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# general management plan



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## APOSTLE ISLANDS

NATIONAL LAKESHORE / WISCONSIN



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September 7, 1989

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September 13, 1989

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September 13, 1989

# general management plan


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september 1989

**APOSTLE ISLANDS NATIONAL LAKESHORE • WISCONSIN**

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UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



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## INTRODUCTION

### THE APOSTLE ISLANDS



The Apostle Islands, lying off the tip of Bayfield Peninsula in northern Wisconsin, display a rich assemblage of natural and cultural resources. The islands have been carved for over a million years, first by glaciers then by the relentless forces of Lake Superior. On the lake-facing sides of most islands the constant pounding of waves has made fascinating rock and cave formations in the red-brown sandstone, while on the protected sides fine sand beaches have been formed. Northern hardwood forests cover all of the islands, while some of the islands have been logged in this century and now have second-growth forest. Wildlife includes a diverse population of nesting and migrating birds, plus a variety of mammals, amphibians, and fish.

Humans have used the Apostle Islands since early times, and many Chippewa Indian legends are associated with them. French fur trappers established trading posts on the islands, and later settlers built seasonal hunting and fishing camps, summer cabins, and homesteads. These people used the resources of the islands and the adjacent waters for their commercial potential – brownstone was quarried, the hardwood forests were logged, and commercial fisheries were established. Light stations were built in the 1800s to warn approaching ships of shoals and hazardous rocks.

Apostle Islands National Lakeshore was established on September 26, 1970, "to conserve and develop for the benefit, inspiration, education, recreational use, and enjoyment of the public" 20 of the 22 islands in the group, as well as a strip of shoreline on the mainland. In 1986 Long Island was added to the national lakeshore. Only Madeline Island is not included in the national lakeshore. The largest of the Apostle Islands, Madeline has many cultural and natural features of interest. It also has a fully developed, year-round community that offers a full range of amenities for residents and visitors. Today visitors to the Apostle Islands can gain a unique perspective of the natural forces that shaped the islands and an appreciation of how people have tried to adapt to this harsh environment.

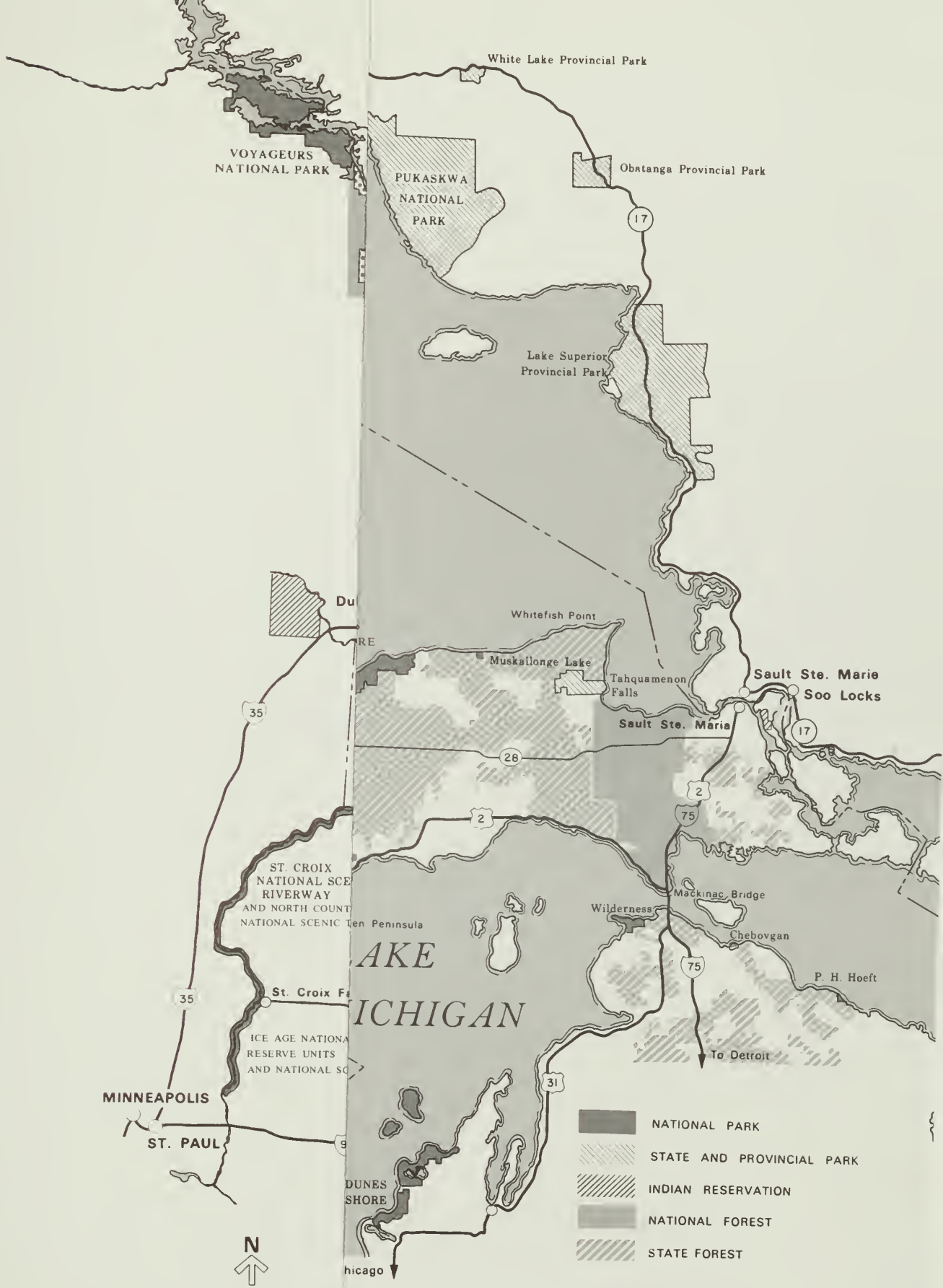
### PLANNING FOR THE NATIONAL LAKESHORE

A *Master Plan* was prepared for Apostle Islands National Lakeshore in 1971, in accordance with the authorization act (Public Law 91-424; see appendix A). Since then, the National Park Service has gained on-site experience with lakeshore operations, baseline information on resources has been gathered, additional visitor use patterns have begun to form, the local economic situation has changed, and Long Island was included in the lakeshore. These changes, plus additional information, have made the original plan out of date.

This *General Management Plan* for Apostle Islands National Lakeshore outlines the National Park Service's broad strategies to preserve the natural and cultural values that make the

lakeshore significant, while providing for visitor access to the islands and for recreational opportunities. It will also guide facility development over the next 10 to 15 years.

The lakeshore's resources have been evaluated, and the kinds of visitor activities that are compatible with the long-term protection of these resources have been determined. Management zones have been established to delineate the level of visitor use to be encouraged and the amount of development that can take place. All planning has been done in accordance with the legislative mandate for the lakeshore and its management objectives (see appendix B). The need for and the appropriateness of development for winter use has also been evaluated. The plan will be implemented gradually. More detailed site planning will precede the implementation of each phase of the plan and will include public review.



UNITED STATES DEPARTMENT OF  
NATIONAL PARK SERVICE

## REGION

### APOSTLE ISLANDS NATIONAL LAKESHORE

MICHIGAN AND WISCONSIN





N  
0 25 50 75 MILES  
0 25 50 75 KILOMETERS  
25 MILES = 40.225 KILOMETERS  
UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

- NATIONAL PARK
- STATE AND PROVINCIAL PARK
- INDIAN RESERVATION
- NATIONAL FOREST
- STATE FOREST

**REGION**  
**APOSTLE ISLANDS NATIONAL LAKESHORE**  
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# **THE NATIONAL LAKESHORE AND ITS ENVIRONMENT**





## SIGNIFICANCE OF THE LAKESHORE



Apostle Islands National Lakeshore encompasses a 720-square-mile area on the Bayfield Peninsula and in Lake Superior. The lakeshore displays a variety of scenic features, and it records some of the earliest and latest events of geologic history in the conterminous 48 states. Originally, the Apostle Islands were part of the Bayfield Peninsula, but in a relatively brief period of geologic time, the meltwaters of successive stages of glaciation eroded channels in the peninsula and formed the island group.

Today the lakeshore includes 69,372 acres, of which 27,232 acres are submerged (lakeshore boundaries extend 0.25 mile from the shore of the mainland and from each island). There are 42,140 acres of land above the high waterline – 2,568 acres on the mainland and 39,572 acres on the islands.

The 12-mile-long mainland unit is a narrow (usually less than 0.25 mile wide) strip stretching from Little Sand Bay to Squaw Bay on the northwest shore of the Bayfield Peninsula. The southwestern half of this area contains the highest cliffs in the region, and the spectacular, sheer sandstone walls are crowned with forest.

The islands have a sandstone base that was deposited about 600 million years ago and is overlain with glacial drift and a layer of decomposed organic matter that supports lush vegetation. The shorelines have eroded into interesting rock and colorful cliff formations, interspersed with coves and beaches. The islands range in height from 50 to almost 500 feet above the surface of Lake Superior.

Vegetation on the Apostle Islands is at the continental northwestern limit of the hemlock/white pine hardwood forest and the southern limit of the circumpolar boreal forest. Most of the lakeshore's densely forested areas were cut over for commercial grade timber earlier in the century, and forests are now in second- and third-growth stages. Only Raspberry, Devils, North Twin, Eagle, and Gull islands were not logged.

Island wildlife includes a diverse population of nesting and migrating birds and a variety of mammals, amphibians, and fish. Wildlife species are characteristic of the southern limits of the boreal and the northern limits of the hardwood/hemlock forests. Aquatic species are typical for waters of good quality. The federally threatened and state endangered bald eagle is nesting on several of the Apostle Islands.

The abundant natural resources attracted prehistoric people to this area. During the historic period, people constructed residences and started farms, fishing operations, brownstone quarries, and logging camps on these islands. To provide for safe recreational and

commercial navigation of Lake Superior, light stations were established in the 19th century on various islands. Beneath the waters of Apostle Islands National Lakeshore are remnants of these activities, as well as shipwrecks. These aboveground and submerged cultural resources provide an important facet to the national lakeshore.

Five light station complexes, one lighthouse on Long Island, and eight historic sites (including a farm, fishing camps, two archeological sites, and a quarry) are listed on the National Register of Historic Places. In addition, three brownstone quarries are eligible for listing.



## **ACCESS**

Access to and circulation within Apostle Islands National Lakeshore is predominantly by boat. Land access is by way of state and local roads on the Bayfield Peninsula.

### **WATER ACCESS**

About two thirds of all island visitors arrive by sailboat. Most sailboaters congregate at relatively secure anchorages or docks at Stockton, Rocky/South Twin, and Raspberry islands. In 1988 three large marinas in the Bayfield area – Port Superior, Apostle Islands, and Madeline Island – accounted for about 70 percent of the boats entering the archipelago. About 15 percent came from the other marinas in the area, 10 percent sailed in from other Lake Superior ports, and 5 percent launched from public ramps.

For visitors who do not have access to private boats, they may visit the islands either by means of regularly scheduled concession boat tours or by the water taxi service.

### **LAND ACCESS**

Wisconsin Highway 13 is the primary access road to Bayfield and Little Sand Bay on Bayfield Peninsula. Several roads owned by local governmental jurisdictions provide access to the mainland unit of the lakeshore (see Existing Development map). Major roads within the lakeshore are dirt or gravel.

Little Sand Bay Road is owned by Russell Township and provides access from county road K and Wisconsin 13 to the Little Sand Bay developed area.

East Sand Bay Road is a dirt road providing access to the northeast end of Little Sand Bay. An electrical utility easement runs along the road to the Point Detour campground (an adjacent development owned by the Red Cliff Chippewa).

Ridge Road leads to the shoreline and is off Little Sand Bay Road.

Sand Bay Road branches off county road K and provides access to 0.25 mile of beach within the lakeshore and to a private beach.

Sand Point Road extends from Wisconsin 13 to a lakefront sandy beach, where there is a well, one primitive camping site, and a good view of the islands. The area receives some hunting use in the fall.

Menard Road, off Wisconsin 13, has a view of sandstone bluffs at its end. A historic farmstead is east of Menard Road, just off North Branch Road.

Squaw Bay Road provides an easement for access to private properties now under use-and-occupancy agreements.

Meyers Road provides excellent access from Wisconsin 13 to a good sandy beach. An electrical utility easement lies along the road.

## **VISITOR USE TRENDS**

Since 1981 recreational use at Apostle Islands National Lakeshore has averaged 122,320 visits per year, with an average annual increase of 7 percent. Factors such as weather, gasoline prices, and local tourist promotions can affect visitation in any given year. The approved general management plan may offer more opportunities for visitors, which would influence future levels of visitation.

Nearly 90 percent of the visitors to Apostle Islands National Lakeshore come from June through September. The average daily visitation for the peak month of August is 1,406. The number of campers has remained fairly constant over the past four years, at about 20,000 annually.

Visitor use studies indicate two well-defined boating visitor groups: visitors who come to sail or use other privately owned watercraft and those who come to take the tour boats. A third group is less well-defined and includes nonboating visitors who come for various reasons.

### **BOATING VISITOR USE PATTERNS**

In a 1985 survey of visitors contacted at national lakeshore docks and anchorages, 91 percent had arrived by sailboat. Peak sailboat use during the summer season is on weekends, with an average of 40 percent of use recorded during this time. Sailboaters generally come for the superb sailing and to enjoy the resources of the national lakeshore. They moor offshore or use lakeshore docks, coming on shore to use the facilities, picnic, or explore. They rarely camp on shore or take long hikes; those who do camp seem to prefer beach camping. The average age of sailors in 1985 was 37, and less than 3 percent were over 60. A third of them were new, inexperienced boaters.

The key change in the boating population between 1975 and 1985 has been the dramatic increase in chartering. In 1975, 30 percent of the boats were chartered, and by 1985 this had increased to 57 percent. It is anticipated that the fleet of sailboats available for charter will continue to grow. In line with this trend, midweek visitation (Sunday through Thursday) has been increasing because there are not enough charter boats for hire on weekends to accommodate the increased demand. It is anticipated that as midweek chartering increases, visitation will become more even throughout the week, rather than peaking on weekends.

The 1985 survey found that 80 percent of the boating visitors lived in Minnesota, 12 percent in Wisconsin, and 8 percent in other locations. Boaters spent an average of 12.5 days around the islands. Fifty-eight percent took only one trip to the Apostle Islands in summer 1985, and the typical boating trip was four days.

Sea kayaking at Apostle Islands has become a popular activity in recent years, and from all indications this trend will continue.

## **TOUR BOAT VISITOR USE PATTERNS**

Visitors who take the tour boat cruises usually spend only a short time (one hour or less) on shore. Most of the visitors electing to camp or hike on the islands are dropped off by the tour boats or water taxi and are picked up later. Some visitors with limited time may take the Madeline Island ferry in lieu of the concession tours.

In July and August 1987 a survey of tour boat users found that 60 percent were from Wisconsin and the Minneapolis/St. Paul areas. The users tended to be first-time visitors to the Apostle Islands. Tuesday was the highest volume day for tours, followed closely by Wednesday and Thursday. One reason for this midweek peak may be that a visit to the national lakeshore falls approximately midway on a week-long tour of attractions in northern Wisconsin. Tour boat visitors typically come in groups of two to four people (and occasionally six or more people on the shorter tours), and they spend only one or two days in the area.

## **NONBOATING VISITOR USE PATTERNS**

Nonboating visitors account for about 39 percent of total visitation. These visitors are generally adults with family groups and live within a two- to five-hour drive of the lakeshore. Most are through-visitors who are on extended trips and who are passing through the lakeshore as one stop on their itinerary; consequently, they stay only a portion of a day or overnight in the area. They are usually first-time visitors, and the only lakeshore-related opportunities at the present time are the visitor center in the old Bayfield County courthouse and the self-guided tour of the Hokenson Brothers Fishery at Little Sand Bay.

