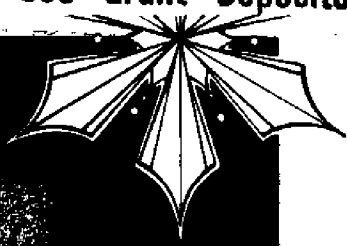


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**Lake
Huron**

**Recreation
& Weather**

a four-season guide

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NOTE: These charts present conditions for Saginaw, Oscoda, and Alpena. Saginaw's climate is similar to the Thumb's. Oscoda's represents the mid-coastal region. Alpena's represents the northern area, including the Lake Huron shore of the Upper Peninsula, which may be a couple degrees colder in mid-winter and slightly warmer in summer.

For the **WATER TEMPERATURES** chart, Port Huron, Harbor Beach, and Mackinaw City are the locations for which data are available.

The following symbols are used in some charts:

\leq = less than or equal to

\geq = more than or equal to



Produced by:

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National Oceanographic Data Center
(Branches of the National Oceanic and
Atmospheric Administration)

Meteorological Data by:

National Climatic Data Center

WELCOME

All year long, Lake Huron offers adventure and relaxation, camaraderie and solitude, wilderness and luxury along some 3,000 miles of shoreline. Called "the bluewater" by the Indians, Lake Huron is the fifth largest freshwater lake in the world and second largest of the Great Lakes. Its watershed is rich with thick forests, scenic rivers, expansive beaches, and parks ranging from rugged to tranquil. During all four seasons, the Lake Huron area draws vacationers for swimming, sunbathing, beachcombing, fishing, boating, diving, hiking, camping, bicycling, skiing, ice skating, and snowmobiling. There is always something new to discover — an isolated cove, a striking rock cliff, a wrecked ship, a buried flint, a rare orchid. History comes alive in restored lumbering towns, old forts, lighthouses, and museums. Industry tours, pick-your-own farms, arts and crafts fairs, festivals, fishing derbies, and sailing and snowmobiling races abound.

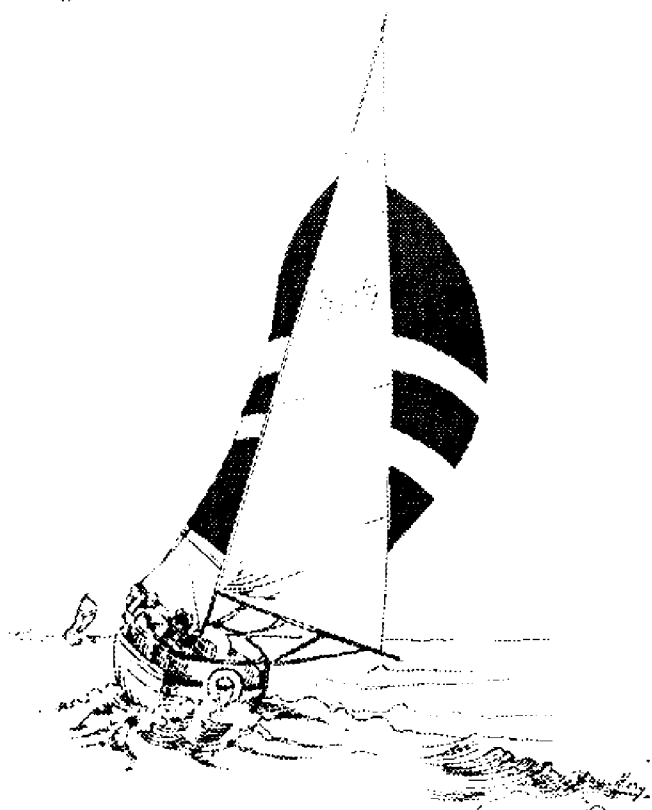
Variety spices Lake Huron's weather daily, seasonally, and annually, providing ever-changing scenes of land, sea, and sky. In autumn crisp breezes rustle the brilliant burgundy, cinnamon, and gold leaves, which usher in the snows of winter. Then, cool spring rains and sunlight awaken flowers and trees, filling the air with lush "new green" smells. Summer days are warm, but nights are cool. Along the shore, waves rhythmically flow onto sandy beaches, break against rocks, or roar mightily under dark skies.

This guide describes the recreation you can enjoy and the kind of weather you can expect along Lake Huron's shore. Specific spots and activities mentioned indicate the opportunities available but are not a complete list of things to do and places to go. Sources of more detailed information are listed at the back of the brochure.

Enjoy Lake Huron!

WATER ACTIVITIES

Boating — Lake Huron's bays, rivers, and open waters offer relaxation and adventure under shifting breezes and variable skies. Whether you are cruising the Michigan coast to Mackinac Island, sailing in Thunder Bay, or hopping islands in the North Channel, May through September offer many fine boating days. Racing occurs all summer along the coast, climaxed by the prestigious Port Huron to Mackinac Race in July.



Sailors cruising the western shore of Lake Huron can enjoy the solitude of sandy beaches and pine forests, yet find safe harbors only 15 to 30 shoreline miles apart. These harbors offer docking facilities and frequently provide fuel and other services. Boaters can stop to fish or to visit the inland attractions nearby. Off the Upper Peninsula, boaters can cruise among the rocky coves of the Les Cheneaux Islands. To the east, Drummond Island's Potagannissing Bay offers blue-green waters studded with emerald islands.

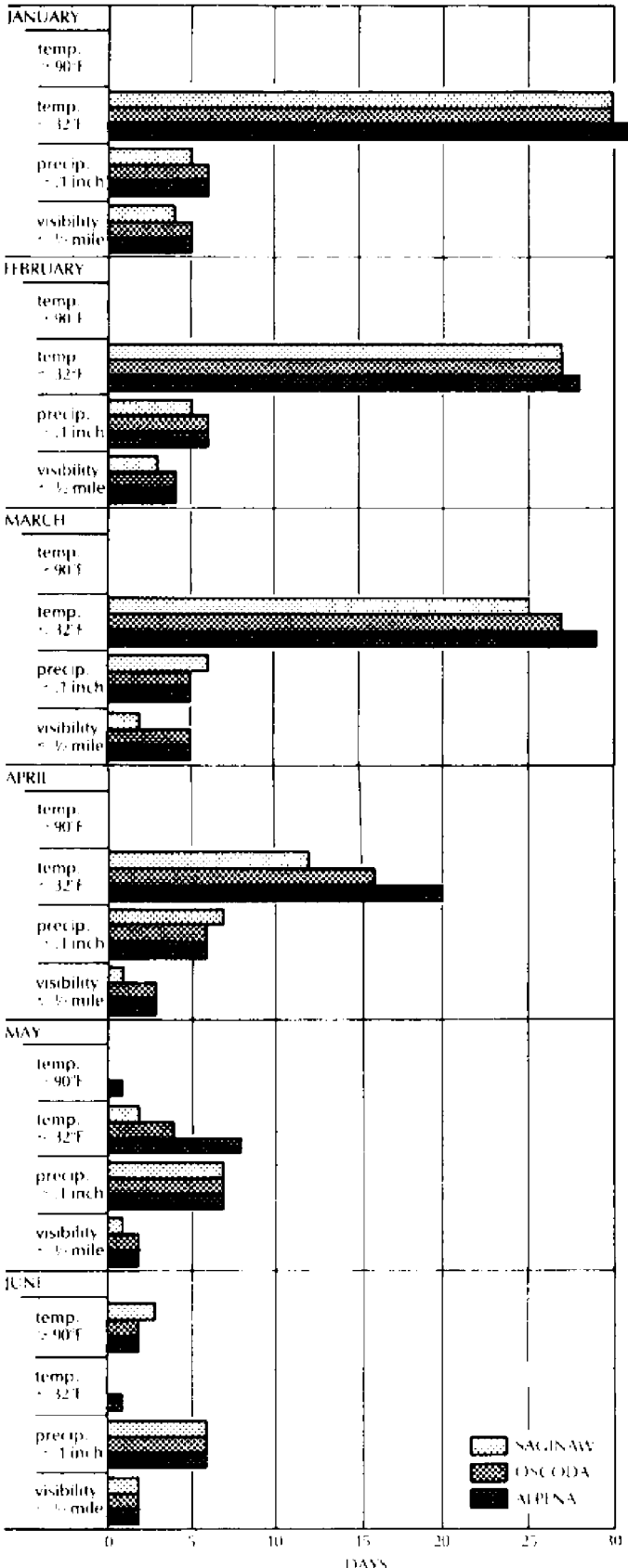
In Canada the North Channel offers challenging sailing and beautiful scenery among rocky, forested islands garnished with solitary coves. On the southern horizon are the rocky headlands and protected bays of Manitoulin Island, the largest freshwater island in the world. From Tobermory to Sarnia the sailor can enjoy beautiful, unspoiled shoreline dotted with small harbors. Shoals, snags, and rocks require alert navigation along this coast.

Back on the west side, boaters can cruise the 45-mile Inland Waterway, a chain of lakes and rivers winding through wooded northern Michigan to within eight miles of Lake Michigan. A shuttle service hauls boats to Lake Michigan. The fall color season is a popular time for this cruise.

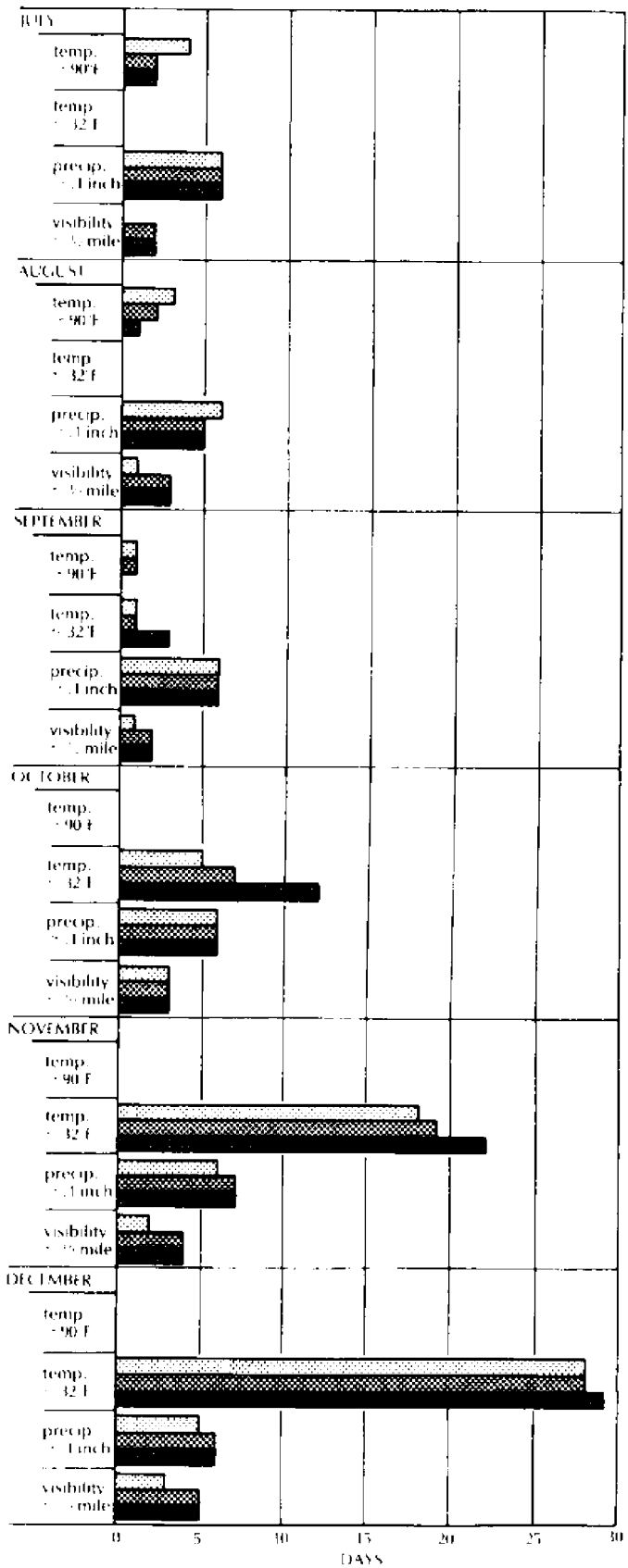
Fishing — Lake Huron's nearshore waters, bays, deeper waters, and tributary streams offer many varieties of excellent sport fish. Fishing occurs year-round, from the shore, from boats, and from winter ice shanties.

