

The Chippewa Indians tell of a mother bear and her two cubs who long ago tried to swim across Lake Michigan. Nearing this shore, the exhausted cubs lagged behind. Mother bear climbed to the top of a bluff to watch and wait for her offspring. They never reached her and today she can still be seen as the "Sleeping Bear," a solitary dune covered with dark trees and shrubs. Her hapless cubs are the Manitou Islands that lie a short distance offshore.

Sleeping Bear Dunes National Lakeshore owes its diverse scenery to events of the Ice Age and post-glacial times. The shoreline with its headlands and embayments, the neighboring hills and valleys, the small lakes fringing the Lake Michigan coast, the curved ridges and troughs bordering the bays, and the sand dunes all shed light on geological changes of the past.

Continental glaciers spreading outward from their source in Canada repeatedly buried this area under a thick sheet of ice. Glaciers, capable of erosion on a grand scale, enlarged river valleys to form the Great Lakes basins. The glaciers in the process, also transported large quantities of rock debris, and upon melting, deposited it unevenly to form hilly terrain. Throughout the park today a thick mantle of glacial sediment covers the older bedrock.

After the ice receded, three major ancestral Great Lakes—Algonquin, Chippewa, and Nipissing—preceded Lake Michigan in this area. Each of the ancestral lakes had a water level quite different from Lake Michigan's. The present shoreline evolved not only through changing water levels, but also as a consequence of erosion and sedimentation. At first the shoreline was highly irregular with islands, high headlands jutting far out into the lake, and deeply recessed embayments. Lobes of ice had once occupied the embayments, while between the lobes high headlands developed. Wave action focused on the headlands and gradually wore them back. Shoreline currents carried sediment from the headlands to neighboring bays, where new land was built. Sedimentation across the mouths of bays created many small lakes—Glen Lake, Crystal Lake and the Platte Lakes, for example—along the Lake Michigan shoreline.

THE SAND DUNES

The receding ice left behind a setting favorable to the development of sand dunes: a sandy coast on the leeward side of the lake. Wave action concentrates sand along beaches. Prevailing westerly winds pick up speed crossing the lake and blow dry beach sand inland where it piles up into dunes. These dunes that develop along low-lying coasts and get their sand from the beach are known as beach dunes. They occur commonly along the Michigan shoreline both within and outside the park.

Within the park the Aral Dunes, located along the northern part of Platte Bay, are notable both for their size and as an illustration of parabolic dunes. These U-shaped dunes developed as a result of erosion on the windward side and migration inland.

In contrast to beach dunes, perched dunes rest on a surface high above the lake and derive their

sand from the upper layers of the glacial outwash upon which they rest. The Sleeping Bear Dune of Indian legend, a landmark along the Michigan shore, is a good example of a perched dune.

While sand dunes are often associated with deserts, Michigan dunes are by no means arid and support a varied plant community. Beach-grass, sand cherry, and cottonwood are among the pioneer plants of the dunes. Their roots hold the sand in place while the upper parts of the plant act as obstacles, slowing the wind and causing sand to be deposited. Thus plants interact with blowing sand to create dunes and to stabilize them. Sometimes the stabilization is only temporary, for blowouts develop when wind erosion removes the plant cover and scoops out a bowl in the sand. Sometimes a grove of trees is buried in drifting sand and later uncovered by wind erosion. The snags standing as evidence of these events are known as a "ghost forest."

PLANT SUCCESSION

With the lowering of the water level since Lake Nipissing time about 4,000 years ago, new land has gradually emerged. Along embayments, such as Platte Bay, a series of curved ridges and troughs parallel to today's shoreline represents former shorelines. On the older sites, located further inland, forests have developed.

As you approach the beach you pass through a sequence of plant communities characteristic of younger sites. Those plants which appear early on emerging land prepare the site for later plant communities by stabilizing the sand, enriching the soil with products of decay, and providing shade. The process of plant succession is a classic example of the interrelationship between life forms and their environment.

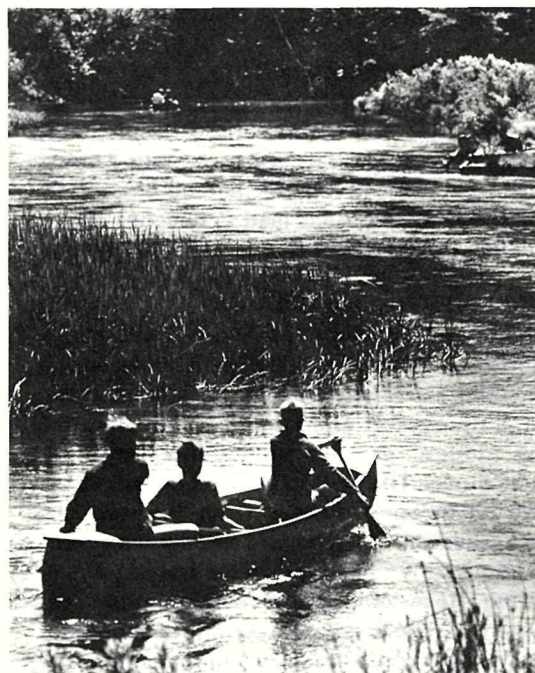
VISITOR INFORMATION AND INTERPRETATION

The Philip A. Hart Visitor Center, open daily from mid-May through mid-October and on weekends through most of the rest of the year, provides information for planning your visit, exhibits on the maritime history and natural history of the area, a short orientation slide program, and book sales.