## **EXISTING DEVELOPMENT**

### **INTERPRETIVE FACILITIES AND PROGRAMS**

#### **Visitor Center and Contact Stations**

The headquarters visitor center is in the old Bayfield County courthouse and is generally the first contact that visitors driving from the south on Wisconsin 13 have with the lakeshore. The visitor center contains an information desk, a cooperating association literature display and sales outlet, an auditorium where introductory films and a slide program are shown, exhibits on both natural and cultural history, and a library.

A staffed information station at Little Sand Bay serves visitors arriving from the west on Wisconsin 13; however, the gravel access road probably discourages some visitors. The station contains an information desk, an auditorium where an introductory slide program is shown, and exhibits on natural and cultural history.

A contact station on South Twin Island contains natural history exhibits.

A visitor contact station on Stockton Island contains a cooperating association literature display and sales outlet. Exhibits on natural and cultural history are scheduled for completion in 1990.

#### **Wayside Exhibits**

There are a total of six wayside exhibits throughout the lakeshore. Two at Little Sand Bay interpret the shipwreck *Sevona* and the Hokenson Brothers Fishery. Three exhibits on Stockton Island interpret the stone quarry, Presque Isle, and Quarry Bay. There is one exhibit at the Nies fish camp on Rocky Island.

#### **Self-Guided Facilities**

The Hokenson Brothers Fishery at Little Sand Bay and the Julian Bay trail on Stockton Island are both self-guided, and each has its own booklet.

#### **Traveler Information Stations**

There are two small radio transmitters that broadcast information to park visitors, one on Basswood Island and one on Stockton Island. There is also one on the mainland near Wisconsin 13.

#### **Personal Services**

Evening talks or campfire programs are offered at the visitor center in Bayfield, at Big Bay State Park on Madeline Island, and on Stockton Island. Guided walks or tours are given at the Hokenson Brothers Fishery, and on Stockton, Manitou, and Raspberry islands.



DAY USE AREA



RANGER STATION

D

NPS DOCK

HF

HISTORIC FISH CAMP/FISHERY



LIGHT STATION



QUARRY

----- TRAIL



CAMPSITE



PRESERVE

----- NPS BOUNDARY

## EXISTING DEVELOPMENT

### PARK GENERAL

#### APOSTLE ISLANDS NATIONAL LAKESHORE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

|     |          |
|-----|----------|
| 633 | 20,021   |
| DSC | APRIL 88 |





- DAY USE AREA
- 🏠 RANGER STATION
- D NPS DOCK
- HF HISTORIC FISH CAMP/FISHERY
- 🏰 LIGHT STATION
- Q QUARRY
- TRAIL
- ▲ CAMPSITE
- PRESERVE
- NPS BOUNDARY

## EXISTING DEVELOPMENT

### PARK GENERAL

#### APOSTLE ISLANDS NATIONAL LAKESHORE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

633 20,021  
OSC APRIL 88

## **CAMPGROUNDS**

The National Park Service maintains designated campsites on the mainland and 13 islands, with a total of 56 small party campsites (maximum of nine people) and seven group sites. Designated campsites generally contain a tent pad, fire ring, and picnic table, with a toilet nearby. Group sites have tables, fire rings, and large gathering areas, with toilets nearby. They are capable of accommodating large groups (at least 10 people and a maximum of 30). In 1988 a permit system was instituted for both types of campsites.

## **TRAILS**

A total of 110.4 miles of trails are available on 17 of the islands plus the mainland unit. A total of 46.6 miles of trails on 12 islands are actively maintained by NPS staff. The approximately 63.8 remaining miles are not maintained. Often these include old roadbeds that are gradually revegetating. Boardwalks and wooden trail bridges are maintained over wet or fragile areas.

Trails in the lakeshore allow visitors to experience and enjoy a variety of natural and historic features in the lakeshore, commensurate with its carrying capacity. Any new trails will be designed, constructed, and maintained to meet this objective.

## **ADMINISTRATIVE FACILITIES**

Currently the National Park Service maintains four year-round quarters, a maintenance shop building, and four cold storage buildings; three seasonal visitor contact stations and nine seasonal quarters; and 16 small field maintenance buildings, such as pumphouses and tool sheds. Other facilities include 31 vault toilets and 18 docks ranging in size up to 10 feet wide by 300 feet long.





# **GENERAL MANAGEMENT PLAN**



## PLAN CONCEPT



Under the general management plan visitors to the mainland unit will have opportunities for an excellent shoreline experience, and it is hoped they will develop a feeling for the beauty and power of Lake Superior. This experience will be complemented by programs and facilities on the islands that will give visitors opportunities to experience their character, beauty, and remoteness. Visitors will be able to choose from a broad range of experiences requiring different levels of commitment in terms of time, energy, and expense. A low-commitment experience will rely on public transportation to a selected group of islands and will provide a moderate level of facilities and services, such as campsites, sanitary facilities, trails, and interpretive programs. A high-commitment experience will be based on self-reliance, independent transportation, and few if any facilities. In general, the amount of park development and the availability of NPS-provided programs will decrease proportionately to the distance from the mainland. The visitor experience on the mainland and inner islands will tend to be assisted to a much greater extent than the more primitive recreational opportunities available on the outer islands.

### THE VISITOR EXPERIENCE

Campsites on the innermost islands (those within 8.5 miles of a port) will generally have tables, grills, tent pads (where necessary), and water and a privy nearby; there will continue to be opportunities for primitive camping (that is, no facilities will be provided) on this inner group of islands. Campsites on the "middle" group of islands (for example, Rocky, South Twin, and Manitou islands and the western portion of Stockton Island) may

have grills, tent pads, and a privy nearby. Campsites on the outermost islands will be primitive, and no amenities will be provided. The only designated sites will be those necessary for resource protection.

Despite the amenities provided, visitors to the inner islands will have a relatively self-reliant experience. They will set up their own camps, cook their own food, and travel about the island on foot. Those dropped off by tour boat will perceive just how isolated an island can

be when there is no way to leave until the next boat arrives and there is no store to buy necessities.

In contrast to the island experience offered in the national lakeshore, the experience on Madeline Island gives visitors a chance to appreciate similar natural, cultural, and scenic features, but with all the amenities of a mainland community – from service stations, restaurants, lodging, and stores to a museum, bank, library, and post office. Madeline Island offers an excellent opportunity for visitors who want to visit an island, but who do not seek the more primitive opportunities available in the national lakeshore.

The reservations of both the Red Cliff and the Bad River bands of the Lake Superior Chippewa are near the national lakeshore, providing an opportunity for the bands and the National Park Service to jointly develop some facilities and to pursue cooperative efforts to protect resources. The National Park Service will pursue such cooperative activities when feasible.

Lakeshore tour boat stops will be designed to meet management objectives, resource protection, and visitor use needs. They will be subject to periodic review and will be revised as appropriate.

All new facilities in the national lakeshore will be accessible to handicapped visitors.

## RESOURCE PROTECTION

A major objective of this plan is to protect natural and cultural resources and to allow for compatible visitor use. Because the general management plan is a conceptual plan, the sizes and locations given for proposed facilities are approximations that were used for generating cost estimates and for understanding the relative scale of development. Before new facilities are constructed, site planning and specific environmental assessments will be conducted to ensure that facility construction and use have minimal impact on resources, especially wetlands, floodplains, threatened or endangered species, and significant cultural resources. Operational facilities (ranger stations, employee quarters, etc.) on the islands will be limited to those necessary to protect resources and visitors and to provide interpretation. Where new buildings are proposed, construction will incorporate current energy conservation materials and methods. Before any construction activities are initiated, archeological surveys will be conducted to provide necessary information to avoid or mitigate any adverse effects.

## WILDERNESS SUITABILITY

The National Park Service as a matter of policy evaluates all lands and waters under its jurisdiction for wilderness suitability, in accordance with the Wilderness Act (PL 88-577) and Department of the Interior and NPS guidelines for wilderness preservation and management. These policies and guidelines delineate existing and future conditions and uses that are compatible with wilderness designation. The following factors are particularly relevant to determining the wilderness suitability of lands in Apostle Islands National Lakeshore:

***Historic Features*** – Historic features that are primary visitor attractions, such as 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.



Historic trails may serve and be maintained as part of the wilderness trail system. However, if the planned scope and standard of maintenance would result in obvious evidence of human work, the trail or other feature should not be recommended for wilderness (for example, maintained historical landscapes).

***Landownership*** – Only lands where the National Park Service or other federal agencies have complete control are eligible for wilderness designation. Lands are not suitable for wilderness designation if the federal agency owns a less-than-fee interest (scenic easements), the mineral rights have been retained by nonfederal owners, or there are state or private owners. However, such lands if they otherwise qualify can be designated as potential wilderness until such time that nonfederal interests have been acquired.

***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 are not compatible with wilderness designation (see Management Zoning map).

***Motorized use areas*** – Areas where aircraft, motorized watercraft, or tools are routinely used for recreational or maintenance purposes are not suitable for wilderness designation unless those uses would be eliminated. The Wilderness Act states that where the use of aircraft and motorboats has already become established, "these uses . . . may be permitted to continue subject to such restrictions as the Secretary [of the Interior] deems desirable." This does not mean that previously established motorboat and aircraft uses of an area must be allowed to continue upon the designation of that area as wilderness, or that water areas must be excluded from wilderness recommendation where motorboats are allowed. Any recommendation to allow established aircraft or motorboat use to continue in wilderness must be based on a finding that the purpose, character, and manner of such use is suitable to the specific wilderness under consideration.

On the basis of these factors, the National Park Service will program a formal wilderness study for lands and waters within Apostle Islands National Lakeshore. Of the lands and waters within the lakeshore that are under NPS jurisdiction, about 97 percent (41,054 acres) may be suitable for wilderness. These lands and waters will be placed in the natural zone (see Management Zoning map), and they will be managed to preserve their potential wilderness values until a formal wilderness study has been completed and forwarded to Congress. Any recommended wilderness area will then be managed to preserve its wilderness qualities, pending a decision by Congress on whether to designate wilderness. An additional 27,232 acres of submerged lands within the legislated boundaries of the national lakeshore are currently owned by the state, 315 acres of land are owned by other nonfederal entities, and 206 acres are under use-and-occupancy agreements. These lands could be eligible for designation as potential wilderness additions and will also be thoroughly evaluated in the formal wilderness study.

## LAND USE AND MANAGEMENT

### LANDOWNERSHIP

Of the 69,372 acres in Apostle Islands National Lakeshore, the National Park Service owns 42,124 acres, and the state of Wisconsin owns 27,232 acres of submerged lands. The remaining nonfederal lands are owned by the U. S. Coast Guard, local governments (including road rights-of-way), and private owners. The lakeshore's *Land Protection Plan* determines what lands or interests in lands need to be federally owned, and what means of protection other than acquisition are available. The *Land Protection Plan* is updated every two years.

### MANAGEMENT ZONING

Management zoning establishes the broad framework for specific planning decisions about the use and development of lakeshore lands. Four major zones are designated: natural, historic, park development, and special use. Within these zones, subzones are identified to further clarify intended use and development. The management zoning scheme for this plan is described below and is shown on the Management Zoning map.

#### Natural Zone (41,054 acres)

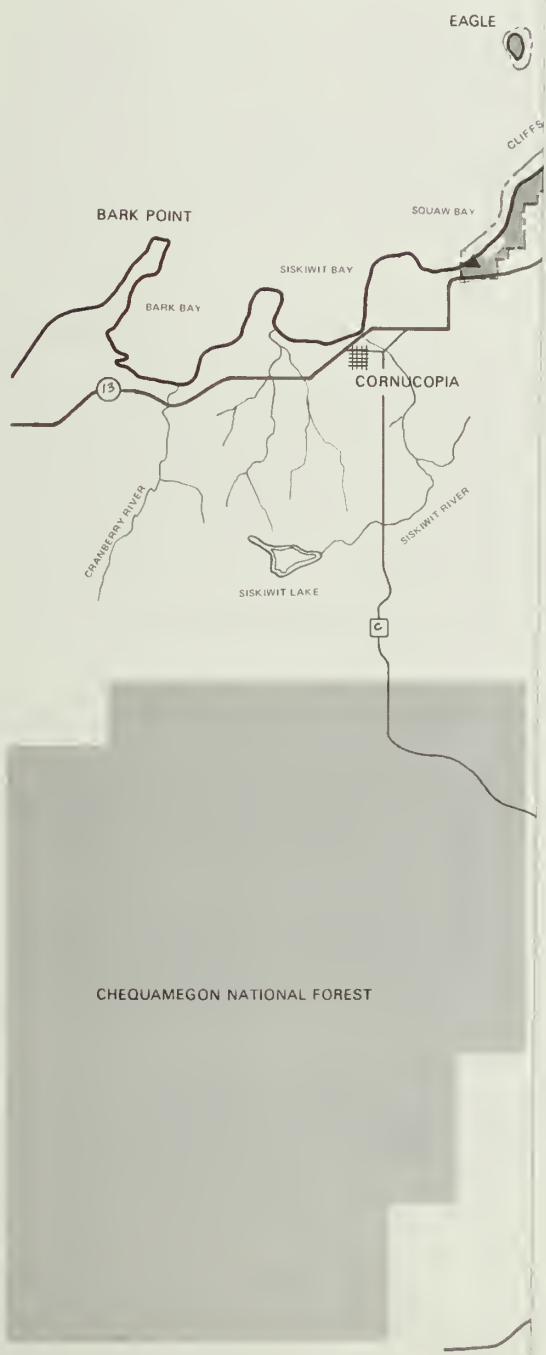
Lands in the natural zone are managed to conserve natural resources and processes. Uses and facilities that do not adversely affect these resources and processes are permitted. Within the natural zone, three subzones are designated to more specifically define use:

***Outstanding Natural Feature Subzone (2,825 acres)*** – Management in this subzone provides for public appreciation and interpretation of geological or ecological features possessing unusual intrinsic value or uniqueness. Some of the features included in this subzone are sandstone cliffs, tombolos, sandspits, ancient bogs and beaches, and virgin hemlock stands.

***Protected Natural Area Subzone (300 acres)*** – Lands and waters in this zone are managed to perpetuate geological or ecological values, without or with only minimal human intrusion. These lands and waters are unusually significant. Gull, Eagle, and North Twin islands fall into this subzone.

***Natural Environment Subzone (37,929 acres)*** – Recreational activities that are compatible with natural resources are allowed in this zone. Where recreational activities are not occurring, the areas are managed to conserve natural resources. If the properties owned by Bayfield County and two private owners are acquired through a boundary adjustment (total 220 acres), they will be added to this subzone.

L A K E  
S U P E R I O



| ZONE/SUBZONE                                 | ACRES  | PERCENTAGE<br>OF LAKESHORE |
|--|--------|----------------------------|
| NATURAL ZONE                                 | 41,054 | 59.1                       |
| HISTORIC ZONE                                | 370    | 0.5                        |
| PARK DEVELOPMENT ZONE                        | 195    | 0.3                        |
| SPECIAL USE ZONE                             |        |                            |
| STATE-OWNED SUBMERGED LANDS SUBZONE          | 27,232 | 39.3                       |
| RESERVATION OF USE SUBZONE                   | 206    | 0.3                        |
| INHOLDINGS (FEDERAL, LOCAL, PRIVATE) SUBZONE | 315    | 0.5                        |
| SUBTOTAL                                     | 27,753 | 40.1                       |
| TOTAL  | 69,372 | 100.0                      |

## MANAGEMENT ZONING

### PARK GENERAL

### APOSTLE ISLANDS NATIONAL LAKESHORE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



| ZONE/SUBZONE                                 | ACRES  | PERCENTAGE OF LAKESHORE |
|--|--------|-------------------------|
| NATURAL ZONE                                 | 41,054 | 59.1                    |
| HISTORIC ZONE                                | 370    | 0.5                     |
| PARK DEVELOPMENT ZONE                        | 195    | 0.3                     |
| SPECIAL USE ZONE                             |        |                         |
| STATE-OWNED SUBMERGED LANDS SUBZONE          | 27,232 | 39.3                    |
| RESERVATION OF USE SUBZONE                   | 206    | 0.3                     |
| INHOLDINGS (FEDERAL, LOCAL, PRIVATE) SUBZONE | 315    | 0.5                     |
| SUBTOTAL                                     | 27,753 | 40.1                    |
| TOTAL  | 69,372 | 100.0                   |

--- NPS BOUNDARY

## MANAGEMENT ZONING

### PARK GENERAL

### APOSTLE ISLANDS NATIONAL LAKESHORE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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### **Historic Zone (370 acres)**

The management emphasis in the historic zone is to preserve, protect, and interpret cultural resources and their settings. This zone contains all cultural resources that are important because of their aesthetic values (which merit full communication to park visitors) or because of their association with persons, events, or periods in human history. Historically significant structures may be used, with necessary modifications, or leased for contemporary public or administrative activities or functions, as long as the qualities that make these resources qualify for listing on the National Register of Historic Places are perpetuated. Logging camps, fishing camps, light stations, homesteads, quarries, archeological sites, and shipwrecks (if they are owned by the Park Service) are included in this category.

