

MICRO-94-002 CS

Lake Superior



Recreation & Weather

CIRCULATING COPY

a four season guide

*There is a sublime order to it,
the long curves of the beaches,
the sweeping ranges of hills,
the headlands that push out into the lake . . .
and beyond,
Lake Superior, shining like burnished silver.*

—A. Y. Jackson, 1925

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CONTENTS . . .

Introduction	1
Vacation Weather	3
Boating	9
Fishing	21
Diving	25
Lake Superior Beaches	31
Isle Royale	37
Winter Recreation	41
Land-Based Recreation	49
Sightseeing	57
History	63
Travel Tips	69
For More Information	73
Index	90

Charts . . .

Sailing Winds	12
Sailing Weather Days	15
Foggy Weather Days	17
Snowfall	42
Winter Weather	45
Warm Weather Days	51
Lake Superior Facts	87
Lake Superior Map	88
Historic Map	89
Metric Conversions	93

*There is not perhaps on
the globe
a body of water so pure
and so light
as that of Lake Superior.
It appears as if conscious
of its innate excellence.*

—John Johnston, 1700s

Lake Superior . . . How far? Within a day's drive for Michigan and northern Iowa, Illinois, Indiana, or Ohio residents. Less than a day's drive for many Wisconsin, Minnesota, and Canadian residents.

. . . How cold? Cold enough to harbor schools of game fish, to preserve century-old shipwrecks, and to provide abundant snow for skiers and snowmobilers. Warm enough for swimming in sheltered bays and enjoying pleasant summer days.

. . . How scenic? Very. The water is incredibly clear—green, blue, and violet. Breakers wash over a rainbow of rocks. The land is rolling, the hillsides clothed with dark evergreens and snowy birches, carpeted with lush ferns and soft gray moss, laced with gurgling streams tumbling over a hundred rushing waterfalls.

Each stretch of Michigan's Lake Superior coast has its own flavor. . . .

At the Soo Locks, big ships link the nation's interior with European ports. In contrast, small communities dot the forests from Sault Ste. Marie to Grand Marais.

Massive sand dunes and the Pictured Rocks then dominate the shore to Munising. Sandy beaches facing offshore islands nestled amid whitecaps extend to Marquette.

Marquette ushers in a grand past, with both elegant and humble reminders of the iron mining heyday. Beyond the Huron Mountains wilderness, the Keweenaw Peninsula is replete with lakeshore vistas and Copper Country history. On the west shore of the Upper Peninsula, the Porcupine Mountains rise high above Lake Superior.

Throughout the Lake Superior watershed, agate beaches, waterfalls, lighthouses, museums, campgrounds, trails, trout streams, driftwood, deep forests, wild flowers, and wildlife abound.

In winter, well-maintained roads lead to alpine ski slopes and cross-country ski and snowmobile trails. Frozen waterfalls, fantastic lakeshore ice formations, the still beauty of snowbound forests, and warm hospitality reward the winter visitor. In spring wildflowers are abundant; in fall the flaming trees are unrivaled.

Michigan's Lake Superior coast in any season is replete with beauty, history, and outdoor opportunities.

Come on up to Lake Superior.

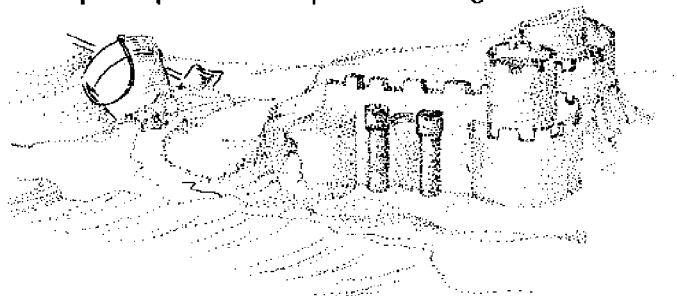


Vacation Weather . . .

The wilderness charm of the Lake Superior coast is enhanced by an invigorating climate. Four distinct seasons offer conditions suited to a variety of recreational pursuits.

Summer

In summer, sunshine is plentiful, although sometimes hidden by early morning fog in June and July. The breeze off Lake Superior helps keep conditions pleasant along the shore



on summer afternoons. This effect may extend inland a few hundred yards or many miles. The lake breeze is sometimes met by a similar breeze from Lake Michigan, causing clouds and showers across the middle of the Upper Peninsula.

Along the lakeshore, showers and thunderstorms occur on about 5 to 8 days per month. These cooling showers are often brief but heavy, and are most likely in the late afternoon or evening. Thunderstorms are more common in late summer and September than in early summer. Temperatures climb to 90° F or more on only about 1 to 5 days each year, as summertime highs usually hover in the 70s. Nights are 20° to 25° F cooler on the average.

Autumn

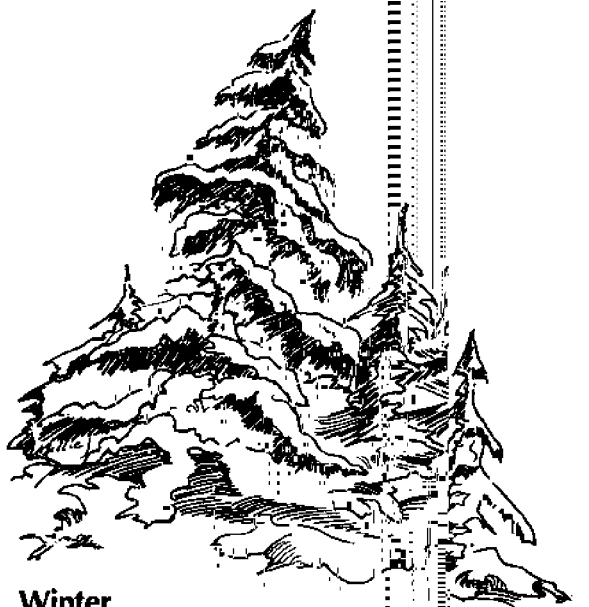


Summer's warmth gently merges into the crisp, colorful days of fall. Tempered by the slow-to-cool lake water, September yields grudgingly, as daytime highs often reach 70° F, and freezes are infrequent. The first freeze, often in the Porcupine Mountains, usually occurs about mid-September. The first significant snowfall (1 inch or more) is usually seen in early November.

By November cold weather has settled in, as minimums fall to freezing or below on about 20 to 27 days. November snowfalls generally range from 13 to 17 inches along the shoreline and up to 27 inches in the higher elevations in Ontonagon County.

*... the woods were tinted of a
thousand brilliant hues ...*

—Dr. Chandler Gilman, early 1800s



Winter

A mantle of snow draws skiers and snowmobilers to the Lake Superior shore. Winter storms tend to converge upon the lake, and in addition, "lake-effect" snows occur when cold air streams across relatively snow-free lake waters. The air picks up water vapor and moisture, triggering snow showers along the Great Lakes shores.

Snow is heaviest in December, with monthly averages ranging from 20 to nearly 40 inches. By January extremes along the shore of the lake become frozen, causing precipitation amounts to decline somewhat. Midwinter temperatures usually range from the mid 20s (°F) during the day and drop to 10° or below at night. Coldest readings are encountered inland and at higher elevations. In February, temperatures range from about -30° to -45°.

Temperatures climb to the 40s and 50s by late April, up to 10° or more by June. In the summer months, you may encounter occasional heat waves. Extremes

Ice forms in shallow bays and inlets in early winter. On open Lake Superior, ice cover reaches a peak by late March, with 60 percent of the lake normally covered. Winds are variable, often strong, with northerlies and northwesterlies reaching wind speeds over the lake of 40 to 50 knots on occasion.

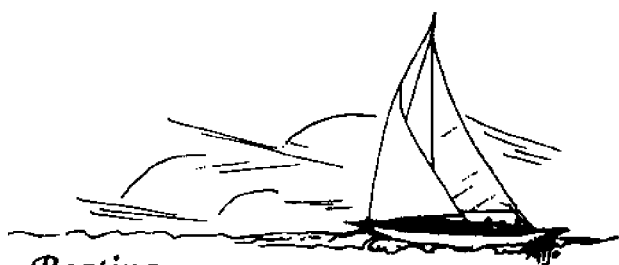
Spring

Spring arrives later along the shore than it does inland because of cold air off the ice, which begins to decay in early April. Low pressure storms still occur, but are usually less frequent and less intense than they are in fall and winter. However, in late spring, severe weather often occurs when arctic and subtropical air clashes. Showers and thunderstorms are the result, sometimes triggering hail or strong gusty winds. Snowfall averages of 12 to 20 inches in March drop to 2 inches or less by May. Color gradually returns as flowers carpet the forests and snowmelt cascades over scores of waterfalls. By May daytime temperatures often reach the 60s. The last freeze usually occurs late in May. Northerly winds are common but southerlies are on the rise. Late in the season this influx of warm air causes fog over the lake.



*... all [around] and in front
is one vast ocean
of transparent water,
over which air as pure as ether
perpetually hovers in stillness
or blows in tempests.*

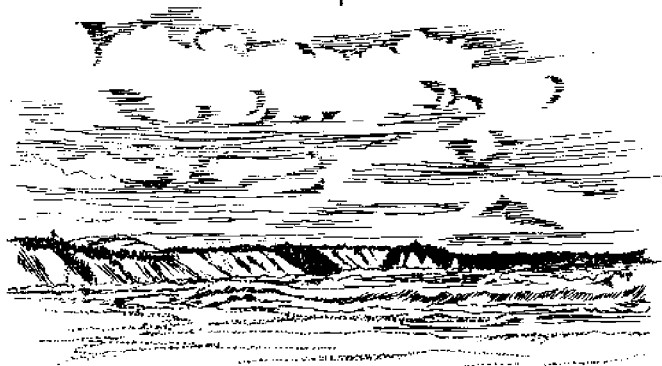
— Thomas McKenney, 1826



Boating . . .

Are you an experienced boater? Then the challenges and rewards of cruising Lake Superior may be for you. The clean, clear water, the cry of a loon, a deer or moose slipping into cover, a quiet anchorage near a forested shoreline, a sunrise on a misty morning—these make Lake Superior a wilderness cruising paradise.

A sailor cruising the Michigan coast from Sault Ste. Marie to Little Girl's Point on Wisconsin's border will pass forested shores



edged by white sand beaches, imposing 350-foot high Grand Sable Dunes, elegant Pictured Rocks, rocky shores and bluffs of many hues, the pink sands and bays of the Keweenaw, and the wooded peaks of the Huron and Porcupine Mountains.

The Keweenaw Waterway, slicing across the Keweenaw Peninsula, offers a change of pace. The channel squeezes between picturesque Hancock and Houghton, whose steep-roofed houses and tall poplars climb the hills on either side to mine shaft houses at ridgetop.

Experienced navigators in seaworthy craft may sail the 65 or so miles from the Keweenaw to Isle Royale National Park to spend one to several weeks exploring the inlets and islets of this wilderness island.

If you enter Lake Superior from Lake Huron you will first cruise the St. Marys River. You may sail along the ship channel or, if your boat is not too large, take the quieter and more scenic Island Explorer Water Trail along the

west side of the river's islands. At the Soo, you are in a complex and busy waterway, so thoroughly study the *Coast Pilot* and the navigational chart and stay clear of freighters. Most recreational craft use the Canadian lock, since fewer formalities are involved.

Craft and Accommodations

Sailboats make up 80 percent of the Lake Superior fleet, but powerboats are becoming more popular. Sailboats on the lake should be at least 20 feet long, preferably longer, and powerboaters must take care to choose large, seaworthy craft. Because of Lake Superior's long fetch (380 miles long, 160 miles wide), heavy seas can develop quickly. Smaller craft should sail in protected waters nearshore.

