

Indiana Dunes

National Lakeshore
Indiana

National Park Service
U.S. Department of the Interior



Cover photo by Bob Deum

Nature observes an easily remembered rule of thumb here: Age is a function of distance from the lakeshore. The closer to Lake Michigan, the younger the feature, whether sand dune, wetland, or forest. There are exceptions, to be sure, but you need not be one of them. Why not shed your age and rejuvenate yourself by approaching the water's edge from inland? This is a good way to gain an understanding of the past and of the reasons why this area was placed in the National Park System. The landscape veils many processes—some still mysterious—that have been at work for eons. And this landscape adjoins a compelling deep, one of our five Great Lakes.

Age is a function of distance from the lakeshore. . . . On the back of this folder we both map and describe this rule of thumb, but there are more immediate questions. Why are you here? How did you come to be here?

Perhaps you have heard that the largest "live" dune here moves away from the lake one giant step each year? Yes, Mt. Baldy—one look explains the name—moves a short distance away from the lake each year.

Or perhaps you have heard there are fine sandy beaches here and a minimum of hustle and bustle. To test this out, just leave your car or bus and walk off by yourself. Stop, look, and listen. What is *not* here can be as attractive as what is here. Mystery abounds too. Carnivorous plants can be found here . . . and so can quaking bogs. Perhaps you simply want to test a rumor that grains of beach sand and dune sand are different both in texture and in size. This too can be verified.

Certain facts are inescapable. You are here because the dunes have caught people's attention. Dunes are created when: 1. a plentiful supply

of sand combines with 2. wind blowing mostly from one direction, and 3. a natural trap causes the wind to drop the sand. At Indiana Dunes sand is lifted by winds blowing off the lake. A short distance inland plants, dunes, and hills slow the wind so that it drops its cargo, creating shoreline sand dunes. On windy days you can place a stone on the beach and watch the wind create a miniature dune behind it. With patience, you can lie down and watch yourself creating one.

Other people came here long before you did, and not without reasons. The dunes lay along major Indian routes between the Great Lakes and the Mississippi River. They were a major source in this region's medicine trade. Miami and Potawatomie Indians hunted and gathered food through here in warmer months. U.S. 12 follows the Calumet Beach Trail, which connected today's Chicago and Detroit and points in between. You can

reflect on our Indian heritage today at the Bailly Homestead. Joseph Bailly was a fur trader who exchanged jewelry, guns, and blankets for furs supplied by Indians and voyageurs. He settled here in 1822. Chellberg Farm gives a good picture of early agriculture. This Swedish farm was begun in 1874 by Anders Chellberg. The Chellberg family farmed the land for nearly a century. The mid-1800s saw man-caused change begin in earnest, and economic interests have determined land use here since that time.

Conservation campaigns sought to reverse this trend, notably with creation of the Indiana Dunes State Park in 1925; and the National Lakeshore in the 1960s. Illinois Senator Paul Douglas gave impetus to the latter drive. The National Lakeshore was authorized by Congress in 1966 and formally established in 1972.

Enjoying the Lakeshore and Dunes Environs



Bailly Homestead

What to Do . . .

Swimming Beaches with parking are at West Beach (parking fee in summer), Kemil Road, Central Avenue, and Mt. Baldy. Be careful—Lake Michigan waters can be treacherous. Lifeguards work West Beach, Kemil Road beach, and Central Avenue beach during the summer. West beach has showers, bathrooms, and concessions. The others have portable toilets (no water).

Dune Climbing Be careful of grassy areas when climbing dunes. Roots and runners may be just below the surface and break easily. Stay on open sand if possible. Too many

trails mar the dunes, so don't make your own trail through the grasses. Stick with the trail.