### **Park Development Zone (195 acres)**

Lands in this zone are used to provide park facilities to serve the needs of park management and visitors. Included are areas where park development or intensive use has substantially altered the natural environment or the setting for historically significant resources. This zone includes roads, parking areas, major docks, visitor facilities, and administrative and maintenance buildings. The developed areas on Meyers Road (10 acres) and Sand Point Road/Berwager Road (5 acres) will be placed in the park development zone. If the Little Sand Bay and the Sand Point/Berwager road corridors (total 47 acres) are acquired through a boundary adjustment, they will also be placed in the development zone.

### **Special Use Zone (27,753 acres)**

This zone allows for uses that are carried out by other governmental agencies or private interests on lands within the lakeshore boundaries. NPS administrative control over land uses in this zone either is lacking or is secondary to that of another party. Included in this zone are three subzones – a state-owned submerged lands subzone (27,232 acres), a reservation of use subzone (206 acres), and an inholdings subzone (315 acres). Included in the reservation of use subzone are properties that have been reserved under use-and-occupancy agreements or life-estate terms. The management of these properties will revert to the National Park Service upon expiration of the reservation terms.

## **PROPOSED BOUNDARY ADJUSTMENTS AND LAND ACQUISITION**

The National Park Service will attempt to acquire rights to the Little Sand Bay and Sand Point/Berwager road corridors so as to improve access to the mainland unit. Acquisition may be accomplished through a boundary adjustment or some other means.

Through a boundary adjustment, three tracts of land will be added to the lakeshore (see Proposed Boundary Adjustments and Land Acquisition map). Tract 1 (about 120 acres, private ownership) is a wooded parcel near the west end of the mainland unit and could potentially be harvested for timber. Acquisition is needed to provide a buffer for the Meyers Beach area.

Tracts 2 (40 acres, Bayfield County) and 3 (80 acres, private ownership) are near Sand Point. These sites are wooded (second-growth mixed hardwoods), and they could potentially be harvested for timber. Sand Point is a proposed access point for the shoreline trail for both summer and winter use. Part of the present access road passes through a critical

winter yarding area for deer. Further development and use of this road for winter access could adversely affect the deer. Including these two tracts within the lakeshore will allow the road to be rerouted closer to the periphery of the yarding area. The most desirable option will be for the National Park Service to purchase these properties in fee simple. If the owners are unwilling to sell, the Park Service will seek an easement or lease so that the road can be rerouted and the corridor protected from incompatible adjacent uses, such as logging.

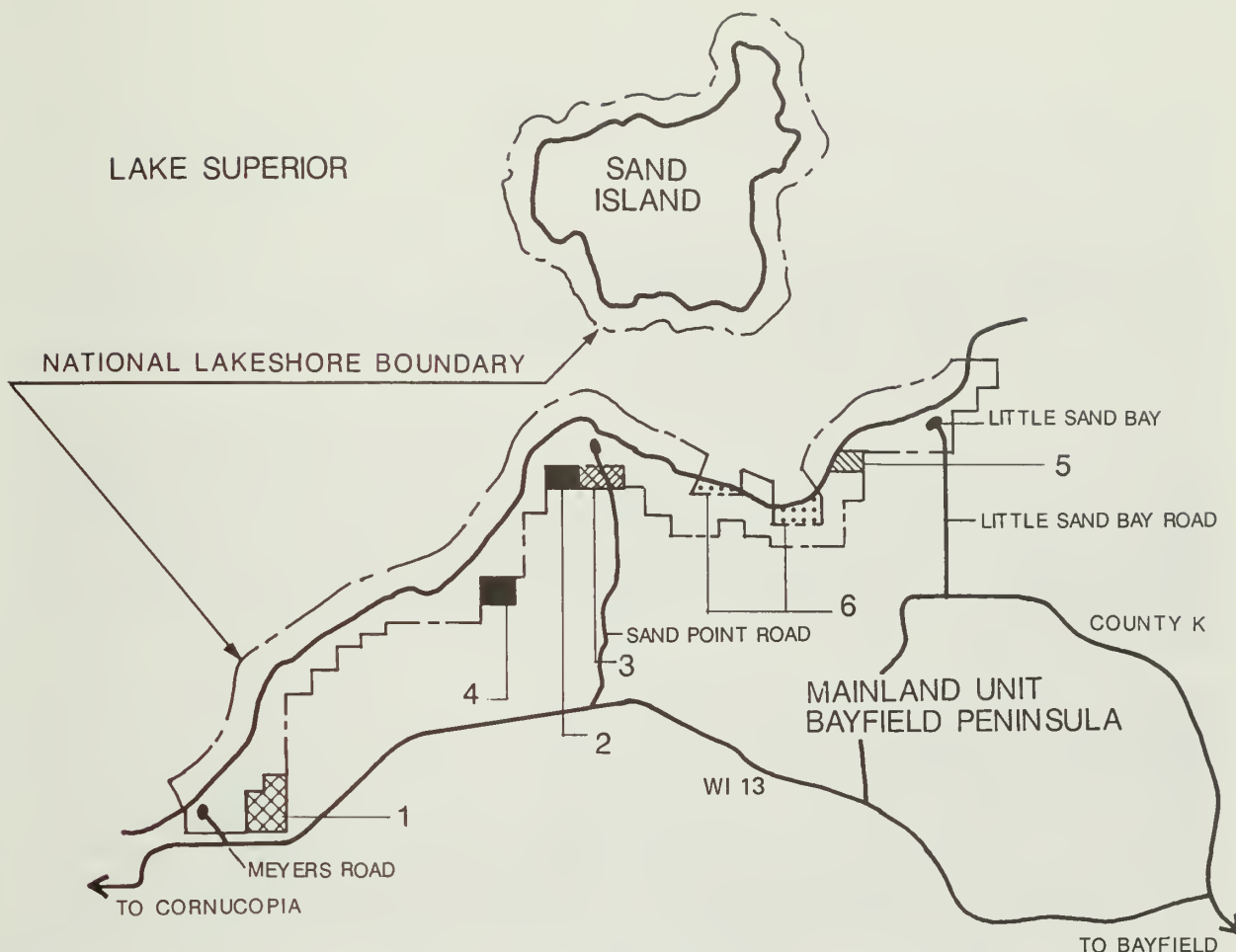
Tracts 4 (40 acres, Bayfield County) and 5 (about 52 acres, Russell Township) are within the lakeshore boundary. Tract 4 is classified as forest cropland and is one parcel of an entire section of forest cropland. It is probable that this tract would eventually be logged, which would be incompatible with lakeshore values. The proposed shoreline trail will probably have to be routed through this property because of the deep ravines closer to the shoreline. The county does not wish to sell, so the Park Service will seek a cooperative agreement to allow trail development and to preserve a natural setting along the trail corridor. Tract 5 bisects the mainland unit. This tract was acquired by Russell Township from the county, which had obtained it through tax default. The tract is partly wooded (second-growth mixed hardwood) and fronts the lake. Because this tract divides the mainland unit and no alternative route is available, it is critical to the proposed development of the shoreline trail. If the township is unwilling to sell this tract, the Park Service will seek a cooperative agreement or easement with a sufficient buffer zone along the trail to protect scenic, cultural, and natural values.

Tract 6 consists of two parcels of land with considerable beach and lake shoreline, as well as Sand River frontage. They are owned by the Red Cliff Band of the Lake Superior Chippewa, and they are outside the national lakeshore boundary. These tracts may be important to the development of the proposed shoreline trail, especially for crossing the Sand River. The National Park Service will seek a cooperative agreement with the Red Cliff Band to develop a trail and to protect scenic, cultural, and natural values.

The National Park Service will acquire in fee 36.45 acres of privately owned land on Long Island.

In 1984 an analysis was made to determine mineral occurrence and potential in the national lakeshore. It was found that the only possibility for oil and gas in this area is the Freda sandstone, which lies very deep beneath the surface of the Apostle Islands, making this an economically unfeasible area for exploration at this time. Because potential hydrocarbons beneath the islands are relatively inaccessible, the lakeshore is not a likely target for exploration or extraction activities in the immediate future. No other economic deposits of minerals exist.

Mineral trends, activities, and technological advances in extraction techniques will be monitored. If it is determined after a tract-by-tract analysis that lakeshore values would be adversely affected by future mineral extraction activities, then the National Park Service will take action to protect lakeshore values, including but not limited to the acquisition of subsurface interests. If it is determined that acquisition is necessary, then donation and exchange will be the preferred methods. If purchase is required, such acquisition will be possible only if funds are available. Except in the case of donation, owners of subsurface rights will receive compensation at fair market value if their rights are acquired by the National Park Service. Until it is determined that all nonfederal subsurface rights have to be acquired, applicable federal regulatory authorities will be fully applied to any proposed mineral activity.



| Property | Owner                                    | Acres | Recommendation   |
|----------|--|-------|--|
| 1        | Private                                  | 120   | Add to lakeshore; purchase   |
| 2        | Bayfield County                          | 40    | Add to lakeshore; purchase or cooperative agreement                          |
| 3        | Private                                  | 80    | Add to lakeshore; purchase or cooperative agreement                          |
| 4        | Bayfield County                          | 40    | Cooperative agreement  |
| 5        | Russell Township                         | 51.42 | Cooperative agreement  |
| 6        | Red Cliff Band of Lake Superior Chippewa | —     | Cooperative agreement (these lands are excluded from the lakeshore boundary) |

| Roads           | Owner            | Acres |
|-----------------|------------------|-------|
| Sand Point      | Russell Township | 29.5  |
| Little Sand Bay | Russell Township | 17.5  |

## PROPOSED BOUNDARY ADJUSTMENTS AND LAND ACQUISITION

APOSTLE ISLANDS NATIONAL LAKESHORE/WISCONSIN

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## RESOURCE MANAGEMENT

### NATURAL RESOURCES

The natural resources of Apostle Islands National Lakeshore will be managed in accordance with NPS policies and regulations. Natural resource study and protection programs have already been developed and assessed in the *Resources Management Plan and Environmental Assessment* (NPS 1986), which is now being implemented. Additional funding may be needed to implement these programs.

In general, the long-term natural resource objective of the National Park Service is to restore and maintain the biologic diversity of the dynamic ecosystem that would exist today had not human activities such as logging intervened. The significance of lakeshore resources in terms of the biologic diversity of the fragmented natural ecosystem of the western Great Lakes area is currently under study. Following is a brief description of the issues and actions proposed in the *Resources Management Plan*; more detailed information can be found in that plan.

Lakeshore vegetation is much different from what existed before human influence and intervention. Past logging and other events such as fire and drought have left only fragments of the original vegetation. The present forest cover is largely second-growth deciduous trees. NPS policy emphasizes that vegetation in natural areas be restored to pre-interference conditions. Natural reforestation of native vegetation would take a very long time, and some species may not regenerate naturally. The recommended course of action is to manage selected vegetative types in a limited regeneration program. This is a practicable approach in light of the prohibitive costs of large-scale reforestation. Certain islands will be managed to provide representative small stands of natural pristine forest cover. Various management techniques will be used to enhance and reestablish these areas.

The lakeshore's sandspits and beaches have been traditionally used for camping, picnicking, and boat landing/launching. On several islands beaches and sandspits are the only means of access because of steep sandstone cliffs and clay banks. On several sandspits heavy use has affected the composition of the beach vegetation that holds the sand in place. Monitoring is ongoing to ensure the protection of all sandspits.

A long-term monitoring program has been established to determine whether the lakeshore's natural resources are being adversely affected by visitor use. NPS personnel will survey and monitor existing conditions on beaches, sandspits, and other sensitive areas. Evaluation standards will be developed based on management objectives and the desired visitor experience. If the stability of an area is being seriously threatened by human activity, then restrictions will be imposed. After evaluating the monitoring results and comparing them to the standards, managers will establish the resource carrying capacity for a particular site. The *Resources Management Plan* identifies particular areas, such as sandspits on Raspberry, Oak, Rocky, Outer, and Michigan islands, where impacts of use need to be monitored.

Apostle Islands National Lakeshore has numerous clearings as a result of human occupation, primarily old farmsteads and logging or fishing camps. Many clearings are being overgrown by forest vegetation. Those clearings that are significant from a historical or cultural aspect will be kept cleared. These selected clearings will be managed and interpreted relative to their cultural and historical background.

Terrestrial wildlife populations will respond to direct management actions, such as tree regeneration, prescribed fire, maintenance of clearings, and regulation of hunters and trappers. There will also be indirect impacts from recreational developments, particularly trails and campsites on sandspits and near wetlands. Game and furbearer management plans will prescribe harvests (including the option of closed seasons) of the major herbivores (white-tailed deer, beaver, snowshoe hare), which affect second-growth forest succession on the mainland and the islands. Existing trails or campsites in critical habitats of reptiles, amphibians, falcons, shorebirds, and other sensitive species will be moved as the need is demonstrated through study.

Which animal species existed in the Apostle Islands before 1850 but have since been extirpated is not well known. Several species, such as moose, pine marten, and wolf, no longer inhabit the mainland area. One formerly extirpated species that is now successfully breeding within the lakeshore is the bald eagle (listed by the U.S. Fish and Wildlife Service as a threatened species). Present efforts at Apostle Islands have been directed toward monitoring the natural rehabilitation of this species. Following ecological studies of piping plover habitat within the lakeshore, a detailed plan will be prepared to manage and protect nesting habitat, especially on Long Island. As other extirpated species are identified through research, the feasibility/desirability of reestablishing them will be determined on a species-by-species basis.

The relatively clear water of the Great Lakes is one of the lakeshore's prime assets. The use of the water and adjacent lands by visitors, including campers, hikers, and boaters, could result in some degradation of water quality. An effort will be made to maintain the highest water quality standards, and an in-house monitoring schedule will be established to ensure that standards are being maintained. The sources of contamination from outside the lakeshore, including acid precipitation, will be located and monitored.

Wildfire is recognized as part of the natural scene and has occurred historically on the islands and the mainland unit. Fire will be considered as a tool in the management of forest vegetation and wildlife. Fire management recommendations could include prescribed burns and prescribed natural fire policies.

The fishery resource within Apostle Islands consists primarily of cold water native and exotic salmonid species. These waters support one of the most productive commercial and recreational fisheries in Lake Superior, and the waters within the 0.25-mile boundary of the lakeshore are vitally important as spawning reefs and shoals for the native lake trout and whitefish. The management of these waters has been primarily the responsibility of the Wisconsin Department of Natural Resources; however, the national lakeshore has concurrent jurisdiction within its boundaries. Research around the islands has been conducted by the U.S. Fish and Wildlife Service through its Ashland field station. The Red Cliff Band of Lake Superior Chippewa now employs a trained fisheries biologist to monitor and manage the tribal commercial fishery. The National Park Service will also provide input into fishery management programs, particularly where visitor use and the enhancement of natural reproduction of native and extirpated fish species are concerned.