There are 19 harbors of refuge along Michigan's Lake Superior shore, including two on Isle Royale. Harbors range from municipal settings in Sault Ste. Marie and Marquette, to the village of Grand Marais, to the forested trails of Little Lake. Shoals, pilings, and reefs require careful entry into certain harbors. Because of the distance between some harbors and limited berths at many, Lake Superior sailors should be prepared to anchor. Bring a dinghy for shore access from anchorages.

For boaters using trailerable boats, more than 40 launch ramps dot the Upper Peninsula's Lake Superior coast. Most of these are paved, some offer gas, a few also offer moorage and have camping and swimming facilities.

SAILING WINDS

(speed, % of time, and prevailing direction)

SAULT STE. MARIE (con)

	AM	PM		
MAY			MARQUETTE	
7 to 16 kt	49%	74%	AM	PM
over 16 kt	3%	12%		
Prevailing wind	E	NW	9%	74%
JUNE			2%	9%
7 to 16 kt	40%	74%	N	N
over 16 kt	2%	6%		
Prevailing wind	NW	NW	0%	74%
JULY			1%	6%
7 to 16 kt	31%	71%	S	N
over 16 kt	*	4%		
Prevailing wind	NW	NW	5%	75%
AUGUST			*	4%
7 to 16 kt	32%	69%	C	N
over 16 kt	*	5%		
Prevailing wind	C	NW	7%	73%
SEPTEMBER			*	4%
7 to 16 kt	39%	70%	C	N
over 16 kt	1%	6%		
Prevailing wind	SE	NW	7%	70%

NOTES:

Knot (kt) = 1.15 miles per hour
 * = less than 0.5% of time
 C = calm
 % indicates percent of time
 direction blows 7-16 kt and our

wind from any
 over 16 kt.

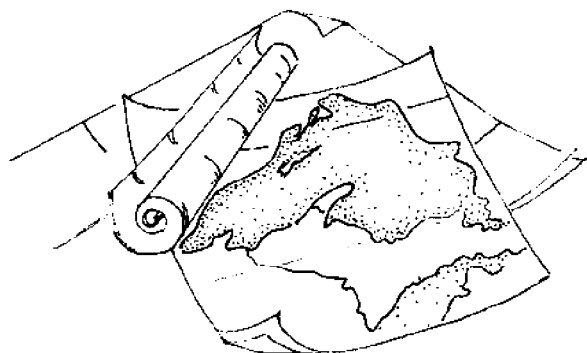
EAST	CENTRAL	WEST
Entire Day Summary		
50%	48%	51%
39%	42%	37%
SE	NW	SW
57%	55%	55%
29%	32%	29%
SE	S	SW
59%	56%	59%
23%	30%	27%
NW	S	SW
55%	57%	57%
27%	28%	25%
S	S	SW
47%	46%	50%
43%	44%	40%
NW	S	SW

Cruises and Excursions

Non-sailors might enjoy a chartered boating trip on Lake Superior, savoring the fresh breeze and the view of sparkling whitecaps under the sky's blue bowl. From Copper Harbor and Houghton, 165-foot passenger cruisers sail for Isle Royale during the summer months. Many tourists enjoy the four-to-six-hour voyage, camp on Isle Royale or stay at the Rock Harbor Lodge, and return to the mainland on another day's ship. The Isle Royale ship out of Houghton also cruises the Portage Canal.

Another popular cruise takes sightseers to view the Pictured Rocks at Munising. This 3-hour cruise operates from Memorial Day through the fall color season, weather permitting, and offers the best way to see and photograph the magnificent, multi-colored cliffs and grottos.

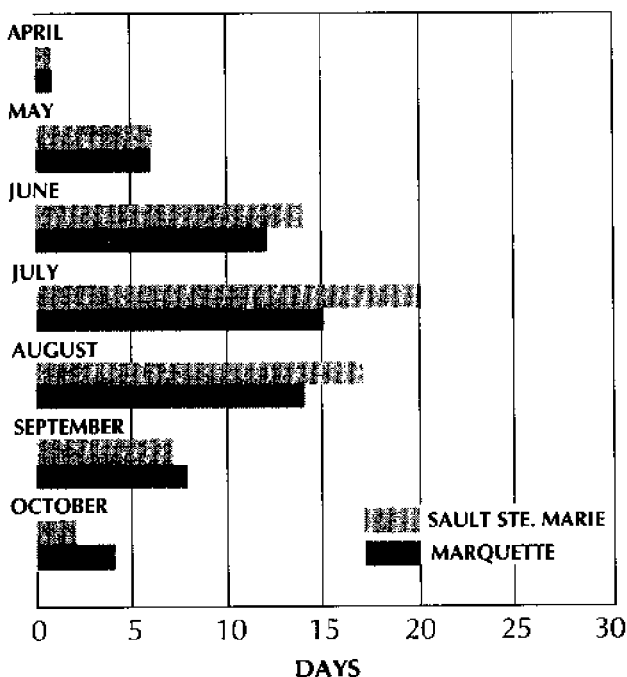
Also at Munising, a charter service is available to drop off hikers and campers on Grand Island, one of Lake Superior's largest islands at 13,000 acres. Another charter—a glass-bottomed boat—takes non-divers out to view the shipwrecks off Munising. At Sault Ste. Marie excursion boats tour the locks and waterfront.



Boating Weather

The best months for cruising on Lake Superior are June, July, and August, but some fine boating weather also occurs in May and September. During the summer months, seas vary from calm to choppy and temperatures are usually cool.

SAILING WEATHER DAYS



With 4 readings between 8 AM and 5 PM, sailing weather days had:

- temperatures of 65° F at least twice
- windspeeds of 7 knots at least twice
- visibilities of 2 miles or more at least twice
- precipitation no more than twice



Winds - On the open lake, summer winds are variable, especially in the early morning. During the afternoon, you will commonly encounter west through northwest winds if you are east of the Keweenaw Peninsula. If you are sailing west of the Keweenaw, you will mostly experience winds from the southwest through west. Windspeeds reach 7–16 knots 55–60 percent of the time.

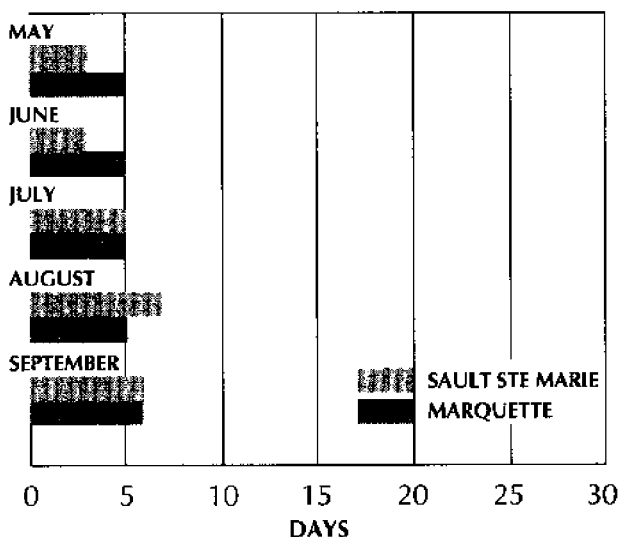
Along the coast, an onshore flow will develop on summer days as the land warms faster than the water. It will intensify during the day, and may reach 15–20 knots. At night, winds are light and variable, and a weak offshore flow may develop. Gales are uncommon during the summer in both coastal and open waters.

Waves - During the summer, waves of two feet or less occur about 60 percent of the time in open water, while seas of five feet or more occur 10–15 percent of the time. Maximum wave heights can reach 12–15 feet.*

**The wave statistics refer to the "significant wave," which is defined as the average of the highest third of the waves. Individual waves vary greatly.*

Fog - Fog is summer's most persistent navigational weather hazard. The fog results from warm air passing over the cool lake; along some portions of the coast upwellings keep water temperatures in the 40s. Fog is most likely east of Keweenaw Point and north of Au Sable Point (Pictured Rocks) where water temperatures are coldest; it is less frequent along the coast from Au Sable Point to Marquette and in Keweenaw Bay. In general, dense fog is reported on two to six days per month during the summer and is worst before sunrise. By noon visibilities usually improve, particularly along the coast. Isle Royale, however, may have fog lasting several days.

FOGGY WEATHER DAYS



- days with visibility less than 1/2 mile
- Marquette readings taken at Sawyer Air Force Base

Spring and Fall - While spring and fall offer many fine boating days, the weather can turn rough as storms move across the area. Gales blow 2–5 percent of the time, while waves of five feet or more are encountered 25–35 percent of the time. Maximum wave heights can reach 30–35 feet. In fall, waterspouts may occur, most commonly over Keweenaw Bay and Whitefish Bay. The spring boating season is delayed by ice, which may still be present in May during some years.



Precautions

The weather can change quickly on Lake Superior. Always keep an eye on the weather and listen to weather forecasts frequently. It is best to have a VHF-FM radio for continuous NOAA Weather Radio broadcasts of weather conditions and forecasts and special severe weather bulletins. Lake Superior boaters can tune to 162.55 MHz (KIG-74, Sault Ste. Marie, KIG-64, Duluth, or KIG-66, Marquette) or 162.40 MHz (WXK-73, Houghton). Several U.S. and Canadian Coast Guard stations broadcast continuous forecasts and observations. Weather information may also be obtained by calling the National Weather

Service at Marquette (906/475-5212), Sault Ste. Marie (906/632-8921), or Duluth (218/722-3588). The U.S. Coast Guard continuously monitors VHF-FM Channel 16. This channel should be used only for calls for help.

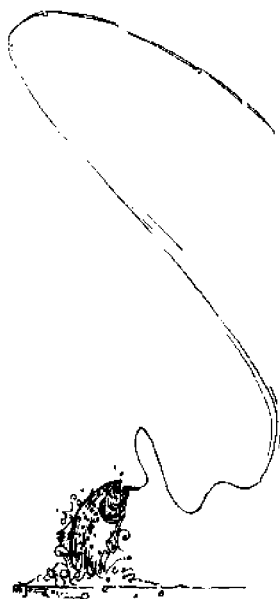
The long distances between ports and the relative scarcity of recreational boaters on Lake Superior require the sailor to be self-sufficient. Your boat should be well-equipped with safety gear, navigational instruments, and charts. A radar reflector will help commercial ships spot you in the fog. Always know your position, so you are prepared for sudden fog. Extend your cruising range by carrying extra fuel and plenty of provisions. Ice is often not available, but the water is cold enough that bilge-stored food usually stays fresh. Check out all systems on your boat before you start and carry spare parts. Know how to make repairs.

In addition to foul weather gear, bring warm clothing, including hat, gloves, and warm shoes. Even in summer, it can be cold on Lake Superior. For more typical summer days, bring sunscreen and bug repellent. Lake Superior's cold waters require that everyone on board wear personal flotation (PFDs) devices at all times, as survival time in cold water is very short. Anyone overboard must be retrieved quickly and treated for exposure.

Lake Superior cruising is not for novice boaters or for those who need the lights and conveniences of civilization. But if you wish to challenge your sailing prowess and self-sufficiency and enjoy the northern wilderness, a Lake Superior cruise is for you.

*Trout, unlike men,
will not live,
indeed cannot live,
except where beauty dwells.*

—Robert Traver, 1991



Fishing . .

Lake Superior area fishing offers solitude and beauty as well as fish. Superior's rugged shores, cold, clear streams, and forest-rimmed inland lakes provide a memorable backdrop for the angler.

Lake Superior supports an excellent lake trout fishery and good fishing in certain areas for five other popular Great Lakes sport fish—coho, and chinook salmon, steelhead (lake-run rainbow trout), brown trout, and Atlantic salmon.

