely (in error) from state but this error persisting in the literature.

SU = possibly in peril in state, but status uncertain; need more information.

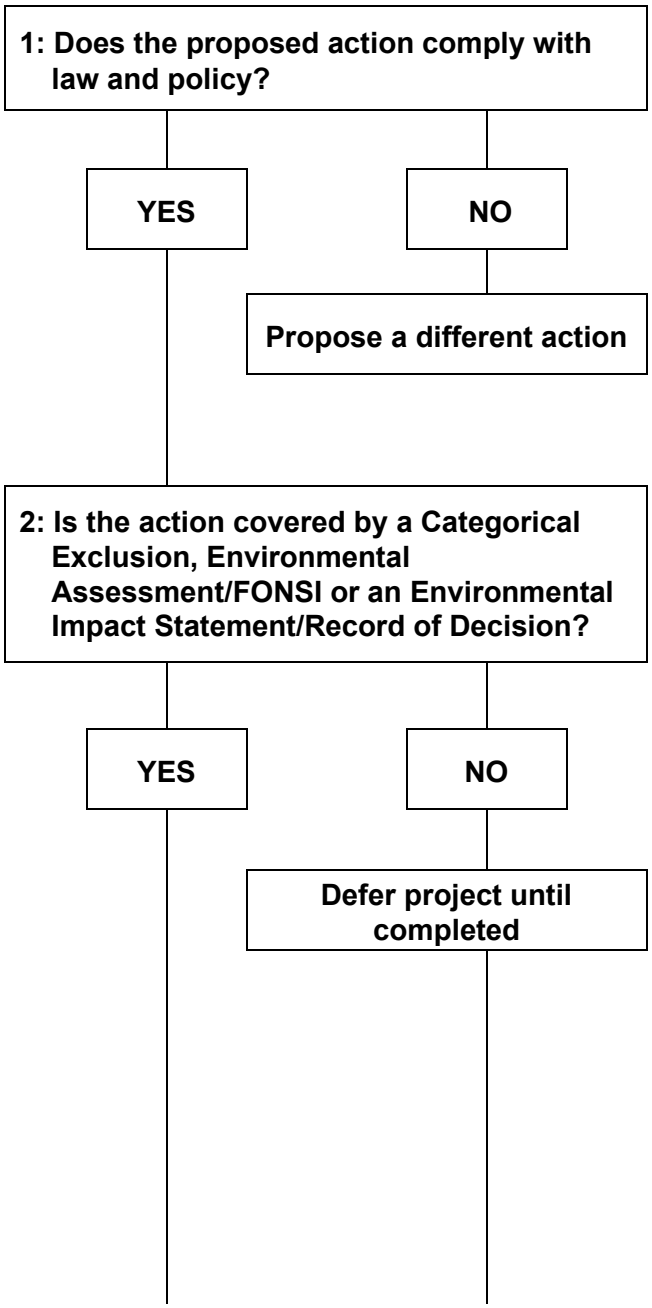
SX = apparently extirpated from state.

APPENDIX I: WILDERNESS MINIMUM REQUIREMENT PROCESS

PROPOSED ACTION *Allowing picnic tables in Wilderness*

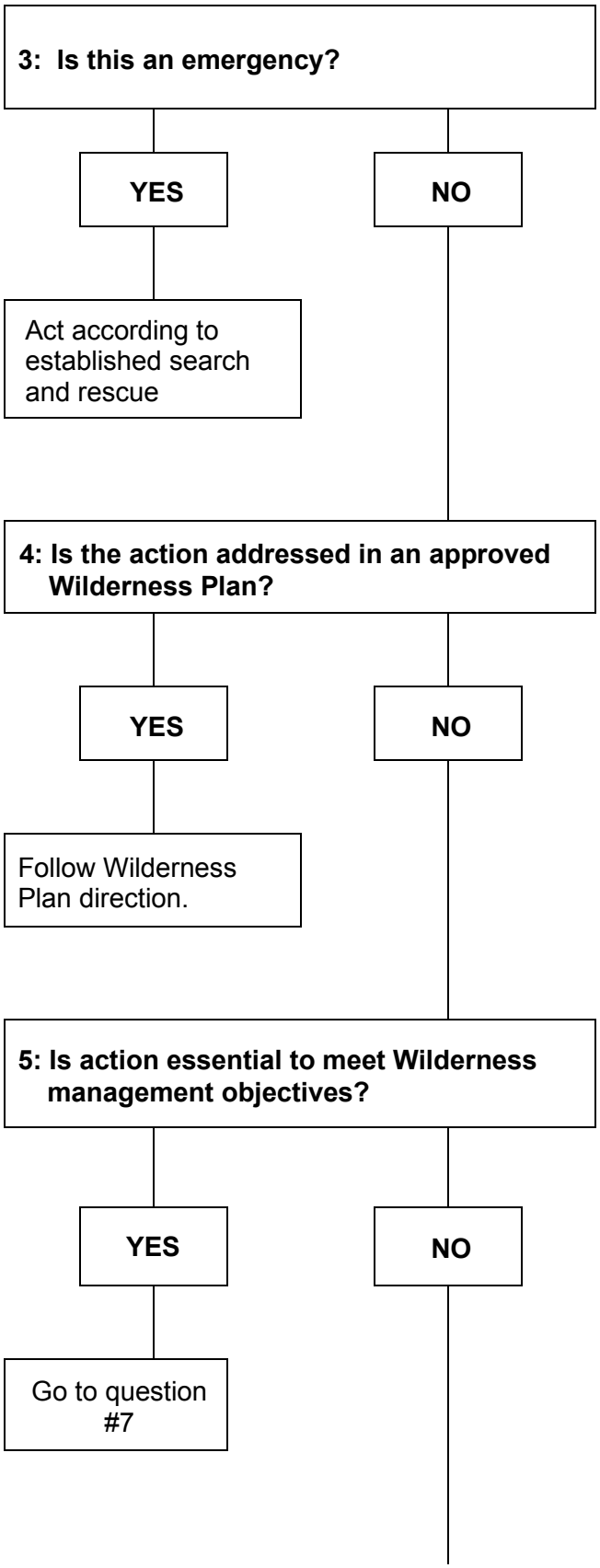
WHAT ISSUE IS ADDRESSED BY THE PROPOSED ACTION?:

Minimizing resource impacts while providing visitor enjoyment within Wilderness



CITE LAW AND POLICY:

2006 NPS Policies, 6.3.10.3 Shelters and Campsites: Picnic tables will not be allowed in wilderness except in those limited circumstances when they are necessary for resource protection and when documented and approved through a minimum requirements analysis.

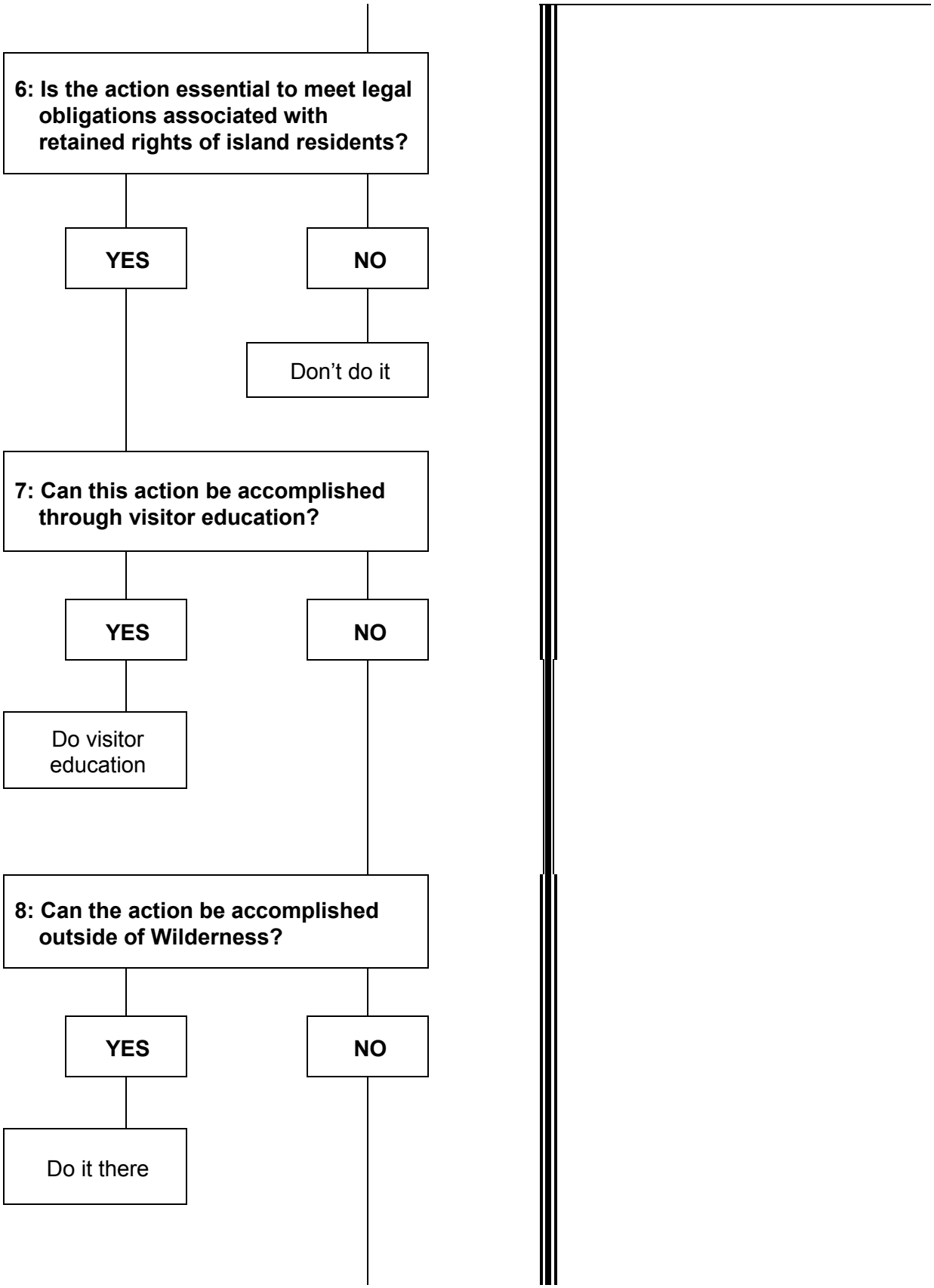


*Emergency: a situation that involves inescapable urgency and temporary need for speed beyond that available by primitive means (For example: loss of human life or serious injury, law enforcement efforts involving serious crime or fugitive pursuit, retrieval of the deceased, fire suppression).

NOTES:

It is addressed in a draft WBMP

For resource protection, and visitor enjoyment


6: Is the action essential to meet legal obligations associated with retained rights of island residents?
YES
NO
Don't do it
7: Can this action be accomplished through visitor education?
YES
NO
Do visitor education
8: Can the action be accomplished outside of Wilderness?
YES
NO
Do it there

9: List alternative ways to address this issue

10: Evaluate and select alternative that successfully achieves objective with least impact on:

WILDERNESS RESOURCES
VISITORS' WILDERNESS EXPERIENCE

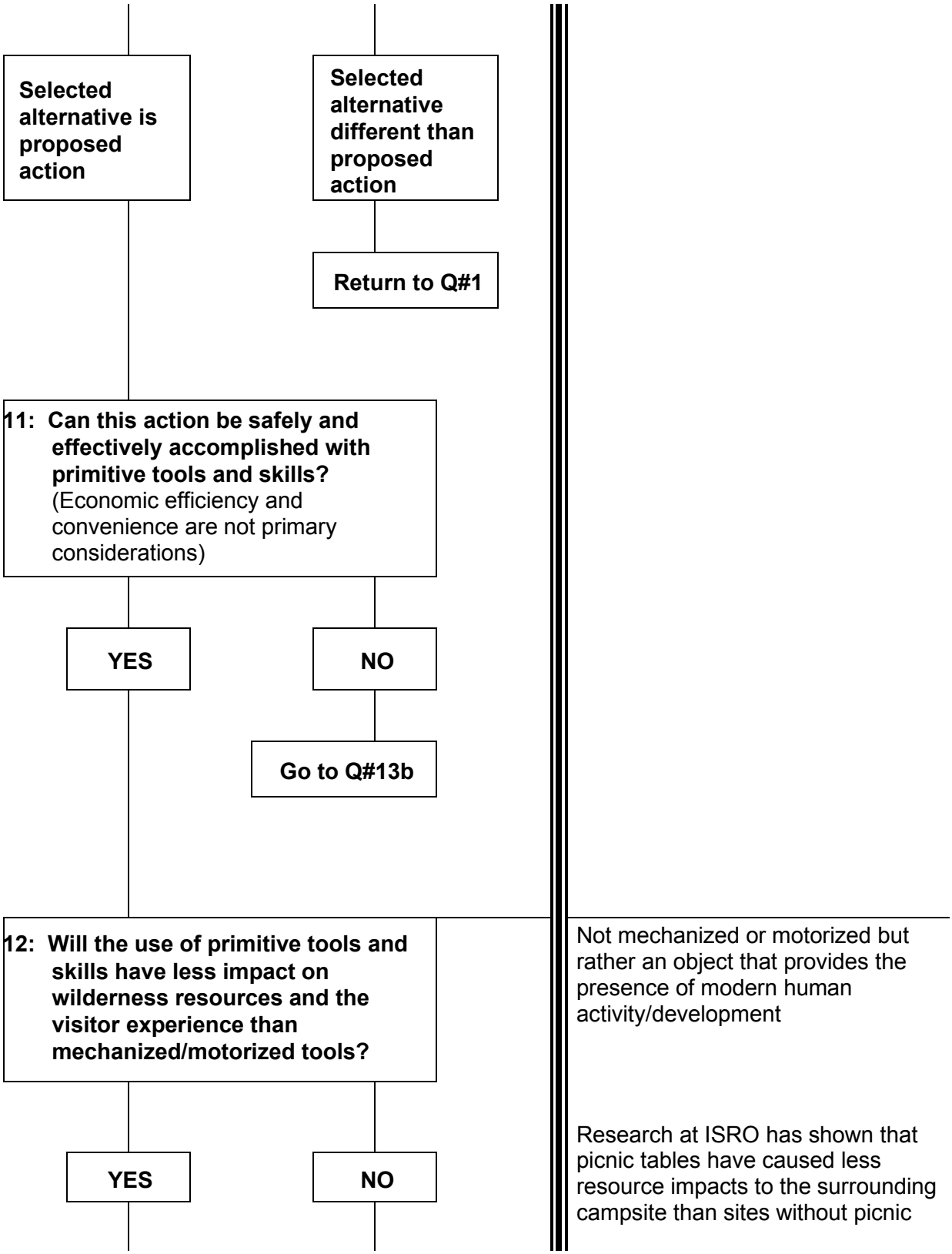
Consider impact on:
-Wilderness character and influence
-Preservation of natural conditions (including lack of man-made noise)
-Outstanding opportunities for solitude
-Assurance of a primitive and unconfined type recreation opportunity
-Preservation and use in an unimpaired condition

LIST ALTERNATIVES:
Alternatives are evaluated in the Draft WBMP.

A. No action

B. Remove picnic tables from all campgrounds within designated or potential wilderness (remove from 12 campgrounds, while retaining them at 9 campgrounds).

C. Request a waiver to maintain picnic tables in wilderness campgrounds. (NPS policies changed during the planning process and now states that picnic tables will not be allowed in wilderness except in those limited circumstances when they are necessary for resource protection and when documented and approved through a minimum requirements analysis.)


Selected alternative is proposed action
Selected alternative different than proposed action
Return to Q#1
11: Can this action be safely and effectively accomplished with primitive tools and skills? (Economic efficiency and convenience are not primary considerations)
YES
NO
Go to Q#13b
12: Will the use of primitive tools and skills have less impact on wilderness resources and the visitor experience than mechanized/motorized tools?
YES
NO
Not mechanized or motorized but rather an object that provides the presence of modern human activity/development
Research at ISRO has shown that picnic tables have caused less resource impacts to the surrounding campsite than sites without picnic

	tables (Farrel and Marion, 1998).
13a: Select appropriate primitive tools and skills	Picnic tables will be allowed when campsites have a dock, and shelters. Where campsites have these two features (docks & shelters) picnic tables will be allowed at both the shelters and the tent sites. (This has been the policy recommended by the BMG and approved by the Superintendent since April 1993) It is recommended that tables that blend in with the natural environment, should be phased into the landscape. (Get rid of metal leg tables, they reduce maintenance, but detract from the wilderness environment.)
13b: Select minimum mechanized tool/technique/facility	***Consider*** Minimum # trips Minimum group size Quiet technology Boat vs. vehicle
14: Evaluate your final destination using the questions on next page to ensure wilderness character is preserved.	

QUESTIONS TO CONSIDER IN WILDERNESS DECISION MAKING

1. Does your decision ensure that wilderness is not occupied or modified by humans? *The decision minimizes the presence of picnic tables to campgrounds that have both established docks and shelters, and does not increase the presence of human modifications to new areas.*

2. Does your decision maintain or move wilderness toward less human influence, within legal constraints? *In these limited situations where the presence of man is evident, the picnic tables will not standout, especially if they are the type that blend into a natural environment. Picnic tables will not be permitted within the interior or lakeshore campsites without docks or shelters.*

3. Does your decision allow wilderness to retain solitude and elements of surprise and discovery? *This decision should not impact the solitude or elements of surprise and discovery.*

4. Did you ensure that your decision was not primarily based on economy, convenience, comfort, or commercial value? *Does provide some comfort and convenience, but the benefits of reduced resource impacts to the campsite balance the decision.*

5. Does your decision look beyond the short term to ensure that future generations will be able to enjoy the benefits of an enduring resource of wilderness? *Yes it does.*

6. Does your decision support the wilderness resource in its entirety rather than maximizing an individual resource within wilderness? *Yes, this decision affects only 12 campsites out of 36, and a very small area out of the park which is designated 99% wilderness.*

7. Does your decision recognize the unique character of this particular wilderness? *Yes, and thanks for asking. Isle Royale's wilderness is surrounded by Lake Superior waters. Wild and untamed, but not designated wilderness. Boaters use docks around the island for safe dockage, and to access associated campsites and trails. These tables are only associated with these campgrounds (11) that have dock access. There are also 9 docks in non-designated wilderness that are managed as wilderness, where tables would continue to be provided. On the surface the public would not be able to tell the difference why some tables would be allowed in campsites with docks and shelters, and not in other campsites with docks and shelters.*

8. Does your decision ensure that the effects of human activities do not dominate natural conditions and processes? *Yes, in a reasonable balanced way.*

AFFIRMATIVE ANSWERS PROTECT AND PRESERVE THE WILDERNESS

APPENDIX J: LIST OF PREPARERS, CONSULTATION AND COORDINATION

In preparing the Wilderness and Backcountry Management Plan and EIS for Isle Royale, the NPS consulted with internal NPS staff, other agencies, research partners, and the public.

