

master plan

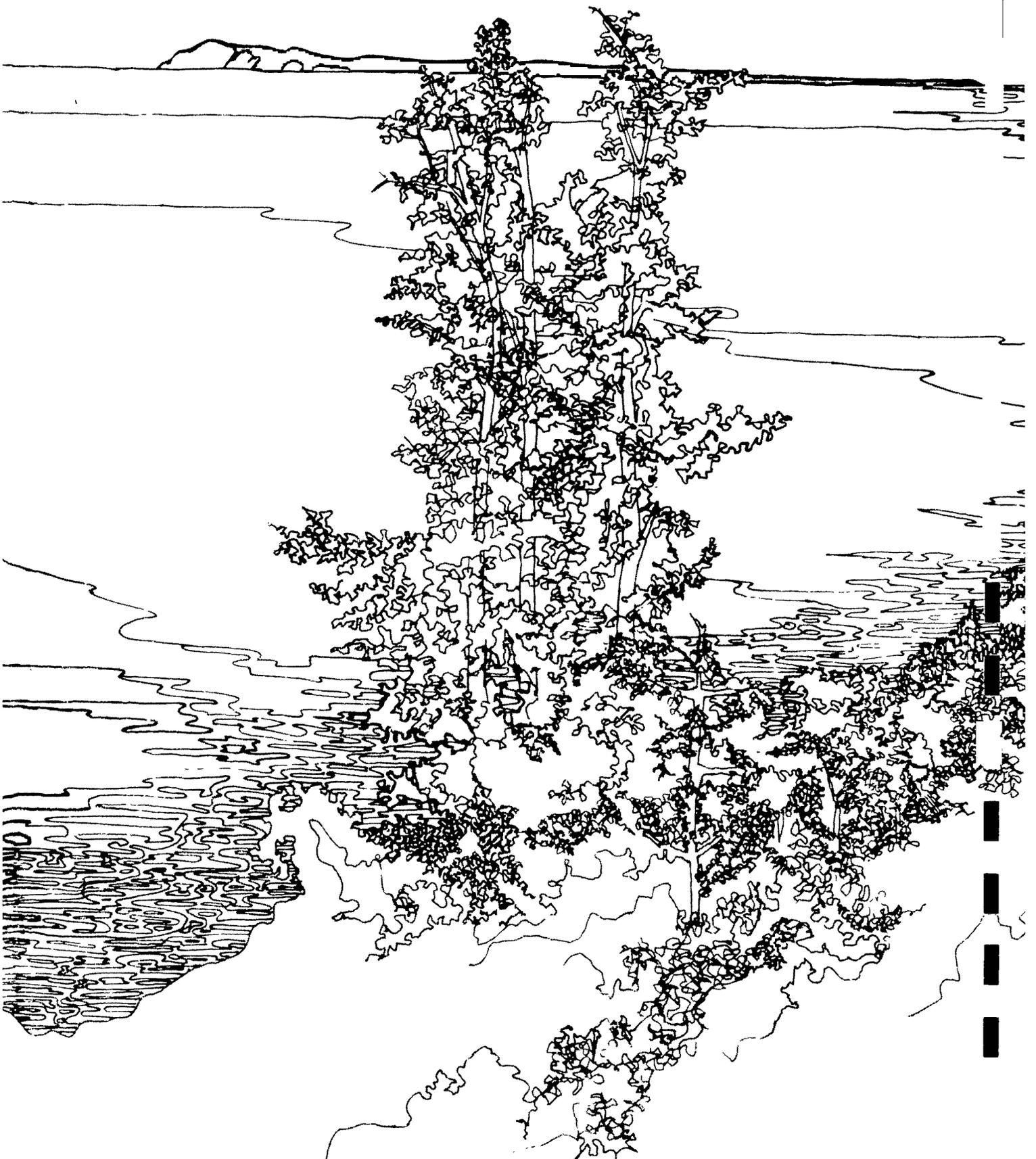
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Sleeping Bear File

**SLEEPING BEAR
DUNES**



NATIONAL LAKESHORE • MICHIGAN



NATIONAL LAKESHORE

634/D-1



SLEEPING BEAR DUNES

TECHNICAL INFORMATION CENTER
DENVER SERVICE CENTER
NATIONAL PARK SERVICE

Recommended:

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December 31, 1969

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February 18, 1970

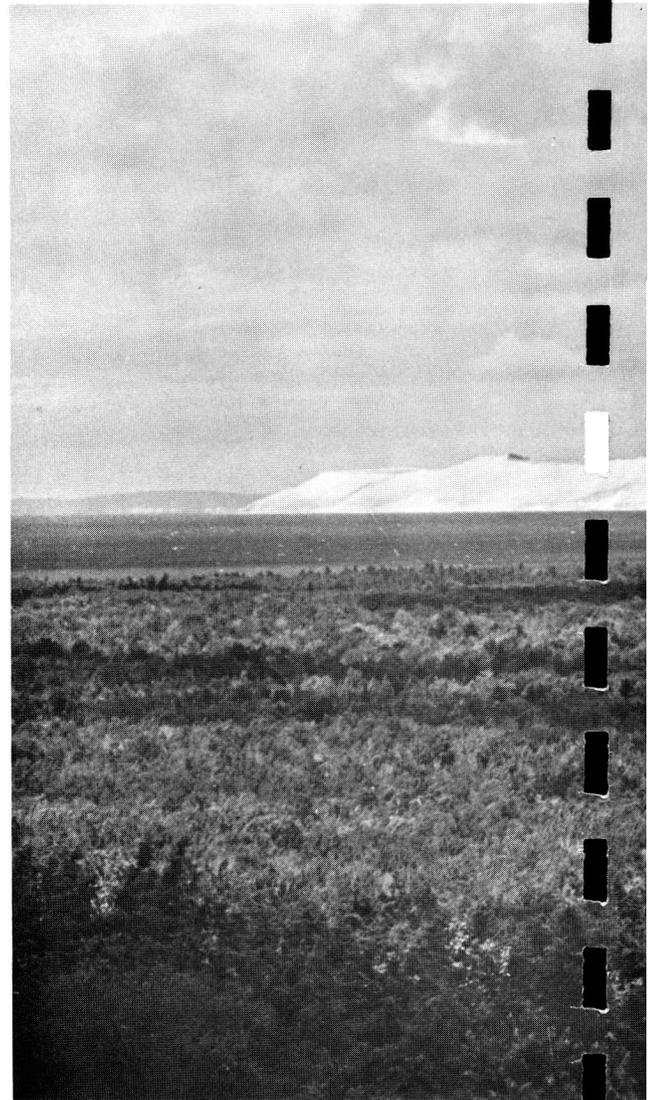
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February 18, 1970

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MASTER PLAN SUMMARY

The Sleeping Bear Dunes area is one of the most scenic portions of the Lake Michigan shoreline. It contains an unusual combination of natural features possessing outstanding scientific and recreational values. The dynamic forces of glaciers, water, and wind, are clearly demonstrated in the landforms, and in various other ways. There is a great diversity of ecological environments and habitats, offering excellent opportunities for research, observation, and interpretation. The Manitou Islands, Lake Michigan, the beaches, the inland lakes and streams, the forests, and the dunes, are all integral parts of the total recreation picture.



The Sleeping Bear Dunes National Lakeshore is part of the six-county Grand Traverse Bay region – an area of diverse recreation resources attracting increasing numbers of summer residents and the vacationing public. Traverse City, lying 20 miles from the Lakeshore, has a population of approximately 19,000, and is the hub of this region. The Grand Traverse Bay region is part of a macroregion of northwoods lake country – the Upper Great Lakes area – extending through northern Minnesota, Wisconsin, Lower Michigan, Upper Michigan, and adjacent Canada, and having outstanding recreation potential.

This National Lakeshore includes 60,748 acres of land and inland waters. Two islands account for 19,980 acres: South Manitou has 5332, and North Manitou has 14,452. Sixty-four-miles-plus of Lake Michigan shoreline lie within the Lakeshore – 31¼ fronting the mainland, and 33 on the islands. In addition, Lake Michigan waters and submerged lands, extending outward from and adjacent to the Lakeshore, are also included, adding another 10,360 acres.

The master plan for Sleeping Bear Dunes National Lakeshore recognizes the potential for recreational use and enjoyment, the need for preservation, and the interrelationships of the adjacent communities and the Grand Traverse Bay region with the Lakeshore.

The plan provides for a system of access and circulation that will, to a large degree, enable the separation of Lakeshore use and local traffic. The Lakeshore will be predominantly a day-use area. Visitors will arrive by car. Scenic appreciation will be the basic ingredient in the majority of pursuits. Recreational use facilities will emphasize those activities encouraged by the area's specific resource potential, and will include bicycling, hiking, riding, canoeing, snowmobiling, nature walks, touring, swimming, and picnicking. Campgrounds are planned, but their development will be synchronized with the other needs within the Grand Traverse Bay region. The master plan also gives consideration to the development of sports areas near beaches and campgrounds. Accommodations for meals and lodging other than campgrounds are not planned within the mainland portion of the Lakeshore. A lodge-type facility is proposed on South Manitou Island, to be developed on a concession basis.

Visitor enjoyment of the recreation resource will be increased by an interpretive program aimed at explaining how the visible landforms were formed, and why the various ecological communities are where they are. Concepts will be explained in a central interpretive facility, and this explanation will be augmented by interpretive overlooks, trails, and similar devices for onsite interpretation.

THE REGION

DESCRIPTION

Sleeping Bear Dunes National Lakeshore is physiographically situated in the Upper Great Lakes area of Michigan, Minnesota, Wisconsin, and southern Ontario.

Within this Upper Great Lakes physiographic area lies the Grand Traverse Bay socioeconomic region, which, for purposes of this master plan, will be considered Sleeping Bear Dunes National Lakeshore's "region." The Grand Traverse Bay region includes the counties of Antrim, Benzie, Grand Traverse, Kalkaska, and Leelanau. Benzie and Leelanau Counties themselves form an "impact-subregion," where high visitation is expected.

● Access

Traverse City, the hub of the Grand Traverse Bay region, is served by both scheduled airline and bus. Leland, one of the larger communities, has a small harbor of refuge, which is the base for a small fleet of fishing vessels, and for boat service to North and South Manitou Islands. Another of the larger towns, Frankfort, has harbor facilities for large vessels, and serves as a terminal for ferry service across Lake Michigan. But even though these other means of access are available, the private automobile will continue to be by far the most important form of access to the Lakeshore.

The entire Upper Great Lakes area has an excellent highway network. Transcontinental highways, including Interstates 80, 90, 94, and 96, and United States Routes 10 and 16, lie just to the south. Although I-90, 94, and 96, and the two U.S. highways, are interrupted or diverted by Lake Michigan, automobile ferry service is provided from Frankfort, Michigan, to Keweenaw, and Manitowoc, Wisconsin. Ferries also connect Ludington, Michigan, with Manitowoc and Milwaukee, Wisconsin.



A north-south transportation-corridor system flows northward from the transcontinental routes, and from the population centers of the Lower Great Lakes, linking up with lesser east-west United States and Canadian highways north of Lake Michigan by means of the Mackinac Bridge. I-75, originating in Florida, goes through Detroit, and passes 45 miles east of Traverse City. Other major north-south highways include U.S. Routes 27, 31, and 131, and several State highways.

Immediate approach to the Lakeshore from the south is by U.S. 31 and Michigan 22; from the east by Michigan 72 and U.S. 31; and from the north via Michigan 22, which has been designated a scenic road, and traverses the entire length of the Lakeshore.

The Michigan State Highway Department has expressed a positive interest in upgrading the major approach-highways to the Lakeshore.

MAJOR RECREATION ATTRACTIONS OF THE UPPER GREAT LAKES REGION

MINNESOTA

1. Scenic State Park
2. McCarthy Beach State Park
3. Bear Head Lake State Park
4. Boundary Waters Canoe Area
5. Grand Portage National Monument
6. Saint Croix State Park
7. Voyageurs National Park
8. Interstate State Park

WISCONSIN

8. Interstate State Park**
9. Apostle Islands National Lakeshore
10. Copper Falls State Park
11. Bois Brule River Canoe Trail
12. Pattison State Park
13. Brule River Canoe Trail
14. Peninsula State Park
15. Potawatomi State Park
16. Wolf National Scenic Riverway
17. High Cliff State Forest Park
18. Point Beach State Forest
19. Kettle Moraine State Forest**
20. Devils Lake State Park**
21. Saint Croix National Scenic Riverway

MICHIGAN

22. Isle Royale National Park
23. Pictured Rocks National Lakeshore

MICHIGAN

24. Keewenau Peninsula
 - a. Isle Royale National Park HQ
 - b. Fort Wildins State Park
 - c. F. J. McLain State Park
25. Porcupine Mountains State Park
26. Gogebic State Park
27. Sylvania
28. Tahquamenon State Park
29. Sault Ste. Marie Locks
30. Mackinac Island
31. Mackinac Bridge and Fort Michlimacinac State Park
32. Wilderness State Park
33. Young State Park
34. Interlochen National Music Camp
35. Higgins Lake State Park
36. Albert E. Sleeper State Park
37. Ludington State Park
38. Silver Lake State Park
39. Yankee Springs State Park
40. J. W. Wells State Park

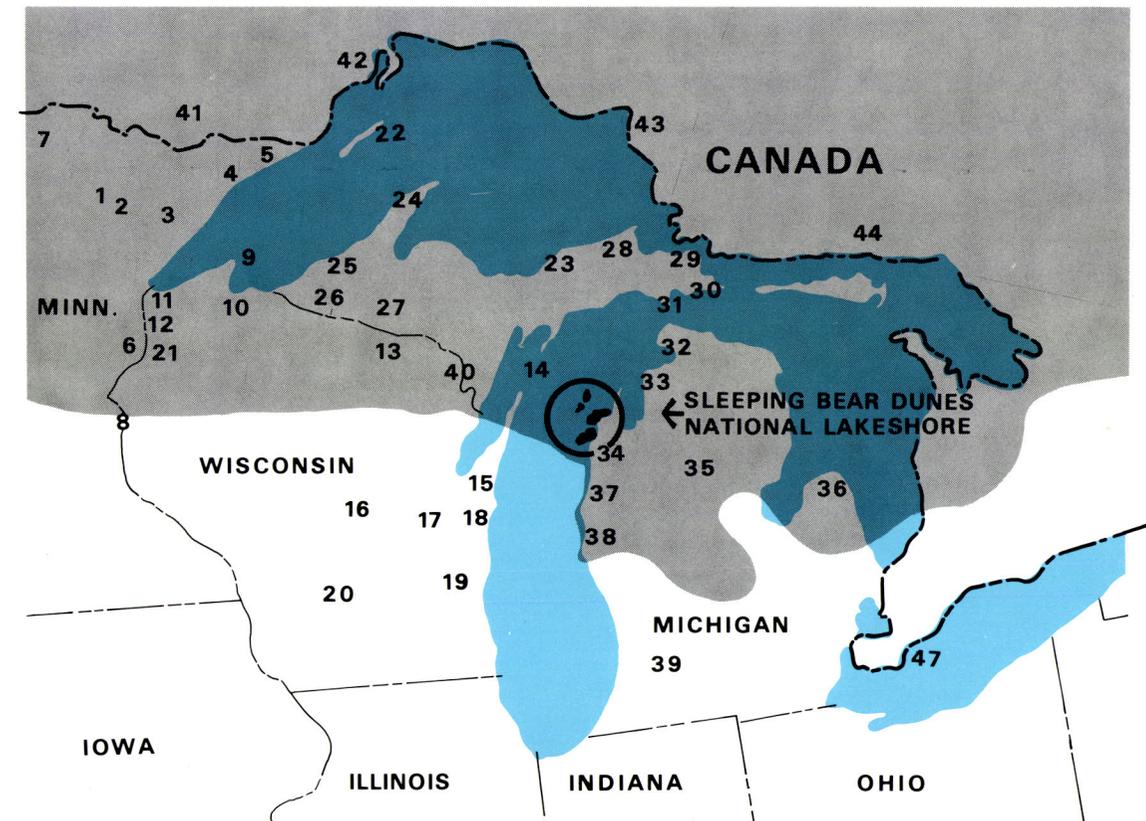
CANADA

41. Quetico Provincial Park
42. Sibley Provincial Park
43. Lake Superior Provincial Park
44. Mississagi Provincial Park
45. Killarney Provincial Park
46. Grundy Lake Provincial Park
47. Ipperwash Provincial Park

**These are all part of the Ice Age National Scientific Reserve



REGIONAL MAPS



- **Circulation**

Lakeshore legislation has provided for a road system through the deleted area that overlooks points of great geological interest and scenic grandeur. This scenic road system provides an important unifying link between Benzie and Leelanau Counties, as well as desirable access from U.S. Route 31 in the Honor/Beulah area. Michigan 22 is the main artery through the Lakeshore itself. Numerous secondary roads emanate from or cross it, and while they serve to provide ample circulation, they also present a potential problem in some areas because of their numbers.

- **Population**

The population pattern of the Grand Traverse Bay region is one of scattered farms, summer homes, clusters of summer cottages along Lake Michigan and the larger inland lakes, and small villages. Traverse City, 18 miles east of the Lakeshore, is the regional tourist shopping and service center, and a popular convention center. Other communities with a population of 500 or more are Frankfort, Beulah, Leland, Elk Rapids, Central Lake, Belaire, and Kalkaska. Regional population hit a peak between 1900 and 1910, declined to a low during the thirties, and has made a steady gain ever since, registering a new peak of 76,524 with the 1970 census. Summer population is from four to five times greater than the permanent population.

In the Benzie/Leelanau impact-subregion, population peaked in 1910, declined steadily until 1930, and has since steadily gained. The change from 1960 to 1970 was an increase of 2310 for the two counties, with 789 for Benzie, and 1551 for Leelanau.

**Recent Population Trends
Grand Traverse Bay Region**

<u>County</u>	<u>1970</u>	<u>1960</u>	<u>1950</u>
Antrim	12,612	10,373	10,721
Benzie	8,593	7,834	8,306
Grand Traverse Bay	39,175	33,490	28,598
Kalkaska	5,272	4,382	4,597
Leelanau	10,872	9,321	8,647
Total Region	76,524	65,400	60,869
Traverse City	18,048	18,432	16,974
Michigan	8,875,083	7,823,194	6,371,766

- **Park and Recreation Facilities**

A number of major park and recreation facilities and visitor attractions have been or are being proposed for development within the Upper Great Lakes area. The Sleeping Bear Dunes National Lakeshore, Interlochen National Music Camp, Mackinac Bridge and Mackinac Island, Soo Locks, Pictured Rocks National Lakeshore, Sylvania, Porcupine Mountains State Park, Ice Age National Scientific Reserve, Isle Royale National Park, North Shore Drive, the Apostle Islands National Lakeshore, and the St. Croix and Wolf National Scenic Riverways are among the attractions of the region. In addition, scenic roads are proposed in both the United States and Canada. Ontario's 1,429,000 acres of provincial and national parks, and what amount to just under 10 million acres of state and national forests in Michigan, Wisconsin, and Minnesota, all augment what will be an outdoor recreation complex of increasing dominance – both nationally and internationally. Together, these park and recreation facilities, and the natural resources upon which they are based, attract visitors from all over the United States and Canada. They especially attract visitors from the population centers of the Lower Great Lakes States.