Lake trout and chinook are usually caught by deep-water trolling. Steelhead, brown trout, and coho are more commonly caught by nearshore trolling or still fishing. Atlantic salmon can be fished in the St. Marys River. These fish will readily strike artificial flies and put on a spectacular aerial fight.



Other popular Lake Superior fish are the flavorful lake whitefish, menominee (round whitefish), and splake (a hybrid of the lake trout and brook trout).

Fish in Lake Superior's nearshore waters and the St. Marys River include northern pike, muskellunge, walleye, smallmouth bass, largemouth bass, yellow perch, suckers, and lake herring.

Stream Fishing

The Upper Peninsula is laced with cold-water streams and lakes that provide memo-

rable wilderness fishing. The fly fisherman can pit his or her skills against the brook trout, brown trout, and rainbow trout in numerous lakes and streams. Walleye, northern pike, and muskie are also found in many streams and lakes. Cisco is found in a few lakes. Warmer water fish, such as bluegill, crappie, bullhead, perch, and bass, are found in some waters as well. Spearing is legal on some waters for some fish. Spring smelt runs occur on some Lake Superior tributaries, particularly in the Keweenaw Peninsula, and are caught with dip nets. Many Lake Superior area fish are of trophy size, thanks to the limited fishing pressure exerted.

Anyone over 17 must have a fishing license to fish in Michigan. These can be purchased at DNR field offices, bait shops, and boat rental and tackle stores.

Even if you don't fish, you can enjoy delicious fresh Lake Superior fish on your trip. Nearly any lakeshore town has at least one fish shop selling smoked and fresh fish. Most restaurants offer fresh caught fish. Sampling Lake Superior's specialties, lake trout, whitefish, and menominee, is a must.

Fishing Weather

The early rising summer angler is often greeted by fog or haze with temperatures in the 50s(°F). Occasionally a light rain or drizzle will be encountered. Air temperatures over the lake may be 5° to 10° cooler than over land, and the water itself is even

older. Winds are usually light and variable or even calm. By mid-morning skies brighten, the wind picks up, and temperatures climb into the 60s on average. Afternoons are usually pleasant with readings in the 70s along the shore and 60s over the water. A lake breeze often appears at mid-day and brings a pronounced lowering of air temperature. Skies are frequently sunny, but there is a chance of an afternoon or evening shower or thunderstorm.

Autumn and spring conditions are more unsettled and undependable although there are still many fine days for fishing. Freezing temperatures are common, particularly in the morning. Winds can be strong and gusty as weather systems move across the area. In the fall, lake temperatures are slow to cool, so the onset of winter is delayed and good fishing weather is extended. But beware of the "Gales of November," notorious for causing shipwrecks. Spring waters are slow to warm and ice can be present through April.

For the ice fisherman, ice formation usually begins on shallow bays. The ice sheet slowly extends several miles out into the lake. While ice coverage and thickness is usually greatest from late February through March, coastal waters begin to freeze in December, and in some places ice is a foot thick by the end of the month.

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Diving . . .

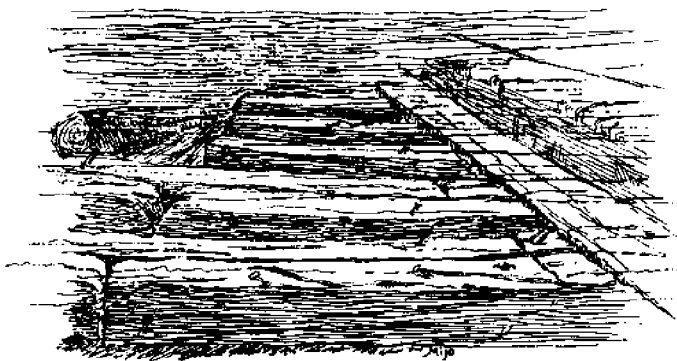


There's a new frontier to explore in the Great Lakes—shipwrecks. There are 6,000 or so sunken ships in the Lakes, providing a rich field for exploration. What a thrill to inspect a drowned hull, reaching across the gap of time and technology to feel kinship with those people who lived and worked on the Great Lakes a century ago!

Lake Superior is excellent for diving because of its many shipwrecks, clear water, and the preserving qualities of the cold, fresh water. Visibilities range up to 40 feet at 100-foot depths and greater at shallower depths. In the winter, under-ice diving is possible in protected waters. The Upper Peninsula's multi-hued, rocky shoreline dipping beneath the clear water provides another diving attraction.

On-land interpretive centers fascinate both divers and nondivers. The Great Lakes Shipwreck Historical Museum at Whitefish Point houses top-quality displays, films, and videos on Lake Superior shipwreck history and artifacts. The Marquette Maritime Museum has an excellent display on Great Lakes shipping history.

The five major concentrations of wrecks in Lake Superior are at the Whitefish Point, Alger, Keweenaw, and Marquette Underwater Preserves, and Isle Royale. The major wrecks in all the preserves are buoyed, using a consistent system from preserve to preserve. Dive charters are available at most preserves and Isle Royale.



Whitefish Point Preserve

Whitefish Point is called the Graveyard of the Great Lakes. There are an estimated 200 sunken ships in the area, of which only 50 or 60 have been discovered. The 530-foot-deep *Edmund Fitzgerald* is the most famous wreck in the area. The shipwrecks are in water 100 feet deep or deeper.

Fitzgerald is the

vicinity. More than 113 square miles encompass the preserve and stretch along the Pictured Rocks.

Alger Preserve contains 16 known shipwrecks, ranging from 15 to 110 feet and providing a variety of sites for divers of all levels of experience. The Pictured Rocks provide a range of colorful rock formations and provide a variety of sites for divers to explore. Many of the shipwrecks are in waters protected by Grand Island. A glass-bottom boat from Munising provides non-divers with the opportunity to view the shallower waters of Lake Superior's clear water.

Marquette Preserve

The preserve contains eight shipwrecks in two locations, one on the shore and southeast of Marquette, and another on the Huron Islands, northwest of Marquette. This preserve features interesting geological formations and near the area's oldest rock formations. Divers in Marquette must be on the lookout for shipwrecks that occur in this area. Marquette is a busy coal and iron ore shipping port, so divers must keep away from the shipping channels.

reefs and shipwrecks. Iron ore is shipped from the shipwrecks.

Keweenaw Preserve

The Keweenaw Preserve covers 65 miles of shoreline stretching from the Portage Lake Ship Canal north along the western Keweenaw Peninsula, around the tip, and down the eastern side into Bete Grise Bay. It includes 12 major shipwrecks, including the Great Lakes' most recent shipwreck, the U.S. Coast Guard cutter *Mesquite*. The Keweenaw's rocky geology provides Michigan's most striking formations and a variety of colorful minerals. The lack of sediments, due to the rocky bottom, ensures especially good visibility.

Isle Royale

There are 10 shipwrecks around Isle Royale, where ships traveling to and from Minnesota and Canadian ports grounded on offshore reefs. Several wrecks slipped off the reefs and lie at steep angles, with bow or stern close to the water's surface. Copper veins and greenstones are two of the geological attractions here. Divers are subject to the regulations of Isle Royale National Park and must register with a ranger and obtain a permit for their activities.

Weather And Precautions

Lake Superior's cold waters require that divers wear full wet suit or dry suit with hood, boots, and gloves. Lake Superior waters are calmest during June, July, and August, but thunderstorms and squall lines can spring up quickly.

Currents can cause temperature changes and reduce visibility with the silt they may carry. Extreme caution should be used if visibility is low, especially near sunken hulls, pilings, or other obstructions. Local current peculiarities can be caused by jetties, coves, and sandbars. Wind-generated currents can be strong and hazardous.

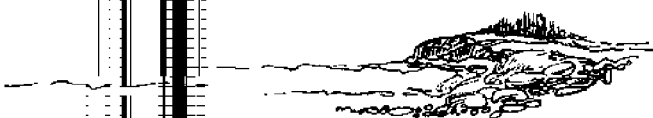
Dive according to your experience and skill. Wrecks may have projecting cables, tangled nets, and tight areas with little maneuvering room and hard-to-find exits. Dive with a buddy and use a dive flag. Don't dive when you are tired.

Emergency officials in the preserve areas have been trained to handle diving accidents and have well-established procedures for evacuating divers to hyperbaric chambers in Marquette and other Great Lakes locations.

Michigan law prohibits divers from taking artifacts from shipwrecks, just as artifacts cannot be taken from land-based historic sites, such as old forts or mining settlements. Take nothing but pictures and leave these historic sites intact for the enjoyment of other divers.

*. . . shining rocks and stones
of rare description.*

—Alexander Henry, 1769



Lake Superior Beaches . . .

Lake Superior's stony beaches are a delight. On sunny days the clear, greenish-blue water rippling over the smooth multi-hued stones creates a fabulous moving mosaic. Wet stones at the water's edge gleam in a wide array of colors, including shades of brown, red, gray, black, pink, blue, and green.



Agate, chert, jasper, epidote, quartz are just some of Superior minerals. Eroded by wind, water, and milky ice from bedrock dating back to the Precambrian, these rocks are some of the oldest on earth.

Michigan's state gem, and the oldest one found on Isle Royale. This stone is found elsewhere in the world. Also, chlorastrolite, a "green stone," (but not the volcanic one) is very rare and comprises Isle Royale's Greenstone. "Green-chlorastrolite is a lustrous green stone that has a mosaic pattern resembling the Stone Ridge),

Agates are Lake Superior's smooth stone with a gemstone. They can be found back of a turtle. Lake Superior strand, but best-known Point, Grand Marais, and they are on almost any end of the Keweenaw Peninsula. Whitefish is a very productive. Agates are a southwestern distinct concentric bands of color are particularly translucent. These bands are characterized by varying colors and not always

evident in an uncut stone, so it takes practice to identify agates on the beach. National, state, and local parks often enforce specific collecting rules, so check before you collect.

It is helpful to stop at a local rock shop or mineral museum to become familiar with Lake Superior's stones. Of particular renown is the A. E. Seaman Mineralogical Museum at Houghton, on the campus of Michigan Technological University. It is considered one of the best in the country.



Some stretches of shoreline are characterized by rocky cliffs. The most famous of these is the Pictured Rocks, just east of Munising. These cliffs of many colors rise 200 feet above the water. At their base waves have cut out caves and arches; their tops are crowned by white birches and other trees of the northern forest. Waves also dash against rocky shores at Presque Isle Park in Marquette and along the western edge of the Keweenaw Peninsula.

Sand Beaches

Not all of Lake Superior's shores are rocky. Sand beaches include those that edge Route 28 between Munising and Marquette, and at Bete Grise Bay on the Keweenaw Peninsula. Lake Superior also has impressive sand dunes, particularly the massive Grand Sable Banks and Dunes just west of Grand Marais in the Pictured Rocks National Lakeshore. These rise 350 feet above the lake and are accessible by road and trails. Dunes also occur along Great Sand Bay on the Keweenaw Peninsula.

A sandy beach rewards the beach walker with sand patterns made by wind and waves, tiny snail and fingernail clam shells, feathers, and animal tracks. Upper sand beaches exhibit plants particularly adapted to the sandy, breezy environment, such as succulent annuals, beach grass, sand cherry, and beach blueberries.



Other Beach Attractions

Driftwood is plentiful on many beaches and occurs in fascinating shapes, polished smooth and bleached gray.

breakware.

At night
or on moon
mirror. Clear
stars, entwin

backed star storms that replenish the beaches
supply of rocks and driftwood are
Bend against the driving wind
witness the awesome power of
ashing and plunging up a beach,
just before, curling along a

Displays of the breakers gleam white in the dark,
Peninsula's lit nights, the lake becomes a silvery
early when a moonless nights reveal a host of
shore, when by the Milky Way, its closely
tween you a flung across the skies like a scarf.