The Backcountry and Wilderness Management Plan Planning Team was the core team responsible for development of the Management Plan. Team members included:

- Phyllis Green, Superintendent
- Betsy Rossini, Assistant Superintendent
- Larry Kangas, Chief Ranger (formerly Isle Royale West District Ranger)
- Jean Battle, Chief, Natural Resources Management Division
- Jim Callahan, Facility Manager
- Liz Valencia, Acting Chief, Interpretation and Cultural Resources Division
- Mark Romanski, Lead Biological Technician
- Doug Boose, Program Analyst (formerly Isle Royale Trails Foreman)
- Buzz Brown, Trails Foreman
- Marshall Plumer, East District Ranger
- Greg Blust, Houghton District Interpreter/Visitor Center Supervisor
- Ann Mayo Kiely, Wilderness Coordinator and Team Leader since 2001
- David Newland, Environmental Compliance Specialist

Several people who are no longer part of the Isle Royale staff were also integral to the planning effort:

- Jack Oelfke, Chief of Resource Management, North Cascades National Park (formerly Isle Royale Branch Chief of Natural Resources)
- Pete Armington, Chief Ranger, Denali National Park (formerly Isle Royale Chief Ranger)
- Bill Munsey, District Ranger, BLM Taos Field Office (formerly Isle Royale East District Ranger)
- Smitty Parratt, Chief of Interpretation Wrangle-St. Elias National Park (formerly Isle Royale Branch Chief of Interpretation)
- Rick Barrett, Chief of Maintenance Assateague Island National Seashore (formerly Isle Royale Chief of Maintenance)

Isle Royale staff and the public provided invaluable comments and input to develop plan drafts and alternatives. Seasonal staff and research partners were also critical for inventorying and monitoring wilderness conditions.

Marilyn Hof, Senior Planner with the NPS Denver Service Center, provided direction, support, and consultation throughout the planning process.

Mike Hyslop, Michigan Tech University, provided assistance with producing maps.

A preliminary draft of the WBMP was reviewed by the Midwest Regional Office and other wilderness managers within the NPS.

APPENDIX K: COMMENTS RECEIVED

A full reprint of all written comments received from individuals and organizations is provided below.

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2. Alexander, Kim; Isle Royale Resorts 332
3. Glowicki, Ed; Isle Royale Boaters Association-Record of Phone Conversation 335
4. Brunson, James 336
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8. Barnum, David; Isle Royale Friends and Family Association 343
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10. Gale, Christopher 348
11. Haataja, Mark 350
12. Hand, Dave; Isle Royale Boaters Association 352
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19. Kilpela, Donald; Isle Royale Line, Inc. 371
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31. Strobel, Mark and Joan 403
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33. Westlake, Kenneth; Environmental Protection Agency 405
34. Wherley, Sean; Friends of the Boundary Waters Wilderness 407
35. Woiwode, Anne 409
36. Clean Wisconsin; Madison Audubon Society; Wisconsin League of Conservation Voters; Sierra Club-John Muir Chapter 412

PEPC: 135799
rec'd 11/21/05

11/18/05

COMMENTS ON WILDERNESS & BACK COUNTRY MANAGEMENT PLAN & EI STATEMENT.

AFTER READING THE "BACK COUNTRY IMPACT STATEMENT" IT IS VERY CLEAR THAT THE PARK HAS SO MANY ISSUES TO DEAL WITH AND FEWER AND FEWER RESOURCES AT HAND, THAT IT (THE PARK) NEEDS TO TAKE A DIFFERENT APPROACH TO ITS SITUATION. I WOULD LIKE TO MAKE A FEW SUGGESTIONS:

1. RAISE THE DAILY USER FEE AT THE BUSIEST TIME OF THE SUMMER. THIS MAY CAUSE SOME PEOPLE TO USE THE PARK AT OFF PEAK TIMES.

2. CULTURAL HISTORY.
THE PARK NEEDS TO BECOME MORE TOLERANT AND ACCEPTING OF ALL GROUPS OF PEOPLE WHO ARE INTERESTED IN IMPROVING THE PARK. THE PARK HAS AS MUCH AS ADMITTED THAT IT CANNOT MAINTAIN AND RESTORE ALL OF THE HISTORIC STRUCTURES ON THE ISLAND. THE PARK SHOULD JUST EMBRACE AND ACCEPT THE HISTORICAL FAMILIES WHO HAVE LIVED AT AND MAINTAINED THEIR OWN PROPERTIES

FOR YEARS AND YEARS. THE PARK COULD VERY EASILY ALLOW THE FAMILIES TO CONTINUE TO MAINTAIN & RESTORE THEIR OWN HOMES ON THE ISLAND. THIS WOULD SATISFY THE ESTABLISHED LAW (PRESERVING HISTORIC STRUCTURES) AND AT VERY LITTLE IS ANY COST TO THE GOVERNMENT. ALL THE FAMILIES WANT IS THE OK TO CONTINUE TO USE THEIR OWN HOMES.

3. THE PARK HAS TO REDUCE ITS OWN OVERHEAD COSTS. REDUCE THE NUMBER OF BOATS, DOCKS (DO NOT CREATE NEW CAMPSITES WHEN YOU CANNOT MAINTAIN THE ONES YOU HAVE NOW), ALLOW VOLUNTEER GROUPS TO MAINTAIN/REPAIR LIGHTHOUSES, CAMP GROUNDS ETC.

4. STOP DOING ALL OF THESE IMPACT STUDIES AND STATEMENTS. SAVE MONEY.

5. CULTURAL AND HISTORIC BLDGS. AND FAMILIES SHOULD REMAIN STATUS QUO UNTIL ALL PUBLIC IMPACT STUDIES ARE COMPLETE OR ACCEPT THE HISTORIC FAMILIES AS AN INTEGRAL PART OF THE PARKS HISTORY. (THE IRNHA ORGANIZATION HAS MADE A LOT OF MONEY OFF THEIR HISTORY)

Parc. 125929
rec'd 12/16/05

December 15, 2005

Ms. Phyllis A. Green
Superintendent
Isle Royale National Park
800 East Lakeshore Drive
Houghton, Michigan 49931

Dear Phyllis:

We appreciate the opportunity to offer comments concerning the draft **Wilderness and Backcountry Management Plan and Environmental Impact Statement for Isle Royale National Park**. Our comments center on the portion of the draft plan addressing the issue of **Managing Day Use in the Wilderness and Backcountry**, and in particular as it applies to day tours offered in conjunction with our tour boat the *M. V. Sandy.*

We are happy the park recognizes the vital role the day tours play in enhancing enjoyment of the island for many park visitors, including but not limited to guests of Rock Harbor Lodge. We also fully support the necessity of conducting these activities in a way that will ensure the preservation of these resources. A stated corporate goal of Forever Resorts is, after all, "Play, Preserve, Protect."

It is our view, however, that the best way to achieve the goal of maximum availability of these activities is through **Alternative A** rather than the park's preferred **Alternative C**. As stated in the draft WBMP on p. 79, "All alternatives ..... include maintaining the concession-operated boat tours with the stipulation established in the GMP that there would be no expansion of the tour destinations, schedule, or boat capacity." We believe that it would not be possible to implement the preferred **Alternative C** under these conditions.

Ten *M. V. Sandy* Sightseeing Tours are offered each week under the current scheduling. Six of these tours are offered in conjunction with NPS interpreters. The other four tours are offered with interpretation provided by the boat's crew. The WBMP raises the possibility of having additional NPS interpreters or tour operators provide additional personnel to accompany the split up groups required by **Alternative C**, triggered when maximum threshold numbers of tour participants are reached for any given tour: 20 person group size limit in Frontcountry areas, 15 for Hidden Lake, and 10 to McCargoe Cove/Minong Mine, in the 42 person capacity boat.

Rock Harbor Lodge / Windigo

Summer - P.O. Box 605 ■ Houghton ■ MI 49931 ■ (906) 337-4993 ■ (906) 337-4993 fax ■ www.isleroyaleresort.com
Winter - P.O. Box 27 ■ Mammoth Cave ■ KY 42259 ■ (270) 773-2191 ■ (270) 773-5120 fax ■ www.isleroyaleresort.com

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This proposed arrangement would we believe pose an ongoing challenge for all entities involved. NPS budget constraints in recent years seem to make it unlikely that more NPS interpreters could be made available for the additional staffing required. Tour operators in our experience would be hard pressed to add additional personnel to meet this proposed extra staffing. Isle Royale Resorts fields a two person crew on the M. V. Sandy consisting of a U.S.C.G. licensed captain and deckhand, both of whom have provided some degree of interpretation when needed. Aside from the specific skills needed to operate the boat safely, each crew member is also enrolled in both company required and U.S.C.G. required drug and alcohol testing programs, making the casual addition of lodge provided crew for temporary interpretative duties a difficult prospect.

We have included statistics showing totals for M. V. Sandy sightseeing tours from 1991 through the 2005 season (see attachments). Although this fifteen year compilation could provide ample numbers to support most any given viewpoint on this issue, at minimum we do see these clear trends: many tours ran with fewer passengers than the **Alternative C** thresholds, many tours ran with the average numbers, and some fewer tours ran at or near the M.V. Sandy's 42 passenger limit. What the statistics cannot reliably tell us is when, on any given day of week or the season, will we cross over to the need for split groups and thus require the additional personnel as called for in the preferred **Alternative C** plan.

Full access to and availability of the day tours has long been an essential component of the services we have offered the park visitor. Day tours are an integral ingredient in serving the much sought after group tour business we value. Day tours are also an essential element of the all-in-one lodging/transportation packaging we are finding so successful the past few years, offered in conjunction with our partners the Voyageur II and Isle Royale Queen IV. Other aspects of the WBMP are sure to alter park visitation patterns in ways not now foreseen, furthering the need for the full flexibility now in place.

We urge you to assure continued full availability for these day tours by adopting **Alternative A for Day Use: No Action, Maintain Current Management Direction in the WBMP for Isle Royale National Park.** We support other aspects of the preferred **Alternative C** such as the development of a new hiking trail in the Windigo vicinity.

We strongly disagree with the inclusion of **Low-cost Rustic Cabins in Rock Harbor** as an item for consideration in the **WBMP**. We contend these proposed units would have an ongoing negative impact on the viability of the lodging accommodations offered by Rock Harbor Lodge, an enterprise already struggling with low occupancies, a short operating

season, overall high costs of doing business in a very remote location, and extremely high utility costs(which currently add $30-80 per night to a night's stay in the form of a utility pass-through). For an operation open from Memorial Day to Labor Day, paying utility costs to the National Park Service in excess of $225,000 for that short season, any modification to the lodging landscape must be very carefully considered indeed.

We do not wish to compete with the National Park Service for a very finite number of those who would desire to visit the island and stay in a cabin, whether it be labeled a low-cost rustic or a housekeeping cabin; it would not take long for potential guests to figure out they could escape the Rock Harbor Lodge's 24%utility surcharge if they stay in the rustic cabins.

We suggest instead the park consider adding a number of additional Adirondack style shelters to the Rock Harbor campground and designate them for multi-night use as a way to meet the desire to offer more multi-night accommodations.

We salute the park's efforts to improve the visitor's enjoyment of Isle Royale National Park as shown in the tremendous effort represented in creating the draft **Wilderness and Backcountry Management Plan**. Thank you for considering our respectfully submitted comments.

Sincerely,

Kim L. Alexander, CHA
General Manager
Isle Royale Resorts

Cc: Bill Butts, Exec. Vice President, Forever Resorts
enclosure

PEPC: 135838
rec'd 12/14/05

Jean Battle
12/14/2005 09:20 AM
EST

To: Phyllis Green/ISRO/NPS@NPS, Betsy Rossini/ISRO/NPS@NPS
cc: Mark Romanski/ISRO/NPS@NPS, Susan Sanders/ISRO/NPS@NPS
Subject: WBMP & Glowicki/IRBA

Phyllis, Betsy

Just a note re: WBMP discussion with Ed Glowicki. We talked this am, 8:30-9:00. Below is a summary of the conversation, FYI.

He wanted clarification on Alt B vs Alt C, for overnight use. I explained that Alt B (preferred alt) accounts for/allows for docking permits either in conjunction with campsites or alone, based on dock lengths and boat lengths of permittees. We discussed a specific scenario where he changed his itinerary, tied up at a dock that was fully booked, and had to move his boat or negotiate tying off an advance- permitted boater, even if he got to the dock first (paragraph 1, p.60, basically says the same thing.)

-1

I explained that Alt C does not account for dock space separately, and so if all campsites were booked at a campground, the boater would not be able to put that campground on his itinerary for the nights the campground was full. No tally of dock space would be kept (ie if the campground was full of hikers and paddlers and no boaters, the system wouldn't account for docking only, and would only show that the campground was full.) He would still be able to flex his itinerary and show up there, and decisions about who gets dock space would basically be decided the way they currently are (whoever gets to the dock first gets space, and the boaters work it out among themselves without anyone being able to claim precedence.)

-2 Discussed Alt D (entry quotas) briefly: I explained that at the start there would be no quotas on boaters and we would monitor how things were going to determine if an entry quota was needed for boaters down the line.

-3 He also asked about funding for the remote permitting system- were we definitely going to institute a user fee? I said it is one of several options to explore; we haven't made any decisions.

-4 He also asked about methods of making advance reservations. I said they were the same for all advance permitting options: phone, fax, mail, in person, or via Internet.

This will serve as a Conversation Record and will be placed in the admin record for the EIS. Susan, please print this and put in the EIS file. Thanks

Jean

Jean Battle
Chief, Natural Resources Management Division
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49931
jean_battle@nps.gov

PEPC: 136451
rec'd 12/21/05

"Brunson, James (USAMIE)" <James.Brunson@usdoj.gov>
12/21/2005 12:10 PM EST

To: isro_wbmp@nps.gov
cc:
Subject: FW: Isle Royale Wilderness and Backcountry Management Plan and IES

From: Brunson, James (USAMIE)
Sent: Wednesday, December 21, 2005 12:08 PM
To: 'isro_wbmp@nps.gov'
Subject: Isle Royale Wilderness and Backcountry Management Plan and IES

I have received and reviewed the above-referenced item. Thank you for honoring my request that it be forwarded to me.

I have backpacked at Isle Royale four times. In doing so, my companions and I have been quite aggressive in wanting to cover a lot of ground during the limited time available to us for such recreation. On our last trip, we backpacked the entire length of the Isle in 4 days.

-1 I concur in the proposal to establish a back-country office. I believe that doing so will enhance the long-term preservation of the wilderness.--Campfire rings should be eliminated. They are injurious to the environment under any circumstance, and of course potentially destructive in a significant way. I like a nice campfire as well as anyone, but Isle Royale is simply not the place for that type of activity, in my opinion. Your day use concept of the c3-5 mile loop near Windigo is a good idea, as is the idea of removing two of the fire towers. You can and you should, in my view, eliminate the picnic tables, except those that are near the lean-to shelters. -2

-3 Please resist the nice-sounding inducements to privatize the parks. I am aware from other reading that there is a significant lack of funding for the carrying out of all the various functions and programs you'd like to on Isle Royale. Money coming in from private sources though, and goods and services in-kind, are in my estimation fools gold. If privitization was to occur on Isle Royale, my prediction would be that you (and I) would like a number of the things accomplished during the first several years or phase of involvement. Long-term though, we'd end up worse off.

The NPS is doing an extraordinary job of maintaining and preserving Isle Royale, and under difficult circumstances. My hat is off to you for a job well done. Thank you for soliciting my views.

James A. Brunson
Attorney-at-Law
989-895-5712

PEPC: 135812 rcvd 12/12/08

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name David Crites

Organization

Address 320 W Reader St
Elburn, IL 60119

E-mail davidcrites@sbcglobal.net

Keep my contact information private ☐

Comments

The centralized permitting system is a must. I think it will give visitors a much improved experience.

I think the day use limits of option C makes the most sense for the parties involved. The current practice of allowing up to 40 people at backcountry sites can have a very negative impact on other visitors.

I believe the picnic tables should be maintained at backcountry sites. Without picnic tables visitors would resort to using trees/rocks for cooking surfaces ~~and~~ doing more environmental damage than the presence of tables.

Campfires should be allowed using the rotating fire ring option.

over

please continue on other side

The new campsite at North Lake Desor is an important addition.

I do not think there should be new shelters built at Windy O

Building rustic cabins at Bass Harbor seems to be a good idea as long as there is a fee associated to recover the cost of building and maintaining the cabins. There would also need to be limits on length of stay in the cabins.

The day use loop near Windy O is a good idea. It would give day use visitors a much better option than walking the same trail in both directions

~~The~~
I think the overall plan will help to lessen the impact of the peak season on the Island. Hopefully more people will choose to use the Island off peak, which will give all visitors a better experience.

PEPC: 136527
rec'd 12/21/05

December 20, 2005

310 Pillsbury Drive, Southeast
Minneapolis, MN 55455, 651-646-7371

Summer resident of Tobins Harbor, Isle Royale

Phyllis Green, Superintendent
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49930-1895

Dear Phyllis,

Please accept the following comments concerning Isle Royale's Wilderness and Backcountry Management Plan.

My family, the Edwards, first came to Isle Royale in the 19th century seeking a wild place to fish, reflect and find a connection to nature seeking a respite from urbanization and industrialization characteristic of that time period. The Edwards, a family of ministers and missionaries, valued wilderness and reflected on man's spiritual connection to the land. They viewed themselves as stewards of the land and this ethic of environmental stewardship constitutes a historical legacy that was passed down to each succeeding generation of Edwards. For over 100 years, the Edwards have lived in accord with what the NPS now defines as a concept of "minimal impact" utilizing hand tools, non-motorized boats and keeping a primitive "camp" which is very much the same as it was long ago.

Although I agree with the concept of minimal impact and value the idea that park managers, visitors, and island residents adhere to reducing congestion and noise on the island, I am very concerned about the future management of Isle Royale's cultural resources. These resources, including the cabins, their contents, surrounding landscape and, most importantly, the people reflect a rich cultural history associated with westward movement, immigration, environmentalism and the growth of a new leisure class. This is an important part of our Nation's cultural heritage, which the Park Service, in part through you, is charged, by Federal law to preserve. The last remnants of Isle Royale's rich cultural heritage remain, largely because of the stewardship over the past century of the few remaining families. The families' stewardship contrasts sharply with NPS policies, which even into the 21st Century have destroyed this heritage. Therefore, I request that the Wilderness Backcountry Management Plan not be finalized until a corresponding Cultural Resource Plan is in place. I also request that the families who *are* the last remaining threads of Isle Royale's culture and without whose stewardship, Isle Royale's cultural resources would be greatly diminished, play an important role in the *development and implementation* of the Cultural Resource Plan.