Even though the Apostle Islands are relatively isolated from industrial plants, they are not immune to the effects of airborne and waterborne pollutants. A coal-fired power plant is located in Ashland, some 20 miles south-southwest of the Apostle Islands, and the industrial complex of Duluth, Minnesota, is approximately 70 miles west of the islands. Pollutants may also be carried from more distant midwestern and western industrial centers. The temporary wet-fall air quality monitoring collector on Outer Island has been removed. The park is considering the establishment of a permanent air quality monitoring site. Wet- and dry-fall collectors are located at Isle Royale National Park and Duluth.



## CULTURAL RESOURCES

A wide array of cultural resources, such as light stations, fishing camps, and logging camps, exist within the national lakeshore. Properties on the National Register of Historic Places, including most of the light stations, will be preserved to prevent deterioration. All other sites will be preserved and interpreted according to their significance. Navigational aids (lights) will continue under the jurisdiction of the U.S. Coast Guard; the National Park Service will seek the transfer of ownership and management responsibilities for the historic structures associated with these navigational aids.

The lakeshore's collection of natural and cultural objects includes more than 12,000 items, of which approximately 96 percent are related to archeological sites or to historical fishing, lumbering, and farming activities. In addition the collection contains archival materials such as journals, books, charts, and maps. The natural resource portion of the collection includes geological specimens, a herbarium, and specimens of plants, animals, and insects. Currently, the collections are stored at Little Sand Bay, with display areas in Little Sand Bay and on Manitou Island. The existing storage facility will be replaced with a facility that will comply with the standards for collection storage outlined in the *Cultural Resources Management Guideline* (NPS-28) and the *Interpretation and Visitor Services Guideline* (NPS-6).

Wisconsin owns the lake bottom to the high water mark, and no agreement currently exists between the National Park Service and the state as to the management of submerged cultural resources. These sites are not now adequately protected by state legislation; however, state action in accordance with the Abandoned Shipwreck Act of 1987 is pending. No formal agreement exists as to law enforcement responsibilities. Under the general management plan and working with the state of Wisconsin, the National Park Service will seek to provide the highest level of preservation feasible for lake bottom lands within the 0.25-mile boundary. Actions to be pursued by the National Park Service could include cooperative agreements, new legislation, or acquisition of the lands by donation. If the Park Service acquires jurisdiction through one of these actions, then all cultural resources within this area will be managed in accordance with NPS policy. An underwater resource study will be conducted in phases, and inventories and appropriate site reports of submerged cultural resources will be prepared. Furthermore, actions will be taken to prevent any adverse effects because of development, visitor use, or resource management activities.

A special history study about the role and function of the Apostle Islands light stations will be completed to guide interpretation and preservation actions. Management actions will include interpreting and maintaining historic landscapes, interpreting and stabilizing or rehabilitating historic structures, interpreting historic sites, and conducting guided tours of historic structures.

A comprehensive historic resource study will be undertaken to identify historic and archeological resources in the national lakeshore and to determine if they meet the criteria for listing on the National Register of Historic Places. Those resources that do meet the criteria will be nominated to the National Register. A base map will also be developed to show the location of the resources. The resource study will be coordinated with the underwater resource study.

Carrying capacity studies will be initiated for several history structures and sites to establish acceptable visitor use levels to protect the structures and sites, as well as the visitor experience.

## **VISITOR USE AND DEVELOPMENT**

### **ACCESS AND CIRCULATION**

#### **Water Access**

Public tour boats operated by concessioners will continue to cruise among the islands and stop at selected interpretive features and visitor use sites. Moderately priced public transportation to selected inner islands will allow visits by people who may not otherwise have an opportunity to see the islands firsthand. Tour boats will operate from Bayfield and, if economically feasible, from Little Sand Bay. Besides regularly scheduled tours, a water taxi service will provide unscheduled shuttle service to the islands on request.

The variety of natural and cultural resources on the islands will give visitors an overview of the lakeshore. Interpretation will be provided on selected tours by NPS personnel, and concession boat operators will also be trained to provide additional interpretive information. To ensure access to the islands, the federal government may subsidize the transportation system.

Through concession contracts and commercial use permits, the National Park Service will encourage guided trips to the islands for both summer and winter activities. When Lake Superior ice conditions are suitable, guided tours could be offered to special scenic features, such as the frozen caves at Squaw Bay.

#### **Land Access**

Under the general management plan road access to the mainland unit will be improved. An all-season but unpaved access road to the shoreline will be developed using Meyers Road and Sand Point Road. The National Park Service will seek authority to expend federal funds to improve and maintain nonfederally owned roads (Little Sand Bay and Sand Point roads).

### **INTERPRETIVE THEMES**

The key issue for visitor use and interpretation is to establish a quality experience that gives visitors a comprehensive introduction to the lakeshore and that is consistent with protecting natural and cultural resources. Facility and program development will be guided by the kind of visitor use experience that is offered. The interpretive themes listed below will continue to provide the basis for the lakeshore's interpretive program.

#### **Natural History**

Glaciation has played a significant role in shaping the landforms of the Apostle Islands and the Lake Superior basin.

Natural events and human activities have affected the composition, distribution, and successional stages of vegetation in the Apostle Islands.

The composition, distribution, and relative abundance of fish and wildlife species in the lakeshore region depend on plant communities, natural barriers to migration, and human alterations of the environment.

Lake Superior, through its effect on regional weather patterns, influences the lakeshore's natural environment and human activities.

## **Cultural History**

Archeological evidence of early aboriginal cultures can be found throughout the Apostle Islands area.

The Chippewa both historically and currently have used the natural resources of the Apostle Island's area to sustain their way of life. (This theme may be addressed only superficially as it is intended to be treated in depth at the Red Cliff Band of Lake Superior Chippewa's cultural center at Red Cliff.)

Because the Apostle Islands were a center of the Lake Superior fur trade, European influence and settlement came early to the region.

The commercial endeavors of fur trapping, commercial fishing, timber harvesting, and quarrying drew European explorers, traders, and finally settlers to the Apostle Islands region.

The Apostle Islands and Bayfield Peninsula provided a climate moderated by the lake and available land on which many early settlers and immigrants carved out homesteads and farms.

A variety of transportation methods – including boat, rail, and auto – were important to the settlement of and tourism to the area. Island enterprises relied on a variety of modes of transportation, including small and large boats, horses and sleighs, dog sleds, wind sleds, and snow machines.

Since the second half of the 19th century, maritime enterprises have depended on navigational aids to guide ships through the Apostle Islands.

Tourism and recreation were important historically to the settlement and development of this region and to the establishment of the Apostle Islands National Lakeshore. Tourism and recreation are important pursuits today.

The Apostle Islands have been the focus of ambitions and dreams since Europeans first arrived in Chequamegon Bay. They have attracted resource extractive industries, land development and speculative schemes, and conservationists' and recreationists' fervor.

## **VISITOR FACILITIES**

### **Mainland**

Under the general management plan facilities will be developed at Little Sand Bay and Bayfield to encourage both day and overnight use. Over the long term, and depending on



visitation levels, much of the mainland use will be consolidated at Little Sand Bay, assuming that access roads can be improved.

To serve visitors arriving from the west on Wisconsin 13, the Meyers Road lake access at Squaw Bay will be improved, and a small information kiosk will be built. A parking area for 10 to 15 cars will serve the kiosk, the trailhead, a 10-site picnic area, and kayak launch.

A 10- to 12-mile hiking trail will be developed along the shoreline bluffs between Squaw Bay and Little Sand Bay. The trail will be designed for cross-country ski and snowshoe use as well as summer use. Layout of the trail will take into consideration the needs and protection of wildlife, especially in winter. Natural and cultural sites along the trail will be interpreted through wayside exhibits. Because of the narrowness of the mainland unit, the trail will have to be developed in cooperation with other landowners to ensure minimum resource disturbance, to take full advantage of lakeshore views, and to maximize visitor safety. Meyers Road and Sand Point Road will provide year-round access to the trail. Menard/Engholm Road will provide unplowed winter access to the shoreline trail for skiers and snowshoers.

A viewpoint, with an interpretive exhibit and trailhead parking for 10 cars, will be provided at the Sand Point Road lake access.

**Little Sand Bay.** The existing visitor contact station, district ranger headquarters, and concessioner operations facility will be remodeled. The new interpretive exhibits will be accessible when the contact station is not staffed. Restrooms will be provided in a new building that will be designed to be available on a 24-hour basis.

The National Park Service will encourage Russell Township and the Red Cliff tribe to upgrade their campgrounds to meet the need for camping facilities. If and when the demand for these facilities exceeds capacities, the Park Service will develop a 50-site campground (see the Visitor Use and Access map for the Bayfield Peninsula).

The Hokenson Brothers Fishery, a short walk from the parking lot at the contact station, is a commercial fishery that operated for more than 30 years and is listed on the National Register of Historic Places. The National Park Service owns and maintains the complex and provides visitors a self-guiding brochure about commercial fishing in the Apostle Islands.

The tour boat concession will operate from the dock that was reconstructed in 1987. A ticket sales area and parking for 50 cars will be provided.

Little Sand Bay is a focal point for mainland visitor activities, and the setting, with its view of some of the islands, offers an excellent opportunity for interpreting the national lakeshore from the mainland. When visitation at Little Sand Bay regularly exceeds the capacity of the remodeled visitor contact and interpretive station, a new interpretive center will be built at the northeast end of Little Sand Bay. Space will be provided for interpretive exhibits, an auditorium, an information desk, cooperating association sales, public restrooms, and offices. The ranger station and associated offices will also be a part of this new building. A 30- to 40-car parking area will be provided for visitors and employees.

Upon completion of the new interpretive center, the existing visitor contact station will be removed, and the area will be converted to a 30-site picnic area. The restrooms that were developed during the initial implementation of this plan will remain. An interpretive loop trail will be developed to link the Little Sand Bay bog/slough and the Hokenson Brothers Fishery and will connect to the lakeshore trail. The other nonhistoric structures at Little Sand Bay will be removed or demolished.

**Bayfield.** Lakeshore headquarters will remain in the old Bayfield County courthouse, which is listed on the National Register of Historic Places. The small visitor center will continue to provide information and orientation to the lakeshore.

**Information Center/Kiosks.** If feasible, the National Park Service will cooperate with local communities and agencies in the development of an information center at the junction of US 2 and Wisconsin 13. Information kiosks will be placed at the marinas in Ashland, Washburn, Port Superior, Bayfield, Cornucopia, Madeline Island, and Red Cliff.

## **Islands**

The islands are grouped into three categories according to the predominant type of visitor use, facility development, and access (see Park General map):

*Islands with some facilities or tour boat access* – those islands accessible by tour boat or where there are relatively well-developed facilities and programs (designated campsites, visitor contact stations, guided interpretive tours, etc.)

*Islands with few facilities and independent access and use* – those islands where there are few or no developed facilities and to which visitors must provide their own transportation or use the concessioner-operated water taxi

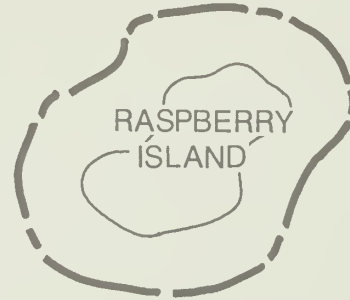
*Islands with restricted access* – those islands to which public access is prohibited because of the sensitive nature of the resource

**Islands with Some Facilities or Tour Boat Access.** Islands accessible by tour boat will include Sand, Raspberry, Oak, Manitou, Basswood, and Stockton; these islands will also remain accessible by private boats. Facilities on these islands are concentrated in small areas ranging from 5 acres (on Sand, Oak, Rocky, and South Twin islands) to 35 acres (at Presque Isle on Stockton), and the remainder of each island will continue to be primitive, with few or no facilities. Proposed development will be for both resource protection and visitor convenience. Mooring buoys may be used as a means of managing overnight sailboat use in the more congested areas. The goal of interpretation will be to weave together the specific stories of each island into a comprehensive picture of the lakeshore. Specific proposals for each island are discussed below.

**Sand Island (2,949 acres)** – Sand Island is a low-lying island about 3 miles by 2 miles, with many wet areas. There are some interesting sandstone caves on the northwest corner of the island. Several private cabins and an old hunting lodge remain on the south shore, two of which – the Shaw farm and the *Sevona* cabin – are listed on the National Register of Historic Places. Public access is currently restricted by use-and-occupancy agreements. Public facilities at East Bay include a dock, three campsites, a well, and a vault toilet. The ranger residence is about 0.5 mile from the campsites and dock. Backcountry camping is permitted on the island.

A light station was built in 1881 on the northern tip of the island. The station is listed on the national register and is used for seasonal quarters. A natural rock ledge directly in front provides a fair-weather boat landing, but the lake is often too rough for docking here. Remains of the historic dock can be seen in Lighthouse Bay. The light station will be restored sufficiently to allow visitors to tour the tower when accompanied by an interpreter. A historic structure report will be completed to guide restoration efforts.

LAKE SUPERIOR



LITTLE SAND BAY (PHASE II)

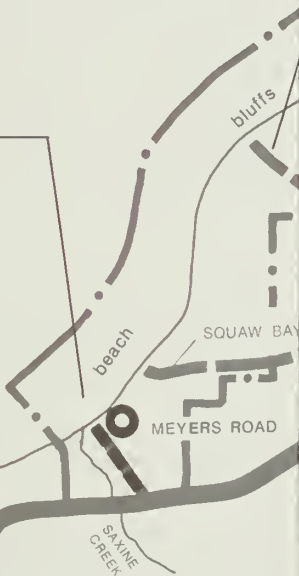
PROPOSED  
VISITOR CONTACT/RANGER STATION, EXHIBITS  
RESTROOMS  
PICNIC AREA (30 SITES)  
PARKING (30-40 CARS)  
CAMPGROUND (50 SITES)



MENARD/ENGHOLM ROAD  
UNPLOWED WINTER ACCESS

MEYERS ROAD

PROPOSED  
INFORMATION KIOSK  
PICNIC AREA (10 SITES)  
PARKING (10-15 CARS)  
TRAILHEAD  
IMPROVED ROAD ACCESS



RED CLIFF  
INDIAN RESERVATION

LEGEND

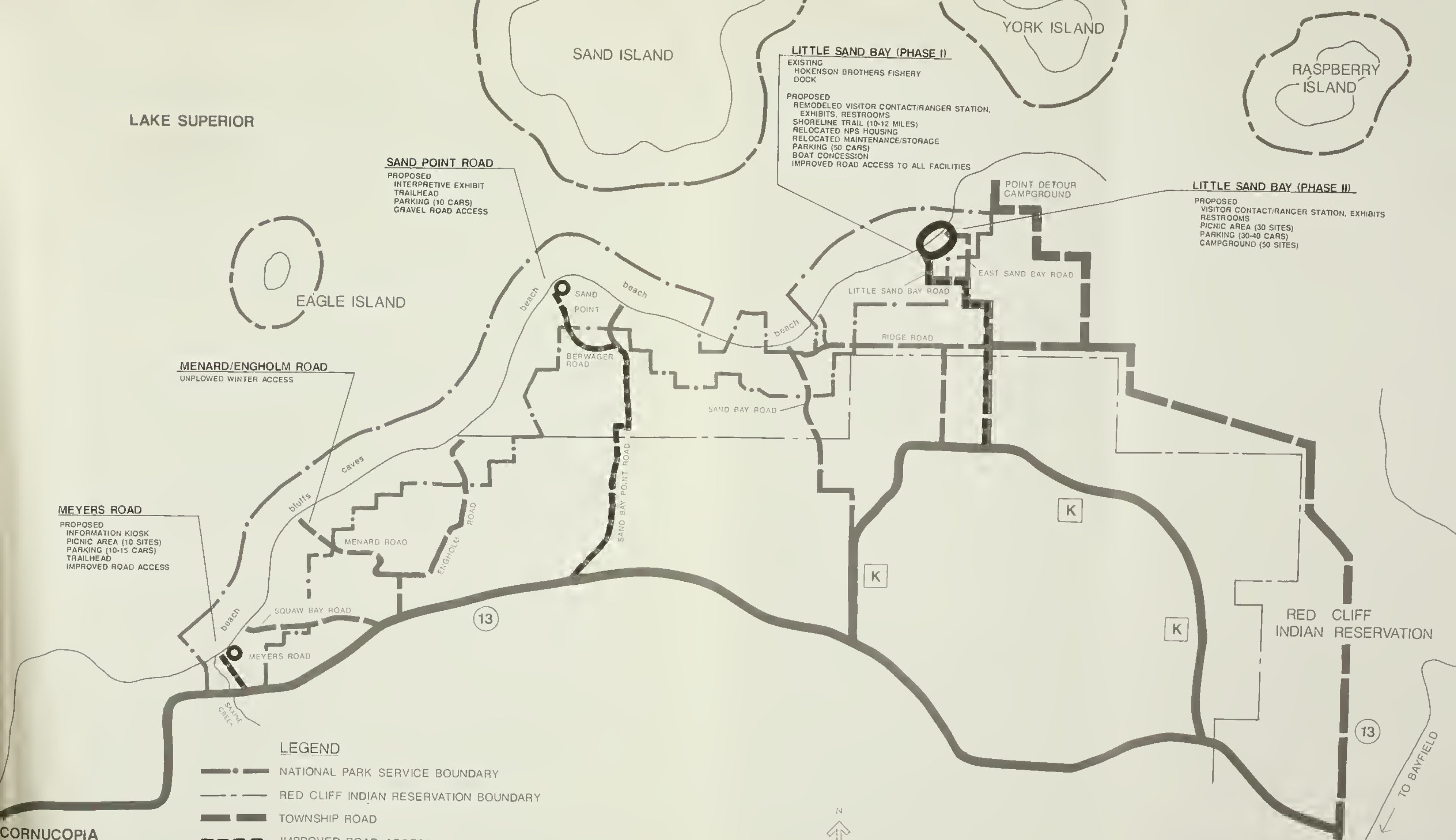
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**VISITOR USE AND ACCESS**  
**MAINLAND-BAYFIELD PENINSULA**  
**APOSTLE ISLANDS**  
**NATIONAL LAKESHORE**

UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE





**VISITOR USE AND ACCESS**  
**MAINLAND-BAYFIELD PENINSULA**  
**APOSTLE ISLANDS**  
**NATIONAL LAKESHORE**  
UNITED STATES DEPARTMENT OF THE INTERIOR/NATIONAL PARK SERVICE

The historical landscape at the Noring farmstead will be maintained. Interpretive programs will focus on the farmstead, a 240-year-old white pine stand along the trail, and the light station.

The campground at East Bay will be expanded to about 10 sites. A ranger residence will be constructed on a former cabin site that has been acquired by the National Park Service. The dock will be extended to accommodate tour boats. Campsites will be provided at the site of the existing ranger station.

When the use-and-occupancy reservations and life estates expire, the island's trail system will be expanded to include the national register properties.

**Raspberry Island (296 acres)** – Raspberry Island is 1 mile long and 0.5 mile wide. A sandspit on the southeast end provides a good landing site, and the bay on the east side is a favored overnight mooring spot for sailboats. The island's forest is relatively undisturbed by past logging activities, and there is a thick understory of yew.

An 1862 light station complex, which is listed on the national register, includes the assistant keeper's quarters, a stable, a fog signal building, a magazine, historic privies, another historic outbuilding, vault toilets, and a dock with a boathouse. Erosion is a problem in front of the light station. The building exteriors, as well as the grounds, have been restored to a 1920s appearance, and an interpreter and a maintenance person stationed at the complex give tours and take care of the grounds. Several temporary exhibits have been provided for visitors. A historic structure report and a historic furnishings study will be done to determine the condition and structural capacity of the light station and the feasibility of refurnishing parts of the station to the 1920s. These studies will provide the necessary information and direction for further restoration efforts. If these studies determine that it is appropriate and feasible, efforts will be made to obtain the original Fresnel lens, which is now in the Madeline Island Historical Museum, and to restore it to the light station. Interpretation of the light station will continue.

A 0.75-mile trail connects the light station with two campsites and a vault toilet on the sandspit. If current monitoring of the sandspit indicates significant resource damage because of camping, the campsites will be removed. Wayside exhibits will be installed to interpret sandspit ecology.

Raspberry Island is one of the few unlogged islands in the lakeshore, and a loop trail will be developed from the light station to interpret this virgin forest.

**Oak Island (5,078 acres)** – Oak Island, 3.5 miles by 2.5 miles, is the highest of the Apostle Islands, with elevations up to 480 feet above the surface of Lake Superior. It is characterized by high clay banks and steep forested shores; a sandspit lies on the southwest corner. The island is heavily forested and cut by steep ravines. Ancient beachlines can be found along what was once the island's east shoreline. An intermittently active eagle nest is on the south shore, and bears are known to inhabit the island.

The remains of five logging camps have been found on the island. The camps apparently belonged to the John Schroeder Lumber Company and date back to the late 1910s. Only foundations are visible, and artifacts have been found in the camp areas and along the logging roads. Camp 5 on the southeast corner of the island



has been the subject of an archeological survey. The Benjamin Armstrong home site is near the sandspit.

The island has 11.5 miles of trail, and the ancient beachlines are evident along the eastern portion of the trail. A dock on the west side of the island is near four group campsites, vault toilets, a well, and a tent cabin for a seasonal ranger. Beaches are available at the sandspit on the southwest corner and along other portions of the shoreline. Eight designated campsites are dispersed along the shoreline. Black-powder hunts for white-tailed deer take place during the fall.

Additional campsites will be developed on Oak Island, with locations determined by a future plan. Prehistoric beachlines, forest history, and logging will be interpreted through wayside exhibits and publications. The dock will be modified to provide for tour boat access.

**Basswood Island (1,917 acres)** – Basswood Island is oval shaped (3.5 miles by about 1.5 miles) and heavily forested, with a rocky shoreline and interesting rock formations on the east side and a natural rock landing on the southeast corner. Basswood is easily accessible to visitors because of its proximity to the marinas at Bayfield and Redcliff. Black-powder deer hunting is permitted in the fall.

Two brownstone quarries, one of which is listed on the national register, are on the southeast end of Basswood Island. Four designated campsites are near the quarries. There are a group site and two individual sites, with a well and vault toilet, near a dock on the west side. The west dock, quarries, campsites, two homestead sites, and the McCloud-Brigham farm are connected by a 5-mile loop trail. The historic dock will be reconstructed at the quarry to accommodate the tour boat as well as visitor boats. The historical landscape of the quarry area and the McCloud-Brigham farmstead will be maintained. A self-guiding interpretive trail will be constructed through the quarry site. The farmstead and quarry will be interpreted through wayside exhibits and publications.





A few campsites may be provided on the north end of the island. Campsites on both the south and west sides of the island will be retained. Winter camping and guided ski/snowshoe trips under commercial use permits will be encouraged.

**Manitou Island (1,363 acres)** – Manitou Island, one of the lowest islands, is about 2.5 miles by 1 mile. There is a gravel beach and dock on the southwest end of the island. Nearby are about a half-dozen sheds and cabins that are remains of a historic fish camp, which is listed on the national register. The camp has been restored and is interpreted. One of the cabins is adaptively used for seasonal quarters, and a well and vault toilet are nearby. A 0.5-mile trail leads from the fish camp to an archeological site on the southeast side of the island.

Two to five additional campsites will be developed on Manitou Island, if a location that is environmentally and recreationally suitable can be found. An interpretive loop trail will be built to connect the campsites and dock with the fish camp and the archeological site on the southeast side of the island. Personal interpretive services at the fish camp will be continued, and a self-guiding site brochure will be developed.

L A K E  
S U P E R I O R



-  SOME FACILITIES/TOUR BOAT ACCESS
-  FEW FACILITIES / INDEPENDENT ACCESS
-  RESTRICTED ACCESS
-  NPS BOUNDARY

## VISITOR USE AND ACCESS

### PARK GENERAL

### APOSTLE ISLANDS NATIONAL LAKESHORE

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

633 20044

DSC SEPT 89

#### US 2/WI 13

INFORMATION CENTER, IN  
COOPERATION WITH NPS,  
LOCAL ORGANIZATIONS,  
OTHER AGENCIES, TRIBES





**Stockton Island (10,054 acres)** – Many visitors consider Stockton the most beautiful island. It is 7.5 miles long and 2.5 miles wide, and it is the largest of the islands in the lakeshore. Along the island's mostly low and forested shoreline are several sand beaches. A large lagoon provides habitat for beavers, and bear are known to live on the island. On the southeast end of Stockton is a low sandy tombolo that connects the rocky Presque Isle Point with the rest of the island.

Stockton receives the highest number of island visitors. The concrete piers at Presque Isle Bay on the island's south side are used by visitors arriving on the tour boat or by private craft. The island has 14.5 miles of trail, including a 0.5-mile self-guiding nature trail by Julian Bay, where the historic shipwreck *Noquebay* lies. A wayside exhibit will interpret the shipwreck, and a map of the wreck will be developed for divers and snorkelers who have valid permits to visit the site. A management plan for the shipwreck site will be prepared to guide public use. NPS staff will continue an energetic education campaign about the importance of not removing artifacts. The site will be monitored for artifact loss, and if any such loss endangers the site's integrity, the Park Service will stop issuing diving permits.

A three-pod facility on Presque Isle Point provides a ranger station plus maintenance and interpretive facilities. Seasonal quarters are nearby. A 19-site campground on the banks overlooks Presque Isle Bay and includes a well and vault toilets. Permanent interpretive exhibits will be installed at the visitor contact station on Presque Isle. The National Park Service will examine visitor and development impacts at Presque Isle and on the adjacent tombolo to guide future management decisions about visitor use development.

Development at Quarry Bay to the west of Presque Isle Bay includes a dock, four group campsites, a well, a vault toilet, and quarters for seasonal staff. The campground is at the site of a historic logging camp, and a brownstone quarry is nearby. The campground will be rehabilitated, and the sites will be clearly delineated. A boardwalk or other system will be installed to channel use and protect the sensitive sand beach vegetation. A footbridge will be constructed across the inlet at Quarry Bay to provide hiker access to Presque Isle. A loop through the quarry will be added to the existing trail. The dock will be extended to provide for tour boat access (tour boats are the primary way for groups to get to the group campsite).

Trout Point, site of a ca. 1917 logging camp, is on the northeast corner of the island and can be reached by trail from Presque Isle Bay. Three campsites have been designated at the point. The logging camp will be interpreted.

Historic logging camps are also located in the clearing on the north end of Presque Isle Bay and on the north and northwest coasts. All five camps are remains from Schroeder Lumber Company operations and date from the 1910s and 1920s. Ruins of a historic fish camp are located on the sandspit.

**Islands with Few Facilities and Independent Access and Use.** This group of islands will serve those visitors who can arrange their own transportation and who seek a more challenging and primitive experience. Most facilities will be for resource or visitor protection rather than visitor convenience. This group of islands will include Long, York, Hermit, Bear, Otter, Ironwood, Cat, South Twin, Rocky, Devils, Outer, and Michigan (see Park General map). Specific proposals for each island are described below.

**Long Island (300 acres)** – Long Island was included in the boundary of Apostle Islands National Lakeshore in 1986 (PL 99-497), with the boundary extending 0.25



mile into Lake Superior and Chequamegon Bay. There is one tract (36.45 acres) of privately owned land. Long Island is the only island in the lakeshore that receives electrical power from the mainland.

Long Island is an example of an unspoiled barrier spit, which is quite rare on Lake Superior. The shape and perhaps the geographic position of Long Island changes over relatively short periods of geologic time because of the continuing transportation and redistribution of sand and biomass. A gap between the "island" and Chequamegon Point formed about 1840, 1870, and briefly in 1981. The present sand bridge formed in the mid-1970s. Long Island is now about 4 miles long and from 30 to 200 yards wide.

A modern cylindrical light tower stands at Chequamegon Point, as well as the abandoned historic Chequamegon Point light. The main light tower, which is known as the La Pointe light, stands on the north coast, along with the 1930s keeper's quarters and dock. The ruins of the historic keeper's quarters and an intact oil house are midway between the two lights. All three components were connected by sidewalks, portions of which still exist.

Long Island probably contains significant prehistoric and historic cultural resources dating to the mid-17th century. The shipwreck *Lucerne* lies within lakeshore boundaries off the north coast.

Plants and wildlife differ considerably from those on the other islands. Ornithologists agree that the island is an outstanding habitat and staging area for sensitive shorebirds, including the endangered piping plover. Long Island is integral to the biologically rich estuarine habitats of the Kakagon Sloughs, the home of the Bad River Band of the Lake Superior Chippewa.

Long Island's sand and adjacent fishing waters comprise an increasingly important recreational resource for boaters from the nearby ports of Ashland, Washburn, Port Superior, Bayfield, and La Pointe.

No visitor use proposals will be considered for Long Island until ongoing basic resource inventories have fully evaluated the significance and sensitivity of natural and cultural resources.

**York Island (320 acres)** – York Island was once two islands that are now connected by a low stretch of sand. The mile-long island is about 150 yards wide at the northwest end and about 0.5 mile wide at the southeast end. There is a sandspit on the southeast corner. An active bald eagle nest is on the island. Five campsites are located along the sandy north beach, but there are no toilet facilities or well.

The north landing site provides an excellent opportunity for visitors with hand-powered watercraft, such as kayaks. One or two small additional campsites will be designated along the north beach. No camping will be allowed on the fragile sandspit, and no docking facilities will be provided.

**Hermit Island (778 acres)** – This island is about 2 miles long and 0.75 mile wide. The shoreline of the western third is steep clay, while the rest is rocky. Gulls nest on the rocks on the north side of the island.

An abandoned brownstone quarry on the southeast side can be viewed from Lake Superior. Massive cribs are the only remains of an old dock that once served the quarry, and they can be seen just below the water surface near the quarry. The ruins of Cedar Bark Cottage, which belonged to quarry owner Frederick Prentice, are immediately east of the quarry. Around the turn of the century the cottage was converted to Cedar Bark Lodge. A historic farmstead is located on the shoreline approximately 0.5 mile northeast of the quarry.

The primary landing and trailhead on Hermit Island will be the sand beach on the north shore of the island. A few campsites will be developed near this landing and in an area on the western coast. A trail will connect the beach landing, quarry, Wilson's cabin site, Cedar Bark Lodge site, the rocky coast northwest of the gull colony, and the campsites. Wayside exhibits or publications will provide interpretation.

**Bear Island (1,824 acres)** – The highest point on Bear Island is 250 feet above lake level, making it the second highest of the Apostle Islands. The island is about 2 miles long and 1.75 miles wide. There is a sandspit on the southeast side, rocky shores with interesting features on the north and east, and clay bluffs on the west. Because of its topography, there are dramatic examples of beachlines formed by earlier Lake Superior water levels. The island contains a virgin stand of hemlock and a bog at the 800-foot elevation. A 1930s logging camp with remains of log buildings is on the northeast side of the island.

Although Bear Island has good potential for visitor use, the most desirable locations for a dock and other visitor activities are under life estates and use-and-occupancy agreements. When these agreements expire and resource studies have been completed, visitor use proposals will be considered.

**Otter Island (1,322 acres)** – Otter Island is 2 miles long and 1.25 miles wide. The north and northwest shorelines are lined with rock cliffs, while the other shores are mostly low-lying. There is a natural rock landing on the north side plus a small sandspit on the southeast end. Areas near the rocky cliffs are covered with boreal forest vegetation, and gulls nest on the north side of the island.

A U-shaped dock on the southeast corner provides access to three designated campsites, a well, a vault toilet, and a 1.9-mile trail. Privately owned properties with two unmaintained cabins adjacent to the campsites are managed under use-and-occupancy agreements. A historic 19th century fishing or logging camp (currently under a use-and-occupancy agreement) and an archeological site are near the trailhead.

A study will be conducted to determine if the dock at Otter Island is altering the configuration of the sandspit and to recommend corrective action. A few campsites will be developed on the northeast corner of the island.