Winter
The moving
interesting
heaving
snow-borne
breakers en

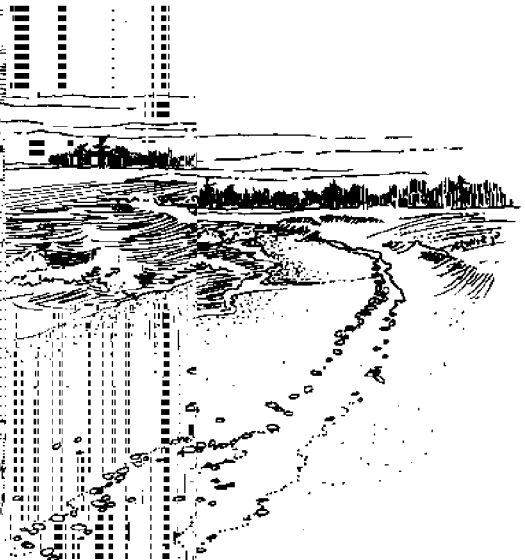
lighthouses the northern lights at the Upper

Handred latitude can be spectacular, particu-
are available viewed from the Lake Superior
federally there is nothing but water be-
private around the northern horizon.
walking on is also a time to enjoy the beach.

grinding ice pack assumes many
forms. When the lake is open, its
face contrasts with the still, ice-and-
world around it. Spray from
cases shoreline vegetation and
in ice.

Islands of Lake Superior shore
to the public, as part of state or
s. If you think you might be on
erty, be sure to inquire before

The fair beach.
with a fresh
exhilarating
and take in
the lake.



Weather

Most always on the lake than inland. Cooler and breezier on the open lake during June, very pleasant weather occurs are filled with July, and August. Afternoon warms the air with abundant sunshine that season temperatures are in the mid to upper 70s (°F) (Lake Royale). Usually several degrees cooler by afternoon, lake breeze readings in the 80s are common. Precipitation one to five days per average eight days per occurs on an average of one afternoon per month. It usually falls as a light drizzle or evening shower or as early in the morning with accompanying fog.

Since about 60-65° temperatures in summer (swimming except) and are generally too cold when the water temperature along sheltered beaches slowly and August temperature rises to 65° to 70° high some warm days.

On other side occur in May and September over a long and fall days, a breeze will keep you cooler and a hat and reach the 20s (°F) comfortable. In winter, temperatures are in the 10s (°F) on average.

Like Superior Beaches



Isle Royale . . .

Isle Royale is for those who seek wilderness. Sailors cruising the rugged shore, campers in the backcountry, canoeists drifting on inland streams and lakes, and tourists staying at the Rock Harbor Lodge will see a rugged, forested island little changed from primeval times. Humans have only been visitors here, to mine copper, fish, and cut timber. None of these enterprises was extensive or lasted long. Ruins of these activities, including 4,000-year-old mining pits left by early Native Americans, add interest to island walks. Yet wilderness prevails.

Isle Royale's ridge-and-valley topography, made of underlying rock strata, and susceptibility to effect weather creates a variety of ecological niches supporting different types of plant growth and wildlife typical of the "North Woods." The island's isolation has made it a well-known laboratory for observing natural balances in nature, the most famous being the wolf/moose relationship.



A visitor is likely to see moose, as well as snowshoe hares, and loons; the wolves are elusive, usually revealing their presence only by their howling.

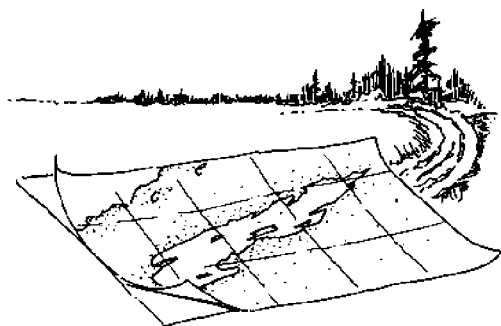
Isle Royale, an International Biosphere Reserve, is in Isle Royale National Park in the State of Michigan, about 65 miles northwest of the Keweenaw Peninsula. It is 50 miles long and 9 miles wide. It has 160 miles of foot trails (circles), numerous inland lakes, streams, and coves, and elevations reaching 750 feet above Lake Superior. Information centers, camping and boating supplies are available at each end of the island. At Rock Harbor on

the northeast end, lodging, meals, and house-keeping units are available, as well as interpretive trails and nature and history programs provided by park rangers.

Transportation to the island is provided by ship from Houghton and Copper Harbor, in Michigan, and from Grand Portage, in Minnesota. Small craft may be transported on all vessels. Seaplane service is provided from Houghton. Reservations for all transportation services are necessary. Your schedule should be flexible in case rough weather delays departures.

The park is open from mid-May through mid-October. The weather is generally cooler than that of Michigan's Upper Peninsula, with summertime highs rarely exceeding 80° F. Dense fog is common in the spring. There are no medical services on the island, so a good first aid kit is essential. Pets are not allowed, as pet diseases and parasites can be fatal to island wolves and other wildlife.

For more reading about Isle Royale and for practical trip-planning information, see *For More Information* (page 83).



*. . . the aurora borealis flashed
in the heavens, spreading out like
a vast plume of ostrich feathers
across the sky,
every minute changing
its beautiful and fanciful forms.*

—Frederick Marryat, 1837

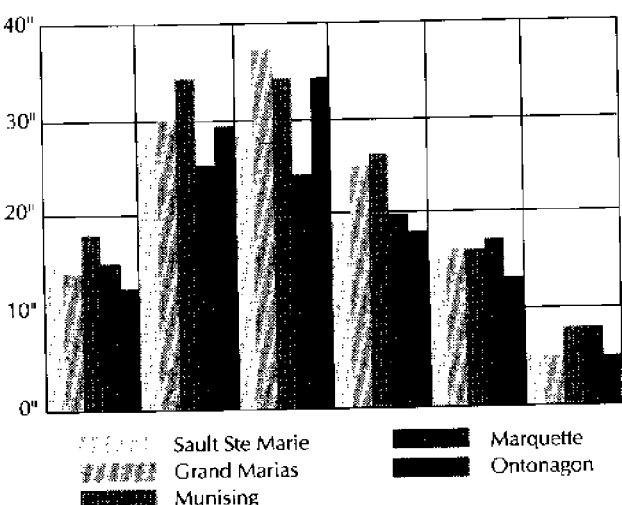


Winter Recreation . . .

Most of us may envision lovely summer days or crisp autumn afternoons when we think of vacationing in Michigan. But what about winter? Many people look forward to the stimulation of outdoor winter sports—Alpine and cross-country skiing, snowmobiling, snowshoeing, ice fishing, tobogganing, dog-sledding, or sightseeing.

The wilderness nature of the Lake Superior area is enhanced by a blanket of snow. What can compare to the sparkling beauty of the wooded landscape on a sunny winter day, the silence of a gentle snowfall in the forest, or the thrill of viewing the northern lights on a clear winter night?

SNOWFALL



The sheer amount of snow that falls on the Upper Peninsula—over 200 inches in the Keweenaw—is itself a marvel. Snow covers first-story windows and encases mailboxes and street signs. However, powerful snow removal equipment keeps the roads clear.

Alpine Skiing

Michigan's Upper Peninsula has the highest slopes between the Alleghenies and the Rockies and some of the best ski resorts in the Midwest. Some Upper Peninsula slopes offer a vertical drop of around 600 feet and runs of over a mile.

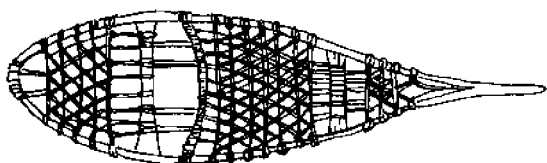
All resorts employ snowmaking capabilities that amplify the natural snowfall. Ski slopes are open by late November or earlier.

Lodging at Upper Peninsula ski resorts is available in a range of styles from motels and hotels to condominiums and chalets. Resorts offer a variety of eating facilities, ski lessons, and rentals. Other amenities include daycare centers, live entertainment, heated indoor pools, saunas, and jacuzzis.

The Upper Peninsula's ski jumping facilities are known worldwide. Pine Mountain at Iron Mountain and Suicide Hill at Ishpeming draw international ski jumping championship contests. The Copper Peak Ski Flying Hill near Bessemer is the only ski flying hill in the Western Hemisphere. It is the home of the International Ski Flying Tournament. The National Ski Hall of Fame is located in Ishpeming, where the United States Ski Association was founded.

Cross-Country Skiing

Cross-country skiing is one of the best ways to enjoy the landscape of the Lake Superior area. Groomed trails are available in almost any area of the Upper Peninsula, including ski resorts, state and national parks and forests, and recreation areas. Trails pass through silent hard-wood forests and snow-laden evergreens, along the Lake Superior shore, and around inland lakes. Many of the groomed trails are rated according to difficulty, and rental equipment, instruction, and trail maps are available. Cross-country ski races are held throughout the winter.



Snowshoeing

Learning to snowshoe is even easier than learning to cross-country ski. Snowshoeing is, therefore, an excellent beginning sport for anyone not yet sure whether they will enjoy the snowy outdoors. The Upper Peninsula's many hiking trails can be used for snowshoe trails, or you can strike off on your own. Falling or blowing snow can cover tracks quickly, so leave an itinerary behind and carry a compass, food, and warm clothing. Some parks offer guided snowshoe walks, and snowshoe races are becoming more common.

Snowmobiling

There are over 2,000 miles of groomed, marked snowmobile trails in the Upper Peninsula. The forests around Munising and Paradise and the Keweenaw Peninsula are key snowmobiling sites. Snowmobiles operating in Michigan must be registered (see *For More Information*, page 85). A more primitive form of transportation, dog-sledding, is gaining in popularity. Several towns sponsor dog-sled races during the winter.

Winter Camping

Winter camping is permitted in the state parks and forests, Pictured Rocks National Lakeshore, national forests, county and local parks, and private campgrounds. While camping at sites

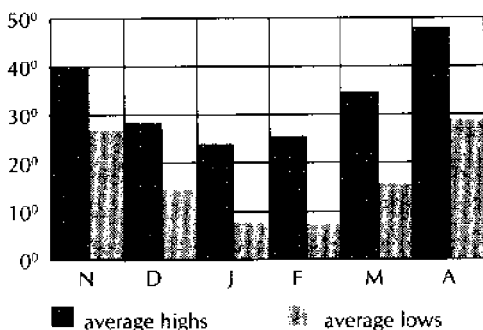
with electricity, heated bathhouses, and other amenities is possible, in many locations you may backpack in on snowshoes to find a secluded spot. Some state parks provide rustic cabins—a comfortable base of operations for cross-country skiing or snowshoeing.

Ice Fishing

Ice fishing enables fishing enthusiasts to continue their passion during the winter months. At least three months of Lake Superior ice fishing—January through March—are possible, with a longer season possible in shallow, sheltered bays and inland lakes. Anglers jig or bob hand-held lines for yellow perch, bluegills, and ciscos; employ tip-ups (reeled and flagged devices) for walleye, muskellunge, and lake trout; and spear northern pike.

Care must be taken to fish from ice strong enough to support you (at least four inches of new ice), to dress warmly, and to use a compass to avoid becoming disoriented if you are

WINTER WEATHER
Average High and Low Temperatures (°F)



Readings taken from Sault Ste. Marie, Grand Marais, Munising, Marquette, and Ontonagon.

some distance from shore. Stay off the ice when there is a strong offshore wind. The ice sheet may become detached and drift out into the lake.



