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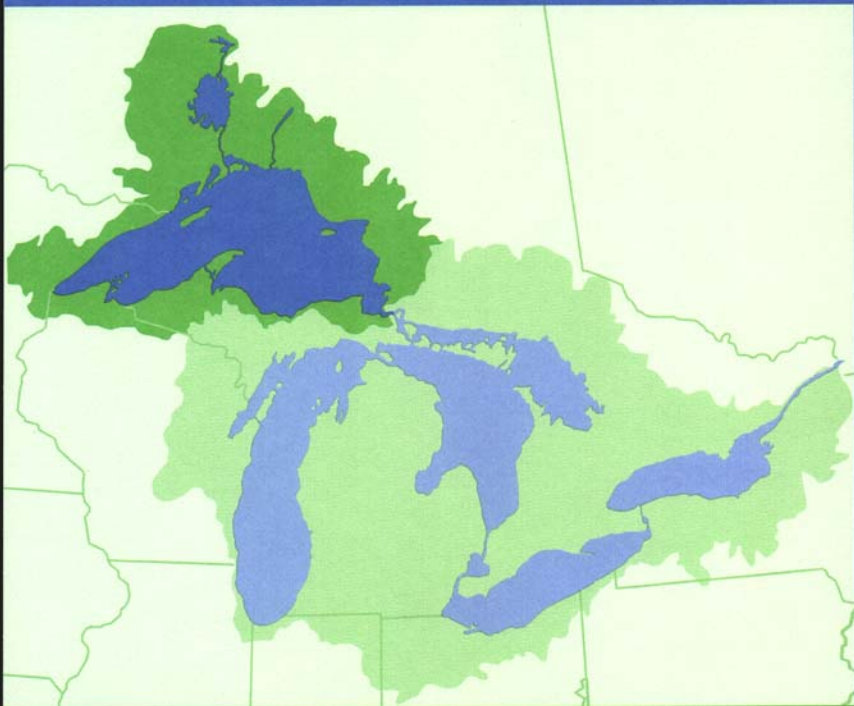
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Lake Superior Basin
Michigan State University Cooperative Extension Service
Michigan SeaGrant
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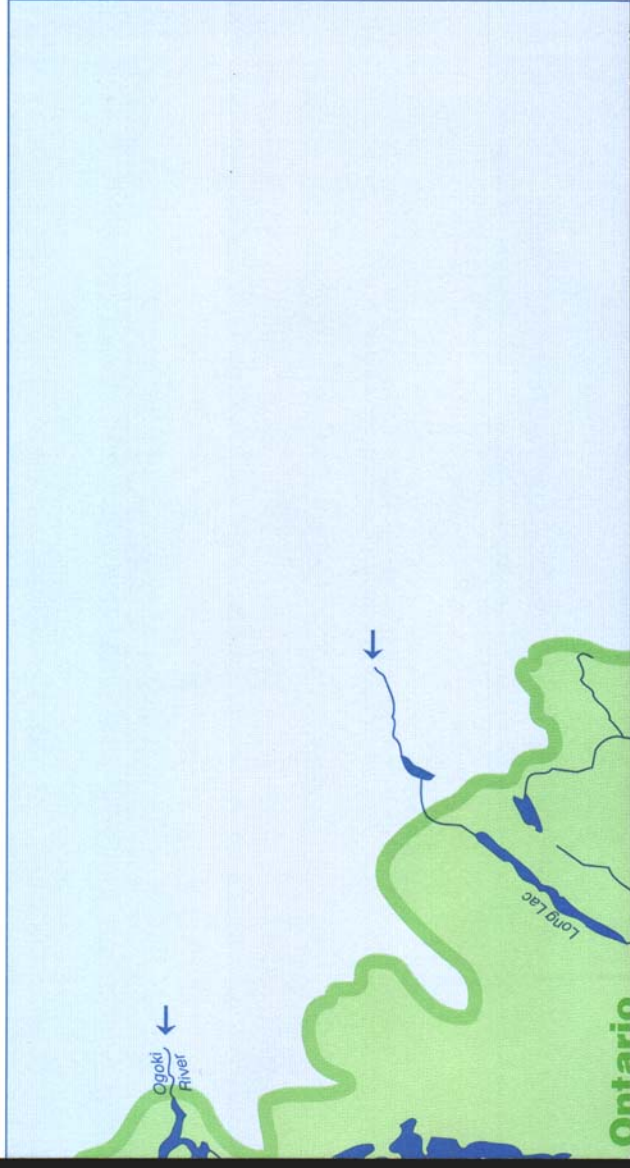
Lake Superior Basin



