HOW TO COMMENT ON THIS STUDY

Comments on this wilderness study are welcome and will be accepted for 90 days after the Environmental Protection Agency's notice of availability appears in the ***Federal Register***. (For the exact date when the public comment period closes, check the park's website, **www.nps.gov/apis/wstudy/htm**.) If you wish to respond to the material in this document, you may submit your comments by any one of several methods. You may mail written comments to:

Wilderness Study Coordinator
Apostle Islands National Lakeshore
Route 1, Box 4
Bayfield, WI 54814

You may also comment electronically (**apis_comments@nps.gov**). Please submit Internet comments as a text file avoiding the use of special characters or any form of encryption. Please include your name and return address in your Internet message.

You may hand-deliver comments at public meetings to be announced in the media following release of this document. Also, comments may be hand-delivered to the Apostle Islands National Lakeshore headquarters, Washington Avenue, Bayfield, WI.

Comments are most useful if they are specific and do the following:

- Identify incomplete or incorrect information
- Describe why a particular alternative would or would not work
- Offer a new idea or complete new alternative that would accomplish the stated goals
- Point out discrepancies between legal mandates and proposals
- Highlight deficiencies in the analysis of environmental consequences

Our practice is to make comments, including names and addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their address from the planning record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety.

This method for public comment submittal listed above stems from recent court rulings concerning the release of public comments, and it is included as recommended by the Office of the Solicitor, Department of the Interior.

DRAFT
WILDERNESS STUDY /
ENVIRONMENTAL IMPACT STATEMENT

June 2003

APOSTLE ISLANDS

National Lakeshore · Wisconsin

DRAFT
WILDERNESS STUDY
ENVIRONMENTAL IMPACT STATEMENT
APOSTLE ISLANDS NATIONAL LAKESHORE
Bayfield and Ashland Counties, Wisconsin

This *Draft Wilderness Study / Environmental Impact Statement* describes and analyzes four alternatives for designating wilderness in Apostle Islands National Lakeshore. Based on the findings of this study, a formal wilderness proposal may be submitted to the Director of the National Park Service for approval and subsequent consideration by the Department of the Interior, President, and Congress under the provisions of the Wilderness Act.

Alternative A, the "**no-action**" alternative, provides a baseline for comparing the other alternatives. Under this alternative, no wilderness would be proposed in the park.

Three alternatives would propose wilderness areas of differing sizes and locations in the park. None of the waters of Lake Superior would be proposed as wilderness under the alternatives. **Alternative B** would propose the highest amount of wilderness (94% of the land base), excluding only the areas determined to be not suitable in all of the alternatives. **Alternative C**, the National Park Service's **preferred alternative,** would propose that 80% of the park's land base be permanently protected as wilderness. This alternative is intended to ensure that there will be outstanding opportunities for people to learn both the stories of the people who settled and altered these islands and the story of the subsequent restoration of the park's "wilderness" qualities. It also strives to minimize the number of small, fragmented areas of wilderness or nonwilderness. **Alternative D** would limit wilderness to remote areas and cover about 55% of the park's land base. It would include those undeveloped and isolated areas that provide the best opportunities for solitude and primitive recreation during the busy summer season. These areas are not on the current tour boat route, and generally are more distant from the mainland.

This document also discusses the potential consequences of each alternative's actions on natural resources, cultural resources, wilderness resources, visitor nonwilderness experiences, and park operations. Each alternative has a mix of beneficial and adverse impacts. The main benefits of alternative A are that it would provide maximum flexibility to park managers to expand recreational and interpretive facilities into new areas and to carry out park programs and operations, and that it would allow the greatest number of the park's cultural resources to be protected in the largest variety of ways. Alternatives B, C, and D would better protect the park's natural and wilderness resources in the long term than alternative A (largely in proportion to the amount of wilderness recommended in each) and would also provide indirect protection to many of the park's cultural resources by limiting the spread of development on the islands. The main drawbacks of alternative A are that it would provide the least amount of protection against potential new development-related impacts to natural, cultural, and wilderness resources, and it would provide the least amount of certainty that the park would continue to look and feel as it does today. Alternatives B, C, and D would offer reduced levels of flexibility to park managers to expand the level of development in the areas recommended for wilderness, which may put development pressure on the areas excluded from the proposals. These alternatives would also reduce, but do not eliminate, the treatment options available for cultural resources contained within the areas recommended for wilderness. The National Park Service believes that Alternative C would provide the best mix of beneficial impacts, while minimizing many of the adverse ones.

For questions about this document, contact the park wilderness study coordinator, Jim Nepstad, Apostle Islands National Lakeshore, Route 1, Box 4, Bayfield, WI 54814, write an e-mail message at **apis_comments@nps.gov**, or call 715-779-3398, extension 102.

United States Department of the Interior • National Park Service

A GUIDE TO THIS DOCUMENT

This document contains the ***Draft Wilderness Study***, which is intended to determine if and where lands and waters within the Apostle Islands National Lakeshore should be proposed for wilderness designation.

DRAFT WILDERNESS STUDY / ENVIRONMENTAL IMPACT STATEMENT

This ***Draft Wilderness Study / Environmental Impact Statement*** is organized in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act and the National Park Service's Director's Orders on "Park Planning" (DO-2) and "Environmental Analysis" (DO-12).

Chapter 1: Purpose of and Need for the Wilderness Study sets the framework for the entire document. It describes why the study is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered, which are based on the Wilderness Act, 1989 ***General Management Plan***, and NPS management policies.

The chapter also provides background on the wilderness study and details the issues and concerns that were raised during public scoping meetings. This chapter concludes with a statement of the scope of the environmental impact analysis; specifically what impact topics were or were not analyzed in detail.

Chapter 2: Wilderness Alternatives, begins by describing what areas were considered not suitable for wilderness designation. It then describes a no-wilderness alternative (alternative A, the no-action alternative). Alternatives B, C (the agency's preferred alternative), and D are then presented, which propose varying areas for wilderness designation. Next, there is a discussion of which alternative was determined to be the environmentally preferred alternative and a description of alternatives considered but dismissed. The chapter concludes with summary tables of the alternatives and the environmental consequences of implementing those alternative actions.

Chapter 3: Affected Environment describes those areas and resources that would be affected by implementing the various alternatives – natural resources, cultural resources, wilderness resources (including the visitor wilderness experiences), visitor experiences in the nonwilderness areas, and park operations.

Chapter 4: Environmental Consequences analyzes the impacts of implementing the alternatives on the topics described in the "Affected Environment" chapter. Methods that were used for assessing the impacts in terms of the intensity, type, and duration of impacts are outlined at the beginning of the chapter.

Chapter 5: Consultation and Coordination describes the history of public and agency coordination during the wilderness study effort and lists agencies and organizations who will be receiving copies of this document.

The **Appendixes** present supporting information for the document, along with selected references, a glossary, a list of the study authors, and an index.

SUMMARY

The purpose of this wilderness study is to determine if and where lands and waters within the Apostle Islands National Lakeshore should be proposed for wilderness designation. The study identifies a range of possible wilderness configurations within the park and evaluates their effects. Based on the findings of this study, a formal wilderness proposal may be submitted to the Director of the National Park Service for approval and subsequent consideration by the Department of the Interior, President, and Congress under the provisions of the Wilderness Act.

The *National Park Service (NPS) Management Policies 2001* (§6.2.1, NPS 2000) require that all lands administered by the National Park Service be evaluated for their suitability for inclusion within the national wilderness preservation system. When the state of Wisconsin donated lands in the Apostle Islands to the National Park Service, it requested that the wilderness qualities of these lands be protected. The 1989 *General Management Plan* for Apostle Islands National Lakeshore directed that a formal wilderness study be done for the lands and waters within the park to determine if areas should be proposed to Congress for wilderness designation. The plan stated that about 97% (41,054 acres) of the park's land base may be suitable for wilderness and instructed that these lands "…be managed to preserve their potential wilderness values until a formal wilderness study has been completed and forwarded to Congress." For the past 14 years the National Park Service has managed these lands to preserve their wilderness values pending completion of a wilderness study.

In the 2001 Department of Interior appropriations bill, Congress specifically directed that the National Park Service conduct a wilderness study for the Apostle Islands National Lakeshore.

WILDERNESS STUDY PROCESS

In the summer and fall of 2001 the National Park Service began to seek public input on wilderness designation for the Apostle Islands. The public raised several major issues and concerns regarding designating or not designating wilderness during the scoping period, including:

- impacts of potential new developments on the islands
- changes in access to the park
- changes in visitor uses and experiences
- impacts to local communities and the economy
- impacts on Native American treaty rights
- protection of cultural resources
- changes in park operations

Once the issues were understood, the study team began to identify draft alternatives for designating wilderness in the park. In preparing these alternatives, the study team first identified those areas in the park that clearly do not meet the Wilderness Act suitability criteria (see the "Planning Background: Wilderness and the Apostle Islands" section for a list of the suitability criteria). Eight areas or types of areas were found to be clearly not suitable as wilderness and therefore were not considered in any of the wilderness study alternatives:

- waters and submerged lands of Lake Superior up to the ordinary high-water mark
- public docks on the islands
- the mainland unit
- light stations and adjoining cultural landscapes
- housing/administration areas on Stockton, Rocky, Sand, and Oak Islands
- Manitou Island fish camp
- Southeast tip of Sand Island
- West Bay Club on Sand Island

The study team initially identified six draft alternative proposals for designating wilderness in the park. A series of open houses and meetings were then held with the public and interested organizations in July 2002 to gather public input on the alternatives and determine which alternative was favored. After analyzing this public input, the study team revised the alternatives, and dropped two of the preliminary alternatives. The four remaining alternatives (which have been renamed) and their environmental impacts are presented in this draft document. A preferred alternative was selected among these alternatives using a "Choosing By Advantages" (CBA) process.

ALTERNATIVES

Alternative A (No Wilderness)

This alternative, the "no action alternative," is required under the National Environmental Policy Act. It provides a baseline for comparing the changes and impacts of the other alternatives. Under this alternative no wilderness would be proposed for Apostle Islands National Lakeshore. If this alternative were selected, it is assumed that Congress would approve the no wilderness recommendation. As a result, the National Park Service would no longer be required to manage the park to protect the area's wilderness values. However, for at least the short term the National Park Service would continue to protect and maintain the park's wilderness characteristics indirectly through the existing zoning framework in the 1989 *General Management Plan*. In the long term it is possible that alternative A could be a departure from how the National Park Service has managed Apostle Islands National Lakeshore in the past – when the existing general management plan is revised or a new general management plan is adopted, the management directions for the park could change, which may result in less protection for wilderness resources in parts of the park.

Alternative B (Maximize Wilderness)

Alternative B only excludes the areas determined to be not suitable in all of the alternatives. Of all the alternatives, alternative B would be most similar to how Apostle Islands National Lakeshore is currently being managed because 97% of the park's land base is being managed as *de facto* wilderness. Altogether, approximately 39,500 acres of the park's 42,160-acre land base (94%) would be proposed as wilderness under alternative B (see the Alternative B map on page 31). This is the equivalent of 57% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

Alternative C (Preferred Alternative and Environmentally Preferred Alternative)

Alternative C is the National Park Service's preferred alternative for designating wilderness in Apostle Islands National Lakeshore. This alternative is intended to

permanently protect most of the park's natural, cultural, and wilderness resources. It also is intended to ensure that there will be outstanding opportunities for people to learn both the stories of the people who settled and altered these islands and the story of the subsequent restoration of the park's "wilderness" qualities. Basswood, Sand and Long Islands would not be included in this wilderness proposal. Alternative C also would also strive to minimize the number of small, fragmented areas of wilderness or nonwilderness.

Altogether, approximately 33,500 acres of the park's 42,160-acre land base (80%) would be proposed as wilderness under alternative C (see Alternative C map on page 35). This is the equivalent of 48% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

Alternative D (Limit Wilderness to Remote Areas)

Alternative D emphasizes those remote, isolated areas that provide the best opportunities for solitude and primitive recreation during the busy summer season. These areas are not on the current tour boat route, and generally are more distant from the mainland. Altogether, approximately 23,000 acres of the park's 42,160-acre land base (55%) would be proposed as wilderness under alternative D (see Alternative D map on page 39). This is the equivalent of 33% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

ENVIRONMENTAL CONSEQUENCES

The study team evaluated the potential consequences the different wilderness proposal alternatives would have on natural resources, cultural resources, wilderness resources, visitor nonwilderness experiences, and park operations. In order to analyze the impacts of wilderness designation it was assumed that Congress would approve the no wilderness recommendation. It was further assumed that if wilderness was not designated in the park, administrative or visitor developments could be built in the undeveloped parts of the islands, provided they were consistent with the park's general management plan. It was also assumed that the current general management plan could be modified to allow new development in areas outside the current development zones. The beneficial or adverse effects of wilderness designation were categorized as either short or long term, and their intensity was rated as negligible, minor, moderate, or major. The impacts of the alternatives are summarized in table 3. No cumulative impacts were identified in any of the alternatives. None of the impacts in the alternatives were found to be of sufficient intensity to constitute an impairment of park resources and values. No impacts were identified due to wilderness designation that would require mitigation measures.

Natural Resources

Alternative A would have the least certainty that the park's natural resources would continue to be protected and maintained as they have been. Depending on the level and type of future developments that occur, there would be the potential for moderate, adverse, long-term impacts to soils, plants, and coastal

processes, and negligible to minor, long-term, adverse impacts to wildlife.

Wilderness designation in alternatives B, C, and D would provide an additional layer of protection and ensure that natural resources would be permanently protected. Alternatives B and C would have moderate, long-term, beneficial impacts in the wilderness area, while alternative D would have minor to moderate, long-term, beneficial impacts. In the nonwilderness areas alternative B would have negligible to moderate, short and long-term impacts on natural resources in localized areas, depending on the new developments that occurred. Alternative

C would have the same type of impacts as alternative B, but more natural resources could be adversely affected in more areas, depending on the level of development that occurred. Likewise, alternative D would have the same type of impacts as alternative B, but more natural resources could be adversely affected in more areas than in alternatives B and C.

Cultural Resources

Alternative A would provide maximum flexibility in managing and preserving cultural resources, including flexibility in locating new developments to avoid cultural resource impacts. But alternative A also has the highest potential of all the alternatives for adverse, long-term impacts associated with increased visitation in more areas. Depending on the level of development that occurred, alternative A might have the potential for minor to moderate, long-term, adverse impacts to cultural resources throughout the park. However, it appears probable that alternative A would have little or no net impact on cultural resources.

Alternatives B, C, and D have the potential for a mix of beneficial and adverse impacts relative to cultural resources. Some minor, adverse, long-term impacts could occur in the wilderness area in each of the alternatives due to reduced flexibility in the treatment options that would likely be used to manage and protect some cultural resources. Moderate, long-term, adverse impacts could occur to cultural resources in the non-wilderness areas under alternative B, and minor to moderate, long-term, adverse impacts in alternatives C and D, if new developments were built near existing developments where there were concentrations of cultural resources.

Wilderness Resources

Because no wilderness is proposed in alternative A, this alternative would provide the least assurance that wilderness resources, such as apparent naturalness and opportunities for solitude, would continue to be protected as they have been. There would be the potential for minor to major, long-term, adverse impacts on wilderness resources, depending on the level of future development that occurred.

Alternatives B and C would have major, long-term, beneficial impacts on wilderness resources , including visitor wilderness experiences, and alternative D would have moderate, long-term, beneficial impacts, due to permanent protection bestowed by wilderness designation. In the nonwilderness areas alternative B would have some negligible, long-term, adverse impacts on wilderness resources due to new developments. In alternative C there could be some loss of wilderness resources, such as solitude and apparent naturalness, due to potential new developments, primarily on Basswood, Sand, and Long Islands, which would be a

minor to moderate, long-term, adverse impact. Under alternative D there could be a loss of wilderness resources due to potential new developments, primarily on 12 islands, which could have a minor to major, long-term, adverse impact.

Visitor Nonwilderness Experiences

Alternative A would have the potential for a minor to moderate, long-term, beneficial impact on those visitor experiences not related to wilderness, primarily due to managers' flexibility to expand recreational and interpretive facilities into new areas. Visitors would have additional opportunities to learn about the park's stories and further understand the area's significance.

Alternative B would have the potential for a moderate, long-term, adverse impact on visitors' nonwilderness experiences, primarily due to limiting the expansion of certain visitor facilities into new areas. Visitors could have fewer new opportunities to gain an understanding of the park and its significance than they would have under alternative A. Removing picnic tables from about a third of the campsites also would adversely affect some visitors' experience.

Alternatives C and D would have both beneficial and adverse impacts on visitors' nonwilderness experiences. Compared to alternative A, alternative C would have the potential for a minor, long-term, adverse impact, primarily due to limits on the possible expansion of certain visitor facilities, such as nonpersonal, interpretive media, into new areas, which would forego potential opportunities for visitors. Removing picnic tables from about 20% of the campsites also would adversely affect some visitors' experience. Alternative D likewise would have the potential for a negligible, long-term, adverse impact for the same reasons. But both alternatives would have the potential for a beneficial, long-term impact by providing visitors with more opportunities onsite to learn the wilderness and nonwilderness stories of the Apostle Islands. Of all the alternatives, alternative C has the most visible "edge" between wilderness and nonwilderness on the islands, which would provide more opportunities for the National Park Service to educate visitors onsite on the role that wilderness plays in shaping the American cultural and physical landscape. This would have a beneficial impact on some visitors' experience.

Park Operations

All of the alternatives would have the potential for both beneficial and adverse impacts to park operations, depending on the level and type of new developments that occur. Alternative A would have the potential for minor to moderate, long-term, beneficial impacts due to a high degree of management flexibility in carrying out park programs and operations. But increased levels of development that could occur under this alternative also could have minor to major, long-term, adverse impacts on the park's operations, primarily due to increased costs and increased demands on park staff's time and energy, assuming staffing levels did not change.

Compared to alternative A, alternative B could have a minor to moderate, long-term, beneficial impact on park operations, due to new developments mostly being confined to a few areas, which would result in lower operational costs. Alternative B also would have minor to moderate, long-term, adverse impacts due to decreased management flexibility and possible increased costs in managing the

few facilities that are in the wilderness area.

Alternatives C and D would have similar effects but in varying intensities due to the changes in the size of the areas being proposed for wilderness. Compared to alternative A, alternative C would have the potential for minor to moderate, long-term, beneficial impacts, and alternative D would have the potential for minor, long-term, beneficial impacts, because there would be fewer areas where new developments would occur. Both alternatives C and D also would have minor, long-term, adverse impacts due to a reduction in management flexibility and possible increased costs of management in the wilderness area.

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PURPOSE AND NEED FOR THE WILDERNESS STUDY

PURPOSE OF AND NEED FOR THE ACTION

PURPOSE OF THE WILDERNESS STUDY

The purpose of this wilderness study is to determine if and where lands and waters within the Apostle Islands National Lakeshore (also referred to as the park in this document) should be proposed for wilderness designation. The study identifies a range of possible wilderness configurations within the park and evaluates their effects on the human environment. Based on the findings of this study, a formal wilderness proposal may be submitted to the Director of the National Park Service for approval and subsequent consideration by the Department of the Interior, President, and Congress under the provisions of the Wilderness Act.

It is important to note that the purpose of this study is *not* to examine questions regarding how a wilderness area should be administered. These questions would be addressed in a subsequent wilderness management plan, which will be prepared if Congress passes legislation designating any portion of the park as wilderness. (For more details on wilderness management, see the *NPS Management Policies 2001*, which are available on-line at www.nps.gov/apis/wstudy.htm.) Some questions that a wilderness plan will need to address are listed in the text box on the following page.

NEED FOR THE WILDERNESS STUDY

The Wilderness Act and *National Park Service Management Policies 2001* (§6.2.1, NPS 2000) require that all lands administered by the National Park Service be evaluated for their suitability for inclusion within the national wilderness preservation system. Section 6.2.2 further states that "lands and waters found to possess the characteristics and values of wilderness, as defined in the Wilderness Act and determined suitable pursuant to the wilderness suitability assessment, will be formally studied to develop the recommendation to Congress for wilderness designation."

The 1989 *General Management Plan* (see the Glossary at the back of the document for a list of terms) for Apostle Islands National Lakeshore directed that a formal wilderness study be done for the lands and waters within the park to determine if areas should be proposed to Congress for wilderness designation. The plan stated that about 97% (41,054 acres) of the park's land base may be suitable for wilderness and instructed that these lands "…be managed to preserve their potential wilderness values until a formal wilderness study has been completed and forwarded to Congress." For the past 14 years the National Park Service has managed these lands to preserve their wilderness values pending completion of a wilderness study.

In the 2001 Department of Interior appropriations bill, Congress specifically directed the National Park Service to conduct a wilderness study for the Apostle Islands National Lakeshore.

WHAT IS WILDERNESS?

As defined in the Wilderness Act, wilderness is "…an area of undeveloped Federal land…without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected *primarily* by the forces of nature, with the imprint of man's work *substantially* unnoticeable; (2) has outstanding opportunities for solitude *or* a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land *or* is of sufficient size as to make practicable its preservation and use in an unimpaired condition…." {Emphasis added}

It is important to note that wilderness does *not* have to be pristine or greater than 5,000 acres in size – smaller areas and those that have been previously altered by people can qualify for wilderness designation.

"Potential wilderness" also is a term that the National Park Service uses. As defined in *NPS Management Policies* (§6.2.2.1), potential wilderness is an area that is surrounded by or adjacent to lands proposed for wilderness designation but does not qualify for immediate designation due to temporary, nonconforming or incompatible conditions. If so authorized by Congress, potential wilderness areas become designated wilderness upon the Secretary of the Interior's determination that the nonconforming use has been removed or eliminated. Areas that may be potential wilderness include areas with use and occupancy cabins and areas where there are rights owned by entities other than the federal government.

USES AND MANAGEMENT IN WILDERNESS

Although this study is not examining use or management of wilderness, the Wilderness Act and NPS policies permit and prohibit various uses, developments, and actions. These directions need to be considered in evaluating impacts of the wilderness proposals.

A variety of recreational uses, management actions, and even facilities are permitted in wilderness areas under the Wilderness Act and NPS policies. Among the uses, management actions, and facilities *permitted in wilderness* are:

- nonmotorized recreational uses (e.g., hiking, backpacking, picnicking, camping)
- hunting and trapping (where otherwise permitted by law, as in the Apostle Islands National Lakeshore) and fishing
- Native American religious activities and other actions recognized under treaty-reserved rights
- guided interpretive walks and onsite talks and presentations
- use of wheelchairs, service animals, and reasonable accommodations for the disabled that are not in conflict with the Wilderness Act (e.g., barrier-free trails, accessible campsites)
- scientific activities/research
- monitoring programs
- management actions taken to correct past mistakes or impacts of human use, including restoration of extirpated species, controlling invasive alien species, endangered species management, and protection of air and water quality
- fire management activities (including fire suppression)
- protection and maintenance of historic properties eligible for the National Register of Historic Places
- trails
- campsites
- certain administrative facilities if necessary to carry out wilderness management objectives (e.g., storage or support structures, ranger station)
- signs necessary for visitor safety or to protect wilderness resources
- uses and facilities permitted for landowners with valid property rights in a wilderness area

The Wilderness Act also specifically *prohibits* certain uses and developments. Under section 4(d) of the Act, the following uses are not permitted in a wilderness:

- permanent improvements or human habitation
- structures or installations
- permanent roads
- temporary roads
- use of motor vehicles
- use of motorized equipment
- landing of aircraft (except for emergency purposes)
- other forms of mechanical transport (e.g., bicycles)
- commercial enterprises (except for commercial services that are necessary for realizing the recreational or other wilderness purposes of the area, such as guiding and outfitting)

With the exception of permanent roads, the Act does recognize that the above uses *may be permitted* if necessary to meet the minimum requirements for the administration of the area as wilderness or for emergency purposes.

In addition to the above prohibitions, NPS policies also *prohibit* some developments:

- new utility lines
- permanent equipment caches
- site markings or improvements for nonemergency use
- borrow pits (except for small quantity use of borrow material for trails)
- new shelters for public use
- picnic tables
- interpretive signs and trails and waysides (unless necessary for visitor safety or to protect wilderness resources)

Ninety-seven percent of the land base of Apostle Islands National Lakeshore is currently being managed according to the above NPS policies and directions.

BACKGROUND FOR THE WILDERNESS STUDY

BRIEF DESCRIPTION OF APOSTLE ISLANDS NATIONAL LAKESHORE

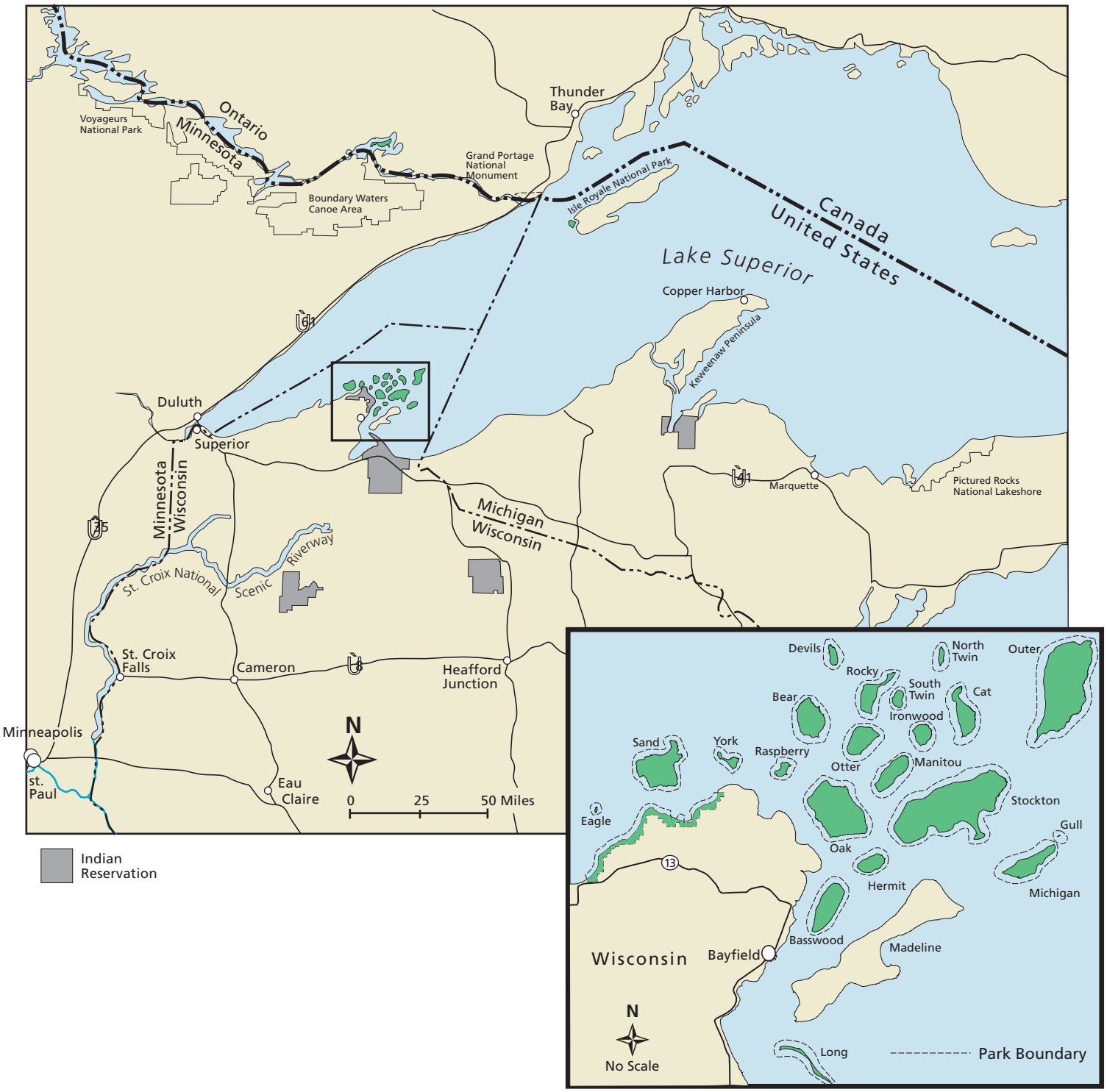
Apostle Islands National Lakeshore, on the tip of the Bayfield Peninsula in northern Wisconsin, includes 21 islands in Lake Superior and a 12-mile narrow strip of mainland shoreline (see figure 1). Established by an act of Congress on September 26, 1970, the purpose of the park is "to conserve and develop for the benefit, inspiration, education, recreational use, and enjoyment of the public" the islands and their related geographic, scenic and scientific values. Apostle Islands National Lakeshore encompasses 69,372 acres, of which 27,323 acres are submerged lands in Lake Superior; the park boundary extends a quarter mile from the shore of the mainland and from each island. The islands range in size from 3-acre Gull Island to 10,054-acre Stockton Island. A variety of scenic features can be found on the islands, including examples of some of the earliest and latest events of geologic history in the lower 48 states. The park features pristine stretches of sand beaches and coves, spectacular sea caves, remnant old growth forests, a diverse population of birds, mammals, amphibians, and fish, and the largest collection of lighthouses in the national park system. People have used the islands for thousands of years. During the historic period, people constructed residences and started farms, fishing operations, brownstone quarries, and logging camps on the islands. Several of these historic sites are listed on the National Register of Historic Places.