Hiking These trails and their features will help you see the park's natural and cultural attractions: *Bailly/Chellberg*: historical structures, woods, river; *Calumet Dune*: woods and dunes; *Cowles Bog*: marsh, woods, dunes, ponds, beach; *Hoosier Prairie*: wet prairie; *Little Calumet River*: woods, river, flood plain, old fields; *Ly-co-ki-we*: woods and sandy areas; *Miller Woods*: dunes, ponds, woods, beach; *Mt. Baldy*: dunes, woods, beach; *Heron Rookery*: woods,

river, and flood plain; *Pinhook Bog*: classic bog plants, can be visited only on tours; *West Beach*: dunes, woods, prairie, beach, Long Lake, ponds; *State Park Trails*: dunes, beaches, marsh, woods; and *Bike Trail*: a paved and straight trail along the edge of woods and prairie, with power lines overhead.

Camping Find year-round camping at State Park and local commercial campgrounds. There is no camping on the National Lakeshore lands.

State Park Set aside in 1925, these lands contain extensive dune areas, trails, group and family camping facilities, and a naturalist program. Special fees and regulations apply. Contact: Indiana Dunes State Park, 1600 North 25 East, Chesterton, IN 46304. Telephone (219) 926-4520.

Fishing and Boating You can fish under federal, state, and local laws. You need an Indiana fishing license and trout-salmon stamp. Watch for sink holes in ditches, marshes, and bogs. Boaters are reminded to stay 152 meters

(500 feet) away from all marked swimming areas, even when beaching. The Little Calumet River has dangerous currents and rapids.

Horseback Riding The only horse trail is the Lyco-ki-we trail near Rt. 20 and Kemil Road.

Winter Activities Try hiking, crosscountry skiing, and snowshoeing. Along the lake it is windy and cold; lake shelf ice is dangerous, so stay on solid ground whenever ice is forming. No snowmobiling is allowed.

Environmental Education The Lakeshore's environmental education staff offers guided trips and special activities throughout the park—or at your school—for students from pre-school age to graduate levels. Telephone the Lakeshore number for further details.

Special Activities Regularly scheduled year-round activities are listed in a free schedule available on request. Ranger-led hikes explore subjects ranging from flowers and trees to geology and cultural history. There are also guest lectures, films, festivals, and recreational activities.

. . . And How to Do It

The best place to begin your visit to the Lakeshore is at its **Visitor Center**, 5 kilometers (3 miles) east of Indiana 49 on U.S. 12 at Kemil Road. Here you find information, maps, public telephones, activity schedules, an auditorium slide and tape program, bookstore, library, and a short loop nature trail through wooded dunes. Open daily except on December 25, January 1, and Thanksgiving.

School and other organized groups may use the interpretive services by making advance arrangements. **Getting Around** The map on the back will help you by car. By rail, the South Shore Railroad between Chicago and South Bend makes stops in the park at Dune Acres, Tremont, and Beverly Shores. A new stop is now under construction at Indiana 49. Call the Lakeshore for details.

Accommodations Find motels, restaurants, campgrounds, supplies, and service stations nearby. **Pests** Poison ivy is common here. So are insects in summer; use normal protective measures. **Park Rangers** Rangers are on duty to help you enjoy yourself and to help protect both you and the Lakeshore; ranger stations are shown on the map. **In Emergencies** Contact a park ranger or

telephone 926-7722 from Chesterton, Porter, Beverly Shores, or Michigan City; or 762-2294 from Portage, Gary, or West Beach. **Important Regulations** Don't litter. Picking of plants and the removal of any natural or historic object are prohibited. Do not trespass on private property. Hunting and trapping are prohibited. Firearms must be cased, broken down, and packed away. Ground fires are

prohibited. Use grills and portable charcoal, gas, or liquid fuel stoves. Dune buggies, motor bikes, and other motorized vehicles must stay on public roadways. A permit from the park is mandatory for hang gliding. **Pets** Pets must be confined or leashed at all times, and are not allowed on designated beaches. **For Information** The superintendent's address is Indiana Dunes National Lakeshore, 1100

N. Mineral Springs Road, Porter, IN 46304. Telephone (219) 926-7561.

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Why Such Strange Combinations of Plants?