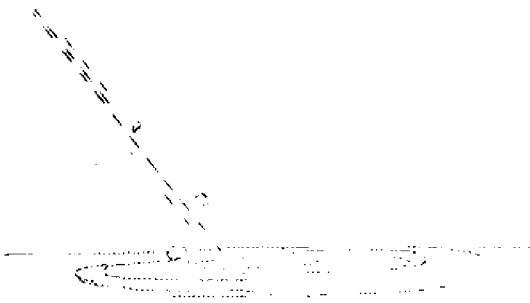
The most abundant sport fish in Lake Huron are yellow perch. They are easily caught and have a sweet, nutty flavor. Coho and chinook salmon and steelhead are large fighting fish caught in both deep waters and shoals or in tributary streams, depending on the season. Easier to catch are lake trout, also found in deep waters and over shoals. Charter boats are available by the half-day or day for deep-water fishing. Brown trout and northern pike live in both the lake and streams. The brown trout is among the most difficult stream fish to catch, and the pike, while easy to catch, is aggressive and attacks the lure with great force.





FISHING WEATHER GUIDE





Bass provide good fishing in shallow waters, the largemouth in weed beds and the smallmouth over shoals. Channel catfish are abundant in Saginaw Bay and walleye can be found around Michigan's Thumb and in inland lakes. The pumpkinseed,



sunfish, and crappie are also found in Saginaw Bay. A popular spring outing is smelt dipping at the mouths of tributaries, as the smelt begin their spawning run upstream.

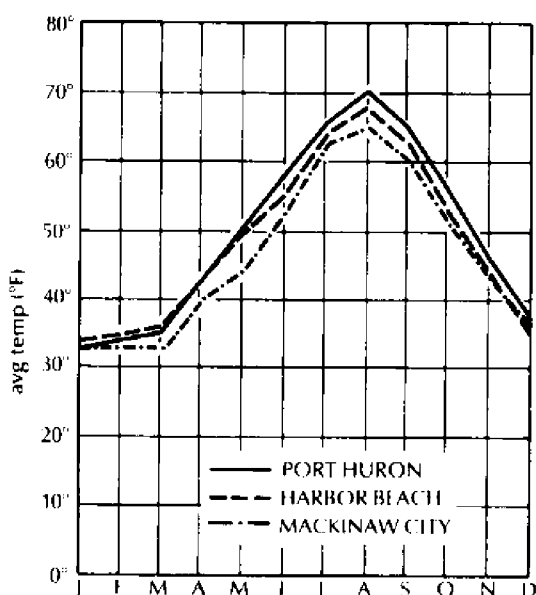
In general, the southern end of Lake Huron through Saginaw Bay provides the best fishing for perch, bass, catfish, sunfish, crappie, and pike, while salmon and trout predominate north of Saginaw Bay. In the Upper Peninsula, the Les Cheneaux Islands provide excellent fishing for many species of fish, including some not commonly found farther south, such as cisco, herring and muskie. Other good Upper Peninsula fishing spots are the Carp River and St. Martin Bay. Off Drummond Island record perch are common. Derbies and festivals give anglers the opportunity to earn cash and prizes.

A fishing license is required for fishing in Michigan waters. The state provides a booklet upon licensure that outlines the regulations and gives guidelines for handling fish to reduce exposure to possible contaminants. The Michigan Department of Natural Resources can provide you with current information (*see FOR MORE INFORMATION for tollfree fishing hotline number*).

Swimming and Diving — Lake Huron is rimmed by many miles of white sand beaches, ideal for sunbathing and swimming. The Tawas Bay, Harrisville, and Thunder Bay areas in Michigan and Sauble Beach on the Bruce Peninsula are particularly well-known for their fine, sandy beaches. City, county, and state parks and privately owned campgrounds and resorts provide ample opportunities to enjoy Lake Huron's beaches.

Lake Huron waters are generally clear and cool, desirable for swimming and scuba diving. The scuba diver can explore shipwrecks, plant and animal life, and underwater landforms. Schooners, steamers, freighters, tugs, and barges, as well as Indian and voyageur canoes, rest on the bottom of Lake Huron, victims of storms, shoals, fires, and collisions. The Thunder Bay Bottomland Preserve in Alpena, Michigan, and the Fathom Five Provincial Park in Tobermory, Ontario, protect two concentrations of shipwrecks. Local businesses provide diving equipment and charter boats. Other areas rich in sunken treasure are at Point Aux Barques, off the Thumb; the Black River, south of Alpena; and the North Channel,

WATER TEMPERATURES

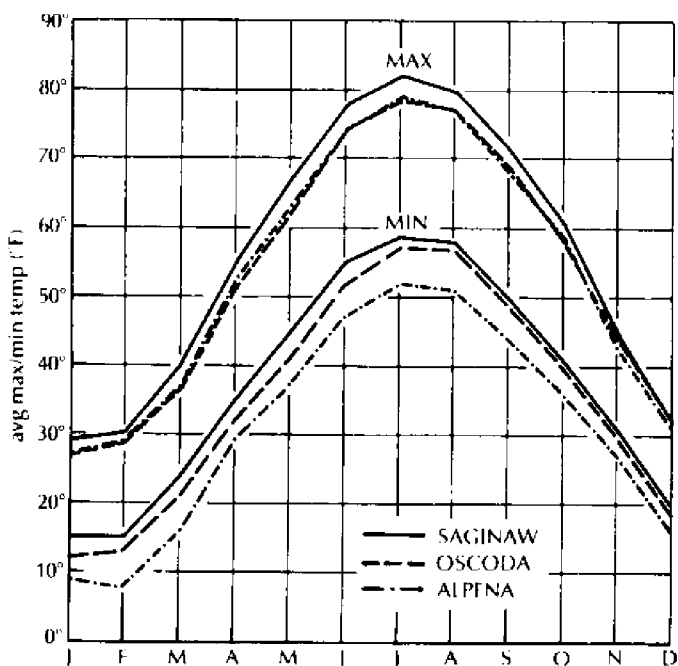


along the Manitoulin Island shore. Taking of artifacts from these wrecks is forbidden by law, as they must remain for others to enjoy and for historic and scientific research.

Divers looking for natural features can test their patience and skill at a sinkhole in Misery Bay, offshore of the Alpena State Forest. Twenty-five miles north of Alpena an abandoned limestone quarry can be reached from shore. Other attractions include the towering limestone cliffs of Thunder Bay and of Middle Island, north of Alpena.

Varying depths, cold water in spring and fall, and opportunities for diving among wrecks and caves, where direct surfacing is not possible, require adequate training before the diver can be assured of a safe experience. Once trained, however, the diver can enjoy an unusual form of discovery and sight-seeing.

AIR TEMPERATURES



WEATHER OVER WATER

Winds — During the summer boating season, a prevailing southerly through westerly flow is generated by a high pressure system usually found over the North Atlantic. However, lake breezes often predominate in nearshore areas, and these usually blow towards the shore (onshore). Windspeeds reach a peak during the early afternoon. Along much of the coast, winds reach the ideal sailing range of 7-16 knots 60-70% of the time during the afternoon. On waters where the lake breeze reinforces a general flow onshore, speeds frequently reach 15-20 knots. Over open Lake Huron, summer winds climb to the 20-30 knot range about 5-10% of the time. Strong winds are rare in summer and are usually brief gusts associated with thunderstorms. At night, as the land cools more rapidly than the water, a weak land breeze is often generated, blowing offshore. Spring and autumn winds are stronger than summer breezes. They generally vary between south and northwest. Along the coast, 7-16 knot winds occur about 60-70% of the time during spring and fall afternoons. Windspeeds greater than 16 knots occur more often than in summer. Offshore, windspeeds average 14-18 knots. Gales (windspeeds over 34 knots) blow 2-4% of the time by October. Severe storms can occur by late October.

Waves — Waters are often placid from May through August, with waves less than 5 feet high 80-90% of the time. However, strong winds from any quarter can generate rough waters somewhere in Lake Huron. Northerly winds can raise dangerous seas in the south, especially near the southern outlet. Easterlies or northeasterlies blowing across central Lake Huron can generate heavy waves along the Michigan coast. Southerlies can produce rough conditions near the converging northern shores. Winds from any direction exceeding 20 knots can generate waves of 10 feet or more if fetch (the uninterrupted stretch of water over which the wind travels) and wind duration are sufficient. These conditions are most likely in autumn.

NEARSHORE

| | SAGINAW | | OSCODA | | ALPENA | |
|------------------|---------|-----|--------|-----|--------|-----|
| | AM | PM | AM | PM | AM | PM |
| APRIL | | | | | | |
| | SW | SW | NW | E | NW | SE |
| 7 to 16 kt | 65% | 67% | 45% | 70% | 38% | 72% |
| over 16 kt | 7 | 24 | 5 | 13 | 4 | 8 |
| MAY | | | | | | |
| | SW | SW | NW | E | SW | SE |
| 7 to 16 kt | 65 | 66 | 45 | 73 | 41 | 76 |
| over 16 kt | 4 | 20 | 4 | 10 | 1 | 5 |
| JUNE | | | | | | |
| | SW | SW | SW | E | W | W |
| 7 to 16 kt | 62 | 71 | 40 | 73 | 28 | 69 |
| over 16 kt | 2 | 11 | 2 | 7 | * | 2 |
| JULY | | | | | | |
| | SW | W | NW | E | W | SE |
| 7 to 16 kt | 53 | 71 | 38 | 72 | 20 | 65 |
| over 16 kt | * | 6 | 1 | 5 | 1 | 2 |
| AUGUST | | | | | | |
| | SW | SW | C | S | SW | W |
| 7 to 16 kt | 49 | 72 | 36 | 69 | 19 | 62 |
| over 16 kt | 1 | 5 | * | 5 | * | 1 |
| SEPTEMBER | | | | | | |
| | SW | SW | C | SW | SW | SW |
| 7 to 16 kt | 51 | 72 | 39 | 68 | 19 | 62 |
| over 16 kt | 1 | 13 | 2 | 8 | 1 | 3 |
| OCTOBER | | | | | | |
| | SW | SW | SW | SW | SW | SW |
| 7 to 16 kt | 54 | 69 | 42 | 68 | 26 | 65 |
| over 16 kt | 3 | 13 | 3 | 9 | 1 | 3 |

NOTES: 1 knot (kt) = 1.15 miles per hour.

* = less than .5% of time.

C = calm.

PREVAILING SAILING WINDS

(direction, speed, and % of time)

OFFSHORE¹

| NORTH | SOUTH |
|--------------|-------------|
| <hr/> | |
| NW/E | S/NE |
| 48% | 51% |
| 41 | 38 |
| <hr/> | |
| NW/W | S/N |
| 53 | 55 |
| 35 | 33 |
| <hr/> | |
| NW/SE | S/S |
| 59 | 59 |
| 25 | 23 |
| <hr/> | |
| W/W | SW/N |
| 59 | 61 |
| 24 | 18 |
| <hr/> | |
| W/W | SW/N |
| 57 | 58 |
| 27 | 25 |
| <hr/> | |
| SW/SE | W/N |
| 49 | 50 |
| 39 | 40 |
| <hr/> | |
| S/W | SW/S |
| 44 | 41 |
| 47 | 53 |

¹Offshore windspeeds summarized for entire day.

Sailors cruising from Rogers City to Detour Passage should watch for a doubling of windspeeds as they sail across westerly winds funneled through the Straits of Mackinac. As sailors sailing north along the Thumb come abreast of Saginaw Bay, they should be alert to sudden increases in wave height when the wind is from the west to southwest.



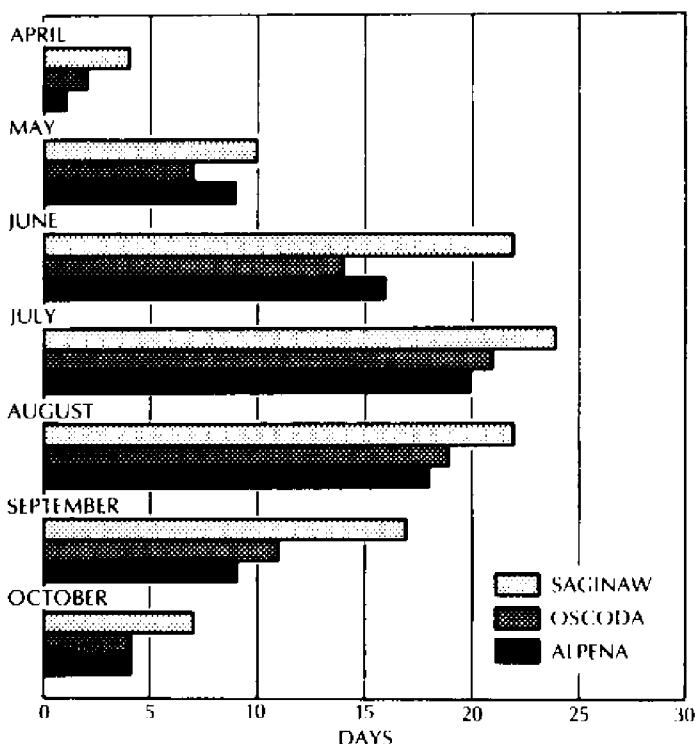
Strong, persistent northeast winds can increase the water level in Saginaw Bay by two to three feet in a few hours. Lesser increases in water level occur around Port Huron with northerly winds. Anyone engaging in activities along the beach or docks should be alert to these changes.