Within the Upper Great Lakes area, the Grand Traverse Bay socioeconomic region (of which the Lakeshore is a part) specifically features sand, sun, water, a rolling forested landscape, and a cool climate, all of which afford major summer recreation resources. In addition to approximately 240 miles of Lake Michigan shoreline, this region has 203 named inland lakes, with a total water surface of 106,000 acres.

Numerous park and recreation facilities, shown on the Grand Traverse Bay region map, have been developed upon the basis of these resources. The various campgrounds, together with the many hotels, inns, motels, and private summer homes and cottages, will supplement Lakeshore campgrounds, and will contribute to the day use of such Lakeshore facilities as beaches, trails, picnic areas, and interpretive devices.

- **Surrounding and Existing Use**

With the exception of State forests and park lands, most of the lands adjacent to the Lakeshore are privately owned. Land use in and adjacent to the Lakeshore is shown on the Existing Land Use Map.

Four regional land-use trends are noticeable in the Benzie/Leelanau subregion: an increase in both number and percentage of seasonal residents; an increase in summer-home construction; a decrease in land devoted to general agriculture; and an increase in the amount of land lying in orchards and in pine plantations. The last, a regional trend that began within the past decade, is particularly noticeable, although as yet only a small percentage of land is so used.

GRAND TRAVERSE BAY FIVE-COUNTY REGION

LEGEND

-  STATE PARK
-  GOLF COURSE
-  WINTER SPORTS AREA
-  CAMPGROUND
-  WILDLIFE AREA
-  NATIONAL LAKESHORE



Land use within the Benzie/Leelanau County impact-subregion falls into three major categories: agriculture, forestry, and recreation. Both counties specialize in growing fruit: apples in Benzie, and cherries in Leelanau. Other agricultural products include small grains, vegetables, beef, and dairy cattle. Between 25 and 35 percent of the land in this two-county area is devoted to agriculture.

Recreation, although extremely important to the region, actually occupies a rather small portion of the total land area. Recreation lands other than the State forests and parks are used either for summer cottages or motel sites. This use is concentrated along Lake Michigan, and around the inland lakes.

Forestry is certainly the most extensive regional land use, but it is the least productive economically. Approximately 70 percent of the land is either cutover timberland or 40- 50-year-old second-growth timber.

EVALUATION

The roles Sleeping Bear Dunes National Lakeshore plays in the Grand Traverse Bay region that surrounds and includes it are: stabilizing development within an area of great scenic charm; interpreting natural phenomena; offering a high potential for public outdoor recreation; and keeping the now-undeveloped portions of the Lakeshore available for public use and enjoyment.

Land use within the Lakeshore is similar to land use elsewhere in Benzie and Leelanau Counties. The Lakeshore contains 14.3 percent of the total land area, and holds less than 5 percent of the population of these counties. The almost-undeveloped Manitou Islands comprise over a third of the total land area of the two counties – or 19,980 acres.

Since the Lakeshore-establishment legislation safeguards most existing use within the Lakeshore, the above land uses will continue more or less unchanged; public recreation use will be added to it, rather than replacing it.

The emphases at Sleeping Bear Dunes National Lakeshore will complement those of the Grand Traverse Bay region. It will stabilize development within its own boundary, and thus ensure preservation of and public access to these assets. Visitor facilities, which will be provided only where they are consonant with preservation of the resources and lands that are presently undeveloped, will attract visitors to the region. These visitors will contribute to the regional economy through their use of tourist services outside the Lakeshore. Also, a continuation of summer-home development can be expected in the vicinity of the Lakeshore – as well as throughout the Grand Traverse Bay socioeconomic region – even after all the choice lakefront sites outside the Lakeshore are built upon. The attraction will derive from the long, undeveloped stretch of shoreline found within the Lakeshore, which is accessible for the use and enjoyment of all summer residents.

THE LAKESHORE

PURPOSE

The purpose of creating Sleeping Bear Dunes National Lakeshore is to preserve this portion of Lake Michigan shoreline for the inspiration, education, and recreational use and enjoyment of the American people, while at the same time stabilizing private development within the area.





NORTH
MANITOU
ISLAND

SOUTH
MANITOU
ISLAND

M I C H I G A N

L A K E

GLEN LAKE

LAKE
LELANAU

PLATTE LAKE

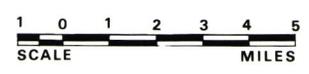
CRYSTAL LAKE



CONTOUR INTERVAL 100 FEET

TOPOGRAPHIC BASE MAP

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**RESOURCE
DESCRIPTION**

● **Recreation**

The recreation resources of Sleeping Bear Dunes National Lakeshore include many miles of Lake Michigan shoreline, majestic dunes, several small inland lakes, portions of four large creeks and rivers, two large islands, a varied and highly scenic landscape, interesting plant-successional communities, and abundant wildlife.

Within the Lakeshore are some 64 miles of Lake Michigan shoreline: 31 miles on the mainland; 20 miles on North Manitou Island; and 13 miles on South Manitou Island. Sand, gravel, cobble, and boulder beaches border the entire shoreline, varying in width from about 30 feet just south of the Empire Dunes and at the tip of Sleeping Bear Point to over 200 feet at Platte Bay. Sand beaches predominate. Water depths of 4 feet or less extend 200 to 1000 feet from shore at all but a very few points, then increasing quickly to 100 feet or more. Behind the beach lie formations varying from low foredunes in the bays to the very steep 300- and 400-foot slopes of the Empire and Sleeping Bear Moraines and Dunes.

Also within the Lakeshore are 15 inland lakes and three streams. The inland lakes are shallow and small, ranging in size from about 15 acres to about 160 acres. Streams include all of spring-fed Otter Creek; most of rather shallow and sluggish Shal da Creek; part of Crystal River; and over 3 miles of the Platte River, extending from a point near Platte Lake to its mouth. The Platte River is noted for its steelhead and coho salmon fishing.

Great Lakes shoreline, inland lakes, and streams are only a few facets of the primary recreation resource: the others, which are at least as important, are the varied topography; the interesting plantlife; and the abundant wildlife, which is described in some detail in the next section.

The entire Grand Traverse Bay region surrounding (and including) the Lakeshore comprises a distinct recreation resource. The climate is conducive to the enjoyment of summer outdoor activities, because heat is not excessive, and also to winter activities, because there is a good snow cover for skiing and snow vehicles.

● **Natural History**

Geology / Geologically speaking, the upper part of the Lower Peninsula of Michigan is composed of surface formations shaped relatively recently in geologic times — between 20,000 and 10,000 years ago. These formations are largely products of the final period, or Port Huron

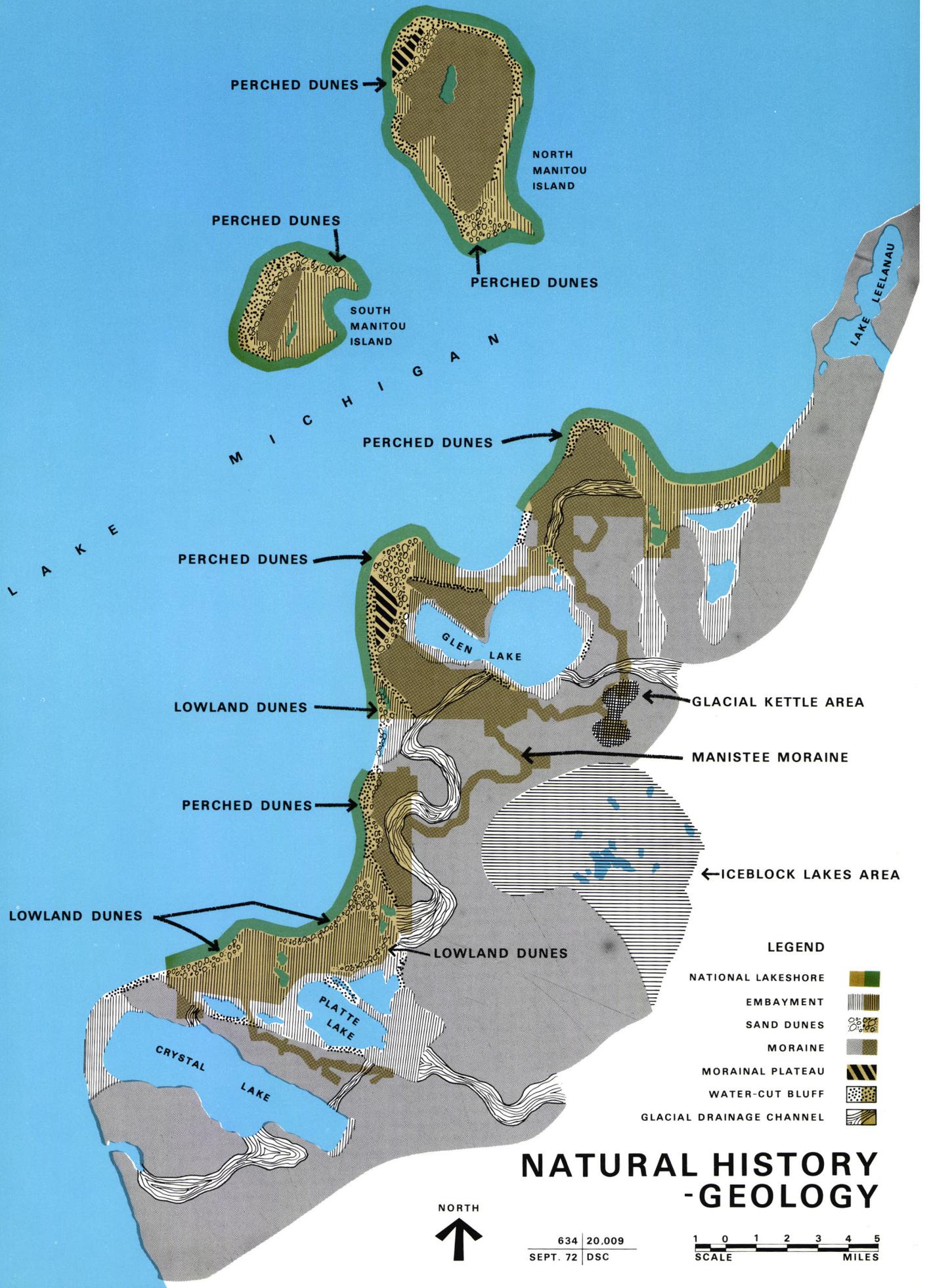
substage, of the Wisconsin stage of continental glaciation. Any visible evidences of previous stages of glaciation in the Sleeping Bear area have been obliterated or altered. The Port Huron substage left behind a well-defined series of end moraines, ground moraines, interlobate moraines, outwash plains, drainage channels, deltas, and glacial lakebeds, as well as kettle holes, ice-block lakes, eskers, kames, kame terraces, and drumlins. Glacial till covered the bedrock here to depths exceeding 500 feet, compared with a 40-foot average for the entire Great Lakes area.

When the ice had melted away from the land, the ancestral stages of Lake Michigan became the principal agents in altering the local landscape. The first of these stages was Lake Algonquin, with a surface elevation 25 feet higher than the present Lake Michigan level. The ice in Lake Michigan had nearly or completely disappeared, although the eastern Lake Superior area still lay beneath the glacier.

Sides of interlobate moraines that had formed peninsulas were eroded by the lake water, and headlands were truncated along the shoreline, creating sheer bluffs. Bay mouths were sealed off by sandbars and sand spits. Results of this ancient lake activity are displayed along the steeply pitched slopes of the Sleeping Bear and Glen Lake Moraines, and the east side of Pyramid Point. The Platte Embayment is the largest and most complex of the four embayments in the area. It lies in the form of a triangle, roughly 8 by 8 by 6 miles along its sides. Originally, it was a bay in Lake Algonquin, with the interrupted Platte Moraine appearing as islands. During the subsequent Lake Nipissing stage, the moraine acted as a barrier to lake currents and formed two bays. A well-defined wave-cut terrace is incised in the Crystal Lake Moraine along the south side of the embayment. West of Honor, the old shoreline leaves the moraine in the form of a bayhead bar crossing to the west morainal boundary. There it continues, with two interruptions, to the Empire Bluffs.

The processes of shoreline modification are still going on today. Lake currents and waves remove sand from one place and deposit it in another. As sand accumulates on the beaches, it dries and is blown inland to form dunes, such as those at Platte Bay. The larger dunes found in all the embayments are thought to be associated with the Lake Nipissing stage.

Headland erosion is continuous on the shoreline bluffs. Sleeping Bear Point stretches out into Lake Michigan, and is slowly but constantly growing northward and eastward due to the joint action of lake currents and wind.



PERCHED DUNES →

NORTH
MANITOU
ISLAND

PERCHED DUNES →

SOUTH
MANITOU
ISLAND

PERCHED DUNES

M I C H I G A N

PERCHED DUNES →

L A K E
L E E L A N A U

L A K E

PERCHED DUNES →

G L E N
L A K E

LOWLAND DUNES →

← GLACIAL KETTLE AREA

← MANISTEE MORAIINE

PERCHED DUNES →

← ICEBLOCK LAKES AREA

LOWLAND DUNES →

LOWLAND DUNES

P L A T T E
L A K E

C R Y S T A L
L A K E

LEGEND

- NATIONAL LAKESHORE 
- EMBAYMENT 
- SAND DUNES 
- MORAIINE 
- MORAINAL PLATEAU 
- WATER-CUT BLUFF 
- GLACIAL DRAINAGE CHANNEL 

**NATURAL HISTORY
-GEOLOGY**



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SCALE MILES

In many places on the Sleeping Bear morainal plateau, the wind has scooped out hollows. The material thus moved by the wind helps to build the dunes found throughout the area in all shapes and sizes.

“The Sleeping Bear,” which gives its name to the point, the bay, and the National Lakeshore, is a long, stabilized perched dune rising 464 feet above Lake Michigan. It stands alone on the edge of a 360-foot bluff, and is a landmark for miles in all directions. It is part of a large active dune complex covering an area of about 5000 acres; these dunes are predominantly moving to the northeast, advancing as a continuous front into the lowlands along the western arm of Glen Lake.

Empire Bluffs, on the north side of Platte Bay, are the tallest in the area, reaching a height of about 390 feet above the lake. They are topped by the Empire Dunes, which are mostly stabilized in the southern section by a rich deciduous forest. A few active blowouts occur in the northern section.

Vegetation / Except for the beaches and active dunes, the Sleeping Bear Dunes National Lakeshore area was almost entirely forested until the settlers arrived in the mid-19th century. Years of timber cutting followed; then land was cleared for agriculture; and finally forests were reinstated, partly with the help of tree-planting projects. Over three-quarters of the land within the Lakeshore is presently covered with a submature second-growth forest. The two principal forest types are maple/beech on the moraines and better soils, and pine/oak/aspens on the sandy embayments.

Two features of the Lakeshore’s vegetation are of special interest in the field of plant ecology: one is the large number of environmental niches available to plants; the other is the clearly displayed story of plant succession, progressing from the barren, sandy, storm beaches where the only plant growing is the American searocket. This member of the mustard family is common on the Atlantic Coast, as well as along the shores of the Great Lakes. Beyond the storm beach lie the beachgrass dunes; then the shrub- and forest-covered dunes; and finally, the climax maple/beech forest of the moraines. A host of smaller plant communities is also found in the area: pond and lake associations; marshlands; leatherleaf bogs; black spruce/tamarack bogs; arborvitae swamps; elm/ash/red-maple swamps; grassy swales; and dry heaths.

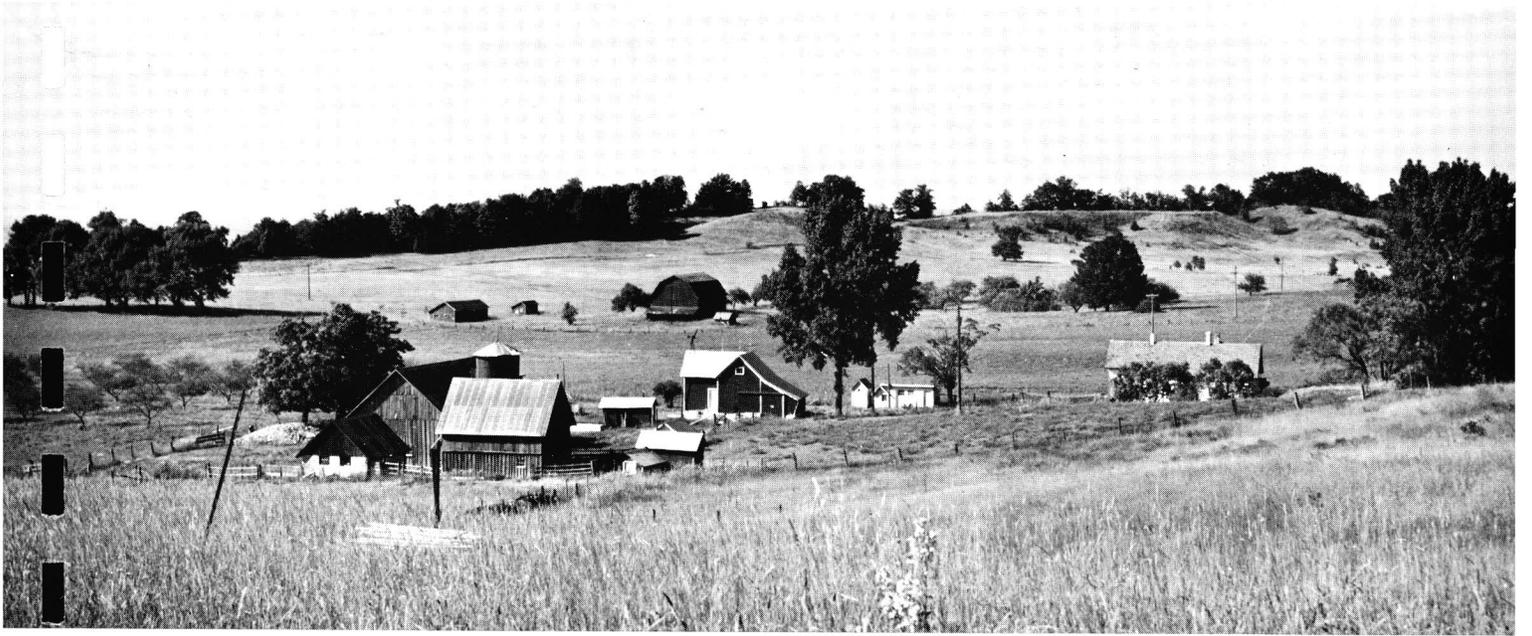
Because of these diverse environments, there is a great variety of plant species. Several are of unusual or rare occurrence in the region. White

spruce, for instance, is found in the relict forests atop the morainal plateau of South Manitou Island, but not on the adjacent mainland. It also occurs sparsely along the stabilized bluffs of the south shore of the island. A 50-acre stand of virgin hardwood timber in the southwestern corner of the island contains the largest known arborvitae in the United States. Large nodding trillium, absent from the Leelanau Peninsula, is found in this virgin forest, where it forms varicolored hybrids with the red trillium.