Professor Henry Cowles found the Indiana Dunes and Lake Michigan shoreline area a natural laboratory for developing important principles of plant succession. He arrived at the newly founded University of Chicago on a graduate fellowship in 1896 and retired as chairman of its botany department in 1934. Both he and his university students conducted extensive field research in this region. His dedication to understanding this area led to the naming of Cowles Bog in his honor. Here at Indiana Dunes, thanks to the Ice Age, environments collided and deposited their remnants. The resulting strange combinations of plants attracted Cowles's interest. The arctic bearberry grew next to the pricklypear cactus, and southern dogwoods grew just over a dune from northern jack pines. Something else puzzled Cowles. Plant life differed dramatically from dune ridge to dune ridge. Plants growing near the lakefront were not

usually found further inland, and inland forest trees could not be found on exposed dunes near the beach. Why? Cowles and his students observed that as plants grow on a site they change it. When these pioneer plants have changed the site sufficiently, the way is prepared for other plants. New plants can now be more successful and so they crowd out the pioneer species. Once marram grass becomes established on a dune, for example, that dune changes. Where once there was total sunlight, now there is partial shade; where once only sand, now there is the beginning of soil. As grass blades decompose they begin to build humus. Change sets in. Cowles pieced together the puzzle and formulated basic ecological concepts. At the close of the Ice Age about 10,000 years ago, the landscape was covered with the spruce and fir forests now found in Canada. As the glaciers moved north, the climate warmed and

the forests retreated. Some arctic plants, such as bearberry and jack pine, persisted while plants forced south by the Ice Age reappeared. Dry sand areas with minimal soil—like deserts—now made homes for pricklypear cactus. The red oak and sugar maple found homes in the deep soil and humid conditions of protected moist areas. All this and more caught Professor Cowles's inquiring eye. You too can sleuth landscape features. On rolling dunes you may find jack pine or black oak, but in moist ravines the dune detective may discover, as did Henry Cowles, red oak and sugar maple. Ponds are scattered among younger dunes. Marshes are found on old lake bottoms between long dune ridges. Sphagnum bogs are found in the moraine. Bogs and marshes are dying ponds, ponds which are filling in and will eventually become meadows, then forests. For the sharp eye nature reveals its secrets, and especially so at Indiana Dunes.

Paul H. Douglas

Indiana Dunes National Lakeshore is dedicated to the late Senator Paul H. Douglas (1892-1976) in grateful recognition of his efforts to protect, preserve, and enhance this park for the use, enjoyment, and edification of present and future generations.

The Paul H. Douglas Center for Environmental Education will provide an opportunity to acquaint and educate students in the disciplines of ecology and environmental science. The use of this facility for such a purpose is a fitting tribute to a man who worked tirelessly in a decade-long effort to establish a national park at the dunes.

Mapping Glacial Advances and a Shrinking Shoreline

You are standing on a flat bit of earth on which two things have been piled, sand and rocky, glacial till. The piles of till, called "moraines," tell the story of advancing glaciers that deposited them in conveyor-belt fashion. The sand piles, called "dunes," tell the story of a lake that shrank by stages after the glaciers disappeared. The glaciers had pushed south; the lake receded northward.

Our major story is the dunes, so we asked our map

maker to color key the four dune ridges for emphasis (see map legend). You could easily fail to recognize the inland dune ridges because they are now covered with vegetation. But beneath their vegetation and thin soil veneers lie massive sand piles just like today's beachfront dunes.

