Exploring Pictured Rocks

Pictured Rocks National Lakeshore consists of two zones. The Lakeshore Zone is federal land managed by the National Park Service (NPS). The Inland Buffer Zone is a mixture of federal, state, and private ownership. Please respect the rights of private landowners.

Lakeshore Zone (NPS)
Inland Buffer Zone (mixed ownership)
Wilderness within Lakeshore Zone (NPS)

Beaver Basin Wilderness Congress has designated nearly 12,000 acres in Pictured Rocks National Lakeshore for protection under the 1964 Wilderness Act. Included are forests, streams, lakes, wetlands, and 13 miles of Lake Superior shoreline.

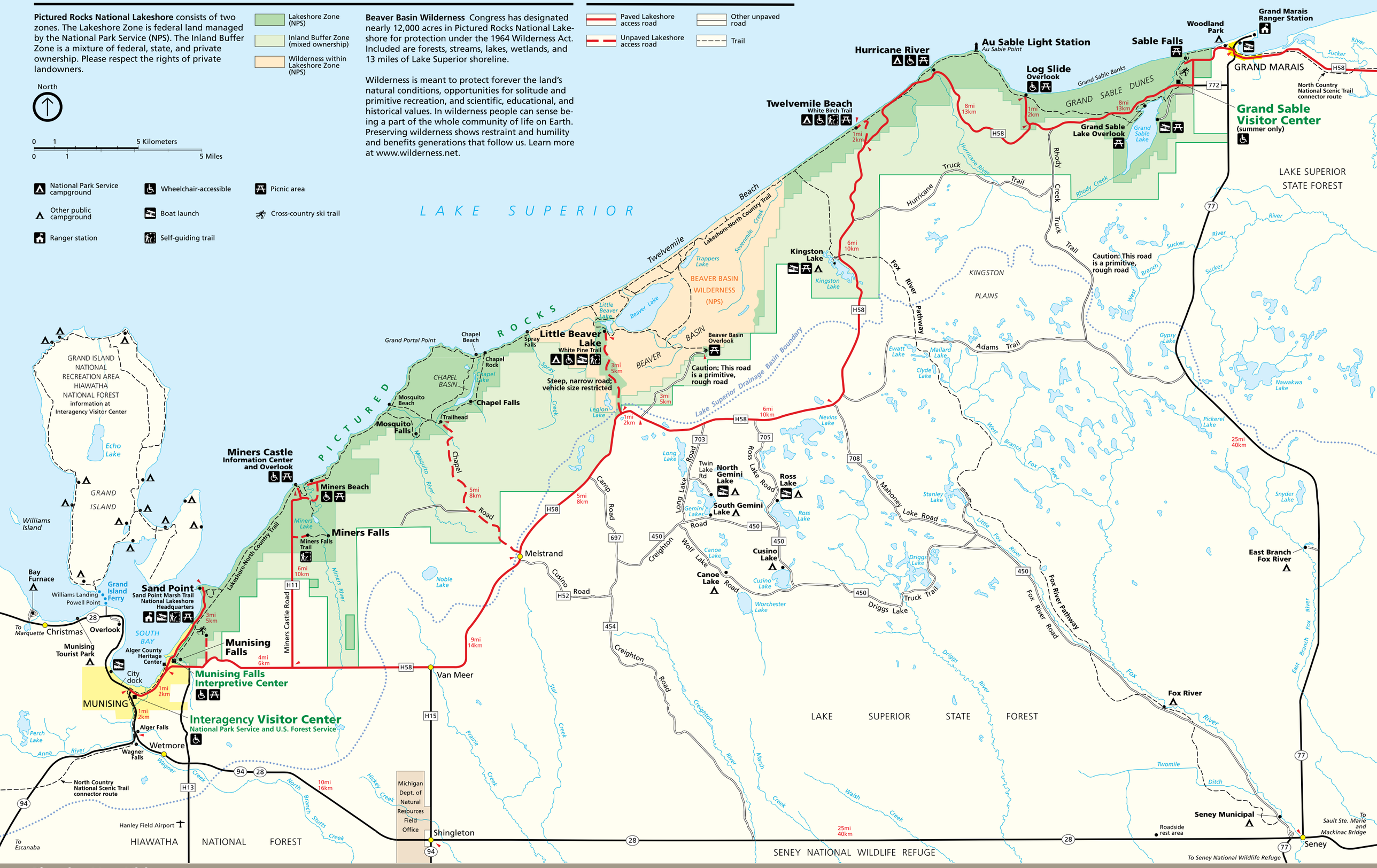
Wilderness is meant to protect forever the land's natural conditions, opportunities for solitude and primitive recreation, and scientific, educational, and historical values. In wilderness people can sense being a part of the whole community of life on Earth. Preserving wilderness shows restraint and humility and benefits generations that follow us. Learn more at www.wilderness.net.