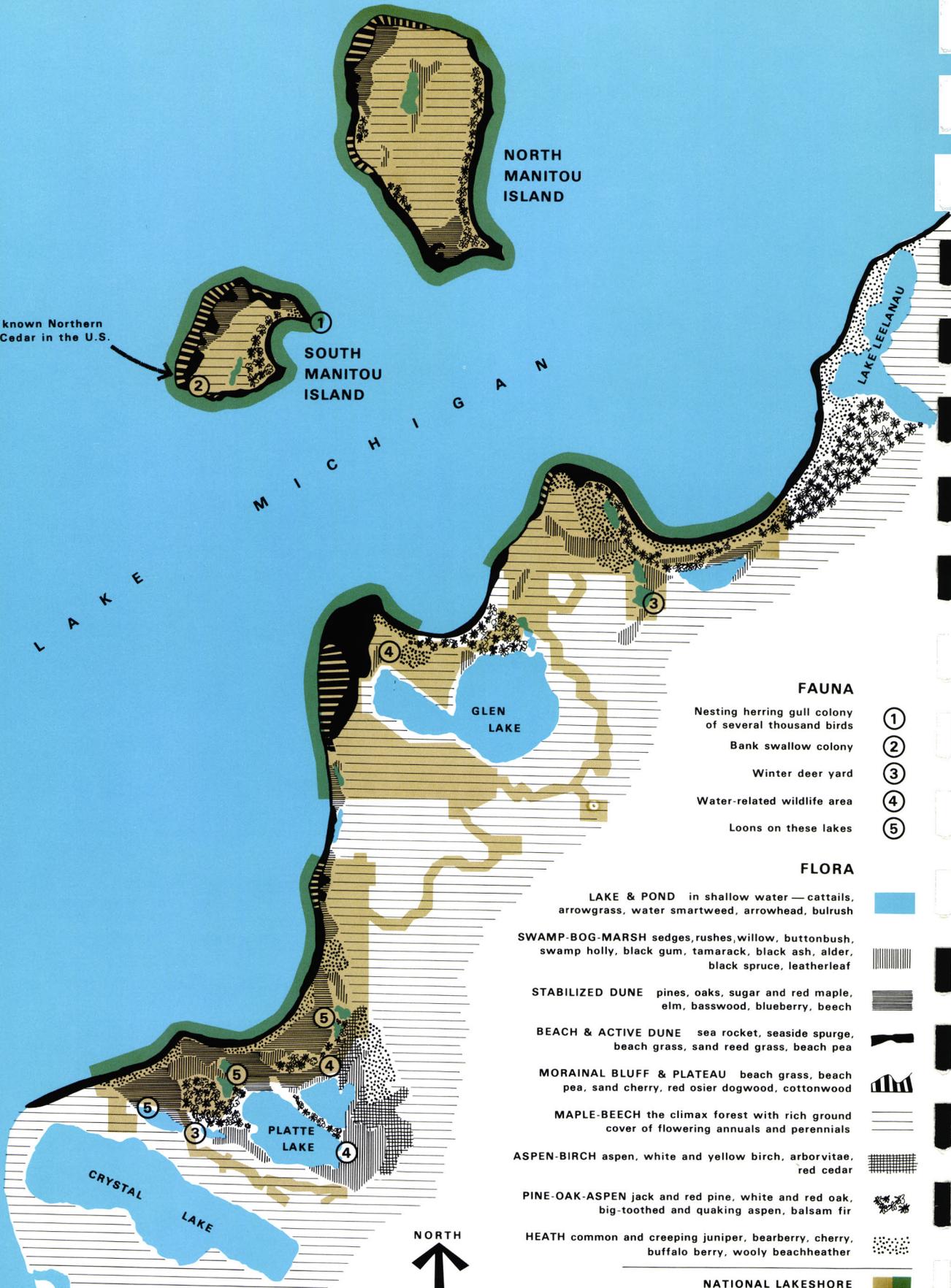
Also on South Manitou are the largest common elders and mountain maples known. A richly varied dune forest on the north side of the island contains jack pine, which is not found on other Lake Michigan islands.

The principal rocks in the moraines on South Manitou Island are limestone, and this appears to be responsible for the unusual occurrence of three species of ferns. The walking fern completely covers entire sections of rotting logs. The only other area known in the Lakeshore region where this species is found is near Alpena, on the opposite side of the Lower Peninsula. Green spleenwort and Northern holly fern are found nowhere else in the Lower Peninsula.

At the eastern base of the high dune south of Empire is the largest known pagoda dogwood in the United States. In the dune forest 3 miles south of Empire is the largest red elm in Michigan. The largest oldfield common juniper is located a quarter of a mile west of Michigan 109, in Glen Haven. These aspects of the regional flora are dependent upon, and deserve protection along with, other plants and animals growing and living on the dunes and moraines.



Largest known Northern White Cedar in the U.S.



FAUNA

- Nesting herring gull colony of several thousand birds ①
- Bank swallow colony ②
- Winter deer yard ③
- Water-related wildlife area ④
- Loons on these lakes ⑤

FLORA

- LAKE & POND** in shallow water — cattails, arrowgrass, water smartweed, arrowhead, bulrush
- SWAMP-BOG-MARSH** sedges, rushes, willow, buttonbush, swamp holly, black gum, tamarack, black ash, alder, black spruce, leatherleaf
- STABILIZED DUNE** pines, oaks, sugar and red maple, elm, basswood, blueberry, beech
- BEACH & ACTIVE DUNE** sea rocket, seaside spurge, beach grass, sand reed grass, beach pea
- MORAINAL BLUFF & PLATEAU** beach grass, beach pea, sand cherry, red osier dogwood, cottonwood
- MAPLE-BEECH** the climax forest with rich ground cover of flowering annuals and perennials
- ASPEN-BIRCH** aspen, white and yellow birch, arborvitae, red cedar
- PINE-OAK-ASPEN** jack and red pine, white and red oak, big-toothed and quaking aspen, balsam fir
- HEATH** common and creeping juniper, bearberry, cherry, buffalo berry, woolly beachheather

NATIONAL LAKESHORE

NATURAL HISTORY - BIOLOGY

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SCALE | MILES

Studies of dunes and dune flora date back at least to 1899, when Dr. H. C. Cowles of the University of Chicago undertook considerable research dealing with the dunes along the shores of Lake Michigan. At that time, he wrote: "Perhaps no topographic form is more unstable than a dune. Because of this instability, plant societies, plant organs and plant tissues are obliged to adapt themselves to a new mode of life within years rather than centuries." Through the years, botanists and ecologists have observed the way in which various successional sequences of plant growth relate to the different types and positions of dunes. The Sleeping Bear Dunes area is ideally suited for continuing studies of this type.

Animal Life / Due to the relative narrowness of the National Lakeshore, much of the wildlife seen here is transient. However, because of the variety of landforms, and the number of plant communities and habitats available, there is a large assortment of animals in the area. White-tailed deer, raccoon, and porcupine are common. Red fox, striped skunk, mink, woodchuck, cottontail rabbit, and snowshoe hare are also prevalent. All three species of Eastern tree squirrel are present. The red squirrel, including a surprising number of the black phase, are found in hardwood forests, particularly where red oak grows. The deer mouse is of less frequent occurrence. The Eastern chipmunk is common in forested areas; it is replaced by the thirteen-lined ground squirrel in open land. Bobcat, grey fox, otter, badger, coyote, and beaver are of somewhat rare occurrence. And the muskrat, fox squirrel, house cat, European hare, and Norway rat have been introduced to the area by man.

Although a complete observation list is not available, Sleeping Bear Dunes National Lakeshore falls within the range of about 35 species of reptiles and amphibians. The only poisonous reptile that might possibly occur in the area is the Eastern massasauga, or timber rattlesnake.

Birdlife is particularly abundant and varied. Marsh hawks, horned larks, and vesper sparrows are found among the dunes. In the summertime, turkey vultures are occasionally observed. A great variety of songbirds may be seen in summer residence, and during spring and fall migrations. Many species of migrant waterbirds are attracted to the Sleeping Bear Dunes area: loons nest in the lakes of the Platte Plains; black ducks nest along the streams and ponds; and South Manitou Island is especially noted for its herring gull rookery — one of the largest gull-breeding colonies found on the Great Lakes, with about 1500 nests.

Between 85 and 90 species of fishes may be found in the inland lakes of Sleeping Bear Dunes National Lakeshore, and in the adjacent waters of

Lake Michigan. Of the spiny-rayed group, largemouth and smallmouth bass, bluegill, yellow perch, and rock bass are represented. Northern pike are found in nearly all the lakes. Muskellunge occur sparsely in Platte Lake, which lies just outside the boundary.

Streams in the area provide brook, brown, and rainbow trout. Smelt ascend the streams from Lake Michigan to spawn in springtime, and large numbers are taken by dip netting. Occasionally, large die-offs of alewives occur, and great windrows of dead fish are washed up onto the beaches; this causes problems in water and sand pollution, and also unpleasant odors in the vicinity.

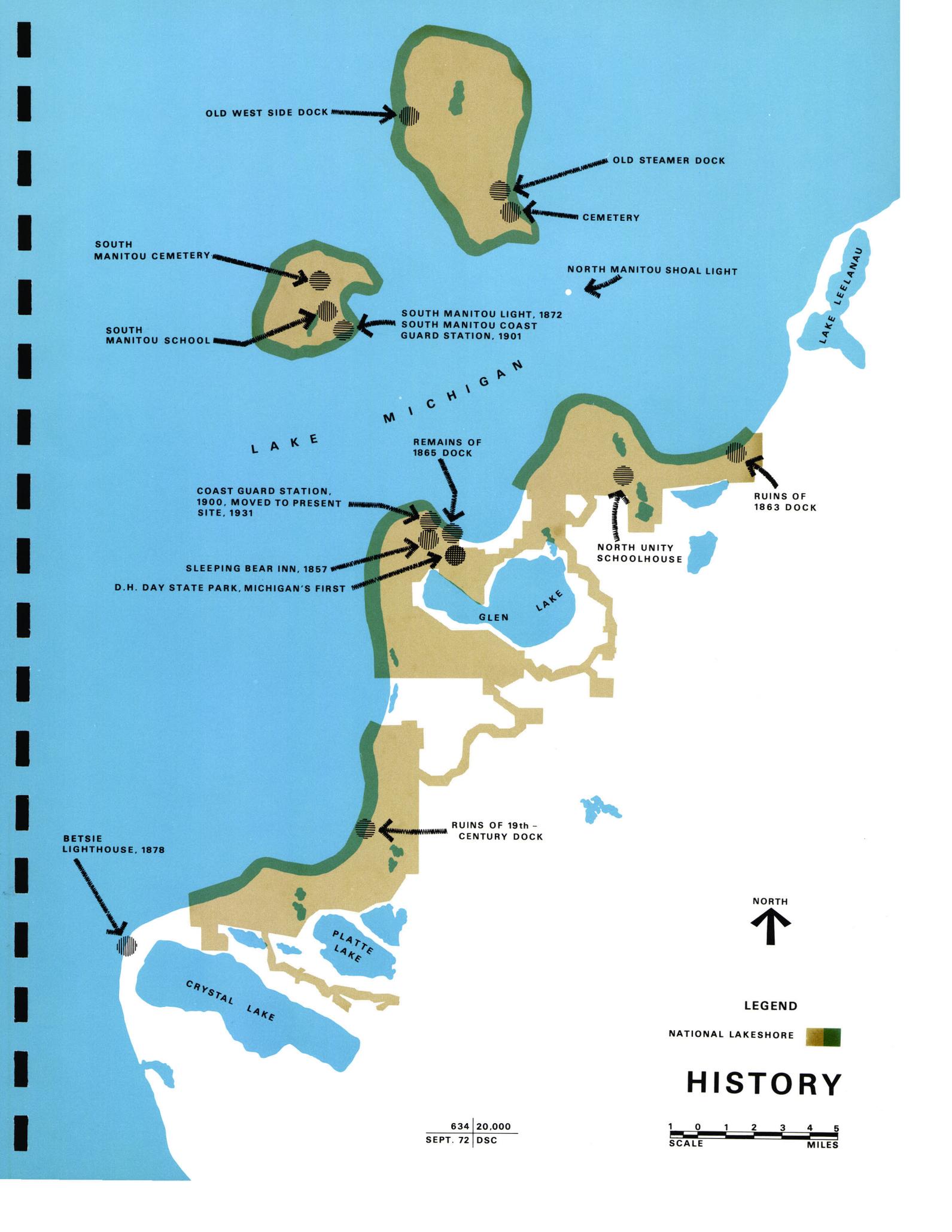
To help restore the Great Lakes to a productive fishery, following the decline of the lake trout, the Michigan Department of Natural Resources conducted a study of the coho salmon, and concluded that this species would be an excellent introduction. In the spring of 1966, two-year-old coho smolt ranging in size from 4 to 6 inches were released in the Platte and other rivers. Alewives provided a plentiful food supply, and in August of 1967, the coho adults began returning to the general area of the mouths of the rivers where they had been released. By mid-September, great numbers had congregated near the mouth of the Platte River, and some had started upstream. The spawning run was in full force by mid-October, and continued to mid-November. Fishermen congregated in great numbers to try their luck at catching this latest addition to the fishery.

- **History and Archeology**

The archeological and historical resources of the Sleeping Bear Dunes National Lakeshore area fall under the National Survey of Historic Sites and Buildings themes: "Prehistoric Hunters and Gatherers," "French Exploration and Settlement," "Commerce and Industry," "Agriculture," and "Travel and Communication."

The first known occupants of the Lakeshore area were the Mound Builders, who lived in scattered settlements during prehistoric times. These people had disappeared long before the coming of French explorers, who found the region occupied by the historic Ottawas. This tribe, joined in a loose alliance with the Chippewas and Potawatomis, wintered inland where the hunting was good, and returned to the Lakeshore to fish during the summer. There seems to have been an Ottawa village near Glen Arbor as late as the 1840's.

French explorers and fur traders may have penetrated into the Lake Michigan area as early as 1622. In 1671, a mission was established at the Straits of Mackinac. It seems certain that Sleeping Bear and



OLD WEST SIDE DOCK

OLD STEAMER DOCK

CEMETERY

SOUTH MANITOU CEMETERY

NORTH MANITOU SHOAL LIGHT

SOUTH MANITOU SCHOOL

SOUTH MANITOU LIGHT, 1872
SOUTH MANITOU COAST
GUARD STATION, 1901

L A K E
M I C H I G A N

REMAINS OF
1865 DOCK

COAST GUARD STATION,
1900, MOVED TO PRESENT
SITE, 1931

RUINS OF
1863 DOCK

SLEEPING BEAR INN, 1857

NORTH UNITY
SCHOOLHOUSE

D. H. DAY STATE PARK, MICHIGAN'S FIRST

G L E N
L A K E

BETSIE
LIGHTHOUSE, 1878

RUINS OF 19th -
CENTURY DOCK

P L A T T E
L A K E

C R Y S T A L
L A K E



LEGEND

NATIONAL LAKESHORE

HISTORY

634 | 20,000
SEPT. 72 | DSC

1 0 1 2 3 4 5
SCALE MILES

Empire Dunes and the Manitous must have been landmarks to the French as they followed the Lake Michigan shoreline on voyages of exploration or trade. An occasional party may have camped for a night or two to wait out a storm on the shoreline within what is now the National Lakeshore, although there is no evidence of this.

In any event, permanent settlement of the Sleeping Bear Dunes National Lakeshore area did not begin until well into the 19th century. When it came, it followed in the wake of the steamboat. The first steamer on this part of Lake Michigan appeared in 1819, and was rapidly followed by others. The narrow passage between the Manitous and the mainland was a good and heavily used channel. In 1839, a lighthouse was built on South Manitou, and in 1846, W. W. Barton arrived on the island, built a dock, and began selling cordwood to lake steamers. Six years later, another wooding station opened on North Manitou, and in 1848, the first permanent settler on the mainland opened a trading post at Glen Arbor. By 1860, over 2000 people had settled in the area.

The early settlers were farmers and loggers. Hardwood forests, with some hemlock, pine, and cedar, covered the area, and much of it went into cordwood to fire the boilers of the lake steamers, particularly during the early years. But by 1874, there were six sawmills, capable of turning out a variety of timber products, in Leelanau County alone. Timber cutting hit its peak in 1893. By 1907, when the timber era was near its end, some 2 billion board feet had been processed.

As the timber was cut, the cleared land went into farms. Potatoes were the first important crop, but it developed that the region was better suited to fruit production. At first, apples were the major crop, but the emphasis gradually shifted to cherries. As the years passed, recreation and summer-home development became increasingly important, and remain so.

A thorough survey of surviving archeological and historic features of the Sleeping Bear Dunes National Lakeshore area has not yet been made. Those features now known are shown on the map of historic features.