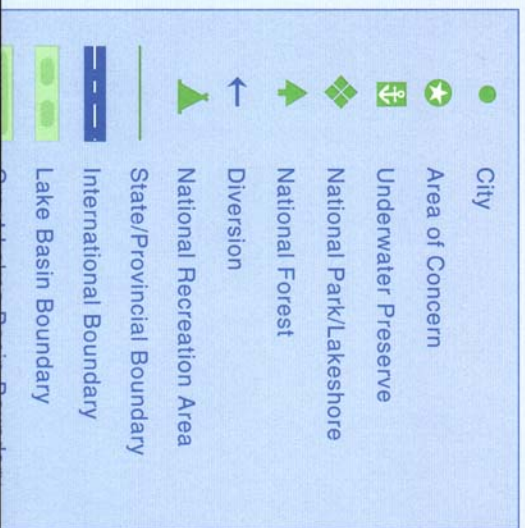
Lake Superior Basin Statistics

Length	350 mi/563 km	Shoreline Length	2,730 mi/4,393 km (including islands)
Breadth	160 mi/257 km	Elevation	601.1 ft/183.2 m
Depth	489 ft/149 m average; 1,333 ft/406 m maximum	Outlet	St. Marys River to Lake Huron
Volume	2,935 mi ³ /12,232 km ³	Retention/Replacement Time	173 years
Water Surface Area	31,700 mi ² /82,097 km ²	Population	672,116
Drainage Basin Area	49,300 mi ² / 127,677 km ²	United States	443,127
		Canada	228,989

rior Basin

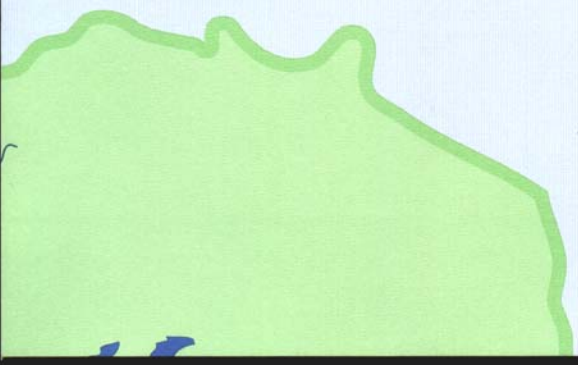


Lake Sup



A legend box with a light blue background and a thin blue border. It lists ten symbols and their corresponding map features. The symbols are arranged vertically from top to bottom: a green circle, a green star, a green anchor, a green diamond, a green arrow, a blue arrow, a green funnel, a thin green line, a thick blue line, and a green shaded area.

- City
- ★ Area of Concern
- ⚓ Underwater Preserve
- ◆ National Park/Lakeshore
- ➡ National Forest
- ➡ Diversion
- ⚑ National Recreation Area
- State/Provincial Boundary
- ▬ International Boundary
- ▭ Lake Basin Boundary



Lake Superior is the largest of the Great Lakes in both surface area and volume. It has the largest surface area of all freshwater lakes in the world. Lake Superior is the deepest, the clearest and the coldest of the Great Lakes. In addition to its natural sources of water, some water is transferred into the Lake Superior drainage basin through diversion structures at Long Lac and Ogoki Lake in Ontario. It takes almost two centuries for the water in Lake Superior to circulate completely through the lake and empty into the St. Marys River, where it will travel through three of the four other Great Lakes — Huron, Erie and Ontario. The basin's border runs through three states — Minnesota, Wisconsin and Michigan — and the Canadian province of Ontario. The basin is sparsely populated; less than 2 percent of the Great Lakes basin's population lives there. Lake Superior is rich in natural resources and scenic beauty. It is particularly known for its cold, clear water, rocky shoreline and agate beaches.

Lake Superior contains 3 quadrillion gallons of water. This is 10 percent of the world's fresh surface water and half of the water in the Great Lakes basin.