Winter Sightseeing

As winter winds whip across Lake Superior, the beaches become zones of fantastic ice formations. Frozen spray forms icy caves, their entrances guarded by heavy icicles. Ridges, hummocks, pancake ice, and ice balls are some of the other formations you'll see. Lighthouses and jetties may become completely ice-covered, their icy decoration becoming more ornate as the winter progresses. Some interesting formations may be several hundred yards offshore, so bring binoculars. Bring at least one other person and stay off ice beyond the shoreline.

There are 150 waterfalls secluded in Upper Peninsula forests for snowshoers and cross-country skiers to discover. Icy spray coats nearby trees, and ice formations and snow decorate the falls like frosting on a cake. Several waterfalls, such as Presque Isle Falls

in the Porcupine Mountains and Tahquamenon Falls, are accessible in winter by car and a hiking trail.

Winter Precautions

Winter weather requires the exercise of caution and preparedness. Storms that dump heavy snow can come up quickly off Lake Superior. Be prepared to leave a wilderness area if a storm is imminent, and always carry a compass and adequate food and clothing to see you through an emergency.

A key to keeping warm is keeping dry, so wear several layers of water-absorbent clothes that you can peel off as vigorous exercise warms you up.

It's also important to generate heat by eating high-calorie foods. Drink plenty of hot liquids or soup to keep from becoming dehydrated. Keeping the body supplied with enough non-alcoholic liquid is essential to keeping warm. (Alcohol creates temporary warmth in the extremities, but takes warm blood away from vital organs.)

Be on the lookout for hypothermia (exposure) either in yourself or your companions. Early signs of hypothermia are uncontrollable shivering, clumsiness, and disorientation. It must be treated immediately. Stop your activity, find shelter, get into dry clothing, and drink something warm.

Always enjoy your winter outing with companions. Each should carry a whistle to aid keeping in touch or to signal an emergency.

Set realistic goals for your outdoor jaunt. Maintain a healthy respect for the northern winter and you will bring home happy memories of your outing in the Upper Peninsula's winter wilderness.

Winter Weather

During an average winter season about 100 to 130 inches of snow falls along the Lake Superior coast. Around Keweenaw Point the total snowfall decreases to about 70 inches while in the Porcupine Mountains average snowfall is about 170 inches. The first 6-inch snow depths are usually recorded in the first part of December, but occur a week or two earlier in the higher elevations. Depths of 6 inches or more can be counted upon for 100 to 130 days a season. This means that good conditions for cross-country skiing and snowmobiling should last through March in most years.

On the downhill slopes the season can be extended artificially, since minimum temperatures consistently drop to freezing or below from November through April. Maximum temperatures average 32° F or less on 20 to 27 days per month during December, January, and February, and remain below 40° on the average from November through March.



Land-Based Recreation . . .

The Lake Superior region offers ample opportunities for enjoyable outdoor sports such as camping, hiking, canoeing, and hunting.

Camping

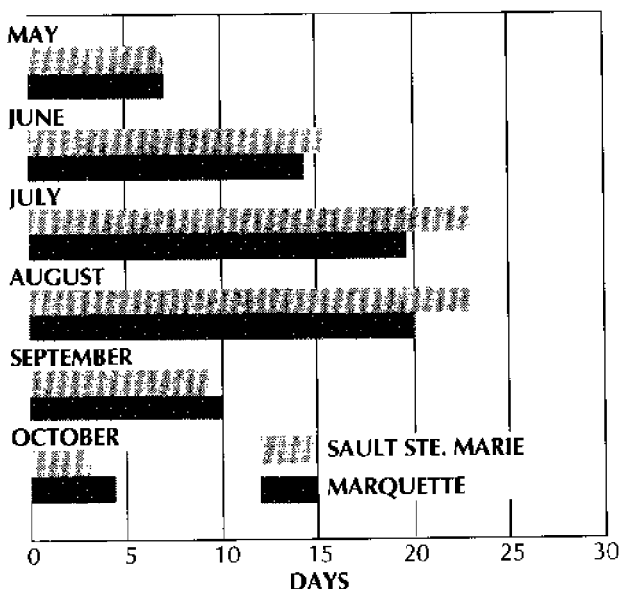
Upper Peninsula towns have comfortable, reasonably priced motels for visitors not equipped to camp. Lodges, resorts, cabins, and cottages are also available.

For those seeking a camping vacation, the Upper Peninsula offers more than 200 public and private campgrounds. There are campsites to suit every taste, from those seeking an easily accessible location to those willing to hike or canoe to a secluded spot. Generally, state and national forest campgrounds are more isolated and rustic than state park and private campgrounds.

In all cases, campground fees are reasonable. A wide range of services are offered, from primitive sites to those with electricity, flush toilets, and bathhouses. Cabins are available in a few state parks. Regulations basically require common courtesy and respect for the natural setting. Black bears are present throughout the Upper Peninsula, requiring campers to take precautions to protect their food.



WARM WEATHER DAYS



With 3 readings between 11 AM and 5 PM, warm weather days had:

- air temperatures of 65-90°F at least twice
- windspeeds less than 17 knots at least twice
- relative humidities less than 46% at least twice (when air temperature is more than 84°F)
- precipitation no more than twice

Campgrounds can serve as a base from which to explore a region of the Upper Peninsula, but they also offer their own attractions. Fishing, swimming, boating, canoeing, and trails are offered at many. Some, such as Bay Furnace National Forest Campground near Munising, have historic attractions. Others offer interesting scenery, such as a streamside seat for viewing Great Lakes ore carriers plying the St. Marys River, or easy access to waterfalls and beautiful forest scenery, such as in Porcupine Mountains Wilderness State Park.



Hiking

One of the best ways to enjoy the natural attractions of the Lake Superior area is on foot. Walking enables one to observe wildlife, plant life, and geologic features; to tune in birdsongs, the wind sighing through evergreen boughs, Superior's waves lapping the shore.

In spring, trout lily, clintonia, spring beauty, and other delicate wildflowers carpet the woodland floor. Colorful warblers flit through the trees. Frogs raise a mighty chorus.

Summer's warmer weather and fewer biting insects appeal to many, and crops of thimbleberries and huckleberries provide trailside meals. In autumn, colorful hardwoods, set off by the green of spruce and pine, create breathtaking views in every direction.

There are many good backpacking opportunities. Backpackers who wish to stick close to Lake Superior should consider the North Country Trail, which presently stretches across much of the Upper Peninsula near Lake Superior. Porcupine Mountains Wilderness State

Park has 85 miles of foot trails leading to spectacular scenic vantages, through virgin hemlock, and along lakes and waterfall-punctuated streams.

Travelers who wish to spend a few hours hiking might enjoy sections of the longer hiking trails or the climb up Sugar Loaf Mountain in Marquette to a spectacular view of lake, town, and forest below. Trails through Estivant Pines, a virgin forest near Copper Harbor, wind under 250–850-year-old white pines over 100 feet tall.



Some short trails to waterfalls and scenic overlooks encourage observation of natural features with interpretive signs or brochures.

Whether taking a long hike or a short walk, wear appropriate foot gear and have insect repellent along during spring and early summer. Respect for the solitude of other hikers and for the environment will result in a happy hiking experience for everyone.

Canoeing

Several streams in the Lake Superior watershed provide good wilderness canoeing. The rivers flow through terrain that is generally timbered, remote, and plentiful in wildlife, fish, and scenery. There are a few canoe rental establishments.

The Two-Hearted River and Tahquamenon River in the eastern Upper Peninsula, the Portage Lake Ship Canal across the Keweenaw Peninsula, and the Presque Isle River and Middle Branch Ontonagon River in the western Upper Peninsula are good for beginning and intermediate canoeists. The South and East Branch Ontonagon Rivers, Black River, and Sturgeon River require expert canoeing.



Portages around rapids, falls, log jams, and dams can be expected in any of the rivers. Some rivers are not negotiable during periods of high and low flow. Other canoeists and anglers are scarce, so you must plan your trip carefully to avoid the need for help.

Hunting

State and federal forests and corporate land open to the public add up to more than six million Upper Peninsula acres available for public hunting. This is two-thirds of the land area of the Upper Peninsula. In this expanse hunter density is low, and the wilderness setting provides hunting opportunities not available in southern Michigan or in neighboring states.

The Upper Peninsula is particularly known for its bear hunting. The most bear are taken in the westernmost counties, Gogebic and Ontonagon, but bear hunting is good throughout the Peninsula. Big game hunters will also find whitetail deer throughout the Upper Peninsula. Bobcat hunting is especially good in the eastern third of the Peninsula.

Bird hunters will find ruffed grouse throughout the Upper Peninsula. The best sharp-tailed grouse hunting is in the easternmost counties. Excellent woodcock and Canada goose hunting is possible in much of the Peninsula. The best duck hunting is along the St. Marys River.

Small game hunters can find snowshoe hare, gray squirrels, and other small game throughout the Upper Peninsula.

Weather Over Land

The weather is most cooperative for land-based activities from May through October. Usually days are warm, nights cool, winds light, and precipitation short-lived. Nighttime temperatures drop below freezing on about 5 to 10 days per month in May and October and 2 days or less from June through September. Summer nights often find readings in the 50s (°F). Daytime highs usually range from the mid to upper 70s during summer and are about 15° to 20° cooler in May and October. Sunshine is most plentiful in July when the sun is shining during 67 percent of the daytime hours.

From May through October about 2 to 4 inches of rain each month occurs along the coast on about 5 to 8 days per month. Thunderstorms occur on 3 to 6 days per month on the average. Rain is most likely during the late afternoon or evening and is often brief. Sometimes it occurs during the early morning as drizzle and may be accompanied by fog.



Sightseeing . . .

Lakeshore drives skirt much of Michigan's Lake Superior coast. In some instances these are secondary roads, but usually they are paved and provide views of the lake and access to the beach. For example, paved secondary roads edge the lakeshore from Sault Ste. Marie to Whitefish Point, allowing visits to Brimley State Park, Bay Mills Indian Reservation, and Iroquois Point lighthouse and museum.

State Routes 28 between Munising and Marquette and 26 between Eagle River and Copper Harbor, offer many unobstructed views of the lake. Route 64 from Ontonagon to Silver City is another paved lakeshore drive. U.S. Route 41 from L'Anse to Arnheim provides tremendous views across Keweenaw Bay to the rugged Huron Mountains. Although portions are still unpaved, the road from Deer Park to Grand Marais and through the Pictured Rocks National Lakeshore offers a medley of attractions, including lakeshore views, inland lakes, stands of white birches, and the Kingston Plains, an unusual landscape of cut-over white pine. Before traversing any unpaved road, check with local people on current conditions.

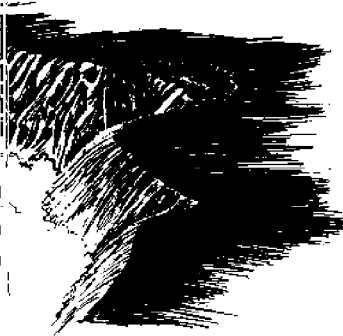
When the roads veer away from the lake, they usually cut through extensive forests. This feature makes the Upper Peninsula a popular destination for viewing fall colors. U.S. Route 41 through the center of the Keweenaw Peninsula is particularly renown for its arching canopy of brilliant autumn leaves. And don't overlook the secondary roads on the east side of the Keweenaw Peninsula. Lac La Belle, the ruins of a copper stamping plant at Gay, and outcrops of colorful red and cream Jacobsville sandstone at Jacobsville are some points of interest.



setting. Some are on
are challenging to look

Lighthouses

Lighthouse buffs will
Michigan's Lake Superi-
Roya!e. Built mostly
shipping, the lighthouses
safety on the lakes.



light and sound of flowing

150 waterfalls in the

Michigan. These include

foot-high Taquamenon

lls east of the Mississippi

high ribbon of water

of a rock-bound amphi-

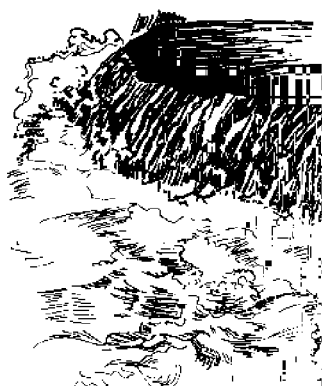
lls. There is a wide

to 40 feet in height, each

character and woodland

well-marked trails; others

ate.