- **Resource Use**

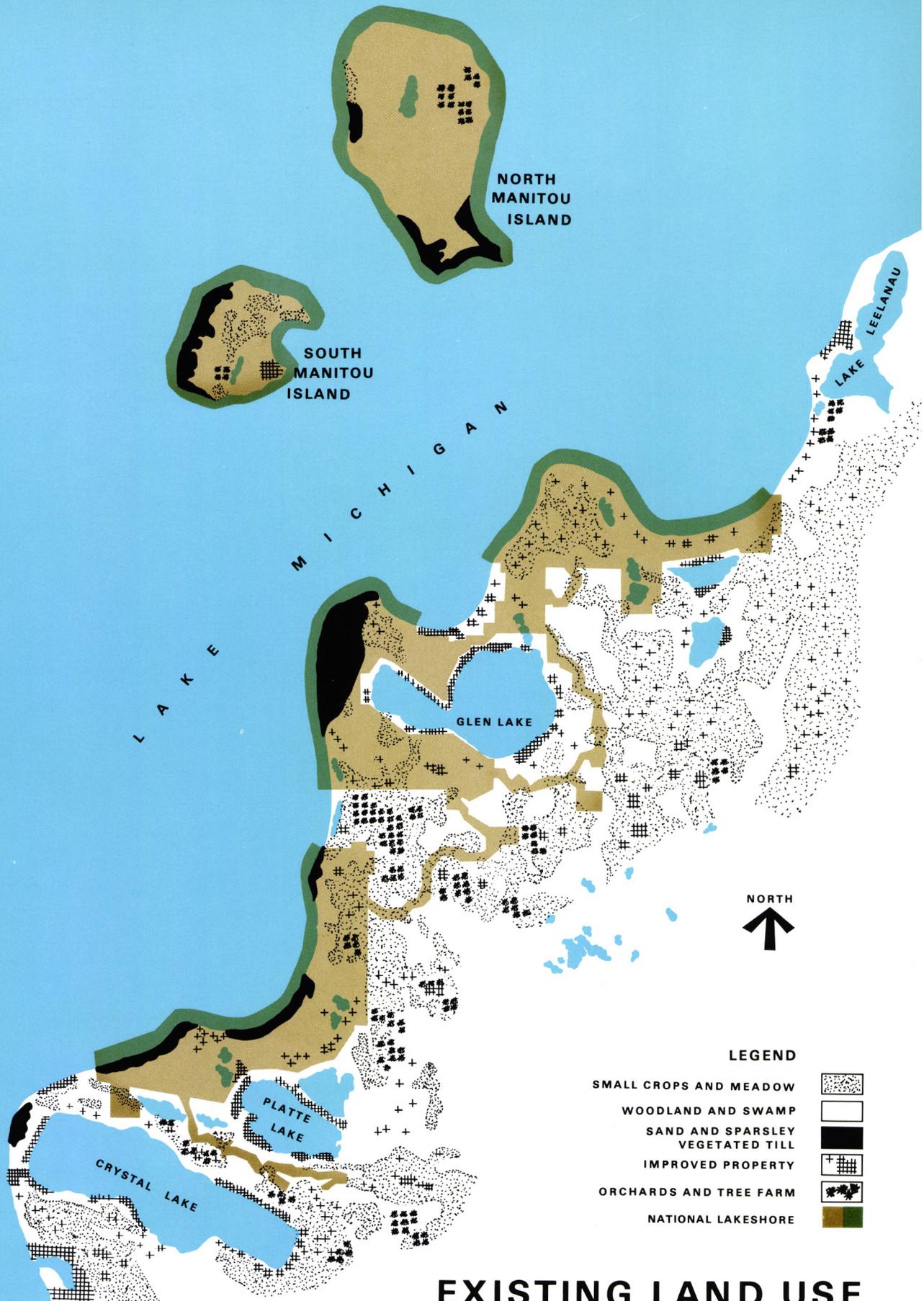
Existing Land Uses / Land use in and adjacent to Sleeping Bear Dunes National Lakeshore is shown in generalized form on the Existing Land-Use Map. Uses within the area, which includes a total of 838 acres of inland lakes, are:

<u>LAND USE</u>	<u>ACREAGE</u>	<u>TOTAL</u>	<u>PERCENTAGE</u>
Public Lands		8,631	14.2
Federal installations	98		0.2
State parks and forests	8,373		13.8
Local parks	160		0.2
Privately Owned Lands		52,117	85.8
Unimproved	50,539		83.2
Cropland, pasture, hayland	6,340		10.5
Idle land, marsh, sand, beach	5,900		9.6
Woodland	37,299		61.5
Producing orchards	1,000		1.6
Improved	1,578		2.6
Residential	1,500		2.5
Commercial	50		0.1
Industrial	3		
Organizational	15		
Special-purpose	10		

Improvements within the Lakeshore include 65 farm units; 61 year-round and 246 seasonal residences; 20 commercial buildings; and two summer camps.

Land uses adjacent to Sleeping Bear Dunes National Lakeshore are similar to those within it. In Benzie and Leelanau Counties, approximately 70 percent of land is cutover timberland or second-growth timber. Almost all remaining land outside the boundaries is devoted to agriculture — a somewhat higher percentage than within. Orchards are somewhat more numerous, and larger, in the surrounding area than within the Lakeshore itself. In addition to orchards, agricultural uses in the Sleeping Bear Dunes area include the production of grain, vegetables, and beef and dairy cattle.

Analysis of Existing Land Uses / Four land-use trends are noticeable in the Sleeping Bear Dunes National Lakeshore area: an increase in both numbers and percentages of seasonal residents; an increase in summer-home construction; a decrease in land devoted to general agriculture; and an increase in the amount of land lying in orchards and pine plantations. The last trend, which began within the past decade, is especially noticeable, although as yet only a small percentage of land is so used. The foregoing trends characterize both the Lakeshore and its surroundings, although the implementation of certain portions of the legislation authorizing the Lakeshore acted to slow summer-home construction within the boundaries prior to the 1967 construction season.



NORTH
MANITOU
ISLAND

SOUTH
MANITOU
ISLAND

LEELANAU
LAKE

GLEN LAKE

PLATTE
LAKE

CRYSTAL LAKE

L A K E
M I C H I G A N



LEGEND

- SMALL CROPS AND MEADOW 
- WOODLAND AND SWAMP 
- SAND AND SPARSLEY
VEGETATED TILL 
- IMPROVED PROPERTY 
- ORCHARDS AND TREE FARM 
- NATIONAL LAKESHORE 

EXISTING LAND USE

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1 0 1 2 3 4 5
SCALE MILES

SOUTH
MANITOU
ISLAND

NORTH
MANITOU
ISLAND

M I C H I G A N

L A K E

LAKE LELANAU

GLEN LAKE

PLATTE LAKE

CRYSTAL LAKE

LEGEND

- FEDERAL 
- STATE 
- PRIVATE 



BOUNDARY AND LAND OWNERSHIP

634 | 20,006
SEPT. 72 | DSC

1 0 1 2 3 4 5
SCALE MILES

Compatible Land Uses / The following commercial land uses, in existence before December 31, 1964, are among those specified as compatible in the legislation authorizing the Lakeshore: commercial farms; tree farms; orchards; motels, rental cottages; camps; craft and art studios; marinas; and medical, legal, architectural, and other such professional offices.

Visitor Use of the Resources / It is estimated that user demand may reach 3 million visits annually, 5 years after Lakeshore establishment. Existing visitor uses include camping, beach use and swimming, summer-cottage use, boating on both Lake Michigan and inland lakes, hiking, scenic driving, fishing, and hunting. All of these uses will continue, and some will expand. The provision of more facilities and better access to the Lakeshore resources will greatly stimulate camping, beach use and swimming, hiking, and scenic driving.

- **Factors Affecting the Resources and Their Use**

Legal Factors / The establishment of a Sleeping Bear Dunes National Lakeshore was authorized on October 21, 1970, by Public Law 91-479. This establishment act is unusually complex; for this reason, it should be referred to directly whenever any questions as to its precise provisions and requirements arise.

In general, the act authorizes the Secretary of the Interior: to establish the Lakeshore; to establish a 10-member advisory commission; and to provide for continued hunting and fishing. It also directs the Secretary to prepare and implement a land- and water-use management plan. And it requires the Secretary to assist local governments in establishing zoning bylaws, and to identify a boundary. It authorizes construction of a scenic road and prescribes its general routes, and authorizes the appropriation of funds, with specific ceilings for land acquisition and development.

The act also contains several sections affecting land acquisition. They give the Secretary the usual authority to acquire by donation, to exchange for other lands under his jurisdiction within Michigan, and to purchase with donated or appropriated funds. Property owned by the State or a political subdivision may be acquired only by donation. Priority will be given to the purchase of any lands offered for sale.

Condemnation of "improved property" — that is, a detached, one-family dwelling under construction before December 31, 1964 — is withheld as long as a valid local zoning ordinance is in effect, or as long as the property owner agrees to use the property according to the standards set

forth in the establishing act. These standards set criteria for determining what a valid zoning ordinance is. Property owners may retain 25-year or lifetime occupancy. The Secretary may not condemn any commercial property used for commercial purposes on December 31, 1964, so long as, in his opinion, such use would further the purpose of the act, and such use does not impair the usefulness and attractiveness of the Lakeshore. The act lists the following uses, among others, as being compatible with the purposes of the legislation: commercial farms; orchards; tree farms; motels; rental cottages; camps; craft and art studios; marinas; and professional offices.

In addition, the authorizing act requires that all Lakeshore lands be classified into one of three categories: Category I, public use and development areas; Category II, environmental-conservation areas; and Category III, private use and development areas. Lands in Category I may be acquired in fee simple, in accordance with section 8 of the act. There are also lands specifically designated for fee-simple acquisition within Categories II and III.

The act requires that, within 4 years from the date of enactment, the Secretary of the Interior review the Lakeshore as to the suitability or unsuitability of any part of it for preservation as wilderness, in accordance with the Wilderness Act of 1964.

During early hearings, commitments were made to the effect that the Sleeping Bear Scenic Dune Ride, now operating under a State permit, would be continued.

Jurisdiction will be proprietary.

Land Status / The following chart indicates the current status of lands in Sleeping Bear Dunes National Lakeshore.

Federal	98
State	8,373
County and municipal	160
Private	52,117
Total	60,748

Climate / The climate of Sleeping Bear Dunes National Lakeshore is moderated by Lake Michigan. January's mean minimum temperature is 18 degrees; July's mean maximum is 80 degrees. Precipitation averages 29 inches a year, and is well distributed throughout the year. September

is the wettest time, and December through March the driest. The remaining months average from 2½ to 3 inches of precipitation. Mean snowfall exceeds 70 inches. The total snowfall during the 1964-65 season at Maple City was 173.4 inches. Prevailing winds are westerly. Mean dates of the last spring and first fall frosts are May 25 and October 6, respectively, giving an average growing season of 134 days.

Special climactic conditions include a considerable amount of late-fall and early-winter cloudiness, and windblown sands.

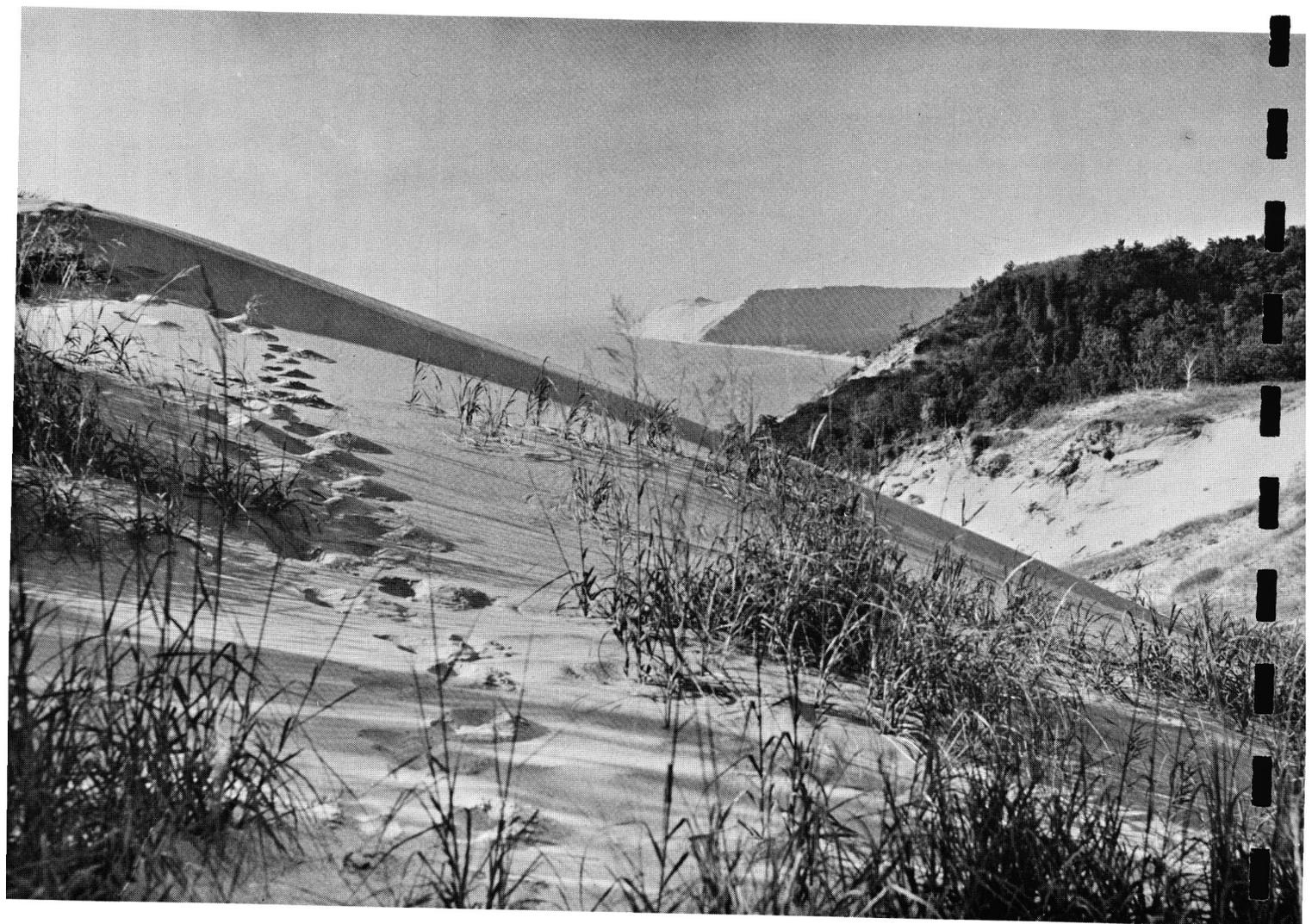
Climate will not have much effect upon either Lakeshore development or operation. Fog — especially in the fall — may sometimes disrupt boat service to the islands. The sandblasting effect of windblown sand should be carefully considered in the planning of sites and designing of facilities.

Terrain and Soils / Two types of terrain in particular influence development and use of the Sleeping Bear Dunes National Lakeshore area.

First, the high ground of the long, curving Manistee Moraine offers a succession of highly scenic views. Since the high quality of these views is the result of geological processes, overlooks will present an opportunity for meaningful introductory interpretation of the processes.

Second, the low, jumbled dunes and older beach ridges of the sand plains that occur behind the foredunes in the embayments — particularly those around Platte Bay — create access problems. Once exposed to winds, these formations will erode and shift rapidly, yet they are among the most charming areas of the Lakeshore, and have a high potential for interpreting the processes of dune formation and plant succession. Major road access must not be provided in any location where and in any manner which will disturb such dune complexes. Development of facilities for heavy public use should be avoided. Trail access will be provided, but trails must be carefully designed and constructed in order to avoid disturbing extensive areas of the cover that holds the sand in place.

Soil types found within the Lakeshore are gravels in the morainal features, and sand elsewhere.



**RESOURCE
EVALUATION**

The Sleeping Bear Dunes National Lakeshore area is one of the most scenic portions of the Lake Michigan shoreline. It contains an unusual combination of natural features having outstanding scientific and recreational values. The dynamic forces of glaciation, water, and wind, are clearly demonstrated in various ways and landforms. There is a great diversity of ecological environments and habitats, offering excellent opportunities for research, observation, interpretation, and conservation-education. The Manitou Islands, Lake Michigan, the beaches, the inland lakes and streams, the forests, and the dunes are all integral parts of the Lakeshore's total recreational picture.

- **Scenic and Scientific**

In the area of scientific importance, the Sleeping Bear Dunes National Lakeshore demonstrates four things to an unusual degree: the effects of continental glaciation; the post-glacial process of shoreline adjustment; the part the wind plays in the formation of a great variety of dunes; and finally, the processes of plant succession. We have, then, a landscape shaped by the slow but meticulous hand of nature, using three great geologic tools: ice, water, and wind.

These scientific processes so vividly manifested at Sleeping Bear Dunes National Lakeshore are responsible for its unexcelled scenery. Superb vistas — both intimate and expansive — are everywhere to be had. The long, sweeping, crescent-shaped expanses of beach, anchored on their extreme ends by bold, high bluffs of lake-eroded moraines, give the Lakeshore a special character.

Within the embayed lowlands of the Lakeshore are numbers of lakes that were once part of ancestral Lake Michigan, and are now sealed off by sandy beach ridges. These lakes may be best seen and appreciated from the high morainal hills surrounding the lowlands.

Dune formation creates a diversity of scenic forms, and these are unusually well displayed within Sleeping Bear Dunes National Lakeshore. All types of the varied stages of ecological plant succession are represented here — dunes of the lowlands, rich in their variety of plant environments; dunes perched atop receding headlands; and dunes actively moving across the landscape.

In addition to its diversity of landforms, the area contains a great variety of plant environments, ranging from the first plantlife associated with dune stabilization to pure stands of white birch, and cedar bogs. On old beach ridges, lines of red pine give an open, parklike effect to the landscape. In areas of old, windblown, undulating landscape, remnant white pines and scattered clusters of oldfield common juniper stand in a ground cover of bearberry, creeping savin, and caribou moss, to create a delightful garden effect.

- **Historic**

No events of great historical importance have taken place within the Sleeping Bear Dunes National Lakeshore. However, the broad sweep of human activity taking place within the area — lake steamboating and logging in particular — is inherently interesting, and should be interpreted as opportunities occur.

● **Recreational**

The outstanding scenic qualities, and the natural forces involved in their making, are basically the most dynamic recreation resources of the Sleeping Bear Dunes National Lakeshore area. They provide both the reason and the place for nature study, nature walks, photography, scenic appreciation, hiking, bicycling, horseback riding, beach walking, rock hunting, and touring. In addition, the cool climate the Lakeshore area enjoys during the summer months makes most outdoor recreation and-vacation activities especially palatable.

Camping and picnicking can be accommodated in various types of natural environments, and the beaches offer opportunities for swimming and sunbathing. Placid-water canoeing and rowing may be enjoyed on some of the lakes and streams. Fishing is again becoming a major activity. Winter use is becoming very popular in the Lakeshore area, and it can be expected that snowmobiling and cross-country skiing will become important activities here.

Factors that enhance or limit specific recreation activities at Sleeping Bear Dunes National Lakeshore can be summarized as follows:

**FACTORS THAT ENHANCE OR LIMIT SPECIFIC RECREATION ACTIVITIES
AT SLEEPING BEAR DUNES NATIONAL LAKESHORE**

Recreation Activity	Potential	Comments
Dunesmobile rides	This activity, presently operating under permit on State land, makes possible the enjoyment of the Sleeping Bear Dunes area by those unable to stand the rigorous climb and strong winds.	Maintenance of the dunesmobile trail to some extent disrupts the natural processes, and disturbs the resulting setting.
Private auto touring	Scenic roads are proposed to enhance the visitor's appreciation of the area in relation to the region as a whole.	None.
Scenic appreciation	Scenic values are ubiquitous, expansive, and intimate throughout the region.	To some extent there is a lack of control of visual encroachment inside, as well as outside, the National Lakeshore.