Shoreline Use

United States

14.9%
5.0%
.2%
79.8%*

Residential
Commercial/Industrial
Agricultural
Other

Canada

8.5%
3.0%
1.0%
87.5%**

- * U.S. "other" classification includes public, beaches, forests, barren lands.
- ** Canadian "other" classification includes transportation and communications, recreation, extraction, water, wetlands, forestry, grassland, barren and unknown.

Economy

The Lake Superior drainage basin is not very suitable for agriculture because of the cold climate and poor soils. Therefore, its population is economically dependent largely on tourism and the natural resources in the basin, which include metals, minerals and forests.

Forestry: The Lake Superior drainage basin is an important region for producing pulp, paper and lumber in Canada and the United States. Of the 21 northern states, Michigan is the richest in timberland. The U.S. portion of the Lake Superior basin produced more than 256 million cubic feet of timber in 1996.

Mining: Minnesota is by far the largest producer of natural iron ore and taconite in the United States. Mines in the basin supply the United States with 97 percent of its iron ore.

Fisheries: More than 3 million pounds of fish were caught commercially in Lake Superior waters in 1996. The main species caught were lake herring, lake trout and whitefish. The Lake Superior recreational fishery is the smallest of the Great Lakes but still quite active. In 1991, more than 114,000 anglers spent more than 880,000 days fishing in U.S. waters; in 1985, more than 57,000 anglers fished 965,000 days in Canadian waters.

Shipping: Lake Superior ports ship iron ore, grain, coal and potash. In the United States, more than 76 million tons of cargo were shipped out of Lake Superior ports in 1996. Duluth-Superior is the busiest inland port in the country, with more than 1,000 vessels visiting annually.

Tourism/Recreation: Lake Superior is well known for its scenic beauty and offers many opportunities for recreation. Six U.S. and Canadian national parks and lakeshores are located in the region, including Isle Royale, the only island national park in the United States. More than 5 million people each year visit the national parks, along with the many state and provincial parks and underwater preserves in the basin. Underwater preserves are special areas in the lakes designated by states to protect shipwrecks and other cultural and geologic resources.

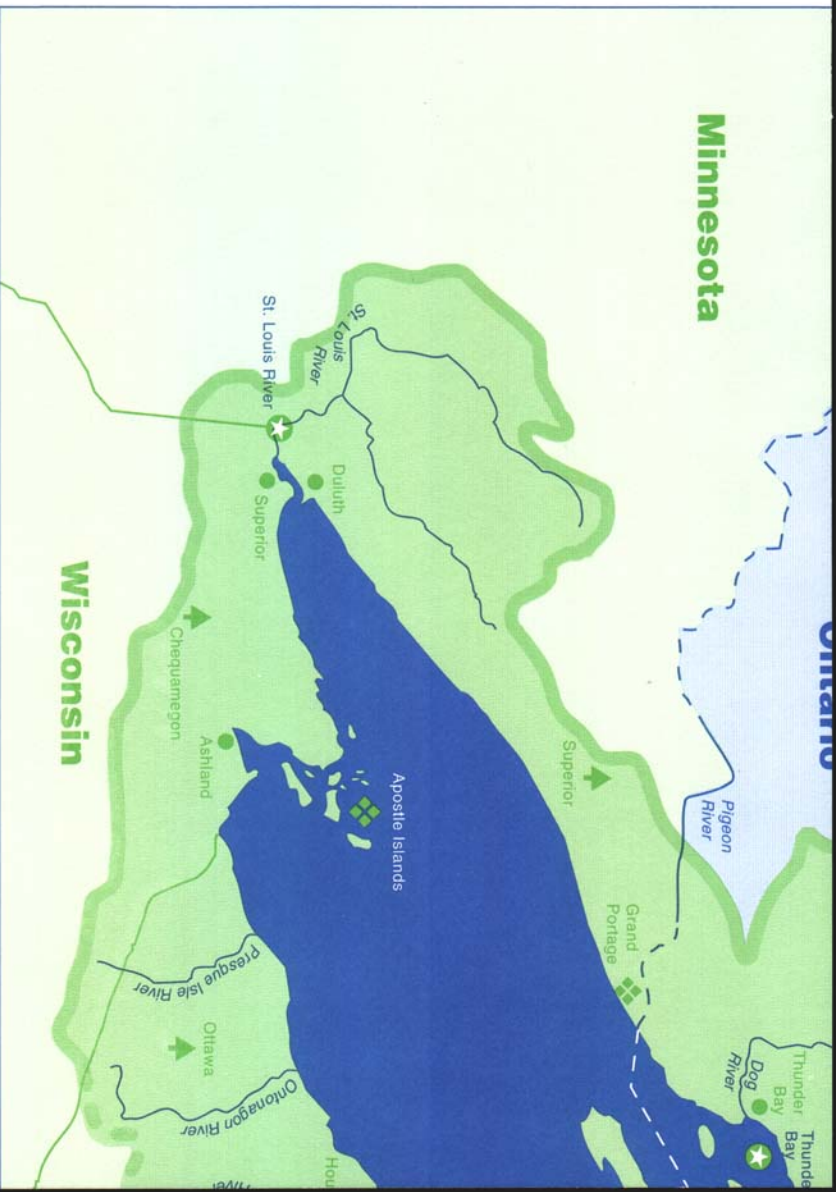
Lake Superior could contain all the other Great Lakes plus three more lakes the size of Lake Erie.

