Ecologically Significant Sites to Visit in the Straits Region of Michigan

Michigan's more than 3,000 miles of Great Lakes shoreline represent some of the state's most valuable assets. These shores harbor a unique assemblage of natural ecosystems and associated plant and animal species.

Ordovician and Silurian limestone and dolomite bedrock, deposited when most of Michigan was a shallow marine basin some 300 million to 500 million years ago, underlies the Straits area. The calcium-rich bedrock supports several rare plant and animal species, including dwarf lake iris, rare boreal land snails and Hine's emerald dragonfly. The landforms associated with the shorelines of the Great Lakes create several unique habitats. The coastal features include open dunes, dune and swale complexes, and large marshes in protected bays of the Great Lakes. Coniferous forests, northern fens and alvar grasslands also occur here. Some of these habitats and associated plants and animals are regionally or globally rare, and several are found only on the Great Lakes shores.

Lake Superior

Lake Michigan

Lake Huron

Straits of Mackinac

Sites where highlighted natural features have been observed.

Natural feature	Federal status	State status	Big Knob Campground	Hiawatha Dunes	Pointe Aux Chenes	Les Cheneaux Region	Maxton Plains	Wilderness State Park	Grass Bay	Thompson's Harbor State Park	Best viewing time
alvar grassland							X			X	spring - fall
boreal forest			X			X		X	X	X	year round
Great Lakes marsh					X	X		X			spring - fall
interdunal wetland			X		X			X	X		spring - summer
northern fen						X		X	X	X	spring - summer
open dune				X	X	X		X	X	X	year round
rich conifer swamp			X			X		X	X	X	year round
wooded dune and swale			X	X	X			X	X		year round
butterwort		SC			X	X		X		X	May - June
calypso orchid		T		X		X	X	X			late May - early June
dwarf lake iris	T	T	X	X	X	X		X	X	X	mid-May - early June
Houghton's goldenrod	T	T	X		X	X		X	X	X	early August - early September
Lake Huron tansy		T	X	X		X		X	X	X	late June - July
Pitcher's thistle	T	T	X	X	X	X		X	X	X	late June - August
prairie smoke		T					X				late May - early June
bald eagle	T	T	X	X		X		X	X	X	April - August
black tern		SC				X					May - August
Caspian tern		T				X					May - July
common tern		T			X	X		X			May - July
Hine's emerald dragonfly	E	E								X	late June - mid-August
Lake Huron locust		T	X	X	X			X	X		August
neotropical migrants			X		X	X	X	X	X	X	May
osprey		T	X	X	X	X		X			April - August
piping plover	E	E		X	X			X	X	X	May - June
rare land snails		SC				X	X				April - September

- ***Endangered*** **(E): in danger of extinction throughout all or a significant part of its range.**
- ***Threatened*** **(T): likely to become endangered within the foreseeable future.**
- ***Special concern*** **(SC): likely to have undergone a serious decline or is sufficiently uncommon in Michigan that it could become threatened in the foreseeable future if the decline continues, or populations or habitat is reduced, or rare species in Michigan that requires further evaluation.**

Big Knob Campground

Directions: From Naubinway, follow U.S. 2 west 7 miles to Big Knob Road, then 5 miles south to campground.
Ownership: State of Michigan.
Parking: Small lot at campground.
Facilities: Rustic camping; vault toilets; hiking trails.

Hiawatha Dunes

Directions: U.S. 2 west from Mackinac Bridge 12 miles to national forest lands. Dunes also can be accessed via the North Country Trail from the Brevoort Lake National Forest Campground by hiking eastward along the south side of Brevoort Lake.
Ownership: U. S. Forest Service – Hiawatha National Forest.
Parking: Many pull-offs along south side of highway; parking at Lake Michigan, Brevoort Lake and Little Brevoort Lake campgrounds.
Facilities: North Country Trail and beach access; modern toilets and picnic area at Lake Michigan National Forest Campground; camping inland with modern toilets at Brevoort Lake National Forest Campground and vault toilets at Little Brevoort Lake State Forest Campground.