**Ironwood Island (659 acres)** – Ironwood Island is 1 mile wide and 1.25 miles long. A good sandy beach landing site on the south tip has one designated campsite. Past logging activities damaged the sandspit. There are several old logging roads, but no developed or maintained trails. Backcountry camping is permitted.

No additional facilities will be proposed on Ironwood Island. The good landing sites will continue to be available for use by visitors who enjoy the challenge of using hand-powered watercraft, such as kayaks, and who want opportunities for solitude.

**Cat Island (1,348 acres)** – Cat Island is a low-lying island 3 miles long and 1.25 miles wide. The south end of the island has sandy beaches; the north end, a rocky shoreline. A good sandy beach landing site, two designated campsites, and a well are on the south sandspit. The cabin on the island may be removed. A historic logging camp is just north of the cabin. Old logging roads are visible, but there are no maintained trails.

No facilities will be developed on Cat Island so that it will continue to offer opportunities for solitude.

**South Twin Island (360 acres)** – South Twin Island (1 mile long and 0.75 mile wide) is predominantly covered with sand and has no rock formations. A small sandspit is on the west side of the island. South Twin receives heavy use because of the protected waters and the NPS facilities on the west side of the sandspit. Boardwalks connect a dock with a fire ring, a small interpretive center, seasonal staff quarters, and a district ranger residence. A well and vault toilets serve the area, and a 0.25-mile trail leads to an abandoned airstrip. There are five campsites around the perimeter of the area. A fuel supply for NPS boats is stored near the dock. The anchorage between South Twin and Rocky islands is popular with sailboaters because it offers a safe place to moor.

The small interpretive station and staff quarters on South Twin will be removed. Alternatives for providing other interpretation at the site will be considered by the lakeshore staff.

**Rocky Island (1,099 acres)** – Rocky Island is about 2 miles by 1 mile. It has a rocky shoreline on the south, sand beaches on the east and northwest, and a sandspit on the southeast. The protected water between Rocky and South Twin islands draws the second highest boater use after Stockton Island. A 1.9-mile trail from the dock on the east side of the island leads to the sandspit and seven campsites along the shore, and a second trail from the dock leads to the west side of the island. Along the trail is the Nies fish camp, which is being interpreted through wayside exhibits. An NPS-owned cabin, well, and vault toilet are near the dock. The Hadland fish camp (listed on the national register) is north of the dock and is under a use-and-occupancy agreement due to expire in 1999. Other long-term use-and-occupancy agreements limit public access and use of the northern quarter of the island. A bald eagle nest was discovered on the island's northeast tip in 1987.

The existing staff quarters are substandard and will be replaced. Interpretive signs at the Nies fish camp will remain. When the life estate and use-and-occupancy agreements on Rocky Island expire, the trail system will be extended, campsites will be provided on the northern portion of the island, and the Hadland fish camp will be interpreted.

**Devils Island (318 acres)** – Devils Island is the northernmost of the Apostle Islands, and it receives the brunt of Lake Superior storms. The constant pounding of waves has created spectacular caves in the rocky sandstone bluffs along the northeast shoreline. These caves are a highlight of excursion boat tours. An active bald eagle nest is on the southeast side of the island.

The historic light station on the north end of the island is served by a natural rock landing site. The complex (listed on the national register) consists of two lightkeeper's quarters, one of which is used for seasonal NPS staff, a fog signal building used for maintenance functions, a well, a light tower (with its original Fresnel



lens), a hoisting engine house, and two magazines. The light station will be rehabilitated and preserved, and the interior will be stabilized to prevent deterioration. A cultural landscape report will be completed to guide interpretation of the historical scene. Interpretation will be through signs or publications.

A 1.2-mile historic road links the light station to a dock and small boathouse on the south end of the island. There is one designated campsite at the south landing. A 0.5-mile trail connects the light station and the east landing, and a second 0.5-mile trail runs from the light station to the west rock landing. Backcountry camping will not be permitted. The tour boat will continue to pass by Devils Island so visitors can see the spectacular rock caves created by Lake Superior.

**Outer Island (7,999 acres)** – Outer Island is the third largest of the Apostle Islands, and the second largest in the lakeshore (6.5 miles long by 2.5 miles wide). Low rock cliffs face the east shoreline, and clay bluffs the west. There are several natural rock landings along the coast, and the south end of the island has a large sandspit that encloses a 1-mile-long lagoon. The island has a large stand of virgin hemlock, a beaver population, and a periodically active bald eagle nest.

A light station complex at the north edge of the island (listed on the national register) includes a lighthouse and keeper's quarters, a dock, a fog signal/generator building, an oil house, vault toilets, and a well. The light station will be rehabilitated and preserved, and the interior will be stabilized. A self-guided interpretive trail will be built to the unique hemlock stand near the light station.

A 7-mile trail connects the light station with a sandspit and a good sand beach landing at the south end of the island, where there is one designated campsite and a vault toilet. The major trails on the island will be maintained only in a primitive state.

Approximately 2 miles up the trail from the sandspit are the remains of a Schroeder Lumber Company camp (ca. 1928-30), which was apparently the only railroad camp on the islands, and most of the trail is routed along the railroad grade. The historical clearing at the logging camp may be maintained, and the significance of the camp and railroad landing will be explained. There are also remains of the 1940s Lullaby logging camp on the northeast shore, which will be allowed to deteriorate naturally.

**Michigan Island (1,581 acres)** – Michigan Island is 3.5 miles long and 1.25 miles wide. A large sandspit on the southwest end encloses a lagoon, but most of the rest of the shoreline is made up of high clay bluffs. On the northern tip of the island is a virgin stand of hemlock and an eagle nesting area.

A light station complex on the southwest corner of the island includes an 1850s lighthouse (not in use), a 1926 lightkeeper's quarters (used for park staff), a light tower that was transported to the island in the 1920s, a generator/fog signal building, a storage shed, a tramway, and a pit toilet. The complex is listed on the national register. A dock was completed in 1987 at the site of the light station's historic dock. The light station will be rehabilitated and preserved, and the interior will be stabilized to prevent deterioration. The light station grounds will be maintained to allow access by visitors. A cultural landscape report of the light station will be completed to determine the appropriate time period for interpretation and to provide other data for maintaining the historical scene.



A large sandspit on the west end is used for beach landings. The sandspit will be monitored for signs of any adverse effects, and if necessary, the existing campsites will be relocated to protect the sandspit. Resource protection measures will be interpreted through signs or publications.

A 1-mile unmaintained trail from the sandspit to the light station will be realigned and maintained to prevent erosion. Historic logging, fishing, and homestead sites are also found on the island and are being allowed to deteriorate naturally.

**Islands with Restricted Use and Access.** Public use of North Twin, Gull, and Eagle islands will continue to be restricted because of the sensitivity of the resources and unique opportunities for scientific studies.

**North Twin Island (175 acres)** – Remote North Twin Island is the smallest (1 mile by 0.25 mile) of the forested islands, with a good example of a relatively undisturbed boreal forest. The shoreline is nearly all rocky, with a natural rock landing site on the northwest corner. Bald eagles have nested on the island in recent years. A cabin near the landing site is used to house biological researchers.

**Gull Island (3 acres)** – Gull Island is a low island that is the visible end of a reef extending northeastward from Michigan Island; it is about 200 yards long and 20 yards wide. The island consists of pebbles and boulders and is sparsely covered with grasses and shrubs. An automatic navigation light warns boaters about nearby reefs. Visitation will continue to be restricted because this is one of the primary nesting sites of the herring gull and double-crested cormorant. Boaters may not approach the island during the nesting period, from late May through September.

**Eagle Island (28 acres)** – Eagle Island is the westernmost of the Apostle Islands and is about 0.5 mile square. Forested and with a rocky shoreline, the island is a primary nesting site for herring gulls and double-crested cormorants, and there is also a great blue heron rookery. Access and approach to the island will continue to be restricted during the nesting periods to preclude disturbance by visitors. Access to the island is also dangerous because of submerged boulders and reefs.

## **Carrying Capacity**

Carrying capacity is a concept that can help quantify how much use a given unit of land can support. The goal is to identify a level of use that is within management policies and objectives and that will prevent resource degradation due to overuse.

Four types of carrying capacity can be applied to recreational settings: physical, ecological, social, and facility (Shelby and Heberlein 1986). Any one or any combination of these capacities may be applied to a recreation area at a given time. The selection of a capacity measurement scheme for an area depends on specific conditions within the park, on the availability or accessibility of baseline data, and on management policies and objectives. In addition, different measurements of capacity may be applied to separate areas within a facility.

*Physical capacity* involves the number of recreationists that can physically fit into an area. Measurements for this capacity are usually expressed in terms of the number of people per unit of space (for example, per acre or square foot).

*Ecological capacity* is concerned with impacts on the natural environment. Ecological carrying capacity is determined in consideration of the impacts that recreational use could have on animals, plants, soils, water, air, and other elements of the ecosystem. When necessary, this capacity may also be extended to encompass impacts on cultural resources. The capacity might then be termed *resource capacity*.

*Social capacity* refers to the number of people that can be in an area without altering or impairing recreational experiences. Measurements of impact are largely based on the number of encounters with other recreationists, and on the effect of these encounters on the overall enjoyment of the park and activities.

*Facility capacity* is indicated by the number of people that can be accommodated by improvements such as parking lots, restrooms, boat ramps, and campgrounds.

For those islands classified within the natural and historic zones, the primary management consideration will be the protection of park resources where use occurs or is anticipated. To this end a *resource capacity* for these zones will be determined and implemented. The establishment of a resource capacity will require extensive resource monitoring and baseline data collection. This monitoring and data collection is already underway and will continue indefinitely.

Another consideration within the natural and historic zones will be the experiences of lakeshore visitors. A *social capacity* will be developed and implemented within these zones that will help ensure quality visitor experiences. This capacity will be determined in consideration of the results of past and future sociological studies.

To ensure quality visitor experiences for future generations, park resources must be carefully protected. Thus, while social capacity is an important management tool, resource capacity will have precedence in determining appropriate visitor use levels.

The primary management considerations for those areas of the lakeshore that are within the development zone will be the preservation of quality visitor experiences and good overall facility maintenance. To facilitate these goals, a *facility capacity* will be used. Deterioration of facilities from overuse will be closely monitored.

When an applied capacity is in danger of being exceeded in any zone, the lakeshore will implement actions to restore conditions to acceptable levels. Examples of corrective actions may include the restriction of visitor use or not expanding facilities in the development zone.

Until baseline data have been collected to allow for the accurate determination of resource and social capacities, facility capacity will provide the best estimate of carrying capacity for the lakeshore. As more baseline data are collected on the resource and use patterns of the lakeshore, social and resource capacities will be implemented.

The carrying capacity of the lakeshore is established by the size of existing and proposed facilities and programs. At Apostle Islands three facilities provide the ultimate constraints on visitor use. Use on the mainland is regulated by the number of automobile parking spaces, while island use is largely controlled by the number of boat slips at nearby marinas and by tour boat capacities. Parking/docking facilities and tour boat capacities are an excellent indication of the possible magnitude of the lakeshore's carrying capacity. (A complete discussion of the methodology used to determine facility carrying capacities for the lakeshore is included in appendix C.)

Facility carrying capacities for Apostle Islands are intended only as a guide, and a carrying capacity model should also incorporate expressions of current and predicted environmental impacts caused by visitor use, as well as statistics on the nature, volume, and distribution of recreational use within the lakeshore. In order to develop a more thorough understanding of such considerations (and to make more effective use of the carrying capacity concept), the following actions will be accomplished by lakeshore staff:

Continue and expand field sampling points to observe and measure visitor impacts on the ecosystem, on facilities, and on recreational activity patterns.

When feasible, conduct additional visitor surveys to determine use patterns (including turnover rates, average length of stay, intrapark travel patterns, and areas of concentrated use).

Utilize visitor information systems in adjusting future use volumes.

The total facility capacity for Apostle Islands under existing conditions is approximately 507,000 visitors, which has been determined based on the peak use period. About 53 percent of this total (268,000 visitors) is attributable to the mainland, while the remainder is associated with the islands. Recreation visits to Apostle Islands totaled approximately 140,000 in 1988 (the peak year for visitation thus far). Therefore, current lakeshore use is about 28 percent of total facility capacity.

The estimated annual facility capacity with proposed facility modifications, including the addition of parking spaces at Little Sand Bay, Meyers Road, and Sand Point, along with changes in tour boat schedules, routes, and capacities, are shown in table 1. Total lakeshore capacity will be approximately 20 percent higher than under existing conditions. The capacity of the islands will be about 4 percent higher than under existing conditions, while the capacity of the mainland will increase by about 35 percent. Peak year visitation (140,000) will be equivalent to 23 percent of total capacity.

**Table 1: Annual Facility Carrying Capacity**

| <b><u>Islands</u></b>          | <b><u>Recreation Visits</u></b> |
|--------------------------------|---------------------------------|
| Private Boats*                 | 211,000                         |
| Tour Boats                     | 38,000                          |
| Subtotal                       | 249,000                         |
| <b><u>Mainland</u></b>         |                                 |
| Bayfield Headquarters          | 249,000                         |
| Little Sand Bay                | 81,000                          |
| Meyers Road                    | 19,000                          |
| Sand Point                     | 12,000                          |
| Subtotal                       | 361,000                         |
| <b>Total Facility Capacity</b> | <b>610,000</b>                  |

\* Private boats include privately owned craft, charter boats, and water taxi service. This capacity is a reflection of the total number of available slips at local marinas, the average number of boats that enter the island system from other Lake Superior ports, the average number of boats that are launched at local ramps, and the average use of water taxis. (See appendix C.)

With the development of a 50-site campground and additional parking at Little Sand Bay, if warranted by demand, an additional 78,000 annual recreation visits will be added to the lakeshore's facility capacity (for a total capacity of 688,000). Total lakeshore capacity will then be 36 percent higher as compared to existing conditions. The capacity of the mainland will be 64 percent higher than under existing conditions, and peak year visitation will be equivalent to 20 percent of total capacity.



## **LAKESHORE OPERATIONS**

Lakeshore headquarters will remain in leased space in the old Bayfield County courthouse.

On-site park staff housing is required to provide 24-hour resource and visitor protection services in the Little Sand Bay area. Existing employee housing at Little Sand Bay will be relocated to the east-northeast portion of Little Sand Bay, away from the Hokenson Brothers Fishery in order to diminish the impact on this historic resource.

A small maintenance operation will be retained in Little Sand Bay to serve the Little Sand Bay development and nearby islands. The primary maintenance facility will remain in the Bayfield vicinity to service the Bayfield visitor center and headquarters vehicles, boats and other equipment, and the maintenance needs of a majority of the islands.

Employee quarters will continue to be provided on Sand, Raspberry, Oak, Manitou, Stockton, Rocky, Devils, and Michigan islands. Staffing levels will vary at each site, depending on visitor services and resource protection needs.

## PROPOSED STUDIES

The following studies will be undertaken as soon as possible.

***Cultural Landscape Reports*** – Cultural landscape reports are needed for the Devils Island and Michigan Island light stations. A landscape report will document the historical development of a microenvironment in association with related structures and the significance to the lakeshore. This information will provide the context for understanding, restoring, and interpreting a particular environment.

***Environmental Monitoring Survey*** – This information is vital to establishing carrying capacities for the lakeshore. Study areas in the lakeshore will be identified, evaluated, and monitored for the impacts resulting from recreational use.

***Historic Furnishings Study*** – A historic furnishings study is needed for the Raspberry Island light station to document its historic furnishings. The study will determine what furnishings to display and how to arrange them. It will also control their maintenance, replacement, or other changes in the furnishings to protect the quality and integrity of the historic structure.

***Historic Resource Study*** – A comprehensive historic resource study is needed for the entire lakeshore to evaluate archeological and historic resources. This study will provide the overall context for these resources and will evaluate all park resources to determine if they meet national register criteria. Those that meet the criteria will be nominated to the register, and a base map depicting cultural resources will be developed. The resource study should be done in coordination with the underwater resource study.