Sincerely,

R. Lawrence Edwards

R. Lawrence Edwards
Professor &
Fellow of the American Academy of Arts and Sciences

PEPC: 135796
rec'd 12/05/05

Warner M. Forsell
P. O. Box 411
Hydesville, CA 95547
November 28, 2005

Park Superintendent Phyllis Green
Attn: WBMP
Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931

Dear Superintendent Green:

Thank you for sending a CD of the Wilderness and Backcountry Management Plan. I was Rock Harbor District Ranger/Park Naturalist between 1966 and 1969. I enjoyed reading the plan and appreciate the difficulties that went into formulating it. The degree of detail is impressive. I realize that this is a 10 to 15 year plan and that all the various legislative requirements must be complied with, including those of the Wilderness Act of 1964. I believe the Wilderness Act is based upon a false premise; that is, the dichotomy of "man and nature." This dichotomy is a mental construct that puts a boundary between things human and natural. On one side of the line is the human world, the cultural; and on the other side – "out there" – is the natural world. What we're discovering is that there is no "out there" anymore, and that humans have, and have always had, a place in the natural world. We're the keystone species with an obligation to manage and control resources.

The concept of wilderness relates very closely to "natural regulation," as we once attributed to "nature" a self-healing ability if damaged, as well as a degree of self-regulation. The mandated objective of the NPS is to conserve natural scenery, wildlife, and historic objects, while providing the setting for human enjoyment. Implicit in this mandate is a requirement to manage and control. The "untrammeled by man" language in the Wilderness Act suggests the self-healing, self-regulating attributes of nature and appears to be a denial of any positive human input in the natural world; however, the intent must have been to ensure preservation of "wilderness character," or set of qualities that are *not obviously* human, i.e., "with the imprint of man's work substantially *unnoticeable*," or that, "generally *appears* to have been affected . . . by nature" In other words, it doesn't have to *be* totally "natural," or "untrammeled by man," but Wilderness should *look* "natural." Most will agree that pre-settlement America looked "natural."

I will confine my comments to one area I feel is incomplete and that is "prehistoric occupation." It is well documented that the Ojibwa, and/or other earlier Indians, occupied Isle Royale (or Minong) for over 4,000 years and that they extracted copper from pits using hammer-stones in areas like McCargoe Cove. In Chapter 3, page 113, is the statement, "During the park's mining period, fires were intentionally started to expose bedrock and minerals." I suggest that it is "more likely than not" that Native Americans also exposed a lot of bedrock through fire for their mining <u>and other activities</u>, and did so for an extended period. Fire was used for a multitude of reasons.

There has been a lot written in the past few decades that attests to the extensive use of fire by Native Americans. An excellent reference is "America's Ancient Forests," 2000, Thomas M. Bonnicksen, John Wiley and Sons. Too frequently, the influences (on the natural ecology) by pre-settlement Native Americans are ignored. The pre-Columbian ecology of Isle Royale was likely determined by these people (who were undoubtedly the keystone species).

We can attempt to manage the park to provide a snapshot of what Isle Royale possibly "looked like" at and before European settlement, and that would be about 1800, give or take a few years. If we define "natural" as without any human influences, we would have to go back 4,000 years or more. The 1963 Leopold Report argued that parks should provide vignettes of primitive America (or snapshots of pre-settlement conditions). This was a year before the Wilderness Act. The problems with the "vignettes of primitive America" argument are twofold: we're not certain of what pre-settlement conditions were, and that even without settlement, conditions change. Isle Royale provides an excellent example of change without extensive settlement.

Having said that, I believe it's necessary to learn as much about the pre-settlement conditions as possible. If we can determine, better understand and appreciate the influences pre-settlement Native Americans had on the park, we will probably be less concerned about the impact of visitor campfires, etc, and possibly more concerned with the loss of influence by this vanquished keystone species. The Native American was not only an accomplished fire builder, but was also a very accomplished big game hunter. Frequent low intensity fires produce a much different fire mosaic, and large herbivores were a preferred food source. We've created a very different ecosystem without doubt.

Many people assume that management of parks is an oxymoron, believing these areas are best left to self-heal and self-regulate. With fire suppression the NPS disrupted a natural disturbance regime, but how much? Very little probably. Some attribute an extended (100 to 200 year) fire return interval to the forested land in the area. The pre-establishment, 1936 fire was apparently the result timber cutting operations and burned about 35,000 acres. The early fires set to expose bedrock and copper may have burned more. It is likely that the pre-Columbian Native American fire regime (which was not dependent and altered the lightning-ignited regime) produced the forest composition and structure presented to the early copper miners – so what's natural? Some kind of management is usually required where the natural processes have been disrupted and this requires a <u>measurable</u> objective in order to tract results.

The Chapter 3, "3.2 Wilderness Character," on page 112, admits to being difficult to measure and is a somewhat quasi-religious intangible in its own right. Without getting into "an unseen presence capable of refocusing our perception," etc, we can measure sights, sounds, smells, people, developments and so forth, and can plan for and manage these impacts. The statement, "an intention and a commitment to the spirit of an intangible," falls in the same "not measurable" realm. We should manage measurable qualities or factors and avoid the intangible. While there is a religious dimension to wilderness thinking, management plans should be science-based and the basic objectives

2

should address biodiversity, health and sustainability. The 1.3.1 Management Goals statement "Wilderness character is a combination of biophysical, experiential, and symbolic qualities in an untrammeled and natural state . . ." is esoteric and could be revised. Visitors come to parks equipped with their own "state of mind."

I was very pleased to see a commitment to "**Adaptive management**: a process for continually improving management policies and practices based on ongoing assessments of management effectiveness" (WBMP Glossary). The following are quotes from "The Redwood Forest: History, Ecology, and Conservation of the Coast Redwoods," 2000, Reed F. Noss, Save-the-Redwoods League, Island Press, Covelo, CA:

> Adaptive management requires, first, humility – the admission by forest managers that they do not have all the answers and that everything they do is an experiment with an uncertain outcome. In practice, "management" and "humility" have been countervailing concepts, and this needs to change. Beyond humility, adaptive management requires a commitment of scientific oversight to forest management in perpetuity.
>
> Adaptive management relies on *measurable indicators* that correspond to the elements of forest *biodiversity, health, and sustainability* that forest managers – and society generally – find valuable. (my italic)
>
> . . . the best forest managers can do is to use their ecological judgment as a starting point and then apply adaptive management – learn by doing – in an intelligent, reasonably controlled, responsive way.

Durward Allen, of the wolf-moose study, used, as I recall, the following in a speech to resource managers at some retirement function:

> "When the season has run its course and it's time to pull in the sheaves, people should look back upon their work and see there a modicum of improvement in the productive resource."

Thank you for providing me with the opportunity to comment. Good luck on the plan.

Sincerely yours,

Warner M. Forsell

Warner M. Forsell

3

PEPC: 1363716
rec'd 12/21/05

December 19, 2005

Phyllis Green, Superintendent
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49931-1895

Dear Superintendent Green,

The Isle Royale Friends and Family Association appreciates this opportunity to comment on Isle Royale's proposed Wilderness and Backcountry Management Plan. We, the board of directors, feel the current document raises many questions relevant to the preservation, protection and interpretation of cultural resources on the island. The key issue, from our perspective, is how to effectively manage cultural resources within a wilderness area. In an attempt to answer this very question, the Apostle Islands National Lakeshore conducted a study in 2002 that concluded "The Wilderness Act and all of the cultural resource laws are part of the National Park Service's stewardship mandate and we must put our efforts into making them work in concert with one another, even when they appear to be in conflict with one another." (See Guidance "White Paper" Number 1, Issue: Cultural Resources and Wilderness, November 30, 2002, www.nps.gov/apis/). This important dialogue between wilderness and cultural resources is part of an evolving body of knowledge nationwide that reflects the growing and ever-changing field of historic preservation.

We feel strongly that the Isle Royale Wilderness and Backcountry Management Plan needs to do a better job at specifically addressing the protection and integration of cultural resources. Isle Royale is at a critical juncture in its history. Its cultural resources are threatened by a wide range of factors, including the expiration of life leases, lack of maintenance and preservation resources, lack of management planning, and an historical (and natural) bias toward the wilderness qualities of the park. The management plan for Isle Royale's cultural resources--including components of the WBMP that impact these resources--has to address not only the protection and preservation of physical cultural resources (i.e. buildings and sites), but the more intangible cultural values contained within the history of the island's families and communities prior to the establishment of the park in 1940. As continuing stewards of these resources that extend more than a century, we feel a deep sense of obligation to develop a vision and plan for

not only the protection and preservation of the island's unique history, but an optimal plan to yield the most benefit to future generations from research and interpretive perspectives.

At Isle Royale, a cultural resource management plan has yet to be developed. Thus, the comprehensive WBMP, developed over many years, does not effectively answer significant questions concerning the future of cultural resources within the park. In fact, the plan itself recognizes how little is known about such resources. For example, the plan states that "The cultural resource program is new....several other areas around the park need to be evaluated for cultural significance" (3.4.5.); "The entire (Washington) harbor area should be evaluated for cultural landscape status" (3.4.5); "Other fishing sites on the north shore of the park should also be considered for cultural significance" (3.4.5); "At present few ethnographic resources have been documented.... It is likely that additional ethnographic resources exist in the park" (3.4.6); "The summer cottage area of Tobin Harbor has the potential to be recognized as a cultural landscape. Many of the original cottages remain including several that are still occupied by the families who owned the land before Isle Royale became a National Park" (3.4.5).

Because so much is unknown and so much is at stake, the Isle Royale Friends and Family Association (IRRFA) recommends that the final WBMP be postponed until a comprehensive Cultural Resource Management Plan is conducted and implemented. IRFFA has long awaited this overdue plan, first promised by Superintendent Douglas Barnard on July 30, 1996, in a meeting held on Isle Royale attended by former East End District Ranger Bob Whaley and island residents Grant and Marilyn Merritt, John and Jeanne Snell, Tom Gale and Mary and Dick Scheibe. Also, we note that although the term "cultural resources" is used hundreds of times throughout the WBMP, the NPS plans to conduct a Historic Properties Plan in the future (1.6). We ask that the NPS clarify the difference between a Historic Properties Plan and a Cultural Resource Management Plan as "historic properties" suggests a very narrow focus on the built environment and its surroundings.

As representatives of the few remaining ancestral families on Isle Royale, IRFFA cares deeply about the future of Isle Royale's cultural resources. To us, the cultural resources are not narrowly defined in terms of structures. They include not only the buildings and landscape, but the unique community of people who reflect the culture of those who built the

structures, inhabited them and cared for them. The WBMP nostalgically states that the fisherman are gone(3.4.5), yet the Anderson, Sivertson, Johnson, Mattson, Holte and Rude families, for example, are still actively part of an historic tradition rooted in the larger context of late 19th century immigration patterns. This larger context is a key piece missing from the cultural history yet to be told at Isle Royale. Reactions to industrialization and the rise of a new middle class led other island families to come to Isle Royale at the turn of the 20th century. This historic community of people embraced the concept of man's interaction with the wilderness, a concept very similar to that proposed by the WBMP. How the wilderness plan can embrace this part of Isle Royale's history will deepen the public's understanding of a rich part of its national heritage associated with Isle Royale National Park.

We look forward to a continued dialogue with the NPS on the future preservation and interpretation of cultural resources within the wilderness setting of Isle Royale National Park.

Sincerely,

David Barnum, President, Isle Royale Friends and Family Association
Carla Anderson
Jim Anderson
Tom Gale
Missy McDonald
Grant Merritt
Stuart Sivertson

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

rec'd 12/22/05

Name FRED FUNKEY

Organization KEWEENAW EXCURSIONS

Address PO BX 97
AHMEEK MI
49901

E-mail

Keep my contact information private ☐

Comments

HOW MUCH DID 8 YEARS OF PLANNING THIS DID IT COST THE TAXPAYERS? (US)

please continue on other side

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

rec'd 12/22/05 Desmond name Cr ID

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Keep my contact information private ☐

Comments

ARE DAY GROUPS OF MORE THAN 20 GOING TO BE PROHIBITED?

please continue on other side

PEPC: 135879
rec'd 12/14/2005

"Chris Gale"
<cbgale@up.net>
12/14/2005 08:49 AM
EST

To: <isro_wbmp@nps.gov>
cc:
Subject: Comment on WBMP

Dear Superintendent Green:

Please include this email in the comments for the WBMP.

I notice an error in the WBMP on Page 151 in the writer's interpretation of the condemnation history. The Plan states that "....many cabin owners were given a unique opportunity to sell their land and stay on as "Life Lessees". " This makes it sound like the Life Lessees were able to "double dip" from the Federal trough. In reality, as part of the condemnation process of lands held by private citizens, the Federal Government exercised their police power. When the land buyers of Michigan approached the landowners of Isle Royale, there was an either/or choice. You could EITHER get the value of your land and buildings at that time, OR you could stay on as a life lessee. There were no payments made to those who chose to stay on as life lessees. This is neither "unique" nor an "opportunity". It is not "unique" since there is a long history of condemnation of private lands for the good of many, in our National Parks. It is not an "opportunity", since the value of the land, is the land itself, and that was taken. While several following generations have had the ability to use the land, if the back taxes could be paid in exchange for clear title, I suspect that most would do so.

Mainland Permitting—Enforcement may be difficult, and if there are violations, it will create confrontational situations that create other issues. How about offering priority of locations for those with mainland permits. No permit then no guaranteed dockspace.

Day use management-Additional short day trails make sense. Limit the numbers on ferries during August.

Campfires- In the 1970's, the Park loaded up the landing craft and put pulp sticks at every lakeshore campground. The Park also provided a saw and axe at every campground. Visitors were invited to cut trees. In effect, the visitors were trained to expect fires. Now, policy has changed-we all have the right to get smarter. While rotation of sites sounds reasonable, I think this will be hard to manage. I would limit to very few locations, and ban during fire seasons.

Fire Towers—Like other cultural resources, these reflect a past period in the Park's history. I would leave in place, and when maintenance and safety become an issue, dismantle and leave on the ground in place. Just like the boiler at Daisy Farm, or the ore car in McCargoe Cove or the house on Newman Island, or the

boathouse on Savage Island. Save the taxpayers $100,000, or use the money for another valuable interpretive need at the Park. I think the firetowers reflect a different period, one that has equal value in the history of the island.

Picnic tables—Either leave in place until they need maintenance and then remove, or remove all tables now.

As a general comment: Don't create so many rules that it will be difficult to enforce them consistently and equitably, or so many rules that the visitor will have difficulty learning what rules apply. Since so much of the sound violation of wilderness space is from the daily operations of boats and equipment at Park Service locations such as Mott Island, Windigo, and Rock Harbor, I think the Park needs to take a harder look at what they can do to minimize their impacts. Today, the NPS operates more boats and equipment than ever before, yet visitation has not markedly increased. Perhaps there are more effective ways to operate on a daily basis. Currently, the Park is operated on a "do as I say, not as I do" basis. A minimal impact Park operation should be the good example that the visitor follows.

Thank you, Christopher B. Gale

Christopher Gale
Buell Consulting, Inc.
54410 Old County Road
Calumet, MI 49913
Ph. 906-281-2161
FAX 906-337-5276
email: cbgale@up.net

PEPC: 1316400 rec'd 12/21/05

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name Mark Haatajа

Organization

Address 50605 Mekitigan Rd
Atlantic Mine, MI 49905

E-mail Mark Haatajа@Netscape.com

Keep my contact information private ☐

Comments

1 I'd like to see the picnic tables retained.

2 The current first-come-first-served arrangement of allocating docks should be maintained. Often we cannot plan ahead more than 1 week when crossing to Isle Royale in our small boats.
I have never had a problem finding a dock or with crowding ever.

please continue on other side

DOC: 136533
rec'd 12/21/05

ISLE ROYALE
BOATERS ASSOCIATION
P.O. Box 97, Houghton MI 49931

Comments
Wilderness Backcountry Management Plan - Isle Royale

1) As a background, one must first consider the size of the affected area that is in question with respect to the WBMP. The total wilderness area reported by the NPS is approximately 131,925 acres of land. If we assume that trails are 6 feet wide and there are 165 miles (5280 ft/mi) of trails then there are 5,227,200 ft^2 of trail area utilized by visitors. The campground area affected as report by the NPS in Table 12 of the WBMP is 196,160 ft^2. The total land area affected is 5,423,360 ft^2 or 124.5 acres. So the percentage of wilderness land mass that is used by the vast majority of the visiting public is only 0.0944 percent. This plan only addresses this 0.0944 percent. All the alternatives presented in this document do not incorporate a plan for visitor utilization of the pristine zone which is 99.906 % of the land mass of Isle Royale.

2) In a letter to Ms. Green from IRBA on 1/2/2002, the following was presented for the WBMP scoping:
On page 107 of the GMP/EIS, the NPS acknowledges the "programmatic" nature of the plan and "... based on assumptions that may not prove to be accurate in the future". An important area to consider in the WBMP/EIS is additional new campgrounds and dispersed campsites. The potential negative environmental impact of not increasing campsites and dispersing visitors is unknown. The reason for not increasing campsites in the GMP/EIS appears to have been the previous superintendent's position, which was not based in science. The effect of not increasing campsites and dispersing visitors may very well be detrimental to the human environment of Isle Royale; the human environment as defined by NEPA. NPS's Jack Oelfke's acknowledges in the Daily Mining Gazette (12/1/2001) that "The key feature of wilderness is seeking a solitude experience." This statement coupled with the fact that there is not one campsite at Isle Royale that is solitary in nature; indicates the NPS must consider the addition of dispersed solitary campsites. Oelfke also states "How do you manage a park so people don't feel crowded?" Certainly the answer to this question is alternatives which increase the number of campsites and campgrounds.
On page 12 of the Draft WBMP, paragraph 1 entitled Backcountry regulations and policies: "Many people offered suggestions for better

managing visitation in the park's wilderness and backcountry, again with some conflicting interests. Some visitors suggested encouraging more camping off trail and anchoring out to alleviate pressure on campgrounds. There was general agreement however that regulations and any system for permitting should be kept as simple as possible. These issues were considered in evaluating current wilderness and backcountry policies and incorporated into alternatives for changes. Additionally these concerns will remain a consideration for the WBMP's implementation plan." Where is the discussion of the incorporation of off trail camping in the pristine zone? THIS DOCUMENT DOES NOT INCLUDE A PERTINENT DISCUSSION OF HOW THE OFF TRAIL USE OF THE PRISTINE ZONE (INCLUDING CAMPING AND HIKING) MAY EFFECT THE ISSUE OF CROWDING IN THE CAMPGROUNDS, IN ANY OF THE ALTERNATIVES IN A MEANINGFUL WAY. For example, what is the carrying capacity of the pristine zone? How many permits are allowed in this zone and how would this offset crowding in the campgrounds? Not only was the Pristine Zone ignored in the Alternatives Section, the Affected Environment Section does not contain a description of the Zone, and as it would be expected the Environmental Consequences section has no mention of it. **The scope of this plan included the Pristine Zone and as such, alternatives must include this zone along with Affected Environment and Environmnental Consequences sections**.