**FACTORS THAT ENHANCE OR LIMIT SPECIFIC RECREATION ACTIVITIES
AT SLEEPING BEAR DUNES NATIONAL LAKESHORE**

Recreation Activity	Potential	Comments
Swimming, beach walking, and sunbathing	There are 64 miles of broad, expansive, clean sand beaches on Lake Michigan shores.	Water temperature and winds off of Lake Michigan may be uncomfortable except during the warmest weather. Where private homes front on Lake Michigan, beach use is restricted to rights of passing. There is a lack of suitable beaches on the inland lakes.
Canoeing and rowing	There are safe and pleasant waters for non-experienced boaters on inland lakes and streams.	Stream distances are short, and the low gradient is discouraging to white-water boaters.
Motorboating	Lake Michigan is excellent for large boats. Opportunities are numerous elsewhere in the Grand Traverse Bay region for all boat sizes.	Sudden storms make the open waters of Lake Michigan dangerously rough and unsafe for small boats. There are no harbors of refuge within the National Lakeshore. The nearest harbors are at Frankfort and Leland. The inland lakes within the Lakeshore are generally too small and shallow for motorboating.
Water skiing	There are many opportunities within the Grand Traverse Bay region.	Inland lakes within the Lakeshore are too small for motorboats, and have generally muddy bottoms. Lake Michigan is normally too dangerous for water skiing.
Fishing	There is a variety of fisheries, ranging from cold-water streams to warm-water lakes and Lake Michigan. Steelhead and coho salmon fishing is popular in the Platte Bay area.	The popularity of coho fishing creates parking congestion near the mouth of the Platte River.

**FACTORS THAT ENHANCE OR LIMIT SPECIFIC RECREATION ACTIVITIES
AT SLEEPING BEAR DUNES NATIONAL LAKESHORE**

Recreation Activity	Potential	Comments
Horseback riding	The moraines and the proposed scenic road right-of-way offer excellent opportunities for riding-trails. Riding-stables already exist adjacent to the National Lakeshore.	None.
Hiking	There are excellent opportunities for high and low trails.	Inholdings may possibly block some ideal locations for trails.
Nature walks	There are unlimited possibilities for nature trails, because they relate to ecological processes and geological features.	Inholdings may restrict ideal locations.
Bicycling	The embayments are reasonably level, interesting, and relatively free from construction problems, and thus are suitable for bicycle trails.	The moraines are generally too steep for bicycling.
Photography	Photographic subjects are unlimited throughout the four seasons.	None.
Rock hunting	There are interesting waterworn pebbles on Lake Michigan beaches. Petoskey stones, the official State stone, may be found in old gravel pits.	None.
Golfing	Potential sites exist in the Port Oneida/Pyramid Point section, as well as in the abandoned course above Sleeping Bear Bay.	Lands may be unavailable due to acquisition restrictions in the enabling legislation.

**FACTORS THAT ENHANCE OR LIMIT SPECIFIC RECREATION ACTIVITIES
AT SLEEPING BEAR DUNES NATIONAL LAKESHORE**

Recreation Activity	Potential	Comments
Snowmobiling	The area has good snow cover and interesting terrain. Snowmobiling could possibly be an active winter use of equestrian trails and existing low-grade roads and jeep trails. Another possibility is the recently constructed Stocking Trail.	Strict control will be needed for this type of use. Cooperation will be necessary with State and local governments and private landowners in extending the trail systems.
Skiing	Ski resorts are being developed within the region, some of them just outside the National Lakeshore. Cross-country skiing within the Lakeshore could complement private resort development.	Slopes within the National Lakeshore are not generally suitable for ski-tow development.
Skating	The smaller inland lakes are covered with ice earlier in the season.	The demand for this activity is limited.
Ice boating	There are many opportunities within the region.	The lakes within the National Lakeshore are relatively small for this use.
Hunting	Upland game birds and deer are plentiful in the Grand Traverse region.	There are numerous homes within and adjacent to the National Lakeshore, thus restricting the hunting opportunities.
Camping	Opportunities exist for expanding facilities for family, group, and primitive camping throughout the region.	Some existing camping facilities are presently located at D. H. Day and Benzie State Parks.
Picnicking	Attractive locations are available on uplands and beaches.	Strict control of picnic sites is needed on beaches to prevent pollution.

THE PLAN

OBJECTIVES

● Visitor Use

The primary pattern of use in Sleeping Bear Dunes National Lakeshore should enable visitors to enjoy recreational opportunities, enhanced through their appreciation of scenic beauty and scientific significance — and yet this primary use-pattern should cause the least inconvenience possible to the lives and movements of users of properties within and adjacent to the Lakeshore.

● Visitor Information

The information program will encourage the full use of Lakeshore features and facilities, and a respect for private properties within Lakeshore boundaries.

In providing information for visitors about accommodations within the Grand Traverse Bay region, cooperation with State and local agencies should be established.

In making information available about such features as regional points of interest, resorts, food, and lodging, cooperation with chambers of commerce will be necessary.

● Interpretation

Theme / The story to be told at Sleeping Bear Dunes National Lakeshore is of the geological and ecological processes that created the Lakeshore landscape, and of the continuing natural changes occurring there.

Program / The Lakeshore's interpretive program will help the visitor understand why the landforms and vegetation he sees are where they are.

Method / Broad underlying concepts will be presented in an interpretive facility overlooking representative glacial features; details will be interpreted on site. The whole will be tied together by a scenic road and trail system.

GENERAL DEVELOPMENT

PLATTE RIVER BAY

9. BEACH ACCESS
10. SWIMMING BEACH
11. CAMPING
12. BEACH ACCESS
13. CANOE RENTAL AND FLOATS (private)
14. CONTACT STATION
 - a. NATURE TRAILS
 - b. BICYCLE TRAILS
 - c. PICNICKING
 - i. SNOWMOBILE TRAILS
16. BOAT LAUNCHING AND MARINA SITE

SLEEPING BEAR BAY

6. BEACH ACCESS
6. STORE
6. DUNESMOBILE CONCESSION
- c. PICNICKING
- d. HIKING TRAILS
- j. INTERPRETIVE OVERLOOKS

PYRAMID POINT

15. EXISTING GROUP CAMPS
 - a. NATURE TRAILS
 - c. PICNICKING SCENIC AND INTERPRETIVE OVERLOOKS
 - g. EQUESTRIAN TRAILS

SLEEPING BEAR PLATEAU

- d. HIKING TRAILS
- h. DUNESMOBILE TRAILS
- j. SNOWMOBILE TRAILS

GLEN LAKE HIGHLANDS

7. CAMPING (family only)
8. VISITOR CENTER INTERPRETATION INFORMATION
- d. HIKING TRAILS
- g. EQUESTRIAN TRAILS

GOOD HARBOR BAY

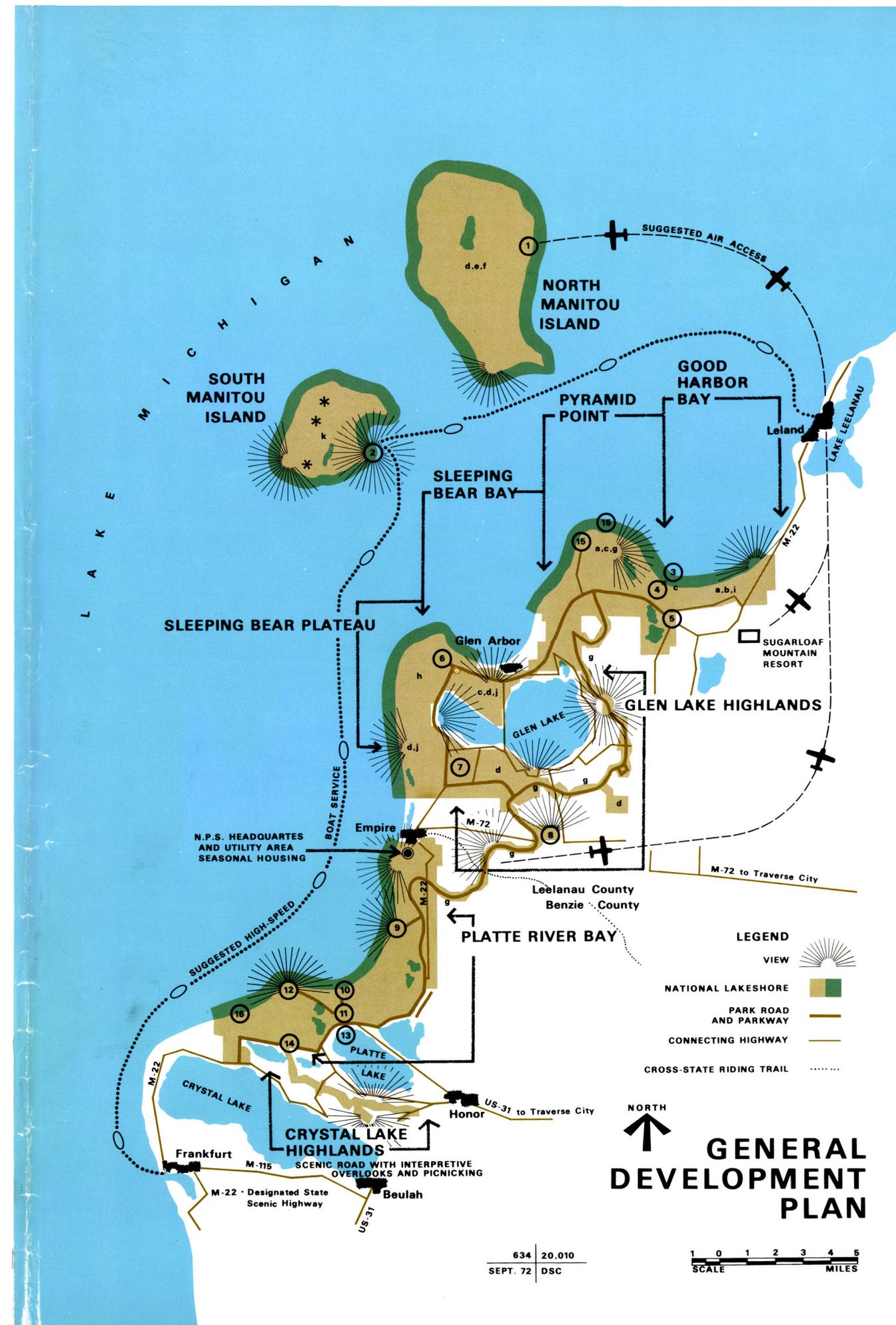
3. SWIMMING BEACH
4. CAMPING
5. CONTACT STATION
 - a. NATURE TRAILS
 - b. BICYCLE TRAILS
 - c. PICNICKING
 - i. SNOWMOBILE TRAIL

NORTH MANITOU ISLAND

1. AIRSTRIP
1. DOCK (existing)
- d. HIKING TRAILS
- e. HUNTING
- f. PRIMITIVE CAMPING

SOUTH MANITOU ISLAND

2. DOCK FACILITIES
2. LODGE AND RESTAURANT (private capital)
2. LIGHTHOUSE (existing) MARITIME EXHIBIT RANGER STATION
 - a. NATURE TRAILS
 - k. MINIBUS TRAILS
 - * SEMI-PRIMITIVE CAMPING



- **All-Season Use**

Through design and layout, Lakeshore potential will be developed as needed for all-season use, utilizing to the fullest extent a planned multi-season versatility of facilities.

- **Resource Conservation**

The use-pattern should be so guided through development-planning and design that the esthetic and natural values of the Lakeshore are not diminished.

- **Conservation-Education**

Lakeshore facilities and resources will be available for environmental study programs, and for other educational uses by school classes, scouts, and other groups.

- **Architectural Theme**

One architectural theme should prevail throughout the Lakeshore. The architectural character should derive from the use of native wood and stone materials, and should convey a feeling of strength — especially in the use of wood. Beach facilities will reflect a lighter and more airy feeling, more in keeping with informal beach use.

- **Comprehensive Planning**

Lakeshore planning will be coordinated to the utmost extent with State and local planning for Grand Traverse Bay region.

PROPOSALS

The master plan for Sleeping Bear Dunes National Lakeshore is intended to encourage distribution of the visitation throughout the Lakeshore, with the density of use at any given point being governed by both the type of use and its impact upon the resource. The plan should establish a use-pattern that allows people a feeling of informal freedom, yet one which also subtly injects an element of nonregimented order into the enjoyment of the area.

The planned developments — roads, trails, and overlooks — should be sensitive to landscape features, recognizing the landforms and their meanings to the extent that the use of such facilities in itself becomes an interpretive tool. The visual effect of facility development upon the landscape must be minimized as much as possible. Parking areas in particular can become massive intrusions on even distant views, unless carefully concealed. Beach parking lots should in all cases be situated back from the beach, behind the foredunes. And when extensive parking lots are required, they should be broken up by tree plantings and/or stabilized dunes.

- **Access and Circulation**

Mainland Portion / While the primary object of the National Lakeshore road system will be to provide access to significant activity-developments and points of interest, every effort has been made to separate Lakeshore traffic from local or residential traffic wherever possible.

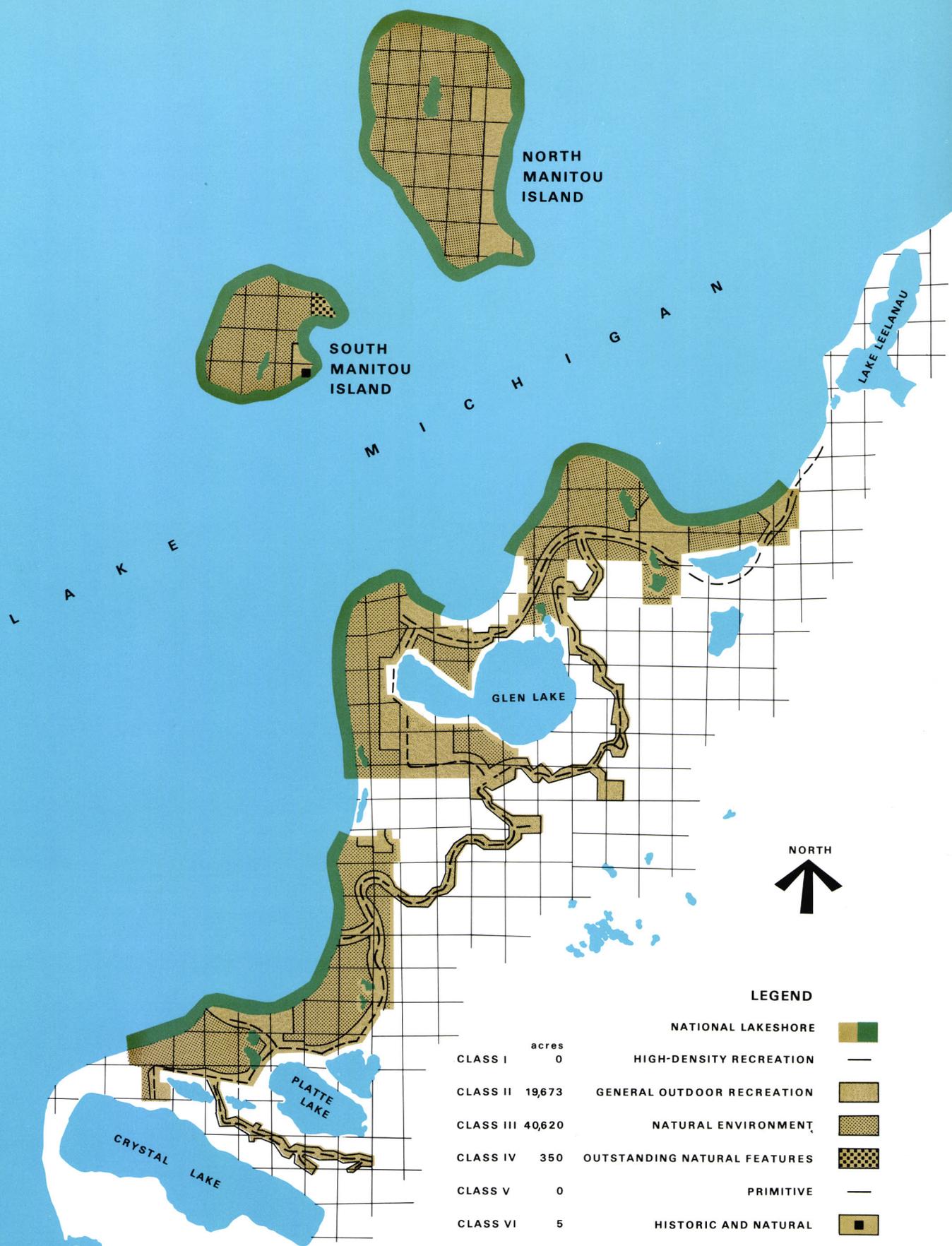
The Lakeshore visitor will approach primarily from the east or south via highways Michigan 72 and U.S. Route 31. The most prominent access points will be located in the central portion of the Lakeshore, on Michigan 72 and the scenic road, and from U.S. Route 31 via the scenic road. Scenic highway Michigan 22 will provide secondary access and egress points as it enters and leaves the Lakeshore. These access points will not provide complete control, since several existing roads will meet or cross Lakeshore roads at grade; but through the use of the scenic road system as it is shown in the master plan, reasonable order can be expected.

The major automobile circulation system for the National Lakeshore visitor will combine portions of existing Michigan 22, Michigan 109, and the scenic road. Secondary spurs and loops will serve specific facilities and activity-areas.

An optional system of ingress and egress for residential areas, utilizing existing roads, will function independently of the Lakeshore road system. Residents of the Platte Lakes developments can move via existing public roads toward Honor, Beulah, and Traverse City, without entering the National Lakeshore. The villages of Empire, Glen Arbor, and Burdickville, and all of the residential development on Glen Lake except its extreme western shore, will have freedom of movement completely independent of Lakeshore roads to Maple City, Cedar, and Traverse City.

The Manitou Islands / Access to South Manitou Island will be by boat only. It is anticipated that boat service will be provided by private enterprise, possibly from Frankfort and Leland. Some docking for private boats will also be provided, but the construction of an elaborate marina is not anticipated at this time.

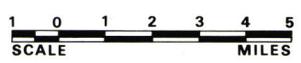
A one-way minibus trail originating at the lodge and dock area is planned as a loop road on the island. It will be used for transporting campers' gear to the vicinity of the Adirondack-type shelter-clusters, for those who may wish to hike sections of the nature trail, and it will also be used by bicyclists.



CLASS		acres	LEGEND	
CLASS I		0	NATIONAL LAKESHORE	
CLASS II	19,673		HIGH-DENSITY RECREATION	
CLASS III	40,620		GENERAL OUTDOOR RECREATION	
CLASS IV	350		NATURAL ENVIRONMENT	
CLASS V	0		OUTSTANDING NATURAL FEATURES	
CLASS VI	5		PRIMITIVE	
			HISTORIC AND NATURAL	

LAND CLASSIFICATION PLAN

634 20,005
SEPT. 72 DSC



Private air service to North Manitou Island from local airports throughout the Grand Traverse Bay region will be encouraged. Improvement of the island's landing facilities will be required to accommodate small commercial airplanes and helicopters. No major docking facility is planned for the period 5 years after Lakeshore establishment.