Summer interpretive programs are offered to acquaint visitors with the special significance of this area. For a schedule of these free ranger-guided walks and evening programs, ask at the visitor center or at one of the campground offices, or check a bulletin board. If you would like a ranger to present a special program for a school group or other organization, you can make arrangements in advance at the visitor center.

ACCOMMODATIONS

A variety of privately operated cottages and motels is available in the area, but often accommodations are fully occupied during the summer and many are closed the remainder of the year. Most cottages rent by the week only. Reservations are recommended. For more information write to the Glen Lake Chamber of Commerce, Box 217, Glen Arbor, MI 49639, or to the Sleeping Bear Dunes Area Chamber of Commerce, 164 N. Michigan Avenue, Beulah, MI 49617.



Paddling along the Platte River.

THE SEASONS

Though the summer attracts the most people, other seasons also have their appeal. Fall colors usually peak in mid-October. Fall is also the time for coho fishing and hunting for small game and deer. The cross-country skiing and snowshoeing season runs from about late December to early March. The marked and mapped trails, totaling about 40 kilometers (25 miles), are not groomed, but use generally keeps them well packed. Spring activities include viewing woodland wildflowers, gathering morels, fishing for steelhead, and birdwatching.

There are two "between-season" periods when recreational opportunities are minimal: from mid-March to mid-May and again from early November to late December. At these times, trails may not be suitable for either hiking or skiing. During a two-week period in November, rifle hunting is permitted under the regulations of the Michigan Department of Natural Resources. You may prefer to stay out of the woods if you are not a hunter.

REGULATIONS

- Off-road driving is not permitted on the sand dunes or anywhere in the National Lakeshore.
- Camping is permitted only in campgrounds.
- Pets must be kept on a leash at all times. Pets are not permitted on the Dune Climb, on South Manitou Island, or at the Glen Lake Beach.
- Fires are permitted only in campground and picnic area fireplaces and along the Lake Michigan beach on the bare sand between the water and the edge of the dune vegetation.
- Natural objects must be left undisturbed, with the following exceptions: berries and mushrooms may be collected for personal use; campers in park campgrounds may collect dead and down wood, except on the dunes, for use in campfires.
- The dead wood of ghost forests on the dunes represents part of the outstanding natural value of this area and, therefore, is protected.
- Snowmobiling is not allowed.

Sleeping Bear Dunes

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LANDSLIDE HAZARD

Due to the instability of wind-drifted sand certain activities on the dunes are hazardous. For your protection:

- **Don't dig in sand at the bottom of a dune.**
- **Don't dig holes deep enough to bury a person.**
- **Don't descend steep slopes where dislodging of rocks or large quantities of sand may injure or bury you or those below you.**
- **Stay away from steep snow-covered dunes.** The chief danger here is the accumulation of large snow drifts at the crests of dunes. These result in very dangerous avalanche conditions.

OTHER SAFETY TIPS

- Sudden weather changes on Lake Michigan can lead to boating accidents. Boaters should be aware of the weather forecast and carry appropriate safety equipment.
- Drinking water should be taken from wells and drinking fountains only. Water from lakes and streams may contain disease-carrying organisms.
- If you must use surface water, boil it for at least one minute. Boiling will not eliminate chemical contaminants.

Sleeping Bear Dunes National Lakeshore is administered by the National Park Service, U.S. Department of the Interior. The superintendent's address is 400 Main Street, Frankfort, MI 49635.

National Park Service
U.S. DEPARTMENT OF THE INTERIOR

PIERCE STOCKING SCENIC DRIVE

The Pierce Stocking Scenic Drive, a 12-kilometer (7.6-mile) route through forest and over dune, offers magnificent views of the Sleeping Bear landscape. From scenic overlooks along the drive you can see Glen Lake, the Sleeping Bear, the Lake Michigan shoreline, and the Manitou Islands. A self-guiding brochure, available at the entrance, allows you to read about the scenery.

The drive is open daily from early May through mid-October, weather and road conditions permitting. The drive is closed during wet weather because of slippery conditions on the steep access road. Motor homes more than 7.3 meters (24 feet) in length or 3.4 meters (11 feet) in height, trailers, and buses are not permitted on the drive.