Visibilities — In general, good visibilities prevail during the boating season. Haze, smoke, and rain occasionally restrict visibility to less than 10 miles, but rarely to less than one mile. During the spring, and sometimes in summer, fog caused by warm air moving across the cold lake occasionally restricts visibility. In May and June visibilities over the open lake drop below one-half mile about 5-15% of the time, especially in the morning. Early in the season in the south and all summer in the north visibilities of one-half mile or less can be expected 1 to 3 days per month along the coast and over the bays and inlets. Heavy thunderstorms may briefly drop visibility to near zero.

Thunderstorms — In general, thunderstorms are slightly more frequent in the southern portion of the lake. While they can occur at any time, thunderstorms are most likely from May through September. In the south they are most common early in the season. In the north they are most common during August and September, although they are not as intense or frequent as in the south.

Over land, they blow up on an average of 5 to 7 days per month. Over open water they occur about 2% of the time during the July and August peak and are most frequent during late afternoon. Thunderstorms can be widespread or scattered. Ahead of a cold front, they can organize into a powerful squall line that kicks up strong, gusty winds and choppy seas. They may even bring hail and occasionally spawn nearshore tornados in western portions of the lake. These severe thunderstorms are most probable in spring and early summer. Air mass thunderstorms can be expected in the afternoon in mid and late summer. They often do not move out over the water until late in the day, because of the blocking action of the lake breeze, and they weaken as they move out.

GOOD SAILING WEATHER DAYS

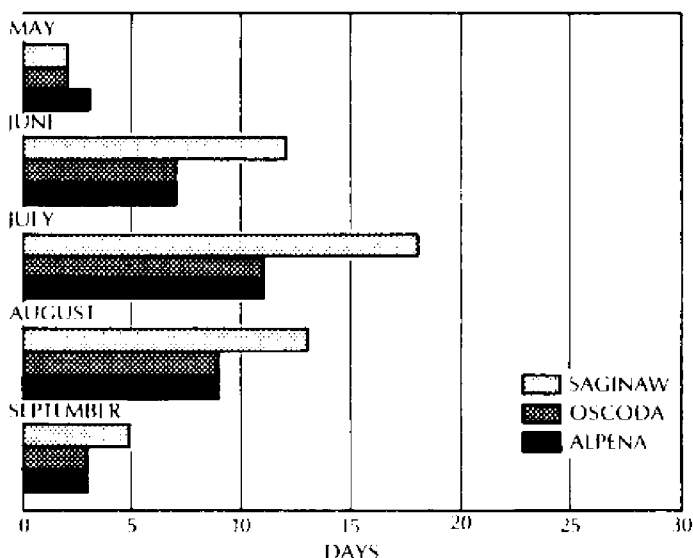


with 4 readings from 8 AM to 5 PM, these days had:
 temperatures of 65°F or more at least twice
 windspeeds of 7-16 knots at least twice
 visibility of 2 miles or more at least twice
 precipitation no more than twice

Beach Weather — During the spring, air temperatures and then water temperatures begin to moderate, first in the south, then in the north. By May, average daytime highs range from the upper 60s (°F) near Port Huron and Sarnia to about 60° near Mackinaw City; they are in the low 60s along the Upper Peninsula. While not yet warm enough for swimming — water temperatures may be in the 40s — there are many fine days for beachcombing and sunbathing. June brings warmer temperatures and ideal summer days, continuing through mid-September in the south and mid-June through August in the north. Water temperatures, slow to warm and slow to cool, become most accommodating from July through September, when they usually remain in the 60s. They reach a maximum in August ranging from the mid-60s near Mackinaw City to 70° at Port Huron. Occasionally, a strong, persistent offshore wind will blow away warm surface water, allowing an upwelling of cold water from below that is too cold to enter, even on hot days.

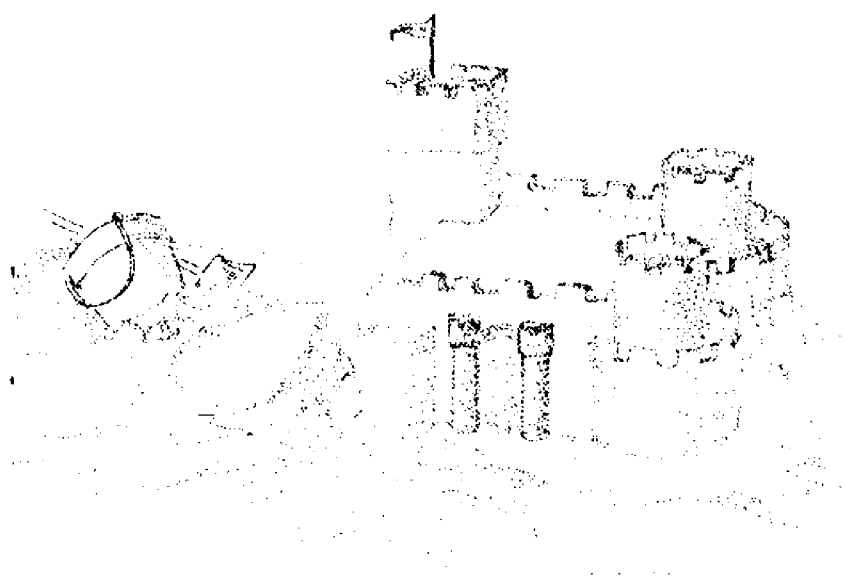
While the number of warm beach days dwindles in autumn, there remain many beautiful, colorful days for picnics and walks. In October, daytime highs average in the low-to-mid-60s in the south and in the upper 50s in the north. Significant precipitation occurs on only about six days. Even on the most wintry day, a walk along the beach, with very warm clothing on, can provide an invigorating change of pace as the ice-rimmed shoreline takes on a haunting beauty under a winter sky.

GOOD BEACH WEATHER DAYS



with 3 readings from 11 AM to 5 PM, these days had:

- air temperatures of 80°F or more at least once
- windspeeds less than 17 knots at least twice
- visibilities greater than 2½ miles at least once
- precipitation no more than once
- cloudy skies (% cover or overcast with ceilings of 20,000 feet or less) no more than twice



WATER SAFETY

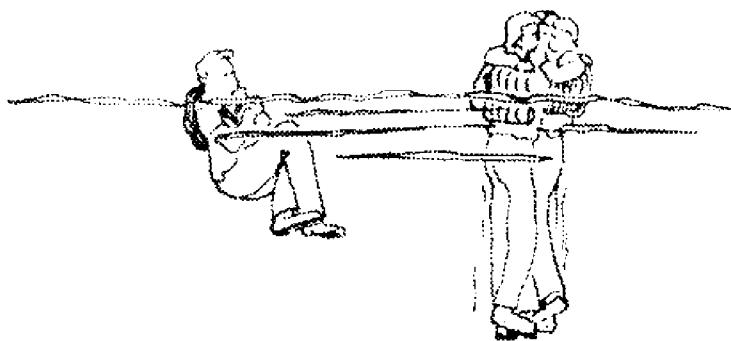
Boating Precautions — Before setting out, check local weather and lake conditions (*see Lake Weather Services*). File a “float plan” with someone and know where the nearest protected harbor is. Have a plan of action to follow in case of approaching bad weather. Carry all Coast Guard-required equipment in an easily accessible place and know how to use it.

Weather conditions on Lake Huron can change quickly. While afloat, keep a weather eye out for the approach of dark clouds which may precede a squall or thunderstorm, and watch for any steady increase in wind or waves. Heavy static on your AM radio may indicate nearby thunderstorm activity. Check the radio for the latest forecasts and warnings. If a thunderstorm catches you afloat, (a) stay below deck if possible, (b) keep away from metal objects not grounded to the boat’s protection system, and (c) do not touch more than one grounded object at the same time, for this could give you an electrical shock. Give large ships plenty of room, as they cannot react quickly and may have difficulty seeing small craft.

Lake Weather Services — The NOAA Weather Radio provides marine weather forecasts and special severe weather bulletins over VHR-FM radios. Lake Huron boaters can tune in to either 162.55 MHz (K16-83 from Alpena or Sault Ste. Marie) or 162.40 MHz (KIH-29 from Flint) for continuous VHR-FM broadcasts of weather conditions. Several Canadian Coast Guard and U.S. Coast Guard stations broadcast continuous forecasts and observations. Weather information can also be obtained by telephone from the National Weather Service at Alpena by dialing (517) 356-0942 or 354-8733.

Hypothermia — Exposure to water less than 91°F or to air less than 75°F can cause hypothermia, a serious, sometimes fatal, condition of lowered body temperature, caused when the body's heat loss exceeds its heat production. Hypothermia can occur after extended exposure to cold air if you are wet from perspiration or precipitation, after a fall overboard if the water is cold, or, in summer, after prolonged immersion or extended exposure to cool winds while wet.

Precautions should be taken to avoid hypothermia. In cool weather take along plenty of warm clothing that you can "layer" on or off and high-energy food, such as raisins and nuts. Avoid caffeine, tobacco, and alcohol. When boating, use a life vest, or better yet, a "float coat" with protective insulation. Float coats can more than double survival time compared to life vests. If you get wet, dry off and warm up quickly. If you fall into cold water and can't get back into your boat, it is usually better to maintain a fetal position if you have a life vest or float coat, or to tread water if you do not, rather than to try swimming to shore. Swimming will chill you quickly. The average person can swim less than ¼ mile in 50°F water before becoming incapacitated by the cold. Survival time can be increased by one-third by treading water; it can be doubled if a fetal position is maintained. Groups of people should huddle together.



A hypothermia victim will shiver, turn bluish, and feel cold. As the condition advances, the victim will become numb. Mental disorientation then occurs. Medical attention should be sought, and in the meantime, rewarming of the head, neck, and trunk must begin. Handle the victim gently and elevate the feet slightly. Don't warm the arms or legs and don't give alcohol, as these procedures stimulate cold blood in the limbs to flow back into the body core, chilling it further. Hot packs and body-to-body contact may be used for warmth. Outdoorspeople and sailors will find it helpful to read the publications listed in the back of this booklet about hypothermia.

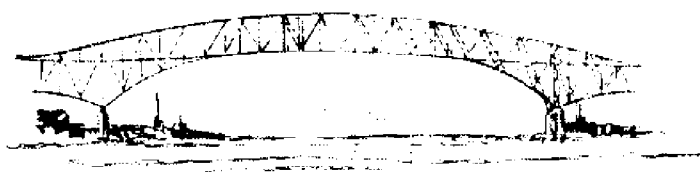
Cold Water Near-Drowning — People who have been in cold water (less than 70°F) can often be revived even after long periods of submersion (up to an hour) and even if breathing and heartbeat have apparently stopped and the person appears dead. The victim should be taken immediately to the nearest medical facility. While waiting and in transit, cardiopulmonary resuscitation (CPR) should be administered and continued without letup until the victim revives or receives medical care. It may take hours to revive the victim, so don't give up. Immediate and persistent attention are essential. Survival depends on the combined factors of length of time the victim was submerged, the temperature of the water, and the victim's age. Resuscitation is not always possible, but has occurred in hundreds of cases. (*See FOR MORE INFORMATION for publications detailing cold water drowning rescue techniques.*)

LAND ACTIVITIES

An ever-changing shoreline of woods, meadows, beaches, bays, marshes, streams, and dunes encircles Lake Huron. Roaming the land are raccoon, fox, mink, beaver, partridge, turkey, wildcat, deer, elk, and black bear, sheltered by evergreen and hardwood forests. These woodlands provide a cool haven in summer and brilliant flashes of scarlet, mahogany, gold, and russet in fall.