- **Visitor Contact, Orientation, and Information**

Since much of the land within Lakeshore boundaries will remain in private use, and since Michigan 22, a State highway, will continue to be an essential element in Lakeshore circulation, an entrance fee is not practicable. However, it is essential that the visitor be contacted, and that he have an opportunity to orient and inform himself about other public and private facilities, features, and services available elsewhere in the Grand Traverse Bay area.

While a number of minor roads intersect Michigan 22 throughout the length of the Lakeshore, the vast majority of visitors will arrive at three points: the scenic road via U.S. Route 31 from the south and east; Michigan 72, and the scenic road from Traverse City near the center of the Lakeshore; and Michigan 22 as it enters the Lakeshore from the north. For this reason, three contact and information stations are proposed: the southern station will be placed at the intersection of Michigan 22 and the scenic road; the central station will be provided at the interpretive center, just off Michigan 72 and the scenic road; and the north station will be along Michigan 22, at the point where the visitor arriving from the north first enters a major segment of the Lakeshore.

The central station will be open all year, and can be attended off-season by the personnel of the interpretive center. The north and south stations should be designed for unattended operation during the off-season.

Visitors arriving at any of the three stations will need information about Lakeshore facilities, features, and services. They should also be given information about the extent of private lands within the Lakeshore, and be urged to respect private property rights. The form and content of the information program will be spelled out in a forthcoming interpretive prospectus.

Many visitors will want information about the features, facilities, and services provided by the private sector — both within and outside the Lakeshore. Publications containing this information could be distributed at the north and south stations. It is unlikely that the Grand Traverse Bay region's chamber of commerce would want to man all three stations, but there should be enough demand for this type of information to

warrant one manned station within the Lakeshore; since most visitors will stop in the central interpretive facility, space for a general chamber of commerce information desk should logically be provided there.

● **Interpretation**

Geologically, the Sleeping Bear Dunes area unfolds the story of continental glaciation, and the maturation of a shoreline that is very young in geologic age. A large number of glacial landforms occur in a compact grouping; they are excellent examples of their kind, and can be easily observed and understood. And the glacial or post-glacial lake stages of Lake Algonquin and Lake Nipissing are clearly represented, providing a nearly continuous sequence of geological events from the time of the Wisconsin glaciation to the present.

The variety of plant environments found in the Lakeshore is great, and affords excellent opportunities to present plant ecology and other botanical fields to visitors. The wildlife population is probably as varied and large as any comparable area in the Midwestern United States.

Most visitors to Sleeping Bear Dunes National Lakeshore will have little knowledge of geology and ecology. They will notice the larger geological features, but will have no idea what caused them. They may not even notice such less obvious features as the wave-cut beaches of Lake Algonquin and Lake Nipissing. They will notice that the vegetation of the dunes near the lake differs from that farther inland, but will not know – and may not care – why this is so.

Through its interpretive program, the Lakeshore has the opportunity to: tell the visitor how the larger features he will notice came to be; call his attention to the less obvious features and explain their formation; and explain to him the factors that determine which plants will grow in a given environment. Done well, interpretation will awaken the visitor's interest, enrich his visit, add understanding and perception to his enjoyment of the scenery, and add dimension to his recreation experience.

The recommended interpretive concept at Sleeping Bear Dunes National Lakeshore is: to interpret geological and ecological features in the field, where they occur, both from distant viewpoints and at close range; and to interpret their relationships to each other and to the forces that created them in an interpretive center, through interpretive literature and other media.

Access is the key to field interpretation. The larger scale geological features — moraines, dunes, glacial drainage channels, embayments, wave-cut bluffs — are best seen, and most easily identified and explained, when viewed from a distance. The scenic road provides access to a number of viewpoints from which such features can be clearly seen and effectively interpreted. The features to be interpreted from overlooks in the Lakeshore form the basis of the entire Upper Great Lakes area landscape — the structure that is still being modified by erosion and deposition.

Other geological features and processes, and all aspects of ecology and botany, must be viewed at close range to be interpreted effectively. A walk along the crest of the Sleeping Bear Dune when a stiff breeze is sweeping in off the lake will enable visitors to experience the erosive force of wind more effectively than through even the best literature, audiovisual program, or exhibit.

To a degree, this more intimate contact can be provided at pullouts along the Lakeshore road system. However, because of terrain and soil conditions, and the sensitivity and distribution of many of the most interesting plant communities, carefully planned and constructed nature trails — radiating out from activity centers wherever possible — offer the best access to such features. Precise routes, and a comprehensive nature-trail system will be considered during preparation of the interpretive prospectus.

The tangible and visible evidences of geological and ecological processes can be presented effectively in the field; however, the conceptual and abstract aspects of these processes — particularly such aspects as the interrelationships of visible glacial features and their relationships to the process of glaciation as a whole — can best be presented through such mediums as literature, exhibits, and audiovisual programs. A central interpretive facility is proposed for these interpretive functions.

The site chosen for the central interpretive function commands a distant view of several representative geological features. Being approximately halfway between the northern and southern entrances, it will serve as the initial point of contact for those visitors — probably the majority of all visitors — arriving on Michigan 72 from Traverse City.

The precise content and methods of interpretation to be provided in the central interpretive facility will be worked out in the interpretive prospectus. An exhibit calling attention to other units of the system and illustrating glacial geology should be considered. Also, the material

presented here should be correlated with that presented on site in such a way that the two complement one another.

Visitors arriving at the north and south entrances will already have driven over half the scenic road and passed many interesting and important features before they reach the central interpretive facility. For these visitors, an introduction to the National Lakeshore story should be provided at the contact stations, and so should self-guidance literature, keyed to the scenic road and trail system.

The human history of the Sleeping Bear Dunes National Lakeshore area, while not particularly significant, still has interest. The outlines of this story should be sketched in the interpretive center. Onsite interpretation should be used wherever interesting cultural remains occur, such as at the remnant old pier at Glen Haven. Insofar as possible, the history program should be coordinated with local groups, such as the Leelanau Historical Society and the Grand Traverse County Historical Society.

● **Conservation-Education and Research**

The unique and relatively undisturbed geological and ecological features found in the National Lakeshore will be used by educators for both research and teaching. Both of these activities will be primarily carried on in the field, but they will also require some office and classroom space. Research space should be provided in the naturalist's office and workroom in the central interpretive facility; classroom space should also be provided in the interpretive center, perhaps through flexible auditorium space.

Further, the Lakeshore staff should work with the Grand Traverse Bay region's public school system to develop a nature-study and conservation-education program. This would include a special environmental-awareness program, utilizing whatever Lakeshore resources are needed for laboratory and exhibit areas, and leading toward a flexible and varied educational experience.

● **Overnight Use**

The Grand Traverse Bay region has been developing as a tourist and resort area since the late 19th century. Today, the choices of overnight accommodations are many, and include public and private campgrounds, resorts, motels, and the most modern hotels. With the exception of a few small motel units and two public campgrounds, these accommodations are all available outside the Lakeshore. The further development of meal and lodging accommodations other than campgrounds is not planned within

the mainland portion of the Lakeshore. It is anticipated that private enterprise in communities adjacent to the Lakeshore will furnish accommodations as the demand increases.

A lodge-type facility is proposed on South Manitou Island. It is recommended that this be developed by private capital, and be operated on a concession basis.

Several types of camping experiences are planned within the Lakeshore. Family campgrounds are planned for the mainland portions; some would be located within convenient walking distance of developed beaches, and others put in the highlands, to take advantage of cooling breezes and distant views. Family campgrounds would be provided with roadways, entrance stations, comfort stations, utility systems, tables, fireplaces, and amphitheaters or campfire circles. The Platte Bay and Good Harbor Bay family campgrounds would accommodate up to 300 sites each, and be located inland and convenient to – yet isolated from – the swimming-beach development. This would lessen the beach parking-space requirements and permit further consolidation of the utility systems. Two group camps would also be developed in association with beach developments, in proximity to the family campgrounds at Good Harbor and Platte Bay, for convenience of utility developments, and to serve as substitutes, when necessary. Their capacity would approximate 100 campers each. Semi-private camping would be offered on South Manitou Island, where several clusters of Adirondack-type shelters are planned. Access to the proximity of the clusters would be by minibus from the docking and concession complex.

Only primitive camping will be permitted on North Manitou Island.

- **Recreational Day Use**

Recreation at Sleeping Bear Dunes National Lakeshore will for the most part be on a day-use basis. Visitors will arrive by car. Scenic appreciation will undoubtedly be the number-one activity. However, such an appreciation depends upon such other activity-potentials as touring or driving for pleasure; bicycling; hiking; riding; nature walks; dunesmobile riding; canoeing; and snowmobiling. Actually, any activity that takes the visitor from one place to another, or whose location is fixed but esthetically ideal – such as an overlook, the beach, or a picnic table – will yield scenic appreciation.

It is therefore paramount that great care be exercised in the site selection of roads, trails, and facilities, to maximize the esthetic

potential and minimize the impact of developments and users upon the Lakeshore resources.

Swimming Beaches / The swimming beaches would provide parking areas, bathhouse facilities, coin-locker space, light-snack concession, and lifeguard services. The swimming-facility demand is expected to be moderate — restrained somewhat by the coolness of water and air temperatures. The use of the beaches for swimming and sunbathing is nonetheless an important activity, and two such developed beach areas are proposed. The initial development necessary to care for 200-car parking and camper use in these areas would be so planned that a future overall expansion of 50 percent could be accommodated without destroying the design concept.

Access Points / Access to the beach, other than at swimming areas, will also be provided at strategic locations. These points may include parking areas, comfort stations, picnic sites, trailhead information and interpretive facilities, and in some cases concession services.

The Glen Haven developed area provides the following: beach access to the Lake Michigan shoreline; picnicking; the starting point of the dunesmobile rides over Sleeping Bear Dunes; and a hiking trailhead. The existing country store will likely remain part of the developed-area complex. Among its wares, this store sells petoskey-stone jewelry and some local artwork. The addition of a lapidary shop could provide a stimulus for rock collecting, and complement the store outlet. If the present campground in D. H. Day State Park is ultimately donated to the United States by the State of Michigan, it will be converted into a picnic site, but it should retain the name "D. H. Day Picnic Grove," in deference to its donor, and to commemorate the first unit of the Michigan State park system to be established by the Michigan State Park Commission.

The Otter Creek area, at Esch Road, would provide parking, picnicking, a trailhead for bicycle and hiking trails, and shore access at one of the most outstanding scenic shore points.

A portion of the Platte River extending from a point on Michigan 22 just below Platte Lake to its confluence with Lake Michigan is included in the Lakeshore. This is the only river of any consequence within the area. It and the lakes through which it flows are intimately scenic, and form the central focal point of the Platte Embayment. On the river's slow meandering course, it wends its way through a variety of ecological communities, ranging from hardwood forests, swales, lakes, and aquatic marshes, to pine plains, and the shoreline dunes of Lake Michigan.

The river and its environment have played an important roll in the scenic, recreational, and interpretive plans for the National Lakeshore. Platte River Point has long been a canoe take-out location, and popular wading and picnic area. Fishing has also been popular here during certain seasons in the past.

The Sleeping Bear Dunes National Lakeshore master plan envisions continual use of the river as a pleasant canoe float-stream, but with expanded beach picnic facilities and fire circles west of its mouth.

Recent developments relating to the coho salmon fishery may require a drastic change in plans for this area. Since the advent of stocking of coho in the upper reaches of the river, fishing pressures have bordered on hysteria during the spawning run.

A weir has been built across the Platte River just below Mud Lake. Although this intrudes upon the fine scenery, a gateway is provided that is large enough for canoes to pass through during the off-spawning season. The weir's purpose is to harvest the excess salmon that would normally swim upstream, spawn, and die, and thus pollute the stream and the Platte Lakes. It should be included in the informational and educational program of this master plan.

The Michigan State Division of Waterways of the Department of Natural Resources requested that the Army Corps of Engineers make a feasibility study of the mouth of the Platte River for harbor-of-refuge purposes, as well as for its launching and mooring potential. The State Division of Waterways previously suggested a breakwater extending into Lake Michigan from Platte River Point; the dredging and straightening of approximately a half mile of the Platte River; the widening of the river to accommodate boat slips, launching ramps, an initial 10-acre parking area for 500 cars and trailers; and the construction of an access road. This was the sketch plan that served as a basis for the Army Corps of Engineers feasibility study. This development would have had a devastating effect on the esthetic and natural-history values of the sensitive ecosystems of the lower Platte River, and its adjacent dunes, marsh-meadows, and forest environment.

To lessen the impact upon National Lakeshore resources, an alternative to this site was suggested in preliminary versions of this master plan. It was located on the western portion of the Lakeshore, where development would disperse rather than congest uses. Its design suggested partial inland dredging and a breakwater system that would conform more closely

to the contour of the existing shoreline. Although it too would drastically alter a segment of the shoreline dune area, it would affect a less ecologically sensitive portion of the Lakeshore.

During recent months, conservation organizations, citizen groups, the Lakeshore advisory commission, and private individuals have all expressed concern over the location, scope, and adverse effects of the proposed harbor facility at the mouth of the Platte. It and the alternate site have both now been abandoned – the first because of the extreme negative effects upon esthetic and natural values associated with the Platte River, and the latter because of the increased costs of dredging and breakwater construction, and the greater distance required for those fishing east and north of Platte River Point.

Achieving a solution that is satisfactory to all interests is in all likelihood impossible, but it must be the objective of the National Park Service to make every effort, through close cooperation and planning efforts with the State of Michigan and the U.S. Army Corps of Engineers, to arrive at a responsible solution that takes into consideration all factors pertinent to all use-demands, esthetic amenities, and natural-environmental qualities. Alternative considerations should be approached with an open mind and innovative thinking. The State is presently making a study of an alternate site in the western portion of sec. 21, T. 27 N., R. 15 W., which may develop into an acceptable compromise.

Game Areas / Consideration should be given to associating multi-use game courts with swimming beaches and campgrounds. If space is adequate, and conditions are favorable, facilities for tennis, volleyball, handball, and basketball courts can be provided in these areas.

Picnicking / Picnicking in the Sleeping Bear Dunes National Lakeshore area may best be separated into the primary- and associated-objective categories.

In the primary-objective picnic category, the setting will guide site selection, and consideration should be given to such factors as views, pleasing surroundings, and privacy. Such locations may include upland sites along the scenic road for distant views, the D. H. Day State Park location, and specific beach sites, such as the proposed picnic circles south and west of the mouth of the Platte River.

Associated-objective picnicking would be situated in areas convenient

to swimming beaches and beach-access points, and would share common parking with these areas whenever possible.

Trails / Included in the National Lakeshore will be hiking, bridle, bicycle, snowmobile, minibus, and nature trails. These trails will, to a large extent, form an integrated trail system. All will function as tools of interpretation, providing opportunities for broader visual appreciation and scientific understanding.

The hiking, bicycle, and bridle trails should be designed in such a way that they can also serve as one-way winter trails for snowmobiles. The hiking and bicycle trails of Good Harbor Bay and Platte Bay can originate at common trailheads, thus enabling all to receive initial interpretive impetus at the same facility. Although these hiking and bicycle trails will function independently of one another, they could meet at such points as merit a special interpretive facility. They can also share parking and picnicking provisions at trailheads.

Dune Climbing / Climbing on the east slope of the Sleeping Bear Dune has been a favorite activity of visitors for many years. At present, dune-climbing activity takes place at a point on the dune where it approaches Glen Lake. A study of alternate dune-climbing sites should be made, not in an attempt to discontinue this activity, but rather to reduce the rate of dune advance in this critical location.

Winter Use / Winter recreation is becoming increasingly popular throughout the Grand Traverse Bay region. Resorts are being developed on the basis of four-season use, but the primary emphasis for many of them is skiing. The snowmobile has converted what once were summer riding stables into year-round, lodge-type overnight developments, with riding trails now used for snowmobiles.

Because of a lack of suitable sites, there are no winter resorts within the Lakeshore; however the Sugar Loaf Mountain resort lies adjacent to the Lakeshore, in the Good Harbor Bay area.

No facilities specifically designed for winter use are contemplated in this master plan, other than those occurring within the context of the multiseason use of trails. Winter use of the area will depend more upon management decisions than upon facility development. For instance, the experience of hiking through a winter forest could be made possible simply by traversing the trails with a special wide-track snowmobile after each snowfall. Also coasting locations could be designated near parking overlooks.

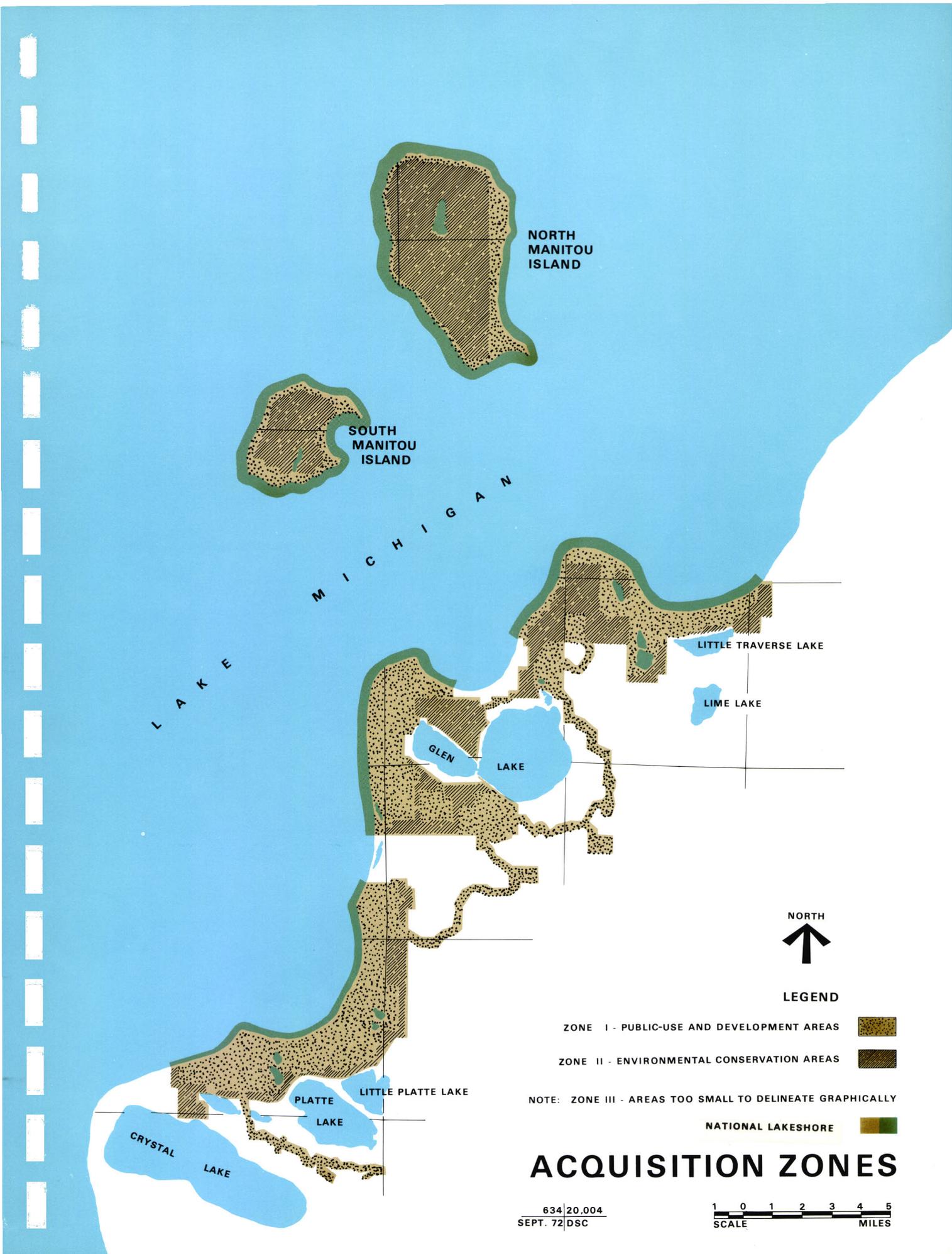
Headquarters / The Sleeping Bear Dunes National Lakeshore headquarters complex would include administration, shop, and storage buildings. Its location just south of the village of Empire is central to the Lakeshore, convenient to the local highway network, and yet it lies off the normal park visitor circulation system.