PLANNING BACKGROUND: WILDERNESS AND THE APOSTLE ISLANDS

Throughout the planning efforts that led to the establishment of Apostle Islands National Lakeshore, the importance of protecting the wilderness qualities of the islands was recognized. The 1965 Department of Interior proposal for the park stated that the islands "…should be considered as primitive and wild areas and as such only minimum basic facilities are necessary for their use and enjoyment." Assistant Secretary of the Interior Leslie Glasgow stated in testimony at a March 1970 Senate hearing that "The majority of the islands are…ideally suited for wilderness camping, hiking, and natural science studies…." Jordahl (1994) noted that in establishing the park Congress clearly intended that, with the exception of Sand Island, the islands be kept wild and primitive.

The state of Wisconsin also directed that wilderness qualities be protected in the park. One of the conditions the Wisconsin legislature stipulated when it donated its lands to the federal government for the park was that this area's wilderness character be preserved. The legislature stated: "It is the policy of the legislature that the Apostle Islands be managed in a manner that will preserve their unique primitive and wilderness character" (Wisconsin Statutes §1.026(1)(b)).

As noted above, the 1989 *General Management Plan, Apostle Islands National Lakeshore,* called for a formal wilderness study for Apostle Islands National Lakeshore. The G*eneral Management Plan* found approximately 97% of the lands



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Location

Apostle Islands National Lakeshore

U.S. Department of the Interior
National Park Service

in the park under NPS jurisdiction (about 41,054 acres) may be suitable for wilderness. These lands and waters were placed in the natural zone in the *General Management Plan* and have been managed to preserve their potential wilderness values pending completion of a formal wilderness study.

National Park Service Management Policies 2001 direct that a wilderness suitability assessment be prepared that identifies all areas within the park that potentially qualify as being suitable for wilderness designation. The accompanying text box describes the criteria that are used to determine if areas are suitable for wilderness. On April 27, 2001, the NPS Director concurred that the park's 1989 *General Management Plan* met the requirements for a wilderness suitability assessment (see appendix A).

WILDERNESS SUITABILITY ASSESSMENT AND STUDY POLICIES AND GUIDELINES

The Wilderness Act (PL 88-577) and *National Park Service Management Policies 2001* (NPS 2000) provide directions and guidelines for wilderness suitability assessments, which also apply to wilderness studies. These policies and guidelines delineate existing and future conditions and uses that are compatible with wilderness designation. Congress also implied in the Eastern Wilderness Act (PL 93-622) that wilderness does not have to consist solely of pristine old-growth forest and that lands previously disturbed can be rehabilitated to meet wilderness standards and qualities.

The following directions are particularly relevant to the Apostle Islands National Lakeshore wilderness study:

- *Past Uses* – Lands that have been logged, farmed, grazed, mined, or otherwise utilized in ways not involving extensive development or alteration of the landscape may also be considered for wilderness designation if the effects of these activities are substantially unnoticeable or their wilderness character could be maintained or restored through appropriate management actions.
- *Management* – An area will not be excluded from a determination of wilderness suitability solely because established management practices require the use of tools, equipment or structures, if those practices are necessary to meet minimum requirements for the administration of the area as wilderness.
- *Historic Features* – Historic features that are primary visitor attractions (e.g., light stations) will not be recommended for wilderness designation by Congress. However, an area that attracts visitors primarily for the enjoyment of solitude and unconfined recreation in a primitive setting and that may also contain historic features may be recommended for wilderness. Typical historic features that may be included are archeological sites, historic trails, travel routes, and minor structures.
- *Existing Developments* – Areas where evidence of people and their developments are obvious and are expected to remain are not suitable for wilderness designation. NPS development zones, as identified in the *General Management Plan*, *Apostle Islands National Lakeshore,* are not compatible with wilderness designation.

WILDERNESS SUITABILITY CRITERIA

Under *National Park Service Management Policies 2001*, NPS lands will be considered suitable for wilderness if they are at least 5,000 acres or a sufficient size to make practicable their preservation and use in an unimpaired condition, and if they possess the following characteristics as identified in the Wilderness Act:

- The earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.
- The area is undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area has outstanding opportunities for solitude or a primitive and unconfined type of recreation.

Some have questioned whether the Apostle Islands meets the criteria for wilderness designation. It is true that the Apostle Islands are not a pristine landscape. Logging, quarrying, and farming have altered the landscape of many of the islands. However, in the Eastern Wilderness Act, Congress recognized that smaller natural areas can still be considered for wilderness designation even if they are not "pristine." The key questions that need to be answered are: 1) Will the area recover significantly to a natural state (not necessarily to its original state)? 2) Can the area be reasonably protected in the future as wilderness? In the case of the Apostle Islands National Lakeshore, the National Park Service determined in the 1989 *General Management Plan* that most of the park's land base was recovering and could be reasonably protected as wilderness.

WILDERNESS STUDY PROCESS

In the summer and fall of 2001 the National Park Service began to seek public input on wilderness designation for the Apostle Islands. A public open house was held in Bayfield and meetings were held with agencies, tribes, and organizations. However, the formal public scoping process for the wilderness study, required for an environmental impact statement under the National Environmental Policy Act, began on October 12, 2001, when a notice of intent to prepare the wilderness study/environmental impact statement was published in the *Federal Register*. Letters were sent out at that time to the park's mailing list, requesting the public to identify the major issues and concerns regarding the wilderness study. The mailing list that the park staff routinely uses to invite public input on its plans and studies was used as the starting point for the wilderness study mailing list. This list was supplemented with individuals and organizations who expressed interest in the study after it was publicized. Once the issues were understood, the study team identified six draft alternative proposals for designating wilderness in the park. A series of open houses and meetings were then held with the public and interested organizations during the summer of 2002 to gauge public reaction to the alternatives and determine which draft alternative was favored (see the "Consultation and Coordination" chapter for a list of these meetings). After analyzing this public input, the study team revised the alternatives, and dropped two of the preliminary alternatives. The four remaining alternatives (which have been renamed) and their environmental impacts

TREATY AND PROPERTY RIGHTS PERTINENT TO THE WILDERNESS STUDY

Certain treaty and property rights apply to all the alternatives being considered in the wilderness study:

- Treaty Rights: Native American treaty rights will continue to be honored under all of the alternatives being considered in the study – none of the alternatives being considered would impede, prevent, or in any way negate treaty rights. Wilderness will not, indeed cannot, affect the gathering or harvesting of plants or plant materials, hunting, fishing, and trapping rights, or commercial fishing (although with appropriate consultation it may affect the manner in which these treaty rights are exercised). These rights are "reserved rights" through the treaties of 1837, 1842, and 1854, which were reaffirmed through *State vs. Gurnoe* and *Lac Courte Oreilles Band of Chippewa Indians vs. Voigt.* In addition, the Red Cliff and Bad River Bands of Chippewa Indians have reserved rights beyond or in addition to those guaranteed by the Treaty of 1842 for those portions of the park that lie within their reservations.

- Other Valid Rights: Wilderness will not affect the owners of various valid property rights under all of the alternatives being considered in the study. This includes county and township owned lands, mineral right owners, and individuals with use and occupancy rights. The National Park Service will continue to honor and respect the valid rights of these entities and individuals under all of the alternatives, as required under the provisions of the Wilderness Act and NPS management policies.

are presented in this draft document. A preferred alternative was selected among these alternatives using a "Choosing By Advantages" (CBA) process (Suhr 1999). This process, which has been used extensively by government agencies and the private sector, evaluates different choices (in this case, the four draft alternatives) by identifying and comparing the relative advantages of each according to a set of factors. The factors used to evaluate the alternatives were

- ability to ensure long-term preservation of natural and cultural resources
- consistency with the spirit and intent of the Wilderness Act, Eastern Wilderness Act, other relevant legislation, NPS policy and the Wisconsin Legislature's policy in donating its lands to the federal government
- ability to preserve and tell the stories of the Apostle Islands
- consistency with public comments received on the preliminary alternatives

This *Draft Wilderness Study / Environmental Impact Statement* will have a 90-day public review comment period. During this period, the National Park Service also will hold public meetings, including at least one public hearing, to provide additional opportunities for the public to provide comments on the draft. After the comment period ends, the study team will review comments on the draft document, make appropriate revisions to address the comments, and prepare a final wilderness study / environmental impact statement. The final document will include responses to substantive written and oral comments on the draft document — comments that modify the preferred alternative, the range of alternatives, or the environmental analysis. A minimum of 30 days after the final study / environmental impact statement is published, a record of decision will be signed by the NPS Midwest Regional Director and published in the *Federal Register*. This record of decision will document what action the National Park Service intends to take regarding a wilderness proposal for the Apostle Islands National Lakeshore.

If the decision is made to propose wilderness, and the NPS Director concurs, a wilderness proposal will be sent to the Assistant Secretary of Fish and Wildlife and Parks and the Secretary of the Interior, who may revise or approve the proposal. The Secretary may then forward a wilderness recommendation to the President. The President may approve or revise the recommendation and then transmit his recommendation to Congress for consideration. Congress may enact legislation needed to include the area within the national wilderness preservation system as "designated" and/or "potential" wilderness.

It is important to note that under NPS policies the 97% of lands within the park that have been found suitable for wilderness designation will continue to be managed as *de facto* wilderness until Congress takes action on a wilderness recommendation or the Secretary of the Interior recommends to the President that no lands be recommended to Congress for designation as wilderness.

PRIMARY ISSUES AND CONCERNS

Several major issues and concerns regarding designating or not designating wilderness were raised prior to and during the public scoping period by citizens, local governments, state agencies, and tribes. These issues and concerns were expressed at a public open house, held on July 25, 2001, in Bayfield, mailed in via comment forms and the Internet, and voiced at several meetings members of the planning team held with agencies and organizations during the summer of 2001.

It is important to note that the issues and concerns listed below are the *perceptions* of those who commented during the scoping period. They do not necessarily reflect how the National Park Service would actually manage wilderness. For more details on wilderness management, see the *NPS Management Policies 2001*, which are available on-line at **www.nps.gov/apis/wstudy.htm.**

1. IMPACTS OF POTENTIAL NEW DEVELOPMENTS ON THE ISLANDS

The most frequent concern raised by individuals and conservation groups was the possibility that in the future new developments could be built or other actions taken that would change the character of the park. Many of these people wanted to ensure that the islands be maintained as they are for present and future generations. Concerns were raised that without the protection provided by wilderness, there could be fewer opportunities for those seeking solitude and quiet, primitive recreational experiences, and that adverse impacts could occur to the islands' wildlife and other resources.

2. ACCESS TO APOSTLE ISLANDS NATIONAL LAKESHORE (MOTORBOATS AND SAILBOATS)

Another issue frequently raised by individuals and local governments was access to the park. People were concerned that wilderness would "lock up" the park, preventing or reducing access and use of the islands and preventing motorboat access. Local residents were worried that they would not be able to use the islands. People were apprehensive about wilderness extending out into the ¼-mile water area surrounding the islands. Concerns were expressed that wilderness designation would prevent docks from being used, prevent people from snowmobiling by the islands to ice fish, result in restrictions being placed on anchorages, and prevent people with disabilities from accessing the islands. This issue was considered but was not addressed further for the reasons outlined at the end of this chapter.

3. CHANGES IN VISITOR USES AND EXPERIENCES

Another major concern was how the visitor experience would change as a result of wilderness designation. A fear was expressed that wilderness would result in more and more restrictions being placed on uses of the islands over time, which would alter the experience people now have. Some expressed the opinion that with wilderness, visitors would have less freedom to do what they want, when and where, compared to the present. Other concerns were what effect wilderness would have on hunting and trapping and commercial fishing.

4. IMPACTS TO THE LOCAL COMMUNITIES AND ECONOMY

A fourth major concern was what effect wilderness designation would have on the local communities and their economies. Concerns were expressed that wilderness designation would threaten the tourism industry, which is vital to the area and has shaped itself around the park's current management approach. This issue was considered but was not addressed further for the reasons outlined at the end of this chapter.

5. IMPACTS ON NATIVE AMERICAN TREATY RIGHTS

Representatives of Native American tribes were concerned that wilderness might interfere with their treaty rights, specifically commercial fishing and trapping, hunting, and gathering. A concern was expressed that wilderness could result in a ban on commercial fishing. Another concern was that wilderness might limit motorboat access to the islands and limit the use of motorized vehicles to transport elders to important remote areas. This issue was considered but was not addressed further for the reasons outlined in the textbox in the "Wilderness Study Process" section.

6. PROTECTION OF CULTURAL RESOURCES

Concerns were expressed that wilderness designation would restrict actions that can be taken to maintain and protect cultural resources, such as the quarries and old farmsteads. Some people believe that wilderness designation would increase the temptation to remove and obliterate signs of past human use. Specific details regarding the management of cultural resources in wilderness are beyond the scope of this wilderness study and are more appropriately considered in a subsequent wilderness management plan. However, this concern is generally addressed in the "Environmental Consequences" chapter of this environmental impact statement.

7. PARK OPERATIONS

Concerns were raised that wilderness designation would reduce the flexibility of park managers to use machinery and other motorized equipment to manage resources and visitors in wilderness. This could reduce the productivity of staff, increase the number of staff needed to complete a task, and increase costs.

IMPACT TOPICS CONSIDERED IN THIS ENVIRONMENTAL IMPACT STATEMENT

To focus the environmental impact analysis in this document, and to ensure that the alternatives were evaluated against relevant topics, the study team selected specific impact topics for further analysis and eliminated others from evaluation. The impact topics selected for analysis in this document, listed below, were based on public and other agency concerns identified during scoping, federal laws, regulations and orders, and National Park Service Management Policies 2001 (NPS 2000). A brief rationale for selecting each impact topic is provided below.

NATURAL RESOURCES (GENERAL)

This topic includes geology and coastal processes, soils, water quality, vegetation, and wildlife. None of the alternatives being considered would alter the park's soils, biotic communities, vegetation or wildlife populations, or other natural resources. Wilderness designation would not substantially affect either the management of natural resources, such as vegetation and wildlife in the park, or uses within the park that could affect these resources. In all of the alternatives the National Park Service would continue to protect and conserve native vegetation, wildlife, and other natural resources as required under the NPS Organic Act and *NPS Management Policies 2001*. However, in implementing the alternatives there is the potential that future developments could occur in those areas that are excluded in the various wilderness proposals, which could affect the park's natural resources. Any loss or alteration of coastal processes, soils, vegetation, wildlife, etc., would be of concern to visitors, the general public, and NPS managers. This impact topic addresses issue #1.

CULTURAL RESOURCES (ARCHEOLOGICAL RESOURCES, HISTORIC STRUCTURES, ETHNOGRAPHIC RESOURCES, AND CULTURAL LANDSCAPES)

Wilderness designation could affect the park's cultural resources, including archeological and ethnographic resources, historic structures, and cultural landscapes. In all of the alternatives the National Park Service would continue to protect and conserve cultural resources as required under the National Historic Preservation Act, Archaeological Resources Protection Act, NPS Organic Act and *National Park Service Management Policies 2001*. But like the natural resources, in the implementation of the alternatives there is the potential that future developments could occur in those areas that are excluded in the various wilderness proposals, which could affect the park's cultural resources. Any loss or alteration of archeological sites, historic structures, cultural landscapes, and ethnographic resources would be of concern to visitors, the general public, and NPS managers. This impact topic addresses issue #6.

WILDERNESS RESOURCES (INCLUDING THE VISITOR WILDERNESS EXPERIENCES)

The primary purpose of this study is to determine whether or not wilderness should be proposed for Apostle Islands National Lakeshore. A wilderness type experience is important to many visitors who come, or want to come, to the park. Director's Order 41 ("Wilderness Preservation and Management") and *National Park Service Management Policies 2001* require that the wilderness qualities found in 97% of the park's land base be protected until Congress takes action on a wilderness recommendation. Thus, the park's wilderness resources are important to consider in the management of the park. During the scoping period many people emphasized the need to protect the park's wilderness resources. Any decreases in opportunities for solitude, the apparent naturalness of the park, and opportunities for primitive, unconfined recreation would be of concern to some visitors, managers, and the public. This impact topic addresses issue #2.

VISITOR NONWILDERNESS EXPERIENCES

This topic relates to the quality of those visitor experiences not related to wilderness, including the range of activities available to visitors. The purpose of Apostle Islands National Lakeshore is "to conserve and develop for the benefit, inspiration, education, recreational use, and enjoyment of the public." Any actions that would diminish the quality of visitors' experiences in the park would be important to visitors and managers — changes in available visitor opportunities, the character of the visitor experience, or what activities are and are not permitted would be of concern to many people. During the scoping period many people expressed concerns about the impacts of wilderness designation on their experience in the park. This impact topic addresses issue #2.

PARK OPERATIONS

This topic concerns park staffing levels and workloads, maintenance activities, costs, planning needs, and the ability to consider facilities in the future to support island administrative operations. Although much of the park could be designated as wilderness under the alternatives, most island operations would not be affected because major developments would not be included in any of the wilderness proposals. But wilderness designation could increase some workloads and staff needs and decrease other needs. Proposed management actions, such as administrative use of motorized equipment or mechanical transport, would need to be evaluated to determine if they are consistent with NPS wilderness policies before they could be authorized. Any changes in park operations due to wilderness (e.g., changes in maintenance activities, ranger patrols, or costs) may be of concern to both NPS staff and visitors. This impact topic addresses issue #7.

IMPACT TOPICS CONSIDERED BUT NOT ANALYZED IN DETAIL

Several potential impact topics were dismissed because they would not be affected, or the potential for impacts under all of the alternatives would be negligible. These topics are listed below, with an explanation of why they were not considered in detail.

PRIME AND UNIQUE AGRICULTURAL LANDS

There are no prime or unique agricultural soils within the boundaries of Apostle Islands National Lakeshore (NPS 1989).

AIR QUALITY

In all of the alternatives the National Park Service would continue to protect and conserve air quality as required under the NPS Organic Act and *NPS Management Policies 2001*. None of the alternatives being considered would substantially alter the park's air quality. Wilderness designation would not substantially affect either the management of air quality in the park or uses within the park that could affect air quality.

FLOODPLAINS AND WETLANDS

None of the alternatives would alter the park's wetlands and floodplains. Wilderness designation would not substantially affect either the management of wetlands and floodplains in the park or uses within the park that could affect wetlands and floodplains. In all of the alternatives the National Park Service would continue to protect and conserve the park's wetlands and floodplains as required under the NPS Organic Act, Executive Order 11988 (Floodplain Management), the NPS "Floodplain Management Guideline," Executive Order 1190 ("Protection of Wetlands"), NPS Director's Order 77-1 ("Wetland Protection"), and *NPS Management Policies 2001*. If potential developments were to be built in areas not proposed for wilderness, the National Park Service would avoid building facilities in floodplains (except as permitted under the floodplain guidelines) or wetlands. If a trail was to be built that passes through a wetland, and that wetland could not be avoided, the project would be analyzed to minimize impacts to the wetland.

FISH

The Apostle Islands area is important for commercial and recreational fishing. However, none of the alternatives propose wilderness for the waters of Lake Superior or would result in changes that would affect the fish populations within the park portion of Lake Superior. Recreational and commercial fishermen would continue to be able to harvest fish within the boundaries of the park under all of the alternatives, subject to the regulations of the Wisconsin Department of Natural Resources. No changes would occur to the management of the commercial and recreational fishery or commercial fishing by Native Americans within the boundaries of the park solely due to wilderness designation under any of the alternatives.

THREATENED & ENDANGERED SPECIES

Apostle Islands National Lakeshore supports populations and/or habitats for several federal and state listed threatened and endangered species (see appendix B). Federally endangered timber wolves (*Canis lupus*) have begun to utilize portions of the mainland unit, federally threatened bald eagles (*Haliaeetus leucocephalus*) nest in the park, and Long Island and the Michigan Island sandscape have been designated as critical habitat for the federally and state endangered piping plover (*Charadrius melodus*). The Apostle Islands also provide important habitat for five state endangered plants (butterwort (*Pinguicula vulgaris*), moonwort (*Botrychium lunaria*), mountain cranberry (*Vaccinium vitis-idaea*), satiny willow (*Salix pellita*), lake cress (*Armoracia lacustris*)), and 12 state threatened plants. None of the alternatives would affect threatened and endangered species or habitats that occur within the park. Wilderness designation would not substantially affect either the management of threatened and endangered species in the park or uses within the park that could affect these species and their habitats. In all of the alternatives the National Park Service would continue to protect, conserve, and restore threatened and endangered species populations in the park as required under the Endangered Species Act, NPS Organic Act, and *NPS Management Policies 2001*. If potential developments were to be proposed or development were to be proposed in nonwilderness areas, the National Park Service would seek to avoid adverse effects on listed federal and state species and their habitats in consultation with the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources.

LIGHTSCAPE

Under the NPS Organic Act and *NPS Management Policies 2001*, the National Park Service is required to protect to the greatest extent possible the natural lightscapes (i.e., night sky) of the park. In particular, the policies call for the National Park Service to protect natural darkness. None of the alternatives in this wilderness study would alter the park's lightscape. Wilderness designation would not substantially alter activities within the park that could modify the lightscape. It is also considered likely that a potential development that may be built in a nonwilderness area on the islands would have only a negligible impact on the night sky. Most potential developments, such as campsites, trails, and picnic areas, would not have artificial light sources. If lights were needed, they would be localized, affect only a small area, and be designed to not adversely affect the lightscape.

SOUNDSCAPE

Under the NPS Organic Act, Director's Order 47 ("Soundscape Preservation and Noise Management"), and *NPS Management Policies 2001*, the National Park Service is required to protect to the greatest extent possible the natural soundscape. None of the alternatives in this wilderness study would alter the park's soundscape. Wilderness designation would not substantially affect activities within the park that could alter the soundscape. Although a potential development could be built in an area not proposed for wilderness, increasing noise levels in that area, it is not likely that a substantial change would occur in the park's soundscape. The primary source of noise in the park would continue to be motorboats and people at the existing primary developments, which

would occur regardless of whether or not wilderness was designated.

MUSEUM OBJECTS

Museum objects are manifestations and records of behavior and ideas that span the breadth of human experience and depth of natural history. None of the proposed alternatives have potential to affect museum objects.

PUBLIC HEALTH AND SAFETY

None of the alternatives would result in identifiable risks to human health and safety. Wilderness designation would not change visitor activities or management activities that would substantially alter the potential for threats to the health and safety of people in the park – regardless of whether or not wilderness would be designated, Lake Superior would pose the same risks for people who paddle, sail, or motor to the islands.

ACCESS TO APOSTLE ISLANDS NATIONAL LAKESHORE

None of the alternatives in this study would affect access to the park by any currently legal means, including motorboats and sailboats — all currently permitted access methods would continue regardless of whether or not wilderness is designated in the park. None of the alternatives would result in the removal of public docks, or prohibit boats from being beached on the islands, which also could affect access to the islands.

SOCIOECONOMIC ENVIRONMENT

Apostle Islands National Lakeshore affects local businesses and the economy of Bayfield and other communities in the area. Any actions that would alter visitor use levels or visitor use patterns would be of concern to many local businesses, including marinas, lodges, motels and restaurants, supply stores, guides, outfitters, and concessioners. During the scoping period many people expressed concern that wilderness designation would adversely affect the local economy. The two-county economy would be negatively affected only if designating wilderness (and managing these areas as wilderness) would cause negative changes in the numbers of visitors and/or their expenditure patterns, to the extent that individuals or firms would experience a loss of jobs and/or income. Because none of the alternatives would affect existing docks or access to the islands, no changes would be expected in overall visitor use levels or use patterns, and thus no changes would be expected in visitor expenditures related to the park.

Also, NPS policy is to manage parklands and waters that have the potential for wilderness designation in a manner that preserves the wilderness potential and qualities of these resources. The islands being considered for designation as wilderness are currently being, and have been, managed to preserve wilderness values. Consequently, very little change in management activities and allowable types of use would occur in these areas of the park. As a result, official recognition and legal protection of wilderness in the park would not cause negative impacts to the local economy.

There are no studies that support the hypothesis that negative impacts would occur to the local and regional economy as a result of the alternatives – there is a lack of evidence to substantiate claims that designating wilderness actually harms a

local county economy. Thus, the belief that there is a connection between wilderness designation and negative economic impacts, such as a loss of jobs or income within the local region, has not been substantiated. On the contrary, several research studies indicate that wilderness is a positive (or at least neutral) factor supporting the growth of local economies — there is evidence that wilderness positively correlate with increased economic growth and increasing populations in rural counties (Duffy-Deno 1998, Lorah 2000, Power 2000, Rudzitis and Johnson 2000).

LAND USE

There are no local land use plans that would affect the islands being considered for wilderness designation in this document. Wilderness designation under any of the alternatives also would not induce any changes in land use, or increase pressure for development, on the mainland adjacent to the park.