Good highways follow the Lake Huron shoreline. Beginning at Port Huron, M-25 edges the Thumb to Bay City. North of Saginaw Bay, the traveler can pick up U.S. 23 for a 200-mile scenic lakeshore drive to the tip of the Lower Peninsula. Across the beautiful, five-mile long Mackinac Bridge, scenic M-134 turns off I-75 and heads eastward to De Tour Village at the very tip of the Upper Peninsula. Ferries connect the mainland with Mackinac and Drummond Islands. The Trans-Canada Highway and provincial routes skirt



the eastern side of Lake Huron, bringing the traveler back to the Blue Water Bridge linking Sarnia, Ontario, with Port Huron, Michigan. The motorist along these highways can enjoy the varied beauty of the coast and find many activities and attractions.

History — The enjoyment of travel today in the Lake Huron region is enhanced by understanding its yesterdays. The region's first human occupants were Paleo-Indians, who came to the area just as the glacial ice was melting, over 10,000 years ago (8,000 B.C.). The 1600s brought French explorers and a flourishing fur trade to the region. European trade goods, diseases, and warfare nearly destroyed the Indians' lifestyle in the short span of 200 years. The British wrested control of the Great Lakes area from the French in the French and Indian War (1754-63) and remained in Michigan Territory until the Americans finally gained complete control during the War of 1812. Then the pioneers began moving in, pushing the Indians westward and establishing farms and sawmills. Stream navigation on the Great Lakes began in 1818 and expanded when the Erie Canal was opened in 1825. Following Michigan statehood in 1837, a network of canals, railroads, and roads was built to support the growing timber and agricultural trades. The timber industry boomed in the late 19th century, providing lumber for settlers in the western plains and giving rise to the Paul Bunyan legend. The boom ended when the virgin forest was destroyed by overcutting and fire. Much of the land was reforested or converted to farmland. Also in the late 1800s, a mining industry developed around the stone and salt resources, and at the turn of the century the automotive industry was established. Good roads were developed early in Michigan, many of them following old Indian trails.

Historical Attractions — The traveler beginning at the southern end of Lake Huron will find two lighthouses in Port Huron. These are the first of numerous lighthouses around the lake, many of which have guided ships for over a century. There are several lighthouses around the Thumb, at



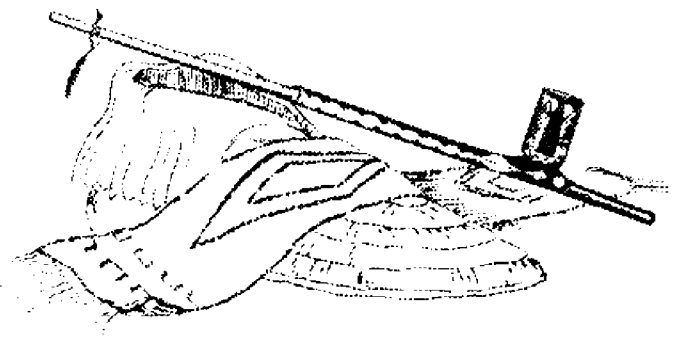
Tawas Point, Harrisville, and Presque Isle Harbor. More lighthouses are on the islands in the Straits of Mackinac and northern Lake Huron.

Many county courthouses throughout the Lake Huron area preserve the architectural styles of the 1800s. Notable examples are the Lapeer County and Alcona County courthouses. Probably the most popular monument in the area is the Lumberman's Memorial on the banks of the Au Sable River near East Tawas.

For students of Indian culture, the Lake Huron shore contains one of the highest densities of archaeological sites in Michigan. Among the most unusual relics are the Sanilac Petroglyphs near New Greenleaf in Sanilac County. These aboriginal carvings of men, animals, and mythical creatures were obscured for centuries until exposed by the forest fires of the late 1800s. Across the Straits of Mackinac at St. Ignace lie several Indian villages and gravesites.

The tip of the Thumb offers several interesting historical sites. In Huron City, a logging town dating from 1854 has been restored and includes an early Coast Guard rescue station. Just down the road is Grindstone City, a major producer of grindstones until 1930. The quarries are still visible and old grindstones up to six feet across are strewn along the rocky shore.

Leaving the lakeshore, the traveler can imagine being in Germany for a day in the village of Frankenmuth, founded in 1845. Bavarian architecture, a glockenspiel, and German cuisine are among the attractions. Nearby, just north of Flint, costumed artisans at Historical Crossroads Village demonstrate sawmilling, blacksmithing, and household crafts. On the Huckleberry Railroad, an old Baldwin steam locomotive pulls passengers along an authentic narrow-gauge logging railroad in restored wooden passenger coaches and gondolas. Also in Flint, the Sloan Museum traces the development of the automobile. Farther north is the Hartwick Pines virgin forest, near Grayling. Among the towering white pines a museum displays an early logging camp's kitchen, mess hall, and workshop. Other museums throughout the Lake Huron area preserve the artifacts and life styles of the past. Two are the Jesse Besser Museum in Alpena and Teysen's Talking Bear Museum in Mackinaw City,

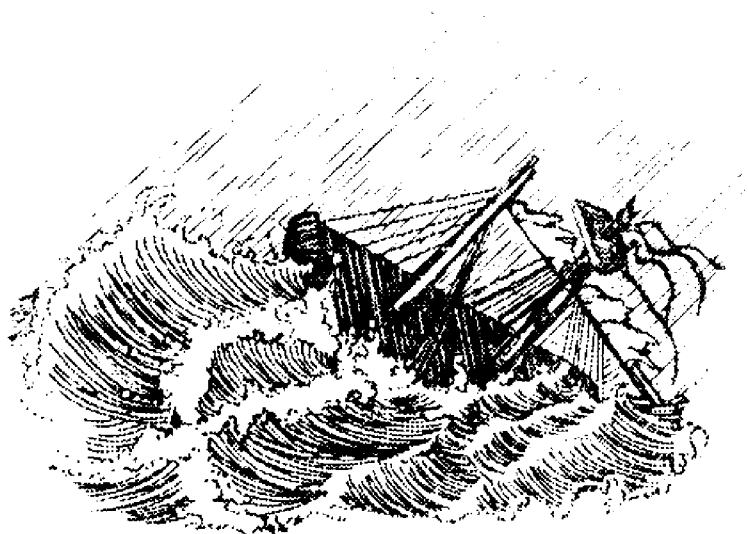


both featuring Indian and pioneer artifacts. The Besser Museum also has contemporary art and a planetarium, and Teysen's includes sailing ship and lumber camp artifacts. Near the Besser Museum is Bell Pines, a stand of virgin white pine along the Lake Huron shore.

At the strategic Straits of Mackinac the traveler can visit two forts and a mission. Fort Michilimackinac, built by the French in 1715 stands in Mackinaw City. On Mackinac Island is Fort Mackinac, built by the British in 1781. Life in these outposts is reenacted today. At St. Ignace, in the Upper Peninsula, is the 1671 mission of Father Jacques Marquette, the famous French missionary and explorer. About 40 miles away are the Soo Locks and Sault Ste. Marie.

For the traveler in search of history and romance, Mackinac Island offers restored buildings set amid limestone cliffs and visited by foot, bicycle, or carriage (no motor vehicles). The luxurious Grand Hotel, built in 1887, is the largest summer hotel in the world. Indians worshipped Mackinac Island because of its beauty and grandeur. Following its military history, the island became the headquarters of John J. Astor's American Fur Company. Today, visitors can enjoy this history, the 19th century ambience, and summer yachting races.

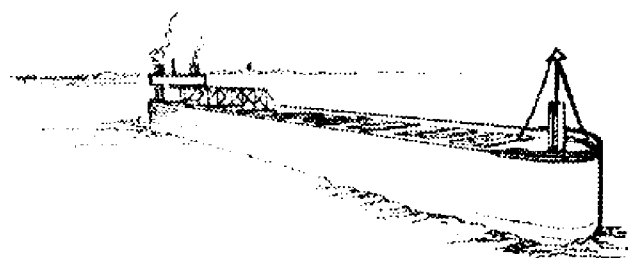
The Canadian side of Lake Huron is rich in history also. Manitoulin Island has four museums preserving the settlers' way of life. A fine collection of Indian crafts is preserved at the Little Current-Howland Centennial Museum. At West Bay, the Indians are reviving Indian art and culture. Nearby is the Jesuit mission church, an unusual 12-sided wooden pit structure built two-thirds underground with the seats forming broad steps down to a central altar.

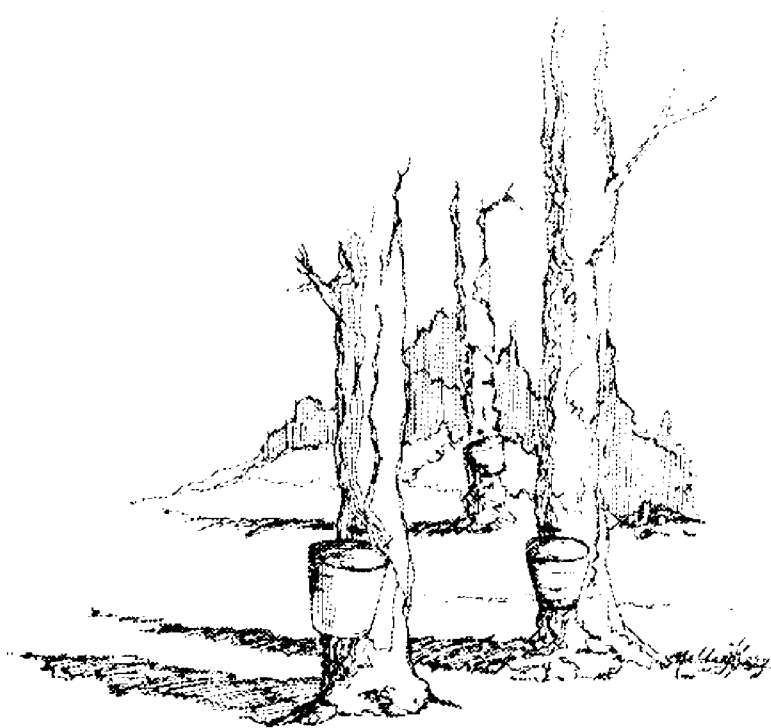


In the deep Mississagi Strait at the west end of the island are believed to be the remains of the first ship to sail the Great Lakes, La Salle's *Griffin*, which sank in 1670. Timbers claimed to be part of the *Griffin* are displayed at Gore Bay and across the Main Channel at Tobermory. Manitoulin Island can be reached either by bridge on Highway 68 from the Canadian mainland, or by car ferry from Tobermory, a 2-hour crossing. At Tobermory, on the tip of the Bruce Peninsula, the glass-bottomed boat, *Fathom Five*, can take you for a cruise to view the many 19th-century ships resting on the bottom.

Farther south is Goderich, a beautiful little town built around a town square at the top of a cliff overlooking Lake Huron. Founded in 1827, the town is rich in historic buildings and sites. History buffs will enjoy the Huron County Pioneer Museum and the octagonal stone Huron Historic Jail, where Canada's last public hanging occurred. Sunsets, viewed from the cliff as the sun sinks into Lake Huron, are spectacular.

Industrial Attractions — Lake Huron's shores house industries of interest to the traveler. Shipbuilding, auto plants, and large quarries predominate. There are eleven auto plants open for tours in Flint, and in Bay City the tourist can watch the Defoe Shipbuilding Company construct Great Lakes freighters and U.S. Navy ships. Motorists in the Saginaw River Valley will see brine wells, producing salts for the Dow Chemical Company headquarters plant in Midland. Two of the largest gypsum quarries in the U.S. are at Alabaster. Rogers City has one of the largest limestone quarries in the world, and one of the world's largest dolomite quarries is on Drummond Island. Tours of the world's largest cement plant are available in Alpena at the Huron Portland Cement Company. In Canada, one of the world's largest nuclear plants, the Bruce Nuclear Power Development, lies between Kincardine and Port Elgin. For those who like to watch the Great Lakes freighters and sea-going vessels, the channels and islands in northern Lake Huron provide many good viewing spots.