Paved Lakeshore access road
Unpaved Lakeshore access road
Other unpaved road
Trail

North

0 1 5 Kilometers
0 1 5 Miles

National Park Service campground
Other public campground
Ranger station
Wheelchair-accessible
Boat launch
Self-guiding trail
Picnic area
Cross-country ski trail



Planning Your Visit

Interagency Visitor Center This visitor center serves Pictured Rocks National Lakeshore and Hiawatha National Forest. Start here for information, exhibits, a video, backcountry permits, maps, and a bookstore. It is open daily except Thanksgiving Day, December 25, and January 1. Closed on Sundays in winter. Seasonal hours vary. For details about activities and programs visit www.nps.gov/piro.

Munising Falls Interpretive Center Stop here for information, brochures, and a bookstore. Exhibits explain ironmaking, logging, wildlife, and how the cliffs were formed. Open seasonally.

Miners Castle Information Center This center has information, a bookstore, and exhibits about Lake Superior. Open seasonally.

Grand Sable Visitor Center Here at the foot of Grand Sable Dunes you will find information, backcountry permits, exhibits, and a bookstore. Open in summer; hours vary.

Hiking and Walking Pictured Rocks has some of the best trails around. You can choose short or long, easy or strenuous. The Lakeshore-North Country Trail (part of the North Country National Scenic Trail) and other trails provide spectacular vistas of the lake, cliffs, dunes, and waterfalls. Plan your hiking trip beforehand. Let someone know where you are going, carry plenty of water and food, and be prepared for rain and sudden weather changes. Wear layered clothing and sturdy footgear. Get trail maps at visitor centers.

Camping You can drive to Little Beaver Lake, Twelvemile Beach, and Hurricane River campgrounds. All have water, tables, grills, and toilets but NO showers. Campsites (fee) are first-come, first-served. Register at the campground; stays are limited. Camping is also available in state forests and parks, private campgrounds, and in the Hiawatha National Forest.

Backcountry Camping There are 13 hike-in campgrounds and one boat-in site; seven group sites are spaced every two to five miles along the Lakeshore-North Country Trail (fees). Permits are required. Use stoves at Chapel Beach and Mosquito Beach campgrounds; fires prohibited. At other sites fires are allowed only in metal fire rings. Ground and beach fires are prohibited. There is no potable water; use a water filter. Camping allowed only in designated sites.

Hunting/Fishing Hunting and fishing are allowed in season under federal and state regulations. Michigan hunting or fishing licenses required. Ice fishing is popular on South Bay and most inland lakes. Trapping and target practice are prohibited. Some park areas are closed to hunting for safety reasons. For details about fishing check the *Michigan Fishing Guide*. Check bait restrictions posted at the lake where you are fishing. For firearms regulations check the park website www.nps.gov/piro.