***Historic Structure Reports*** – Historic structure reports are needed for the light stations on Raspberry, Sand, Outer, Michigan, Long, and Devils islands. Such reports are prepared when there are to be major changes of use for historic structures or where activities are programmed that may affect the qualities and characteristics that make the properties eligible for inclusion on the national register. The reports will present and evaluate historical and architectural/engineering research findings on the structures, including all periods of construction (not just "significant" periods), modifications, source materials, building techniques, other evidence of use, and settings. Recommendations for treatment will be made that are consistent with the structures' settings and significance, integrity, condition, and programmed use.

***Hydrological Study*** – A hydrological study is needed on Devils Island to determine what impacts the historic road has had on surface water flow and subsequently on the flora of the island.

***Interpretive Prospectus*** – The last interpretive prospectus for the lakeshore was written in 1979. This plan needs to be updated to implement the proposals of the new general management plan. The prospectus needs (1) to develop a diversity of new summer, off-season, and special programs, (2) to design a new interpretive center, and (3) to determine the location, number, and type of wayside exhibits. In addition, interpretive staffing requirements will be set, and new information/orientation maps and guides will be produced.

***Littoral Drift Studies*** – Docks on Otter, Basswood, Oak, Michigan, Raspberry, and Outer islands may be affecting the littoral drift and sandspit formation. Studies are needed to determine if there is an effect and, if so, to recommend appropriate corrective actions.

***Sociological Studies*** – Previous studies have provided information on sailboat users and cruise boat users. A new study is needed to determine the characteristics of the other lakeshore users, their recreational experiences, and the sociological carrying capacity. A study is also needed to determine environmental impacts of recreational use within the lakeshore, the socioeconomic impacts on the region of lakeshore recreational use, and the management system needed to protect recreational resources.

***Special History Study*** – A special history study on the role and function of the Apostle Islands light stations in Great Lakes navigation will enable the lakeshore to better interpret the story to visitors.

***Underwater Resource Study*** – A phased underwater resource study is needed to discover and record the conditions of shipwrecks found within the 0.25-mile boundary around each island.

***Wilderness Study*** – A wilderness study will be conducted to determine what areas within the lakeshore meet the criteria for wilderness designation.

## IMPLEMENTATION SCHEDULE, COST ESTIMATES, AND STAFFING

The implementation of the general management plan will be accomplished in three phases, as described below, and will be dependent on congressional appropriations. Scheduling of management actions will ensure that the management objectives of the lakeshore are accomplished in a manner that protects the natural and cultural resources, provides for visitor use, and minimizes conflicts between visitors and reservation-of-use holders.

**Phase 1 actions** – These actions will be undertaken after approval of the general management plan. Phase 1 actions will involve the development of information and interpretive services and resource protection actions.

**Phase 2 actions** – These actions will primarily provide needed development to support expanding programs and activities and to provide improved public transportation to selected islands.

**Phase 3 actions** – These actions are generally those that will be implemented only after a demonstrated need.

Development costs are estimates and are conceptual in nature for the purposes of long-range programming and budgeting. They include not only construction cost estimates, but also costs for project planning, project supervision, and contingencies. These cost estimates will be refined for each project at the preliminary design stage. These cost estimates do not include actions described and proposed in the *Resources Management Plan*. Costs for interpretive media will be determined when a media plan is prepared. Cost figures are gross costs in 1989 dollars.

Table 2: Cost Estimates

| <u>Action</u>  | <u>Total Project Cost</u> |
|--|---------------------------|
| <u>Phase 1</u>   |                           |
| Provide 6 information kiosks at local marinas                                  | 156,000                   |
| Pave Little Sand Bay Road (2.5 mi)   | 1,636,000                 |
| Remodel visitor contact station; provide<br>comfort station at Little Sand Bay | 124,000                   |
| Construct 0.5 mi loop trail at Little Sand Bay                                 | 15,000                    |
| Extend dock on Sand Island   | 74,000                    |
| Construct 1.5 mi loop trail on Raspberry Island                                | 47,000                    |
| Extend dock on Oak Island  | 74,000                    |
| Construct 3-5 campsites on Oak Island  | 8,000                     |
| Extend dock at Quarry Bay (Stockton Island)                                    | 74,000                    |
| Reroute trail/boardwalk at Presque Isle (Stockton Island)                      | 43,000                    |
| Construct footbridge (4' by 150') at Quarry Bay<br>(Stockton Island)           | 37,000                    |
| Remove employee quarters and contact station<br>from South Twin Island         | 6,000                     |
| Relocate/construct employee quarters (1,000 sq ft)<br>on Rocky Island          | 96,000                    |
| Realign 1 mi of trail on Michigan Island                                       | 47,000                    |
| Gravel Meyers Road (1.25 mi)   | 15,000                    |



| <u>Action</u>  | <u>Total Project Cost</u> |
|--|---------------------------|
| Construct information kiosk at Meyers Road   | 79,000                    |
| Construct parking area (10-15 cars) at Meyers Road   | 29,000                    |
| Construct 10-site picnic area at Meyers Road   | 12,000                    |
| Replace existing employee housing (2 residences;<br>one 6-unit apartment) at Little Sand Bay   | <u>705,000</u>            |
| <b>Subtotal – Phase 1</b>  | <b>3,277,000</b>          |
| <br><u>Phase 2</u>   |                           |
| Gravel and realign Sand Point Road   | 820,000                   |
| Construct parking area (10 cars) at Sand Point   | 16,000                    |
| Construct parking area (50 cars) at Little Sand Bay  | 83,000                    |
| Construct 10-12 mi shoreline trail on mainland   | 374,000                   |
| Remove nonhistoric structures from vicinity of Hokenson<br>Brothers Fishery at Little Sand Bay | 29,000                    |
| Restore light station on Sand Island   | 156,000                   |
| Prepare historic structure report for Sand Island<br>light station                             | 30,000                    |
| Construct 7 campsites on Sand Island   | 22,000                    |
| Relocate ranger residence (600 sq ft) on Sand Island   | 19,000                    |
| Reconstruct dock (12 ft by 100 ft) on Basswood Island  | 74,000                    |
| Construct 3-5 campsites on Basswood Island   | 8,000                     |
| Provide 3 wayside exhibits on Stockton Island  | 15,000                    |
| Construct 3-5 campsites on Hermit Island   | 8,000                     |
| Construct 1.5 mi trail on Hermit Island  | <u>47,000</u>             |
| <b>Subtotal – Phase 2</b>  | <b>1,701,000</b>          |
| <br><u>Phase 3</u>   |                           |
| Construct 2-5 campsites on Manitou Island  | 8,000                     |
| Construct 1-mi loop trail on Manitou Island  | 31,000                    |
| Construct 5 campsites on Otter Island  | 8,000                     |
| Rehabilitate Devils Island light station and<br>stabilize interior                             | 156,000                   |
| Prepare historic grounds study for Devils Island<br>light station                              | 30,000                    |
| Rehabilitate Outer Island light station and<br>stabilize interior                              | 156,000                   |
| Construct 0.25 mi trail on Outer Island  | 3,000                     |
| Construct interpretive center/ranger station<br>at Little Sand Bay                             | 1,428,000                 |
| Construct parking area (30-40 cars) at Little<br>Sand Bay                                      | 67,000                    |
| Construct 1 mi road at Little Sand Bay   | 655,000                   |
| Remove old visitor contact station at Little Sand<br>Bay and landscape site                    | 45,000                    |
| Construct 30-site picnic area at Little Sand Bay   | 36,000                    |
| Construct 50-site campground at Little Sand Bay  | <u>155,000</u>            |
| <b>Subtotal – Phase 3</b>  | <b>2,778,000</b>          |
| <b>Total</b>   | <b>7,756,000</b>          |

**Table 3: Annual Costs**

| <b><u>Staffing</u></b>                        | <b><u>Existing</u></b> |                    | <b><u>Additional Staffing/Cost<br/>To Implement Plan</u></b> |                    |
|---|------------------------|--------------------|--|--------------------|
|   | <b><u>FTEs</u></b>     | <b><u>Cost</u></b> | <b><u>FTEs</u></b>   | <b><u>Cost</u></b> |
| Administration                                | 8.5                    | 207,000            | 0  | 0                  |
| Interpretation                                | 4.8                    | 100,000            | 4.3  | 91,000             |
| Resource Management<br>and Visitor Protection | 9.9                    | 248,000            | 2.5  | 43,000             |
| Maintenance                                   | <u>21.0</u>            | <u>504,000</u>     | <u>3.3</u>   | <u>45,000</u>      |
| Total   | 44.2                   | 1,059,000          | 10.1   | 179,000            |
| <br><b><u>Other</u></b>                       |                        |                    |  |                    |
| Public Transportation                         |                        |                    |  | 646,000            |



**APPENDIXES**

**BIBLIOGRAPHY**

**PLANNING TEAM & CONSULTANTS**





## APPENDIX A: LEGISLATION

An Act to provide for the establishment of the Apostle Islands National Lakeshore in the State of Wisconsin, and for other purposes. (84 Stat. 880)

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That, in order to conserve and develop for the benefit, inspiration, education, recreational use, and enjoyment of the public certain significant islands and shoreline of the United States and their related geographic, scenic, and scientific values, there is hereby established the Apostle Islands National Lakeshore (hereinafter referred to as the "lakeshore") in Ashland and Bayfield Counties, Wisconsin, consisting of the area generally depicted on the map entitled "Apostle Islands National Lakeshore", numbered NL-AI-91,000, sheets 1 and 2, and dated June 1970. The map shall be on file and available for public inspection in the office of the Director, National Park Service, Department of the Interior.

SEC. 2. No lands held in trust by the United States for either the Red Cliff Band or Bad River Band of the Lake Superior Chippewa Indians, or for allottees thereof, shall be acquired or included within the boundaries of the lakeshore established by this Act, with the following exception:

If the Indians who own more than 50 per centum of the interest in allotment number 74 GL or allotment number 135 in the Red Cliff Reservation agree to sell the allotment to the Secretary of the Interior (hereinafter referred to as the "Secretary"), the Secretary may consent to the sale on behalf of the other owners, purchase the allotment for the negotiated price and revise the boundaries of the lakeshore to include the allotment.

SEC. 3. The Secretary may acquire within the boundaries of the lakeshore lands and interests therein by donation, purchase with donated or appropriated funds, or exchange, but lands and interests in lands owned by the State of Wisconsin may be acquired only by donation. Notwithstanding any other provision of law, any Federal property located within the boundaries of the lakeshore may, with the concurrence of the agency having custody thereof, be transferred without transfer of funds to the administrative jurisdiction of the Secretary for the purposes of the lakeshore.

SEC. 4. (a) With the exception of not more than eighty acres of land to be designated within the lakeshore boundaries by the Secretary as an administrative site, visitor center, and related facilities, as soon as practicable, any owner or owners of improved property on the date of its acquisition by the Secretary may, as a condition of such acquisition, retain for themselves and their successors or assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term not to exceed twenty-five years, or, in lieu thereof, for a term ending at the death of the owner, or the death of his spouse, whichever is the later. The owner shall elect the term to be reserved. The Secretary shall pay to the owner the fair market value of the property on the date of such acquisition less the fair market value on such date of the right retained by the owner.

(b) A right of use and occupancy retained pursuant to this section may be terminated with respect to the entire property by the Secretary upon his determination that the property or any portion thereof has ceased to be used for noncommercial residential or for agricultural purposes, and upon tender to the holder of a right an amount equal to the fair market value, as of the date of the tender, of that portion of the right which remains unexpired on the date of termination.

(c) The term "improved property", as used in this section, shall mean a detached, noncommercial residential dwelling, the construction of which was begun before January 1, 1967 (hereinafter referred to as "dwelling"), together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

SEC. 5. The Secretary shall permit hunting, fishing, and trapping on lands and waters under his jurisdiction within the boundaries of the lakeshore in accordance with the appropriate laws of Wisconsin and the United States to the extent applicable, except that he may designate zones where, and establish periods when, no hunting, trapping, or fishing shall be permitted for reasons of public safety, administration, fish or wildlife management, or public use and enjoyment. Except in emergencies, any regulations prescribing any such restrictions shall be put into effect only after consultation with the appropriate State agency responsible for hunting, trapping, and fishing activities.

SEC. 6. The lakeshore shall be administered, protected, and developed in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-4), as amended and supplemented; and the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1, 2-1), as April 9, 1924 (43 Stat. 90; 16 U.S.C. 8a et seq.), as amended, except that any other statutory authority available to the Secretary for the conservation and management of natural resources may be utilized to the extent he finds such authority will further the purposes of the Act.

SEC. 7. In the administration, protection, and development of the lakeshore, the Secretary shall adopt and implement, and may from time to time revise, a land and water use management plan which shall include a specific provision for—

(a) protection of scenic, scientific, historic, geological, and archeological features contributing to public education, inspiration, and enjoyment;

(b) development of facilities to provide the benefits of public recreation together with such access roads as he deems appropriate; and

(c) preservation of the unique flora and fauna and the physiographic and geologic conditions now prevailing on the Apostle Islands within the lakeshore: *Provided*, That the Secretary may provide for the public enjoyment and understanding of the unique natural, historical, scientific, and archeological features of the Apostle Islands through the establishment of such trails, observation points, exhibits, and services as he may deem desirable.

SEC. 8. There are authorized to be appropriated not more than \$4,250,000 for the acquisition of lands and interests in lands and not more than \$5,000,000 for the development of the Apostle Islands National Lakeshore.

Approved September 26, 1970.

*Legislative History*

House Report No. 91-1280 accompanying H.R. 9306 (Committee on Interior and Insular Affairs).

Senate Report No. 91-276 (Committee on Interior and Insular Affairs).  
Congressional Record:

Vol. 115 (1969): June 26, considered and passed Senate.

Vol. 116 (1970):

Sept. 10, considered and passed House, amended, in lieu of H.R. 9306.

Sept. 16, Senate concurred in House amendment.



## An Act

To authorize the inclusion of certain additional lands within the Apostle Islands National Lakeshore.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*  
The Act of September 26, 1970 (Public Law 91-424; 16 U.S.C. 460w) is amended as follows:

(1) In section 1—

(a) in the first sentence, after the phrase “consisting of”, insert: “: (a) IN GENERAL—”;

(b) at the end of the first sentence, delete “1970” and insert: “1970; and

“(b) LONG ISLAND ADDITION.—Approximately 200 acres of land at the mouth of Chequamegon Bay known as “Long Island”, as depicted on the map numbered NL-AI-91,001 and dated December, 1985.”;

(c) in the last sentence, delete “map” and insert “maps”.

(2) In section 3, after the word “donation.”, strike the following sentence and insert in lieu thereof the following: “Notwithstanding any other provision of law, any Federal property located within the boundaries of the lakeshore is hereby transferred without transfer of funds to the administrative jurisdiction of the Secretary for the purposes of the lakeshore: *Provided*, That the United States Coast Guard may retain a right to utilize a portion of such land and facilities for use as navigational aids so long as may be required.”.

(3) In section 4(c), after “January 1, 1967”, insert: “, or before January 1, 1985 for those lands referred to in section 1(b)”.

(4) Section 8 of such Act is amended by adding the following at the end thereof: “Effective October 1, 1986, there are authorized to be appropriated such additional sums as may be necessary for the acquisition of the lands described in section 1(b).”.

## APPENDIX B: MANAGEMENT OBJECTIVES

### CULTURAL RESOURCE MANAGEMENT

Identify, inventory, preserve, protect, and interpret to the public the lakeshore's cultural resources in accordance with legislative and executive requirements and NPS historic preservation policies.

- Establish baseline data for cultural resources, including archeological sites, historic light stations, quarries, logging camps, fishing sites, farmsteads, and submerged resources.
- Conduct a research and resource monitoring program to provide information for the management and interpretation of cultural resources.
- Preserve and maintain historic structures, landscapes, and objects at national register sites.
- Provide for visitor use and enjoyment of cultural sites without impairing resource integrity.
- Complete essential resource studies: historic resource study; historic structure reports for light stations; furnishings study for Raspberry Island light station; preservation guides for light stations, Hokenson Brothers Fishery, and Manitou Camp; archeological field studies; legislative/administrative history.