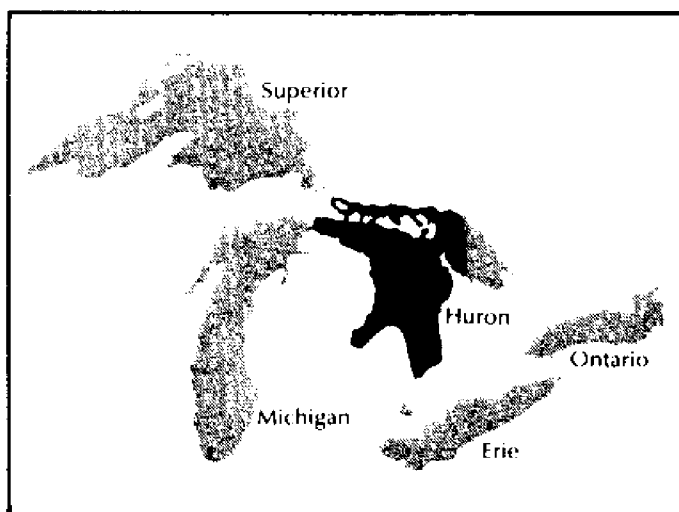


Nature's Bounty — Pick-your-own farms and roadside stands provide a welcome respite for the weary traveler. They offer strawberries, blueberries, raspberries, currants, sweet corn, asparagus, tomatoes, apples, cider, maple syrup, honey, chestnuts, and other fruits and vegetables. The hiker will enjoy picking and eating juicy wild strawberries, raspberries, and thimbleberries on sunny summer days. The cool days of spring and fall draw mushroom lovers in search of the delectable, but evasive, morels and shaggy mane mushrooms that grow in the northern Lake Huron area. Hazelnuts, hickory nuts, and black walnuts are other special treats worth searching for. Wild foods growing on private land must not be picked unless the landowner gives permission.

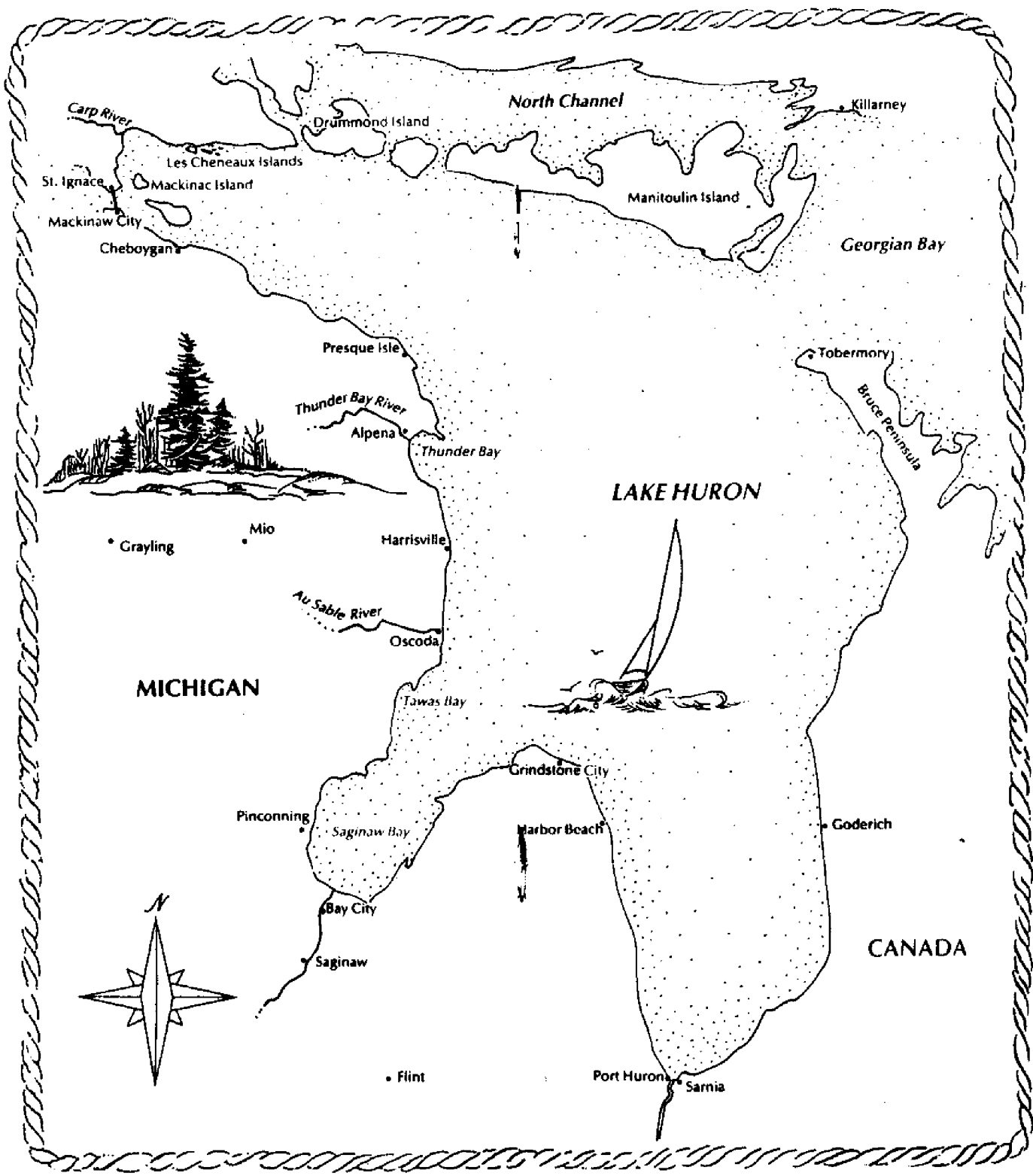
The topic of food cannot be left without mentioning the fine cheddar cheeses made in Pinconning. And many claim that Mackinac Island's fudge is the best anywhere.

LAKE HURON FACTS

| | |
|-------------------|----------------------------------------------|
| Length: | 206 miles (330 km) |
| Breadth: | 183 miles (293 km) |
| Depth: | 195 ft (59m) ave. — 750 ft (228m) max. |
| Islands: | 30,000 (includes Georgian Bay) |
| Shoreline length: | 3,180 miles (5,088 km) (includes islands) |
| Surface area: | 23,000 sq miles (59,800 sq km) |
| Watershed: | 51,800 sq miles (134,680 sq km) |
| Outlet: | St. Clair River to Lake Erie |
| Population: | 1,321,000 U.S. — 937,800 Canada |



Lake Huron area is shown on following pages.



Carp River

Drummond Island

North Channel

Killarney

Les Cheneaux Islands

St. Ignace

Mackinac Island

Manitoulin Island

Mackinaw City

Cheboygan

Georgian Bay



Presque Isle

Tobermory

Thunder Bay River

Bruce Peninsula

Alpena

Thunder Bay

LAKE HURON

Graying

Mio

Harrisville

Au Sable River

Oscoda

MICHIGAN

Tawas Bay



Grindstone City

Pinconning

Saginaw Bay

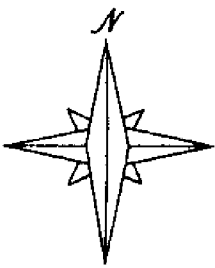
Harbor Beach

Goderich

Bay City

CANADA

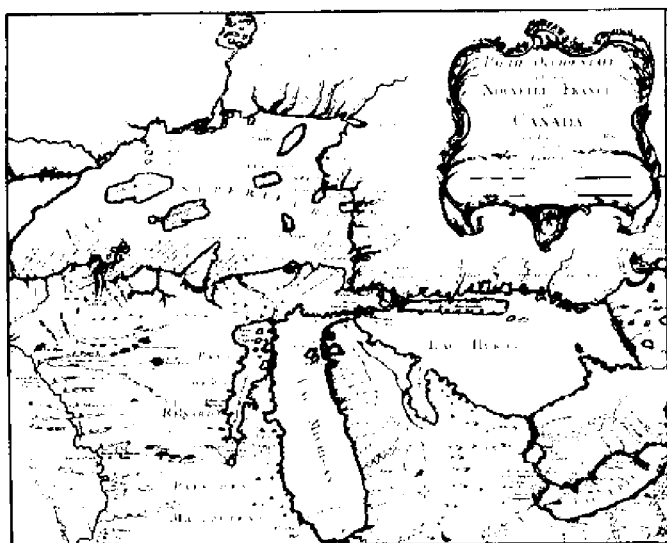
Saginaw



Flint

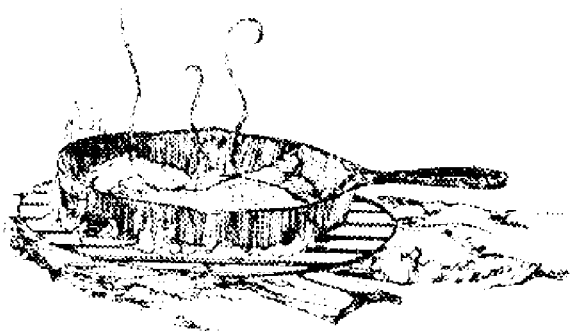
Port Huron

Sarnia



AN EARLY GREAT LAKES MAP

Although Lake Huron was the first of the Great Lakes to be discovered by the European explorers, its large bays created many problems for early map-makers.

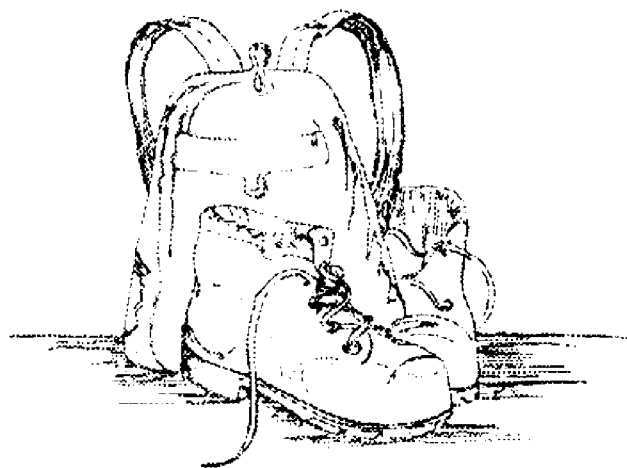


Camping, Hiking, and Bicycling — Lake Huron's forests of oak and hickory, maple and birch, interspersed with towering stands of dark evergreens, are dotted with lakes and interlaced with clear streams. The camper can fish for dinner in a rushing stream or a placid forest-rimmed lake, drift quietly in a canoe, perhaps spotting a beaver, heron, or raccoon, or hike along a trail, enjoying the scenery and exercise. Campgrounds abound in local, county, state, and provincial parks and national forests. There are many private campgrounds too. Most campgrounds charge a modest fee, and reservations can be made ahead at some. (*See FOR MORE INFORMATION for sources of detailed camping information*).

Trails are plentiful in the forests and parks. Hikers near Alpena can look for the 150-foot-wide sinkholes common in the area. Southeast of Alpena, bird lovers may take guided tours from the U.S. Forest Service District Office in Mio to see and hear the Kirtland's warbler. This warbler is a rare songbird whose only known nesting territory is in the jack pine forests in this area. In the Pigeon River State Forest, the hiker may glimpse some of Michigan's splendid elk. The only natural waterfall in Michigan's Lower Peninsula, beautiful Ocqueoc Falls, is west of Rogers City.



Well-known trails are Michigan's Cross-state Hiking and Riding Trail running through the Huron National Forest, and Canada's Bruce Trail. With its northern end at the tip of the Bruce Peninsula, the Bruce Trail winds along sheer limestone cliffs overlooking Georgian Bay. The trail boasts some of North America's best patches of wild orchids and several unusual ferns. These special plants will disappear if picked. (*See FOR MORE INFORMATION for trail maps.*)



The hiker should always have the clothes needed to stay warm and dry. Wear comfortable, sturdy, walking shoes or boots, and take along high-energy food.

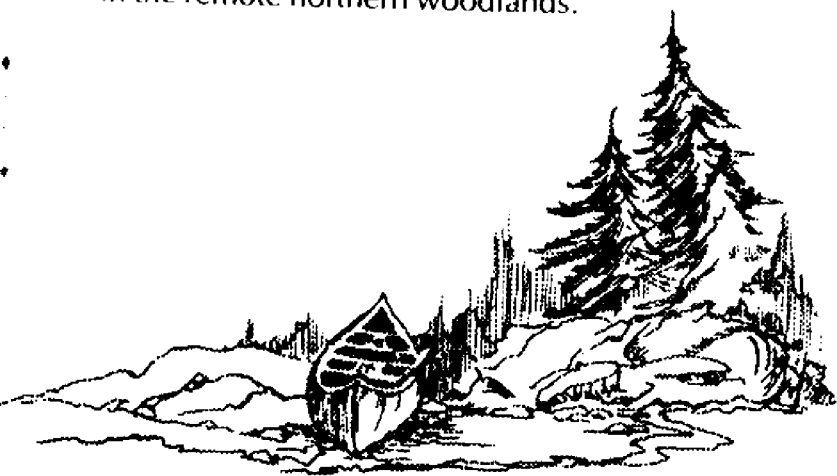
Strolling along the warm sands of the Lake Huron shore, beachcombers can search for smooth, gray driftwood and rockhounds can find agates, chert, jasper, quartz, granite, basalt, and Petoskey stones, particularly between Alpena and Cheboygan.