Waterfalls

Those who love the s
water can find nearly
Upper Peninsula of M
the 250-foot-wide, 28
Falls, second largest fa
River, and the 70-foot
plunging from the top
theater at Munising Fa
variety of falls from 10

and 34 lighthouses along

rior shore, including Isle

the late 1800s to guide

ses are still essential to



The lights have been automated, and with lighthouse keepers no longer resident, many of the structures have been transformed into museums, displaying all aspects of Lake Superior history, including shipping, lumbering, mining, and daily life. These interesting displays, in addition to the architectural variety of the lighthouses themselves, add significantly to a tour of the Lake Superior shore.

Great Lakes Freighters

Those interested in Great Lakes shipping will find their best opportunities for viewing the 600-to-1,000-foot freighters at the Soo Locks at Sault Ste. Marie, Michigan. The U.S. Army Corps of Engineers has established an attractive park alongside the locks with viewing stands at the very edge of the locks. From here every aspect of the locking operation can be

observed and the awesome immensity of the freighters can be appreciated. An interpretive center describes the history and operation of the locks and posts the schedule of ships locking through. From the park, the Historic Locks Park Walkway leads strollers past several points of interest in one of the oldest towns in the United States to the *S. S. Valley Camp*, a Great Lakes freighter converted to a maritime museum. Excursion boats offer narrated tours of the waterfront and float through the locks and under the double arches of the two-mile-long International Bridge.

Wildlife

The extensive forests of the Lake Superior watershed harbor many wild animals, including such wilderness denizens as the timber wolf, black bear, bobcat, moose, fisher, and otter.



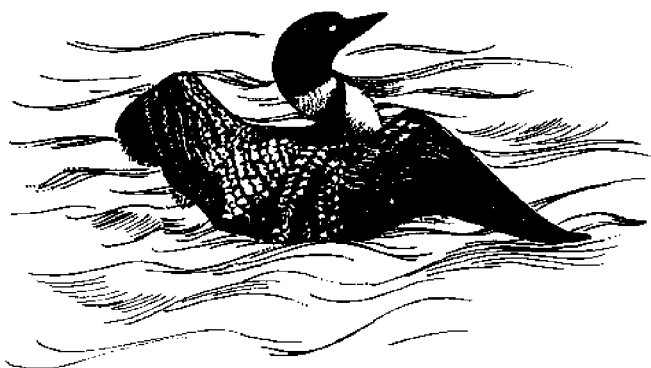
The likelihood of seeing these secretive creatures is slim, but the possibility exists. Black bears are the most likely to be seen. Sighting such an animal is a thrill, but remember these animals are indeed wild and are to be respected, not pestered or fed.

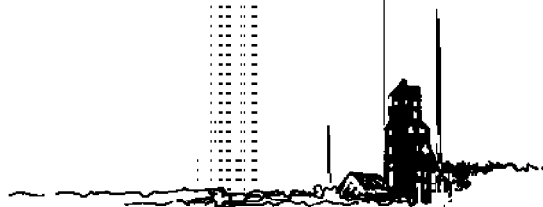
Bears are most often spotted along roads in forested areas. Deer are also seen along or near roadways, particularly at dusk. Watch for them feeding in the fields. Deer often travel in pairs or groups, so if one crosses the road ahead of you, watch for its companions following.

Birds are, as always, the most visible wild animals. Wilderness-dwelling birds you may see near Lake Superior are the bald eagle, pileated woodpecker, raven, and the common loon. With the exception of the bald eagle, these birds will probably be heard before they are seen. If you learn to recognize their voices, their vocalizations can lead you to their haunts.

Sandhill cranes nest across the Upper Peninsula. Look for these tall gray birds feeding in farm fields. Bold gray (Canada) jays are familiar to campers and picnickers as "camp robbers."

Staying watchful while driving and alert and quiet on woodland trails may reward you with treasured glimpses of Upper Peninsula wildlife.





History . . .

The 1849 California Gold Rush pales in comparison to the Upper Peninsula's iron and copper "rush" of the 1840s. More wealth was produced, more people were involved, and a more lasting impact on the land resulted. Today, from Munising in the west, the tourist will find fascinating reminders of the mining era. Impressive homes, ornate municipal buildings, and sturdy mining offices constructed of red sandstone and black-and-white "poor rock" (waste rock from copper mining) remain in use. Abandoned mining towns and operations invite exploration. Still-preserved mines and mining equipment are available for tours. Museums document and explain the technical, economic, and social aspects of life during these earlier times.

Human history in the Upper Peninsula began with the Native Americans, who hunted, fished, and mined the land since the Ice Age. Burial grounds, trails, and museum displays provide reminders of these ancient cultures. Several Native American communities continue in the Upper Peninsula today. The exploration and settlement of the area by Europeans are recalled in restored homes in Sault Ste. Marie and monuments to Father Marquette and Bishop Baraga in Marquette and L'Anse. Fort Wilkins State Park, at the tip of the Keweenaw Peninsula, preserves and interprets the U.S. Army fort built there in 1844. Relatively recent history is found north of L'Anse in Pequaming, a Ford Motor Company town established to provide lumber for station wagons made in Detroit.

Ethnic Influences

The European immigrants who flocked to the Upper Peninsula to mine ore and cut timber largely molded the society there today. The first immigrants were Cornish, who introduced the pasty, a meat pie that was quickly adopted by other ethnic groups. Swedish and Norwegian immigrants brought cross-country skiing and ski flying. The Finns, however, have had the greatest influence on the character of Upper Peninsula life, becoming the largest Finnish community in America. One of their contributions to all of American life is the sauna.

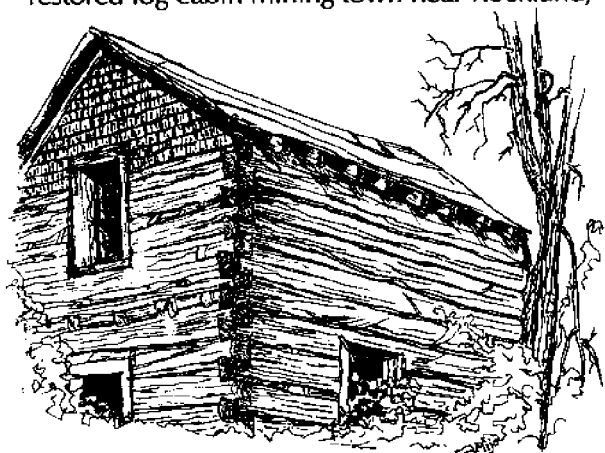
Iron and Copper Mining

Iron ore was discovered near Negaunee in 1844, and Negaunee, Ishpeming, and Marquette became important centers of iron ore trade. Open pit mining operations can still be observed in Negaunee, and the mammoth ore docks in Marquette still send tons of taconite (iron) pellets rattling down loading chutes into the holds of Great Lakes freighters. The Marquette County Historical Museum describes past and present mining techniques and the area's development. Ask for directions to Jasper Knob to find a fabulous red-and-gray striped outcrop of ore-bearing rock above Negaunee. In the southwestern Upper Peninsula, the Gogebic Iron Range supported Wakefield, Bessemer, and Ironwood, where historic sites remain.

The Keweenaw Peninsula and Baraga and Ontonagon Counties were the center of copper mining activity, which began in 1841. The area today is known as Copper Country.



Calumet, once the cultural and economic center of Copper Country, is an impressive town of wide streets and ornately trimmed red sandstone buildings. Old Victoria, a charming restored log cabin mining town near Rockland,



provides a peek at everyday life in the past. Central, north of Calumet, is a particularly interesting ghost town, because the inhabitants' descendants return annually to worship in the church. (Old buildings in many ghost towns currently serve as summer camps—please respect private property.) Look-alike company houses line the streets of Mason, near Torch Lake, while in nearby Lake Linden stand the imposing homes of merchants and mine officials. Museums in Calumet, Houghton, Lake Linden, Ontonagon, and other towns describe the copper mining history. A new national park, the Keweenaw National Historic Park, has been established with headquarters in Calumet. This park ensures the preservation of historic sites and will establish interpretive facilities and activities.

Materials at Highway Travel Information Centers and local chambers of commerce describe museums, mines, and other historic sites, their locations, hours, and fees.

Role of Lake Superior

Key to the early development and settling of the Upper Peninsula was Lake Superior itself, which provided waterborne access to the area. Travel on the lakes was often treacherous, but far more manageable than northward treks through the then heavily forested land.

By 1849, ships on Lake Superior began to be assisted by lighthouses marking dangerous shoals and guiding vessels through fog and snow. The U.S. Coast Guard established life-saving stations manned by well-drilled, courageous men. Today, many of these red-roofed, white clapboard shoreline outposts still stand. The station at Grand Marais, now part of the Pictured Rocks National Lakeshore, houses a museum that describes how the men of the life-saving service saved lives, cargo, and ships.

*All at once the voyageurs
burst out into one of their simple and
melodious boat-songs. . .*

—Henry Rowe Schoolcraft, 1851



Traveling Tips . . .

Superhighways bring Michigan's Lake Superior shore within a day's drive for any Michigan resident, northern Illinois, Indiana, Wisconsin, and Ohio residents, eastern Minnesota and Iowa residents, and many Canadian residents. The Circle Tour around Lake Superior introduces all the varied scenery of the Superior shore. In addition to the attractions in Michigan described in this booklet, Wisconsin offers the beautiful Apostle Islands National Lakeshore; Minnesota the fascinating port city of Duluth and the scenery, lighthouses and waterfalls of its "North Shore;" and Canada an escape into the boreal forest, mining and lumbering towns, and rugged scenery. Plan for more than a week, or try a portion of the tour each year.

Roads

In the Upper Peninsula, you will find good paved roads to most major points of interest. A look at the state map will reveal large areas without any roads indicated. These areas are largely forested, lake-dotted wilderness, crossed by gravel or dirt roads. The visitor looking for a wilderness camping or fishing experience or even a few hours of exploration and solitude will need county maps. These show the roads and points of interest that are not generally publicized (see *For More Information*, page 84).

If you do not have a four-wheel drive vehicle with plenty of clearance, be sure to check with local people about the condition of



the backcountry roads. Many are quite passable with a regular automobile, but some are too rough or are difficult to negotiate in wet weather.

Wilderness Safety

Black bears inhabit the Upper Peninsula's forests. Please enjoy them as wild animals and do not try to feed them. For your safety, do not interfere with their activities. Leave cubs alone; a protective mother is most likely not far away. If you camp, hang your food out of the bears' reach.

Even though most of the water in the Upper Peninsula and on Isle Royale looks pristine, it should be boiled before it is drunk to kill tiny organisms that can cause intestinal disorders. If you travel with a dog, be sure it does not contaminate the waterways. Dogs are prohibited on Isle Royale. Check with officials in charge of other federal lands for regulations regarding pets.

If you are outdoors in the spring and early summer, take insect repellent along. Mosquitoes will be common near water and in damp forests; black flies hang around cold, fast-flowing streams.