Boating, Canoeing, and Sea Kayaking Beaver Lake, Little Beaver Lake, and Grand Sable Lake are favorites for small boats, kayaks, and canoes. Most rivers are too shallow for canoeing. Lake Superior can be rough and small craft are easily swamped. Munising and Grand Marais have launch ramps for motor boats. Backcountry permits are required for overnight sea kayakers and boaters (fee). Only electric motors are permitted on Beaver and Little Beaver lakes.

Private Tours Concession cruise boats leave South Bay daily from Memorial Day to mid-October. Guides can lead you on a variety of recreational opportunities. Get information at the Alger Chamber of Commerce. Contact: 906-387-2138; www.algercounty.org.

Winter Activities You can cross-country ski on miles of groomed trails. If your fancy is snowmobiling, try one of the designated park roads. Also popular are ice fishing on inland lakes and South Bay, snowshoeing, ice climbing, and winter camping. For details see the park website.

Special Considerations Weather and bugs—you can't ignore either. Your visit will be more enjoyable if you prepare for extremes. The proximity of Lake Superior moderates the climate, but sudden storms can develop year-round and hypothermia is always a threat. Bring rain gear and layers of warm clothing. Black flies and mosquitoes can be aggravating from mid-May to mid-July. Stable flies are common during warm, humid weather. Wear light-colored, long pants and long-sleeved shirts. Use insect repellent, and wear a hat.

Accessibility For information visit www.nps.gov/piro/planyourvisit/accessibility.htm. Service animals are welcome.

Safety First Please be alert and observe these regulations. *Remember, your safety is your responsibility.* • Do not climb or slide on cliffs, and stay back from the top edges; they can suddenly give way. • Stay on trails and boardwalks and use the overlooks. • Do not climb on rocks near waterfalls. • Bicycles are prohibited on all lakeshore trails. • Sudden storms and the lake's ice-cold water make water sports treacherous. Use extreme caution when wading, swimming, fishing, scuba diving, or boating. • Motorized or wheeled vehicles are prohibited in the backcountry. • Pets must be leashed and attended; pets and domestic pack animals are not allowed in the backcountry. See the *Pets Brochure* for details • Use caution while bicycling on park roads and H–58. • Off-road vehicles (ORVs) are prohibited in the lakeshore. • Natural and historic features are protected by federal and state law. Do not disturb shipwreck remains on the shore or in the water. **Emergencies call 911.**

More Information
Pictured Rocks National Lakeshore
P.O. Box 40,
Munising, MI 49862-0040
906-387-3700
www.nps.gov/piro

Pictured Rocks National Lakeshore is one of over 390 parks in the National Park System. To learn more about national parks visit www.nps.gov.

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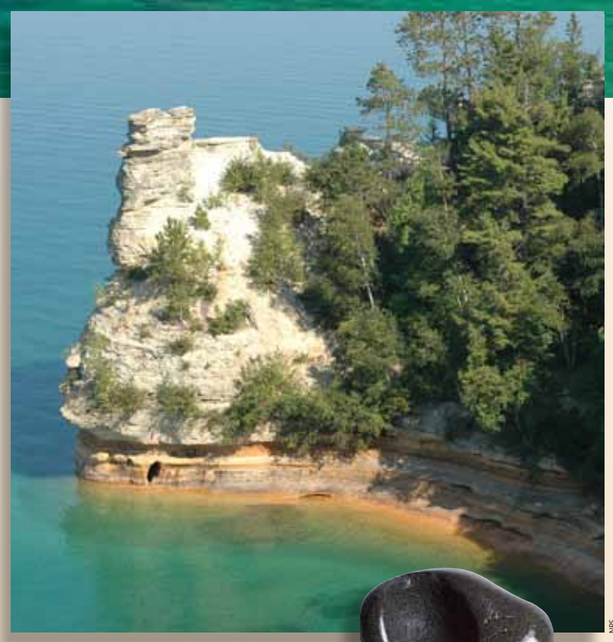
Pictured Rocks

Pictured Rocks National Lakeshore
Michigan

National Park Service
U.S. Department of the Interior

Cliffs along the trail east of Miners Castle.