Wilderness campers may enjoy approaching their campsites by canoe. The many canoe liveries in eastern Michigan provide canoeing equipment. Rivers such as the Thunder Bay, Au Sable, Rifle, Carp, and Manistee present a wide range of canoeing conditions (*see FOR MORE INFORMATION*). Avid canoeists may enjoy the 240-mile nonstop Au Sable River Marathon Canoe Race. For a different river experience, try the paddlewheel riverboat trips on the Au Sable.

Bicycling is another way to enjoy Lake Huron's lovely forested and farmland regions. Paved country roads throughout make biking trips easy to plan. County maps can be obtained from addresses listed in the back. Some biking clubs offer tours that include guides, maps, and overnight accommodations. Some tours combine biking with hiking and canoeing.

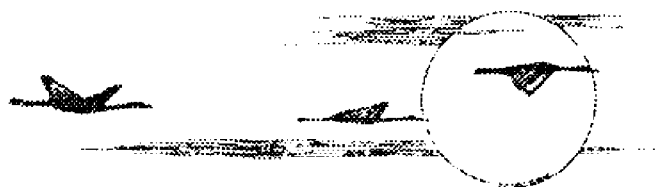
Many people plan especially to be outdoors at the time of the fall color change. The area is renowned for its autumnal display, and color tours are popular. The extensive northern forests create stunning vistas of flaming red maple, glowing yellow aspen, and burgundy oaks, accented by graceful white birch trunks, and stands of evergreens. Cheboygan County offers an additional color treat — apple and cherry blossoms in late spring.

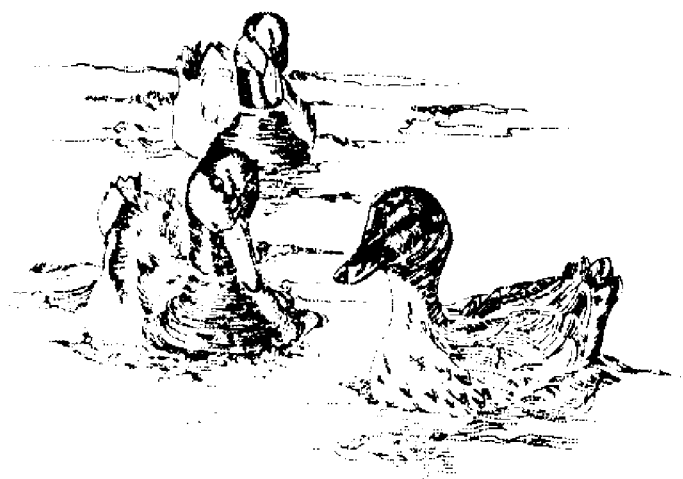
Wildlife — Whether you stalk wildlife with a camera, a weapon, or simply with an appreciative eye, the Lake Huron area woodlands, streams, and lakes provide excellent opportunities. You may see a cottontail rabbit, darting away with a flash of its tail, or hear the indignant scolding of a red squirrel. Spring mornings are filled with birdsong, and on spring evenings peepers, other frogs, and toads chirp, croak, and trill the night hours away. The alert canoeist may surprise shorebirds along sandbars or glimpse a muskrat or beaver. Porcupine, blackbear, bobcat, and turkey dwell in the remote northern woodlands.



Many animals are elusive but you can search for their tracks along streambanks and in the snow. You might also find trees where deer have rubbed their antlers or holes that skunks have poked in the ground in search of grubs. Even the highway traveler can keep a lookout for turkey vultures and hawks circling overhead or stationed in the top of nearby snags. In summer sandhill cranes are often seen along M-134 between the Straits and the tip of the Upper Peninsula. Drivers in wooded areas at night should watch carefully for whitetail deer along the road. Deer can become blinded and confused by headlights and bound in front of oncoming cars.

Birdwatchers and waterfowl hunters will enjoy the concentrations of birds that migrate through eastern Michigan, stopping to rest in lakes and bays. Saginaw Bay is a major resting area for these birds. Two especially good observation points are the Shiawassee National Wildfowl Management Area and Refuge near Saginaw and the Fish Point State Wildlife Area on the southeast shore of the Bay near Sebewaing. A spectacular spring sight here is the large flocks of migrating whistling swans gliding into the grainfields.





The Lake Huron area is popular with hunters from the southern part of the state. Deer are hunted with shotgun or rifle, and there are special seasons for bow-and-arrow hunters and old-time cap and ball musketeers. Some of the heaviest deer populations in Michigan are in Iosco and Alpena Counties, and shotgunners will find plenty of fat deer in the grain fields in the Thumb. Black bear are hunted during special seasons in the northern portions of the Lake Huron basin. Small game hunting includes ruffed grouse, woodcock, wild turkey, pheasant, bobcat, snowshoe hare, cottontail rabbit, squirrel, Canada goose, and marsh and diving ducks. In the Upper Peninsula, the upland bird hunter can also find sharptail grouse.

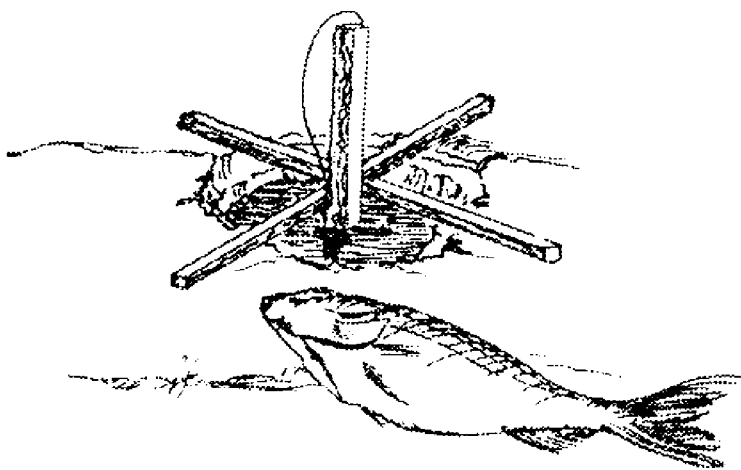
Michigan has regulations on hunting seasons, bag limits, and legal hunting methods, designed to maintain the ecological balance and to ensure that next year's hunters can enjoy a successful trip. Some animals can never be hunted, such as songbirds and hawks, swans, and elk (*see FOR MORE INFORMATION for the state's hunting guide*). Up to 80% of the land in some northern counties is state and federally owned and open for hunting. Hunting can be done on private land if permission is granted by the landowner.

Winter Sports — If you like to be out when the sun streams in brilliant ribbons through the trees and sets the snow sparkling in the breathtaking radiance of a wintry day, the Lake Huron area is a good place to be in the winter months. The area provides an ideal setting for cross-country and downhill skiing, snowshoeing, tobogganing, snowmobiling, ice skating, and ice fishing. There is even a curling rink in Lewiston. A day of skiing or simply a long walk, followed with a cup of hot cider by a fire in a friendly lodge or secluded cabin overlooking Lake Huron's frozen calm can be an outstanding vacation experience.

Throughout eastern Michigan cross-country ski trails wander among gigantic evergreens, along freezing rivers, in open meadows, and up and down hills. A dozen ski slopes offer equipment rental and instruction for the beginner and slopes to challenge every level of expertise.

Snowmobile trails abound and many are regularly groomed. Moonlight snowmobile safaris are a special attraction on Drummond Island, and in January safaris cross the ice from St. Ignace to Mackinac Island and from Drummond Island to the Canadian mainland. For a most enjoyable trip, snowmobilers are encouraged to stay on the trails, avoid trespassing, and operate their machines safely. If you love solitude, winter camping is possible as several private and county campgrounds and some state parks are open in the winter. *(To learn more about winter facilities see FOR MORE INFORMATION.)*





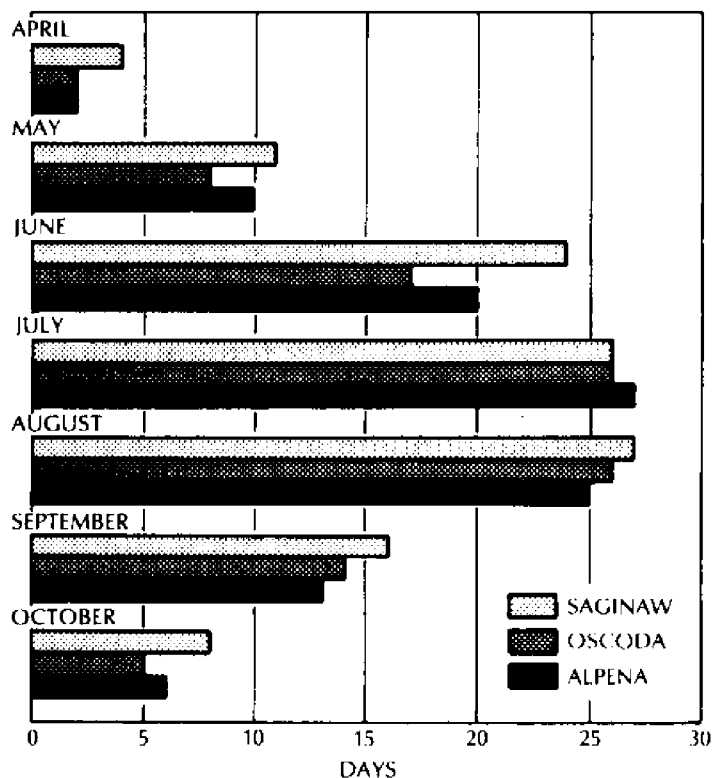
The dedicated angler can keep right on fishing in winter after sufficient ice forms over the area's lakes and embayments. January will find these water bodies dotted with ice shanties and tip-ups. Some people consider Saginaw Bay the best spot in the nation for perch fishing through the ice. Tawas Bay and AuGres offer other good perch fishing spots. Walleye and pike can also be found in Saginaw Bay, and all the inland lakes and river backwaters offer both pan fish and game fish. In February, Mullett, Burt, and Black Lakes in Cheboygan and Presque Isle Counties provide the rare opportunity to spear for sturgeon, Michigan's largest fish. Two winter festivals celebrate ice fishing — the Perchville Festival in February in the Tawas area and Tip-up Town, U.S.A., on Houghton Lake.

Various cities offer winter festivities. These include the Alpena 250 Snowmobile Race, the Silver Creek Challenge Cross Country Ski Race near Tawas, and the Winter Ice Carnival in the Les Cheneaux Islands.

WEATHER OVER LAND

Spring and Summer Weather — By early May, daytime temperatures are consistently climbing into the 60s (°F) from Port Huron to the Upper Peninsula, with temperatures in the south averaging 4-8°F warmer. Clear skies are reported on 8 to 10 days in May while significant rain occurs on about 6 days. By Memorial Day weekend daytime highs are pushing 70° with nighttime lows in the 40s.

WARM WEATHER DAYS

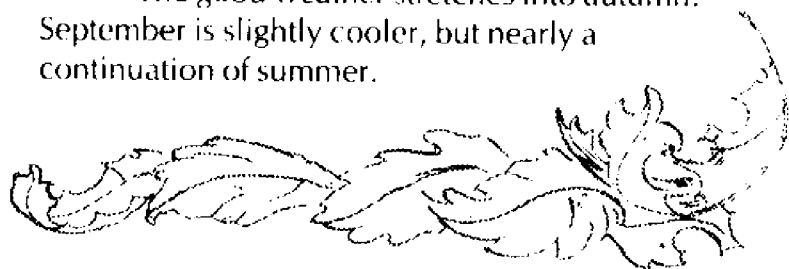


with 3 readings from 11 AM to 5 PM, these days had:
air temperatures of 65-90°F at least twice
windspeeds less than 17 knots at least twice
relative humidity less than 46% at least twice
(applies when the temperature is over 84°F)
precipitation no more than twice

In summer there are many days with pleasant temperatures under sunny skies. From June through August the weather is usually ideal for outdoor activities. Most storms are shunted north of the region, while air masses of Pacific origin travel eastward across the Canadian northwest and arrive cool and dry, providing relief from the hot, humid air of the Gulf of Mexico.