The lure of the wilderness brings with it the need for responsibility and self-sufficiency. Someone else may not be along for a while if you get stranded. If you go exploring, learn all you can about conditions, fill the gas tank, and take along first aid supplies, food, warm clothing, and water. Be prepared, and then enjoy to the fullest the beauty of the northern forest.

Lake Superior lay before us.

—Henry Rowe Schoolcraft, 1851



For More Information . . .

You may obtain additional specialized information and literature from the sources listed on the following pages. Please contact the source for prices. When no source is listed, the book should be available in bookstores and libraries.

Addresses for these frequently cited sources are given at the end of this section:

Michigan Department of Natural Resources (MDNR)
Michigan Sea Grant College Program
Michigan Travel Bureau
Michigan United Conservation Clubs (MUCC)
National Ocean Survey
Upper Peninsula Travel & Recreation Association (UPTRA)

TRAVEL INFORMATION

Michigan Travel Bureau

General booklets on recreation in Michigan, pamphlets and directories on specific activities, and detailed calendar of events for the current year.

Michigan Chamber of Commerce

Provides addresses and phone numbers of chambers of commerce for the areas of interest to you.
517/371-2100

Michigan Department of Natural Resources (MDNR), Information Services Center

Provides a variety of brochures about Michigan outdoor sports.

Highway Travel Information Centers

New Buffalo	I-94 at Indiana-Michigan line
Coldwater	I-69 at Indiana-Michigan line
Dundee	US-23 near Ohio-Michigan line
Monroe	I-75 near Ohio-Michigan line
Port Huron	I-94 at Canada-Michigan line
Clare	US-27 north of Clare
Mackinaw City	M-108 at Straits of Mackinac
Sault Ste. Marie	I-75 at Canada-Michigan line
Ironwood	US-2 at Wisconsin-Michigan line
Menominee	US-41 at Wisconsin-Michigan line

ramps, e

GUIDES

Blue Edge of Summer

Scharfenberg

guide for Michigan's shoreline.

Hit Lakes Guidebook—Lake Superior & Western

Whigan

George Cantor

top attractions, suggests walks and scenic
includes maps.

Interior Circle Tour Travel Guide

Superior Tourism

Injurt St.

TRAVEL Bay, Ontario, Canada P7A 4T7

The Book: A Guide to Hotels and Motels

by Dogs: Travel Bureau

1000 Islands: A Guide to Cabins and Cottages

The Great Travel Bureau

by George G

Superior Way: A Cruising Guide to Lake Superior

Lake Superior Press

North o

79 N. C. WI 54806

Thorough, extensive cruising guide to Lake Superior, weather and cruising tips and list of harbors

Michigan Storages.

Michigan: 2011-2012

Activity Guide—Continued

— **Вопросы и ответы**

MD 21401

—**JOHN J. HARRIS, MD**
—**JOHN A. HARRIS, MD**

2009
The Journal of

...the supplemental advice, confusing conditions, cross-lake and

Edna's Sad shore attractions. Updated yearly

Box 472^d

Agitation

1. **התאמה:** $\frac{1}{2} \times 100\% = 50\%$
 2. **התאמה:** $\frac{1}{2} \times 100\% = 50\%$

Brood of the

2001-2002

3

Water:

Water/Wa

93 Mai

Аппарат

800.368

For More Information 75

Yachtsman's Guide to the Great Lakes

Seaway Publishing Company

16 S. Elm St.

Zeeland, MI 4946

Annual publication listing Great Lakes ports and harbors, with emphasis on small craft services. Short feature article on each lake.

Michigan Harbors Guide—MDNR

Describes each of Michigan's harbors of refuge.

Michigan Boat Launching Directory—MDNR

Lists public launching sites on the Great Lakes and inland lakes.

Nautical Charts—National Ocean Survey

Catalog for Great Lakes charts, including coastal charts and charts of harbors, river mouths, and connecting waterways.

Canadian Nautical Charts and Publications

Hydrographic Chart Distribution Office

P.O. Box 8080

1675 Russell Rd.

Ottawa, Ontario, Canada K1G 3H6

Coast Pilot 6—National Ocean Survey

Current information on Great Lakes coasts too detailed for nautical charts. Monthly supplements May-October.

Marine Weather Services Chart Great Lakes—Michigan and Superior—National Ocean Survey

Information on NOAA weather radio stations, Coast Guard weather broadcasts, and MAFOR and LAWEB broadcasts.

Light List, Vol. IV-Great Lakes

Superintendent of Documents

U.S. Government Printing Office

Washington, DC 20402

202/783-3238

Location of lights, buoys, radio beacons, and other navigational aids.

Navigational Rules, International-Inland

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
202/783-3238

Unified Rules Study Guide and Ready Reference

Houston Marine Consultants, Inc.
1600 20th St.
Kenner, LA 70062
An interpretive guide for the above navigational rules.

Federal Requirements for Recreational Boats

Office of Boating, Public and Consumer Affairs
U.S. Coast Guard
Washington, DC 20593
Coast Guard boating regulations and requirements for
safety equipment, lights, and loading. Pub. No. CG-290.

Registration Information

Michigan Waterways Commission
P.O. Box 30028
Lansing, MI 48909
517/373-0626

A Guide to Safe Boating in Michigan

MDNR, Marine Safety Division
Michigan boat registration, equipment, and operating
requirements.

Superior Boating Safety

Minnesota Sea Grant Extension
208 Washburn Hall
University of Minnesota
Duluth, MN 55812
Reviews types of craft, safety equipment, boat operation,
how to handle emergencies, and sources of more
information.

CAMPING

State Campgrounds

MDNR, Parks Division

MDNR, Forest Management Division

National Forest Campgrounds

Hiawatha National Forest

(see PARKS AND FORESTS for addresses)

Comfort Below Freezing

by Robert McQuilkin

Describes how to enjoy winter camping.

True Bear Tales

by David Young

Golden Oak Books

605 Michigan St.

Ontonagon, MI 49953

Helpful information for those in bear country.

CANOEING

Canoeing Michigan Rivers

by Jerry Dennis & Craig Date

Maps and descriptions of good canoeing rivers.

Lake Superior State Forest

Has information on eastern U.P. rivers.

Ottawa National Forest

Has information on western U.P. rivers.

(see PARKS AND FORESTS for addresses)

CHARTERS AND CRUISES

Michigan Charterbook

Michigan Travel Bureau

Lists ports, addresses, phone numbers, and boat information for fishing, excursion, diving, and duck hunting charterboats.

Soo Lock Boat Tours

500 East Portage Avenue

Sault Ste. Marie, MI 49783

906/632-2512

May-October; reservations not required.

Pictured Rocks Cruises

Box 355

Munising, MI 49862

906/387-2379

May-Oct., weather permitting; reservations not required.

Also provides access to Grand Island.

Isle Royale Cruises

(see section on ISLE ROYALE)

DIVING**Divers Guide to Michigan**

by Steve Harrington

Maps, LORAN coordinates, depths, ship descriptions, skill levels, emergency information, and local accommodations for all Michigan Great Lakes dive sites.

National Diving Accident Network

919/684-8111

24-hour emergency phone to help arrange consultation, transportation, and treatment of diving accidents.

Several Titles on Lake Superior Shipwrecks

by Frederick Stonehouse

Contact Avery Color Studios, Au Train, MI 49806, for list of titles.

Lake Superior Shipwrecks

by Julius F. Wolff, Jr.

Lake Superior Port Cities, Inc.

P.O. Box 16417

Duluth, MN 55816-0417

The story of hundreds of Lake Superior wrecks, with photos, charts, bibliography.

Diver Education Series

Michigan Sea Grant

Series of booklets on under-ice diving, thermal protection, and many other scuba topics. Contact Michigan Sea Grant for complete list of titles.

File—MDNR—517/373-1280

Species, seasons, regulations, special

FISHING

Michigan Fishing Guide

Information on licensing and Fishing Guide

waters, and field offices

Seasonal opportunities, public lands.

Upper Peninsula Hunting

UPTRA

Species Salmon and Trout

Fishing hot-spots, season

Know Your Great Lakes

MDNR, Fisheries Division How to Catch Them

Identification guide

Great Lakes species and successful

Michigan Fish and Wildlife

MDNR, Fisheries Division

Habits of common fish Charters

fishing methods: boat

Fishing charter boats, their ports,

Fishing and Special

Type of fish.

Michigan Travel Bureau

Michigan's licensed Great Lakes

captains, sizes, and illustrations, and methods for

fish.

Angler's Guide to

Maps, charts, color

Fishing Hotline—517/373-0908

catching 27 popular

Michigan

MDNR 24-Hour Fish

Conservation Clubs

Trout Streams of

Michigan. United

Michigan's 50 trout streams.

P.O. Box 30235

Lansing, MI 48909

Handbook

Where and how to

Division

Beginner's guide to ice fishing

Michigan Ice Fishing

MDNR, Fisheries Division

Concise, illustrated

and Magic

techniques.

Warm, and catch all kinds of fish.

Ice Fishing, Methods

by Steven Griffin

Fish—Michigan Sea Grant

How-to-set-up, stay

hook fish to reduce contaminants.

Eating Great Lakes

How to clean and

on

GUIDES

Most books listed below are available in bookstores. The standard field guides by Peterson and Golden Books cover birds and flowers of Michigan.

Know Your Ships

Marine Publishing Company

P.O. Box 68

Sault Ste. Marie, MI 49783

Directory to Great Lakes vessels, with a guide to stack markings and flags.

Fall Beachcombing

Michigan Sea Grant

Describes rocks, plants, and animals of Michigan's beaches. Lists guides and references.

The Mushroom Hunter's Field Guide

by A. Smith & N. Weber

Michigan Wildflowers in Color

by Harry C. Lund

Michigan Trees

Classic guide by Charles W. Otis.

Updated by Burton V. Barnes & Warren H. Wagner Jr.

HANDICAP ACCESS

MDNR Recreation Division

Recreation Services Branch

P.O. Box 30257

Lansing, MI 48909

HIKING

Michigan Trail Atlas

by Dennis Hansen & Danforth Holley

Maps and descriptions of 300 hiking and cross-country skiing trails.

North Country Trail

MDNR, Forest Management Division

Detailed map, general regulations, tips.

Porcupine Mountains Wilderness State Park

RR 2, M-107

Ontonagon, MI 49953

906/885-5798

Topographic Quadrangle Maps—State Index Map

National Cartographic Information Center

U.S. Geological Survey

Reston, VA 22092 or

MDNR, Information Services Center.

HISTORY**A Most Superior Land**

Illustrated, entertaining recap of the Upper Peninsula's logging, copper, iron, and ethnic history.

The Northern Lights

by Charles K. Hyde

History of and guide to Michigan's Great Lakes light-houses. Illustrated with color photos.

Information & Guidebooks on Historic Districts & Sites

Michigan History Division

717 W. Allegan

Lansing, MI 48918

517/373-0510

HUNTING**Michigan Hunting Guide**

MDNR

Bird and game seasons, special seasons, definitions, and field offices.

State Game Areas Maps

MDNR, Wildlife Division

517/373-1263

Michigan Wildlife Newsline

517/373-WILD

ISLE ROYALE

GENERAL INFORMATION

Isle Royale National Park

Houghton, MI 49931

906/482-3310

Isle Royale Natural History Association

(same address as above)

906/482-7860

Publications, videos, and posters about Isle Royale.

ISLE ROYALE CRUISES AND FLIGHTS

(Reservations necessary)

Houghton to Rock Harbor

Isle Royale National Park

Houghton, MI 49931

906/482-3310

Copper Harbor to Rock Harbor

Isle Royale Ferry Service

Box 24

Copper Harbor, MI 49918

906/289-4437 (summer)

906/482-4950 (winter)

Grand Portage, Minnesota, to Windigo

Grand Portage-Isle Royale Transportation Line Inc.