Miners Castle *(above)*.

Basalt *(at right);* horn coral *(middle);* red jasper *(lower)*.

NPS

NPS

Stories in Sand

Sandstone cliffs. Ochre, tan, brown, sandwiched with layers of white and green—tower 50 to 200 feet above the water. Lake Superior. So vast, so blue—glistens against a cloud-streaked sky. Deep forests. Emerald, black, gold—open onto small lakes and waterfalls. The image is reminiscent of a master's painting: a palette of nature's colors, shapes, and textures creates the scene that is Pictured Rocks National Lakeshore.

This place of beauty was authorized as the country's first national lakeshore in 1966 to preserve the shoreline, cliffs, beaches, and dunes, and to provide an extraordinary place for recreation and discovery. Little more than 6 miles across at its widest point, Pictured Rocks National Lakeshore hugs Lake Superior's shore for nearly 40 miles. The park consists of two zones: the Lakeshore Zone, federal land managed by the National Park Service, and the Inland Buffer Zone, a mixture of federal, state, and private ownership. Together these nearly 73,000 acres protect a portion of Lake Superior's shoreline and watershed.

Icy Architects **Massive glaciers inched back and forth across this land for a million years, scouring and molding, while the land yielded and took on a new shape. Moving ice ground the volcanic and sedimentary rock of previous eras into rubble and slowly enlarged river valleys into the wide basins that would become the Great Lakes. The last glacier began its retreat about 10,000 years ago. Over time, meltwater from this wasting glacier formed powerful rivers and scattered rubble onto outwash plains and into crevasses. The water scooped out basins and channels that harbor the wetlands found in the park today. Eventually, as the weight of the glacier lessened, the land rose and exposed bedrock to lake erosion. It was this onslaught by the lake—centuries of crushing ice and battering waves—that carved the bedrock into young cliffs. Relentlessly the water continues to pound and sculpt the cliffs today, eroding them inland while enlarging the lake.**

Solid or liquid, the force of the water profoundly altered the landscape and created the largest freshwater lake system in the world. It is hard to imagine that power, until you examine the evidence. You will soon recognize the clues. Look at the water-sculpted arches and profiles of the cliffs. Observe the inland lakes formed when glacial outwash buried enormous blocks of ice. The ice melted over time, forming depressions that filled with water and became kettle lakes. Examine the stones along Twelvemile Beach—horn coral from an ancient sea, polished granite and quartz rounded like eggs, and disk-shaped fragments of the Jacobsville sandstone.

Colorful Cliffs **The name pictured rocks comes from the streaks of mineral stain that decorate the face of the sculpted cliffs. The ramparts of the cliffs are composed of 500-million-year-old Cambrian sandstone of the Munising Formation. The Munising Formation makes up much of the angled slopes and formations, like Miners Castle. Closest to lake level is the Jacobsville Formation, a late-Precambrian mottled red sandstone that is the oldest exposed rock in the park. Covering all is the 400 million-year-old Ordovician Au Train Formation, a harder limy sandstone that serves as a capstone and protects the underlying sandstone from rapid erosion. Streaks on the cliffs occur when groundwater oozes out of cracks. The dripping water contains iron, manganese, limonite, copper, and other minerals that leave behind a colorful stain as water trickles down the cliff face.**