Lake breezes provide natural air conditioning that makes the beautiful drive along the Lake Huron shore a pleasure. Summertime highs range from the mid-70s to low 80s. Near the shore, readings climb into the 90s on only 5 days or less each year, and nighttime temperatures are particularly delightful, ranging from the mid-50s to low 60s. During June, an average of 17-24 days per month are considered ideal for enjoying the many outdoor opportunities along this coast, while July and August are nearly perfect with 25-27 good days on the average.

The good weather stretches into autumn. September is slightly cooler, but nearly a continuation of summer.



Fall and Winter Weather — In autumn, the onset of cool weather is delayed by the slow-cooling waters of Lake Huron. The first freezing temperatures are typically recorded by the end of September along the western shore.

By October, storm tracks begin to push south but precipitation falls on just 4 or 5 days during the month and mostly sunny skies can be counted on for 12-15 days. The first half of the month provides many days with temperatures in the 60s.

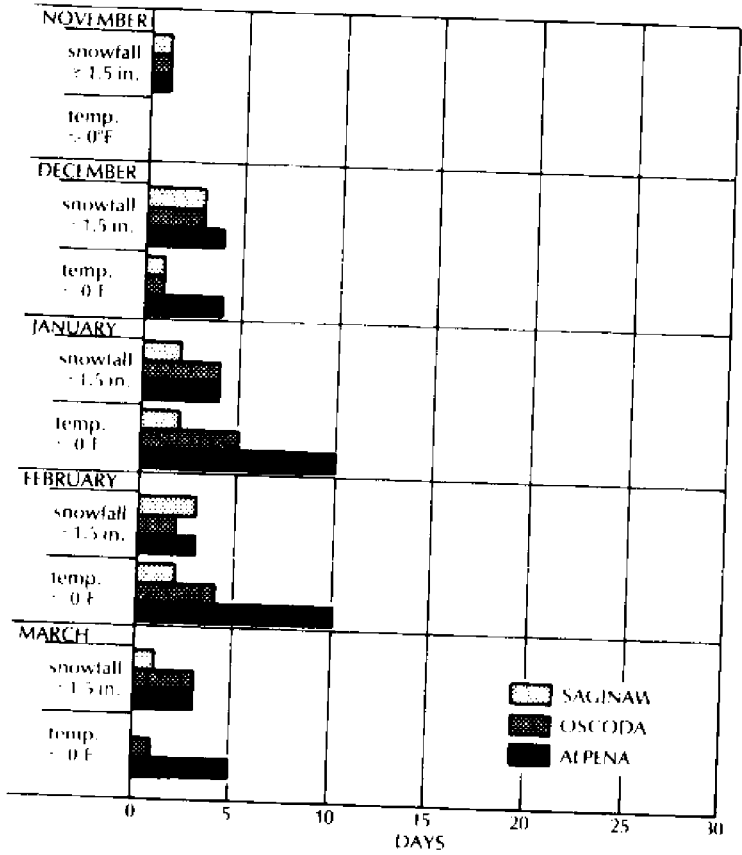
Along most of the Huron shoreline, snow usually begins to fall from early to mid-November in the north and early December in the south. Snowfall is often heaviest during the late fall and early winter as the still unfrozen lakes add moisture to winter storms.

Cross-country skiing and snowmobiling are best with a base of 6 inches or more, although in some areas a 3-inch base is adequate. A 6-inch base occurs on an average of 30-40 days per season in the Tawas region and increases to 80-90 days in the Cheboygan region and along the southeast coast of the Upper Peninsula. Seasonal snowfall is heaviest in the northern coastal counties. Cheboygan County records 80-120 inches annually, and 70-75 inches falls over Presque Isle County. Some 70-90 inches are common over the southeastern Upper Peninsula. South of Presque Isle, snowfall amounts range from 40-70 inches. This is not a steady, progressive decrease, however, since in some areas of the Thumb up to 70 inches are recorded.

Inland lakes begin to freeze in early November. By late January there is extensive ice formation in the bays, inlets, straits, and other shallow waters of the North Channel, the Straits of Mackinac, Thunder Bay, and Saginaw Bay. Ice lasts well into April. The deep north central basin of Lake Huron rarely, if ever, has a noticeable ice cover.



WINTER WEATHER GUIDE



WINDSPEEDS: From November through March, winds over 16 knots blow an average of 5% of the time in protected areas and an average of 13% of the time in open areas.



WINTER SAFETY

To enjoy the many recreational opportunities Lake Huron's winters provide, it is important to dress comfortably in loose fitting, warm clothing in several layers. The layers should be removed as the body warms to prevent perspiring and subsequent chilling. Outer garments should be tightly woven, water repellent, and hooded. The hood should protect the face and cover the mouth to insure warm breathing. Mittens snug at the wrists are better than fingered gloves since entrapped insulated air, warmed by the body, is the best protection against the cold.

A strong wind with temperatures in the 40s or 50s (°F) can have the same chilling effect as temperatures below freezing with no wind. The wind-chill factor should be kept in mind when determining what clothes to wear. There are periods in winter when heavy snow and strong winds curtail activities along the lake front. At Alpena, winds can reach 50 knots, and more than 15 inches of snow can fall in a single 24-hour period. Winter storm warnings are usually issued when a 24-hour snowfall of 6 inches or more is expected.

EQUIVALENT WIND CHILL TEMPERATURE

| Wind Speed (kt) | Air Temperature (0°F) | | | | | | |
|-----------------|-----------------------|-----|-----|-----|----|----|----|
| 0 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| 4 | 6 | 11 | 16 | 22 | 27 | 32 | 37 |
| 9 | -9 | -3 | 3 | 10 | 16 | 22 | 28 |
| 13 | -18 | -11 | -5 | 2 | 9 | 16 | 23 |
| 17 | -24 | -17 | -10 | -3 | 4 | 12 | 19 |
| 22 | -29 | -22 | -15 | -7 | 1 | 8 | 16 |
| 26 | -33 | -25 | -18 | -10 | -2 | 6 | 13 |

1 knot (kt) = 1.15 miles per hour

Visibility is sometimes reduced to a few yards. Blizzard warnings are issued when falling or blowing snow is expected along with 30-knot winds and temperatures of 20°F or lower. A blizzard is considered severe when winds climb about 40 knots and temperatures fall below 10°.

In blizzard conditions, it is crucial to avoid overexposure and exertion. Attempting to walk is dangerous because blowing and drifting snow create disorientation. If in a car, it is best to remain inside, keeping fresh air available, as blowing snow can seal the passenger compartment. The engine and heater should be run sparingly — about 5 minutes per hour — with the down-wind window open for ventilation. Exercising by clapping hands and moving arms and legs vigorously from time to time is helpful. Keep the dome light on at night so you can be spotted, and be on the lookout for help. (*See the WATER SAFETY section on hypothermia for additional cold weather safety tips.*)



FOR MORE INFORMATION

You may obtain additional specialized information and literature from the sources listed below. Many publications are free; however, please contact the source for prices and handling charges.

Addresses for the following frequently cited sources are given at the end of this section.

East Michigan Tourist Association
Michigan Department of Natural Resources (MDNR)
Michigan Natural Resources Outdoor Store
Michigan Sea Grant College Program
Michigan Travel Bureau
Michigan United Conservation Clubs
National Ocean Survey

TRAVEL INFORMATION

Michigan Travel Bureau

Michigan Travel Events -- Detailed calendar of events for the current year.

Tollfree information numbers — listed under ADDRESSES OF FREQUENTLY CITED SOURCES.

East Michigan Tourist Association

East Michigan Auto Guide — Lists attractions, lodging, camping, shopping, sport shops, and auto services.

East Michigan Travel Guide — Lists resorts and vacation opportunities.

East Michigan Sportsmen's Travel Guide
Describes opportunities and locations for all types of outdoor recreation.

East Michigan Color Tour Guide — Gives location and dates for peak fall color.

Upper Peninsula Travel & Recreation Association

P.O. Box 400
Iron Mountain, MI 49801 — 906/774-5480

Chambers of Commerce for areas of interest to you.

Michigan Department of Natural Resources (MDNR)

Information Services Center

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 | west of Saginaw Bay |
| Mackinaw City | M-108 | at Straits of Mackinaw |
| Sault Ste. Marie | I-75 | at Canada-Michigan line |

Canadian Travel Information

Ontario Travel

900 Bay St., Queen's Park
Toronto, Ont., Can. M7A 2E5

Georgian Bay Islands National Park

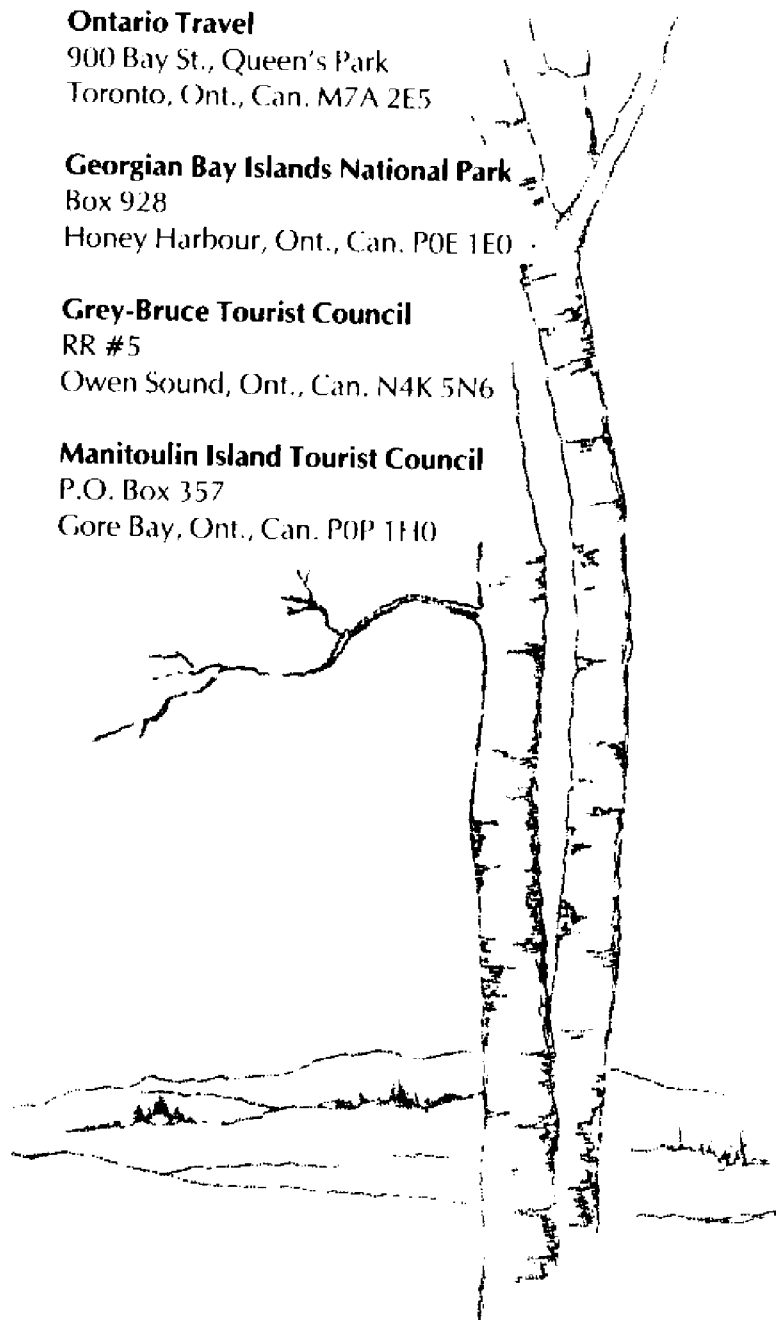
Box 928
Honey Harbour, Ont., Can. P0E 1E0

Grey-Bruce Tourist Council

RR #5
Owen Sound, Ont., Can. N4K 5N6

Manitoulin Island Tourist Council

P.O. Box 357
Gore Bay, Ont., Can. P0P 1H0



Navigational Rules, International-Inland

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

(Ask for stock number 050-012-00192-B)
These new rules became effective March 1, 1983.
(For an interpretive guide see following publication.)

Unified Rules Study Guide and Ready Reference

Houston Marine Consultants, Inc.
1600 20th St.
Kenner, LA 70062

Michigan Harbors Guide — MDNR — 517/322-1311

Describes facilities at each of Michigan's harbors of refuge. Boating safety and courtesy tips.

Michigan Marina List — Michigan Sea Grant

Names and addresses of all Great Lakes and inland lake marinas in Michigan, arranged by county.

The Boat Launching Directory — MDNR —

517/322-1311
Lists public launching sites on the Great Lakes and inland lakes.