THE DUNE CLIMB AND HIKING THE DUNES

The Dune Climb, rising steeply to a height of about 46 meters (150 feet), is a popular place for playing in the sand. The crest of the dune offers a fine view of Glen Lake and the surrounding countryside. You may wish to take the 6.4 kilometer (4-mile) round-trip hike across the dunes to the high bluff overlooking Lake Michigan.

Climbing the dunes is strenuous; assess your ability before starting. Drinking water is not available on the dunes and there is no shelter from sun or wind. The Sleeping Bear Dunes cover an area of about 10 square kilometers (4 square miles). Children should be supervised. It's easy to get lost or delayed in this expanse of sand. Hikers should consult a map and plan a route. A 14-kilometer (9-mile) hiking trail over the dunes can be reached by hiking 0.7 kilometer (0.25 mile) west across the dunes from Dune Climb. An alternative trailhead near Glen Haven eliminates the steep ascent at the Dune Climb. Sturdy shoes will protect your feet from the rocky trail surface. The dunes are an exciting place to explore on foot, but prepare yourself for this special environment before starting your hike.

WOODLAND HIKING

Hiking is permitted on the public lands throughout the park. Some land is still in private ownership. Please respect the rights of private property owners. Several hiking trails are maintained through wooded terrain for which trail maps are available at the visitor center.

Platte Plains Trail is a 19-kilometer (12-mile) system of loops over fairly level ground with occasional hills. Trailheads are located at sites A-28 and A-45 in the Platte River Campground, and at Esch Road near Lake Michigan. Hikers starting at the Platte River Campground should park at the campground picnic area.

Windy Moraine Trail is a 2.4-kilometer (1.5-mile) loop over hilly terrain. Self-guiding brochures are available at the trailhead, just south of the visitor center. Use the visitor center parking lot.

Empire Bluffs Trail is a 2.4-kilometer (1.5-mile) round-trip route ascending steeply in places through beech-maple forest to a bluff overlooking Lake Michigan. The trailhead is on Wilco Road, south of Empire.

Alligator Hill Trail is an 11-kilometer (7-mile) system of loops over rolling hills. A scenic viewpoint looks out on Sleeping Bear Bay. The trailhead

is on Day Forest Road approximately 0.8 kilometer (0.5 mile) south of the D. H. Day Campground.

BEACHES AND SWIMMING

A lifeguard is on duty daily during July and August at the Glen Lake Beach and a shelter is available for changing clothing. The waters of Lake Michigan are cold until late summer, and no lifeguards are on duty. Paved roads lead to beaches along Platte Bay, Good Harbor Bay, and at Glen Haven.

SOUTH MANITOU ISLAND

Points of interest on South Manitou Island include a historic lighthouse, a grove of giant 500-year-old white cedars, a shipwreck easily visible from the shore, a number of abandoned farms, the life-saving station, and an outstanding area of perched dunes. The boat to the island, operating mid-spring through mid-fall from the dock at Leland, takes about two hours and allows about three hours for you to explore the island before returning. Reservations are recommended for the boat trip. There are no overnight accommodations except campsites. During the summer a motorized tour is offered and a small restaurant and supply store is open on the island.

CANOEING

A quiet, intimate look at the countryside is yours as you drift down the Platte or Crystal River in a canoe. Rentals are available on both rivers and the trip generally takes two to three hours.

FISHING

Beginners can try for panfish like rock bass, bluegill, or perch. Bass, pike, and rainbow trout test the skill of those in search of gamefish. It is during the fall coho salmon run, however, that fishing fervor reaches a peak. The coho is an aggressive saltwater species introduced into Lake Michigan in the 1960s. Lake trout, steelhead, and brown trout also provide a challenge. A Michigan fishing license is required. CAUTION: A PUBLIC HEALTH ADVISORY WARNS AGAINST EATING CERTAIN FISH BECAUSE OF CONTAMINANTS. For more details consult the Michigan Fishing Guide.

CAMPING

The D. H. Day and Platte River Campgrounds, operated year-round on a first-come, first-served basis, are equipped with vault toilets, but no electrical hookups. Hand-pumped water is available in the summer. Camping is limited to 14 days and campgrounds are usually filled to capacity during July and August. Group campsites are available by reservation at a separate location near the Dune Climb.

Backcountry camping is permitted at three campgrounds on South Manitou Island. A ranger meets the boat and issues backcountry use permits to arriving passengers. Groups of eight or more should make reservations in advance by calling park headquarters. On the mainland, the White Pine Campground along the Platte Plains Trail and the Valley View Campground north of Glen Arbor offer backcountry camping sites. A free backcountry use permit, which can be obtained at the visitor center, park headquarters, and campground offices, is required.

SLEEPING BEAR DUNES NATIONAL LAKESHORE