1507 N. First St.

Superior, WI 54880

715/392-2100

Circumnavigates Isle Royale; you may board or disembark at points on the island.

Isle Royale Seaplane Service

P.O. Box 371

Houghton, MI 49931

906/482-8850 (mid May-September)

Day boat trips between island points.

ISLE ROYALE LODGING

National Park Concessions, Inc.

906/337-4993 (summer)

502/773-2191 (winter)

MAPS

Michigan Highway Map

Michigan Department of Transportation

425 Ottawa St.

Lansing, MI 48909

Available at Highway Travel Information Centers.

Mapbook of Michigan Counties

Full color maps with parks, campgrounds, fishing sites, and other recreational facilities indicated.

Index to Topographic Maps

(see section under HIKING)

PARKS AND FORESTS

Hiawatha National Forest

2727 N. Lincoln Rd.

Escanaba, MI 49829

906/372-4422

Ottawa National Forest

Ironwood, MI 49938

906/932-1330

Copper Country State Forest

U.S. 41 North

Baraga, MI 49908

906/353-6651

Lake Superior State Forest

P.O. Box 445

309 W. McMillan Ave.

Newberry, MI 49868

906/293-5131

Michigan State Parks

MDNR, Parks Division

Lists parks, facilities, features, and procedures.

SKIING

The Cross-Country Ski Book

by John Caldwell

Equipment, technique, clothing, training, and racing.

Michigan Trail Atlas

(see under HIKING)

Winter Travel Planner

Michigan Travel Bureau

Describes Michigan's downhill skiing areas.

SNOWMOBILING**Winter Travel Planner**

Michigan Travel Bureau

Locations and length of groomed snowmobile trails.

Trail Maps—MDNR, Information Center

Detailed maps of trails. Please specify area.

Registration Information

Michigan residents contact your local Secretary of State's office. Out-of-state residents call 517/322-1473.

WATERFALLS**Michigan Waterfalls**

Michigan United Conservation Clubs

Descriptions of Upper Peninsula waterfalls, with photos, maps, and directions.

WATER SAFETY

Lightning and Boats—Michigan Sea Grant

Describes how to reduce chance of damage on boats from lightning.

Survival in Cold Water: Hypothermia Prevention

Minnesota Sea Grant Extension

208 Washburn Hall

University of Minnesota

Duluth, MN 55812

Describes hypothermia symptoms, how to increase survival time.

Get a Grip on Ocean Motion

Michigan Sea Grant

Describes the causes of seasickness and a variety of preventative and treatment measures.

ADDRESSES OF FREQUENTLY CITED SOURCES

Michigan Department of Natural Resources (MDNR)

P.O. Box 30028

Lansing, MI 48909

517/373-1220

Michigan Sea Grant Communications

2200 Bonisteel Boulevard

Ann Arbor, MI 48109

313/764-1138

Michigan Travel Bureau

P.O. Box 30266

Lansing, MI 48909

800/292-2520

Michigan United Conservation Clubs

MUCC Outdoor Library

Box 30235

Lansing, MI 48909

800/777-6720 (in Michigan only)

National Ocean Survey

Distribution Division C44

Riverdale, MD 20840

301/436-6990

Upper Peninsula Travel & Recreation Association (UPTRA)

P.O. Box 400

Iron Mountain, MI 49801

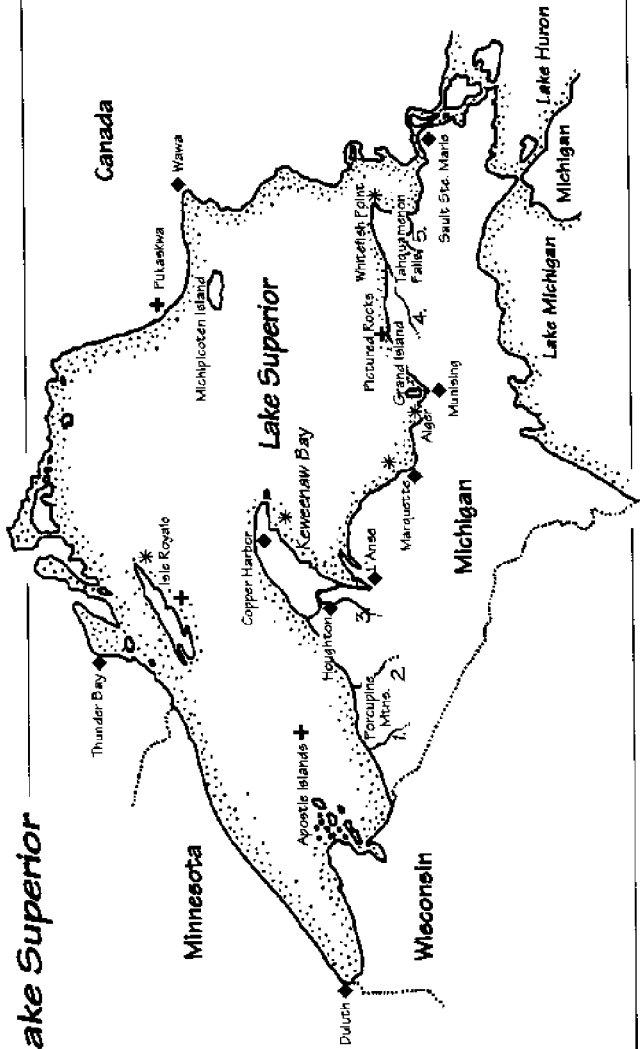
906/774-5480

800/562-7134

Lake Superior Facts	
Length	350 mi/63km
Breadth	160 mi/259 km
Depth	489 ft/149m average 1,335 ft 407 m maximum
Volume	2,934 cu mi/12,230 cu km
Water Surface Area	31,699 sq mi 82,100 sq km
Drainage Basin Area	49,305 sq mi 127,700 sq km
Shoreline Length	2,980 mi/4,795 km (includes islands)
Elevation	600 ft/183 m
Outlet	St Marys River to Lake Huron
Detention Time	191 years
Population	147,000 (Canada) 558,000 (U.S.)



Lake Superior



National Parks and Lakeshores +

Pukaskwa
Apostle Islands
Pictured Rocks
Isle Royale

Rivers

1. Presque Isle River
2. Ontonagon River
3. Sturgeon River
4. Big Two-Hearted River
5. Tahquamenon River

Bottomland Preserves *

Whitefish Point
Alger
Marquette
Keweenaw
Isle Royale

The Explorers' Lake Superior

This map is a detail of "Carte des Lacs du Canada," by Jacques-Nicolas Bellin, published in 1744 in Charlevoix's *Histoire de la Nouvelle France*. Although Bellin was a scrupulous mapmaker for the Service Hydrographique de la Marine in Paris, this map shows five fictitious islands, named for various French government ministers. Bellin probably based his cartography on



Map courtesy of William L. Clements Library, University of Michigan

unpublished maps by Louis Denys de La Ronde, a French naval captain who explored in the Great Lakes region in the 1730s. La Ronde may have created these islands to flatter his superiors in Paris. Bellin may then have copied them, and because of his reputation, the islands remained on Lake Superior maps for 75 years—until the early 1800s.

INDEX

A	
Alger Preserve	27
Alpine Skiing	42
Autumn	5
B	
Beach Attractions	34
Beach Weather	36
Boating	9
Boating Accommodations	11
Boating Precautions	18
Boating Weather	15
C	
Camping	50
Canoeing	54
Craft	11
Cross-Country Skiing	43
Cruises and Excursions	14
D	
Diving	25
Diving Weather and Precautions	28
E	
Ethnic Influences	64
F	
Fishing	21
Fishing Weather	23
Fog	17
G	
Great Lakes Freighters	60

H

Historic Map	89
Hiking	52
History	63
Hunting	55

I

Ice Fishing	45
Isle Royale	28/37

K

Keweenaw Preserve	28
-------------------	----

L

Lake Superior Beaches	31
Lake Superior Facts	87
Lake Superior Map	88
Land-Based Recreation	49
Lighthouses	59

M

Marquette Preserve	27
Metric Conversions	93
Mining—Iron and Copper	65

R

Roads	70
-------	----

S

Sailing Winds	12
Sailing Weather Days	15
Sand Beaches	34
Sightseeing	57
Snowfall	42

Snowmobiling	44
Snowshoeing	44
Spring	7
Spring and Fall	18
Stream Fishing	22
Summer	4
T	
Travel Tips	69
V	
Vacation Weather	3
W	
Waves	16
Waterfalls	59
Weather Over Land	56
Whitefish Point Preserve	27
Wilderness Safety	71
Wildlife	61
Winds	16
Winter	6
Winter Camping	44
Winter Precautions	47
Winter Sightseeing	46
Winter Weather	48

METRIC CONVERSIONS

TEMPERATURE

Fahrenheit	Celsius
0°	-18°
32°	0°
90°	32°

If you know:

°F, subtract 32, multiply by $\frac{5}{9}$ to get °C.

°C, multiply by $\frac{9}{5}$, add 32 to get °F.

DISTANCE

Inches	Centimeters	Miles	Kilometers
1	2.54	1	1.6
10	25.4	25	40
20	50.8	55	88

If you know:

inches, multiply by 2.54 to get **centimeters**

centimeters, multiply by 0.4 to get **inches**.

miles, multiply by 1.6 to get **kilometers**.

kilometers, multiply by 0.62 to get **miles**.

VOLUME

U.S. Gallons	Imperial Gallons	Liters
1	.83	3.8
10	8.3	37.8
20	16.6	75.6

If you know:

U.S. gallons, multiply by 0.83 to get **imperial gallons**.
multiply by 3.8 to get **liters**.

liters, multiply by 0.26 to get **U.S. gallons**.
multiply by 0.22 to get **imperial gallons**.

imperial gallons, multiply by 1.2 to get **U.S. gallons**.
multiply by 4.54 to get **liters**.

Written by:

Martha Walter, Michigan Sea Grant

Richard DeAngelis, National Oceanographic Data Center

Designed, illustrated, and produced by:

Millie J. Flory, Michigan Sea Grant

Edited by:

Ron Kinnunen, Carol S. Allaire, Michigan Sea Grant

Meteorological Data by:

National Climatic Data Center

Inspiration for illustrations was based on photographs by Millie Flory, Martha Walter, and David Jude, and from Michigan Sea Grant files. The illustration on page 22 is of a variation of the classic eastern streamer "Grey Ghost," created and tied by Mark S. Allaire.

The authors wish to acknowledge the assistance of Tom Bathey, Ray Clark, Lily Haataja, Wesley Myllyla, Jim Rooks, Minnie Scott, Ralph Wilcox, and many other residents of Michigan's Upper Peninsula.

Dark behind it rose the forest,

Rose the black

and gloomy pine trees,

Rose the firs with cones

upon them:

Bright before it beat the water,

Beat the shining Big-Sea Water.

—Henry Wadsworth Longfellow

**Learn about outdoor activities
and weather
along Michigan's Lake Superior shore.**

The Lake Superior coast offers wilderness beauty of the present and fascinating history of the past. This traveler's guide will help you enjoy your vacation to the largest of North America's inland seas.

Lake Superior Recreation and Weather presents a host of activities for boaters, anglers, divers, hikers, campers, beach-combers, winter sports enthusiasts, sight-seers, and history buffs.

Easy-to-read charts and accompanying text describe the weather you can expect in all four seasons of the year. Other features are safety information, maps, and an extensive listing of additional sources of information.

Lake Superior Recreation and Weather: A Four Season Guide was produced by Michigan Sea Grant, which has been providing research and education toward better stewardship of the Great Lakes for over 25 years. Weather information and charts are by the National Oceanic Data Center.



Michigan Sea Grant College Program

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