3) The permitting/reservation system needs to be defined in detail, in this plan, in order to make an informed decision of the alternatives. This plan calls for a specific action; a permitting/reservation system. The specific details of how the reservation system will work are not presented in this document. Some examples are: 1) When will permitting start for a given season? 2) How often can a person permit? 3) Are there restrictions with respect to the number of reservations a person can make? 4) Would it not seem that this reservation system relies on the visitors to carry out the enforcement? An example may be: A hiking party comes to Daisy Farm campground late at night and has a reservation and has to kick out someone who is at a camp site. Which campsite does he/her kick out? This person seems to have the right to go to every campsite at Daisy Farm and ask each camper if they are permitted for that night. This would appear to create more social conflict than with the present permitting system. A common scenario with a boater, with a reservation, would be traveling to the island near dusk (possibly running late due to rough seas, motor problems, helping another boater) and pulling up to a dock and finding it full. Then the boater would have to somehow contact the people on the shore to move so they could get their reservation. These types of scenarios are going to be prevalent if a reservation system is adopted. With respect to social conditions, a reservations system would create more animosity among visitors and again puts the enforcement in the hands of the visitor. That is why for the past 50 years, the permitting

system on Isle Royale has worked very well. In addition, it is not fair the public would have to pay for a reservation system.

4) The NPS and the moose/wolf researchers may be violating the Wilderness Act on Isle Royale since it became a national park. Park planners of the GMP did not discuss the impact of research on Isle Royale. The NPS and the moose/wolf researchers have been taking (as far as the public knows) all the moose and wolf remains from the wilderness areas of the island for many years and using them for their own means. These animal remains are one of the natural and short term historic landscapes of the island. Because of these actions, by the NPS and the researchers, visitors are denied the opportunity to view the remains of wildlife in the wild. In addition, the taking of these artifacts alters the natural resources and landscape as the remains contain nutrients for other wildlife and are a part of the natural process of the island. Isle Royale prides itself on the moose and wolf relationship and visitors should be allowed to view the remains of these magnificent creatures as a part of their wilderness experience on Isle Royale. Suggestions to mitigate this violation of the wilderness act may be to: 1) begin to prevent NPS personnel and researchers from taking these remains from sites on Isle Royale. Limit the researchers to taking only small samples of the remains for scientific research. 2) inform visitors of sites where some of these remains are so they can see them if they choose to do so.

5) Clarification Needed: Page 43 paragraph 1; Both the Isle Royale Historical Society and the Isle Royale Boater's Association hold annual meetings at Rock Harbor Lodge. Both organizations hold one day meetings to support various activities related to helping the NPS promote various activities on Isle Royale that benefit both the NPS and the public. Will placing the limit on the size of the groups in the park impact the activities of these organizations?

6) Clarification Needed: Page 42 paragraph 6; Can the NPS define what they mean by unacceptable impacts to park resources and values for boater's that are anchoring out? Please provide specifics.

7) The environmental consequences section does not describe succinctly how the natural resources will be impacted for each specific area of the park by each proposed action.

8) Alternative B for managing overnight use needs clarification on option 1 for boaters. Can boaters permit for docks only? If a boater permits for a particular campground does the boater get permitted for the dock? Option 2 is clear.

9) Alternative C states that permitting for boaters would be as it is for alternative B. However, this is not the case according to the NPS (Jean Battle 12/12/05 and 12/14/05). Hence alternative C is not written properly to explain the actions intended by the NPS. **This is a significant point because the people need to make an informed decision for this alternative and as written they are misled as to what will actually occur**.

10) Page 53 – The NPS acknowledges that canoes have an "adverse effects on the nesting loons on Isle Royale". Page 12 - The scope of the plan included adverse human impacts on loons. The combination of both credible research of canoe impacts on loons coupled with the scope of the plan including impacts on loons compels the NPS to include this loon impact in the management alternative as related to canoes. This impact is not discussed in this plan.

11) Safety is of the utmost concern for boaters traveling to the island. Most of the boating public that travels to Isle Royale are from around the Lake Superior Basin. Most of these boaters make decisions on weekend trips and extended weekend trips to Isle Royale on a days notice because of weather concerns. The reservation system as framed in this plan is a failure to boaters because of the comments mentioned above coupled with not knowing how this reservations system is going to work as stated in the WBMP Draft. Again, the current permitting system is flexible enough for all boaters seeking visitation to Isle Royale.

12) It is not prudent at this point to make any decisions on the fate of the Fire Towers because they are cultural resources and should be discussed in the cultural resources plan.

13) Page 57, last paragraph; "For deteriorating social conditions such as dock over-crowding, or trail or campground crowding, management actions would continue to focus on better informing the public of visitation levels in different areas of the park and different times of the season. However, with continuation of the current permitting system it would not be possible to give site and date-specific information on dock or campground crowding."
Comment: Before a reservation system is implemented, the should NPS considered enhancing the present permitting system with a central computer system and program that could be used to continually monitor and inform visitors making reservations of the present permits issued for the various campgrounds and docks. The system could also be accessed by visitors on the internet to inform them of how busy the various campgrounds and docks may be at the time they make their reservation and before their trip.

It is the position of the IRBA to keep the present permitting system or an enhanced system as noted above than to have any form of required reservation system.

14) The name for alternative "B" 'Managing Overnight Use: Provide a Broad Range of Quality Backcountry Opportunities and Protect Resources' is not accurate, misleads the public, and consequently, should be restated as '**Modify Social Conditions Through The Use Of A Reservation System To Limit Visitation'**. This title is more inline with the other alternatives. The public should decide whether this alternative will provide a broad range of quality backcountry opportunities and protect resources. The NPS should just state that it is their preferred alternative and not try to sway the public into believing that the statement is true. In fact, the NPS provides just an opinion and provides no data to justify that this alternative can in fact do what the title says. The NPS has not provided information to the public that shows decreasing the campground or dock crowding significantly impacts the resources or degrades the social conditions to a level that warrants a reservation system. Consequently, it is difficult to make a decision as to whether a reservation system is needed at this time and whether this alternative is a viable option for the public, especially when as the WBMP points out, that during peak visitation, the park campground capacity is at only 68 percent. More information is needed for the public to make a better informed decision. Some suggestions here would be to: 1) Improve the present permitting system without a reservation system with a central computer that updates the permits in real time and informs the visitor of the present campground capacity levels that the visitor is interest in staying at on the island. A web site that shows the information to the visitor may help the visitor in the planning process would be valuable. This may help distribute the overnight stays and reduce the crowding, 2) Provide more than two entry corridors for hikers and paddlers so as to reduce congestion at Windigo, Rock Harbor and surrounding campsites. This could be done by increasing the taxi service capacity or using the MV Sandy to ferry visitors to other locations. A trial study should be performed such as providing this service during the peak visitation times and maybe use two entry points such as McCargo Cove on the north shore and Chippewa or Malone Bay on the south shore. The impacts of the visitor redistribution throughout the island should be monitored to evaluate the social and environmental impacts. This is in line with suggestions made by researchers (Mayo 2001), 3) A model should be developed using GIS and visitor information to evaluate the best possible ways of managing ferry service with campground crowding during the peak visitation times to minimize congestion and improve visitor experiences. Similar to Alternative C suggestion by NPS.

15) Page 58 visitor use levels: Setting the spring visitation level at 20 percent of the park's total camping capacity seems arbitrary and not justified with

respect to visitor social conditions or the affected environment. The GMP or the proposed WBMP provides no data to show that the visitor social conditions or the affected environment are being harmed and seems to only be an opinion by the NPS and some researchers. For example: page 176 last paragraph: " Maintaining low visitation in spring would have a long-term moderate effect on natural resources in the park, relative to current conditions" "For example, low paddler numbers on inland lakes in the spring appears to be beneficial to loon nesting (Kaplan and others, 2004). Maintaining low human impacts such as disturbance of nesting loons and human encounters with wolves or wolf pups could results in moderate to major beneficial impacts, whereas minimizing trail widening associated with muddy conditions would be minor to moderate and very localized." These statements seem to be opinions that serve to restrict visitation on the island. Some suggestions here: 1) Provide no restrictions on visitation in the spring on the trails and in the campgrounds, 2) Over the next 5 years, design a study that addresses these issues and collect data to substantiate or refute the statements made on page 176.

16) Page 64 paragraph 6: Why can't permits be issued by phone with a credit card and mailed out to the visitor? There are many people that are not computer savy and rely on the use of the phone instead. A suggestion would be to allow for phone permitting as well. How will park personnel and people that work at the concessions on the island get a permit? The plan as written needs to be more clearly stated.

IRBA Summary Comments:

- We are opposed to a permitting/reservation system as presented in this Draft WBMP and explained above.
- We feel the present permitting system is the best alternative with the enhancements described above (e.g, central computer for tracking number of permits issued at campsites and internet access).
- The most significant point to make is that the Draft WBMP only deals with 0.0944 percent of the land mass of Isle Royale and fails to incorporate the pristine zone which composes the other 99.906 percent of the land mass. In addition, the Draft WBMP fails to provide the carrying capacity of the pristine zone and does not address how the utilization of the pristine zone can alleviate crowded campgrounds during peak seasonal visitation even though the park campgrounds as a whole have never been exceeded.
- We support the expansion of certain campgrounds that experience crowding. We advocate the use of the pristine zone for hikers and paddlers that want solitude and we feel the NPS needs to better

inform and educate the public of the opportunities and use of the pristine zone.

- We advocate the use of an expanded shuttle service that provides the hikers and paddlers the opportunity to start their trip at locations other than the present drop-off points. This service would better distribute the visitors and reduce campground crowding.
- We advocate the immediate halt to the taking of moose and wolf remains from their natural sites and inform the public of where these sites are for their observation.
- We feel the loon issues need to be discussed in this plan because of the acknowledgement in this plan that loons are being harmed by paddlers.
- We feel that the maximum party for boaters is the capacity of the vessel. This has been an unwritten rule for many years.
- We feel the prefered alternative for day use fails to meet the requirements of NEPA. Specifically, the proposed trail. The trail is a site specific action and needs to be addressed as such. This includes specific description of the trail location, specific description of the affected environment and specific consequences to the environment. None of these requirements of NEPA are present.
- We feel the Draft WBMP plan follows the biosphere concept as advocated by the NPS and many environmental advocacy groups and fails to evaluate the true resources of the park and further hinders park use by the American Public. Could this be the reason that the Pristine Zone was not addressed in the plan?

Respectfully Submitted By:

Dave Hand, President
Ed Glowacki, Vice President

12/21/2005

Page: 366537 rec'd 12/21/05

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

(1)

Name Steve Hanke

Organization

Address 201 Reservation St.
Hancock, MI. 49930

E-mail

Keep my contact information private ☐

Comments

Isle Royale is a very high quality wilderness experience for all. I dont think we need to reduce the amount of times someone should go, because I haven't seen any overcrowding anywhere there. Last summer every place (docking area) was either empty or spots plentiful avail. The reason some places are more busy is because they have a fire ring to warm up by or, cook on, or even dry clothes & sleeping bags. There are so many fallen trees on the island fire wood is plentiful (most places), without destroying anything alive. As far as advanced permitting, it would be very difficult due to weather conditions (back and forth). I had to cancel Isle Royale trips several times due to bad weather. An appointment system would not work for me-

please continue on other side

I watch for good weather before (2)
I can make any plans.

As far as picnic tables go, everyone truly enjoys them, being able to sit down to relax or even prepare lunch. They are very important for boaters & hikers alike. I haven't seen any overcrowding any on the island (near docking areas) over the past few years. In fact the population seemed to really have dropped. Maybe due to high gas prices for boaters

It seems to me that Isle Royale is very much a nice wilderness experience.

Thank You,

Steve Hanke

REPC: 135809 rec'd 12/12/05

Pg 1

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name John Heneghan

Organization

Address PO Box 92
La Fox, IL
60147

E-mail johnhens@SBCGlobal.NET

Keep my contact information private ☐

Comments Rustic Cabins are fine, good alternative for those who do not camp but want to see the island w/o the ~~HA~~ to stay at the lodge or housekeeping units

— A centralized permitting system should be instituted regardless of what alternative is finally agreed upon. It would allow a more efficient allocation of permits w/o overcrowding the campgrounds. A lot of the National Parks that have permitting have better control (ie a more positive experience for backcountry users.) This would prevent overuse of the existing facilities.

— Part of the reason I go to Isle Royale is the wilderness experience. While I enjoy the people I meet on the island, I don't want to have to contend with sharing my shelter/campsite with others because too many permits were issued.

— I don't think any new shelters should be added at Windigo. Currently Backpackers, Canoists and Kayakers have to move their gear to the Washington Creek sites/shelters

please continue on other side

by cart or carrying them. There is a backlog, from what I understand, of trail maintenance/building maintenance that should be addressed before the idea of additional shelters be considered. If this idea is put into the plan, then an additional fee should be assessed to the boaters.

- Additional campsite or ~~sites~~ campsites at Merritt Lane would be desireable.
- 8 Historic structures should be maintained as they are part of the history of the island.
- Managing Day use is demeable to alleviate overuse of the facilities
- 9 that day use addresses.
- NPS should prohibit the importation of firewood to the island to prohibit introducing invasive species such as the Ash borer or japanese beetle creating more problems with the island.
- Moving the fire rings around on the island is a good idea to cut down
- 10 on the overuse of existing rings and to ensure that overuse of downed trees and wood does not get out of control.
- I enjoy climbing the fire towers at Feltman. I would think with the park service upgrading communications and the use of wifi, the towers would be a logical choice instead of having to install the required towers for cell service for instance.
- ~~Pic~~ Picnic tables should be left as they are. Removal of them
- 11 would lead to people moving rocks trees etc. to make their cooking tasks easier. Leave the table
- Per the GMP, the addition of sites at the West End of the island should eliminate the problem of boaters not having overnight access.
- 12 An addition to the existing trail system on the West end of the island would benefit day visitors would have a better experience.
- I think the use of power tools (chain saws etc) is fine. After a bad storm or in the begining of the summer, cleaning blowdowns etc w/ a cut saw would take forever.

Pg 2

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name John Henegham

Organization

Address PO Box 92
La Fox IL
60147

E-mail johnhens@sbcglobal.net

Keep my contact information private ☐

Comments

The use of ~~heat~~-heated (ACQ) wood should not be used untill the long-term affects have been cleared. The loading of copper into the lake, especially from a growth agency, should not be allowed. There is already too much mercury in the food chain.

As for as economics, if it is determined in the future, that there is a problem with ACQ, the cost incurred in replacing the wood added on to the initial cost of the installation now is doubled. As a carpenter, the use of ACQ will cause many problems in the future due to insufficient research as to the proper means of attachment with both fasteners and brackets. There has already been issues raised about the use of galvanized fasteners vs. stainless steel and this will only continue to be a problem

please continue on other side

PEPC: 135981

rec'd 12/19/05

Bill Johns
90 Bagdad Road
Durham, NH 03824
December18, 2005

Superintendent Phyllis Green
Attn: WBMP
Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931

A big conflict I see in your plan is the fact that you say you will follow your "Historic Properties Management Plan" in handling properties (page 48), but there is no plan in existence. You say you will be establishing that plan at some time in the future. How can you know if you are complying with a plan when it isn't even written yet? I would like you to leave all the properties alone until all plans are written, tested and legal.

Reference page 4. The "National Historic Preservation Act of 1966" states that 'Cultural Resources' may be other than just Historically Designated Properties. Yet, the Park seems to be on a course that if structures & cabins are not listed as Historical Designated Properties (i.e., not on the list) then they automatically won't protect the properties from destruction or deterioration. That is not in compliance with the Act of 1966.

Reference page 54. How can the Park construct a campground on Johns Island when there are no established guidelines associated with the impact on Johns Island Cultural resources? Also, you don't define what an "acceptable impact" is.

Thank you for your consideration of these items.

Bill Johns

ISRO-104 (Rev. 8/02)

ISRO ROUTING:
✓ SUPERINTENDENT
_____ADMIN. MGR./ASSISTANT SUP'T
_____Contract Specialist
_____Budget Analyst
_____Information Technologist
_____Procurement Agent
_____Property Technician
_____Human Resources Specialist
_____Human Resources Assistant
_____Maintenance Worker
_____*Ranger III* Master
_____*Ranger III* Crew

_____CHIEF, RA&RM
✓ ~~Branch~~ Chief, Nat. Res. Mgmt.
_____ Forestry Technician
_____ Secretary (Budget-OA), RA&RM
_____ East District Ranger
_____ West District Ranger
_____ Cultural Res. Mgmt. Specialist
_____ Wilderness Coordinator
_____ Biological Science Technician
_____ Branch Chief, Ed. & Interp.
_____ Interp. Ranger/HHQ
_____ Visitor Services Assistant

_____ FACILITY MANAGER
_____ Assistant Facility Manager
_____ Telecommunications Specialist
_____ Tug and Barge Operator
_____ Engineering Technician
_____ Program Analyst
_____ Other Maintenance Staff

✓ GENERAL FILES

REMARKS:
Team probably needs to go into WBMP file

Rec'd after close of public comment period.

Jan 26, 2005

To: Superintendent, Phyllis Green

From: William D Johnson, Powerboat "Just Dessert"
31805 Evergreen Rd, Beverly Hills, Mi 48025-3817

Re: Mainland based central advanced park permits

Dear Ms. Green,

Advanced park permits will not work for power boaters & be even worse for sail boaters. Weather conditions constantly interfere with our ability to stay to a schedule.

We sometimes are coming from Soo St Marie, Copper Harbor, Thunder Bay, ON or the North shore of Lake Superior. We can't even call from North Shore to say when we are coming. This prescheduling absolutely will not work.

The current system, first come, first serve for dock space or else anchor out has been working for us boaters for the last 15 years & have been coming to Isle Royalle. Boaters are courteous and raft-off when necessary @ the docks. Boater traffic is down substantially from previous years due to past administration harassment policies. We hope you will not make it worse,

Jan 26, 05

by instituting an advanced permit policy for boaters.

We are also a lifeline for backpackers who have become hurt, out of food, etc.

Please don't discourage us boaters from coming to Isle Royalle by creating more difficulties. The current sytem has worked very well.