INDIAN TRUST RESOURCES

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of Interior agencies be explicitly addressed in environmental documents. In the case of Apostle Islands National Lakeshore, there are no Indian trust resources in the park. The lands and waters comprising the park, including the lands on the mainland that are part of the Red Cliff Indian Reservation (and possibly Long Island in relation to the Bad River Indian Reservation), are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. However, this is not to say that the tribes do not have certain other rights to the lands and waters in the park. Those rights will continue to be honored regardless of the alternatives being considered in this wilderness study.

ENVIRONMENTAL JUSTICE

Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects on minority and low-income populations. Minority or low income populations would be treated the same way under all of the alternatives considered in this study. None of the alternatives being considered would have a disproportionately high and adverse effect on any minority or low-income population or community. This conclusion is based on the following information:

- The wilderness proposals in the alternatives would not result in any identifiable adverse human health effects. Therefore, there would be no direct, indirect, or cumulative adverse effects on any minority or low-income population or community.

- The alternatives would not trump or take precedence over Native American treaty rights – Native American tribes with treaty-reserved rights would continue to be able to hunt, fish, trap, and gather within Apostle Islands National Lakeshore, consistent with those rights.

- No natural resource adverse impacts were identified due to the alternatives that would significantly and adversely affect minority or low-income populations or communities.

- The alternatives would not result in any identified effects that would be specific to any minority or low-income community.

- The study team actively solicited public comments during the development of the wilderness study and gave equal consideration to all input from persons, regardless of age, race, sex, income status, or other socioeconomic or demographic factors.

- During the study process park staff consulted and worked with the Red Cliff and Bad River Bands of the Lake Superior Chippewa, and the Voigt Intertribal Task Force of the Great Lakes Indian Fish and Wildlife Commission, and will continue to do so in cooperative efforts to improve communications and resolve any problems that occur. The study team did not identify negative or adverse effects due to wilderness designation that would disproportionately and adversely affect these Native Americans.

- No impacts were identified to the socioeconomic environment due to the alternatives that would substantially alter the physical and social structure of the nearby communities.

NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

None of the alternatives being considered would result in the extraction of resources from the park. Under all of the alternatives ecological principles would be applied to ensure that the park's natural resources were maintained and not impaired.

ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

None of the alternatives would result in a measurable change in energy consumption compared to current conditions. Depending on the approaches used to satisfy NPS wilderness management policies, the park's use of energy could slightly decline due to reduced use of mechanized equipment in the wilderness areas in alternatives B, C, and D. The use of energy could also slightly increase due to the need to take more trips to the islands if crews used hand tools to maintain wilderness facilities such as trails and campsites. However, the change in energy consumption due to these actions in alternatives B, C, and D would be expected to be negligible compared to the overall energy consumption of the park.

The National Park Service would pursue sustainable practices whenever possible in all decisions regarding park operations, facilities management, and developments in Apostle Islands National Lakeshore, as called for in *NPS Management Policies 2001*. As with the existing island facilities, any new future developments in the nonwilderness areas would be powered by solar electrical systems or other alternative energy sources in all of the alternatives.

WILDERNESS ALTERNATIVES

INTRODUCTION

This chapter describes the National Park Service's proposal for designating wilderness in Apostle Islands National Lakeshore (the preferred alternative), and three alternative proposals. The first section in this part describes which segments of the park were considered not suitable for wilderness in all of the alternatives and why. Then alternative A, the no wilderness alternative ("no-action") is presented, which provides a baseline for comparing the effects of the other alternatives. Next, alternatives B, C, and D are described, which present alternative wilderness proposals. The alternatives vary in the locations where wilderness would be proposed, as well as in the acreage amounts.

For alternatives B, C, and D maps and general descriptions are provided that show where wilderness would be proposed in the alternatives. Each alternative also includes a brief rationale for why wilderness would be proposed in that particular configuration. At the end of this part there is a description of alternatives that were considered by the study team initially but dropped from further analysis. There are two tables at the end of the chapter: table 2 shows which islands would be included as wilderness in each of the alternative; table 3 summarizes the impacts of each alternative.

AREAS CONSIDERED NOT SUITABLE FOR WILDERNESS

One of the first tasks of the study team in developing alternatives was to identify those areas in the park that clearly do not meet the Wilderness Act suitability criteria and therefore will not be considered in any of the wilderness study alternatives (see the text box on wilderness suitability criteria on page 10). Eight areas or types of areas have been found to be clearly not suitable as wilderness. Most of the areas listed below were excluded because they are primary visitor attractions with a lot of people, have obvious signs of development, or are being managed for human activities. Areas with use and occupancy structures and life estates currently have nonconforming uses, but potentially could be suitable as wilderness in the future, and were not included in this list.

WATERS AND SUBMERGED LANDS OF LAKE SUPERIOR UP TO THE ORDINARY HIGH-WATER MARK

Rationale for not considering: The Apostle Islands National Lakeshore boundary encompasses both waters and submerged lands of Lake Superior. The state of Wisconsin owns the submerged lands and may own the water column (there are legal questions about this), so the waters likely do not qualify for consideration under the Wilderness Act criteria. In addition, there is the question of whether it would be possible to manage a ¼-mile wilderness boundary: it would be extremely difficult for most visitors and managers to tell when they are within or outside the ¼-mile limit.

Furthermore, inclusion of the waters would do little, if anything, to enhance the wilderness experiences of the islands, given that motorboats would still operate outside the ¼-mile boundary.

It is important to note that beaches on the islands, which are below the ordinary high- water mark, fall in this category and are *not* included in the wilderness proposals in this wilderness study. This means that under all alternatives boats could continue to be beached on the islands and would be outside all the wilderness proposals.

PUBLIC DOCKS ON THE ISLANDS

Rationale for not considering: The public docks within Apostle Islands National Lakeshore are analogous to parking lots and trailheads in traditional national parks. They are vital access points for visitors, are designed to accommodate motorized watercraft, and visitors necessarily congregate near them in relatively high numbers. In addition, the vast majority of each dock lies upon the submerged lands discussed above. For all of these reasons, each public dock and all land areas within a radius of at least 100 yards of the end of each dock, or the maximum perimeter that encompasses all existing developments in the vicinity of a dock, were not considered suitable for wilderness. Public docks are located at Basswood, Oak, Michigan, Stockton, Manitou, Outer, Rocky, South Twin, Otter, Devils, Long, Raspberry, and Sand Islands.

The nonwilderness areas around the docks were modified from the June 2002 alternatives workbook to better define the boundaries of these areas on each island and to ensure that developments associated with the docks were completely incorporated into the nonwilderness areas. On some islands the nonwilderness areas were increased, while on others the nonwilderness areas were decreased.

MAINLAND UNIT

Rationale for not considering: The mainland unit was not considered suitable due to its geography and the presence of roads and developments. Both Little Sand Bay and the Meyers Beach area, at either end of the mainland unit, are major visitor use areas, with visitor support facilities, historic developments, and roads. Between these areas there are many four-wheel drive roads, which are used by local residents and visitors to varying degrees. It is not possible to close all of these roads — these roads are under township jurisdiction, and at least one of them, the Big Sand Bay Road, must be used to access lands outside the park's boundary. There are also a couple of nonfederal tracts in the unit. Consequently, the narrow mainland unit (often only ¼-mile wide) is fragmented by developments, roads, and nonfederal land. Thus, despite the fact that the 1989 *General Management Plan* found the area "may be suitable," it not feasible to manage the mainland's undeveloped areas as wilderness.

LIGHT STATIONS AND ADJOINING CULTURAL LANDSCAPES

Rationale for not considering: The light stations and surrounding environs are major visitor attractions with many signs of people. They clearly do not meet the Wilderness Act criteria. These exclusions include the historic clearings around the lighthouses, which are part of the cultural landscapes.

HOUSING/ADMINISTRATION AREAS ON STOCKTON, ROCKY, SAND, AND OAK ISLANDS

Rationale for not considering: These areas all have multiple developments and many signs of people. There are no plans to remove any of these facilities.

MANITOU ISLAND FISH CAMP

Rationale for not considering: This historic site is a major visitor attraction, which under NPS policies should not be recommended for wilderness designation. The area is being managed to preserve human activities.

SOUTHEAST TIP OF SAND ISLAND

Rationale for not considering: This area has many historic residences, structures, and developments, many of which will be maintained for the foreseeable future.

WEST BAY CLUB ON SAND ISLAND

Rationale for not considering: This historic two-story structure, with outbuildings, is clearly a sign of past human activity. The structures will be maintained for the foreseeable future.

ALTERNATIVE A: NO WILDERNESS (NO-ACTION ALTERNATIVE)

This alternative, which is required under the National Environmental Policy Act, provides a baseline for comparing the changes and impacts of the other action alternatives. Under this alternative no wilderness would be proposed for Apostle Islands National Lakeshore. (This was alternative 5 in the June 2002 workbook.) If this alternative was selected, no lands would be recommended for wilderness in the park. Consequently upon congressional approval, the National Park Service would no longer be required to protect the area's wilderness values.

However, for at least the short term the National Park Service would continue to protect and maintain the park's wilderness characteristics indirectly through the existing zoning framework. The lands in the park's natural zone would continue to be managed to preserve natural features, including many wilderness characteristics, as directed in the 1989 *General Management Plan*. Existing recreational uses and developments would continue. No major changes in resource management could occur and no new major developments could be built in the natural zone.

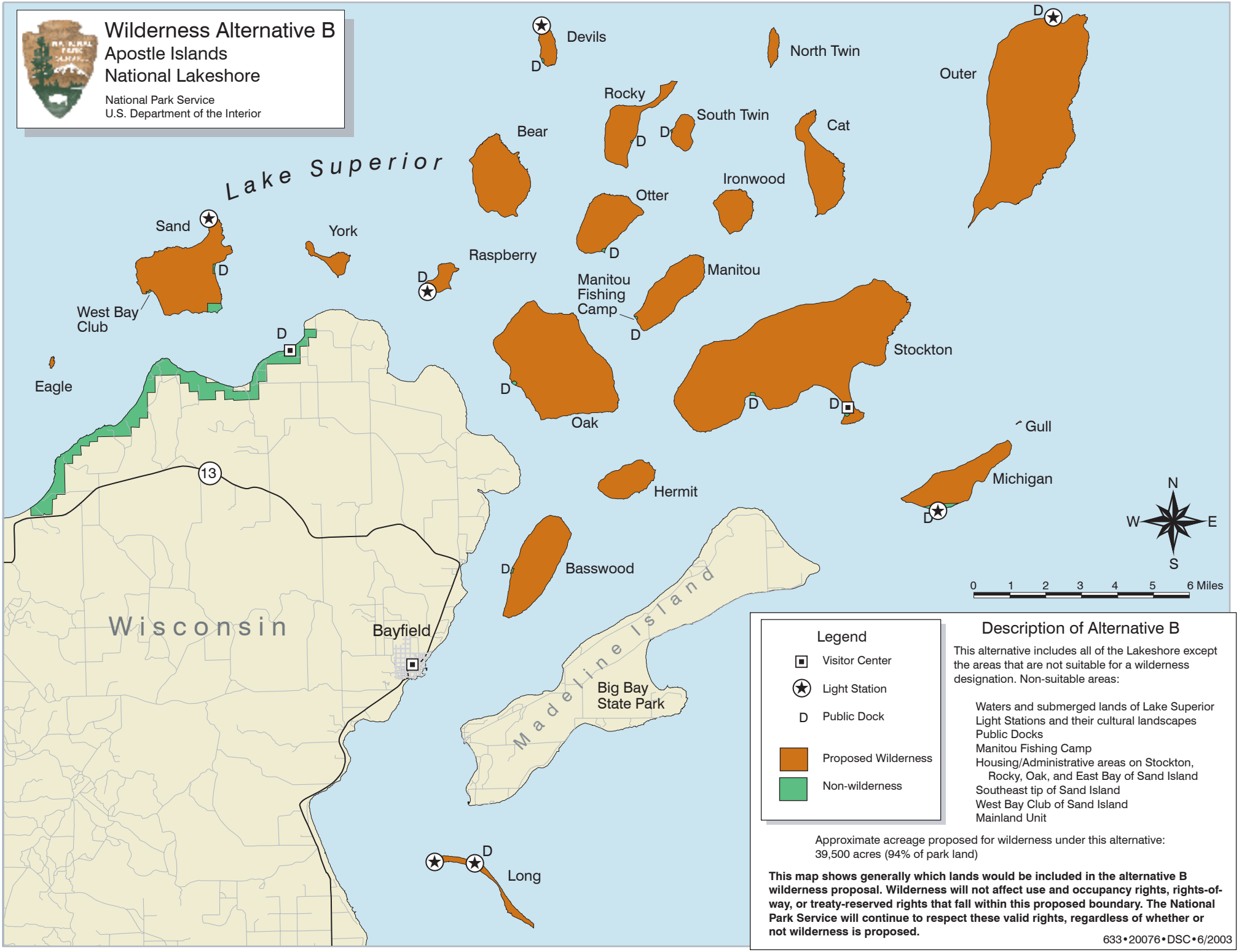
It is important for readers to keep in mind that alternative A would *not* ensure that existing conditions and management would continue in the future. In the long term it is possible that alternative A could be a departure from how the National Park Service has managed Apostle Islands National Lakeshore in the past. The National Park Service would no longer be bound to protect and manage most of the park's land base as *de facto* wilderness in this alternative. As a result, when the existing general management plan is revised or a new general management plan is adopted, the management directions for the park could change, which could result in less protection for wilderness resources in parts of the park — a new plan could propose new developments or management actions that are not currently permitted.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Alternative B would exclude only the areas determined to be not suitable in all of the alternatives (i.e., the waters and submerged lands of Lake Superior, all public docks on the islands, the mainland unit, all light stations and cultural landscapes, the Manitou Island fish camp, housing/administrative areas at Stockton, Rocky, Oak, and East Bay of Sand Island, and the southeast tip and West Bay Club on Sand Island). Of all the alternatives, alternative B would be most similar to how Apostle Islands National Lakeshore is currently being managed because 97% of the park's land base is being managed as *de facto* wilderness. Altogether, approximately 39,500 acres of the park's 42,160-acre land base (94%) would be proposed as wilderness under alternative B (see the alternative B map on page 31). This is the equivalent of 57% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

Under alternative B the following areas would be potential wilderness: the nonfederal tracts on Sand and York Islands and the use and occupancy reservations on Sand, Rocky, and Bear Islands (except for those reservations on Sand Island that have been found to be unsuitable for wilderness designation). Although these areas are identified as potential wilderness, the National Park Service would continue to honor and respect all of these valid rights as required under the provisions of the Wilderness Act and NPS management policies.

This alternative was alternative 1 in the June 2002 alternatives workbook. Except for changes that were made to the exclusion areas around the docks (which also apply to alternatives C and D), no changes were made to the original alternative.


Wilderness Alternative B
Apostle Islands
National Lakeshore
National Park Service
U.S. Department of the Interior
Lake Superior
Devils
North Twin
Outer
Rocky
South Twin
Cat
Bear
Ironwood
Otter
Sand
York
Raspberry
Manitou
Manitou Fishing Camp
West Bay Club
Eagle
Stockton
Oak
Gull
Michigan
Hermit
Basswood
Madeline Island
Big Bay State Park
Wisconsin
Bayfield
13
Long
D
N
W
E
S
0 1 2 3 4 5 6 Miles
Legend
Visitor Center
Light Station
Public Dock
Proposed Wilderness
Non-wilderness
Description of Alternative B
This alternative includes all of the Lakeshore except the areas that are not suitable for a wilderness designation. Non-suitable areas:
Waters and submerged lands of Lake Superior
Light Stations and their cultural landscapes
Public Docks
Manitou Fishing Camp
Housing/Administrative areas on Stockton, Rocky, Oak, and East Bay of Sand Island
Southeast tip of Sand Island
West Bay Club of Sand Island
Mainland Unit
Approximate acreage proposed for wilderness under this alternative:
39,500 acres (94% of park land)
This map shows generally which lands would be included in the alternative B wilderness proposal. Wilderness will not affect use and occupancy rights, rights-of-way, or treaty-reserved rights that fall within this proposed boundary. The National Park Service will continue to respect these valid rights, regardless of whether or not wilderness is proposed.
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ALTERNATIVE C: (PREFERRED ALTERNATIVE AND ENVIRONMENTALLY PREFERRED ALTERNATIVE)

Alternative C is the National Park Service's preferred alternative for designating wilderness in Apostle Islands National Lakeshore. Altogether, approximately 33,500 acres of the park's 42,160-acre land base (80%) would be proposed as wilderness under alternative C. This is the equivalent of 48% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

This alternative is intended to permanently protect most of the park's natural, cultural, and wilderness resources. It also is intended to ensure that there will be outstanding opportunities for people to learn both the stories of the people who settled and altered these islands and the story of the "rewilding" of the park — a term that environmental historian James Feldman uses to describe the process whereby the park's historical "wilderness" qualities are gradually returning (Feldman and Mackreth 2003).

To ensure that future opportunities for interpreting the environmental history of the Apostle Islands are preserved, Basswood and Sand Islands would *not* be included in this wilderness proposal. These two islands are relatively close to the mainland and have a representative cross-section of all the types of cultural resources found in the park. They are ideally suited for the expansion of interpretive opportunities, such as some limited facilities to help visitors understand the historical and natural processes on the Apostle Islands. Wilderness designation would likely preclude some of these facilities and foreclose potential interpretive opportunities.

Alternative C also strives to minimize the number of small, fragmented areas of wilderness or nonwilderness. As an example, rather than excluding numerous small locations along the southern shore of Stockton Island, this alternative excludes two areas that encompass all of these sites. Some areas were excluded because of the potential for expanding visitor facilities (consistent with the *General Management Plan*), but again, always with an eye toward minimizing small isolated pockets of wilderness or nonwilderness.

The following areas would be proposed as wilderness under alternative C: all of Bear, Cat, Eagle, Gull, Hermit, Ironwood, North Twin, and York, and most of Michigan, Otter, Outer, Raspberry, Rocky, South Twin, Devils, Manitou, Oak, and Stockton Islands (see the alternative C map on page 35).

Under alternative C the following areas would be potential wilderness: the nonfederal tract on York Island, and the use and occupancy reservations on Rocky and Bear Islands. Although these areas are identified as potential wilderness, the National Park Service would continue to honor and respect all of these valid rights, as required under the provisions of the Wilderness Act and NPS management policies.

Alternative C reflects the same general goals and direction of alternative 3 in the June 2002 alternatives workbook. However, the alternative has been modified to refine the wilderness boundaries so they are more easily identifiable on the ground, to enhance opportunities for future interpretation of significant cultural resources (which were

not necessarily provided for in the original alternative 3), and in some cases to reduce the fragmentation of wilderness and nonwilderness areas on islands. Among the major changes that were made to the original alternative 3:

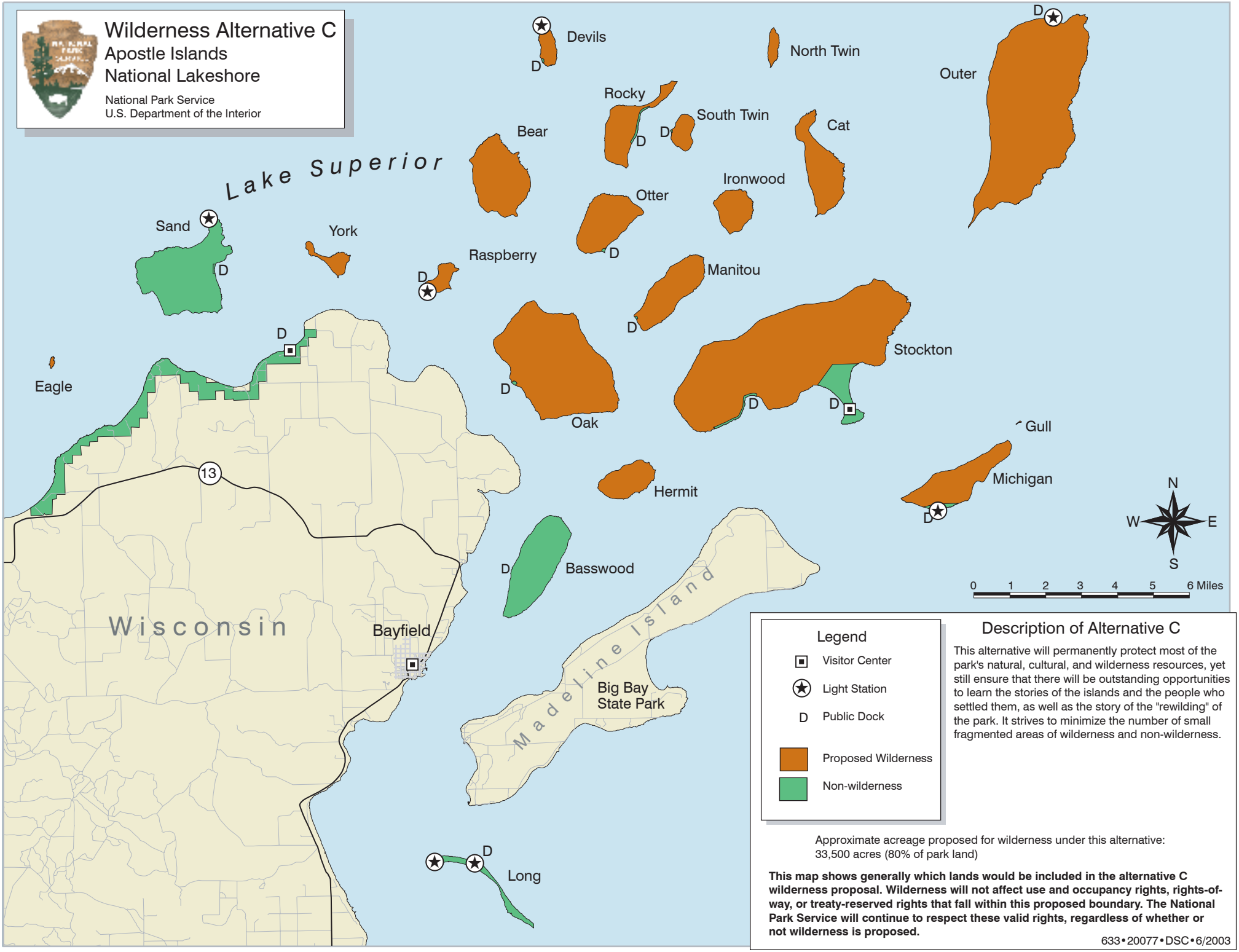
- All of Sand Island was excluded from proposed wilderness. The island still has extensive evidence of human occupation. The change would reduce fragmentation and make the island easier to manage, provide more possibilities to tell stories about the island and to interpret resources in ways that wilderness would not allow, and keep open the possibility of the island accommodating additional development to provide for increased use.

- The nonwilderness portion of Manitou Island was reduced. This change provides a better, more discernible boundary, consistent with how other cultural resources are treated under the alternative

- The nonwilderness portion of Rocky Island was increased, incorporating a former fishing community along the east shore of the island. (This change provides more possibilities to interpret a significant cultural resource, beyond what is allowable in a wilderness area, and keeps open the possibility of providing additional visitor developments to accommodate increased use in one of the park's most popular areas.

- The nonwilderness area on Stockton was decreased, with two areas, Quarry Bay and the Presque Isle area, being excluded from the proposal rather than one large area connecting the two. The new boundary would be easier to identify on the ground, would decrease the size of the exclusion area, and would keep open the possibility of providing additional visitor developments to accommodate increased recreational use in the immediate vicinity of these popular areas.

In addition to the above changes, as in the other alternatives, small changes were made to the nonwilderness areas around the docks.


Wilderness Alternative C
Apostle Islands
National Lakeshore
National Park Service
U.S. Department of the Interior
Lake Superior
Devils
North Twin
Outer
Rocky
South Twin
Cat
Bear
Ironwood
Otter
Sand
York
Raspberry
Manitou
Stockton
Eagle
Oak
Gull
Michigan
Hermit
Basswood
Wisconsin
Bayfield
Madeline Island
Big Bay
State Park
Long
13
D
N
W
E
S
0 1 2 3 4 5 6 Miles
Legend
Visitor Center
Light Station
Public Dock
Proposed Wilderness
Non-wilderness
Description of Alternative C
This alternative will permanently protect most of the park's natural, cultural, and wilderness resources, yet still ensure that there will be outstanding opportunities to learn the stories of the islands and the people who settled them, as well as the story of the "rewilding" of the park. It strives to minimize the number of small fragmented areas of wilderness and non-wilderness.
Approximate acreage proposed for wilderness under this alternative:
33,500 acres (80% of park land)
This map shows generally which lands would be included in the alternative C wilderness proposal. Wilderness will not affect use and occupancy rights, rights-of-way, or treaty-reserved rights that fall within this proposed boundary. The National Park Service will continue to respect these valid rights, regardless of whether or not wilderness is proposed.
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ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Alternative D emphasizes remote, isolated areas that provide the best opportunities for solitude and primitive recreation during the busy summer season. These areas are not on the current tour boat route and generally are more distant from the mainland. Altogether, approximately 23,000 acres of the park's 42,160-acre land base (55%) would be proposed as wilderness under alternative D. This is the equivalent of 33% of the entire park (69,372 acres), if one considers the waters as well as the lands within the park boundary.

Under this alternative Cat, North Twin, Ironwood, Bear, Eagle, Gull, most of Outer and Michigan, and portions of Stockton would be proposed as wilderness (see the alternative D map on page 39). These are all areas where one could be best assured of solitude and a primitive wilderness experiences regardless of the time of year.

Under alternative D the use and occupancy reservations on Bear Island would be potential wilderness. Although this area is identified as potential wilderness, the National Park Service would continue to honor and respect these valid rights as required under the provisions of the Wilderness Act and NPS management policies.

This alternative was alternative 4 in the June 2002 alternatives workbook. One change from the workbook is that the nonwilderness area on Stockton Island has been decreased, with two areas, Quarry Bay and the Presque Isle area, being excluded from the proposal rather than one large area connecting the two. As in alternative C, the new boundary would be easier to identify on the ground, would decrease the size of the exclusion area, and would keep open the possibility of providing additional visitor developments to accommodate increased recreational use in the immediate vicinity of these popular areas.

In addition to the above change, as in the other alternatives, small changes were made to the nonwilderness areas around the docks.