Pointe Aux Chenes

Directions: West on U.S. 2 from the bridge 10 miles. View the extensive dune and swale complex from the car along U.S. 2 or travel north to access the North Country Trail to hike through the inland dunes. Head north on H-57 (Brevoort Lake Road) and follow sign to trail crossing. No beach access at this site.
Ownership: U. S. Forest Service – Hiawatha National Forest.
Parking: Small parking lot at North Country Trail head.
Facilities: Primitive camping areas for hikers along North Country Trail. Visit **www.northcountrytrail.org/** for details.

Les Cheneaux Region

Directions: I-75 north to M-134; east to Hessel and along M-134 to DeTour Village.
Ownership: Private, State of Michigan, The Nature Conservancy, U. S. Forest Service.
Parking: Pull-off at Hessel Marsh viewing station less than 1/2 mile east of Hessel; various pull-offs along M-134.
Facilities: Boat launch facilities in Hessel and Cedarville; kayak and bicycle rental in Cedarville.

Maxton Plains

Directions: M-134 east to DeTour Village. Turn right at second blinking light; straight to ferry. On Drummond Island, follow M-134 for 7.7 miles to Townline Road (Drummond Road). Turn left (north) and drive to Maxton Road. Turn right (east) and go about 7.5 miles to fork in road. Turn left (west) on Bruce Point Road and drive for 2 miles to preserve sign and parking area. More details on preserve can be obtained from the Lansing field office of The Nature Conservancy (TNC): 517-316-0300.
Ownership: The Nature Conservancy, State of Michigan, private.
Parking: Parking area at TNC sign.
Facilities: None.

Wilderness State Park

Directions: From I-75, west on C-81 to Cecil Bay; continue west along shoreline to park.
Ownership: State of Michigan.
Parking: Available at park headquarters, day-use area, Nebo trail head and the west end of Waugoshance Pt. Road.
Facilities: Modern camping, rustic cabins, youth organizational camp, hiking trails.

Grass Bay

Directions: East from Cheboygan on M-23 5.5 miles to Grass Bay Nature Preserve. Access is limited to The Nature Conservancy field trips. Contact the Lansing TNC field office: 517-316-0300.
Ownership: The Nature Conservancy.
Parking: Arranged by The Nature Conservancy.
Facilities: Hiking trail accessed only with permission of The Nature Conservancy.

Thompson's Harbor State Park

Directions: From Rogers City, south on U.S. 23 about 13 miles to park entrance, 1 mile east of Miller Road. From Alpena, north on U.S. 23 about 24 miles to park entrance.
Ownership: State of Michigan.
Parking: Lot located at the trail head 1.25 miles from park entrance.
Facilities: Vault toilets, trails.

Naubinway
Price Road
Big Knob Road
Big Knob Campground
Epoufette
Lake Michigan Campground
Hiawatha Dunes
Brevoort Lake Road
H 57
Pointe Aux Chenes
Cheeseman Road
Gros Cap
Wilderness State Park
Cecil Bay
C 81
St. Martin Bay
Mismer Bay
Hessel Bay
Cedarville
Prentiss Bay
Les Cheneaux Region
De Tour
Maxton Plains
Bruce Point Road
Maxton Road
Townline Road
Cheboygan
Grass Bay
Cordwood Point
Rogers City
Thompson's Harbor State Park
Observatory Point
Miller Road
117
2
123
134
75
23

Michigan State University Extension • Michigan Natural Features Inventory

Ecological Jewels of the Straits

Extension Bulletin E-2885 • New • May 2003

This brochure highlights eight ecologically significant sites in the Straits of Mackinac region where you can view some of Michigan's coastal ecosystems and associated rare plants and animals. It describes the diverse natural habitats found within these sites and provides photos and additional information on select rare plants and animals found there. A map and information on how to access these sites also are provided.