Also please work on the excessive charges for fuel @ The Island.

Sincerely
William Johnson
The Just Dessert

P.S. Please consider returning a fire ring to Duncan Bay Narrows lean to location by the dock.

PEPC: 136374
rec'd 12/4/05

Isle Royale National Park
Wilderness and Backcountry Management Plan
Public Comment

Overall agree with preferred alternative.

On retaining *low use in the spring*: The plan doesn't say whether it means boaters as well as backpackers. Backpackers will be limited by the GMP which indicated ferry service schedules will not be expanded, so this caps them on the max end. To keep them at current low levels, ferries would then need to be restricted to historic use. Lake Superior storms and its cold waters have effectively maintained low use for boaters in the spring and fall. They should not be restricted (issuing less permits then the demand) through the permitting process during spring & fall, but rather allow the lake to continue its natural influence on boaters. The same should likewise hold for the fall. (Management action is not necessary, when the lake has and will continue to be such a limiting and controlling factor- Also, I can't see this changing for the life of this current plan.)

Permitting system – a central permitting system should allow visitors to plan their trip better, knowing campsite availability. The plan mentions a permitting office in Houghton. Park Management should not be restricted to this statement, as all options should be explored that might satisfy the needs of the park and visitors, such as the off sight National Park Service reservation system. The system should also not become an undo burden to the ferry services and passengers making reservations. Last minute boater needs which are often weather related would need to be provided for as well.

Agree with adding 1 site at *Lake Desor*, compared to removing one site at Little Todd. This should reduce crowding; enhance sought experiences in a wilderness setting, while not increasing the use of this primitive trail.

Alternative C offers *2-3 shelters in the vicinity of the Windigo* Dock. Providing additional camping opportunities here would benefit boaters staying on the dock at Windigo and/or other visitors. Maintenance of camping facilities here would be more cost effective than expansion at Washington Island, which would interfere with the historic scene and associated activities that might take place there in the future. These might be a good candidate for reservations during the busier periods of July and August.

Alternative D offers a limited number of campgrounds with *campsite or shelter reservations*. This would benefit those coming during the busy time periods of July and August – where they can know in advance that they have a site for a specific date and place and do not have to race there to make sure they get a spot. These sites should be smaller (campgrounds with 1 to3 sites, so they are easier to monitor and enforce). The sites should also be closer to a Ranger station so enforcement is reasonable, such as Beaver Island compared to Grace Island or Tookers Island compared to Duncan Narrows. I would like to see this option offered at least in the busy season for a few sites.

Agree with preferred on towers, fires, and picnic tables, all seem to be reasonable compromises.

Thank you,

Larry Kangas
Chassell, MI 49916

Pepe: 136528
rec'd 12/21/05

"Dave Mayo-Kiely"
<mayokiely@msn.com>
12/21/2005 10:03 PM
EST

To: <isro_wbmp@nps.gov>
cc: "Susan Sanders" <susan_sanders@nps.gov>
Subject: Comment on the WBMP

December 21, 2005

To the WBMP Planning Team
Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931

To the Planning Team:

First, I would like to express support for the preferred alternatives for overnight use in the backcountry, campfires (with the commitment to monitor and assess resource conditions prior to establishing new campfire areas), and removal of the 2 fire towers. Neither fire tower proposed for removal serves an administrative need to manage the area as wilderness as defined by the Wilderness Act and NPS Management Policies. I also support establishing group size limits for day use, particularly in the pristine and primitive zones, and am supportive of not adding any new campgrounds or trails.

Below are several comments addressing the adequacy of information covered in the WBMP and the appropriateness of decisions identified in the preferred alternatives.

1. I request that you make a greater commitment and effort to consult with other wilderness areas that manage their trails without the use of chainsaws in revising your chainsaw policy and come closer to eliminating chainsaw use. The Boundary Waters Wilderness boreal forest and Shenandoah National Park with eastern hardwoods would be a comparable forest types to the two ends of the island—both areas with a much stronger commitment to using hand tools over chainsaws.

2. I am concerned with the inconsistency of data required to support different decisions. Section D.2.2 states that there would not be an entry quota set for powerboaters until a future need is determined. However, in several places the plan references data that identifies a conflict with noise and crowding in wilderness, which is partially associated with boating visitors. On the other hand, the preferred alternative for day use proposes establishing a new trail within both the Pristine Zone and designated wilderness, with associated major adverse impacts to wilderness on a local scale. Yet there is no data supporting a need for such a new day option in Windigo—no data demonstrating that either the current day hiking options are insufficient or that a significant conflict between day hikers and backpackers exists in the Windigo area. Nor is there any data presented that would support a concern that day use may increase in the Windigo area to the extent that additional trail options would be necessary. A stronger case with sound data supporting that there is a demonstrated need for the trail and the benefits of the new trail

would outweigh the costs is needed to justify including this in the final preferred alternative. I am opposed to the creation of this trail.

3. I am also concerned that the data used to justify the use of chemically treated lumber is insufficient to justify its use in wilderness ecosystems. The proof should be in proving beyond a reasonable doubt that there will be no harm caused many years down the line, not in proving that harm would be caused. It was not too long ago that this standard for proof resulted in the widespread use of arsenic in treated lumber at a high cost to human and environmental health. I would request reconsidering the decision to use chemically treated lumber in wilderness. I am opposed to the use of chemically treated lumber in wilderness, no matter how "benign" it is though to be.

4. I request a commitment in the Final WBMP that all Potential Wilderness areas where non-conforming uses (e.g. life leases) have ceased be immediately converted to wilderness, per the legislation. This includes areas with volunteer agreements that are within the realm of appropriate administrative uses for wilderness, such as Fisherman's Home, Wright Island, Johnson Island, John's Island, Captain Kid and Crystal Cove. Additionally, upon departure of the USCG from Passage Island, that PWA should be converted, as well. If these extended special uses are not appropriate for wilderness, then they should cease anyway as PWAs are legally to be managed as wilderness.

5. There is no justification of not expanding wilderness designation to those areas that were excluded, but where non-conforming uses are no longer an issue—particularly those places where with full implementation of the GMP docks will be removed (Siskiwit Bay and Three Mile), or ferry service relocated (McCargoe Cove). In these cases it would be appropriate for the WBMP to propose wilderness designation for consistency with the rest of the park. I would also propose including Moskey Basin for consistency and no existing non-conforming use. With the changes in the GMP and any changes proposed in this WBMP there would be no non-conforming uses that would preclude wilderness designation in these areas.

6. This plan heavily promotes the idea of adaptive management, and lays out an ambitious monitoring plan. However, current budget trends suggest park managers will be hard-pressed to maintain current levels of resource monitoring, let alone follow-through on the ambitious expansion of monitoring proposed in the plan. Additionally, there is no commitment to quantifiable goals for resource conditions committed to in this plan, other than goals for campsite sharing. Without a dependable commitment to monitoring or a definition of desired resource conditions (i.e. standards for the many indicators to be monitored), one does not have sincere adaptive management. The public deserves a commitment of what resource conditions are desired and what improvements may be achieved by the various management actions proposed in this plan. Without this commitment of desired resource conditions, the WBMP lacks any real depth and management commitment. The public also deserves an explanation of the implications of how management decisions will be made if park staff are unable to complete and maintain the desired monitoring program. I would argue that the park's current allocation

of staffing resources is woefully inconsistent with a sincere commitment to adaptive management.

7. Please explain why the natural and cultural resource indicators proposed in Newsletter 3 (March of 2001) were not included in the WBMP, especially where there is abundant data to support the development of appropriate indicators and standards related to loons and paddler impacts on breeding success.

8. I would request that the final WBMP address interim steps to improve conditions where full implementation of each of the many elements of this plan will be financially unrealistic for the foreseeable future.

Sincerely,

Ann Mayo Kiely
26896 Amygdaloid
Calumet, MI 49913

PEPC: 136547

Received 12/21/05 by Phyllis Green

Isle Royale Line, Inc.

Celebrating 75 years serving Isle Royale

December 21, 2005

To: Ms. Phyllis Green, Superintendent
Isle Royale National Park
Houghton, Michigan

RE: Comment to the ISRO WBMP

Introduction and Background

Regular passenger ferry service between Copper Harbor and Isle Royale was started by Charles Kauppi in 1929. The service was operated with a variety of vessels under Mr. Kauppi until his retirement in 1955. At that time, the run was continued by Ward Grosnick who built the Isle Royale Queen II. The Donald Kilpela family purchased the IRQ II in 1971 and received a franchise in that same year from the NPS. To better accommodate passengers, in 1989 the queen II was lengthened, re-powered, refurbished, and renamed the Isle Royale Queen III. In 2005, they purchased the Isle Royale Queen IV which provided increased speed (with resultant increase in operating expense) to try to increase day and lodge use. The investment in this vessel and its necessary supporting infrastructure exceeds $700,000.

The Kilpela family has run the service for over three decades. During that period they have repeatedly upgraded their vessels and reservation system so that the needs of as many visitors can be met with ease and convenience.

In short, The Royale Line, Inc. is a business with historic connections to Isle Royale. It was a successful and beneficial service to the island in 1929 and since its designation as a National Park it still is.

Our record as a top business and a dedicated member of the IR community is among the finest. Our Annual Evaluations from the NPS has consistently been "Satisfactory." Moreover, our support of the community of Copper Harbor is significant; the community economy depends on this service.

Since the Queen IV takes more visitors to IR than any other transportation service, a major change in operation will necessarily have the greatest economic impact on us. We write on behalf of The Royale Line, Inc. to recommend a delay in the implementation of any hiker reservation system for Isle Royale National Park to allow further study of the data cited in the plan.

General Comment

Because the ISRO WBMP "Mainland Based Permitting System" will have a dramatic and possibly devastating economic impact on our business and the community of Copper Harbor and because the ISRO WBMP makes no estimate of any impact either to our business or the community, we request additional time to further study the proposals before the implementation of any system. Given the data we need to make a

reasoned comment, 30 days would seem to be a adequate time to analyze the need for the proposed permitting system. Incidentally, this is not the first time we have asked for the survey methodology and resultant data.

The Surveys

Terms such as "many people commented" or "others said" which occur in the document are merely descriptive. Until an analysis of the methodology and results is undertaken they remain anecdotal and as such offer no scientific validity.

The survey methodology used to gather overcrowding data was not presented in the ISRO WBMP. Valid survey methodology is critical to the conclusions presented. A) Were the questions properly framed or were they leading to a desired answer? B) Were the all the choices presented? C) Was the sampling statistically acceptable and what was the margin of error in the results? D) Was the year for the survey typical? For example, since 2002 when one survey was conducted, we alone have a steady drop in backpackers from a 2002 total of 3674 to 3006 in 2005 a 19% drop in hikers. Until we have a copy of all methodology used, we cannot make a valid assessment of the problems presented in the ISRO WBMP.

In addition, the results of the survey were not presented in the ISRO WBMP. Without these data, it is not possible for us to determine if the permitting system is inconveniencing the vast majority of hikers throughout the season to satisfy the few who may wish to travel in the peak month. Until these data are presented, we are unable to make a valid argument for or against the need for a NPS permitting system.

The Mainland Based Permitting System *per se.*

Methodology and results aside, a mainland based permitting system will only add to the difficulty is an already difficult and expensive trip. Our fear is that at some point, passengers may simply abandon the trip altogether.

For the past 15 years, the overwhelming complaints we receive about both the National Park Service and our reservation system is the inability to get through to anyone in person without having to make multiple calls. To solve some of these complaints, we offer an 800 toll-free number for all call-backs to our office. Passengers have repeatedly said how much they appreciate this convenience. In addition, we have determined that a web-based reservation system may be a feasible choice to relieve the vast majority of bottlenecks. We can imagine numerous situations when a hiker goes through the NPS permitting system office to clear a reservation and then finds that the ferry is full (we have a self-imposed backpacker limit already) only to return to the NPS system and back again. This type of completely dual reservation system is, we believe, unprecedented in the NPS.

Hikers unfamiliar with the degree of hiking difficulty posed by the island terrain, will find it very difficult to prepare an itinerary on the telephone. Campgrounds are spaced miles apart. Each reservation will take great time and care to give hikers feasible alternatives for their trip. We cannot imagine the NPS providing the permitting staff to discuss the 80-100 calls per day that they will receive during late June, July and early August. Furthermore, unless the NPS operates on weekends, we will lose walk-in business that arrives unannounced and unexpected to go to the island. Without the ability to make an island reservation, we will be required to turn them away and thereby lose all our walk-up passengers.

Most importantly, We believe that an appearance of and actual conflict of interest exists in the NPS adopting a reservation system that affects all transportation services to the park while the NPS competes against those services with the Ranger III.

Further, The Isle Royale Line, Inc. has made extraordinary effort to limit hikers in the peak period by economic means. We charged higher prices during peak period and eliminated group discounts. Yet, the NPS offers a significantly lower price in general ($108 vs our $116) but an even lower group rate ($90 vs our $116). We find it disingenuous to decry overcrowding but remain unwilling to try to bring economics to bear on problem—and also to offer discounts to groups. In short The Royale Line has already adopted a number of good-faith policies to limit backpacker traffic in the park during the island's peak period, and we have met with some success. The 19% drop in backpackers since 2002 (the year of the most recent survey of 150 hikers) attests to the success of that endeavor.

Conclusion

The current system is working well to get people to the island flexibly. The information The Royale Line and NPS puts out on paper and their web sites is first-rate. We have long been committed to getting people to the island as effortlessly as possible for that is also an important feature of their total experience.

In summary, because of the lack of survey methodology and resultant data in the proposal, because of the inconvenience and difficulty of trying to visit the park which is already and expensive and challenging experience, and because of the apparent and real conflict on interest in the permitting system, we request more information and time to prepare a more thorough response.

Thank you for your consideration of this recommendation. If you have any questions, please feel free to contact me at 906-289-4437 or dkilpela@pasty.net.

Sincerely,

Captain Donald E. Kilpela
Captain Bennett W. Kilpela

14 Waterfront Landing P.O.Box 24 Copper Harbor, Michigan 49918 906-289-4437

www.isleroyale.com

Pepc: 135804
rec'd 12/01/05

November 23, 2005

Dear Phyllis Green:

I am in receipt of your request for comments on the W. B. M. P. Thank you for the opportunity to respond as the preservation of our National Parks is critically important to our country.

I will be using your guidelines in responding to the various proposals.

Overnight Use:

The establishment of a back country office would be reasonable as you attempt to control impact and improve the wilderness experience for visitors. A central office would be able to monitor and control any campgrounds that might be suffering from overuse. At the same time, overnighters would be directed to low use areas. I believe over the long term this will help preserve the park and maintain the wilderness nature of Isle Royale.

Campfires:

The campers I met out on the Isle Royale trails were well equipped for low-impact camping. I believe that camp fire rings were destructive to the local environment and would encourage their demise. At no time did I think that my wilderness experience was diminished because of a lack of a camp fire. Please increase the area and time frame where campfires are not permitted. I don't believe campfires are in use very much as a cooking method. I don't believe that the aesthetics of a campfire are worth the local resource impact that results.

Managing Day Use:

On my many trips to I. R. , I noticed the main trails out of Rock Harbor and Windigo would be broad from overuse. Tree roots were exposed and surface soils were compacted. As I ventured deeper the trail would narrow and the damage would be less. Your idea to create a 3-5 mile loop near Windigo would improve the quality of the main trails if you made a concerted effort to narrow the broad main trails near the Harbor. I support smaller groups that might use such a loop trail because it will lessen the overall impact on I. R.

Fire Towers:

Having observed all of the towers, I would agree that the removal of two of them would be beneficial to the wilderness experience.

Picnic Tables:

Picnic tables located near the lean-to shelters were very welcome and functional. Yet their presence in the more primitive camp sites was out of place. Logs or rocks served well as back country substitutes. (Isn't that what wilderness camping is about?) Isn't the maintenance of picnic tables difficult as they are placed further away from the maintenance center?

In closing I would recommend that you avoid privatizing our parks. These National Treasures are worth preservation. The very thought of them being looked on as a business is ludicrous. In spite of what Fran Mainella and Gale Norton believe, our parks are not resources to be abused but a part of our national heritage that must be protected and preserved.

Thank you again for the opportunity to speak to issues that are important to me.

John Longcore Ed. D.

PEPC: 136375
rec'd 12/21/05

December 19, 2005

Phyllis Green, Superintendent
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49931-1895

Dear Phyllis,

Thank you for the opportunity to respond to the Isle Royale Backcountry Management Plan. I endorse the plan's intent to find ways to effectively maintain the wilderness character of Isle Royale. The plan's sensitivity to "soundscapes", minimal use of power tools, and reduction of visitor congestion should be applauded.

I am most interested in how the NPS approaches the management of its cultural resources within this wilderness setting. My interest stems from my marriage into the Edwards family of Edwards Island on the northeast end of Isle Royale, my background as a former NPS seasonal interpreter and curator (Apostle Islands National Lakeshore, Petrified Forest National Park, Grand Portage National Monument, Longfellow National Historic Site and Klondike Gold Rush National Historical Park) and as a trained public historian (Ph.D., University of California, Santa Barbara).

The Edwards family first came to Isle Royale at the turn of the 20th century seeking a respite from city life in St. Paul, Minnesota. Maurice Edwards was one of St. Paul's founding Presbyterian ministers carrying on a tradition of ministry dating back to Jonathan Edwards, one of colonial New England's most renowned evangelical scholars and preachers. While Maurice and family found Isle Royale to be a great spot for sport fishing, he also came to Isle Royale year after year because its remote wilderness allowed for spiritual renewal and provided a place to reflect upon man's relationship to nature. This environmental and spiritual stewardship predated the modern environmental movement and was a value passed down through the generations including our children today.

The Edwards family first camped in canvas tents on Edwards Island and later built two cabins, one on Edwards Island and one on a small island known as "The Gem." As part of an inter-connected community of resident "islanders" that grew up around Tobin Harbor, the Edwards were able enjoy the remoteness they so valued while building strong relationships with other Tobin's Harbor residents such as the Mattsons, Merritts, Gales, Connellys, Snells and others. These relationships still exist today, as do the cabins and their associated material culture, most of which remain much the same as they did 100 years ago due to the island's remote location. On Edwards Island, family members still haul water in buckets, cook over the wood stove, read by kerosene lamp, row historic wooden boats, and demonstrate ingenuity associated with island life. Due to former burn policies implemented in the past by the NPS, much of the park's historic resources have been destroyed. Moreover, most of the former island residents sold their property to the NPS when the park was being established. Those few that remained, maintained,

preserved, and protected what are the last remnants of this significant cultural legacy. When Isle Royale became a National Park, the Edwards family supported the concept of the preservation of the wilderness character of Isle Royale. They also deeply cared for the park's cultural resources long before the rise of the historical preservation movement in the 1960s. I note that the Edwards family, following an historic family tradition has historically practiced the concept of minimal impact through their passion for non-motorized boats, use of hand tools and sensitivity towards environmental and cultural stewardship. Ironically, I also note that the NPS now the caretakers of this "wilderness" legacy rightfully admit they contribute to noise pollution on the island through the use of diesel generators, tractors, heavy equipment, power tools, chainsaws, cranes and barges (3.37).