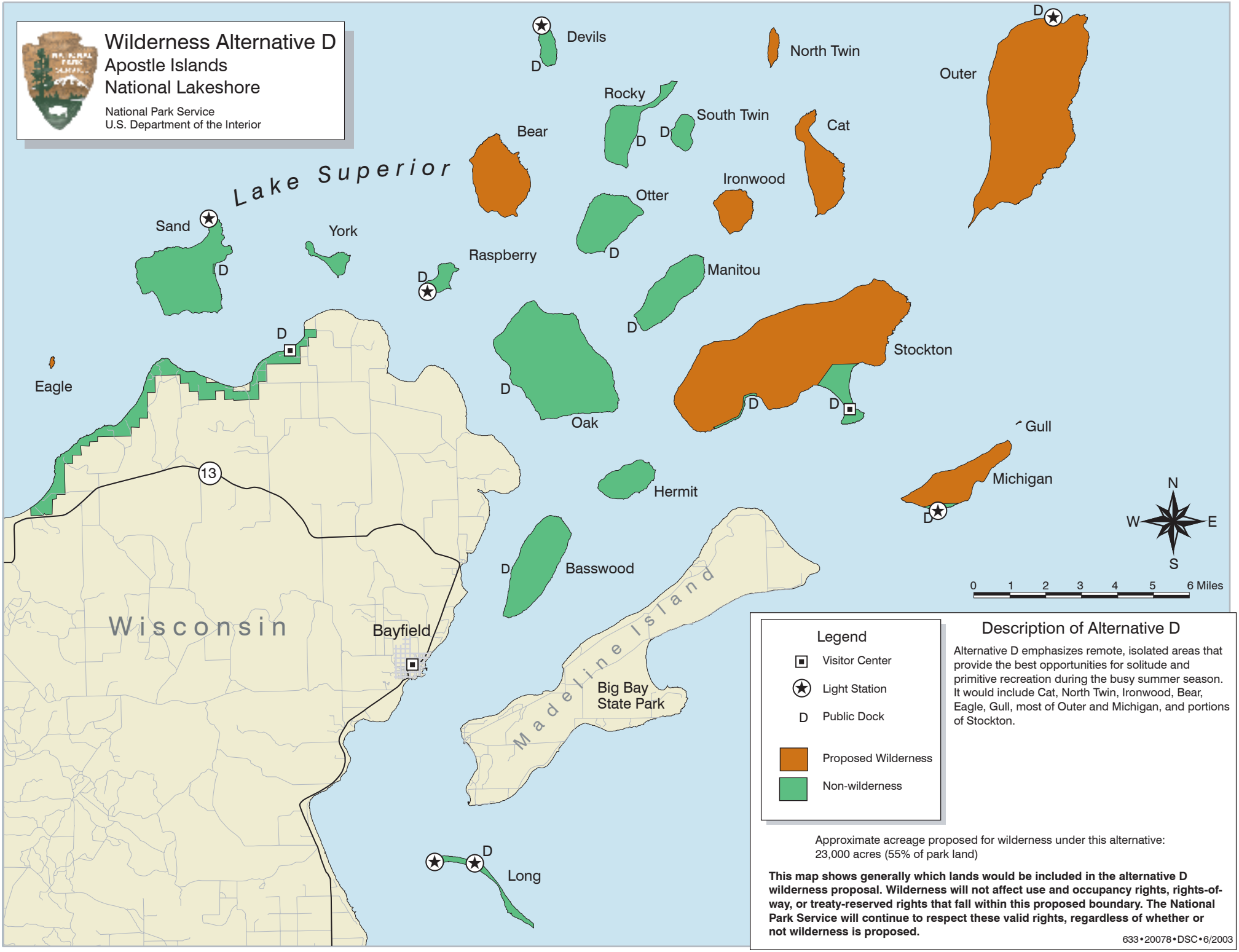
Wilderness Alternative D
Apostle Islands
National Lakeshore
National Park Service
U.S. Department of the Interior
Lake Superior
Devils
North Twin
Outer
Rocky
South Twin
Cat
Bear
Ironwood
Otter
Sand
York
Raspberry
Manitou
Stockton
Eagle
Oak
Gull
Michigan
Hermit
Basswood
Madeline Island
Big Bay
State Park
Wisconsin
Bayfield
13
Long
N
W
E
S
0 1 2 3 4 5 6 Miles
Legend
Visitor Center
Light Station
D Public Dock
Proposed Wilderness
Non-wilderness
Description of Alternative D
Alternative D emphasizes remote, isolated areas that provide the best opportunities for solitude and primitive recreation during the busy summer season. It would include Cat, North Twin, Ironwood, Bear, Eagle, Gull, most of Outer and Michigan, and portions of Stockton.
Approximate acreage proposed for wilderness under this alternative:
23,000 acres (55% of park land)
This map shows generally which lands would be included in the alternative D wilderness proposal. Wilderness will not affect use and occupancy rights, rights-of-way, or treaty-reserved rights that fall within this proposed boundary. The National Park Service will continue to respect these valid rights, regardless of whether or not wilderness is proposed.
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TABLE 1: SUMMARY OF APPROXIMATE TOTAL ACREAGE (%) PROPOSED FOR WILDERENESS IN EACH ALTERNATIVE*

	Alternative A (No Action)	Alternative B	Alternative C (Preferred Alternative)	Alternative D
Lake Superior	0%	0%	0%	0%
Mainland Unit	0%	0%	0%	0%
Basswood	0%	>99%	0%	0%
Bear	0%	100%	100%	100%
Cat	0%	100%	100%	100%
Devils	0%	94%	94%	0%
Eagle	0%	100%	100%	100%
Gull	0%	100%	100%	100%
Hermit	0%	100%	100%	0%
Ironwood	0%	100%	100%	100%
Long	0%	99%	0%	0%
Manitou	0%	>99%	>99%	0%
Michigan	0%	96%	96%	96%
North Twin	0%	100%	100%	100%
Oak	0%	>99%	99%	0%
Otter	0%	>99%	>99%	0%
Outer	0%	>99%	>99%	>99%
Raspberry	0%	97%	97%	0%
Rocky	0%	>99%	95%	0%
Sand	0%	97%	0%	0%
South Twin	0%	99%	99%	0%
Stockton	0%	>99%	93%	93%
York	0%	100%	100%	0%

* NOTE: All percentages have been rounded and are approximate.

TABLE 2: SUMMARY OF APPROXIMATE ACREAGE PROPOSED FOR WILDERNESS IN EACH ALTERNATIVE*

Alternative A (No Action)	Alternative B (% of land base)	Alternative C (Preferred Alternative) (% of land base)	Alternative D (% of land base)
0 acres	39,500 acres (94%)	33,500 acres (80%)	23,000 acres (55%)

* NOTE*:* All acreage figures have been rounded and are approximate.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is defined as "the alternative that will promote the national environmental policy as expressed in §101 of the National Environmental Policy Act." Section 101 states that "…it is the continuing responsibility of the Federal Government to…

> (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations
> (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences
> (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice
> (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities
> (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources

Two of the above goals did not make a difference in determining the environmentally preferred alternative. Goal 1 is satisfied by all of the alternatives: Apostle Islands National Lakeshore is already a national park unit and as a trustee of this area the National Park Service would continue to fulfill its responsibilities to protect this area for future generations. The difference between the alternatives in this regard is not appreciable. Goal 6 also was determined to be not applicable to this study.

When considering the remaining goals, the environmentally preferred alternative is the NPS preferred alternative in the *Apostle Islands National Lakeshore Wilderness Study / Environmental Impact Statement*. Of all the alternatives considered, alternative C best satisfies the four national environmental goals at a relatively high level. In particular, by designating 80% of the park as wilderness, it ensures that most of the park's natural and cultural resources would continue to be protected — this alternative would provide the best overall protection of all the park's natural and cultural resources. It would permanently protect most of the park's wilderness resources. The alternative also would provide for the possible expansion of visitor facilities in limited areas in the future if needed to meet visitor needs. Managers would have flexibility to plan where future development occurred, with public involvement, and in providing new opportunities for interpretation of the park, assuring a diversity of individual choices for the visitor. There would be many places where visitors could go and learn about the park's human history and wilderness stories, contrasting the differences between wilderness and nonwilderness. Thus, alternative C would best satisfy national goals 2, 3 and 4, and 5, ensuring for the long term that visitors coming to the park see an aesthetically and culturally pleasing area, providing a wide range of opportunities for visitors to learn about

and enjoy the area with minimal adverse impacts, and preserving the park's important natural and cultural resources.

Alternative A, the no-wilderness alternative, would not achieve the national goals as completely as alternative C, because the beneficial impacts of wilderness designation would not be realized. Under alternative A there would be the potential for additional developments in the future, which in turn could result in adverse impacts. Thus, the protection of cultural and natural resources, as articulated under national goals 2, 3 and 4, and 5, would be at a lower level than under alternative C. Wilderness is a scarce resource both in Wisconsin and in much of the country. With the potential for the loss of wilderness resources in the future, alternative A would not provide as wide a range of beneficial uses (goal 3), would not achieve as good a balance in sharing of life's amenities (goal 5), and would not be as likely to ensure an environment that supports diversity (goal 4)as alternative C.

Alternative B would protect the greatest amount of the park under wilderness, ensuring long-term protection of more of the park's natural resources than under alternative C. For instance, the biologically important sandscapes on Stockton and Long Islands would be protected as wilderness under alternative B, but not under alternative C. However, alternative B would have a higher potential for cultural resource impacts in the nonwilderness areas because future developments would be restricted to a relatively few areas that also contain a high concentration of cultural resources. In other words, if developments need to be built in the future, alternative B would pose a greater threat to cultural resources in the nonwilderness areas than alternative C. There would also be more areas where managers might not apply the full range of historic structure treatment options, resulting in the possibility of cultural resources being left to decay or being removed. With so much of the park's islands being wilderness, there would be fewer opportunities to install interpretive infrastructure onsite and fewer places people could go to and contrast the differences between wilderness and nonwilderness — with fewer onsite opportunities people would not understand as well the effects of wilderness on people and the landscape. Consequently, alternative B would not preserve and tell the stories of the park onsite as well as alternative C. Thus, alternative B would not satisfy national goals 3 (attaining a wide range of beneficial uses without undesirable consequences), 4 (preserving important cultural and historic resources), or 5 (providing a balance that would result in a wide sharing of life's amenities) as well as alternative C.

Alternative D is similar to alternative C in meeting the national goals. However, alternative D would provide permanent protection to less of the park's wilderness resource and would have more areas where natural and cultural resource impacts could occur due to future developments. Thus, alternative D would not meet quite as well national goals 3 (attain the widest range of beneficial uses of the environment without degradation), 4 (preserve important cultural and natural resources), or 5 (providing a balance that would result in a wide sharing of life's amenities) as alternative C.

ALTERNATIVES CONSIDERED BUT DISMISSED

The study team considered one other alternative proposal, which was alternative 2 in the June 2002 alternatives workbook. The alternative called for designating extensive areas as wilderness while still providing space for potential new developments designed to ensure a diversity of recreational experiences. This alternative strived to be as consistent as possible with the 1989 *General Management Plan*. It was similar to alternative B, but it would exclude a small number of additional areas for potential future development to support recreational uses that are consistent with the *General Management Plan*. In addition to the areas excluded from all alternatives, areas within a ¼-mile radius of the docks at Stockton Presque Isle, Manitou Island, Oak Island, and East Bay of Sand Island were also excluded, along with all of Basswood Island. Excluding these "growth" areas would ensure that the park would continue to accommodate a diversity of recreational uses in areas with the highest numbers of visitors. Most of these areas are visited by the tour boat, and if use continued to increase, a need might develop for additional facilities to support this use. In order to match this alternative as closely as possible with the park's 1989 *General Management Plan*, all known significant cultural resource sites were also excluded from this alternative the approach used by the *General Management Plan*.

The following areas were proposed as wilderness: all of Eagle, Gull, and North Twin Islands, and most of Stockton, Oak, Manitou, Sand, Bear, Cat, Hermit, Ironwood, Michigan, Otter, Outer, Raspberry, Rocky, South Twin, York, Devils and Long Islands.

The study team dropped this alternative for several reasons. With all the exclusions around cultural resources, the wilderness area would be highly fragmented. This would make it extremely difficult for both managers and visitors to know when one is in or outside the wilderness. Also, there is no reason to exclude cultural resources from wilderness, unless they are major visitor destinations, because all applicable laws, regulations, and NPS policies apply to the protection of cultural resources whether or not they are in wilderness. In addition, the distinction between this alternative and alternative B is fairly minor — the alternatives only differ by about 2,500 acres. Eliminating the alternative would not substantially alter the range of alternatives being considered — there is nothing distinctive in this alternative that is not included in one of the other alternatives. Finally, very few people supported this alternative during the 2002 public review period.

TABLE 3: SUMMARY OF IMPACTS

Impact Topic	Alternative A (No Wilderness)	Alternative B (Maximum Wilderness - 94% of land base proposed for wilderness)	Alternative C (Preferred Alternative & Environmentally Preferred Alternative- 80% of land base proposed for wilderness)	Alternative D (Limit Wilderness to Remote Areas - 55% of land base proposed for wilderness)
Natural Resources	Potential for minor to moderate, adverse, long-term impacts in localized areas due to future developments; least certainty that the park's natural resources would continue to be protected and maintained as they have been	Moderate, beneficial, long-term impacts in the wilderness area; negligible to moderate, short and long-term adverse impacts in localized areas in the nonwilderness areas depending on new developments that occurred	Moderate, beneficial, long-term impacts in the wilderness area; negligible to moderate, short and long-term adverse impacts in localized areas in the nonwilderness areas; however, more natural resources could be adversely affected in more areas than in alternative B, depending on the level of development that occurred	Minor to moderate, long-term, beneficial impacts in the wilderness area; negligible to moderate, short and long-term adverse impacts in localized areas in the nonwilderness areas; more natural resources could be adversely affected in more areas than in alternatives B and C, depending on the level of development that occurred
Cultural Resources	Potential for minor to mod--erate, long-term, adverse impacts, depending on the level of future development; minor to moderate, long-term beneficial impacts related to increased flexibility for treating cultural resources and for siting new developments	Potential for minor to moderate, long-term beneficial and adverse impacts in the wilderness area and moderate, long-term, adverse impacts in the nonwilderness areas, depending on the new development that occurred	Potential for minor to moderate, long-term, beneficial and adverse impacts in both the wilderness and the nonwilderness areas, depending on the new development that occurred	Potential for minor, long-term, beneficial and adverse impacts in the wilderness area, and minor to moderate, long-term, adverse impacts in the nonwilderness areas, depending on the new development that occurred
Wilderness Resources	Potential for minor to major, long-term, adverse impacts, depending on the level of development that occurred; least certainty that wilderness resources would continue to be protected as they have been	Major, long-term, beneficial impacts due to permanent protection bestowed by designation; could be some negligible, adverse, long-term impacts in nonwilderness areas due to new developments	Major, long-term, beneficial impacts due to permanent protection bestowed by designation; could be some minor to moderate, adverse, long-term impacts in nonwilderness areas due to new developments, primarily on Basswood, Sand, and Long Islands	Moderate, long-term, beneficial impacts; could be minor to major, long-term, adverse impacts in nonwilderness areas due to new developments, primarily on 12 islands
Visitor Nonwilderness Experiences	Potential for minor to moderate, long-term, beneficial impact, primarily due to the flexibility to expand recreational facilities into new areas	Potential for moderate, long-term, adverse impacts, primarily due to limits on the expansion of certain visitor facilities into new areas	Potential for minor, long-term, adverse impacts, primarily due to limits on the expansion of certain visitor facilities into new areas; some beneficial impacts due to more opportunities to tell wilderness and nonwilderness stories on the islands	Potential for negligible, long-term, adverse impacts, primarily due to limits on the expansion of certain visitor facilities into new areas; some beneficial impacts due to more opportunities to tell wilderness and nonwildeness stories on the islands
Park Operations	Potential for minor to moderate, long-term, beneficial impacts due to high management flexibility, and minor to major, long-term, adverse impacts, depending on the level and type of new developments that occurred	Potential for minor to moderate, long-term, beneficial impacts due to minimizing new developments in new areas, and minor to moderate, long-term, adverse impacts, due to reduction in management flexibility and increased costs of management in wilderness	Potential for minor to moderate, long-term, beneficial impacts due to a reduced likelihood of new developments in new areas, and minor, long-term, adverse impacts, due to reduction in management flexibility and increased costs of management in wilderness	Potential for minor, long-term, beneficial impacts due to fewer areas where new developments could occur, and minor, long-term, adverse impacts, due to decreased management flexibility and increased costs of management in wilderness

Note: See the "Methodology" section in the Environmental Consequences chapter for definitions of the impact intensities.

AFFECTED ENVIRONMENT

INTRODUCTION

The "Affected Environment" chapter describes the existing environment of Apostle Islands National Lakeshore and the surrounding region. The focus of this chapter is on key natural and cultural resources, wilderness resources, visitor uses and experiences, and park operations on the park's 21 islands that have the potential to be affected by the alternatives should they be implemented. For additional information on the Apostle Islands, see the lakeshore's web site (**www.nps.gov/apis**), the 1989 *General Management Plan / Environmental Assessment* (NPS 1989), NPS (1988), and Howk (2001).

This chapter focuses on describing the park's 21 islands, which have the potential to be affected by wilderness designation. There are also many natural and cultural resources on the mainland unit, as well as visitor and administrative facilities, such as the park headquarters in Bayfield and the Little Sand Bay visitor center. These all are important elements of Apostle Islands National Lakeshore, but because they would not be affected under any of the alternatives they are not included in the descriptions that follow.

NATURAL RESOURCES

WATER QUALITY

Lake Superior is the cleanest of the Great Lakes. Water quality in and around the Apostle Islands reflects the general oligotrophic (low nutrient) character of Lake Superior in general – the water quality of the park's Lake Superior waters and tributaries is relatively high. There appears to be little impact of human activities on water quality within the park.

Some areas used for full body contact recreation in the park, such as swimming and diving, are also areas where boats tend to moor and, as a matter of course, discharge "gray water" and bilge water. "Gray water" potentially contains nutrients and other contaminants (e.g., from cleansers). Although illegal, some boaters discharge sewage into the lake. Campers may also be adding nutrients to Lake Superior; however, they are discouraged from bathing and cleaning dishes in the lake. In recent years, outhouses have been replaced with vault toilets, eliminating leaching of human wastes into water bodies from this source.

In 1996, long-term water quality sampling sites were established in the park (Lake Superior Ecosystem Research Center 1997). Five open lake and three lagoon sites were sampled. Physical and chemical water quality parameters were measured and biological samples taken (zooplankton and benthos). The open water sites were found to have low nitrogen and phosphorus levels, low chlorophyll "a" concentrations, and high water clarity. All of the lagoon sites had low or nonexistent benthic organism populations and warm, highly colored, acidic waters. A three-year water quality study (1986-1988) was conducted in the lakeshore by the Center for Lake Superior Environmental Studies, University of Wisconsin-Superior (McCauley et al 1989). Consistent with the most recent sampling, results of this study indicate that park waters are relatively free from contamination by human wastes, that concentrations of nutrients (e.g., nitrogen and phosphorus) were low, and that oil and grease in the sediments of heavily used Stockton harbor were low. Water quality studies conducted from 1979 to 1984 by the U.S. Geological Survey (USGS) in Lake Superior and the park, including inland streams and lagoons and nearshore waters within the park, indicated similar results (USGS 1988).

Introduction of toxic chemicals, such as polychlorinated biphenyls (PCBs), into Lake Superior is a serious concern. The vast majority of PCBs in Lake Superior have entered the system through atmospheric deposition (Eisenreich 1987). PCBs may move back out of the water at both the air-water and water-sediment interfaces. PCBs, dioxins, and other organo-chlorides accumulate in the fatty tissue of organisms and tend to bioaccumulate in the food chain. High levels of PCBs have been found in nesting herring gulls and elevated levels of PCBs and DDE (dichlorodiphenyldichloro-thylene) have been found in nesting bald eagles in the lakeshore (Meyer, et. al 1994). During the 1990s, levels of PCB and DDE have decreased in bald eagles. Toxaphene, another bioaccumulative toxin, has become of increasing concern. Elevated levels of toxaphene were measured in lake trout collected near the Apostle Islands and toxaphene was found by the Minnesota Pollution Control Agency (1996) to be the dominant contaminant in lake trout in Lake Superior.

Reflecting the park's high-water quality, Lake Superior waters within the park are being considered for designation as Outstanding Resource Waters (ORW) by the state of Wisconsin. Lake Superior also has been recommended by the International Joint Commission (IJC) as a demonstration area where no point source discharge of any persistent toxic chemical will be permitted (Lake Superior Binational Program 2000).

GEOLOGY AND COASTAL PROCESSES

Today's Apostle Islands are the result of events beginning over 1 billion years ago. Colorful sandstones, which form the underlying bedrock and core of the islands were deposited during pre-Cambrian times. This sandstone, especially the Devils Island formation, forms cliffs and sea caves.

Pleistocene glaciation, which started around 3 million years ago and ended about 10,000 years ago, was the next significant event in the geological history of the islands. Thick deposits of reddish till were deposited by the glaciers on all of the islands. Three deposits of till were deposited, with the oldest being a sandy till and the two youngest being rich in clay (Nuhfer and Dalles 1983). Steep clay bluffs formed where the till is exposed, especially on the western sides of the islands.

The islands continue to be shaped by wave and wind energy generated by Lake Superior. Coastal features in the park include sandstone cliffs, clay bluffs, and sandscapes. Sandstone cliffs and clay bluffs are continually eroded by lake waves. On the other hand, sandscapes are dependent upon the longshore transport of sand.

Factors both within and outside the control of the National Park Service influence coastal processes. Lake Superior water levels, which are partially regulated through orders of the International Joint Commission, affect erosion rates on bluffs and sandscapes. NPS docks and other developments also may seriously affect local coastal processes. Docks, especially those with solid cores, affect the movement of sand along the coastline.

Apostle Islands National Lakeshore has among the most diverse collection and highest quality sandscapes in the Great Lakes. Various sandscapes include: sandspits, cuspate forelands, tombolos, a barrier spit, and numerous beaches. (Cuspate forelands are a type of sand spit that are wider than they are long. Tombolos are sand features that join either two islands or an island to the mainland. Barrier spits are elongate sand ridges that extend generally parallel to the coast.) These coastal features in the park tend to occur on the southern end of islands and are found only where glacial till along shorelines provides a ready supply of sand (Nuhfer and Dalles 1983).

SOILS

All soil formation evident on the Apostle Islands has taken place in the last 11,000 years. As soon as the topmost point on an island was exposed to the atmosphere, weathering, and plant colonization, soil formation (pedogenesis) began. The landscape of the Apostle Islands is geologically young and various forming processes have had very little time to work. Therefore, soil development in the area has usually affected no more than the upper four feet of surficial material. As a result, soil profiles are shallow (Cary et al 1978).

The soils of the Apostle Islands are derived from several parent materials that cause distinct variations over short distances. These parent materials are: lacustrine clay, water-deposited sand (by stream as well as lake), and glacial till (Brander et al 1978).

Topography has played a part in soil development. Most of the 21 islands are relatively level and low-lying. Water runoff is limited, with rain and snowmelt filtering downward through soil. Oak Island differs due to its elevation and rugged landscape (Cary et al 1978).

Between 1998 and 2000, the USDA Natural Resources Conservation Service mapped soils throughout the entire park. Soils on the islands were found to be quite diverse, ranging from sandy to clayey, and some new series were needed to define soils unique to the islands. The soils on the Apostle Islands overall have thicker humus/organic matter surfaces than the mainland. This may reflect reduced disturbance from logging, burning, and development typically seen on the mainland.

VEGETATION

Located in far northwestern Wisconsin, Apostle Islands National Lakeshore is at the continental northwestern limits of the hemlock-white pine-northern hardwood forest and also contains elements of the boreal forest. In presettlement times about 90% of the islands were covered by an upland mixed coniferous/hardwood forest dominated by hemlock (*Tsuga canadensis*), white pine (*Pinus strobus*), sugar maple (*Acer saccharum*), yellow birch (*Betula alleghaniensis*), and white birch (*Betula papyrifera*).

The park's current forests reflect complex disturbance histories. Forests within the park range from pristine old-growth forest without a history of deer browsing, to forests that have been subjected to logging, fires, and extensive deer browsing. Areas that escaped commercial logging include North Twin, Eagle, and Gull Islands and the lighthouse reservations on Outer, Sand, Devils and Raspberry Islands. In the case of Devils and Raspberry Islands, the reservations included the entire islands. The old-growth forest on Outer Island is one of the best examples of northern hardwood hemlock forest remaining in the upper Great Lakes (Judziewicz and Koch 1993). This stand is especially unique because it has not been affected by deer browsing.

Most of the park's forests were logged, first for white and red pines (*Pinus resinosa*), white cedar (*Thuja occidentalis*) and hemlock (ca. 1870), and later for hardwoods, particularly sugar maple and yellow birch. Today, a maturing second growth northern hardwood forest exists throughout the islands. However, the effects of logging remain. Hemlock and white pine are no longer dominant; the most important tree species in the archipelago are white birch, sugar and red maples, balsam fir (*Abies balsamea*), and white cedar (Judziewicz and Koch 1993).

The species composition of the boreal forest community was not changed due to logging. Today this community is dominated by white spruce, balsam fir, tamarack (*Larix laricina*), white cedar, birch, and aspen, as it was during presettlement times.

Following logging, deer populations irrupted on many of the islands, severely impacting species favored by deer, such as Canada yew (*Taxus canadensis*). Several of the islands, however, that did not have a history of deer populations and others that

had moderate deer populations have lush stands of Canada yew – a very rare species on the mainland due to deer browsing. Currently, deer populations occur on only a few islands.

About one-third of the islands' coasts consist of Precambrian sandstone ledges and bluffs. Local vegetation on these rock faces depends on the microhabitat and can vary from common willows (*Salix* spp.) and weed species, to subarctic rarities and species with calcareous tendencies. Steep reddish clay bluffs are vegetated with small trees of balsam poplar, white birch, red maple and showy mountain ash (*Sorbus decora*) (Judziewicz and Koch 1993).

As noted above, the park has a rich assemblage of sandscapes, including sandspits, cuspate forelands, tombolos, a barrier spit (Long Island), and beaches. These are some of the most biologically diverse lands in the park. They are dominated by dune vegetation, beach grass (*Ammphila breviligulata*), and beach pea (*Lathyrus japonicus*), as well as a shrub and forest component of speckled alder (*Alnus rugosa*), quaking aspen (*Populus tremuloides*), and white birch. Sandscape vegetation is resistant to natural disturbances; however, it is very sensitive to human trampling.

Over 800 plant species occur within the park, including 26 species of concern. Because the Apostle Islands are at the extreme northern frontier of Wisconsin, they tend to provide plant habitats not found elsewhere in the state. Regionally rare habitats in the park include old-growth forest, boreal forest, northern forests (five types), forest seep, clay bluff communities, sandstone cliff communities, lagoon and bog communities, forested ridge and swale, coastal fen, Great Lakes barrens (only example in the state), and dune communities. The Wisconsin Department of Natural Resources Natural Heritage Inventory Program has designated four state natural areas within the park, including maritime forest, sandscape (includes beaches, sandspits, cuspate forelands, and tombolos), maritime cliff, and critical species areas.

Exotic vegetation in the lakeshore is primarily confined to disturbed landscapes, including old logging camps, farmsteads, fishing camps, light station grounds, and quarries. NPS developed areas, such as Presque Isle on Stockton Island, and developments on the mainland unit also contain exotics. Sandscapes are vulnerable to invasion of exotics, especially where native vegetation has been affected by human disturbance (NPS 1999).

WILDLIFE

Island environments, naturally isolated, are a barrier for distribution of some animals. The Apostle Islands were covered by Lake Superior during the end of the last glacial period (11,500 years before present). When the lake level dropped to 450 feet above sea level, around 9,500 years before present, the current archipelago was part of the mainland and the majority of terrestrial vertebrates and plant life became established. Inconsistencies in vertebrate distribution indicate that other factors were operating. Mobile species may have colonized some of the islands by swimming (e.g., deer, bear, beaver) or by crossing winter ice (e.g., deer, red fox, coyote) (Anderson and Stowell 1985). Other species may have been intentionally or unintentionally brought to the islands by humans. Transportation of hay to the islands for work animals and livestock related to logging and farming activities may have been infested by meadow voles,

woodland deer mice, and garter snakes (Meierotto 1976).