The Great Lakes shores in this region are extremely vulnerable because of high development pressures. Fragmentation of habitats, disruption of ecological processes, and some human and animal disturbances can negatively affect the species that occur here. Most of the plants and animals highlighted in this brochure are classified as endangered or threatened and are legally protected under provisions of the Natural Resources and Environmental Protection Act of 1994. It is illegal to pick or capture them. We encourage you to discover and enjoy these shoreline features with consideration for their vulnerability.

For additional information, please see:

Michigan Natural Features Inventory Web site:
www.msue.msu.edu/mnfi
Michigan Department of Natural Resources Camping and Recreation:
www.michigan.gov/dnr
U.S. Forest Service: **www.fs.fed.us/r9/**
The Nature Conservancy:
www.nature.org/wherewework/northamerica/states/michigan/
Nature Serve: **www.natureserve.org/**
The North Country Trail: **www.northcountrytrail.org**

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Additional copies of this brochure can be obtained from Michigan Natural Features Inventory, Michigan State University Extension, P.O. Box 30444, Lansing, MI 48909-7944, www.msue.msu.edu/mnfi.

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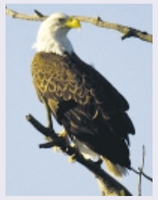
Big Knob Campground

© Kim A. Chapman

Interdunal swales are wetlands that occur between the sandy ridges of forested dunes. Water level in these swales is controlled by the Great Lakes near the shoreline and by groundwater flow farther inland. Vegetation is typically diverse, including aquatic or emergent grasses, sedges, herbs and shrubs. Inland swales are often forested.


© MI DNR/David Kenyon

The bald eagle, Michigan's largest bird of prey, was once critically endangered in Michigan. Today, the bald eagle is making a steady recovery, although it remains vulnerable to environmental pollutants. Bald eagles have been reported from Knob Lake north of the campground. They can be seen nesting in tall trees or foraging for fish along the shorelines of lakes, floodings and large rivers.

In the Great Lakes region, Lake Huron tansy occurs on the Door Peninsula of Wisconsin, the shores of northern lakes Michigan and Huron, and the shores of Lake Superior in Ontario. It grows on calcareous sand dunes and beaches and can be found along the beach at Big Knob Campground. Similar to the common garden tansy, it has much larger flower heads, and the finely dissected leaves are hairy.

© Gary R. Reese

Hiawatha Dunes

© Phyllis T. Higman

Open sand dunes are among the most rugged and beautiful natural features of the Lake Michigan shoreline. The sparse vegetation is exposed to abrasion and burial by windblown sand, extreme temperatures, and low moisture and nutrient levels. Pioneering grasses such as marram grass and sand reed occur here, along with other disturbance-tolerant species such as sand cherry, bearberry, hairy puccoon, Lake Huron tansy and Pitcher's thistle.

© TNC/Doug Pearsall

The Lake Huron locust is a rare grasshopper known only from Michigan, Wisconsin and Ontario. This grasshopper inhabits sparsely vegetated sand dunes and feeds on dune grasses and other dune plants. Adults are silvery to ash-gray with dark brown and white markings and light yellow hindwings with dark bands.

The white-flowered Pitcher's thistle grows in open dunes only along the Great Lakes shores. Its blue-green leaves are densely covered with white woolly hairs, which help minimize the absorption of heat. It also has a strong and deep taproot that enables it to withstand the forces of wind and water.

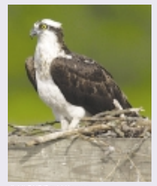
© Phyllis J. Higman

© Susan R. Crispin

Pointe Aux Chenes

© Dennis A. Albert

Wooded dune and swale complexes occur along embayments of the Great Lakes where gradually dropping lake levels and postglacial uplifting have formed a series of alternating sandy beach ridges with low, usually wet areas (swales). Typically, the inland ridges and swales are forested and those near the shoreline are open. This community is restricted to the Great Lakes shores.