The proposed Wilderness and Backcountry Management Plan currently raises important questions concerning how to best preserve the wilderness character of Isle Royale while preserving the cultural legacy of its early residents and the material culture that reflects such traditions. The WBMP itself reveals how little is know about its cultural resources (See 3.4). To date, most of the cabins associated with island residents are on the NPS List of Classified Structures. The preservation of these structures, associated landscapes and the intangible cultural history of the families and community of people they reflect are of paramount importance. Currently, such resources are at great risk due to an absence of cultural resource planning, budgetary and personnel shortages, and long-term neglect. The decay of the Savage family boathouse is a dismal physical reminder of the fragility of Isle Royale's dwindling structural resources; the recent deaths of the Farmer and Wolbrink families is another reminder of the loss of a significant historical legacy associated with the ancestral people of Isle Royale.

The preservation of the wilderness of Isle Royale and the preservation of its cultural legacy go hand in hand. Therefore, I ask that the final approval of the WBMP be postponed until a comprehensive Cultural Resource Management Plan is also in place. To conduct a wilderness plan and implement it now without a corresponding cultural resource plan will ensure incorrectly that wilderness planning supersedes important cultural resource decisions. Therefore, I ask the NPS to thoughtfully consider how best to preserve its cultural resources within a wilderness setting. This can only be done when a visionary cultural resource plan is devised and implemented. The ancestral families associated with Isle Royale would like to participate in this engaging endeavor. The public will then be able to greater enjoy and understand Isle Royale's rich cultural and environmental heritage.

Thank you.

Sincerely,

Missy McDonald
2337 Chilcombe Ave.
St. Paul, MN 55108

PEPC: 136529
Rec'd 12/21/05

"Grant Merritt"
<gjmerritt@comcast.net
>

12/21/2005 10:13 PM
CST

To: <isro_wbmp@nps.gov>
cc:
Subject: Please disregard earlier submissions this evening.

Superintendent Phyllis A. Green
Isle Royale National Park
Attn: WBMP

By: email

Dated December 21, 2005

First, I subscribe to all of the comments and recommendations submitted by the Isle Royale Families and Friends Association. As one who was present when Doug Barnard committed the park to doing a Cultural Resources Management Plan directly following completion of the General Management Plan, I concur that such a plan, not an Historic Properties Plan, must precede adoption of the Wilderness and Backcountry Management Plan. Otherwise, the cultural resources will inevitably take a back seat in the boat.

The Trust for Public Land conservation organization has a maxim which is apropos here: "Habitat is for more than Wildlife". That adage fits the mission of the National Park Service in the language found in the enabling legislation of 1916. As a truism for Isle Royale National Park, it is eminently logical that the cultural resources be assessed and analyzed before adoption of the WBMP --- just as the wildlife has been in this proposed plan.

As I understand this document, all of the picnic table alternatives, including the preferred one, would take out the picnic table at Birch Point (which the NPS insists on calling Duncan Bay I suppose because they think it is confusing with Birch Island). I believe the reason the park is doing this is that the GMP calls for taking out the dock on Birch Point and, therefore, the picnic table must go. I find both of these removals unnecessary. Such removals would have the effect of taking away a very nice day or half day boat trip and picnic place. People of Isle Royale are able to access the beautiful headwaters of Duncan Bay, i.e. the "solitude and remoteness" of that location, which is convenient to Tobin and Rock Harbors. My family and I have enjoyed numerous excursions to this beautiful spot where we have often observed wildlife and birds such as eagles, osprey, loons, and moose in the headwaters. Having the dock is a ready shelter in the event of a sudden storm, and the picnic table has enabled us and many other visitors to enjoy a picnic in this picturesque place as well as a rest afterwards. Children are able to play and cast off the dock for a possible pike. I recommend the park seek a waiver for both the dock and picnic table at Birch Point in Duncan Bay.

On p. 22 and elsewhere this document discusses the fishery of Lake Superior waters. In Sec. 1.9 on p. 22 of this plan it is stated that the NPS is "striving to sustain the native fishery". If that is so why doesn't this document even mention the recent and dangerous recurrence of the lamprey eel in Isle Royale waters? Lake trout should be added to fish of concern on p.125. There was ample evidence of increased lamprey predation during the recent summer of 2005. Just ask the fishing guides at Rock Harbor and other seasoned fishermen such as Dr. Ted Fritche from Marshall, MN, who fishes every summer at the eastern end of the island, and Steve, Tom and Chris Gale as other regular and long-time fishermen from Tobin Harbor.

Minor but important needed corrections are, first, Table 1 on p. 23 lists Newman Island as a life lease property. To my knowledge, the Newman family did not take a life lease on this island which is located due northeast of the Gale island. Second, the text on p. 134 implies that Isle Royale commercial fishermen who did not hold warranty deeds were paid before they were removed, or in a couple of cases, given special use permits. To my knowledge these fisher folks were not paid anything if they did not hold warranty deeds as did the Mattsons of Tobin Harbor and Emil Anderson of Johnson island in Belle Isle.

Finally, I support the retention of the Little Todd campsite, as the preferred Alternative B proposes. I am

currently planning to hike the MInong trail next summer with a cousin from Colorado and it seems to me that the Little Todd campsite is important to a full enjoyment of that hike from McCargoe Cove to Windigo.

I trust you will give these comments and suggestions due consideration and if anyone from the park has questions my office number is 763-259-3459.

Grant J. Merritt
8124-40th Avenue North
New Hope, MN 55427
Res. 763-525-1591
Summer Resident of Tobin Harbor

PEPC: 136012
rec'd 12/20/05

P.O. Box 43
Engadine, MI 49827
December 17, 2005

Superintendent
Attn: WBMP Comment
Isle Royale National Park

Dear Superintendent Green,

My love of and respect for Isle Royale go back to 1975 when my wife and I and our four children, then ages 6-12, got as far as Daisy Farm on our first five-night backpacking trip. Since then, sometimes with family, sometimes solo, most recently with grandchildren, my backpacking trips to the Island number nineteen (or maybe twenty).

I participated in and frequently submitted comments during the GMP formulation process, and have studied the Executive Summary for the proposed WBMP you sent me, and at least some (mainly the common and preferred alternatives) of the full document. I was glad to be able to attend the Dec. 12 Open House, and wish to express my appreciation to Jean Battle for her help in answering my questions and for being such a good listener.

In general, my feeling is that the proposed WBMP represents a lot of hard work and a conscientious effort to arrive at a plan to both preserve the integrity of the Island while at the same time keeping it accessible for people's

enjoyment, two almost diametrically opposing goals. How this conflict plays out remains to be seen. For now, we have a plan to try to address the need, and I commend all of you for your perseverance.

I am not optimistic that we will be able to effect the hoped-for changes in the dates of visitorship (p.58) very much, and I do think (backpacker) backcountry visitation will drop due to scheduling/availability conflicts, especially during start-up of the new regulations. If such a drop proved to be chronic, then I would be very concerned.

With the Central Permitting system, there will be winners and losers. The winners will be the ones who already know four months in advance exactly what dates they are able and wish to visit, and are already familiar with the Island from previous experience, so that they know where they wish to go. The losers will be the first-timers and others who don't yet "know the ropes", and in particular those for whom it is impossible to determine that very narrow window of opportunity to visit the Island until very close to that time. An example is our attempting to find a week that three grandchildren, one from each of three of our children's families, are available at the same time.

Pertaining to the proposed plan to build 2-6 rustic cabins for rent at R.H., I can certainly understand why you may have heard many in favor of that; I have even had such thoughts myself, at times. But then, I think about all it would bring, and my conclusion is that I don't think we want to go there. It would, I think, be very much out of Island character. There's no question that they would be heavily sought-after. The question would be how to contend with the pressure for More!, More!, More!? This would introduce (some, at least) a new type of visitor to Isle Royale, having different expectations with respect to simplicity and self-sufficiency, quite possibly with increased levels of consumption and waste.

I am greatly concerned about the impact that heavier concentrated day use will have on the fragile resource. In 2002, I re-hiked the Chilkoot (Klondike Gold Rush National Historic) Trail. The easily-accessible first half-day segment out of Dyea was literally being pounded apart by day-hikers, especially commercially-guided groups. The Tobin Harbor Trail is much more sensitive than that section of the Chilkoot.

How much more development are we willing to (accept?; encourage?) in the Snug Harbor area? It would be tragic if

our efforts to save the wilderness were compromised by our failure to protect the entrance to the wilderness.

Thank you for the opportunity to participate in the on-going effort to preserve Isle Royale for future generations.

Sincerely,
Robert C. Nelson

PEPC. 136130
rec'd 12/20/05

December 19, 2005

Jack Oelfke
3527 E. Broadway
Mt. Vernon, WA 98274

Comments on Isle Royale WBMP:

I regret I have such limited time to comment on this document, for it is such an important issue to the long-term preservation of the park's character, both wilderness and non-wilderness.

I know this is not a voting process, but for the sake of clarity, I will register my preferences upfront:

In terms of overnight use, I favor Alt. E as the best alternative for the long-term preservation of the park's wilderness and backcountry character and resource. That alternative may provide the most immediate, short-term adverse impact to users (although even that is arguable), but the visitors to Isle Royale have always proven to be adaptive, and their use of the island would evolve to the management scenario the NPS offered. Meanwhile, the beneficial long-term effects of protecting the very resource the visitors come to visit – the wilderness character and its associated natural and cultural resources – that which is least adaptive to human use and abuse – are significant. I recognize the politics of the times, but unfortunately the wilderness, natural, and cultural resources do not – and those resources, the essence of the park, will suffer due to short-term, ill-advised decisions that are a general compromise of wilderness character.

In terms of day-use, I have no particular favorite other than **strongly disagreeing with the idea of a 3-5 mile loop trail in Windigo.** Nowhere in the document do I see a logical rationale for it, nor have I ever heard a call from the public for such a trail. There presently exist good options for day-hiking in the Windigo area that can accomplish the very same purpose. The notion of needing to separate the backpacking hikers from the day-hikers in Windigo is a very weak justification, nor can I even imagine that situation – day-hikers mingling with backpackers just starting out or leaving Windigo – would be a concern for either group. I never heard this issue raised in the GMP process nor the early days of the WBMP process, and the issue is not expressed in the Section 1.7.4. issues section, nor in the issues associated with the park's GMP. I seriously question whether the typical day-users to Windigo would even use this trail – what is the general makeup of the day-users, and how likely is it that they would pursue a 3-5 mile-day hike during the layover of the ferry boats in question, which supply most day-users? The additional fact that the trail would pass through the Pristine Zone violates the core premise of that zone – the lack of park infrastructure/human development in the zone. A mere few years after the completion of the park's GMP and there are already efforts to revise the zones to accommodate further development is very troubling.

In terms of the fate of the fire towers, **I favor the preferred alternative of removing the Ishpeming and Feldtmann Towers** – they have outlasted their usefulness, and now let's get rid of these obvious pieces of the human imprint on wilderness.

Re picnic tables, I have come to believe that the benefits of reducing bare-ground impacts is less a benefit than the educational message about what wilderness should be that the removal of picnic tables imparts. The park has bucked the system for decades on this one – get over it and comply with wilderness policy and **remove all picnic tables in wilderness**.

Other items:

- For all alternatives, **I applaud the establishment of a central permitting office to manage the overnight use.** I know it will be tough to fund, and a headache to implement for the park staff and the visitors, but it is a good approach to manage the visitor use, particularly for the peak season times. Do your best to find a way to get it implemented.

- There is some mention of monitoring resources and conditions upon implementation of the preferred alternative, but that remains vague as to how and what will get done. The monitoring component of this plan is critical to knowing whether you are having any success or not, or most importantly, how the wilderness resource is faring at the hands of NPS management and visitor use. **I urge you to commit to pursuing development of a good monitoring plan.**

- Two of the potential proposals – adding the trail in Windigo and constructing new campgrounds to spread out use – flies directly in the face of the intense public review process the park went thru in the GMP process. Much thought and discussion went into the rationale and locations of the various zones in the GMP, and the Pristine Zone was established for the significant purpose of keeping new development out. **In neither case is there sufficient analysis to aid the reader in understanding if the impacts are significant or not, and this is a serious shortcoming in the document**. While it is good that only the new trail gets lumped into one of the Preferred Alternatives, there is insufficient analysis to determine the impacts- what are the impacts to soils and vegetation, to wolf use patterns, to the very rare marten population on the West end?

- Also significantly lacking in the impacts analysis is the use of real numbers for the reader to understand the potential for increased use in the Fall season, or in some cases the Spring season. For example, **on Page 58, under B.2.1**, Alternative B talks about allowing increased use in the fall "within the existing ferry capacities and schedules" – why not provide the reader with some real numbers as to what this might mean? Similarly for spring use is the comment "visitation not exceeding the highest point between 1994-2003" – why not provide those numbers and relate what it means to total visitor numbers, visitor

use on the inland lakes as it relates to loon nesting, campsite sharing, etc? As written here and elsewhere in the document, the terminology is vague and there is no real way to judge what the true impacts to the park resources and wilderness character of the park will be within each alternative. **Again, this is a serious shortcoming in the impacts analysis portion of the document, and because the proposal is to increase visitor use in these seasons – a change from current conditions – there needs to be good information to evaluate those changes.**

Having spent 11 Fall seasons on the island, I believe that season is far and away the best opportunity for a superior wilderness experience in the park. The combination of fall colors, low visitation, wildlife activity, and crisp weather provides a superb wilderness experience that cannot be found during the summer months, and that is why that precious period needs to be protected. These temporal aspects of the wilderness quality/character of Isle Royale need attention, for in the end that is one way to provide a range of wilderness experiences to a range of users. **If the net result of managing the peak season is to spread the use out and degrade the superb experiences found in the Fall season, then overall the park has failed to manage its wilderness resource.**

I am out of time. I'll sum with these preferences/requests for the plan:

- Do not create new development within the Pristine Zone, be it campgrounds or trails
- Manage the peak season use by spreading it out throughout the summer season better. This may or may not mean lower overall numbers, but the public will adapt.
- Protect the natural resource-sensitive Spring season by keeping visitor use low, and protect the Wilderness Character-sensitive Fall season by keeping visitor use low. **Do not compromise these two use seasons – they are each highly unique for what they provide the park as the foundation of the overall wilderness character of the park.**
- Do not allow for increases in Fall use that potentially match the ferry capacities and schedules – for I do not know what % increase that might be (the document doesn't say) nor is there any logic to managing it to those numbers. If you have to find a number to cap it at, then be consistent and use the same logic you use for spring use, and cap it at the highest Fall use level you've had between 1994-2003. We should not be so shortsighted and assume that visitation will never rise to the numbers in the Fall that are possible under the maximum ferry capacities and schedules that presently exist – it could happen. There are numerous examples where shortsighted thinking such as that has created real headaches (Yellowstone winter use, for example).

Thanks for the chance to comment. All the above has been written in a flurry of thought with a plane soon to catch. After all my years of working at Isle Royale, if I have to choose something to capsulize what is most important to protect the wilderness values of

Isle Royale, it is those Spring and Fall seasons – **I urge you to not compromise them**. The document does not adequately evaluate the potential impacts of increasing the visitor use in those periods.

Jack Oelfke

PEPC: 13581 rec'd 12/12/05

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name Candy Peterson

Organization

Address 605 W. Second
Houghton

E-mail ccpeter650@hotmail.com

Keep my contact information private ☐

Comments

(A) I would like to see Feldtmann Town remain. (1) It's too expensive to dismantle & remove (2) It may be a very fine interpretive site in the future, when Isle Royale puts more resources into interpretation rather than law enforcement (3) It is at present useful for research - monitoring radio signals, for example.

(B) New, low-cost, rustic housing is a great idea!

(C) Making campgrounds pleasant (maintain outhouses frequently) is really important - people should be rewarded for doing the right thing (staying in campgrounds)

please continue on other side

PEPC: 135810
rec'd 12/12/05

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name Rolf Peterson

Organization Houghton resident; Park researcher

Address 605 W. 2nd St.
Houghton, MI 49931

E-mail ropeters@mtu.edu

Keep my contact information private ☐

Comments

2 Fire towers - Ishpeming tower seems to serve no useful purpose, so it seems sensible to remove it.
I'd suggest there is greater potential value in Feldtman tower, although at present it is not utilized for anything but visitor lookouts. It seems to be a positive value for all visitors that I've seen there or have heard comments from - I've not heard any negative comments.
Day Use - I understand Edisen Fishery is designated Frontcountry, w/ group size 20. I'd like some guidance on group size for those who walk to Bangsund - some guided (IRI), some not.

please continue on other side

2 flags possibility - remove Ishpeming, document costs / then consider Feldtman relative to all comments

RH lodge is interested in more formal advertising of the option to hike to Bangsund, ~~the~~ for Sandy passengers. Usually only guided trips exceed 10, but family groups may exceed 6. It appears Bangsund is in a pristine zone, so we need consideration for appropriate group size. There is a distinct advantage in keeping organized groups together (saves time for researchers, especially). People do not make that hike (Edison - Bangsund) for a wilderness experience, rather to learn about wolves + moose.

Finally, I understand the advertising of the "Bangsund option" would be cleared through NPS, as Greenstone would be the venue — all I know is RH lodge is interested.

PEPC 137067 rec'd 12/12/02

Isle Royale National Park
Draft Wilderness and Backcountry Management Plan and EIS

Comment Form

Name from conversation w/ Rolf

Organization

Address

E-mail

Keep my contact information private ☐

Comments

Barqsund is in pristine zone, isn't it? If so, then would our day use preferred limit #s of visitors there to 6 - or could we list it as an exception, maybe 10

please continue on other side

Pepc: 136531
rec'd 12/21/05

"Jr"
<jr@notjustgold.com>
12/21/2005 11:51 PM
CST

To: <isro_wbmp@nps.gov>
cc: <russ_feingold@feingold.senate.gov>
Subject: WBMP plan comments

To: Phyllis Green, Superintendent
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49931-1895

From: Jr Schroeder
8626 Angoli Way
Larsen, WI 54947

December 21, 2005

Dear Superintendent Green,

I wanted to be sure and pass along my comments on the WBMP plan. I have copied my state senator to keep my local government in the loop.