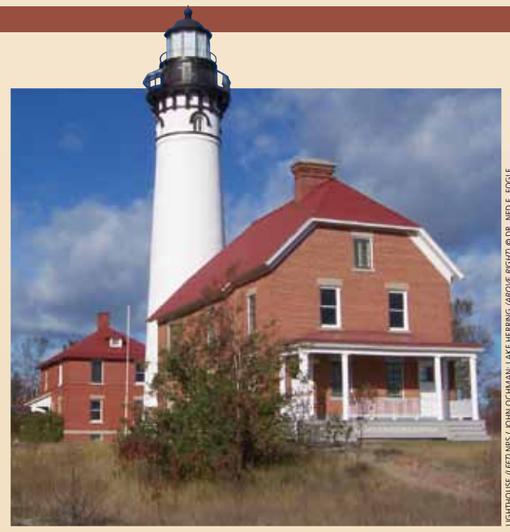
Living with Lake and Land

The bounty of the lake and land has attracted people since the glaciers retreated northward. Archaic and Woodland Indians made summer camps along the coast between what is now Munising and Grand Marais. Later, Anishinaabek Indians hunted and fished here, as their descendants still do, while en route to their summer fishing areas at the Sault rapids of the Saint Marys River between Lakes Superior and Huron.

Anishinaabek birchbark storage basket.
NPS

Schoolcraft and Other Adventurers In the 1600s and 1700s French and English explorers and voyageurs searched here for furs and minerals. They left little behind except place names, like Grand Marais and Miners River. In the 1800s American and European settlers arrived to make fortunes in mining and logging. In 1820 Henry Rowe Schoolcraft, adventurer, Indian agent and wilderness scholar, said, "We had been told of the variety in the colour and form of these rocks, but were wholly unprepared to encounter the surprising groups of overhanging precipices, towering walls, caverns, waterfalls . . . . mingled in the most wonderful disorder."

The demand for timber attracted lumber barons who bought vast forests of white pine, beech, and maple. By the 1890s boomtowns supported sawmills. Grand Marais, bustling with a population of 2,000, produced millions of board feet of lumber annually. Business on the lake flourished too. Wooden-hulled freighters and sidewheelers moved lumber and pig iron to distant markets. To help ships navigate the treacherous reefs, the U.S. Life Saving Service and the U.S. Lighthouse Service (later to become the U.S. Coast Guard) built light stations and lifeboat rescue stations along the lakeshore. By the early 1900s most of the forests were gone, and the fortune-seekers moved on.



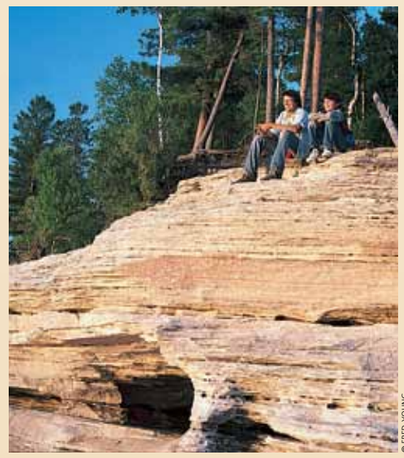
LIGHTHOUSE *(LEFT)* NPS / JOHN OCHMAN; LAKE HERRING *(ABOVE RIGHT)* © DR. NED E. FOGLE

Today, powered by the sun and not kerosene, the 1874 Au Sable Light Station still warns mariners of the dangerous Au Sable reef.

Life of the Lake

Measured by surface area, Lake Superior is the largest freshwater lake in the world. It is 350 miles long, 160 miles across at its widest, and about 1,300 feet at its deepest spot, which is about 35 miles north of Pictured Rocks National Lakeshore. This natural vessel holds so much liquid that, if drained, the water would fill a swimming pool the size of the lower 48 states to a depth of nearly five feet.

Like all things on Earth, Lake Superior is part of an interdependent ecosystem. Picture a giant web with energy flowing from point to point. The spark igniting the web comes from sunshine. Solar energy flows into phytoplankton—microscopic plants—that turn it into food eaten by zooplankton—tiny animals, like water fleas. These are eaten by forage fish, sculpins and lake herrings, which are eaten by predator fish, like lake trout. These, in turn, are eaten by bald eagles and other birds, by small mammals, like otter and mink, and by humans. Humans are an important link in this energy flow because of the residence time of Lake Superior's water. It takes over 190 years to completely replace the lake's volume of water with an equal amount of new water. That means—what you consume, produce, and throw away—will affect Lake Superior's food web for a *long* time.



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Hikers take a break at Mosquito Beach.