The dune ridges farthest from the lake are the oldest. They mark former shores of a once larger lake. As the lake shrank back in stages shorelines

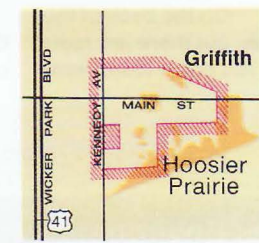
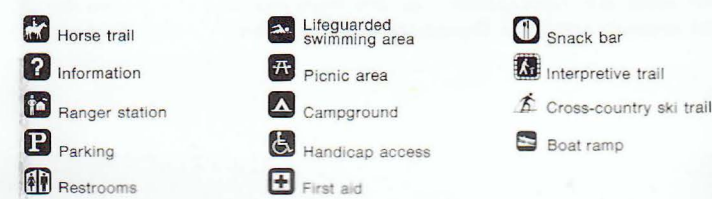
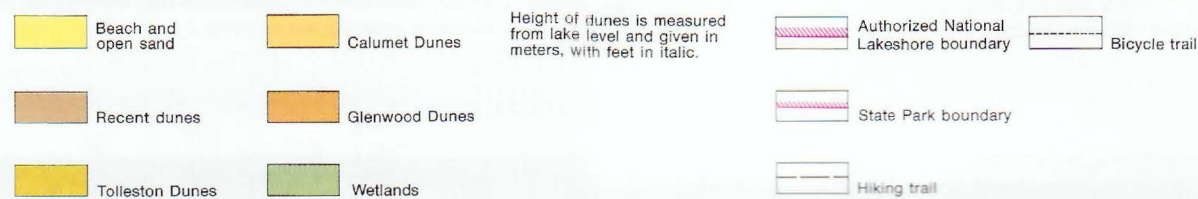
formed. Farthest inland are the Glenwood Dunes, representing the oldest of three earlier shorelines. These oldest dunes lie between moraine and lake, proving moraines the older features. You easily guess then that the Lake Border Moraine is younger than Valparaiso Moraine. It is also younger than the Tinley Moraine. The next major lake shrinkage produced the Calumet Dunes Ridge; further shrinkage formed the Tolleston Dunes. The present shoreline built the "recent" dunes. Near

the Ly-co-ki-we Trail, the Glenwood and Calumet Ridges abut as both finger out west of Route 149. The Glenwood Dunes then disappear completely, at the edge of the disturbed area—gray tint—due north of the Goodfellow Camp label. In this industrial area modern man flattened the topography and stabilized the shorelines. Gone are old and recent dunes and the dynamics of living shores.