### NATURAL RESOURCE MANAGEMENT

Study, protect, interpret, and manage the lakeshore's natural resources in accordance with legislative and executive requirements and the NPS *Management Policies*. Ensure that the natural resource management plan is updated on a regular basis to address the following:

shoreline environments, including sandspits, beachlines, and their relationships to erosion and beach-building processes

habitats of native plants and animals

the proliferation of plants and animals owing their existence to human intervention

plants and animals and their habitats that have been eliminated or severely altered because of the actions of humans during the past 300 years

aquatic resources in Lake Superior

acid deposition and air transport of contaminants

Rehabilitate, where appropriate, resources and processes recently altered by human activities. Use natural or simulated natural processes wherever possible; natural processes may, however, be modified to protect the integrity of certain cultural resources.

Provide for visitor use and facility development in an ecologically sound manner.

If problems are identified, ensure through an ongoing monitoring program and subsequent mitigation that the water quality of Lake Superior is not diminished by the National Park Service or visitor use (use ca. 1970 as the base year).

Manage islands found to be suitable for wilderness designation under the Wilderness Act of 1964 so as not to impair their wilderness qualities, pending congressional consideration of wilderness designation.

## **VISITOR USE AND RECREATION**

Identify, provide for, interpret, and regulate appropriate recreational uses in a manner consistent with the protection of scenic, natural, and cultural resources, and existing land use reservations.

- Provide access and facilities within the lakeshore to permit and manage uses such as hiking, camping, fishing, hunting, and boating.
- Provide visitor services required to manage and protect the area for year-round use.
- Provide access and services for handicapped visitors.

## **VISITOR ORIENTATION**

Assist area visitors in safely using the lakeshore and surrounding region by providing adequate information on the resources, recreation, services, and facilities.

## **INTERPRETATION**

Interpret the lakeshore's natural and cultural resources and their significance as an interrelated, evolving environment.

Develop and provide interpretation for various scopes of interests, including broad concepts, in-depth specific interpretive information, and environmental education. Emphasis will be on themes and subthemes, including the following:

- glacial geology and stratigraphy
- existing and prehistoric vegetation and wildlife types
- aquatic resources
- modern, historic, and prehistoric human occupation and use of the area
- recreational uses
- environmental concerns
- safety

Continue the cooperative relationship with Eastern National Park and Monument Association, with outlets at stations on the mainland and the islands.

Assist and encourage other groups in the interpretation of local and native resources.

## **SAFETY**

Provide for the safety of visitors, residents, and employees of Apostle Islands National Lakeshore by establishing and maintaining an occupational safety and health program compatible with the requirements of Executive Order 12196.

- Stress water safety through enforcement, information, orientation, inspections, and interpretation.
- Identify and publicize specific and general winter safety hazards of the area.
- Cooperate with other agencies such as the U.S. Coast Guard, Wisconsin Department of Natural Resources, and sheriffs of Bayfield and Ashland counties to provide better water safety.
- Comply with OSHA standards wherever they apply to work facilities and conditions and to visitor use.

## **CONCESSIONS**

Provide through concession permits or contracts the opportunities and the means for people to visit the islands in a safe, inexpensive, energy-efficient, and environmentally desirable manner. Also, provide a regularly scheduled transit system throughout the islands.

## **DEVELOPMENT**

Ensure that area development is adequate to provide for efficient and essential area administration, protection, interpretation, maintenance, and visitor services.

- Provide a mainland base (or bases) for NPS and concessioner operations to serve the lakeshore. Primary bases will be Little Sand Bay and Bayfield.
- Provide ranger stations and interpretive and maintenance facilities on the islands to allow for compatible uses and proper resource management and visitor protection.

## **MAINTENANCE**

Maintain the area's roads, docks, trails, buildings, historic structures, grounds, utilities, facilities, and resources in a manner that will be efficient, safe, and compatible with visitor use and resource management and protection.

## **OPERATIONS**

Manage the area through a superintendent and organizational structure that will provide the most efficient operation of the lakeshore.

## **ACQUISITION OF INFORMATION**

Encourage and administer research and data-collecting activities to provide better bases for the management of resources, visitor use, and interpretation and for visitor and resource protection.

## **LANDS**

Secure through acquisition, boundary adjustments, or other means, a land base that is adequate to manage, interpret, and protect the area's significant natural, cultural, and recreational resources.

## **COOPERATION**

Cooperate with federal, state, tribal, and local agencies; private organizations; educational institutions and interests; and members of the public to ensure that

land uses in the area and its immediate vicinity have minimal adverse effects on area resources and the experience of area visitors

recreational opportunities and public services in the area and its environs are coordinated in a manner that minimizes within-area development and unnecessary duplication of facilities and services

visitor resource protection is accomplished with a minimum of duplication between agencies



## APPENDIX C: FACILITY CAPACITY METHODOLOGY

The annual facility capacity at Apostle Islands National Lakeshore is estimated to be approximately 507,000 visits based on existing conditions. The proposed plan could cause the facility capacity to increase by up to 103,000 visits per year, with annual facility capacity increasing by an additional 78,000 visits if a campground is developed at Little Sand Bay.

### PROCEDURE

Annual facility capacities for each alternative were determined by adapting the methodology used in the publication *Design Day for Recreation Planning* (Hatke, Knudson, and Ziegler 1977). This methodology, which is centered on the "design day," was developed by Purdue University for the Indiana Department of Natural Resources. Annual facility capacity was calculated in the following manner:

- 1) *Daily facility capacity* – one-time facility capacity  $\times$  turnover rate
- 2) *Annual facility capacity for each unit (islands and mainland)* – daily facility capacity  $\times$  number of design days
- 3) *Annual facility capacity for the park* – the sum of the annual capacities for each unit of the park (islands and mainland)

### DEFINITION OF TERMS

*One-time (or "instant") facility capacity* – The maximum number of people a facility can support at a particular instant.

*Turnover rate* – The average length of an activity day divided by the average length of stay.

*Daily facility capacity* – The one-time facility capacity for each unit  $\times$  estimated turnover rate.

*Design day* – By examining visitation statistics, the number of days during the season that facilities experience peak daily use is determined. One of these peak use days is a design day. The number of normal use days that equals one design day is then calculated for the use season (which is adjusted to allow for a certain percentage of days with bad weather), and the number of design days is totaled.

### ASSUMPTIONS

Any estimate or projection is based on a set of assumptions, and holds true only so long as these assumptions are viable. The following section describes the assumptions that were used in determining facility capacities for Apostle Islands.

#### Multipliers

In order to convert parking spaces and boat slips into an equivalent number of visitors, a people per unit multiplier was applied. The multipliers used in this conversion for the capacity estimates were 3.3 people per car and 4.0 people per boat. These multipliers correspond to those which Apostle Islands uses in its monthly use reports.

## Turnover Rates

The turnover rates that were applied to capacity calculations were also derived from the lakeshore's monthly use reports. For example, the average length of stay at the Bayfield headquarters visitor center is about 15 minutes. The visitor center operates on a 10-hour day during the summer peak-use period. Thus, 10 hours divided by 15 minutes denotes a turnover rate of 40. This rate was used in calculating the facility capacity for headquarters/visitor center use under each alternative.

The average length of stay at Little Sand Bay is currently two hours. Assuming a 12 hour use-day, the turnover rate for the visitor contact station is 6. This standard was used for estimating facility capacities of all existing and proposed parking lots at Little Sand Bay, Meyers Road, and Sand Point. The exception to this norm was the proposed 10-space overnight lot at Little Sand Bay, which was estimated to have a turnover rate of 1.

The turnover rate for the proposed campground at Little Sand Bay was estimated to be 1. The same rate was used for all private and charter boating, and for water taxi usage. The turnover rate for tour boat service was estimated at  $1 \times$  the total number of trips made by the boats on a peak-use day for each alternative.

## Volume of Boat Use

**Private and Chartered Boats.** The total number of private and chartered boats that can be in the Apostle Islands group at one time was assumed to equal

- 1) the total number of available slips at marinas in the vicinity of the lakeshore; plus
- 2) the average number of boats that enter the system from other Lake Superior ports; plus
- 3) the average number of boats that are launched at local ramps

A study of social carrying capacity among boaters in the Apostle Islands found that approximately 85 percent of the total boat usage can be attributed to craft from local marinas (Heberlein, et al. 1986). The same study determined the total number of available slips at local marinas to be 708. If all slips were rented, a like number of boats could be on the lake at any given time.

If 85 percent of boat usage is attributable to locally harbored vessels, it is assumed that 15 percent of total boat usage can be ascribed to boats from other ports and boats that are launched near the lakeshore. Based on this assumption, 125 boats were added to the above figure. Thus, a total of 833 private and chartered boats could be in the island system at one time.

**Water Taxi Use.** Park staff have estimated that about 1 percent of total lakeshore use can be attributed to users of water taxis. Through interpolation, this percentage was found to be equivalent to an additional five private vessels in the system at a given time.

**Total Private/Charter Boat Use.** Assuming four passengers per boat, the total facility capacity for the island zone was determined to be about 211,000 [or  $((833 \pm 5) \times 4) \times 63$  design days].

## POTENTIAL INCREASES IN LOCAL MARINA SPACE

It should be noted that this general management plan does not propose an increase in the available slips at local marinas. Any increase in marina space would depend on the initiatives of the private sector.

An increase in the number of slips, however, would affect the facility capacity of the islands. For example, an increase of 100 slips in the area would result in an additional 25,000 people per year in facility capacity.



## SELECTED BIBLIOGRAPHY

ANDERSON, R. K., C. J. MILFRED, G. J. KRAFT, AND W. J. FRAUNDORF

- 1980 "Inventory of Selected Stockton Island Resources for Recreation Planning." University of Wisconsin at Stevens Point.

BRANDER, ROBERT B.

- 1980 "A Conceptual Plan for Development of a System of Campsites and Trails on the Inner Apostle Islands." Report prepared for the National Park Service. On file at Apostle Islands National Lakeshore.

CARY, S. J., P. F. MCDOWELL, AND L. J. GRAUMLICH

- 1978 "Soils and Surficial Geology of Four Apostle Islands." Paper presented at the annual meeting of the Wisconsin Academy of Sciences, Arts and Letters.

ENGSTROM, WAYNE N.

- 1984 "Evaluation of Shoreline Changes along Cuspate Forelands at Apostle Islands National Lakeshore." California State University, Fullerton.

FOREST SERVICE, U.S. DEPARTMENT OF AGRICULTURE

- 1986 "The Limits of Acceptable Change (LAC) System for Wilderness Planning," by George H. Stankey, David N. Cole, Robert C. Lucas, Margaret E. Petersen, and Sidney S. Frissell. General technical report INT-176. Intermountain Forest and Range Experiment Station, Ogden, UT.

GREAT LAKES INTER-TRIBAL COUNCIL AND RED CLIFF OVERALL ECONOMIC DEVELOPMENT COMMITTEE

- 1976 *Red Cliff Overall Economic Development Plan*. Red Cliff: Red Cliff Reservation.

HARRIS, JAMES T., AND SUMNER W. MATTESON

- 1975 "Gulls and Terns as Indicators of Man's Impact upon Lake Superior." University of Wisconsin Sea Grant, Madison, Wisconsin.

HATKE, TRUDY E., DOUGLAS M. KNUDSON, AND JEFFREY ZIEGLER

- 1977 "Design Day for Recreation Planning: Element Number 5 of the 1975-79 Indiana Outdoor Recreation Planning Program." Report prepared by Purdue University, Department of Forestry and Natural Resources, for the Division of Outdoor Recreation, Indiana Department of Natural Resources, Indianapolis.

HEBERLEIN, THOMAS A., GERALDINE E. ALFANO, AND LAURIE H. ERVIN

- 1985 "Using a Social Carrying Capacity Model to Estimate the Effects of Marina Development at the Apostle Islands National Lakeshore." Madison, WI.

HEBERLEIN, THOMAS A., TRUDY A. MCKINNELL, AND LAURIE H. ERVIN

- 1986 "Recreational Boating in the Apostle Islands National Lakeshore: Current Boaters and Trends of the Last Decade." Madison, WI.

HEBERLEIN, THOMAS A., AND JERRY J. VASKE

- 1975 "The Apostle Islands Visitor in 1975." Working paper no. 11. School of Natural Resources, College of Agricultural and Life Sciences, University of Wisconsin, Madison.

INTERNATIONAL JOINT COMMISSION

- 1976 *The Waters of Lake Huron and Lake Superior*. Vol. 3 (parts A & B): *Lake Superior*. Report to the IJC by the Upper Lakes Reference Group. Windsor, ONT.



KRAFT, GEORGE J.

- 1982 "Soil and Recreational Use on the Apostle Islands National Lakeshore: 1. Soil Suitability for Trails and Campsites; 2. Bank Erosion in the Presque Isle Campground." MS Thesis. College of Natural Resources, University of Wisconsin at Stevens Point.

MARTIN, L.

- 1965 *The Physical Geography of Wisconsin*. 3rd ed. Madison: University of Wisconsin Press.

MATHESON, D. H., AND M. MUNAWAR

- 1978 "Lake Superior Basin and Its Development." *Journal of Great Lakes Research* 4(3-4):249-63.

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR

- 1978 *Environmental Assessment, Proposed Mainland Development, Apostle Islands National Lakeshore*. Denver Service Center.
- 1979 *Interpretive Prospectus, Apostle Islands National Lakeshore*. Midwest Regional Office. Omaha, NE.
- 1985 *Environmental Assessment: Natural Resources Inventory and Management, Apostle Islands National Lakeshore*. Bayfield, WI.
- 1985 *Statement for Management, Apostle Islands National Lakeshore*. Bayfield, WI.
- 1987 *Resources Management Plan and Environmental Assessment, Apostle Islands National Lakeshore*. Bayfield, WI.
- 1988 *Statement for Interpretation, Apostle Islands National Lakeshore*. Bayfield, WI.
- 1989 *General Management Plan / Environmental Assessment, Apostle Islands National Lakeshore*. Denver Service Center.
- n.d. *Land Protection Plan, Apostle Islands National Lakeshore*. Bayfield, WI.

NORTHWEST WISCONSIN REGIONAL PLANNING COMMISSION

- 1981 *A Plan for Outdoor Recreation*. Bayfield, WI.

SAARNISTO, M.

- 1975 "Stratigraphical Studies on the Shoreline Displacement of Lake Superior." *Canadian Journal of Earth Sciences* 12:300-319.

SHELBY, BO, AND THOMAS A. HEBERLEIN

- 1986 *Carrying Capacity in Recreation Settings*. Corvallis: Oregon State University Press.

SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE

- 1961 "Soil Survey of Bayfield County, Wisconsin," by J. K. Ableiter and F.D. Hole. Series 1939, no. 30.

STADNYK, LELYN, RICHARD L. VERCH, AND BRUCE A. GORTZ

- 1974 "Stockton Island Survey." Northland College, Ashland, WI.

STRZOK, DAVE

- 1981 *A Visitor's Guide to the Apostle Islands National Lakeshore*. Superior Printing.

SUBCOMMITTEE OF THE NORTH CENTRAL FIELD COMMITTEE

- 1964 "Proposed Apostle Islands National Lakeshore, Bayfield-Ashland Counties, Wisconsin."

TEMPLE, STANLEY A., AND JAMES T. HARRIS

1985 *Birds of the Apostle Islands*. Hartland, WI: The Wisconsin Society for Ornithology, Inc.

U.S. FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR

1983 *Northern States Bald Eagle Recovery Plan*. Twin Cities, MN.

1988 *Great Lakes and Northern Great Plains Piping Plover Recovery Plan*. Twin Cities, MN.

WISCONSIN COASTAL MANAGEMENT COUNCIL

1987 *Wisconsin Coastal Management Program for the Great Lakes, 1987 Update*.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES, SCIENTIFIC AREAS PRESERVATION COUNCIL

n.d. "Outer Island Sandspit Plant Species," by William E. Tans. Madison, WI.

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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