Housing / No new housing is proposed for permanent Lakeshore employees. It is anticipated that necessary acquisition of existing homes within the area will meet the needs of required resident personnel. The development of a multi-unit complex for seasonal employees should be considered in the headquarters vicinity.

Visitor-Use Capacity / The greatest impact upon Lakeshore resources will be made by the facilities necessary to accommodate the automobile. The existing roads will very likely remain, for the convenience of private land-users within and adjacent to the Lakeshore. The inholdings likely to remain by virtue of the enabling legislation will limit the total visitor-use capacity of the area, but the extent of this limitation will not be known for some years following Lakeshore activation. This master plan for Sleeping Bear Dunes National Lakeshore provides for the optimum use of lands that can reasonably be expected to become available for the use, development, and preservation of the basic resource environment.

<u>Visitor Use</u>	<u>Instant Capacity</u>	<u>Yearly Estimate</u>
Day Use	5,200	1,775,000
Scenic road and related use	4,960	3,600,000
Campgrounds	3,200	283,000
Islands	370	36,000

It is estimated that 50 percent of visitors using the scenic road and related facilities will also visit other use-areas. Therefore, the total yearly estimated capacity of all facilities on a visitor-day basis would be 3,869,000.



**NORTH
MANITOU
ISLAND**

**SOUTH
MANITOU
ISLAND**

M I C H I G A N
L A K E

LITTLE TRAVERSE LAKE

LIME LAKE

GLEN LAKE

NORTH



LEGEND

ZONE I - PUBLIC-USE AND DEVELOPMENT AREAS 

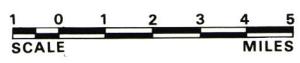
ZONE II - ENVIRONMENTAL CONSERVATION AREAS 

NOTE: ZONE III - AREAS TOO SMALL TO DELINEATE GRAPHICALLY

NATIONAL LAKESHORE 

ACQUISITION ZONES

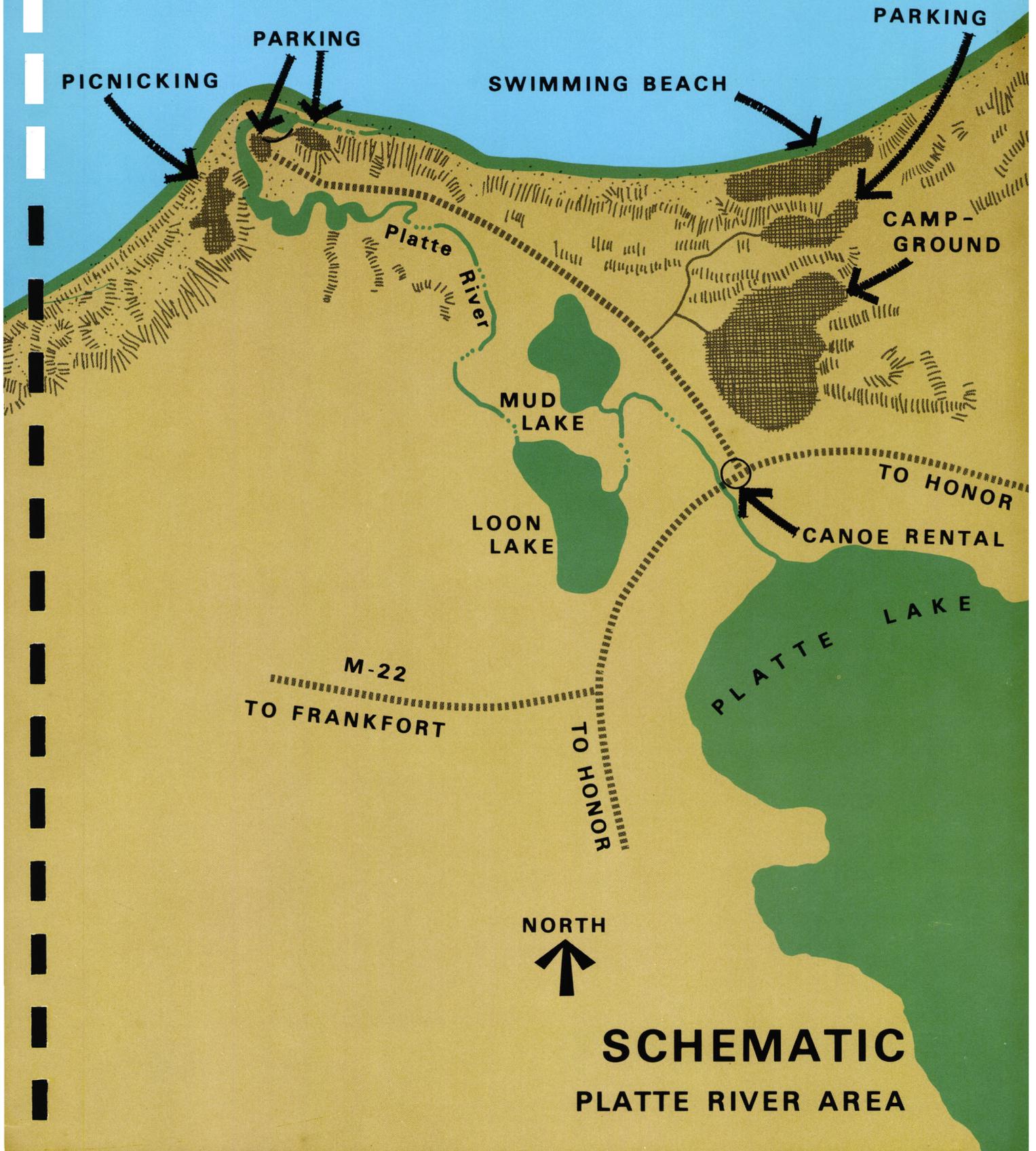
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PRIORITY OF NEEDS

- PHASE I:
PRELIMINARY
(Immediately follows
authorization)**
- Establish a temporary office for use until headquarters is constructed. If no convenient rental space can be located, the U.S. Coast Guard Station on Sleeping Bear Bay could be renovated and used for this purpose.
 - Initiate surveys for scenic road location and design as a prerequisite to the acquisition of lands.
 - Arrange with the State of Michigan to transfer to the Federal Government the State lands within the proposal.
- PHASE II:
PRE-
DEVELOPMENT**
- Acquire all lands within the Lakeshore boundary, in accordance with authorizing legislation, and using the land-acquisition criteria as general guidelines. A broad priority-emphasis, placing the mainland section first, South Manitou Island second, and North Manitou third, should override the general acquisition criteria.
 - Prepare all action plans.
 - Refine existing resource inventories to further assist in the most suitable developments, and in the choices of the best settings.
 - Study the dune-climbing activity, relevant to suitable locations, and the suitability of its continuation.
- PHASE III:
DEVELOPMENT**
- Initiate a Grand Traverse Bay regional facility study of campsite supply and demand, including that of both the private and public sectors outside the Lakeshore, to determine the relative rates of development.
 - Continue the land acquisition initiated in Phase II.
 - Activate the development and construction programs.

LAKE MICHIGAN



PICNICKING

PARKING

SWIMMING BEACH

PARKING

CAMP-
GROUND

Platte
River

MUD
LAKE

LOON
LAKE

TO HONOR
CANOE RENTAL

PLATTE
LAKE

M-22

TO FRANKFORT

TO HONOR

NORTH

SCHEMATIC

PLATTE RIVER AREA

L A K E M I C H I G A N

COAST GUARD STATION

PARKWAY

DUNE CLIMB
(relocation to
be studied)

COUNTRY STORE
DUNESMOBILE TRIPS

PICNIC AREA
BEACH ACCESS

view

sleeping bear
dunes

hill

M-22

GLEN LAKE

MOTORIZED
DUNE CLIMB
(to be obliterated)

M-22

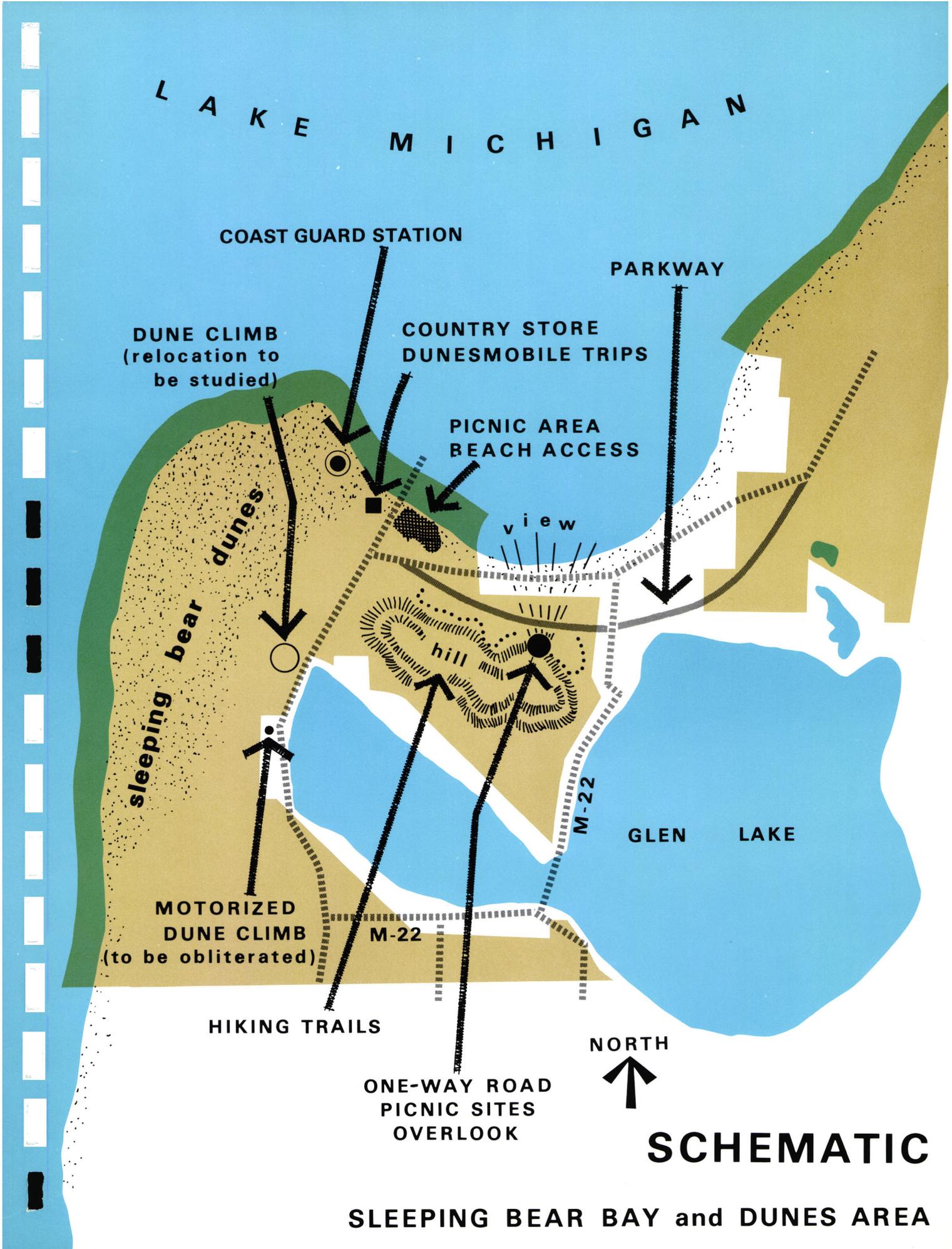
HIKING TRAILS

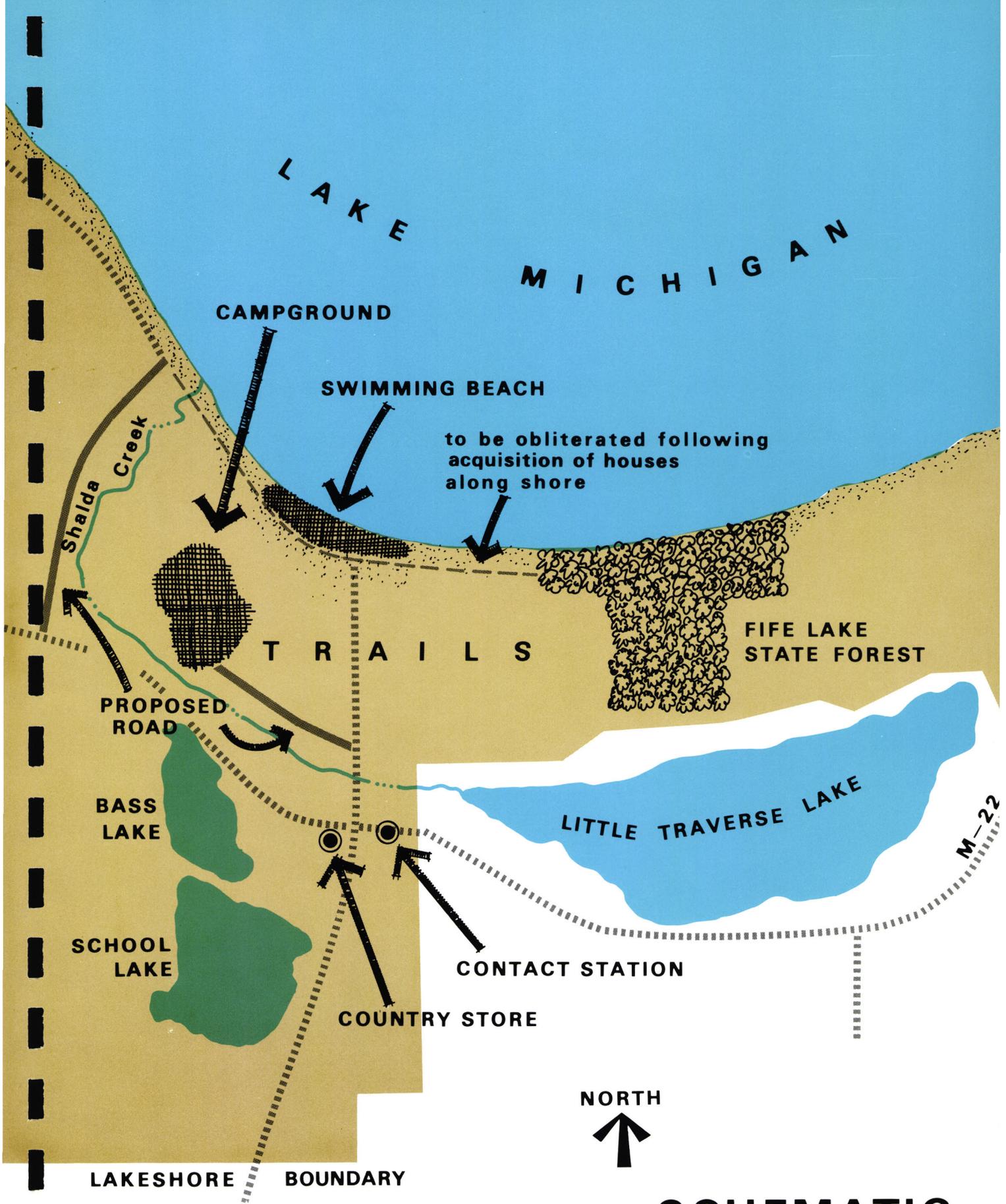
NORTH

ONE-WAY ROAD
PICNIC SITES
OVERLOOK

SCHEMATIC

SLEEPING BEAR BAY and DUNES AREA





SCHEMATIC

GOOD HARBOR BAY AREA



APPENDIXES

A: ACT OF ESTABLISHMENT

B: BACKGROUND

C: REFERENCES

D: NATIONAL PARK SERVICE PLANNING PARTICIPANTS

A: ACT OF ESTABLISHMENT



Public Law 91-479
91st Congress, H. R. 18776
October 21, 1970

An Act

84 STAT. 1075

To establish in the State of Michigan the Sleeping Bear Dunes National Lakeshore, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) the Congress finds that certain outstanding natural features, including forests, beaches, dune formations, and ancient glacial phenomena, exist along the mainland shore of Lake Michigan and on certain nearby islands in Benzie and Leelanau Counties, Michigan, and that such features ought to be preserved in their natural setting and protected from developments and uses which would destroy the scenic beauty and natural character of the area. In order to accomplish this purpose for the benefit, inspiration, education, recreation, and enjoyment of the public, the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized to take appropriate action, as herein provided, to establish in the State of Michigan the Sleeping Bear Dunes National Lakeshore. In carrying out the provisions of this Act, the Secretary shall administer and protect the Sleeping Bear Dunes National Lakeshore in a manner which provides for recreational opportunities consistent with the maximum protection of the natural environment within the area.

Sleeping Bear
Dunes National
Lakeshore, Mich.

(b) In preserving the lakeshore and stabilizing its development, substantial reliance shall be placed on cooperation between Federal, State, and local governments to apply sound principles of land use planning and zoning. In developing the lakeshore, full recognition shall be given to protecting the private properties for the enjoyment of the owners.

SEC. 2. (a) The Sleeping Bear Dunes National Lakeshore (hereinafter referred to as the "lakeshore") shall comprise the land and water area generally depicted on the map entitled "A Proposed Sleeping Bear Dunes National Lakeshore Boundary Map", numbered NI-SBD-91,000 and dated May 1969, which shall be on file and available for public inspection in the offices of the National Park Service of the Department of the Interior.