Ecology

The Lake Superior basin is unlike the other Great Lakes basins because its terrain is dominated by granite bedrock that is part of the Canadian Shield. This rock dates back to Precambrian times, the oldest era of geological history. The basin is heavily forested, and conifers dominate the landscape. Because the basin is so sparsely populated, it makes a suitable home for wildlife found nowhere else in the Great Lakes basin. Wolves and moose live on the mainland and on Isle Royale. Black bear, coyote, Canada lynx, bobcat, beaver, porcupine, white-tailed deer and red fox also live in the basin, along with a variety of birds, amphibians and more than 45 species of fish.

At its deepest point, Lake Superior would submerge the Empire State Building.





Minnesota

Wisconsin

Ontario

St. Louis River

St. Louis River

Duluth

Superior

Chequamegon

Ashland

Apostle Islands

Superior

Pigeon River

Grand Portage

Dog River

Thunder Bay

Thunder Bay

Ottawa

Ontonagon River

Presque Isle River

Natural Resource and Environmental Issues

The water in Lake Superior could cover both North and South America under a foot of water!

Lake Superior has not suffered from some of the extensive resource problems of the other lakes. The small population and relatively few heavy industrial processing and agricultural centers limit the amount of pollution that goes directly into the lake. Though pollution from these sources is not a significant problem, Lake Superior does have to contend with such resource issues as water quality and exotic species.

Water Quality: Lake Superior is not as threatened as the other Great Lakes by agricultural runoff or sewage disposal. Instead, most of its contamination is deposited by air currents from very distant locations. This pollution accounts for 93 percent of mercury loadings and 98.8 percent of PCB contamination in the lake. These toxins can be harmful to fish and wildlife. Consumption advisories have been placed on some Lake Superior sport-caught fish because of concern that mercury, PCBs and the pesticide chlordane might harm humans who eat fish in large amounts. The U.S. and Canadian governments have designated seven places as areas of concern on the Lake Superior shoreline where beneficial uses have been impaired and environmental standards are not being met.

Aquatic Nuisance Species: The sea lamprey was introduced into Lake Superior in 1938. This parasitic fish did substantial damage to Lake Superior fisheries, especially lake trout and whitefish. In the 1940s, the annual lake trout catch was 4.5 million pounds per year. That number plummeted to only 500,000 by the 1960s. Lamprey control programs have reduced the population of this invader to 10 percent of its former peak, but continual control is required to maintain the current number of lake trout in Lake Superior. Another exotic invader, the ruffe, is a threat to Lake Superior fisheries. This small, aggressive fish first entered Lake Superior in the 1980s, most likely in the ballast water of ocean vessels. Ruffe reproduce rapidly, and because they compete with native fish for food and resources, they may pose a serious threat to Lake Superior's fisheries.



The Michigan Sea Grant College Program is a joint effort of the University of Michigan and Michigan State University, funded by the National Oceanic and Atmospheric Administration, to conduct research, outreach and education on Great Lakes and marine issues. MICHU-SG-00-401

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