I got stuck on some of the text at the very front of the WBMP plan. find this comment ***"This involves preventing or reversing degradation of conditions within the park's wilderness and backcountry, including natural and cultural resources, high quality human experiences, and wilderness character****." from page one to be of concern for me. I agree that I have seen conditions within the park degrading, but I am not sure we agree on what we see degrading.*

For example on my father-in-laws old map I see a trail from Feldtmann ridge to Lake Halloran. On my map from 1987 there is a smaller loop trail called the east Feldtmann Trail. Both of these trails are no longer maintained for the public use. To me this is a sign that the park has degraded. The idea behind the National Park designation is for the island to be preserved for the public to use an enjoy in a balanced manner.

Page three says that one of the objectives of the GMP is to ***"Manage human use of Isle Royale so visitors have opportunities to experience solitude, remoteness, challenge, self-sufficiency, and discovery as appropriate in wilderness."*** *By my count I have walked over 70% of the islands trails and have stayed in all of the backpack sites except East Chickenbone, Lake Richie, Malone Bay, Chippawa Harbor, Mosky Basin, and McCargoe Cove although I have hiked into McCargo, but not spent the night. It is important that the park understand that I have very much enjoyed my solitude on each and every trip and every night on each trip. I have yet to have the interaction with another hiker impact my solitude or my feeling of remoteness. If anything I have made some great friends as a result of ending up at the same campsite. Please do not use VERP to change or restrict in any way the amount of people that are able to visit the park or stay at a given campground at any given time. A permit system or use limits would block people from using the park like we do and am strongly opposed to this concept.*

*Page 4 says that the "****The National Historic Preservation Act of 1966 is one of the many acts that govern the island."*** *My comment on this is that I am frustrated by the parks policy on life lease families. I am not related to any of the families and have nothing tangible to gain if their leases are amended to allow them to be passed down to future generations. I say*

nothing tangible because I do have a lot to gain in the intangible category. For example a few years back I had the distinct pleasure of meeting Wes Farmer while in Rock Harbor. The stories he told and the questions he answered for me are priceless when it comes to my memories. Since both he and his wife have now passed I am concerned that their history as part of the island will now be lost forever. If their lease is granted to continue to their family that history will not be lost. All of this does not even begin to take into account the families abilities to keep up the cottages that are a huge part of the history of the island. It is this unique mix of people eking out a life in a true wilderness that makes the island what it is. As more and more of the cotages are left to molder more and more of the history and the attractiveness of the island are lost.

When you start talking zones I am concerned that any of the existing trails or campgrounds would be downgraded in zone class. For example removal of a shelter or the dock at Siskiwit to move it from a zone of Wilderness portal or Backcountry to Primitive would be a downgrade in usability. I believe there is currently far more Pristine area on the island then will ever be used. The reason I say this is that most hikers I know prefer the campgrounds with a shelter if they are going to stay in a campground. For example Feldtmann Lake or Huginnin campground could actually use an upgrade in zone so that they did have shelters.

Residential Uses section
*"**Seventeen families retain life leases, special use permits, and volunteer agreements for residential use within the park boundaries, and in several cases within potential wilderness areas. The WBMP would in no way alter the agreement of these leases and permits. However, upon the expiration of the leases the proper steps would be taken to evaluate the conversion of any associated potential wilderness to designated wilderness in compliance with Isle Royale's Wilderness Legislation. The potential continuation of non-conforming uses of these areas would be a consideration in a decision for conversion to designated wilderness**." I believe that these leases residential uses should never be terminated and should be encouraged as I have mentioned above. It is not a positive thing to say that we get more designated wilderness when someone dies, yet that is what you are saying when a life lease expires. Again these folks are a big part of the history of the island.*

Wilderness and Backcountry Facilities section
*"**Shelters would continue to be maintained, though per the GMP no additional shelters would be added to campgrounds within designated wilderness, and shelters will eventually be removed from the Duncan Bay and Siskiwit Bay campgrounds, after the docks are removed**." This is my example of a down grade. The concept of removing that dock from Siskiwit drives me crazy. I love that dock when I am out on a backpack trip. I can only imagine what the boaters must have to say about its removal as well as the other dock changes in the GMP. They should all stay as well as the shelter. For example my wife and daughter can now say their first swim in Lake Superior came as a result of jumping off the dock at three mile. It's part of the experience. Take it away and it is lost forever.*

Trails section
*"**The trail system and its management would remain unchanged in all proposed alternatives, except for a possible new 3-5 mile section of trail designed for day use near Windigo, as described in Alternative C for managing day use in the wilderness and backcountry**." I would encourage any new trails for day use or overnight backcountry use.*

2.4.1 "Description of Alternatives for Overnight Use of Isle Royale's Wilderness and Backcountry section"

Some of the talk in this section goes back to the campsite interactions that people have. It is my belief that the issue of having to double up is a non issue. I have done it for people and they have done it for me. It has never been forced. You have a shelter and someone needs a place to stay so you say "Hey we have room" join us. Those that don't like this and want the true pristine experience can apply for a backcountry permit and stay outside of a campground. Encourage this in the registration process for those who don't like the idea of they may double up.

"Alternative A for Managing Overnight Use: No Action, Continuation of Existing Management Direction" *If this is don't change anything then this is the best option.*

Alternative B –D are unacceptable and I would not consider them a good alternative.

*"**Alternative B for Campfires: Move Campfire Rings to Different Campgrounds on a Rotational Basis (Preferred Alternative)"** I see this as a method to remove rings to the point where there are none under the guise of the site can't support a fire right now. I would be in favor of alternative A for Campfires if **"Alternative Considered but Rejected: Add Fire Rings or Grills at All Campgrounds"*** *can't be reconsidered as a valid alternative.*

"Alternative A for Fire Towers: No Action, Maintain Existing Fire Towers"
This is not a positive step. The towers are a great part of the island experience and offer a low cost great way to see more of our park. Yes it is our park and if you get rid of them or restrict access to the top of the towers you take away our ability to use our resource.

"Alternative C for Picnic Tables: Request a Waiver to Maintain Picnic Tables in Wilderness Campgrounds (Preferred Alternative)" *It looks like you got this correct and I would favor this as long you can also keep the tables at Duncan and Siskiwit.*

3.4.1 says "Many sites and resources still exist from prehistoric and historic use of the island, including periods of use by Native Americans, voyageurs and fur traders, and from extensive commercial fishing and mining, Lake Superior shipping, vacationing and resort development. These cultural resources are categorized as archeological sites, historic structures, cultural objects, cultural landscapes and ethnographic resources. Many of these cultural resources are located in designated wilderness and potential wilderness additions." *This goes back to the life lease folks. They need to be kept forever.*

*"**Alternative A for Overnight use: Maintain Current Management Direction"*** *This is better then options that would restrict this ability.*

I might have had more comments but I didn't even find out about this comment option until this week and this was a very large document to read and then put thoughts together on. Please consider that my voice here is more then just mine. My family also wants to see much of the same thing happen.

JR Schroeder

December 18, 2005

Superintendent Phyllis Green
Attn: WBMP
Isle Royale National Park,
800 East Lakeshore Drive
Houghton, MI 49931
isro_wbmp@nps.gov
fax: (Attn: WBMP): (906) 487-7170

Dear Superintendent Green:

Below are the comments of the Sierra Club on the Isle Royale National Park Wilderness and Backcountry Management Plan and Environmental Impact Statement. On behalf of Sierra Club I want to express our appreciation for the process used in the preparation of the draft Wilderness and Backcountry Management Plan for Isle Royale National Park (WBMP). During the General Management Planning process we in the Sierra Club raised our great concern with the failure of the National Park Service to include a full examination of alternatives and prepare a complete environmental impact statement. The WBMP, in contrast, provides a range of alternatives for the five specific areas of change under consideration and the environmental impact assessment provides good documentation of both the sensitive features of IRNP backcountry and wilderness. While more public meetings in the populous areas where a large number of the users of IRNP live would have been beneficial, the time provided for input into the plan was reasonable for public comment.

Our comments are offered below broken out by the five issues addressed in the WBMP and EIS, with a final category for additional issues that were not proposed for consideration of change by the National Park Service although they were discussed in the environmental impact statement.

OVERNIGHT USE: The Preferred Alternative (Alternative B) is supported by Sierra Club as a good way to manage conflicts and impacts among backcountry users. Because the difficulty of travel to IRNP effectively eliminates the spontaneous visitor, developing a Backcountry Overnight permitting office to work with visitors and their itineraries to try to reduce overuse and doubling up on campsites seems like an excellent idea. A single office that can be contacted by internet, phone or mail also appears to create a much more efficient system, allowing staff on the island to spend time much more effectively and in keeping with the mission of the IRNP. Addressing the seasonal heavy use or overuse of some backcountry campgrounds by trying to distribute visitors over less well used times of year is an good strategy and well worth trying as opposed to

expansions of multiple backcountry campsites. See "Other Issues" below regarding concerns about cross-country backcountry users.

DAY USE: The Preferred Alternative (Alternative C) is accepted as a good balance designed to spread out impacts of day users in the Windigo area and through smaller groups in guided tours on the *M.V. Sandy* and elsewhere. However, the issue does raise some unanswered questions about the location and design of the proposed 3 to 5 mile trail at Windigo. The WBMP indicates an amendment would be made to the General Management Plan to reassign some of the "Pristine" zone to "Backcountry" zone, but the EIS suggests the proposed trail might be entirely in the Backcountry zone. The EIS discusses the expected impacts of the proposed trail in a very general way which raises many of the key issues of concern, but doesn't explain how the trail would be designed and how public input would be garnered. While we understand that the initial decision needs to be made among alternatives prior to planning the trail, some guidance on the process used for public input and analysis of the proposed trail would be helpful.

CAMPFIRES: The Preferred Alternative (Alternative B) is a reasonable approach that allows campfires to be used but spreads the impact by moving fire rings around to campsites, reducing the impact of wood gathering. The success of this clearly depends as well on whether there are sufficient Park Service staff members to move the rings. Our members observe that the importance and attractiveness of campfires is likely to be significantly greater in the spring and fall when the weather is more likely to be cold, and it would be advisable to use the Backcountry permitting office to assure that visitors are aware of whether their routes take them to campsites with fire rings.

FIRE TOWERS: Sierra Club supports the Preferred Alternative (Alternative B) which proposes removing the Ishpeming and Feldtmann Fire Towers. This decision helps move these areas more toward wilderness conditions with little loss to the enjoyment of the area.

PICNIC TABLES: Picnic tables are inconsistent with wilderness designation, and IRNP should move increasingly toward elimination of structures in the wilderness. However, we recognize that the continuing presence of docks and/or shelters at certain campgrounds continues the nonconformance with wilderness conditions, we urge that where the Park Service moves forward with removing docks and structures at campgrounds, picnic tables should also be removed from those sites.

OTHER ISSUES: Two issues that were discussed in the WBMP but without alternatives being offered deserve attention as well.

CROSS-COUNTRY CAMPING: The potential for harm to the natural resources of IRNP from cross-country camping raises concerns about the decision common to all alternatives to continue with the existing regulations for cross-country camping. The analysis in the EIS explains a variety of the possible negative effects of cross-country camping, but does not address how the Park Service will be able to monitor the impacts of cross-country camping. While the numbers of parties are relatively few per year, we have a concern that parties as large as six may cause damage to the remote

areas of the park. We would suggest limiting the size of cross-country camping parties to three or four in the interests of limiting the impacts.

CHAINSAW USAGE: The actions common to all alternatives call for reducing chainsaw usage in favor of crosscut saw usage, a direction we applaud. We would urge the Park Service to move more aggressively in this direction, recognizing that in a wilderness are trees in all their forms and conditions are part of the experience. One option to offset the reduction of chainsaws would be to encourage more service trips through organizations like Sierra Club, working to train more volunteers to assist with trail maintenance. Chainsaws for emergency use would continue to be appropriate.

Thank you for considering Sierra Club's comments regarding the Wilderness and Backcountry Management Plan for Isle Royale National Park.

Sincerely,

PEPC: 136530
rec'd 12/21/05

Grand Portage-Isle Royale Transportation Line
1507 North First Street
Superior, Wisconsin 54880
715-392-2100 COM 715-392-5586 FAX
Wednesday, December 21, 2005

Management Team: ISRO WBMP 2005

Ladies and Gentlemen:

It appears to me that the only feasible plan is choice A., No Action. At the present time visitation to Isle Royale is already in a downtrend. Instituting policies that may further develop and accelerate this trend is neither necessary nor proper. The Action plans may be unwise under the present circumstances.

The most important of the preferred plan's stated goals, those that involve limiting and controlling visitation from an office on the mainland, are not worth the efforts and costs of implementation at this time. Even if the goals were not vague, the policy prescriptions are unlikely to achieve anything permanently useful or desirable from the general public's viewpoint. The perceived problem of crowding is not serious and is lessening as visitation continues to decline.

Objectives:
For example, let's examine the objective of limiting visitation to the point that probability of double occupancy at a campsite is less than 5%. Isle Royale's remote location in Lake Superior often results in weather and transportation delays. Logistics are difficult. To assure the accomplishment of such targets would require a full-fledged campsite reservation system, full explanation of policies and trail alternatives on the mainland prior to boarding. It would require complex and intrusive measures that are far more incompatible with a wilderness experience than an occasional double occupancy. There would be many problems. It would necessitate the wasting of resources to achieve a doubtfully beneficial result. The proposed cure is worse than the disease.

Park management appears to have accepted as a premise the view that "doubling up is inappropriate" for the type of "expectations" that visitors to Isle Royale are thought to have. The "salient" point is that these visitors are being "forced to do so", as stated on p. 55. Of course they are not really being "forced" to do anything; they can continue up the trail and camp cross-country, etc. [This option may be arbitrarily ruled out as a solution. See p.] Some visitors' expectations of sole occupancy of a campsite aren't being met, and somehow this is regarded by park management as a serious matter, one that demands changes in visitation policies, especially when it seems it might occur more than 5% of the time during the peak season.

Is anyone seriously suggesting that backcountry visitors are deciding not to return to Isle Royale on account of over crowding? If so, how should such a problem be addressed?

Is restricting access the only Actionable approach that has undergone serious consideration, other than minor changes in campsites and rustic cabin additions?

Apparently management is only calculating the disappointment costs of those who place a premium on solitude, those who didn't expect to have company at their planned campsite. How does management calculate the lost opportunity cost of those potential visitors who are denied permits at their preferred times because of a policy designed to assuage other visitors' disappointments? Why, when more amiable visitors might find occasional doubling up to be quite tolerable, why are they to be denied access?

It would be different if no other seasons of summer offered an absence of crowding. But visitors can choose less visited weeks in order to find fewer human encounters, and many do. What is wrong with this simpler and less restrictive solution?

The preferred solutions offered by some Action plans suggest that a form of price rationing be imposed. A permit fee, plus higher daily fees would be instituted. Restrictions on transportation would require higher fares. Infrastructure taxes would need to be raised to defray fixed expenses over fewer visitors. These policies seem to be tantamount to regulating visitation by imposition of planning obstacles and higher costs of visitation.

The policy prescriptions offered in the plans might be appropriate for a park that had serious overcrowding conditions. But such is not the case on Isle Royale, and it is unlikely to become the case anytime soon.

Policies:
There is no evidence that Park managers are likely to achieve many of their stated goals through the policy prescriptions that are offered. Furthermore the secondary and feedback effects from the preferred and other Action options may result in counter-intuitive and undesirable long-term consequences. These might include further loss of interest in the park, decreased availability of transportation services, closing of lodging facilities, lowered Park budgets, loss of cultural assets, and more.

Bandwagon:
If the unstated objective of the reduced visitation policies is to adopt a downtrend, while making it appear to be a management objective, then things will only get worse for visitors and the for the park's assets and resources.

Relevant History:
Prior to Isle Royale National Park Superintendent Brown's ordering the temporary closure of lodging and dining facilities at Windigo (the Arab Oil Embargo was cited as the cause), more than half of the visitors to Isle Royale came from the Minnesota side. Visitation was more evenly distributed around the park prior to this temporary action, which soon resulted in the permanent destruction of lodging and dining facilities at Windigo. Park visitation numbers from the 1970s and 1980s should be reviewed. There was no clamor for visitor restriction then, when visitation was higher than it is today.

Experienced Visitors:
Most of the backcountry visitors to Isle Royale are experienced visitors who have visited the island in the past and are aware of the crowding situation during the peak weeks of mid-July to mid-August. While they might prefer less crowding, they are prepared to experience what they find, or else they wouldn't come at that time. The Action option plans address a misperceived situation with a non-solution course of actions, for the most part.

Unique Isle Royale:
Isle Royale is the least visited national park. Because of isolation, the vagaries of weather and other causes, visitation plans must often be modified. Isle Royale has been a venue where freedom to change plans has been a valued feature. It may not be worthwhile to toss this freedom away.

Elderly Visitors:
Where is the consideration for elderly visitors in the management plans? Handicapped visitors are mentioned. Up until the closing of Windigo's dining room by fiat of superintendent, there were many days when dozens of middle aged and elderly visitors enjoyed a meal of local fish in the Windigo dining room, while enjoying a view of the harbor, often with moose grazing. Why are not these types of visitors of concern, as opposed to worrying about campers who complain of doubling once in a while? Perhaps your surveys failed to find the elderly because they are mostly gone from visitor samples, victims of errant policy decisions of the past? Why then are these Action policy preferences worthy of reliance if based on incomplete information that ignores some formerly important user groups?

Other Alternatives:
Why are some alternatives not considered at all?
Visitor crowding at the Rock Harbor area could be relieved by reconstruction of the lodging facilities at Windigo. It could also be improved by building at least a dozen or so rustic cabins there. Construction of campsites near the Windigo dock area would also be of help.

Transportation by Ferry:
The private firms that supply transportation service to the island must operate profitably in order to continue. Profits are sensitive to fuel costs and to revenues and especially to patronage. Policies which discourage visitation, or are perceived by potential customers to be unfriendly can have serious effects for transportation providers. The risks of operating in these waters is considerable. The season is short, and most Action policy choices propose to shorten the season further for dubious reasons. Action plans which propose substantial changes in the business environment bring new risks to bear, risks which often seem to be discounted, minimized, or ignored by Park management. Furthermore the private transportation operators must compete with a subsidized government competitor.

If visitation drops, is the National Park Service prepared to offer comparable subsidies to its competitors, the private operators? Because of the profound effects upon this critical infrastructure service, adequate care in policy choices ought to be exercised. This degree of care is absent in the Action plans, which are generally dismissive of transportation effects.

Critical Times:
These are critical times, and major changes in visitor policies that affect the relative attractiveness of Isle Royale as a visitation venue should be undertaken with the utmost caution. No such caution toward the transportation services is evident in the proposals. On the contrary, statements that it is "unlikely that ferries will experience adverse effects" are without sound basis.