Thirty-seven species of mammals are known to occur in the park. Large mammals are not common on most of the islands and tend to be transient. Mammals that are common to most islands include red squirrel, snowshoe hare, deer mouse, and redback vole. Other species, such as black bear and white-tailed deer, are locally common on certain islands. Mammal species found on the islands less frequently include fox, coyote, otter, and fisher. Some common mainland species that are less mobile or dormant in the winter (e.g., gray squirrel, least chipmunk, porcupine, skunk, raccoon, and possibly some species of amphibians and reptiles) are not present on the islands. However, Long Island, currently a barrier spit rather than an island, contains most species that occur on the mainland.

White-tailed deer were either absent or in very low numbers prior to European settlement (Anderson and Stowell 1985). Habitat changes due to logging resulted in deer irruptions on many of the islands with populations peaking in the early to mid-1950s. However, by the late 1960s, deer decreased to low numbers through liberal hunting quotas. Deer can occur on any of the islands within the park; however, reproducing populations are limited to Basswood, Oak, and Sand, and potentially Long and Stockton Islands. A reproducing population of deer was not known on Sand Island until the last few years and their numbers appear to be increasing rapidly.

Similar to deer, beaver were probably not present in the park prior to settlement of the region. Their populations also peaked following logging, especially on Outer and Stockton Islands, but have since been in a steady decline. On Outer Island, habitat is poor and beaver forage for great distances; however, a lack of predators has allowed the population to remain fairly stable. On Stockton Island, the last monitoring survey (1999) found no active beaver lodges. Bear on Stockton have been found to prey on beaver.

Stockton and Sand Islands are the only islands with a known reproducing black bear population. Bears have overwintered and/or occasionally been seen on a number of other islands, such as Oak, Basswood, Long, Ironwood, Manitou, Hermit, and Raspberry. Black bears on Stockton Island were studied and monitored from 1984 to 1994. This island population increased significantly from 1984 to 1994 to a density of 2.1 bears per square mile. (In 1990, the greatest population density estimated for mainland Wisconsin was 1.0 bears per square mile.) The bear population on Stockton Island grew from a population of three animals in 1984 to a peak of 31 in 1994 and then declined to approximately 25 in 1996 (Fleming 1997).

Due to its strategic geographic location and wide diversity of habitats, Apostle Islands National Lakeshore provides a refuge for birds. Through the park's long-term monitoring program for forest breeding birds, 150 species of birds have been recorded (NPS 2001). The islands provide important habitats for resident breeding birds as well as neotropical migrant land birds (birds that migrate to Central and South America in winter). Over 89% of the breeding birds in the park are migrants, 59% of which are neotropical migrants.

The Apostle Islands are an important migratory flyway stopover in the Great Lake region. Nearly all of the islands

provide habitat for migrating birds. In particular, Outer and Long Islands provide key habitats for migratory birds: Outer Island is important for passerines, hawks and falcons, while Long Island is important for waterfowl, passerines and shorebirds. Migratory bird surveys conducted on Outer and Long Islands have recorded over 200 species (NPS 1998).

The park provides important nesting habitat for the following colonial nesting birds: herring gulls, double-crested cormorants, great blue herons, and cliff swallows. Gull and Eagle Islands combined have 88% of the park's breeding herring gull populations and 80% of the herring gull breeding population on the entire Wisconsin shore of Lake Superior. Eagle Island has the only great blue heron rookery in the park.

The park also provides nesting habitat for bald eagles (federally threatened) and piping plover (federally and state endangered). Eagles began recolonizing the Apostle Islands in the early 1980s and young have been produced annually since 1983. However, nest productivity still remains below levels found on the mainland. Current research (1991-1993) indicates that lowered productivity is primarily due to a low food base and the continuing presence of anthropogenic toxic chemicals in Lake Superior (Meyer et al 1994). Critical habitat for piping plover has been designated by the U.S. Fish and Wildlife Service on Long Island and the Michigan Island sandspit. Long Island is the only location where piping plovers have successfully nested in the state of Wisconsin in recent years.

Six species of salamanders, ten species of frogs and toads, and six species of reptiles are known to occur within the park, including the islands. The most common species of salamander are blue-spotted, spotted, and eastern red-backed. Four-toed salamander and Central newt are regionally uncommon, and mudpuppies are regionally local. Frogs and toads that occur in the park and are regionally common include: eastern American toad, northern spring peeper, Eastern gray tree frog, green frog, northern leopard frog, mink frog, and wood frog. Chorus frogs are regionally local, Cope's gray treefrogs are regionally rare, and American bullfrogs are regionally uncommon. The park has a rather depauperate turtle fauna, with only two species, painted and snapping turtles. The most abundant snakes in the park are eastern gartersnakes. Other snake species that are present include northern red-bellied snake, northern ring-necked snake, and smooth greensnake (Casper 2001a and 2001b).

The park's enabling legislation permits hunting, fishing, and trapping. A special black-powder season for deer has been open on Oak and Basswood Islands since 1985. Since 2002 tribal members have begun to exercise their treaty-reserved rights to hunt, fish, and gather on park lands. Species that may be hunted and trapped in the park include deer, black bear; fox, coyote, beaver (mainland, Outer and Stockton), otter, mink, fisher, muskrat (mainland), snowshoe hare, waterfowl, woodcock, and ruffed grouse (mainland and Long). However, with the exception of the black-powder and tribal seasons, hunting and trapping is relatively rare on the islands.

CULTURAL RESOURCES

For the purposes of this environmental impact statement, cultural resources are divided into archeological resources, cultural landscapes, historic structures, and ethnographic resources. All of these resources are important elements of Apostle Islands National Lakeshore.

The cultural resources of the Apostle Islands preserve the stories of men and women whose lives have touched the islands over centuries of human occupation. Some lived or worked on the archipelago; others came as visitors. Inhabitants of the islands have included pioneer farmers, fishermen, and lighthouse keepers. Early Native Americans camped and gathered plants on the islands; loggers and quarrymen harvested building materials; tourists came to enjoy the islands' beauty.

The people of the Apostle Islands left evidence of their presence. These traces may be easy to see, like the massive walls of sandstone quarries, or the tall lighthouse towers. Other traces blend subtly into the landscape: farm clearings filling in with grass and brush, stone walls running through second-growth forest, old logging roads now used as hiking trails. Each of these elements contributes to a seamless picture, telling the story of remote islands whose landscape was profoundly affected by human activity, but which are gradually returning to a wild state.

Cultural resources are distributed widely throughout the park. In general, they are most often along shorelines, where easy access has promoted human settlement; yet numerous prehistoric and historic sites have been identified in island interiors, as well. Certain islands, such as Sand and Basswood, are known to be particularly rich in cultural sites, but nearly all the islands have some record of human occupation.

ARCHEOLOGICAL RESOURCES

Archeological resources are the remains of past human activity and records documenting the scientific analysis of these remains. Archeological features are typically buried but may extend above ground. Examples of archeological resources within Apostle Islands National Lakeshore include Native American campsites dating back several centuries, pioneer farmsteads from the 1870s, and logging camps of the early 20th century. The park also includes numerous submerged archeological sites, such as shipwrecks and historic dock structures, which are outside the scope of this document.

Surveys conducted so far have identified more than 60 archeological sites on the Apostle Islands. However, only a fraction of the park's land area has been surveyed, and it is almost certain that there are a substantial number of sites not yet discovered.

HISTORIC STRUCTURES

Structures are material assemblies that extend the limits of human capability. The park includes a wide variety of historic structures, ranging from the modest fishermens' cabins of Manitou Island to the 112-foot light tower on Michigan Island. Some historic structures are in ruins, yet still retain the ability to tell stories of former occupants, such as the cluster of collapsing log buildings on Bear Island, which give vivid evidence of a busy lumber camp.

The National Park Service inventories historic structures by means of the List of Classified Structures (LCS) program. This inventory lists all structures within the park that possess historical and/or architectural/engineering significance. As of 2001, 163 structures within Apostle Islands National Lakeshore were on the List of Classified Structures (NPS 2002); revisions recently undertaken are expected to add slightly to this total.

ETHNOGRAPHIC RESOURCES

Ethnographic resources are basic expressions of human culture and the basis for continuity of cultural systems. A cultural system encompasses both the tangible and the intangible. It includes traditional arts and native languages, religious beliefs, and subsistence activities. Some of these traditions are supported by ethnographic resources: special places in the natural world, structures with historic associations, and natural materials. Management of ethnographic resources acknowledges that culturally diverse groups have their own ways of viewing the world and a right to maintain their traditions.

Further research is necessary to identify the full range of ethnographic resources within the Apostle Islands. No systematic survey of ethnographic resources has yet been conducted. However, it is known that a wide variety of traditionally used plants are found within the park: a *Traditional Resource Utilization Study*, conducted in 1999, identified 224 plant species of importance to the Ojibwe (Stoffle et al 2001). It is possible that there may be ceremonial sites as well.

CULTURAL LANDSCAPES

Cultural landscapes are settings that humans have created in the natural world: intertwined patterns of things both natural and constructed. These landscapes are places that reflect expressions of human manipulation and adaptation of the land.

Historic vernacular landscapes illustrate peoples' values and attitudes toward the land and reflect patterns of settlement, use, and development over time. Examples of historic vernacular landscapes within the Apostle Islands include the six light stations, with their complex arrangements of structures, gardens, clearings, and walkways, and commercial fishing sites, with cabins, docks, drying reels, and other utility structures.

Ethnographic landscapes are areas associated with contemporary groups but are used or valued in traditional ways. Although no specific ethnographic landscapes have been identified within the Apostle Islands National Lakeshore, the area has long been a cultural center for the Ojibwe (Chippewa) people. It is possible that further research will identify the presence of ethnographic landscapes within the park.

Archeological sites may also constitute cultural landscapes. Clearings in the forest, berms, foundations, and other structural remains offer evidence of a site's human history.

The National Park Service inventories cultural landscapes by means of the Cultural Landscape Inventory (CLI) program. The inventory for Apostle Islands National Lakeshore has not yet been undertaken. A preliminary survey conducted in 1993 identified 13 potentially eligible vernacular landscapes within the park (NPS 1993), but this figure may be subject to revision upon further study.

WILDERNESS RESOURCES (INCLUDING VISITOR WILDERNESS EXPERIENCES)

Although most of the lands comprising Apostle Islands National Lakeshore were at various times logged, quarried, farmed, or otherwise utilized by humans in a multitude of ways, these activities ceased for the most part either before or just after the park was established in 1970. Since that time, and for considerably longer on some islands, the vast majority of the park's lands have been left to the forces of nature.

Thomas Heberlein, a rural sociologist and professor emeritus at the University of Wisconsin – Madison, has studied boaters at Apostle Islands and their attitudes since 1975. While the issue is complex and the proportions of the various user groups have shifted over time, Heberlein has consistently found that a majority of island visitors recognize the wilderness characteristics of the islands, and appreciate them (Heberlein et al. 1999, Grossberg 1999).

Many of the sailboaters and motorboaters that park staff have met speak enthusiastically about the scenery afforded by the approximately 140 miles of undeveloped island shorelines in the park. These visitors tend to anchor off the islands, and spend comparatively little time hiking or camping on the islands themselves (with beaches being an exception). Grossberg (1999) found that "viewing pristine scenery" was very important to the recreational experiences of these visitors. Many kayakers enjoy paddling along these same wild shorelines, and are doing so in rapidly increasing numbers. A subset of each of these user groups also enjoys entering into the undeveloped interiors of the islands for day hiking or camping.

Whether visitors are entering the wild parts of the park, or simply enjoying the view from their boats, they are appreciating the wild resources of the park that provide such contrast to their everyday lives and experiences (Grossberg 1999).

The Wilderness Act speaks of wilderness as a resource in itself. The Apostle Islands National Lakeshore is rich in many of the resources and values mentioned in the Wilderness Act, including:

- minimal levels of development, resulting in an appearance of "naturalness"
- opportunities for primitive, unconfined recreation
- opportunities for solitude

MINIMAL LEVELS OF DEVELOPMENT

Although roads existed on many of the islands, mainly to support logging activities or the lighthouses, virtually none of them are maintained as roads at this time. Some of these former roads are maintained as hiking trails, but most are completely overgrown, and it now requires a rather discerning eye to note where they may have been. Collectively, the nearly 40,000 acres of islands constitute a very large roadless area by Upper Midwest standards.

Other forms of development are also relatively sparse. There is no permanent human presence on any of the islands within the park. Areas where the National Park Service actively manages visitor support facilities, historic lighthouses and other structures, or performs grounds

work (such as mowing), currently amount to roughly 200 acres on the islands. Other developments exist, such as hiking trails and campsites, but for the most part these developments are consistent with the Wilderness Act and NPS wilderness management policies. Thus, for the purposes of this study, roughly 99.5% of the island-based lands within the park can be considered to possess "minimal levels of development."

OPPORTUNITIES FOR PRIMITIVE, UNCONFINED RECREATION

There are opportunities for primitive, unconfined recreation on nearly every island in the park. Camping is available on 18 of the 21 islands. In 2002 there were just over 20,000 visitor days of camping recorded on the islands. After subtracting out the visitor days at group campsites, and at the more concentrated camping areas such as Stockton - Presque Isle, nearly 10,000 of these visitor days are at campsites in the areas being considered for wilderness. There are a total of 55 miles of hiking trails on 12 of the islands. It is not known how many visitors make use of the trails, but the opportunities are numerous.

Except for camping, which requires a permit, recreation on the islands is largely unconfined. A small number of areas are closed during the main visitor season to protect nesting bird populations, but access to most of the islands is unregulated.

OPPORTUNITIES FOR SOLITUDE

The islands are logistically challenging to reach, and the visitor season is relatively short. The majority of the shorelines are steep or rocky, making access difficult or impossible in many areas. The only places where relatively large numbers of people (10-30+) may occur at times are near dock areas, some beaches, lighthouses, and group camping areas. Opportunities for solitude are often not available in these places. Island visitation has remained steady over the past decade, with a combined total of roughly 70,000 to 80,000 visitors per year, of which 84% occurs during the summer. With the exception of the peak use months of June through August, very few people visit the islands.

Heberlein et al. (1999) found that, overall, kayakers feel less crowded in the park than boaters. This may be due to the tendency of boaters to congregate near islands with the best anchorages. Even then, however, only 17.6% of boaters felt the places they stopped at were crowded, compared to 12.8% of kayakers. Clearly there are numerous opportunities for solitude in the islands.

Due to the combined influences of beach, campsite, and dock locations, there is a very strong tendency for park visitors to stay near shorelines. Other factors, such as insect populations, probably contribute to this tendency as well. In any case, for those visitors willing to venture into them, the interiors of the islands offer outstanding opportunities for solitude — even during the peak visitor season. On many islands, it is possible to walk for miles without encountering another visitor. Most of the sounds of civilization give way to the sounds of the forest after traveling only a short distance inland.

VISITOR NONWILDERNESS EXPERIENCES

For the purposes of this document, "visitors" are defined as anyone who enters the park or uses park facilities for any reason.

Enjoying the park and its resources is a fundamental part of the visitor experience. That experience is heightened when it progresses from enjoyment to an understanding of the reasons for a park's existence and the significance of its resources. Natural and cultural resources and park facilities provide opportunities for a variety of visitor experiences at Apostle Islands National Lakeshore. Many of these visitor experiences are not related to characteristics associated with wilderness (e.g., opportunities for solitude, opportunities for primitive and unconfined recreation, and naturalness). These types of visitor experiences may include, but are not limited to, group activities, recreational activities (e.g., camping, picnicking), participating in personal interpretive services (e.g., staffed visitor centers, ranger conducted activities), and utilizing nonpersonal interpretive services (e.g., wayside exhibits, visitor center exhibits, radio information systems, computer technologies) to help visitors form their own intellectual and emotional connections with the meanings and significance of park resources.

GENERAL VISITOR USE PATTERNS

The average number of annual recreational visitors to Apostle Islands National Lakeshore in the period from 1990-2001 was 166,728. In 2001 there were a little more than 195,000 recreational visitors in the park. Approximately 77,000 of these were island visitors. A total of 29,000 visitors toured the Apostle Islands by the concessioner's cruise boat, while the remainder came by private motorboat, kayak, and sailboat. (Since 1990, the number of kayak/campers in the park has almost quadrupled, while the numbers of campers using other forms of transportation has remained relatively constant.) The seasonal visitation patterns for this period show that roughly 2% of island visitation occurs in spring (March - May), 84% in summer (June - August), 14% in fall (September - November), and less than 0.1% in winter (December - February). Peak use is during July and August, on weekends.

Most visitors go to more than one island in a day. Most motorboaters and sailboaters congregate at relatively secure anchorages or docks at Stockton, Rocky/South Twin, Raspberry, Oak and Sand Islands. Not surprisingly, these islands also receive the highest use levels – these islands have scenic attractions, have visitor facilities, several are relatively close to the mainland, and most are on the concessioner's tour boat circuit. Islands that are closer to the mainland tend to receive higher use levels, while the more remote islands, such as Outer and Cat, receive lower use levels. Eagle and Gull Islands, and the northwest corner of Otter Island are closed to visitors in the summer (May 15 to September 15) due to the presence of nesting birds.

ISLAND EXPERIENCES

The Apostle Islands offer a variety of recreational experiences. Recreational users of the park include sailors, kayakers, motorboaters, hikers, sightseers, picnickers, swimmers, campers, fishers, hunters, photographers, birdwatchers, divers,

skiers, snowshoers, berry pickers, nature students, and lighthouse buffs. The most popular activities on the islands tend to be sightseeing, lighthouse tours, day hikes, and camping, although many visitors who come to the park participate in more than one activity.

Most people who spend time on the islands stay on shorelines, particularly beaches, or in the general vicinity of the developed areas, particularly areas with campsites and/or lighthouses. In general, cruise boat, sailboat, and motorboat visitors (who all together make up the largest number of users) tend to come on shore to use the park facilities, picnic, or explore. With the exception of campers, these visitors spend relatively short periods on an island and rarely take long hikes. The motorboat and sailboat visitors usually sleep on their boats, with only a small number camping on shore. (In 2002, 14% of campers were motorboat users and 3% were sailboaters.) Kayakers tend to be more likely to camp (55% of all campers were kayakers in 2002) and spend more time exploring an island.

Over 60 developed campsites are on 14 islands; eight of these campsites are group campsites on four islands. Individual campsites generally contain a tent pad, fire ring, and picnic table, with a vault toilet nearby; group sites have tables, fire rings, large gathering areas, and vault toilets nearby. All park visitors that camp on the islands are required to obtain a permit. (The permit system allows campers to reserve campsites in advance and helps park staff monitor the mount of use each campsite receives.) The number of camping permits issued annually has increased from 1,330 in 1997 to 1,697 in 2002. In 2002, a total of 7,452 campers spent a total of 20,028 nights in island camping areas. A total of 2,812 of those campers (38%) camped in groups of eight or more individuals. Campers spent 10,207 nights in group campsites on Basswood, Oak, Sand, and Stockton Islands or in the campground at Presque Isle on Stockton Island.

A total of about 55 miles of trails are actively maintained on 12 islands. These trails provide hiking opportunities for visitors, as well as opportunities to experience and enjoy a variety of natural and historic features.

Many opportunities exist for picnicking on the islands. All individual campsites, except one, and all group campsites have picnic tables. Lighthouse lawns tend to have picnic tables. There are also picnic areas that are separate from campsites and lighthouses on Oak, Rocky, South Twin, and Stockton-Presque Isle.

The islands provide a number of interpretive facilities and programs for visitors. A visitor center is on Stockton, which has exhibits on natural and cultural history. Evening talks or campfire programs are offered on Stockton. Guided walks or tours are given on Stockton, the Manitou Island fish camp, and at several of the lighthouses. In 2002, 1,390 visitors were contacted in the park visitor center at Stockton Island, 11,862 visitors participated in guided tours of lighthouses on Raspberry, Sand, Michigan, Devils, and Outer Islands, 3,860 visitors took guided tours of the Manitou Island Fish Camp, and 1,395 visitors attended evening programs at Stockton Island.

PARK OPERATIONS

The park's operations are discussed below under four divisions: interpretation and education, protection, planning and resource management, and facility management. As noted in the beginning of this chapter, this section ignores the park headquarters in Bayfield, which plays a major role in all of the park's operations, and visitor and administrative facilities on the mainland unit because they would not be affected under any of the wilderness alternatives.

INTERPRETATION AND EDUCATION

The park's island-based interpreters and educators consist mostly of temporary employees hired during summer months. The NPS interpretation and education staff are augmented with volunteers through the summer months.

The park's island-based interpretive efforts have traditionally centered around developed visitor use areas. In 2002, interpretive park rangers were stationed at Stockton Island's Presque Isle, the Manitou fish camp, and the Raspberry Island lighthouse, all of which operate seasonally. Logistics are a constant challenge for the park staff even when the weather cooperates. Typically, interpretive park rangers and volunteers staff the visitor center at Stockton-Presque Isle from mid-June to Labor Day. From mid-June through the end of September interpretive park rangers and volunteer light keepers conduct lighthouse tours and provide educational walks and programs at all lighthouses on the islands, except for those on Long Island. As with most other island-based workers, these employees and volunteers usually live in housing units on the islands and are transported off the islands for their days off duty.

An information desk, interpretive displays, and book sales are also located at the Stockton-Presque Isle visitor center. Interpretive operations include assistance in trip planning and issuing of backcountry camping permits. Informational signs, maps, and bulletin boards, as well as wayside exhibits, are located at many docks and developed areas throughout the park. There are a few wayside exhibits located in more remote areas on several islands.

PROTECTION

Visitor and resource protection park rangers conduct patrols of about 140 miles of island shoreline, numerous historic and archeological sites, trails, campsites, and public use areas and facilities on 21 islands spread out over an area larger than Rocky Mountain National Park. Protection rangers are stationed at Little Sand Bay and Roys Point on the mainland year round and at Stockton-Presque Isle during the summer. Most are permanent park employees, although they are typically supplemented with a small number of temporary employees each summer. These employees perform law enforcement, wildland fire suppression, structural fire prevention monitoring, building and fire security, emergency medical services, and search and rescue operations on the islands, often under very challenging conditions.

PLANNING AND RESOURCE MANAGEMENT

Park planning and resource management employees strive to increase understand-

ing of the natural and cultural resources of the islands and devise strategies for the public to interact with those resources in a manner that ensures their preservation for future generations. The staff monitor the park's wildlife, vegetation, and air and water quality. They assess the historic and cultural sites located within the park for historic significance and make recommendations for their preservation. They add to knowledge and understanding of the park's natural and cultural resources by performing historical research and scientific studies and assist park cooperators who are interested in performing their own research. This knowledge is then applied, with the assistance of other park divisions, in a variety of restoration projects. Planning and resource management staff also educate park staff on current issues affecting park resources, perform National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) compliance, and direct or participate in park planning efforts such as this study.

Planning and resource management staff consist of natural and cultural resource specialists, supplemented by a small number of temporary or volunteer technicians. These employees tend to be mainland-based but spend considerable amounts of time throughout the islands during the short summer field season. As with other park staff, transporting planning and resource management staff to the islands is a constant logistical challenge.

FACILITY MANAGEMENT

Facility management staff care for an enormous variety of park developments and cultural resources. Historic preservation staff face the challenging task of slowing or preventing decay in the 160 historic buildings that are spread throughout the park, including the largest collection of lighthouses found anywhere in the national park system. Facility management crews build and maintain hiking trails (55 miles spread over 12 islands) and campsites (more than 60 spread over 14 islands), repair docks (17 on 13 islands), and maintain a wide variety of grounds, utility systems, and other visitor use facilities distributed over a very large area. Facility management staff also are responsible for maintaining all of the park's housing quarters, as well as the visitor center at Stockton-Presque Isle.

Skilled in a variety of crafts and trades, facility management staff consist of permanent employees supplemented by temporary employees in the summer. Most facility management operations are not based on the islands. Rather, these staff are in almost constant motion, regularly transporting themselves and others to the islands. Routine activities on the mainland, such as pumping outhouses or delivering propane, become adventures on islands in Lake Superior. Some facility management staff are devoted to simply keeping the park's aging fleet of more than 20 boats in safe, working order.

Island-based park staff on Stockton, Sand, Oak, and Rocky Islands are seasonally housed in government-owned housing. Raspberry Island staff reside in historic quarters at the Raspberry Island light station, and volunteer light house keepers are housed in a similar manner on Devils, Michigan, and Outer Islands.

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

The National Environmental Policy Act (NEPA) mandates that environmental impact statements disclose the environmental effects of proposed federal actions. In this case, the proposed federal action would be the designation of wilderness in Apostle Islands National Lakeshore. This "Environmental Consequences" chapter analyzes the potential effects of four alternatives on natural resources, cultural resources, wilderness resources, the visitor nonwilderness experiences, and operations of Apostle Islands National Lakeshore. By examining the environmental consequences of all alternatives on an equivalent basis, decision-makers can decide which approach creates the most desirable combination of the greatest beneficial results with the fewest adverse effects on the park.

Ordinarily, the federal action that necessitates the preparation of an environmental impact statement is some type of planned development, such as the construction of a road or building. In this case, the federal action being evaluated is whether or not to designate wilderness in the park. The result of this federal action would either be a permanent commitment to continue to protect and manage most of the existing natural, undeveloped portions of the park as wilderness (alternatives B, C, and D), or the removal of a policy constraint that has prevented most new developments from occurring in most parts of the park (alternative A).

As noted in the "Purpose and Need" chapter, this study is not intended to address questions regarding how a wilderness area should be managed. Most of these questions would be addressed in a subsequent wilderness management plan and accompanying environmental document. However, in order to analyze the impacts of wilderness designation it is necessary to generally examine and assess the implications of changes in management resulting from wilderness designation. The text box in the "Purpose and Need" chapter generally describes what management actions, uses, and developments would and would not be permitted in a wilderness area. It is assumed in this analysis of the alternatives that if wilderness is not designated in parts of the park, administrative or visitor developments could be built on the undeveloped parts of the islands in the future, consistent with the park's current and future general management plans. In order to allow new development in areas outside the development zones designated in the current G*eneral Management Plan* (1989), the plan would need to be modified. If this were to occur, opportunities for public involvement would be provided in the planning process, as required under law and NPS policies.

It is important to note that because the 1989 *General Management Plan* found that 97% of the park was suitable for wilderness designation, NPS policy has required that the wilderness values of this area be protected until Congress and the President have taken final action. As a result, the vast majority of Apostle Islands National lakeshore has been managed as *de facto* (unofficial) wilderness. For the purposes of this environmental impact assessment, it is assumed that Congress would take action to implement each of the alternatives, either designating new

wilderness as outlined in the alternative, or agree that no wilderness would be designated in the park.

Because of the above policy constraint, it is difficult to know what the park might look like should the long-standing *de facto* wilderness management guidance be lifted. Thus, instead of analyzing the impacts related to a planned development, this chapter analyzes the impacts related to an assortment of developments that could be built if wilderness were not designated on some or all of the islands. The analysis is general because there simply is not a plan that outlines how the islands could be developed should the park's long history of *de facto* wilderness management be removed.