© MI DNR/David Kenyon

The osprey requires open, clear water and feeds primarily on fish, which it catches by plunging feet first into the water. Ospreys nest in dead trees along lakes, rivers and floodings, or in tall conifers in swamps. The osprey has a dark brown back, white underbody, and a white head with a dark eye stripe. In flight, the osprey's wings are V-shaped and white with dark "wrist" patches below.

Houghton's goldenrod is known only from the Great Lakes shores, occurring primarily in calcareous beach sands, rocky shores, interdunal wetlands and northern fens. It is abundant in the wetlands along U.S. 2 at Pointe Aux Chenes. Its large ray flowers (see photo), narrow leaves and minutely hairy stems of the flower heads distinguish it from other goldenrods that have similar flat-topped flower clusters.

© Doug Moore

© Phyllis Higman

Les Cheneaux Region

© Dennis A. Albert

Great Lakes marshes are found along the shoreline of the Great Lakes and their connecting rivers. In the Straits region, they are found mostly in protected embayments and are characterized by grasses, sedges and rushes in the shallow waters at the lake edge. They provide important habitat for insects, fish, waterfowl, water birds and mammals. During spring migration, terrestrial migratory songbirds feed on midges as the insects mature and emerge from the water. Excellent views of Great Lakes marsh are found at St. Martin's, Mismer, Hessel and Prentiss bays (Prentiss Bay marsh shown here).

© Betty Darling Cottrille

The black tern is Michigan's smallest tern, averaging 25 cm in length and 61 cm in wingspan. Its small size and black and gray body coloration help distinguish this species from other terms in the state. Black terns nest in colonies in freshwater marshes of inland lakes and Great Lakes shorelines. Colonies occur along Mackinac Bay, Hill Channel and Prentiss Bay.

© Cornell Lab of Ornithology/O. S. Pettingill

Caspian and common terns also have nested in the Les Cheneaux region. The Caspian tern, shown here, is Michigan's largest tern, with an average wingspan of 137 cm. The Caspian tern has a stout red bill and lacks a deeply forked tail; the common tern is smaller and has a red bill with a black tip and a deeply forked tail. These terns nest on sand and gravel beaches on islands or along the shoreline of the Great Lakes.

Maxton Plains

© Patrick J. Comer

Alvar grasslands are open landscapes where grasses and sedges grow on flat limestone bedrock. Most trees are unable to survive because of thin soils and seasonal extremes such as spring flooding and summer drought. Alvar is among the rarest habitats in the world, known only from the Great Lakes, the Baltic region of Europe and northwestern Ireland. Many uncommon species occur in these grasslands, including species of the Arctic tundra and the Great Plains prairies.

© Gary R. Reese

Prairie smoke ranges from western New York north to Ontario and west through the Great Plains to British Columbia and California, where it is usually found in prairies and dry, open woodlands. In Michigan it also occurs in the alvar grasslands of Maxton Plains, which offer a stunning view in the spring. Its smoke-like appearance results from the elongation of the silky styles to produce a cluster of pale, rosy plumes, which aid in the dispersal of fruits by wind and/or animals.

Rare land snails have been found in the Maxton Plains complex. These include one of the rarest land snails in eastern North America, *Vertigo nylanderi*. These snails can be found in leaf litter or on trees. Finding these snails can be challenging, however, because they measure less than 2 to 3 mm.

© Jeffrey C. Nekola

Wilderness State Park

© Gary R. Reese

Boreal forest, such as that shown here at Waugoshance Point, is a conifer-hardwood forest that occurs primarily across most of northern Canada into Alaska. In the Great Lakes region, most boreal forests are upland communities that occur near the Great Lakes shoreline on thick duff. Dominant trees include balsam fir, white spruce, white cedar, white pine, paper birch and trembling aspen. Mosses and lichens are abundant. Downed trees and standing snags are common because of shallow roots and strong lake winds.