Conclusion: Option A. No Action is the necessary choice at the present time. It is responsive, rather than proactive, which is proper given management's inability to forecast the consequences of the Action policies it has offered. All the other choices ask us to accept ever more restrictions as an answer to a largely perceptual problem. The other Action plans involve considerable inconvenience, unappreciated risk, and seem to be based upon faulty or incomplete evidence and insufficient reasoning.
Finally, park management should heed advice offered on p. 148:

"...The efforts to control recreational use are also a threat, because regulation of activities takes away from the freedom and spontaneity that many visitors associate with a wilderness experience."

Thank you for the opportunity to respond.

Yours truly,

Stuart Sivertson
President, Grand Portage-Isle Royale Transportation Line, Inc.

PEPC: 135802
rec'd 11/30/05

Superintendent
Attn: WBMP, Isle Royale National Park
800 East Lakeshore Drive
Houghton, Mi. 49931

November 28, 2005

Dear Superintendent Green:

With reference to the proposal to remove the Siskiwit Bay Dock and Breakwater. I will try to be brief.

I my humble opinion, to remove this dock defies logic and common sense. This has been a key docking and access point on the Island since the C.C.C. days.

Safe boater access to the trails, natural and cultural features, in this portion of the park will be lost. The Hay Bay dock does not provide such access.

The Park Service will also be without a good, safe, docking facility, for such activities as search and rescue, fire suppression, resource management and law enforcement. Boater assistance to the hikers in this area will be greatly reduced , if not lost. This could translate to a public safety issue.

Since first pulling into the Siskiwit Bay dock as a Seasonal N.P.S. Park Ranger in 1956, I have visited the area a number of times as a private boater - hiker. I am more than aware that some boaters come to Isle Royale for reasons other than to enjoy the pristine wilderness, its beauty, and the access to hiking trails. But in general, they cause no more harm to the wilderness concept than the unruly backpackers who congregate on the dock (s) to bother and sometimes harass the boaters.

My recommendations are; (1) To leave the dock and breakwater and move the campsite to Senter Point. This would benefit the backpackers with a bit of new trail, and access to a very interesting cultural feature - the Island Mine Powder House. (2) Increase Park Ranger presence to enforce the existing Park Rules and Regulations, which would solve many of the problems this very expensive management plan has set out to resolve.

Thank you for this last opportunity to comment on the WBMP, I trust these thought and recommendations well be taken very seriously.

Sincerely, Thomas H. Smith

Thomas H. Smith

12015 Barbara Ann Drive
Washington , Mi. 48095
(586) 752-3690
papertrailtom@comcast.net

P.S. Now that old age is creeping in, with increasing trips to see doctors, the cost of fuel going out of sight.... regular trips to visit Isle Royale are becoming less frequent. If not this next summer, for sure in '07. My Best Wishes to All. Tom.

PEPC: 135803
rcvd 12/14/05

2380 Oakridge Drive
St. Paul, MN 55119
December 10, 2005

Superintendent
Attn: WBMP
Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931

We have completed an extensive review of the draft Wilderness and Backcountry Management Plan (WBMP) for Isle Royale National Park. Surprisingly, we have no comments other than to say that we fully support the preferred alternative as proposed in the draft plan. All of the choices between proposed alternatives made by the planning team match our personal preferences for the best management practices for the park. We urge the National Park Service to finalize the plan based upon the preferred alternative.

Please continue to keep us informed as to the status of the WBMP. Please send us a final version of the plan when that is available. Thank you.

Sincerely,

Mark and Joan Strobel

Mr. John R. Swanson
3400 Edmund Blvd
Minneapolis MN 55406

PERC: 136872
rec'd 12/27/05

No ID #

21 December 2005

Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931.

Dear Sirs;

Please accept my comments:

Wilderness and Backcountry management Plan, Environmental Impact Statement;
Isle Royale National Park.

May I suggest that boats be removed from the Park.
To remove all fire towers.
and to acquire all inholdings.
To eliminate all cabins.
and to manage the Park as a pristine sanctuary.
To designate the Isle Royale National Park Wilderness of 575,000 acres.
So that we may fully preserve our nation's natural heritage.

Sincerely,
John R. Swanson.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGIONS 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 20 2005

DEQC: 136872
Rec'd 12/27/05

REPLY TO THE ATTENTION OF: B19-J

Phyllis Green
Superintendent
Isle Royale National Park
800 East Lakeshore Drive
Houghton, Michigan 49931

RE: Comments on the Draft Wilderness and Backcountry Management Plan(WBMP)/ Environmental Impact Statement (EIS) for Isle Royale National Park, Michigan, CEQ#: NPS-F61022-MI

Dear Ms. Green:

The U.S. Environmental Protection Agency (U.S. EPA) has received the Draft WBMP/EIS. Under the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations, and Section 309 of the Clean Air Act, U.S. EPA reviews and comments on major federal actions.

In the WBMP/EIS, the National Park Service proposes alternatives for the management and public use of Isle Royale National Park (National Park). The WBMP/EIS address issues and provide guidelines for managing the wilderness and backcountry areas of the park.. The document describes a hybrid preferred alternative for managing the following: overnight use (Alternative B), day use (Alternative C), campfires (Alternative B), fire towers (Alternative B), and picnic tables (Alternative C). Alternative A, the no-action alternative, as well as up to three other alternatives, were described for each management objective.

U.S. EPA rates the WBMP/EIS and the hybrid preferred alternative as **LO-Lack of Objection**. We commend your agency for proposing actions to limit overcrowding in campgrounds via establishment of a mainland-based central permitting office. Establishing a permitting process would not only improve visitors' wilderness and backcountry experiences by reducing the frequency of parties needing to share campsites, but also by reducing adverse impacts to park resources and values from overcrowding.

If you have any questions, please do not hesitate to contact me or Kathleen Kowal of my staff at (312) 353-5206 or via e-mail at kowal.kathleen@epa.gov.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Science, Ecosystems, and Communities

Enclosures: *Summary of Ratings Definition and Followup Action*

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (50% Postconsumer)

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

Pepc: 13644
rec'd 12/21/05

TO PROTECT
FRIENDS
of the BOUNDARY WATERS WILDERNESS
& PRESERVE

****SENT VIA MAIL, E-MAIL, AND FAX****

December 21, 2005

Phyllis Green
Superintendent
Isle Royale National Park
800 East Lakeshore Drive
Houghton, MI 49931

RE: Wilderness and Backcountry Management Plan

Dear Superintendent Green:

On behalf of Friends of the Boundary Waters Wilderness ("Friends"), please accept the following comments regarding the Isle Royale National Park Wilderness and Backcountry Management Plan. For each action alternative presented, the Friends has selected its preferred alternative, with supporting arguments detailed below.

The "Friends" is a non-profit conservation group that works to protect the air, land, and water in the Boundary Waters Canoe Area Wilderness and the Quetico-Superior Ecosystem. It has 3,000 donors comprised primarily of Minnesota and Wisconsin residents.

Overnight Use:
The Friends supports Alternative E for overnight use because it provides the greatest opportunity for solitude and protects the resource through a visitor permitting system. It would issue permits below campground capacities, thereby reducing the possibility of parties sharing campsites. The period during which parties may share campsites is also considerably less than the preferred Alternative (Alternative B). Under Alternative E, no more than five percent of parties would share a campsite, and that would only occur during a two-week period in July and August. Meanwhile, under Alternative B, as many as five percent of parties would be expected to share a campsite, and that would occur during a 12-week period from June 16 to September 15.

Day use:
The Friends supports Alternative B because it allows a wide range of recreational opportunities while maintaining the look and feel of a wilderness area. It also limits ferry boat passengers to the same number allowed in a particular part of the wilderness. For instance, in the Frontcountry Zone where groups are limited to 20 passengers, boat tours to the area could carry no more than 20 passengers. This is a sensible approach because it averts having to ask large groups to subdivide themselves, and later have the Park Service enforce those group size limits.

Meanwhile, the Friends opposes the preferred Alternative (Alternative C) because it would create a three- to five-mile trail at Windigo and allows more ferry passengers to reach wilderness

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areas than is allowed. According to the EIS, the proposed trail "...would remain as much as possible within the non-wilderness boundary." Lacking assurances that all of the new trail would remain out of the wilderness area, where a new trail is incompatible, renders Alternative C as an unfavorable option. Finally, it will be more difficult for the Park Service to enforce group limits when more ferry passengers are being dropped at an area than group limits allow.

Campfires:
The Friends supports the preferred Alternative (Alternative B) because it minimizes impact to the land and appropriates fire rings based on resource damage. Campfires are an expected part of any wilderness visit (as witnessed in the Boundary Waters Canoe Area Wilderness) and fire rings should be kept in the park. However, Alternative B offers a creative approach to preserving the resource by monitoring impact and removing fire rings at overtaxed campsites. By removing fire rings from campsites where firewood is minimal or non-existent, it prevents long-term damage to the campsite and preserves the look and feel of the area.

Fire tower removals:
The Friends supports the preferred Alternative (Alternative B) because it removes two unnecessary fire towers (Ishpeming and Feldtmann) that mar the landscape. While dismissed as an option, the Friends indeed prefers the removal of the island's third tower – the Ojibway. It is incompatible for a wilderness area to have a 41-foot structure, particularly one that is no longer used for its intended purpose – fire monitoring. Leaving one tower for administrative purposes is counter to the intent of the Wilderness Act of 1964, which defines wilderness as "...an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements..."

The Forest Service is able to maintain campsites, trails, and portages in the Boundary Waters Canoe Area Wilderness without permanent structures in the wilderness, and the Park Service should be able to perform comparable duties without such structures in Isle Royale's wilderness area.

Picnic table removals:
The Friends supports Alternative B because it removes all picnic tables, a structure that is unnecessary and incompatible in wilderness areas. Conversely, it is for that reason that the Friends opposes the preferred Alternative (Alternative C), which would allow picnic tables to remain at campsites in designated and potential wilderness areas. Under this scenario, human use will trump that of a remote experience and yield a look that more resembles a park than a wilderness area.

Please consider these comments when making your final decision.

Sincerely,

Sean Wherley

Sean Wherley
Communications Director

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Woiwode #136464

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Correspondence (136464)

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Organization Type: I - Unaffiliated Individual
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Correspondence Information

Status: New **Park Correspondence Log:**
Date Sent: **Date Received:** 12/21/2005
Number of Signatures: 1 **Form Letter:** No
Contains Request(s): No **Type:** E-mail
Notes:

Correspondence Text

December 18, 2005

Superintendent Phyllis Green
Attn: WBMP
Isle Royale National Park,
800 East Lakeshore Drive
Houghton, MI 49931
isro_wbmp@nps.gov
fax: (Attn: WBMP): (906) 487-7170

Dear Superintendent Green:

Below are the comments of the Sierra Club on the Isle Royale National Park Wilde Backcountry Management Plan and Environmental Impact Statement. On behalf of Club I want to express our appreciation for the process used in the preparation of t Wilderness and Backcountry Management Plan for Isle Royale National Park (WB the General Management Planning process we in the Sierra Club raised our great with the failure of the National Park Service to include a full examination of alternati prepare a complete environmental impact statement. The WBMP, in contrast, provi range of alternatives for the five specific areas of change under consideration and t environmental impact assessment provides good documentation of both the sensiti of IRNP backcountry and wilderness. While more public meetings in the populous where a large number of the users of IRNP live would have been beneficial, the tim for input into the plan was reasonable for public comment.

Our comments are offered below broken out by the five issues addressed in the WI EIS, with a final category for additional issues that were not proposed for considera change by the National Park Service although they were discussed in the environm impact statement.

OVERNIGHT USE: The Preferred Alternative (Alternative B) is supported by Sierra good way to manage conflicts and impacts among backcountry users. Because the travel to IRNP effectively eliminates the spontaneous visitor, developing a Backcou Overnight permitting office to work with visitors and their itineraries to try to reduce and doubling up on campsites seems like an excellent idea. A single office that can contacted by internet, phone or mail also appears to create a much more efficient s allowing staff on the island to spend time much more effectively and in keeping witl mission of the IRNP. Addressing the seasonal heavy use or overuse of some back campgrounds by trying to distribute visitors over less well used times of year is an (strategy and well worth trying as opposed to expansions of multiple backcountry ca See "Other Issues" below regarding concerns about cross-country backcountry use

DAY USE: The Preferred Alternative (Alternative C) is accepted as a good balance to spread out impacts of day users in the Windigo area and through smaller groups tours on the M.V. Sandy and elsewhere. However, the issue does raise some unan questions about the location and design of the proposed 3 to 5 mile trail at Windigo WBMP indicates an amendment would be made to the General Management Plan some of the "Pristine" zone to "Backcountry" zone, but the EIS suggests the propos might be entirely in the Backcountry zone. The EIS discusses the expected impacts proposed trail in a very general way which raises many of the key issues of concer doesn't explain how the trail would be designed and how public input would be gar While we understand that the initial decision needs to be made among alternatives planning the trail, some guidance on the process used for public input and analysis proposed trail would be helpful.

CAMPFIRES: The Preferred Alternative (Alternative B) is a reasonable approach tl campfires to be used but spreads the impact by moving fire rings around to campsi reducing the impact of wood gathering. The success of this clearly depends as well whether there are sufficient Park Service staff members to move the rings. Our me observe that the importance and attractiveness of campfires is likely to be significa in the spring and fall when the weather is more likely to be cold, and it would be ad use the Backcountry permitting office to assure that visitors are aware of whether tl take them to campsites with fire rings.

FIRE TOWERS: Sierra Club supports the Preferred Alternative (Alternative B) whic removing the Ishpeming and Feldtmann Fire Towers. This decision helps move the more toward wilderness conditions with little loss to the enjoyment of the area.

PICNIC TABLES: Picnic tables are inconsistent with wilderness designation, and IF move increasingly toward elimination of structures in the wilderness. However, we that the continuing presence of docks and/or shelters at certain campgrounds conti nonconformance with wilderness conditions, we urge that where the Park Service r forward with removing docks and structures at campgrounds, picnic tables should removed from those sites.

OTHER ISSUES: Two issues that were discussed in the WBMP but without alterna offered deserve attention as well.
CROSS-COUNTRY CAMPING: The potential for harm to the natural resources of I cross-country camping raises concerns about the decision common to all alternativ continue with the existing regulations for cross-country camping. The analysis in th explains a variety of the possible negative effects of cross-country camping, but do address how the Park Service will be able to monitor the impacts of cross-country While the numbers of parties are relatively few per year, we have a concern that pa large as six may cause damage to the remote areas of the park. We would suggest the size of cross-country camping parties to three or four in the interests of limiting impacts.
CHAINSAW USAGE: The actions common to all alternatives call for reducing chair in favor of crosscut saw usage, a direction we applaud. We would urge the Park Se move more aggressively in this direction, recognizing that in a wilderness are trees

forms and conditions are part of the experience. One option to offset the reduction chainsaws would be to encourage more service trips through organizations like Sie working to train more volunteers to assist with trail maintenance. Chainsaws for em use would continue to be appropriate.

Thank you for considering Sierra Club's comments regarding the Wilderness and B Management Plan for Isle Royale National Park.

Sincerely,

Add Comment

Comment Text:

Add Comment

Comments

ID	First 40 Characters	Status	Assigned Code(s)

No comments have been identified in this correspondence.

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PEPC: 136524
rec'd 12/21/05

December 21, 2005

Superintendent Phyllis Green
Attn: WBMP
Isle Royale National Park,
800 East Lakeshore Drive
Houghton, MI 49931
isro_wbmp@nps.gov
fax: (Attn: WBMP): (906) 487-7170

Dear Superintendent Green:

Isle Royale National Park is a wilderness recreational gem for all of North America. These comments are submitted by Clean Wisconsin, Madison Audubon Society, Wisconsin League of Conservation Voters and the Wisconsin Chapter of the Sierra Club on behalf of a membership approximating 29,000 in Wisconsin. We endorse the comments submitted by the Sierra Club in a letter from Anne Woiwode, State Director, Sierra Club Mackinac (Michigan) Chapter

Below are the comments of the Sierra Club on the Isle Royale National Park Wilderness and Backcountry Management Plan and Environmental Impact Statement. On behalf of Sierra Club I want to express our appreciation for the process used in the preparation of the draft Wilderness and Backcountry Management Plan for Isle Royale National Park (WBMP). During the General Management Planning process we in the Sierra Club raised our great concern with the failure of the National Park Service to include a full examination of alternatives and prepare a complete environmental impact statement. The WBMP, in contrast, provides a range of alternatives for the five specific areas of change under consideration and the environmental impact assessment provides good documentation of both the sensitive features of IRNP backcountry and wilderness. While more public meetings in the populous areas where a large number of the users of IRNP live would have been beneficial, the time provided for input into the plan was reasonable for public comment.

Our comments are offered below broken out by the five issues addressed in the WBMP and EIS, with a final category for additional issues that were not proposed for consideration of change by the National Park Service although they were discussed in the environmental impact statement.

OVERNIGHT USE: The Preferred Alternative (Alternative B) is supported by Sierra Club as a good way to manage conflicts and impacts among backcountry users. Because the difficulty of travel to IRNP effectively eliminates the spontaneous visitor, developing a Backcountry Overnight permitting office to work with visitors and their itineraries to try to reduce overuse and doubling up on campsites seems like an excellent

1

idea. A single office that can be contacted by internet, phone or mail also appears to create a much more efficient system, allowing staff on the island to spend time much more effectively and in keeping with the mission of the IRNP. Addressing the seasonal heavy use or overuse of some backcountry campgrounds by trying to distribute visitors over less well used times of year is an good strategy and well worth trying as opposed to expansions of multiple backcountry campsites. See "Other Issues" below regarding concerns about cross-country backcountry users.

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FROM : SIERRA CLUB JOHN MUIR CHAPTER FAX NO. : 6082564562 Dec. 21 2005 05:02PM P2

CROSS-COUNTRY CAMPING: The potential for harm to the natural resources of IRNP from cross-country camping raises concerns about the decision common to all alternatives to continue with the existing regulations for cross-country camping. The analysis in the EIS explains a variety of the possible negative effects of cross-country camping, but does not address how the Park Service will be able to monitor the impacts of cross-country camping. While the numbers of parties are relatively few per year, we have a concern that parties as large as six may cause damage to the remote areas of the park. We would suggest limiting the size of cross-country camping parties to three or four in the interests of limiting the impacts.

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Thank you for considering these comments regarding the Wilderness and Backcountry Management Plan for Isle Royale National Park.

Sincerely,

Keith Reopelle, Program Director
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FROM : SIERRA CLUB JOHN MUIR CHAPTER FAX NO. : 6082564562 Dec. 21 2005 05:03PM P3