Nautical Charts — National Ocean Survey

Catalog for series of Great Lakes charts, including coastal charts, and charts of each lake, harbors, river mouths, and connecting waterways. Also available at most marinas.

Canadian Nautical Charts and Publications

Hydro-Graphic Chart Distribution Office
P.O. Box 8080
Ottawa, Ont., Can. K1G 3H6
613/998-4931

The Coast Pilot — National Ocean Survey

Gives current information on Great Lakes coasts too detailed for the nautical charts.
Monthly supplements May through October.

**Marine Weather Service Chart — Lakes Huron, Erie,
and Ontario** — National Ocean Survey

Decodes the Marine Forecast (MAFOR), lists stations broadcasting marine weather forecasts, and gives locations of weather warning flag stations. Also available at most marinas.

Light List, Vol. IV — Great Lakes

Superintendent of Documents

U.S. Government Printing Office

Washington, D.C. 20402

Detailed information on lights, buoys, and other navigation aids.

Local Notice to Mariners

Ninth Coast Guard District

1240 E. Ninth St.

Cleveland, OH 44199

216/522-3991

Weekly updates on location of navigation aids and hazards. Information is also broadcast on marine radio band.

Federal Requirements for Regional Boats

Director of Auxiliary, Ninth Coast Guard District

P.O. Box 480

Castle Station

Saginaw, MI 48606

517/753-5475

Gives Coast Guard requirements for boating safety equipment, lights, and loading. Pub. No. CG-290.

Registration Information

Michigan Waterways Commission

Field Box 30028

Lansing, MI 48909

517/373-0626



CAMPGROUNDS

State, Local, and Private Campgrounds

East Michigan Tourist Association

MDNR, Parks Division

MDNR, Forest Management Division

National Forest Campgrounds

(see PARKS AND FORESTS for addresses)

Huron National Forest

Hiawatha National Forest

CANOEING

Canoeing in Michigan

MDNR, Information Services Center

Maps and descriptions of good canoeing rivers in Michigan.

Let's Go Canoeing

Recreational Canoeing Association of Michigan

5042 Scenic Drive

Honor, MI 49640

Lists canoe liveries on major canoeing rivers.

FAIRS AND FARM MARKETS

Michigan Department of Agriculture

P.O. Box 30017

Lansing, MI 48909

Information Division — 517/373-1194

County Fair Division — 517/373-1095

Michigan Art Fairs

Michigan Council for the Arts

1200 Sixth Avenue

Detroit, MI 48226

313/256-3731

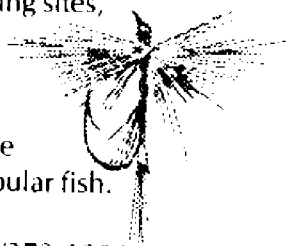
Current listing of fairs, locations, and dates.



FISHING

East Michigan Fishing Guide to Lake Huron and Saginaw Bay — East Michigan Tourist Association
Types of fish, how to fish for them, launching sites, fishing services, license information.

Angler's Guide to Michigan Great Lakes
Michigan Natural Resources Outdoor Store
Maps, charts, and color illustrations of popular fish.



Michigan Fishing Guide — MDNR — 517/373-1280
Licenses, fishing seasons, special waters, size and creel limits, definitions, and field offices.

Tollfree Fishing Hotline

800/292-5404 (MI) - 800/248-5708 (out-of-state)
Current information on fishing conditions.

Catalog of Detailed Maps of Michigan's Best Fishing Lakes — Michigan United Conservation Clubs
Maps listed in this catalog show lake bottom contours.

Trout Streams of Michigan

Michigan United Conservation Clubs
Describes trout streams and gives tips on catching rainbow, brook, and brown trout.

Charter Boat Directory — Michigan Travel Bureau
Lists Michigan's licensed charter boats, their ports, captains, sizes, and rates.

FISH COOKERY

Kitchi Gami Cookery — Michigan Sea Grant
Wide variety of recipes for Great Lakes fish.

Great Lakes Fish Preparation

Cooperative Extension Service
Michigan State University
East Lansing, MI 48824
Basic tips on selecting, cleaning, storing, and cooking fish, including cooking to reduce contaminants.

HISTORY

East Michigan Paths of History

East Michigan Tourist Association

Map and text review history and describe and direct you to historical attractions.

Information & Guidebooks on Historic Districts & Sites

Michigan History Division

208 N. Capitol

Lansing, MI 48918

517/373-0510

HUNTING

Michigan Hunting Guide — MDNR — 517/373-1280

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

Hunting in Michigan — The Early 80's

Michigan Natural Resources Outdoor Store

Overview, with maps, of huntable state lands.

State Game Areas Maps

MDNR, Wildlife Division — 517/373-1263

PARKS AND FORESTS

Huron National Forest

421 S. Mitchell St.

Cadillac, MI 49601

616/775-2421

Mio District Office

Mio, MI 48647

517/826-3252



Hiawatha National Forest

2727 N. Lincoln Road
Escanaba, MI 49829
906/372-4422

State Forests

MDNR, Forest Management Division
517/373-1275

Michigan State Parks

MDNR, Parks Division
Lists parks, facilities, special features, and procedures.

WATER SAFETY

The next 4 publications are available from the
Michigan Sea Grant College Program.

Lightning: Cone of Protection — Pamphlet describes how to reduce chance of damage on boats from lightning.

Cold Water Drowning — A New Lease on Life
Pamphlet describes cold water drowning and how to administer CPR to a drowning victim.

Cold Water Survival — Describes how to recognize, treat, and prevent hypothermia.

The Michigan Sea Grant Diving Safety Series
A packet of pamphlets for the diver, covering prevention and treatment of bends and ear injury, and the influence of drugs and fitness on diving safety.

National Diving Accident Network — 919/684-8111
Call collect in emergencies.
24-hour emergency phone to assist initial treatment of underwater diving accidents.

Diving Accident Network Accident Manual

DAN
Box 3823
Duke University Medical Center
Durham, NC 27701
Handbook giving causes, symptoms, prevention, and treatment of every known diving injury.

Most books listed below are also available in bookstores. The standard bird identification field guides by Peterson and Golden Books cover birds 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.

Guide to Michigan Fossils

MDNR, Geological Survey Division

Reference for beachcombers.

Fall Beachcombing — by Suzanne Tainter

Michigan Sea Grant College Program

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

The Mushroom Hunter's Field Guide

by Alexander H. Smith

Michigan Natural Resources Outdoor Store

Michigan's Morels and Wildflowers

East Michigan Tourist Association

Wildflowers of Michigan

by Roberta L. Simonds & Henrietta H. Tweedie

Published by the authors.

Michigan Trees

Classic guide by Charles W. Otis

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

The University of Michigan Press

Ann Arbor, MI 48109

The Long Blue Edge of Summer

by Doris Scharfenberg

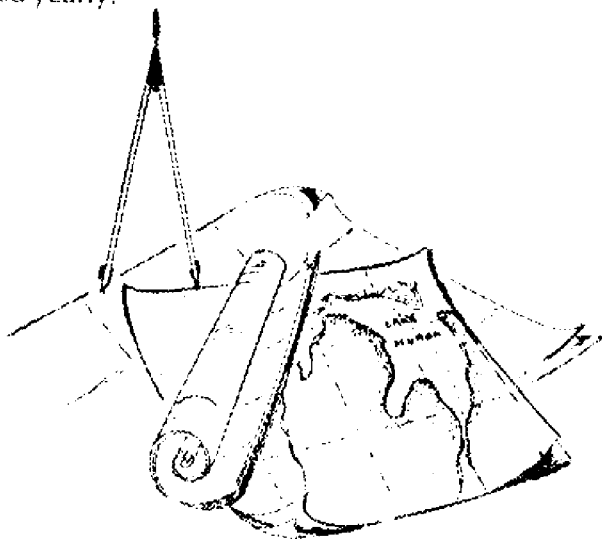
Michigan Natural Resources Outdoor Store

Vacation guide for Michigan's shoreline.

The Great Lakes Guidebook — Lake Huron & Eastern Lake Michigan — by George Cantor
Michigan Natural Resources Outdoor Store
Describes top attractions, suggests walks and scenic drives, includes maps.

Well-Favored Passage — A Guide to Lake Huron's North Channel (revised) — by Marjorie Cahn Brazier
Peach Mountain Press Ltd.
Rt. 2, Box 195
Charlevoix, MI 49720

Waterway Guide — Great Lakes Edition
Waterway Guide, Inc.
93 Main St.
Annapolis, MD 21401
Gives navigational advice, cruising conditions, cross-lake and coastwise distances; describes marinas and services, launching ramps, and shore attractions. Updated yearly.



MAPS

Michigan Highway Map
Michigan Department of Transportation
425 Ottawa St.
Lansing, MI 48909
Available at Highway Travel Information Centers.

Huron National Forest Map
Forest Service
4211 S. Mitchell St.
Cadillac, MI 49601

Michigan County Maps — Guide to Fun in Michigan

Michigan United Conservation Clubs

Includes local roads and parks, recreation opportunities, rivers and streams.

Michigan Hiking Opportunities

Michigan Natural Resources Outdoor Store

Guide to over 60 Michigan hiking trails — short nature trails, day-trails, and longer backpacking trails.

Individual County Maps

East Michigan Tourist Association

Department of State Highways

and Transportation

Bike Maps, Drawer K

Lansing, MI 48904

Index to Topographic Maps

Michigan United Conservation Clubs

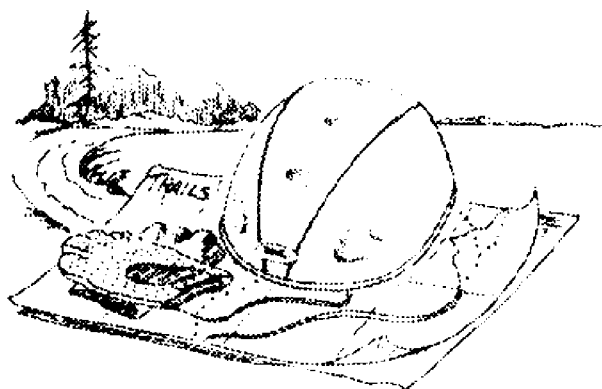
MDNR, Information Services Center

Bruce Trail Map and Guidebook

Bruce Trail Association

Box 857

Hamilton, Ont., Can. L8N 3N9



ADDRESSES OF FREQUENTLY CITED SOURCES

East Michigan Tourist Association

1 Wenonah Park
Bay City, MI 48706
800/292-6154 (MI)
517/895-8823 (out-of-state)

Michigan Department of Natural Resources (MDNR)

Information Services Center
P.O. Box 30028
Lansing, MI 48909
517/373-1220

Michigan Natural Resources Outdoor Store

P.O. Box 30034
Lansing, MI 48909
800/292-2525 (MI)
800/248-5848 (out-of-state)

Michigan Sea Grant College Program

Communications
2200 Bonisteel Blvd.
The University of Michigan
Ann Arbor, MI 48109
313/764-1138

Michigan Travel Bureau

P.O. Box 30266
Lansing, MI 48909
Daily fishing and events information
800/292-5404 (MI) — 800/248-5708 (out-of-state)
General information
800/292-2520 (MI) — 800/248-5700 (out-of-state)

Michigan United Conservation Clubs

P.O. Box 30235
Lansing, MI 48909
517/371-1041

National Ocean Survey

Distribution Division C44
Riverdale, MD 20840
301/436-6990

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 |
|--------|-------------|-------|------------|
| 0 | 2.5 | 1 | 1.6 |
| 10 | 25 | 25 | 40 |
| 20 | 50 | 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 3.8 to get liters.

multiply by 0.83 to get imperial gallons

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

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Designed and Illustrated by:

Millie J. Flory, Michigan Sea Grant

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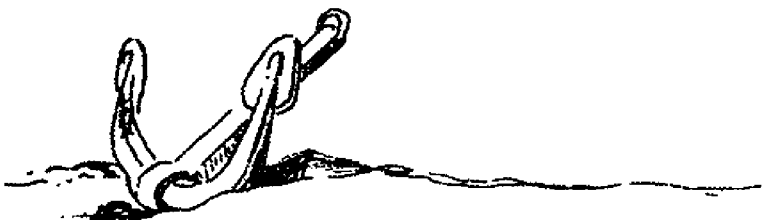
John Schwartz, Steve Stewart, and Ron Kinnunen

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Robert Snider, National Weather Service, Ann Arbor

Copies are available from:

Michigan Sea Grant Communications
2200 Bonisteel Blvd.
Ann Arbor, MI 48109



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