(b) As soon as practicable after the date of enactment of this Act and following the acquisition by the Secretary of those lands owned by the State of Michigan within the boundaries of the area designated for inclusion in the lakeshore (excepting not to exceed three hundred acres in the Platte Bay area) and of such additional lands, if any, as are necessary to provide an area which in his opinion is efficiently administrable for the purposes of this Act, he shall establish the Sleeping Bear Dunes National Lakeshore by publication of notice thereof in the Federal Register.

Publication in
Federal Register.

SEC. 3. (a) Within thirty days, or as soon as possible thereafter, after the effective date of this Act, the Secretary shall publish in the Federal Register a map or other description of the lakeshore delineating areas constituting the following categories:

Description.
Publication in
Federal Register.

- Category I, public use and development areas.
- Category II, environmental conservation areas.
- Category III, private use and development areas.

(b) Lands and interests therein designated as category I may be acquired by the Secretary in accordance with section 8 of this Act.

(c) Within one hundred and fifty days after the effective date of this Act, the Secretary shall publish in the Federal Register an additional map or other description of those lands, if any, designated as within categories II and III for acquisition by him in fee in accordance with section 8 of this Act.

Additional map.
Publication in
Federal Register.

84 STAT. 1076

Land acquisition,
limitation.

(d) Except as provided in subsection (f) of this section, the Secretary may, after the publication provided for in subsection (c), acquire only such interests in lands designated as category II, other than those to be acquired in fee simple, as he deems appropriate to insure the continued conservation and preservation of the environmental quality of the lakeshore.

(e) Except as provided in subsection (f) of this section, the Secretary may, after the publication provided for in subsection (c), acquire only such interests in lands designated as category III, other than those lands to be acquired in fee simple, as he deems appropriate to protect lands designated for acquisition.

Real property,
use and devel-
opment by
owners.
Notification
of restric-
tions.

(f) Not later than one hundred and fifty days after the effective date of this Act, the Secretary shall notify owners of real property in categories II and III, other than property designated by him for fee acquisition, of the minimum restrictions on use and development of such property under which such property can be retained in a manner compatible with the purpose for which the lakeshore was established. If the owner of any real property in categories II and III agrees to the use and development of his property in accordance with such restrictions, the Secretary may not acquire, without the consent of such owner, such property or interests therein for so long as the property affected is used in accordance with such restrictions, unless he determines that such property is needed for public use development. The foregoing limitations on acquisition shall also apply to any owners of real property to whom the Secretary did not, within the time set forth, give such a notice, except that if any property owner has not, within ninety days of the notice agreed to use the property in accordance with the notice, then the Secretary may acquire, without limitation, fee or lesser interests in property by any of the methods set forth in section 8 of this Act: *Provided*, That nothing contained in subsections (d) and (e), and in this subsection, which limits the acquisition of the fee simple title to property within the lakeshore, shall prevent the Secretary from acquiring, without the consent of the owner, the fee simple title whenever in the Secretary's judgment the estimated cost of acquiring the lesser interest would be a substantial percentage of the estimated cost of acquiring the fee simple title.

Advisory com-
mission.

SEC. 4. (a) There is hereby established a Sleeping Bear Dunes National Lakeshore Advisory Commission. The Commission shall cease to exist ten years after the establishment of the lakeshore pursuant to section 2 of this Act.

Membership.

(b) The Commission shall be composed of ten members, each appointed for a term of two years by the Secretary, as follows:

(1) Four members to be appointed from recommendations made by the counties in which the lakeshore is situated, two members to represent each such county;

(2) Four members to be appointed from recommendations made by the Governor of the State of Michigan; and

(3) Two members to be designated by the Secretary.

(c) The Secretary shall designate one member to be Chairman. Any vacancy in the Commission shall be filled in the same manner in which the original appointment was made.

(d) A member of the Commission shall serve without compensation as such. The Secretary is authorized to pay the expenses reasonably incurred by the Commission in carrying out its responsibilities under this Act on vouchers signed by the Chairman.

(e) The Secretary or his designee shall consult with the Commission with respect to matters relating to the development of the lakeshore and with respect to the provisions of sections 9, 12, and 13 of this Act.

Hunting and
fishing regu-
lations.

SEC. 5. In administering the lakeshore the Secretary shall permit

hunting and fishing on lands and waters under his jurisdiction in accordance with the laws of the State of Michigan and the United States applicable thereto. The Secretary, after consultation with the appropriate agency of the State of Michigan, may designate zones and establish periods where and when no hunting shall be permitted for reasons of public safety, administration, or public use and enjoyment and issue regulations, consistent with this section, as he may determine necessary to carry out the purposes of this section.

SEC. 6. (a) The administration, protection, and development of the lakeshore shall be exercised by the Secretary, subject to the provisions of this Act and of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1 et seq.), as amended and supplemented, relating to the areas administered and supervised by the Secretary through the National Park Service; except that authority otherwise 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 this Act. Administration.

(b) In the administration, protection, and development of the area, the Secretary shall prepare and implement a land and water use management plan, which shall include specific provisions for— Land and water use plan.

(1) development of facilities to provide the benefits of public recreation;

(2) protection of scenic, scientific, and historic features contributing to public enjoyment; and

(3) such protection, management, and utilization of renewable natural resources as in the judgment of the Secretary is consistent with, and will further the purpose of, public recreation and protection of scenic, scientific, and historic features contributing to public enjoyment.

(c) Within four years from the date of enactment of this Act, the Secretary of the Interior shall review the area within the Sleeping Bear Dunes National Lakeshore and shall report to the President, in accordance with subsections 3(c) and 3(d) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132 (c) and (d), his recommendation as to the suitability or nonsuitability of any area within the lakeshore for preservation as wilderness, and any designation of any such area as a wilderness shall be accomplished in accordance with said subsections of the Wilderness Act. Area review; report to President.

(d) In developing the lakeshore the Secretary shall provide public use areas in such places and manner as he determines will not diminish the value or enjoyment for the owner or occupant of any improved property located thereon.

SEC. 7. Nothing in this Act shall be construed as prohibiting any governmental jurisdiction in the State of Michigan from assessing taxes upon any interest in real estate retained under the provisions of section 10 of this Act to the owner of such interest. Tax assessments.

SEC. 8. (a) The Secretary is authorized to acquire by donation, purchase with donated or appropriated funds, transfer funds, transfer from any Federal agency, or exchange lands and interests therein for the purposes of this Act. When an individual tract of land is only partly within the area designated, the Secretary may acquire the entire tract by any of the above methods to avoid the payment of severance costs. Land so acquired outside the designated area may be exchanged by the Secretary for non-Federal lands within such area, and any portion of the land not utilized for such exchanges may be disposed of in accordance with the provisions of the Federal Property and Administrative Services Act of 1949 (63 Stat. 377), as amended (40 U.S.C. 471 et seq.). Land acquisition or exchange.

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(b) In exercising his authority to acquire property under this Act, the Secretary shall give immediate and careful consideration to any offer made by an individual owning property within the lakeshore to sell such property to the Secretary. An individual owning property within the lakeshore may notify the Secretary that the continued ownership by such individual of that property would result in hardship to him, and the Secretary shall immediately consider such evidence and shall within one year following the submission of such notice, subject to the availability of funds, purchase such property offered for a price which does not exceed its fair market value.

Transfer of Federal property.

(c) Any property or interests therein, owned by the State of Michigan or any political subdivisions thereof, may be acquired only by donation. Notwithstanding any other provision of law, any property owned by the United States on the date of enactment of this Act located within such area may, with the concurrence of the agency having custody thereof, be transferred without consideration to the administrative jurisdiction of the Secretary for use by him in carrying out the provisions of this Act.

Acquisition by condemnation.

(d) With respect to that property which the Secretary is authorized to acquire by condemnation under the terms of this Act, the Secretary shall initiate no condemnation proceedings until after he has made every reasonable effort to acquire such property by negotiation and purchase. The certificate of the determination by the Secretary or his designated representative that there has been compliance with the provisions of this subsection and of subsection (b) of this section shall be prima facie evidence of such compliance.

(e) Nothing in this Act shall be construed to prohibit the use of condemnation as a means of acquiring a clear and marketable title, free of any and all encumbrances.

Zoning bylaws.

SEC. 9. (a) The Secretary shall, at the request of any township or county in or adjacent to the lakeshore affected by this Act, assist and consult with the appropriate officers and employees of such township or county in establishing zoning bylaws for the purpose of this Act. Such assistance may include payments to the county or township for technical aid.

(b) No improved property within the area designated for inclusion in the lakeshore shall be acquired by the Secretary by condemnation so long as the affected county or township has in force and applicable thereto a duly adopted, valid zoning bylaw approved by the Secretary in accordance with the provisions of subsection (d) of this section and the use of improved property is in compliance therewith. In the event that the affected county or township does not have in effect and applicable to any improved property a duly adopted, valid zoning bylaw so approved, the Secretary shall be prohibited from acquiring such property by condemnation, if the owner thereof notifies the Secretary in writing of such owner's agreement to use his property in a manner consistent with the applicable standard set forth in subsection (d) of this section, and such prohibition against condemnation shall remain in effect for so long as such property is so used.

(c) If the Secretary determines that any such property referred to in subsection (b) of this section covered by any such bylaw is being used in a way which is not in substantial compliance with such bylaw, or that any such property referred to in subsection (b) with respect to which an agreement has been made is being used in a manner which is not substantially consistent with such applicable standards, he shall so notify the owner of any such property in writing. Such notice shall contain a detailed statement as to why the Secretary believes that such use is not in substantial compliance with such zoning bylaw or why such use is not substantially consistent with such applicable standards, as the case may be. Any such owner shall have sixty days following the

receipt by him of that written notification within which to discontinue the use referred to in such notification. Discontinuance of such use within such sixty-day period shall have the effect of prohibiting the Secretary from acquiring such property by condemnation by reason of such use. In any case in which such use is not discontinued within such sixty-day period, the Secretary may, in his discretion, acquire such property by condemnation.

(d) Any zoning bylaw or amendment thereto submitted to the Secretary for approval for the purposes of this Act shall be approved by him if such bylaw or amendment contains provisions which—

Bylaws.
Conditions for
approval.

(1) contribute to the effect of prohibiting the commercial and industrial use (other than a use for a commercial purpose as authorized under section 13 of this Act) of all property within the boundaries of such area which is situated within the county or township adopting such bylaw or amendment;

(2) are consistent with the objectives and purposes of this Act so that, to the extent possible under Michigan law, the scenic and scientific values of the lakeshore area will be protected;

(3) are designed to preserve the lakeshore character of the area by appropriate restrictions upon the burning of cover, cutting of timber (except tracts managed for sustained yield), removal of sand or gravel, and dumping, storage, or piling of refuse and other unsightly objects or other uses which would detract from the natural or traditional lakeshore scene;

(4) provide that no construction, reconstruction, moving, alteration, or enlargement of any property, including improved property as defined in this Act, within the lakeshore area shall be permitted, if such construction, reconstruction, moving, alteration, or enlargement would afford less than a fifty-foot setback from all streets measured at a right angle with the street line, and a twenty-five-foot distance from all contiguous properties. Any owner or zoning authority may request the Secretary of the Interior to determine whether a proposed move, alteration, construction, reconstruction, or enlargement of any such property would subject such property to acquisition by condemnation, and the Secretary, within sixty days of the receipt of such request, shall advise the owner or zoning authority in writing whether the intended use will subject the property to acquisition by condemnation; and

(5) have the effect of providing that the Secretary shall receive notice of any variance granted under, and of any exception made to the application of, such bylaw or amendment.

(e) The approval of any bylaw or amendment pursuant to subsection (d) shall not be withdrawn or revoked by the Secretary for so long as such bylaw or amendment remains in effect as approved. Any such bylaw or amendment so approved shall not be retroactive in its application.

SEC. 10. (a) Any owner or owners of improved property situated within the area designated for inclusion in the lakeshore on the date of its acquisition by the Secretary may, as a condition of such acquisition, retain, for a term of not to exceed twenty-five years, or for a term ending at the death of such owner or owners, the right of use and occupancy of such property for any residential purpose which is not incompatible with the purposes of this Act or which does not impair the usefulness and attractiveness of the area designated for inclusion. The Secretary shall pay to the owner the value of the property on the date of such acquisition, less the value on such date of the right retained by the owner. Where any such owner retains a right of use and occupancy as herein provided, such right during its existence may be conveyed or leased for noncommercial residential purposes in accordance with the provisions of this section.

Property owners,
retention of
use.

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Termination
rights by
Secretary.

(b) Any deed or other instrument used to transfer title to property, with respect to which a right of use and occupancy is retained under this section, shall provide that such property shall not be used for any purpose which is incompatible with purposes of this Act, or which impairs the usefulness and attractiveness of such area and if it should be so used, the Secretary shall have authority to terminate such right. In the event the Secretary exercises his power of termination under this subsection he shall pay to the owner of the right terminated an amount equal to the value of that portion of such right which remained unexpired on the date of such termination.

"Improved
property."

SEC. 11. As used in this Act, the term "improved property" means a detached, one-family dwelling, construction of which was begun before December 31, 1964, together with so much of the land on which the dwelling is situated, such 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 lands so designated. The amount of the land so designated shall in every case be at least three acres in area, or all of such lesser acreage as may be held in the same ownership as the dwelling, and in making such designation the Secretary shall take into account the manner of noncommercial residential use in which the dwelling and land have customarily been enjoyed: *Provided, however*, That the Secretary may exclude from the land so designated any beach or waters on Lake Michigan, together with so much of the land adjoining any such beach or waters, as the Secretary may deem necessary for public access thereto. If the Secretary makes such exclusion, an appropriate buffer zone shall be provided between any residence and the public access or beach.

Scenic roads.

SEC. 12. In order to facilitate visitor travel, provide scenic overlooks for public enjoyment and interpretation of the national lakeshore and related features, and in order to enhance recreational opportunities, the Secretary is authorized to construct and administer as a part of the national lakeshore scenic roads of parkway standards generally lying within the parkway zone designated on the map specified in section 2(a) of this Act. Such scenic roads shall include necessary connections, bridges, and other structural utilities. Notwithstanding any other provision of this Act, the Secretary may procure for this purpose land, or interest therein, by donation, purchase with appropriated or donated funds, or otherwise: *Provided*, That land and interest so procured shall not exceed one hundred and fifty acres per mile of scenic road, except that tracts may be procured in their entirety in order to avoid severances. Property so acquired in excess of the acreage limitation provided in this section may be exchanged by the Secretary for any land of approximately equal value authorized for acquisition by this Act.

Commercial
property.

SEC. 13. In any case not otherwise provided for in this Act, the Secretary shall be prohibited from condemning any commercial property used for commercial purposes in existence on December 31, 1964, so long as, in his opinion, the use thereof would further the purpose of this Act, and such use does not impair the usefulness and attractiveness of the area designated for inclusion in the lakeshore. The following uses, among others, shall be considered to be uses compatible with the purposes of this Act: Commercial farms, orchards, motels, rental cottages, camps, craft and art studios, marinas, medical, legal, architectural, and other such professional offices, and tree farms.

SEC. 14. The Secretary shall furnish to any interested person requesting the same a certificate indicating, with respect to any property

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which the Secretary has been prohibited from acquiring by condemnation in accordance with provisions of this Act, that such authority is prohibited and the reasons therefor.

Sec. 15. There are authorized to be appropriated not more than \$19,800,000 for the acquisition of lands and interests in lands and not more than \$18,769,000 (June 1970 prices) for development, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indices applicable to the type of construction involved herein.

Appropriation.

Approved October 21, 1970.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 91-1401 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 91-1263 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 116 (1970):
Sept. 22, considered and passed House.
Oct. 7, considered and passed Senate.

B: BACKGROUND

The Sleeping Bear area was first identified as having possible national significance in 1957 and 1958, when the National Park Service conducted a study of the Great Lakes shoreline. The report stated: "By virtue of Sleeping Bear's outstanding natural features, this area is of possible national significance and should be given further study to determine the best plan for preservation." Later, more careful and detailed studies of the Sleeping Bear area revealed it to be remarkably diverse, possessing such outstanding and varied scenic, scientific, and recreational values that it clearly merits preservation as a national lakeshore.

Three reports were published following early Sleeping Bear Dunes National Lakeshore studies, which should be considered basic references for the present master plan.

U.S. DEPARTMENT OF THE INTERIOR.

1961. *A Proposed Sleeping Bear National Seashore – Natural History Report.* Washington, D.C.

1961. *Sleeping Bear National Seashore – A Proposal.* Washington, D.C.

MICHIGAN STATE UNIVERSITY.

1961. *Report on Economic Feasibility of the Proposed Sleeping Bear National Seashore.* Lansing.

1967. *The Proposed Sleeping Bear Dunes National Lakeshore – An Assessment of the Economic Impact.* Updating of a 1961 report.

Legislation was introduced in 1961 to authorize establishment of a 77,000-acre national lakeshore, including South Manitou Island. Unfortunately, the aforementioned reports had not yet been printed, and because of a lack of understanding of the proposal, some strong, organized opposition developed. Although hearings were held, no action was taken in the 87th Congress.

In 1963, Senate 792 was introduced in the 88th Congress, again calling for a 77,000-acre lakeshore. After hearings were held in the field and Washington, D.C., the bill passed the Senate on December 23, 1963, with certain modifications.

The principal modifications reduced the acreage to 46,560, and changed the boundary to include a continuous length of lakeshore extending from Glen Arbor to the extreme southern portion of the proposal.

Some reduction in acreage included the highly developed shores of the inland lakes, but most of it occurred in the uplands east of Glen Lake, and south and east of the Platte Lakes. To compensate for the loss of the many scenic vantage points vital to the interpretive story, and to provide for an improved park circulation system, the Senate act substituted a road system through the deleted area that overlooked points of great geological interest and scenic grandeur. This scenic road system provides an important unifying link between Benzie and Leelanau Counties, as well as desirable access from U.S. Route 31 in the Honor/Beulah area.

Although two separate bills were introduced in the House of Representatives, no House action was taken in the 88th Congress.

On February 1, 1965, Senate 936 was introduced. (This bill was similar to the Senate act passed in the 88th Congress.) Although it passed the Senate, and a revised version — including North Manitou Island and a buffer strip along Michigan 22 south of Empire — was passed by the House Interior and Insular Affairs Committee, the 89th Congress adjourned before final action could be taken.

In 1967, a restudy of the economic effects of the proposal on the region was made by Michigan State University.

Sleeping Bear Dunes National Lakeshore was authorized by the 91st Congress, October 21, 1970, with minor modifications of earlier versions reported favorably by the House Interior and Insular Affairs Committee in the 89th Congress.

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