Although it cannot be known with certainty what developments might be constructed in the park if current *de facto* wilderness management guidance was lifted, it is reasonable to assume that the following developments would be considered:

- New campsites: There has been an increase in camping on the islands since the 1989 *General Management Plan* was released. While campsite development can take place in wilderness areas, the nature and distribution of the campsites is necessarily different in wilderness.
- New picnic areas: Increased use of the park by large groups has led to an increasing demand for this type of facility.
- New trails: Trails can be constructed in wilderness areas, but their level of development and placement may vary in some alternatives. If the current wilderness management restrictions were lifted, some of the new trails could be paved, and they could include self-guided interpretive trails with permanent waysides.

Island visitation has been kept to low numbers due to the relative inaccessibility of the islands. Future improvements in transportation technology could conceivably reduce the role of Lake Superior in limiting visitation, however. Depending on future circumstances (e.g., if visitation were to substantially increase and if the park's operating budget was sufficient), it is possible the following developments might be considered:

- Additional or expanded dock facilities: Boaters have expressed an interest in seeing more docks in some areas and expanded docks in others. Although docks extend out into Lake Superior, which is excluded from all alternatives, they have the effect of concentrating relatively large numbers of people in a small area. Thus, new docks would not ordinarily be constructed adjacent to wilderness. However, it also should be stressed that no existing public use docks would be removed by the National Park Service under any of the alternatives being considered.
- Additional structures to serve visitors or house island-based park employees: Examples of structures that might be built include visitor contact stations, storage facilities, shelters, restrooms, and amphitheaters.

Because it is difficult to know what development(s) might be built where, and to speculate about other management implications of wilderness and nonwilderness, the potential consequences of the alternatives are

analyzed in general terms using qualitative analyses. Consistent with the National Environmental Policy Act, the National Park Service would conduct additional environmental analyses with appropriate documentation before implementing site-specific management actions or building new developments in the park.

The existing conditions for all of the impact topics that are analyzed here were identified in the "Affected Environment" chapter. This chapter is organized by impact topic. All of the alternatives are assessed under each impact topic. For each impact topic, there is a description of the positive (beneficial) and negative (adverse) effects of each of the alternatives and a brief conclusion for each alternative.

Alternative A, the no wilderness alternative, is the baseline for comparison of the effects of the other alternatives. The other three alternatives were compared to alternative A to identify the incremental changes that would occur as a result of changes in the wilderness proposals.

At the end of the chapter there is a brief discussion of unavoidable adverse impacts; irreversible and irretrievable commitments of resources; and the relationship of short-term uses of the environment and the maintenance and enhancement of long-term productivity. A brief summary of the impacts of each alternative is in table 3 at the end of the "Wilderness Alternatives" chapter.

METHODOLOGIES FOR ANALYZING IMPACTS

As noted in previously, this chapter is analyzing impacts of designating wilderness and impacts from potential developments in nonwilderness areas. The wilderness study team based the impact analysis and the conclusions in this chapter largely on information provided by experts in the National Park Service, on park staff insights and professional judgments, and on the review of existing literature and studies. The team's method of analyzing impacts is further explained below.

The environmental consequences for each impact topic were defined based on impact type, context, duration, and intensity.

Effects can be either adverse or beneficial for the topic being analyzed. The effects also can be direct or indirect. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable.

Context refers to the setting within which an impact is analyzed, such as the affected region or locality. In this document most impacts are either localized (site-specific) or parkwide.

Impact duration refers to how long an impact would last. Unless otherwise specified, in this document the following terms are used to describe the duration of the impacts:

> *Short term:* The impact would be temporary in nature, lasting a year or less
>
> *Long term:* The impact would last more than one year and could be permanent in nature, such as the loss of soil due to the construction of a new facility

Impact intensity refers to the degree or magnitude to which a resource would be beneficially or adversely affected. It is important to consider that when evaluating the effects of wilderness, terms like "beneficial" or "adverse" are somewhat subjective and value-laden, and what one person might think of as a adverse impact may be thought of by another person as a beneficial impact. Use of these terms should not be viewed as a value judgment on the part of the National Park Service relative to wilderness. For example, if the analysis concludes that the constraints imposed by wilderness on sign construction is an adverse impact, this does not imply that the National Park Service prefers signs more than wilderness. Nor does it imply that the National Park Service has a plan to develop more signs. Rather, it is an acknowledgement that sign construction in designated wilderness as an activity becomes more complicated to those charged with performing that activity. The question of whether the signs themselves are good or bad is left to the reader to decide.

Levels of intensity for each impact topic were determined using the definitions presented below. All of the following intensities were expressed qualitatively.

Natural Resources. The intensity of impacts on natural resources was determined using the following definitions:

- *Negligible* – The impact would be either barely noticeable or extremely localized and would have no discernible effect on natural resources on a parkwide scale.
- *Minor* – The impact would be slight but noticeable and would affect only a small number of natural resources in a small number of park locations.
- *Moderate* – The impact would be clearly noticeable and spread over a number of park locations and would have an appreciable effect on natural resources.
- *Major* – The impact would be highly noticeable and widespread and could result in a substantial change in the park's natural resources.

Cultural Resources. The intensity of impacts on cultural resources was determined using the following definitions:

- *Negligible* – The impact would be either barely noticeable or extremely localized and would have no discernible effect on cultural resources on a parkwide scale.
- *Minor* – The impact would be slight but noticeable, with only a small number of resources in a small number of park locations being affected.
- *Moderate* – The impact would be clearly noticeable and spread over a number of park locations and would have an appreciable parkwide effect on cultural resources.
- *Major* – The impact would be highly noticeable and widespread and could result in the irretrievable loss of cultural resources within the park.

Wilderness Resources. The intensity of impacts on wilderness resources was determined using the following definitions:

- *Negligible* – The impact would be either barely noticeable or extremely localized and would have no discernible effect on wilderness resources on a parkwide scale.
- *Minor* – The impact would be slight but noticeable and would affect only a small number of visitors in a small number of park locations.
- *Moderate* – The impact would be clearly noticeable and spread over a number of park locations and would have an appreciable effect on wilderness resources.
- *Major* – The impact would be highly noticeable and widespread and could result in a substantial change in the quantity of lands within the park possessing wilderness resources.

Visitor Nonwilderness Experiences. The intensity of impacts on visitor experiences not related to wilderness was determined using the following definitions:

- *Negligible* – The impact would be barely detectable by few visitors and would have no discernible effect on their experience.
- *Minor* – The impact would be slightly detectable by few visitors and would have little effect on visitor experiences not related to wilderness resources.
- *Moderate* – The impact would be clearly detectable by many visitors and would have an appreciable effect on visitor experiences not related to wilderness resources.
- *Major* – The impact would be severely adverse or exceptionally beneficial for the majority of visitors,

and would have a substantial, highly noticeable influence on various aspects of visitor experiences not related to wilderness resources.

Park Operations. The intensity of impacts on park operations was determined using the following definitions:

- *Negligible* – The impact would be barely detectable and would have little discernible effect on park operations and facilities.
- *Minor* – The impact would be slightly detectable but would not affect the park's overall ability to provide services and maintain facilities.
- *Moderate* – The impact would be clearly detectable and could have an appreciable effect on park operations and facilities.
- *Major* – The impact would have a substantial, highly noticeable influence on park operations and facilities, and could change the park's services and/or facilities.

MITIGATION MEASURES, CUMULATIVE IMPACTS, AND RESOURCE IMPAIRMENT

MITIGATION MEASURES

No impacts were identified due to wilderness designation that would require mitigation measures. It is assumed in the impact analyses that appropriate mitigation measures would be applied for developments that may be built in the nonwilderness areas under the alternatives. For example, sites would be surveyed for archeological resources and state-listed and rare plants before developments would be permitted. Developments in wetlands and in important wildlife habitats also would be avoided.

CUMULATIVE IMPACTS

The Council on Environmental Quality regulations implementing NEPA define a cumulative impact as "…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time." Each cumulative impact analysis is additive, considering the overall impact of the alternative when combined with effects of other actions (inside and outside the park) that have occurred or that would occur in the foreseeable future.

The wilderness study team considered the potential of actions occurring within and outside the park, which when added to the designation of wilderness, could result in a cumulative impact. It should be noted that there are no designated wilderness areas near the park, and wilderness areas in the region would attract different types of visitors than those who would come to the Apostle Islands. Also, no private or other agency actions were identified occurring on the mainland, such as in Bayfield, that, considered together with the designation of wilderness, would have a cumulative impact on resources, visitors, local economies, or management of the park.

Among the various actions considered in evaluating cumulative impacts were

- initiatives to outsource services provided by NPS staff. This is not likely to result in a cumulative impact.
- nationwide security efforts, which would likely result in law enforcement staff being directed to other duties outside the park, and in turn, fewer NPS staff being available to assist visitors which may affect the visitor experience. But this would not be expected to have a cumulative effect with wilderness designation.
- climate change, which could affect Lake Superior's water level. This could affect use of the park, possibly resulting in longer use seasons and more visitors, and could have both positive and negative impacts on park resources. But this effect would likely occur over time, and wilderness designation (plus changes in lake levels) would not result in additive changes in visitation, resources, or park operations.
- Native American treaty rights, which would continue to be honored by

the National Park Service. Wilderness designation plus the exercise of the treaty rights would not result in any additive cumulative impacts on visitor uses or experiences on the islands, on island resources, or on park operations.

- granting of a new concessions contract for tour boats. This probably would not change existing use patterns of the park or substantially change use levels. Many of the visitors who use this service would not enter the wilderness area. Wilderness designation plus this change are independent actions and would not combine together to result in a cumulative effect on visitors or island resources.
- development of a new general management plan. It is uncertain what would be proposed in a new general management plan. Until Congress takes action on wilderness in the park, major changes in how much of the park would be managed would not be likely. Under NPS policy, wilderness values must be maintained in areas determined to have been suitable for wilderness until Congress takes action. Under this policy most new developments that could be proposed in a new plan would not occur in areas proposed for wilderness. Similarly, no major changes in visitor uses would likely be made in areas proposed for wilderness.

In conclusion, no ongoing or foreseeable actions were identified that would combine with proposals for wilderness that would result in cumulative effects. Therefore, it is expected that there would be no cumulative impacts (on the impact topics being analyzed in this document) that would result from the designation of wilderness in Apostle Islands National Lakeshore. No further evaluation of cumulative impacts is included in this chapter.

IMPAIRMENT OF PARK RESOURCES OR VALUES

In addition to determining the environmental consequences of the preferred alternative, *NPS Management Policies 2001* require that potential effects be analyzed to determine whether or not actions would impair park resources.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, 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, adversely impacting park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within the park, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values. An impact to any park resource or value may constitute an impairment, but an

impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect on a 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 opportunities for enjoyment of the park
- identified as a goal in the park's general management plan or other relevant NPS planning documents

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park.

Impairment Determination

After evaluating the natural and cultural resource impacts for the four alternatives considered in this document, none of the impacts were found to be of sufficient intensity to constitute an impairment of park resources and values. Indeed, many of the resource impacts of wilderness designation were determined to be beneficial impacts. All adverse impacts due to wilderness designation were found to be moderate or lower in intensity and are not anticipated to be of sufficient magnitude to warrant a finding of impairment of park resources and values. From an impairment standpoint, impacts cannot be analyzed in the nonwilderness areas due to uncertainty regarding what actions might be taken where and when, and what resource values might be affected. Future actions in these areas would be evaluated for possible impairment of resource values in future environmental documents, consistent with the National Environmental Policy Act and NPS management policies.

IMPACTS ON NATURAL RESOURCES

ALTERNATIVE A (NO WILDERNESS)

Analysis. Under alternative A the current requirement to manage most of the park as *de facto* wilderness would be removed. As a result new developments could be built throughout the park, consistent with the general management plan. Thus, alternative A has the highest level of uncertainty of all the alternatives relative to impacts on the park's natural resources.

Under alternative A new docks could be built in most locations, consistent with the current general management plan. The development of additional docks in the park has the potential to cause moderate, long-term, adverse impacts on coastal processes. Docks, especially those with solid cores, impede transport of sediments along the shores. Sediments would be trapped by the docks and, therefore, would not be available to replenish downstream areas. Without this replenishment, Lake Superior currents and waves can erode beaches. Depending on the design, location, and extent of the docks, this could cause a moderate level of impact to the geomorphology of one or more of the park's sandscapes. The development of additional docks could also cause moderate, short-term, adverse water quality impacts during construction due to an increase in localized turbidity. In addition, new docks potentially could permanently modify the bottom substrate through the disturbance of nearshore transport of sediments. Both of these changes could cause long-term adverse impacts on fish habitat in very small areas, primarily confined to the areas immediately surrounding the docks where the substrate has been changed.

Development of campsites along the shoreline could cause a minor level of impact to shoreline erosion, especially if campsites were grouped along a shoreline. People going back and forth across shorelines could trample vegetation, which in turn could increase shoreline erosion. Also, if an area becomes cleared of vegetation due to the creation of a campsite(s), and if there are trees behind the cleared area and the beach, the trees would be more subject to blowdown, which in turn could result in shoreline erosion.

The primary impacts on soils related to new campsites, trails, picnic areas, and buildings would be compaction and potential erosion. Depending on the level of new development, impacts could be moderate and long-term; however, individual impacted areas would tend to be small. Areas surrounding interpretive signs and kiosks could also be subjected to increased soil compaction.

The primary impacts on vegetation related to new campsites, trails, picnic areas, and buildings would be the loss of vegetation in the most heavily used areas and in surrounding areas. Similar to soils, impacts to vegetation could be moderate and long-term (depending on the level of development); however, individual impacted areas would tend to be small. Areas surrounding interpretive signs and kiosks could also be subjected to impacts on vegetation due to trampling.

Unless future developments were located in important habitat for sensitive species (a very unlikely situation), impacts would be expected to be negligible to minor on wildlife species.

Conclusion. Of all the alternatives considered, alternative A has the highest potential for adverse, long-term impacts to the park's natural resources — this alternative has the least certainty that the park's natural resources would continue to be protected and maintained as they have been. Depending on the level of development that occurred, minor to moderate, long-term, adverse impacts could occur in localized areas.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Analysis. Designating 94% of the park's land base as wilderness would ensure that relatively few new developments would occur in undeveloped areas of the park. As a result, there would be relatively few natural resource impacts — compared to alternative A, alternative B would have a long-term, beneficial impact by ensuring that coastal processes, water quality, soils, vegetation, and wildlife would continue to be maintained in a relatively "natural" condition, or would not be altered beyond current conditions, on most of the islands. Although new campsites or trails could be built in the wilderness area, consistent with NPS wilderness management standards, no impacts to water quality would be expected. Some soil compaction would result from the construction and use of these facilities, and vegetation would be lost or trampled in these areas. Since there would likely be fewer campsites and trails constructed in the wilderness area compared to alternative A, these impacts would be minor and long term and restricted to small areas. Impacts to wildlife would likely be negligible, given the size of the facilities, careful siting of the campsites and trails, and expected low-use levels.

New developments would largely be focused in the 6% of the park's land base that would not be designated as wilderness. Natural resources in many of these areas already have been disturbed or altered by past developments. If new developments are built in these areas, with appropriate mitigation measures few additional natural resource impacts would be likely. However, if developments such as docks, picnic areas, and buildings were built in undeveloped areas, impacts would be similar to those described under alternative A: minor to moderate, short and long-term, adverse impacts could occur to coastal processes, soils and vegetation, and negligible to minor impacts to wildlife populations.

Conclusion. Since this alternative would be the least likely to result in developments in currently undeveloped areas, it has the lowest potential for adverse, long-term impacts to the park's natural resources. Overall, compared to alternative A, alternative B would have a moderate, long-term, beneficial impact on natural resources because the increased protection wilderness would provide to most of the islands would ensure that potential impacts of new developments would largely be avoided. In the nonwilderness areas alternative B could result in negligible to moderate, short and long-term impacts to natural resources in localized areas, depending on the level of development that occurred.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Analysis. Alternative C would have similar impacts as those described for alternative B, except a smaller area (80% of the park's land base) would be designated as wilderness. Like alternative B, alternative C would have a long-term, beneficial impact on most of the park's natural resources, ensuring long-term protection of coastal processes, water quality, soils, vegetation, and wildlife populations in the wilderness area. Some soil compaction could result from the construction and use of new campsites and trails in the wilderness area, some vegetation would be lost or trampled, and some wildlife could be disturbed, but these impacts would be localized, long term, and negligible to minor in intensity.

New developments could be built in 20% of the park's land base under alternative C, many of which are not currently developed. In particular, new developments could be built on Basswood, Sand, and Long Islands, and larger portions of Stockton and Rocky Islands, assuming this was consistent with the general management plan. If new developments were built in these undeveloped areas, impacts similar to those described under alternative A could occur: minor to moderate, short- and long-term, adverse impacts could occur to coastal processes, soils, and vegetation. Negligible to minor impacts could occur to wildlife populations.

Conclusion. Compared to alternative A, alternative C would have a moderate, long-term, beneficial impact for the park due to the additional level of protection wilderness would bestow to most of the islands and to ensuring that the potential impacts of new developments would largely be avoided. Adverse impacts to natural resources in the wilderness area likely would be negligible to minor and long term. In the nonwilderness areas the alternative could result in negligible to moderate, short and long-term impacts to natural resources in localized areas, depending on the level of development that occurred. With more of the park potentially open to new development in this alternative, compared to alternative B, the natural resources in more areas could be adversely affected under alternative C, although much less than in alternative A.

ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Analysis. Alternative D would have similar impacts as those described for alternative B, except a smaller area (55% of the park's land base) would be designated as wilderness. Like alternatives B and C, alternative D would have a long-term, beneficial impact on much of the park's natural resources, ensuring long-term protection of coastal processes, water quality, soils, vegetation, and wildlife populations in the wilderness area. As in the other alternatives, some soil compaction, loss of vegetation, and wildlife disturbance could result from the construction and use of new campsites and trails in the wilderness area, but these impacts would be localized, long term, and negligible to minor in intensity.

New developments could be built in 45% of the park's land base under alternative D, much of which is not developed. In particular, new developments could be built on the

islands excluded from the wilderness area in alternative C plus an additional nine islands, assuming this is consistent with the general management plan. If new developments were built in these undeveloped areas, impacts similar to those described under alternative A could occur: minor to moderate, short and long-term, adverse impacts could occur to coastal processes, soils, and vegetation; negligible could occur to minor impacts to wildlife populations.

Conclusion. Compared to alternative A, alternative D would have a minor to moderate, long-term, beneficial impact for the park due to the additional level of protection wilderness bestows to most of the islands and to ensuring that the potential impacts of new developments would largely be avoided. (The beneficial impact would be lower than alternatives B and C because less of the park would be designated as wilderness.) Adverse impacts to natural resources in the wilderness area likely would be negligible to minor and long term. In the nonwilderness areas the alternative could result in negligible to moderate, short and long-term impacts to natural resources in localized areas, depending on the level of development that occurred. With more of the park potentially open to new development in this alternative, compared to alternatives B and C, the natural resources in more areas could be adversely affected under alternative D, although less than in alternative A.

IMPACTS ON CULTURAL RESOURCES

Analysis of the proposed alternatives' impacts on the cultural resources of the Apostle Islands is challenging. Most of the potential impacts identified are indirect and long term in nature. Many are related to the consequences of potential development, which wilderness designation would largely restrict to nonwilderness portions of the park.

Additionally, analysis of impacts on the cultural resources must consider several other factors:

- Most importantly, analysis of alternatives must take into account the fact that the park has not been completely surveyed for cultural resources, and additional sites may be identified as time passes. For example, only about 20% of the park's land area has been archeologically surveyed. Prior to implementing any ground-disturbing activity in the future, appropriate archeological surveys would be undertaken. The significance of any discovered archaeological resources would be evaluated and documented, and an appropriate mitigation strategy developed, if necessary, through consultation with the Wisconsin state historic preservation office and any affiliated American Indian tribes.

- The cultural resources of the Apostle Islands are not set off in a distinct, separate area; rather they are distributed widely throughout the park. Cultural features tend to cluster along the shoreline, where access is easiest. Consequently, those sites that are most appealing for modern development also tend to be the spots where cultural features are most often found.

- The island setting resulted in special patterns of use and development, and contributed to the excellent state of preservation of early homesteads, logging camps, and quarry operations. Because access has always been difficult, island sites have escaped both the development and disturbance that have destroyed or damaged similar sites on the mainland throughout the northern Great Lake states.

- Progress in our understanding of the islands' history and cultural resources continues to affect the assessment of significance of cultural resources within the park. Sites that were once thought to lack significance have subsequently been identified as eligible for listing on the National Register of Historic Places; examples include the West Bay Club complex on Sand Island and the logging camp near the northeast cove on Bear Island. Thus, the current national register status of a site cannot serve as the sole measure of its historic significance. The Advisory Council for Historic Preservation (ACHP) offers this guidance:

  > When approaching questions of historical significance, build upon national register criteria as commonly applied to historic properties by drawing upon a wide range of scholarship in the agency's evaluative and

> interpretive frameworks. How do the agency's cultural landscapes illustrate the continuum of human life? To what degree does the potentially affected area itself embody the qualities of a heritage resource? Would interpretation of the area's associated cultural traditions enrich understanding of the values inherent in the area? (ACHP 2002)

Thus, identification of cultural resources is an ongoing process. As time passes, scholarly and/or public thinking about the significance of cultural resources may change. The significance of cultural resources may require re-evaluation based on new information.

ALTERNATIVE A (NO WILDERNESS)

Analysis. Pursuant to the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS 1995), park managers would be able to choose between four alternative treatments for all historic structures within the park: preservation, rehabilitation, restoration, and reconstruction. Managers would be free from the restraints imposed by wilderness management policies on the general use of power tools and other equipment, and as a result could choose the most cost-effective tools and methods for the treatment of cultural resources, making it more likely that the cultural treatment would occur. This could have a minor to moderate beneficial effect, enhancing the level of protection available to the park's cultural resources, including resources that are not on the national register.

Alternative A would provide maximum flexibility for siting future developments and so would entail the least likelihood for developments to be placed in such a way as to directly affect archeological resources or cultural landscapes. On the other hand, new developments could occur throughout the park, consistent with the general management plan in place at the time. New developments could result in increased numbers of visitors in areas that are currently lightly visited. Thus, there is an increased potential for disturbance of cultural resources that are located adjacent to or near any new development, which could have a minor to moderate, adverse impact on these resources.

Ethnographic resources would be protected by existing laws and policies, including the American Indian Religious Freedom Act, the Native American Graves Protection Act, §110 (sacred sites) of the National Historic Preservation Act, Executive Order 13007, and *NPS Management Polices (2001*), and thus would not likely be adversely affected under alternative A.

Conclusion. Under alternative A most of the park's cultural resources could be maintained. The alternative also would provide maximum flexibility in managing and preserving cultural resources, including flexibility in locating new developments to avoid cultural resource impacts. But even with this flexibility, of all the alternatives, alternative A has the highest potential for adverse, long-term impacts associated with increased visitation in more areas. Overall, depending on the level of development that occurred, alternative A would have the potential for minor to moderate, long-term, adverse impacts to cultural resources throughout the park.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Analysis. Under this alternative, a substantial portion of the park's cultural resources would be included in wilderness.

In keeping with NPS wilderness management policies, future park managers would be limited in the tools they can use to rehabilitate, restore, or reconstruct historic structures within the wilderness area. There would be a greater likelihood that structures with potential to be listed on the National Register of Historic Places would be left to molder in the wilderness area, due to restrictions on the tools available for the treatment of these structures. In addition, *NPS Management Policies 2001* states that human-disturbed areas should be restored to natural conditions and processes, which might include the removal of structures that are not listed as historically significant. In a designated wilderness area it would be more likely that structures not currently listed on the national register could be removed, consistent with this policy. However, this could preclude future research that might lead to the reassessment of their significance and possible nomination to the national register. Consequently, a minor to moderate, adverse impact on cultural resources in the wilderness area would be anticipated.

Future development of park facilities would be restricted to the limited areas excluded from wilderness designation, approximately 6% of the park's land base. These areas, such as existing developments and lighthouse complexes, contain a high concentration of cultural resources. Construction of new facilities in these areas and increased visitor use in these developments would almost certainly affect archeological sites and/or cultural landscapes, which could have a moderate, adverse impact on these resources.

Since this alternative has a low potential for new development in 94% of the park's land base, there would be a low potential for disturbance of cultural resource sites in those areas due to more dispersed visitation patterns. The relative inaccessibility that has protected the park's cultural resources so well over the years would have a high potential for continuing for most of the park under alternative B, resulting in a minor to moderate, beneficial impact.

Ethnographic resources would not likely be impacted under alternative B. Wilderness would prevent most new developments and thus ensure that the ethnographic resources' existing condition would be maintained. In all of the park ethnographic resources also would continue to be protected by existing laws and policies, including the American Indian Religious Freedom Act, the Native American Graves Protection Act, §110 (sacred sites) of the National Historic Preservation Act, Executive Order 13007, and *NPS Management Polices (2001*), and thus would not be adversely affected by alternative B.

Conclusion. Compared to alternative A, alternative B would have the potential for a minor to moderate, long-term, beneficial impact on cultural resources due to the low potential for new development and more dispersed visitation patterns in the areas recommended for wilderness. However, with reduced flexibility in the tools that

can be used to protect and manage cultural resources in those areas, there could be long-term, adverse impacts to cultural resources if they were allowed to molder. In the nonwilderness areas, additional long-term adverse impacts might occur due to new developments being built in areas where there are concentrations of cultural resources. Overall, alternative B would have the potential for minor to moderate, long-term, beneficial and adverse impacts in the wilderness area and moderate, long-term, adverse impacts in the nonwilderness areas.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Analysis. Under this alternative, several areas containing substantial concentrations of cultural resources would be excluded from wilderness designation. The exclusion of Sand, Basswood, and Long Islands, along with small portions of Rocky and Stockton Islands, from wilderness designation would allow a full range of treatments for a diverse representation of cultural sites. In particular, this alternative would provide for flexibility in planning the preservation and interpretation of pioneer farmsteads on Sand and Basswood Islands; of historic stone quarries on Basswood and Stockton Islands; and of logging camps on Sand, Basswood, and Stockton Islands. It would allow consideration of a full range of treatments for historic structures in the settlements on Sand and Rocky Islands. Managers would be able to choose the most cost-effective tools and methods for treatment of cultural resources in these nonwilderness areas, making it more likely that the treatment would occur. Thus, on the above islands alternative C would have the same minor to moderate beneficial effect as alternative A regarding efforts to restore, rehabilitate, or reconstruct historic structures.

Because 20% of the park's land base would be excluded from wilderness, there would be a broader range of options when planning future development, resulting in less pressure on individual locations. This would reduce the chances of adverse impacts to cultural landscapes and archeological sites in nonwilderness areas compared to alternative B. But compared to alternative A, alternative C could result in minor to moderate, long-term, adverse impacts on cultural resources if new developments were built near existing developments and visitation increased around the developments in the nonwilderness areas.