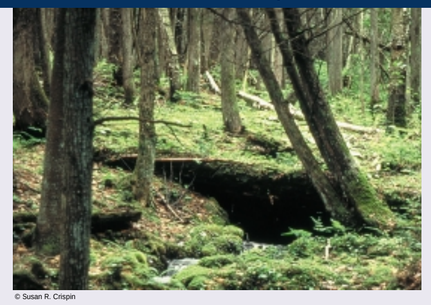
© The Nature Conservancy

The tiny calypso orchid inhabits moist coniferous forests with cool soils, including cedar-fir thickets along the upper Great Lakes shores and cedar swamps and bogs. It is difficult to find, reaching only 1 to 2 dm in height and flowering for only a brief time in early spring. The exquisite, purple-magenta, sac-like flower with its bright yellow crest of hairs is unmistakable.

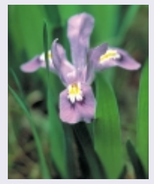
Piping plover, one of the rarest birds in the state, can be readily identified by its sand-colored upper body, white underside, one black band around its neck and one across its forehead, and orange legs and bill. Piping plovers nest on wide, sandy beaches with little vegetation and scattered cobble. This bird occurs in Michigan from late April until mid-August and nests in May and June. Please do not disturb birds during the nesting season.

© MI DNR/David Kenyon

Grass Bay


© Susan R. Crispin

Rich conifer swamp is a mineral-rich, groundwater-influenced, forested wetland occurring on soils high in organic material. It is dominated by northern white-cedar and is often referred to as cedar swamp. Because of high water tables, trees are shallow-rooted and prone to blow down. It is one of the most floristically diverse ecosystems in the upper Midwest, providing habitat for more than 25 percent of northern Michigan's wildlife species and critical winter yards for deer.


© Thomas Arter

Named Michigan's state wildflower in 1999, dwarf lake iris is known only from the shores of lakes Michigan and Huron. The leaves of this miniature iris reach about 15 cm in length, and the showy flowers lie close to the ground. It flourishes along the edges and openings of coniferous forests, often forming a carpet composed of thousands of shoots.

Neotropical migrants, such as the black-throated blue warbler pictured here, breed in the United States and Canada but winter in Latin America and the Caribbean. Many are experiencing population declines because of habitat loss. Neotropical migrants fly over a thousand miles, requiring stopover sites along the way for food, water and shelter. Shoreline habitats such as conifer swamps provide important stopover sites.

© Betty Darling Cottrille

Thompson's Harbor State Park

© David L. Cuthrell

Northern fens are herbaceous wetlands that occur where limestone bedrock or cobble at or near the surface creates calcareous conditions. In the warm carbonate-saturated waters, algae precipitate calcium carbonate, often forming a whitish marl. A complex of calcium-loving plant species occur here, such as Houghton's goldenrod, Kalm's lobelia, twig-rush, sweet gale and shrubby cinquefoil. Several high quality examples of this community occur at Thompson's Harbor State Park, shown here.

© Susan R. Crispin

Butterwort, a calcium-loving plant with purple flowers arising from small rosettes of distinctively yellow-green leaves, occurs predominantly in interdunal wetlands and northern fens along the northern Great Lakes shores. The leaves secrete enzymes that aid in the digestion of insects that land on their sticky surfaces.

The Hine's emerald is an extremely rare dragonfly, occurring only in Michigan, Illinois, Wisconsin and Missouri. These dragonflies live in fens and other grassy wetlands that contain cool water seeps, open areas near a forested edge and thin soils over bedrock, often with marl. Adults are about 6 cm long and have brilliant green eyes, a dark metallic green upper body with two yellow lines, and distinctive appendages at the rear end of the body.

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