These disturbed areas do convey some psycho-

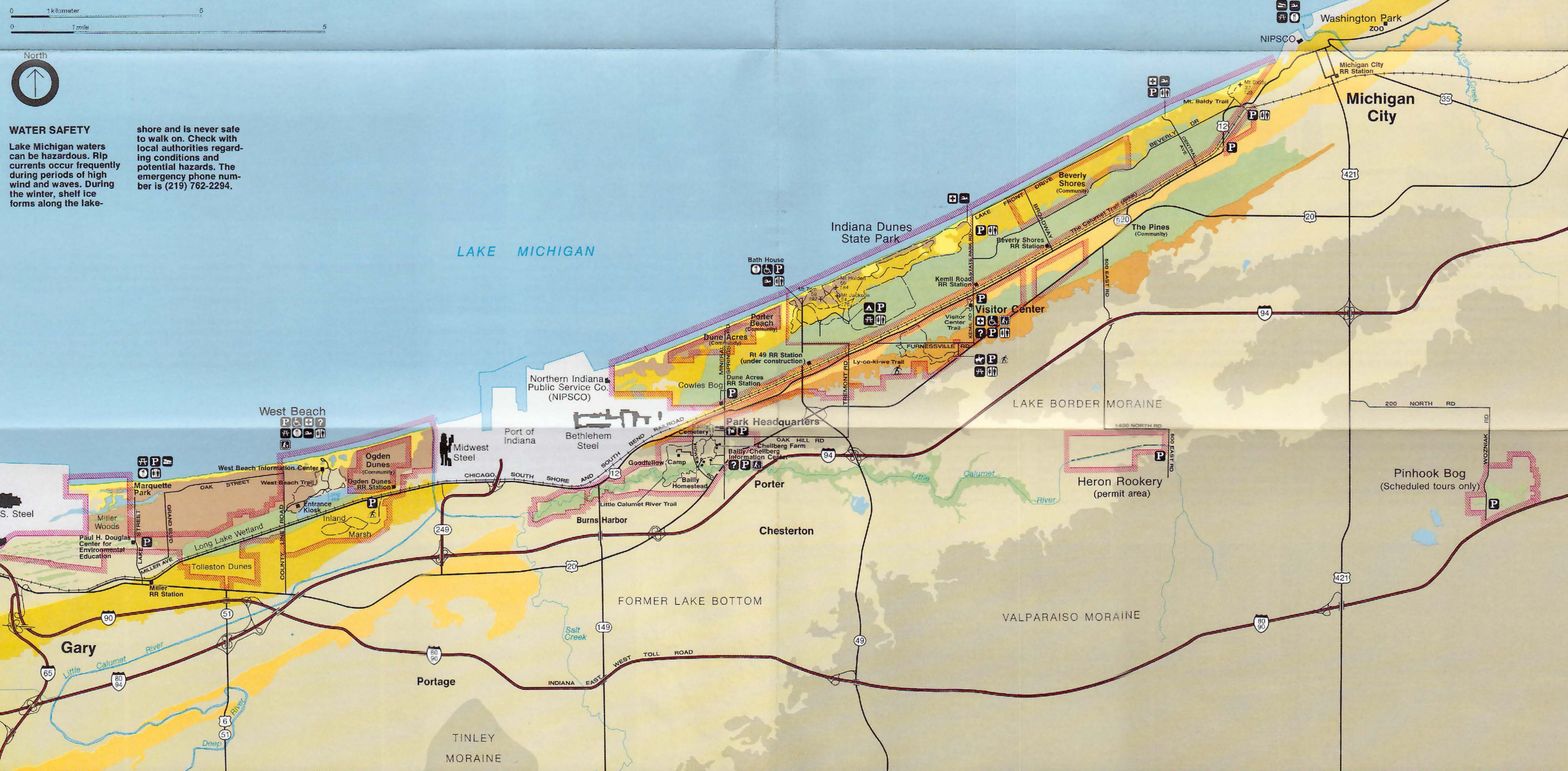
logical sense of the glaciers' stupendous leveling effects. No "bedrock" features interrupt the general flatness at Indiana Dunes; all interruptions are deposits of sand or rock. There are no "hills" here in the sense of the Rockies or the Alleghenies, not even remnants. As you drive through road cuts you see no bedrock to create the lay of the land; only piles of the glacial till (moraines) or piles of sand (dunes). Ironically, road cuts provide the best glimpses of moraine and old dune ridge composi-

tions. These have become mantled with soil and plants so you do not see old "sandy" dunes and moraines today. Instead you find grass- or tree-covered ridges. You can see this succession temporarily thwarted where the map's bright yellow—beach and open sand—loops back through the color blocks of recent and Tolleston Dunes. On these "blowouts" you find precious few plants struggling to gain a foothold. Such is the wispy life of sandy dunes.



A Classic Bit of Prairie
Hoosier Prairie is the largest remnant prairie tract in Indiana. It contains more than 300 native plants, many rare in Indiana. It is a state nature preserve managed by the Indiana Department of Natural Resources.

From the Lakeshore, take Interstate 80/94 west to Rt. 41 south. Turn east on Main Street toward Griffith. Allow 30 minutes driving time.



WATER SAFETY
Lake Michigan waters can be hazardous. Rip currents occur frequently during periods of high wind and waves. During the winter, shelf ice forms along the lake-shore and is never safe to walk on. Check with local authorities regarding conditions and potential hazards. The emergency phone number is (219) 762-2294.