Since this alternative has a low potential for new development in 80% of the park's land base, there would be a low potential for disturbance of cultural resource sites in those areas due to more dispersed visitation patterns. The relative inaccessibility that has protected the park's cultural resources so well over the years would likely continue for the majority of the park under alternative C, resulting in a minor to moderate, beneficial impact.

Ethnographic resources would not likely be impacted under this alternative. Wilderness would prevent most new developments and thus ensure that the ethnographic resources' existing condition would be maintained. In all areas, ethnographic resources also would continue to be protected by existing laws and policies, including the American Indian Religious Freedom Act, the Native American Graves Protection Act, §110 (sacred sites) of the

National Historic Preservation Act, Executive Order 13007, and *NPS Management Polices (2001*), and thus would not be adversely affected by alternative C.

Conclusion. Like all of the other alternatives, alternative C has the potential for a mix of beneficial and adverse impacts relative to cultural resources. Alternative C would have a minor to moderate beneficial impact in the wilderness area due to the low potential for long-term cultural resource impacts associated with new developments and increased visitation in the wilderness area. However, some minor adverse, long-term impacts could occur in the wilderness area due to reduced flexibility in the treatment options that would likely be used to manage and protect some cultural resources. Minor to moderate, long-term, adverse impacts could occur in the nonwilderness areas, depending on the level and location of new development that occurred. Overall, compared to alternative A, alternative C could have minor to moderate, long-term, beneficial and adverse impacts on cultural resources in both the wilderness and nonwilderness areas.

ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Analysis. The exclusion of 12 islands, along with portions of several others, from wilderness under alternative D would allow a full range of treatments for a diverse representation of cultural sites on those islands. The alternative would provide for flexibility in planning the preservation and interpretation of pioneer farmsteads on Sand and Basswood Islands; of historic stone quarries on Basswood, Hermit, and Stockton Islands; and of logging camps on Sand, Oak, Basswood, and Stockton Islands. It would allow consideration of a full range of treatments for historic structures in the settlements on Sand and Rocky Islands. Managers would be able to choose the most cost-effective tools and methods for treatment of cultural resources in the nonwilderness areas, making it more likely that the treatment would occur. Thus, on the above islands alternative D would have the same minor to moderate beneficial effect as alternative A regarding efforts to restore, rehabilitate, or reconstruct historic structures.

Because 45% of the park's land acreage would be excluded from wilderness designation, there would be a broader range of options when planning future development, resulting in less pressure on individual locations. This would reduce the chances of adverse impact to cultural landscapes and archeological sites in nonwilderness areas compared to alternatives B and C. But compared to alternative A, alternative D could result in minor to moderate, long-term, adverse impacts on cultural resources if new developments were built near existing developments and visitation increased around the developments in the nonwilderness areas.

Since this alternative has a low potential for new development in 55% of the park's land base, there would be a low potential for disturbance of cultural resource sites in those areas due to more dispersed visitation patterns. The relative inaccessibility that has protected the park's cultural resources so well over the years would likely continue for about half the park under alternative D, resulting in a minor beneficial impact.

Ethnographic resources would not likely be impacted under this alternative. Wilderness would prevent most new developments and thus ensure that the ethnographic resources' existing condition would be maintained. In all areas, ethnographic resources also would continue to be protected by existing laws and policies, including the American Indian Religious Freedom Act, the Native American Graves Protection Act, §110 (sacred sites) of the National Historic Preservation Act, Executive Order 13007, and *NPS Management Polices (2001*), and thus would not be adversely affected by alternative D.

Conclusion. Like all of the other alternatives, alternative D has the potential for a mix of beneficial and adverse impacts relative to cultural resources. Alternative D would have a minor beneficial impact in the wilderness area due to the low potential for long-term cultural resource impacts associated with new developments and increased visitation in the wilderness area. However, some minor, long-term, adverse impacts could occur in the wilderness area due to reduced flexibility in the treatment options that would likely be used to manage and protect some cultural resources. Moderate, long-term, adverse impacts could occur in the nonwilderness areas, depending on the level and location of new development that occurred. Overall, compared to alternative A, alternative D could have both minor, long-term, beneficial and adverse impacts on cultural resources in the wilderness area, and minor to moderate, long-term, adverse impacts in the nonwilderness area.

IMPACTS ON WILDERNESS RESOURCES (INCLUDING THE VISITOR WILDERNESS EXPERIEINCE)

For the purposes of this assessment, wilderness resources are defined as those qualities of the environment that people seek when they travel to federally designated wilderness areas. These qualities include minimal levels of development; opportunities for primitive, unconfined recreation; opportunities for solitude; and quiet.

ALTERNATIVE A (NO WILDERNESS)

Analysis. Under this alternative new developments, such as visitor centers, docks, or concession-operated lodges, could be built in the park, provided the general management plan is in place at the time allowed for them. Under alternative A these developments could be placed in areas that are currently managed to protect wilderness resources. It would be unlikely that a substantial amount of new development would occur in the near future, given the park's purposes and significance, and the difficulty (and cost) in placing new developments on the islands. But if any new visitor or administrative development(s) were built in those areas, they would result in the loss of wilderness resources. There would be fewer opportunities in the park for visitors seeking solitude and primitive, unconfined recreation than at present. The apparent naturalness visitors see in the park would decline in the areas with development, and scenic views could be obstructed or degraded in localized areas. If transportation technology were to change in the future, allowing substantially more visitors to get to the islands, additional adverse impacts would occur to the park's wilderness resources. Thus, under alternative A visitors seeking wilderness experiences would have fewer opportunities to find this experience in the park.

Conclusion. Of all the alternatives, alternative A has the highest potential for widespread, adverse, long-term impacts to wilderness resources. Depending on the level of development that occurred in undeveloped areas and the increase in visitation, there could be minor to major, long-term, adverse impacts to wilderness resources. However, these impacts would likely be localized, limited to the general vicinity of where the new developments are built. Ultimately, it is the *certainty* that the park will resemble its present wild and primitive character that is most at risk from this alternative — alternative A provides the least certainty that the park's wilderness resources would continue to be protected and maintained as they have been.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Analysis. Under alternative B most of the park's land area would be designated wilderness. This would be a major, beneficial, long-term, impact, ensuring that most of the park's wilderness resources would be permanently protected and maintained. In most of the park there would be opportunities for visitors seeking solitude and primitive, unconfined recreation. Most of the park would appear relatively natural to visitors.

About 6% of the park's land base would be nonwilderness under this alternative

and could experience additional development in the future. The vast majority of this land is contained within developed areas that this study has found to be unsuitable for wilderness designation. By definition, these lands possess few wilderness characteristics, so the impacts to wilderness resources under alternative B would be negligible. However, the few impacts that might occur could be long term.

Conclusion. Since wilderness designation is by definition intended to protect the area's wilderness resources, it stands to reason that alternative B would have a beneficial impact on the wilderness resources of Apostle Islands National Lakeshore. Compared to alternative A, alternative B would have a major, long-term, beneficial impact on the park's wilderness resources. There could be some negligible, adverse, long-term impacts to wilderness resources in the areas excluded under alternative B, assuming additional development occurred in undeveloped areas.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Analysis. With 80% of the park's land base designated as wilderness under alternative C, most of the park's wilderness resources would be permanently protected — a major, long-term, beneficial impact. In most of the park there would be opportunities for visitors seeking solitude and primitive, unconfined recreation. Most of the park would appear relatively natural to visitors.

New developments could be built in 20% of the park's land area that would be nonwilderness areas under alternative C. As in alternative B, some of these areas already have developments and were found to be unsuitable for wilderness designation, possessing few or no wilderness characteristics. Thus, impacts from new developments and/or increased use levels in these areas would have no impact on wilderness resources. However, the majority of the nonwilderness area acreage would be on Sand, Long, and Basswood Islands, as well as some additional small areas on other islands. If new developments were built on these islands, and/or use levels increased substantially due to changes in technology, there would be a long term, adverse impact to wilderness resources. Visitors going to those islands would find fewer opportunities for solitude and primitive, unconfined recreation. The apparent naturalness of the islands could be adversely affected and some scenic views could be degraded or obstructed. Consequently, minor to moderate, long-term, adverse impacts could occur to opportunities for solitude, primitive, unconfined recreation, and apparent naturalness in the nonwilderness areas on three of the park's 21 islands.

Conclusion. Compared to alternative A, alternative C would have a major, long-term, beneficial impact. Most of the park's wilderness resources (80%) would be permanently protected. In the nonwilderness areas, there would be the potential for minor to moderate, long-term, adverse impacts, depending on the level of development and use levels that occur. These adverse impacts would be mostly limited to Basswood, Sand, and Long Islands.

ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Analysis. With 55% of the park's land base designated as wilderness in alternative D, over half the park's wilderness resources would be permanently protected — a long-term, moderate, beneficial impact. In much of the park there would be opportunities for visitors seeking opportunities for solitude and primitive, unconfined recreation. Much of the park would appear relatively natural to visitors.

New developments could be built in the 45% of the park's land base that would be nonwilderness areas under alternative D. As in alternatives B and C, some of these areas already have developments and were found to be unsuitable for wilderness designation, possessing few or no wilderness characteristics. Thus, impacts from new developments and/or increased use levels in these areas would have a negligible, long-term impact on wilderness resources. However, there would be the potential for a long-term, adverse impact on 12 islands: Basswood, Sand, Long, Oak, Otter, Rocky, South Twin, Devils, Manitou, Hermit, York, and Raspberry Islands. Many of these islands have good opportunities for solitude and primitive, unconfined recreation, particularly in areas away from beaches and shorelines. If new developments were built in these areas, such as campgrounds or visitor contact stations, or use levels were to substantially increase due to changes in technology, these opportunities would decline and the areas would appear less natural to visitors. Consequently, minor to major, long-term, adverse impacts could occur to wilderness resources on a number of islands.

Conclusion. With 55% of the park's land base designated as wilderness, alternative D would have a moderate, beneficial, long-term impact on wilderness resources. In much of the park, visitors would be able to find opportunities for solitude and primitive, unconfined recreation in a fairly "natural" setting. However, in a large portion of the park (mostly 12 islands) there would be the potential for minor to major, long-term, adverse impacts to wilderness resources, depending on the level of development and/or increase in use levels that occurs. Ultimately, it is the *certainty* that the park would resemble its present wild and primitive character that is most at risk in the areas excluded from wilderness under this alternative.

IMPACTS ON VISITOR NONWILDERNESS EXPERIENCES

Enjoying the park and its resources is a fundamental part of visitor experience. That experience is heightened when it progresses from enjoyment to an understanding of the reasons for a park's existence and the significance of its resources. Natural and cultural resources and park facilities provide opportunities provide opportunities for a variety of visitor experiences at Apostle Islands National Lakeshore. Many of these visitor experiences are not related to, nor dependent upon, wilderness resources (i.e., opportunities for solitude, opportunities for primitive and unconfined recreation, naturalness, and quiet). These types of visitor experiences might include, but are not limited to, such activities as camping, picnicking, swimming, socializing, and sunbathing. These activities might take place in a solitary, family, or group setting.

ALTERNATIVE A (NO WILDERNESS)

Analysis. Compared to the other alternatives, alternative A would provide managers with the most flexibility for expanding current visitor experience opportunities or creating new ones. For example, the demand for group camping and/or day use facilities has been slowly but steadily increasing in recent years. Alternative A would provide the most flexibility to substantially increase the number of group campsites or create new day use areas. This would have a moderate beneficial impact on groups visiting the park in the long term.

All alternatives would allow the National Park Service to continue providing for the existing range of recreational activities. But alternative A would allow the park staff to expand facilities and recreational opportunities to new areas. For instance, while all alternatives call for maintaining the existing docks on the islands, alternative A could allow the addition of new docks in currently undeveloped areas. Under alternative A, the present range of facilities (including picnic tables) would continue at individual campsites throughout the park. This alternative would also allow the maximum flexibility for a wider range of recreational activities and to consider adding paved trails and other accessible facilities in the islands, provided they were consistent with the general management plan in effect at the time. If new wayside exhibits and trails with interpretive signs were provided, visitors would have additional opportunities to learn about the park's stories and further understand the area's significance. This would provide a minor, long-term, beneficial impact for visitors seeking experiences not related to wilderness resources.

Conclusion. Alternative A would have a minor to moderate, long-term, beneficial impact on visitor experiences not related to wilderness resources. It would provide park managers with the highest degree of flexibility for expanding recreational facilities into new areas of the park.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Analysis. Alternative B would limit the construction or expansion of certain new recreational facilities, such as trails with interpretive signs, group campgrounds, picnic areas, and visitor

centers, to the 6% of the park's land area not recommended for wilderness designation. Limiting most future visitor developments to such a small area could increase crowding and have a moderate, adverse impact on visitor nonwilderness experiences.

Implementation of this alternative could result in visitors having fewer new opportunities to learn about the park from nonpersonal interpretive media such as wayside exhibits or self-guided interpretive trails. Thus, visitors could have fewer potential opportunities to gain an understanding of the park and its significance than they would have under alternative A, although this could be partially addressed through increased reliance on brochures and other printed materials that visitors could pick up at trailheads. It is expected that this would have a negligible to minor, adverse impact on visitors.

Alternative B would preclude adding public docks to islands in the wilderness area where they currently do not exist. Implementation of this alternative also would mean picnic tables from 23 individual campsites and from one group campsite would be removed, since NPS policy precludes picnic tables in wilderness. These sites were used by 5,570 campers in 2002. Removing the tables could inconvenience these campers, resulting in a minor, adverse impact.

Conclusion. Compared to alternative A, alternative B would result in fewer opportunities to add picnic sites or group campsites in new areas under this wilderness proposal, which could adversely affect some visitors. While most existing recreational facilities would remain (with the exception of picnic tables in certain campsites), the potential for substantial expansion of recreational or visitor use facilities would be limited under this alternative. Overall, compared to alternative A alternative B would have a long-term, moderate, adverse impact on visitor experiences not related to wilderness resources.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Analysis. Alternative C would limit the construction and expansion of some recreational and visitor use facilities to the 20% of the park's land area not recommended for wilderness designation. The expansion of group campsites and picnic areas would be easier under this alternative than under alternative B, since the excluded area is larger and includes areas that are currently in high demand. But restricting options for these future visitor developments could increase crowding in a few areas and have a minor, adverse impact on visitor nonwilderness experiences.

Although all of the Apostle Islands are rich in human history, some are richer than others. The areas excluded from wilderness in alternative C were excluded largely due to their human history. In terms of telling the stories of the islands' early years, this alternative would provide the National Park Service with maximum flexibility in the areas where it is most needed. Of all the alternatives, alternative C has the most visible "edge" between wilderness and nonwilderness on the islands, which would provide more opportunities for the National Park Service to educate visitors onsite on the role that wilderness plays in shaping the American cultural and physical landscape. This would have a minor, beneficial impact on some visitors' experience.

Implementation of alternative C would mean that visitors potentially would have fewer opportunities to learn about the park from certain nonpersonal interpretive media (e.g., wayside exhibits) in the areas proposed for wilderness compared to alternative A, although this could be partially addressed through increased reliance on brochures and other printed materials. Wayside exhibits and interpretive signs would be possible, however, on Basswood and Sand Islands, where there is considerable evidence of past human activity and many important interpretive themes could be highlighted. Thus, it is believed that alternative C would have a negligible, adverse impact on visitors relying on personal and nonpersonal interpretive services to help them understand the park and its significance.

Under alternative C picnic tables from 13 individual campsites and from one group campsite would be removed, since NPS policy precludes picnic tables in wilderness. These sites were used by 3,953 campers in 2002. Removing the tables could inconvenience some campers. There also would be fewer opportunities to add group campsites in new areas on the islands compared to alternative A. Consequently, a minor, adverse impact on visitors' nonwilderness experiences would be expected.

Conclusion. Under alternative C existing recreational facilities would remain (with the exception of picnic tables in certain campsites), and the potential for substantial expansion of recreational or visitor use facilities would be limited. Compared to alternative B, alternative C would have less impact on visitor nonwilderness experiences, because visitors seeking these experiences would be able to find them on more islands and possibly enjoy more services and facilities. These nonwilderness islands are places where the pressure for new facilities is high. Compared to alternative A, alternative C also could have a beneficial impact on some visitors' experience by providing more opportunities onsite for visitors to learn about the wilderness and nonwilderness stories of the Apostle Islands. Overall, alternative C would have a minor, long-term, adverse impact on visitor experiences not related to wilderness resources, compared to alternative A.

ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Analysis. Alternative D would limit the expansion of some recreational and visitor use facilities to the 45% of the park's land area not recommended for wilderness designation. As with alternatives B and C, potential new group campsites and/or day use areas for groups would be limited to these nonwilderness areas. With a much larger area excluded from wilderness, the potential for substantially expanding group campsites or picnic areas would be much higher in alternative D than in alternatives B and C (although potential opportunities would be lower than those afforded by alternative A). It is expected that the limits on new visitor facilities under alternative D would have a negligible adverse impact on visitor nonwilderness experiences.

Implementation of alternative D would mean that visitors would have potentially fewer opportunities to learn about the park from certain nonpersonal interpretive media (i.e., wayside exhibits) in the areas proposed for wilderness,

although this could be partially addressed through increased reliance on brochures and other printed materials. But as with alternative C, wayside exhibits and interpretive signs would be possible on Basswood and Sand Islands since they would be in nonwilderness areas. Most of the islands included in alternative D are expected to continue to be lightly visited, so it is believed that the adverse impacts on visitors who rely on personal and nonpersonal interpretive services to help them understand the park and its significance would be negligible.

Compared to alternative A, alternative D would provide more "edge" between wilderness and nonwilderness on the islands, which would provide more opportunities for the National Park Service to educate visitors on the role that wilderness plays in shaping American culture. This would have a minor beneficial impact on some visitors' experience.

Under alternative D picnic tables from five individual campsites would be removed, since NPS policy precludes picnic tables in wilderness. These campsites were used by 852 campers in 2002. Removing the tables could inconvenience some campers, resulting in a negligible adverse impact.

Conclusion. Under alternative D most existing recreational facilities would remain (with the exception of picnic tables in certain campsites), and the potential for substantial expansion of recreational or visitor use facilities would be limited in 55% of the park's land base. Although the flexibility of park managers to add additional recreational or visitor use facilities to new areas would be lower under alternative D compared to alternative A, the pressure to add new facilities on the islands in the alternative D wilderness proposal is expected to be very low. Alternative D also could have a beneficial impact on some visitors' experience by providing more opportunities for visitors to learn onsite about the wilderness and nonwilderness stories of the Apostle Islands. Overall, compared to alternative A it is expected that alternative D would have a negligible, long-term, adverse impact on visitor experiences not related to wilderness resources.

IMPACTS ON PARK OPERATIONS

Without exception, the National Park Service can accomplish its core mission in areas of designated wilderness. What changes in designated wilderness areas is *how* the mission gets accomplished. What follows is an analysis of the impacts to the park's major functions — interpretation and education, natural and cultural resource management, visitor and resource protection, and facility management — that would result from the four alternatives.

ALTERNATIVE A (NO WILDERNESS)

Analysis. Under alternative A new trails with interpretive signs, wayside exhibits, and other permanent developments could be built throughout the park. Depending on the type and number of facilities, additional demands could be placed on the time and energy of the park's existing interpretive staff to operate and maintain these facilities, if additional staff were not hired. Even if volunteers were to run the facilities, park staff would still need to supervise these volunteers as well as run existing interpretive and educational efforts. Additional operational costs related to planning and design of these facilities also could be incurred. The effect on interpretive operations could range from minor to major, adverse impacts, depending on the type and number of facilities constructed.

The park staff's ability to respond to emergencies from additional fully-equipped, island-based locations could be enhanced under alternative A, although the need for such facilities is currently fairly low. This would be a negligible, beneficial impact. Should future planning documents recommend any new developments, there would be increased costs associated with their planning, design, construction, and maintenance, and there may be an increased need for additional resource monitoring. This could have a minor to moderate, adverse impact.

The park's natural and cultural resource management staffs would have maximum flexibility in how their work is performed in this alternative, although an increase in the level of development in the park could substantially increase their workloads. As a result, a minor to moderate, beneficial impact on resource management operations would be anticipated to occur.

Likewise, facility management staff could choose from a full range of options in performing their work. For instance, in trail-clearing operations, the use of chainsaws and motorized vehicles would be possible, although park managers may choose different options. The construction and repair of park facilities that lie in areas currently being managed as *de facto* wilderness could be performed with fewer constraints under alternative A. Consequently, a minor to moderate, beneficial impact on facility management operations would be expected.

Current planning documents call for little or no expansion to the park's present level of development. This could change if alternative A were implemented, however. The resulting increase in management flexibility could result in an increase in the quantity and complexity of park facilities. This would increase facility management workloads and

could have moderate to major adverse impacts on the park's facility management operations, depending on the number and type of new developments, and whether or not new staff and funds would be available.

Conclusion. Alternative A would have beneficial impacts in that it would offer park staff the highest degree of flexibility for carrying out its various programs and operations. On the other hand, potential increased levels of development could have adverse impacts on the park's operations, primarily due to increased costs. Thus, alternative A could have both minor to moderate, long-term, beneficial impacts and minor to major, long-term, adverse impacts, depending on the number and type of developments that were built and changes in staffing and funding.

ALTERNATIVE B (MAXIMIZE WILDERNESS)

Analysis. In many ways, the impacts of alternative B on park operations would be the opposite of those in alternative A.

Under alternative B, even if future budgets allowed, there would be fewer new places for nonpersonal interpretive media, such as wayside exhibits and trails with interpretive signs, and fewer new places to hold formal park programs in the undeveloped portions of the islands compared to alternative A. Foregoing these potential developments could reduce the extent of the park staff's future personal and nonpersonal interpretive services, which could result in minor, long-term adverse impacts on the park's interpretive operations. On the other hand, alternative B would likely result in lower operational costs than alternative A due to a smaller interpretive infrastructure that would be largely confined to a few places in the park.

Under alternative B, the park's visitor and resource protection staff would have fewer opportunities to add new island-based facilities for the storage of equipment or for basing operations. Although this could decrease efficiency and increase the cost of operations in the short term, in the long term it is likely to make park operations less expensive, since there would be less infrastructure to plan, design, construct, and repair. There also would not be an increased need for additional resource monitoring associated with additional infrastructure. Consequently, a minor to moderate beneficial impact on resource management operations would be expected to occur.

Alternative B would offer the natural and cultural resource management staffs the least amount of flexibility in how their work is performed. But the minimized level of development that would occur in the park as a result of alternative B would also reduce some aspects of their workloads, such as compliance-related activities and some resource monitoring. This would result in a minor to moderate, beneficial impact.

Likewise, facility management staff would have fewer options in performing their work. In trail-clearing operations, for instance, the use of chainsaws and motorized vehicles would be possible only if it could be demonstrated that they are the minimum requirement for getting the work done. The potential for construction of park facilities that lie in areas proposed as wilderness would be sharply reduced, compared to alternative A, and the repair of existing facilities

(mostly cultural resources) would have to conform to NPS wilderness management principles as well as other NPS policies. Some additional staff time and effort would be needed to ensure that the proposed actions meet these policies. It is expected that this would result in a minor to moderate, adverse impact.

Of all the alternatives, alternative B would have the least likelihood that the park's present level of development would increase in the vast majority of the islands. Operational costs for some individual facility management activities could increase under this alternative, compared to alternative A, since there are generally fewer work methods to choose from in wilderness areas due to restrictions in the use of mechanized equipment. For example, trail crews equipped with traditional hand tools would not be able to work as efficiently as trail crews equipped with chainsaws. But overall costs associated with facility management could be lower, compared to alternative A, because there would be fewer areas where new infrastructure would be built in alternative B — costs would be lower if the amount of new infrastructure in the park was limited to a few already developed areas. Thus, there could be minor to moderate, adverse, and beneficial impacts associated with alternative B relative to facility management costs.

Conclusion. Alternative B would result in a mix of adverse and beneficial impacts. Management flexibility would be reduced in this alternative, resulting in fewer options, and in some cases, possible increased costs. Overall, however, it is believed that the park's operational costs would be lowest under this alternative, due to the likelihood of little or no new development in most (94%) of the park's land base. Thus, compared to alternative A, alternative B could have a minor to moderate, long-term, beneficial impact on park operations, due to new developments mostly being confined to a few areas, and a minor to moderate, long-term, adverse impact due to decreased management flexibility and possible increased costs in managing the few facilities that are in the wilderness area.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Analysis. Under alternative C there would be fewer new places where nonpersonal interpretive media, such as wayside exhibits and trails with interpretive signs, could be provided compared to alternative A. There also would be fewer new places to hold formal park programs. Foregoing these potential developments could reduce the extent of the park staff's future personal and nonpersonal interpretive services, and thus could have a minor, long-term, adverse impact on the park's interpretive operations. On the other hand, alternative C would be expected to have lower operational costs than alternative A due to the likelihood of a smaller interpretive infrastructure that is confined largely to existing developed areas.

The park's visitor and resource protection staff would have fewer opportunities to add new island-based facilities for the storage of equipment or for basing operations in the areas proposed as wilderness. The areas that are currently thought to need such facilities the most would be excluded from wilderness under alternative C, however. Thus overall, the adverse impacts to visitor and resource

protection operations would be negligible to minor at most.

Alternative C would provide the park's natural and cultural resource management staffs with considerably less flexibility in how their work is performed, compared to alternative A, although considerably more flexibility than under alternative B. The exclusion of the cultural resource-dense areas of Basswood and Sand Islands would enhance the National Park Service's ability to preserve or restore the cultural resources themselves, rather than just preserving their stories. Overall, the park would remain very lightly developed. This would help ensure that some aspects of the workloads for resource management staffs, such as compliance-related activities and some resource monitoring, would not substantially increase. Consequently, a minor to moderate, beneficial impact would be expected on these operations.

Alternative C would likely have a minor, adverse impact on facility management. Facility management staff would have fewer options in performing their work compared to alternative A, although the area in which the full range of options is available would be considerably larger than in alternative B. Except in non-wilderness areas, trail-clearing operations would not routinely use chainsaws and motorized vehicles, unless it could be demonstrated that they were the minimum requirement for getting the work done. The potential for construction of park facilities that lie in areas proposed as wilderness would be sharply reduced, and the repair of existing facilities in those areas (mostly cultural resources) would have to conform to NPS wilderness management principles as well as other NPS policies. Some additional staff time and effort may be needed to ensure that the proposed actions meet these policies. However, alternative C would keep 20% of the park's land base as nonwilderness areas, so the adverse impacts associated with alternative B would be moderated.

Compared to alternative A, alternative C would have a sharply reduced likelihood that the park's present level of development would increase on most of the islands. Operational costs for some individual facility management activities could increase under this alternative, since there are generally fewer work methods to choose from in wilderness areas due to restrictions in the use of mechanized equipment. But alternative C would reduce the number of work areas where these cost increases would take place by excluding certain areas from wilderness. For example, many of the agricultural openings and quarries that the park staff desires to occasionally clear would be excluded in alternative C. This would enable the National Park Service to use the most efficient means available to maintain the clearings. In this way, many of alternative B's adverse impacts to the park's facility management operations would be moderated, resulting in a minor, adverse impact on operational costs.

Conclusion. To varying degrees, many of the beneficial effects of alternatives A or B would be true in alternative C as well, and many of the adverse impacts associated with those alternatives would be moderated in alternative C. Although alternative C would allow for new development in the nonwilderness areas, there would be only a limited number of new areas on a few islands where development could occur. This would give the park staff flexibility in the areas where the need is highest, and would help to ensure that the level of

development doesn't further overwhelm the capability of the park's staff to maintain it. Overall, compared to alternative A, alternative C would have a minor to moderate, long-term, beneficial impact on park operations due to ensuring that there would be fewer places where new developments could occur, and a minor, long-term, adverse impact due to decreased management flexibility (primarily on Basswood and Sand Islands) and possible increased costs in managing the wilderness area.

ALTERNATIVE D (LIMIT WILDERNESS TO REMOTE AREAS)

Analysis. Like alternatives B and C, alternative D would have fewer new places for nonpersonal interpretive media, such as wayside exhibits and trails with interpretive signs, and fewer new places to hold formal park programs compared to alternative A. Foregoing these potential new developments could reduce the extent of the park staff's future personal and nonpersonal interpretive services, and thus could have a minor, long-term adverse impact on the park's interpretive operations. But alternative D also would be expected to have lower operational costs than alternative A due to the likelihood of a smaller interpretive infrastructure.

The park's visitor and resource protection staff would have fewer opportunities to add new island-based facilities for the storage of equipment or for basing operations in the areas proposed as wilderness. The areas that are currently thought to most need such facilities would be excluded from wilderness under alternative D, however. Thus, the adverse impacts to visitor protection operations would be negligible to minor at most.

Alternative D would provide the park's natural and cultural resource management staffs with considerably less flexibility in how their work is performed, compared to alternative A, although there would be considerably more flexibility than in alternatives B or C. The exclusion of the cultural resource-dense areas of Basswood and Sand Islands would enhance the National Park Service's ability to preserve or restore the cultural resources themselves, rather than just preserving their stories. Overall, the park would remain very lightly developed. This would help ensure that some aspects of the workloads for resource management staffs, such as compliance-related activities and some resource monitoring, would not substantially increase. Consequently, a minor to moderate, beneficial impact would be expected on these operations.

Alternative D would likely have a minor, adverse impact on facility management. Facility management staff would have fewer options in performing their work, compared to alternative A, although the area in which the full range of options were available would be considerably larger than in alternatives B or C. Except in nonwilderness areas, trail clearing operations would not routinely utilize chainsaws and motorized vehicles, unless it could be demonstrated that they are the minimum requirement for getting the work done. The potential for construction of park facilities that lie in areas proposed as wilderness would be sharply reduced compared to alternative A, and the repair of existing facilities in those areas (mostly cultural resources) would have to conform to NPS wilderness management principles as

well as other NPS policies. Compared to alternative A, some additional staff time and effort would be needed to ensure that the proposed actions meet these policies. However, alternative D would keep 45% of the park's land base as nonwilderness so the adverse impacts associated with alternative B would be considerably moderated.

Compared to alternative A, alternative D would have a reduced likelihood that the park's present level of development would increase beyond most of the existing developed areas, although it could increase on several individual islands. Operational costs for some routine facility management activities could increase under this alternative, since there would be generally fewer work methods to choose from in wilderness areas due to restrictions in the use of mechanized equipment. But alternative D would reduce the number of work areas where these cost increases would take place by excluding many areas from wilderness. In addition to excluding the agricultural openings and quarries discussed in alternative C, alternative D also would exclude a quarry on Hermit Island and logging camps on Oak Island. This would enable the National Park Service to utilize the most efficient means available to maintain these resources, should the agency choose to actively maintain them in the future. Overall costs of park operations could increase in the long term due to the increased likelihood of new developments in the nonwilderness areas, however, resulting in a minor, adverse impact on operational costs.

Conclusion. Like alternative C, many of the beneficial or adverse impacts associated with alternatives A and B would be moderated in alternative D. Flexibility to add new developments or to perform work in the most efficient manner would be higher in this alternative than in any other except alternative A. But if new developments were to be built in the nonwilderness areas (45% of the park's land area), the increased amount of maintenance and resource monitoring that would be needed could make the park staff's job more difficult. Overall, compared to alternative A, alternative D would have minor, long-term, beneficial impacts on park operations, due to ensuring that there would be fewer places where new developments could occur, and a minor, long-term, adverse impact due to decreased management flexibility and possible increased costs in managing the wilderness area.

OTHER REQUIRED IMPACT TOPICS

UNAVOIDABLE ADVERSE IMPACTS

Unavoidable adverse impacts are defined as impacts that cannot be fully mitigated or avoided. For all of the park under alternative A, and for those areas not included in the wilderness proposals in alternatives B, C and D, there would be the potential for some unavoidable adverse impacts to natural and cultural resources and wilderness resources (solitude, naturalness), depending on the number and type of new developments that could be built in undeveloped areas and increases in use levels. These impacts could include in localized areas: changes to coastal processes, losses of soil and vegetation, loss of archeological resources and changes in cultural landscapes, loss of opportunities for solitude and primitive unconfined recreation, a decline in apparent naturalness, and also a loss of the ability to add new picnic areas and group campsites in certain locations. In wilderness areas the removal of picnic tables would be an unavoidable adverse impact for some visitors. Another unavoidable impact in wilderness areas could be a decrease in management flexibility and an increase in costs for some park operations. The potential for unavoidable adverse resource impacts would be highest in alternative A, because more areas potentially could be subject to future development, and lowest in alternative B, because future developments would be largely confined to very small areas. Alternatives C and D would have lower potentials for unavoidable adverse impacts than alternative A, but higher than alternative B, due to the size of the nonwilderness areas where new developments potentially could occur.

Wilderness designation in alternatives B, C, and D would result in no unavoidable adverse impacts to natural or cultural resources in the wilderness area. However, the removal of picnic tables from the wilderness area in the three alternatives could be an unavoidable adverse impact to some visitors' experience.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

No actions would be taken as a result of any of the alternatives that would result in the consumption of nonrenewable natural resources or in the use of renewable resources that would preclude other uses for a period of time. Thus, there would be no irreversible or irretrievable commitments of resources in the park by the National Park Service.

RELATIONSHIP BETWEEN SHORT-TERM USES AND MAINTENANCE AND ENHANCEMENT OF 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. 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 recreational 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.

Under alternative A, there would be the potential for a reduction in long-term biological productivity in localized areas if new developments were built on the islands or mainland unit.

Compared to alternative A, wilderness designation under alternatives B, C, and D would help further ensure the long-term productivity of the areas proposed for wilderness. With the largest wilderness proposal, alternative B would provide the highest potential for ensuring long-term productivity, while alternative D, with the smallest proposal, would have the lowest potential (but higher than alternative A).

By minimizing future developments and other uses that can occur on the islands, the long-term biological productivity of the islands would be maintained in the three action alternatives. On the other hand, for those areas that are not included in the wilderness proposals in alternatives B, C, and D, there would remain the potential for future developments that could reduce or eliminate long-term biological productivity in localized areas. Alternative B would have the lowest potential for such a reduction, while alternative D would have the highest potential (albeit still lower than alternative A).

CONSULTATION AND COORDINATION

SUMMARY OF PUBLIC INVOLVEMENT

The National Park Service has sought the public's views on wilderness throughout the wilderness study process. The input was used to help identify the issues to be addressed in the environmental impact statement, and to identify and help shape the alternatives.

A "notice of intent" to prepare a wilderness suitability study and environmental impact statement for Apostle Islands National Lakeshore was published in the *Federal Register* (volume 66, number 198, pages 52151-52152) on October 12, 2001. The National Park Service held meetings, and issued press releases and Internet messages on the park's web site to provide opportunities for the public, agencies, and organizations to identify issues and concerns for the study (see below).

A total of 4,512 separate written comments were received through the mail, FAX, and the Internet between July 2001 (when the National Park Service held a public meeting on the study in Bayfield) and February 1, 2002, when the scoping comment period closed.[1] Two petitions also were also received, with a total of 895 names.

WRITTEN COMMUNICATIONS AND THE INTERNET

A variety of techniques were used to keep the public informed about the wilderness study and to solicit input. During the study process a mailing list of over 4,200 names was compiled. The list included officials from other state and federal governmental agencies, federal and state legislators, Indian tribal governments, local and regional governments, businesses, organizations, and interested citizens. A post card was mailed in the spring of 2002 asking people if they wanted hard copies of the study documents and encouraging use of the Internet to access the documents. The public mailing list was subsequently pared down to about 300.

Press releases were issued at key points during the study, including the initiation of the study (May 8, 2001), the announcement of the Bayfield scoping open house (July 17, 2001), an extension of the scoping comment period (November 20, 2001), another extension of the scoping period (January 9, 2002), and an announcement that the preliminary alternatives were ready for public input and a schedule of open houses (June 18, 2002).

The Internet was used extensively to publicize the study, inform people about the study and meetings, and provide a means for people to provide input.

The park's Internet web site (**http://www.nps.gov/apis/study.htm**) included all publications, messages on the status of the study, a timeline, a "frequently asked questions" section, and contacts for additional information.

1. Officially, the scoping comment period did not begin until the "notice of intent " was published in the *Federal Register* on October 12, 2001, but was extended to January 15, 2002, and then again to February 1, to provide the public with additional time to provide input to the NPS study team.

A newsletter was sent to the public in November 2001. This newsletter was an update on the study and was published shortly after the *Federal Register* notice of intent was published. It summarized comments that had been received to date, noted key issues and concerns, announced that the comment period had been extended, encouraged people to provide comments on the study, and provided a schedule for the project.

An alternatives workbook was published in May 2002 and also placed on the park's web site. The workbook summarized the purpose of the study and the scoping comments, provided responses to several concerns raised by the public during the scoping period, noted areas that the study had determined were not suitable for wilderness, and identified six preliminary alternatives. A schedule for the study and a comment response form were also included in the workbook. Approximately 1,000 copies of the alternatives workbook were printed and distributed to the mailing list and handed out at various meetings. In addition, the workbook was downloaded from the study web site nearly 3,000 times during the comment period. Between June 20 and August 1, 2002, when the comment period closed, a total of 1,784 written comments were received via response forms, letters, e-mails, and faxes.

PUBLIC, AGENCY, AND ORGANIZATIONAL MEETINGS

The study team held many meetings during the course of the study. At the beginning of the study (2001), park staff met with a variety of local, state, and tribal agencies and governments to identify issues and concerns for the study, including the State of Wisconsin Historic Preservation Office (July 31, 2001), Bad River and Red Cliff Bands of Lake Superior Chippewa (June 21 and June 29, 2001), Voigt Intertribal Task Force of the Great Lakes Indian Fish and Wildlife Commission (September 6, 2001), United States Fish and Wildlife Service (December 18, 2001), United States Geological Survey (December 18, 2001), Wisconsin Department of Natural Resources (September 13, 2001), Bayfield County Board of Supervisors (June 26, 2001), Mayor of Ashland (June 28, 2001), Bayfield City Council (July 18, 2001), Chair of the Town of La Pointe (July 23, 2001), Town of Russell Board of Supervisors (August 14, 2001), and the Ashland Chamber of Commerce (June 28, 2001).

On July 25, 2001, a public open house was held in Bayfield, Wisconsin, to identify the public's issues and concerns regarding designating wilderness in the Apostle Islands National Lakeshore. A total of 78 people attended.

After the preliminary alternatives workbook was distributed, the study team held more meetings with the public, governments, agencies, and organizations. On May 16, 2002, letters of invitation were sent to the following governments, agencies, and organizations inviting them to meet with study team members during the 2002 alternatives workbook comment period:

- Ashland County Board of Supervisors
- Bayfield County Board of Supervisors
- Red Cliff Band of Lake Superior Chippewa Indians
- Bad River Band of Lake Superior Tribe of Chippewa Indians
- Bay Mills, Bois Forte, Fond du Lac, Grand Portage, Keweenaw Bay, Lac Courte Oreilles, Lac du Flambeau, Lac Vieux Desert, Mille

Lacs, Mole Lake, and St. Croix Bands of Chippewa Indians
- Great Lakes Indian Fish and Wildlife Commission
- Cities of Ashland, Bayfield, and Washburn
- Towns of Bayfield, La Pointe, Russell, and Sanborn
- Chambers of Commerce of Ashland, Bayfield, and Washburn
- State of Wisconsin
- United States and state of Wisconsin senators and representatives

Invitations to meet were also extended to the Wisconsin State Historic Preservation Office, the Wisconsin Department of Natural Resources, and the U.S. Fish and Wildlife Service. Informal invitations were extended to numerous civic organizations, boating organizations, and user groups during the course of the comment period.

Park staff met with all entities that responded to the invitation, including the Lac du Flambeau, Lac Vieux Desert, Red Cliff, and Bad River Bands of Chippewa Indians (June 10, June 14, June 18, and July 3, 2002, respectively), Voigt Intertribal Task Force of the Great Lakes Indian Fish and Wildlife Commission (June 6, 2002), Ashland County Board of Supervisors (July 24, 2002), Bayfield City Council (June 12, 2002), Bayfield Chamber of Commerce (June 19, 2002), Town of Russell Board of Supervisors (July 22, 2002), Town of Bayfield Board of Supervisors (July 15, 2002), staff at local marinas (June 20, 2002), Bayfield Yacht Club (July 27, 2002), Duluth Power Squadron (September 19, 2002), and the Pikes Creek Keel Club (October 5, 2002). In addition, park staff met with the Wisconsin state preservation office on December 9, 2002.

The study team held five public open houses during the summer of 2002 to seek public views, concerns, and issues regarding the preliminary alternatives. The open houses were held July 5 at the Stockton/Presque Isle Visitor Center in Apostle Islands National Lakeshore, July 8 at Odanah, Wisconsin, July 9 at Bayfield, Wisconsin, July 10 at Red Cliff, Wisconsin, and July 11 at Saint Paul, Minnesota. About 175 people attended the five meetings.

CONSULTATIONS WITH NATIVE AMERICAN TRIBES

As noted above, several meetings were held with different bands of Chippewa Indians and the Voigt Intertribal Task Force of the Great Lakes Indian Fish and Wildlife Commission during the study. At every meeting with tribal officials, there was discussion related to the hunting, fishing, and gathering rights guaranteed to them by the Treaty of 1842. Park staff assured tribal leaders that those rights would continue to be honored regardless of whether wilderness was designated or not. Both the Red Cliff and Bad River Bands endorsed the concept of wilderness designation, provided their treaty rights are unaffected. In that regard, both Bands recommended that guarantees of those rights be specifically inserted into any legislation that might be drafted for wilderness designation. The Bad River Band also expressed concern over Long Island being within designated wilderness.

CONSULTATION WITH THE WISCONSIN STATE HISTORICAL PRESERVATION OFFICE (SHPO)

Members of the study team met twice with compliance staff in the Wisconsin State Historical Preservation Office. The SHPO staff acknowledged that wilderness is very

protective of archeological resources due to the low likelihood of ground disturbance, but also expressed concern that wilderness designation may make it more difficult to perform archeological surveys in the future. The SHPO staff were also concerned that management's flexibility to choose certain treatment options (such as restoration or reconstruction) would be limited in designated wilderness. They believe this may result in an increased likelihood that certain cultural resources would be left to molder in the field.

CONSULTATIONS WITH THE U.S. FISH AND WILDLIFE SERVICE (USFWS)

The study team initiated informal consultation with the Endangered Species Field Office of the U.S. Fish and Wildlife Service in Green Bay, Wisconsin, in June 2001. The Fish and Wildlife Service has indicated that due to the nature of wilderness, the threatened or endangered species known to exist in the park will not be affected (see appendix B).

COASTAL ZONE CONSISTENCY DETERMINATION

Federal agency activities in or affecting Wisconsin's coastal zone must comply with §307 of the Coastal Zone Management Act and implementing regulations, which require that such federal activities be conducted in a manner consistent to the maximum extent practicable with Wisconsin's Coastal Management Program.

Although all of Apostle Islands National Lakeshore is federal land and excluded from Wisconsin's coastal zone, the park is geographically within the coastal zone. The National Park Service has determined that the preferred alternative described in this document is consistent with Wisconsin's Coastal Management Program, including the state's goals and policies for this area.

This draft wilderness study/EIS provides the substantive basis for the National Park Service's consistency determination and it has submitted this document to the Wisconsin Coastal Management Council for its concurrence. This consistency determination and the Council's concurrence complies with the requirements of the Coastal Zone Management Act If the state of Wisconsin concurs with the National Park Service's consistency determination, it will transmit its formal concurrence and that letter will be published in the final wilderness study / environmental impact statement.

PUBLIC OFFICIALS, AGENCIES, AND ORGANIZATIONS TO WHOM COPIES OF THE DRAFT STUDY WERE SENT

The National Park Service is circulating the *Draft Wilderness Study/Environmental Impact Study* to the agencies and organizations listed below. A limited number of copies of the wilderness study are available upon request by interested individuals. Copies of the document are also available for review at the park, on the Internet (**http://www.nps.gov/apis/wstudy.htm**) and at libraries.

CONGRESSIONAL DELEGATION

Representative David Obey
Senator Russell Feingold
Senator Herb Kohl

STATE AND LOCAL ELECTED OFFICIALS

Representative Gary Sherman
Senator Bob Jauch

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Army Corps of Engineers
Great Lakes Commission
Natural Resource Conservation Service
Northern Great Lakes Visitor Center
U.S. Department of Agriculture, Forest Service
- Chequamegon-Nicolet National Forests

U.S. Department of the Interior
- Bureau of Indian Affairs
- National Park Service
  - Grand Portage National Monument
  - Ice Age and North Country National Scenic Trails
  - Keweena Historical Park
  - Indiana Dunes National Lakeshore
  - Isle Royale National Park
  - Midwest Archaeological Center
  - Pictured Rocks National Lakeshore
  - Saint Croix National Scenic Riverway
  - Sleeping Bear Dunes National Lakeshore
  - Voyageurs National Park

U.S. Fish and Wildlife Service, Endangered Species Field Office, Green Bay
U.S. Coast Guard
U.S. Environmental Protection Agency, Region 5

NATIVE AMERICAN TRIBES AND AGENCIES

Chippewa Indian Bands
- Lac du Flambeau
- Lac Vieux Desert
- Lac Courte Oreilles
- Red Cliff
- Bad River
- Bay Mills
- Bois Forte
- Fond du Lac
- Grand Portage
- Keweenaw Bay
- Mille Lacs
- Mole Lake
- St. Croix

Voigt Intertribal Task Force of the Great Lakes Indian Fish and Wildlife Commission

STATE OF WISCONSIN AGENCIES

Department of Natural Resources
Department of Tourism
Northwest Regional Planning Commission
Office of the Governor
State Historical Preservation Office
State Historical Society

Wisconsin Coastal Management Program

LOCAL AND REGIONAL GOVERNMENT AGENCIES

Ashland County Board of Supervisors
Bayfield County Board of Supervisors
Bayfield County Forest
City of Ashland
City of Bayfield
City of Washburn
Town of Bayfield
Town of Bell
Town of LaPointe
Town of Russell
Town of Sanborn

ORGANIZATIONS AND BUSINESSES

Adventures in Perspective
Alliance for Sustainability
Animaashi Sailing Company
Apostle Islands Cruise Service
Apostle Islands Marina
Ashland Chamber of Commerce
Ashland Marina
Association of Wisconsin Snowmobile Clubs
Bayfield Chamber of Commerce
Bayfield Hertiage Association
Bayfield Yacht Club
Bruce River Canoe Rental
Camp Amnicon
Camp Manio-wish
Camp Voyageur
Catchun-Sun Charter Co.
Chequamegon Adventure Company
Chequamegon Audubon Society
Duluth Power Squadron
Friends/Boundary Waters Wilderness
Glacier Valley Wilderness Adventures
Great Lakes Cruising Club
Great Lakes Sport Fishing Council
Madeline Island Chamber of Commerce
National Audubon Society
National Park Foundation
National Parks Conservation Association
National Trust for Historic Preservation
National Wildlife Federation
Northland College
NW Passage Outing Club, Inc.
Pikes Bay Marina
Pikes Creek Keel Club
Port Superior Marina
Red Cliff Marina
Roberta's Charters
Sailboats, Inc.
Schooner Bay Marina
Sierra Club
    Midwest Office
    John Muir Chapter
Siskiwit Bay Marina
Superior Charters, Inc.
Superior Sailor
The Nature Conservancy
Trek and Trail
University of Minnesota
Voyageur Outward Bound School
Washburn Chamber of Commerce
Washburn Marina
Wilderness Inquiry
Wilderness Society

LIBRARIES

Ashland Public Library
Duluth Public Library
University of Minnesota, Forestry Library
University of Wisconsin, Madison
    (Steenbock Library)
Washburn Public Library

MEDIA

County Journal
The Daily Press
Duluth News-Tribune
Ironwood Daily Globe
The Journal
The Journal Times
KADL Radio
KBJR TV Duluth
KDLH TV Duluth

Lake Superior Magazine
Madison Capitol Times
Milwaukee Journal Sentinel
Minneapolis Star Tribune
The Outdoor Network
St. Paul Pioneer Press
Superior Evening Telegram
WATW (AM 1400)
WDIO TV, Duluth
WDSE TV, Duluth
WEGZ Eagle 106
Wisconsin Public Radio

APPENDIXES / BIBLIOGRAPHY / PREPARERS / GLOSSARY / INDEX

APPENDIX A: WILDERNESS SUITABILITY ASSESSMENT MEMORANDUM

APPENDIX B: LETTER OF CONSULTATION

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GLOSSARY

Barrier spit – Elongate sand ridges that extend generally parallel to the coast.

Cultural landscape – A geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or esthetic values. There are four nonmutually exclusive types of cultural landscapes: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Cuspate forelands – A type of sand spit that is wider than it is long.

***De facto* wilderness** – An area that is managed as if it were wilderness, but which has not been officially designated and included in the national wilderness preservation system. Under *NPS Management Policies*, the National Park Service manages lands that have found to be suitable for wilderness, but have not yet studied or actions have not been taken on a wilderness proposal or recommendation, as *de facto* wilderness.

Environmental impact statement – As required by the National Environmental Policy Act (NEPA), a detailed document that is prepared when a proposed action or alternatives have the potential for significant impact on the human environment.

Environmentally preferred alternative – Of the action alternatives analyzed, the one that would best promote the policies in §101 of the National Environmental Policy Act.

Ethnographic resource – Objects and places, including sites, structures, landscapes, and natural resources, with traditional cultural meaning and value to associated peoples. Research and consultation with associated people identifies and explains the places and things they find culturally meaningful. Ethnographic resources eligible for the National Register of Historic Places are called traditional cultural properties.

General management plan (GMP) – A plan that clearly defines direction for resource preservation and visitor use in a park, and serves as the basic foundation for decision making.

Impairment – An impact so severe that, in the professional judgment of a responsible NPS manager, it would harm the integrity of park resources or values and violate the 1916 NPS Organic Act.

Interpretive media – This term is basically the same as nonpersonal interpretive services. Examples of these media include: includes park brochures and other publiccations, museum and visitor center exhibits, wayside exhibits, web pages, audiovisual programs, and radio information systems.

Life estate – Structures and land leased back to the original owner for the lifetime of that owner. The park's enabling legislation authorized the government to offer life estates to the prior owners at the time their land was acquired.

Lightscape – The state of natural resources and values as they exist in the absence of human-caused light. This is usually associated with natural darkness and night skies.

Minimum requirement concept – A two-step process that documents 1) the determination as to whether or not a proposed management action is appropriate or necessary for the administration of the area as wilderness, and does not pose a significant impact to the wilderness resources and character; and 2) the selection of the management method (tool) that causes the least amount of impact to the physical resources and experiential qualities (character) of wilderness.

Nonpersonal interpretive services – Non-personal interpretive services are those that do not require the presence of staff. Examples of these services include wayside exhibits, visitor center exhibits, radio information systems, and computer technologies.

Nonwilderness area – An area that does not meet wilderness suitability criteria, or other lands that may satisfy the criteria but for other reasons are not included in a wilderness proposal. These areas may vary between alternatives in a wilderness study / environmental impact statement.

Ordinary high water mark – In the case of Lake Superior, the highest level reached by the lake's water. Typically, this corresponds to a surface elevation of about 602 feet in the Apostle Islands, and often corresponds to stable vegetation lines adjacent to beaches.

Personal interpretive services – Personal interpretive services are those in which staff interact with visitors. Examples of these services include ranger talks, staffed visitor centers, and other ranger-conducted activities.

Potential wilderness – Lands that possess wilderness characteristics that would normally qualify them for designation with the national wilderness preservation system but contain temporary non-conforming conditions (such as structures or roads) or uses (such as inholdings or valid mining claims) that prevent their being immediately designated as wilderness. Potential wilderness may be identified in NPS wilderness proposals, wilderness recommendations, and within legislation designating other portions of a park as wilderness.

Proposed wilderness – A suitable wilderness area that has been studied by the National Park Service and has been submitted as a proposal to the director but has not been approved by the Department of the Interior.

Recommended wilderness – A suitable wilderness area that has been studied and proposed by the National Park Service, recommended for wilderness by the Secretary of the Interior to the President, and then transmitted by the President to Congress. Once approved by the Secretary, the area can be considered recommended wilderness for management purposes.

Record of Decision – A document that is prepared to substantiate a decision based on an environmental impact statement.

Sandscape – A landscape that is dominated by sand. In the Apostle Islands that are various sandscapes, including sandspits, cuspate forelands, tombolos, numerous beaches, and a barrier spit.

Scoping – The process followed in preparing a National Environmental Policy Act (NEPA) document for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed

action. Internal scoping is when NPS staff decides what needs to be analyzed in a NEPA document. External scoping is early public involvement in a NEPA process, intended to identify what issues and concerns the public has regarding a proposed action.

Soundscape – The natural soundscape is the aggregate of all the natural sounds that occur in an area, together with the physical capacity for transmitting natural sounds. Natural soundscapes exist in the absence of human-caused sound.

Suitable wilderness – An area that posses the qualities and character, as identified within the Wilderness Act, which would qualify it for designation within the national wilderness preservation system. An area where, based upon a wilderness suitability assessment, the NPS Director has approved the determination of suitability for wilderness designation.

Tombolo – A sand feature that joins either two islands or an island to the mainland.

Use and occupancy agreement – Structures and land leased back to the original owner for a finite period of time. The park's enabling legislation authorized the government to offer use and occupancy agreements to the prior owners at the time their land was acquired.

Visitor nonwilderness experiences – The experiences a visitor has in those parts of the park that are not included in a wilderness proposal. This includes interactions with natural and cultural resources, park staff, and park facilities (e.g., campgrounds, trails) that visitors use. Examples of activities that generate these visitor experiences include using a visitor center or wayside exhibit, walking on a self-guided interpretive trail, socializing at a picnic area or group campsite, or watching a ranger presentation at an amphitheater.

Wilderness suitability assessment – A brief memorandum, from a regional director to the Director, that makes a management determination as to the suitability of a park's lands for wilderness designation. All lands and waters found to possess the characteristics and values of wilderness, as defined in the Wilderness Act, and determined suitable pursuant to the wilderness suitability assessment are formally studied to develop a proposal for wilderness designation.

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