Lake Huron Basin
Michigan State University Cooperative Extension Service
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LAKE HURON

Lake Huron is the second largest Great Lake and the fifth largest freshwater lake in the world. It has the longest shoreline of the Great Lakes, counting the shorelines of its 30,000 islands. One of these islands, Manitoulin Island, is the largest freshwater island in the world. Georgian Bay and Saginaw Bay are the two largest bays on the Great Lakes. Early explorers listed Georgian Bay as a separate sixth lake because it is nearly separated from the rest of Lake Huron by Manitoulin Island and the Bruce Peninsula. In fact, Georgian Bay is large enough to be among the world's 20 largest lakes. Huron receives the flow from both Lake Superior and Lake Michigan, but water flows through Lake Huron (retention time) much more quickly than through either of them.

Huron was the first of the Great Lakes to be discovered by European explorers. Shipwrecks are scattered throughout the lake, with five bottomland preserves in Michigan and a national park in Ontario designated to protect the most historically significant ones. The Lake Huron basin is heavily forested, sparsely populated, scenically beautiful, and economically dependent on its rich natural resources.

WATER USE

The Great Lakes provide water for many purposes: residential, commercial and institutional facilities; agricultural operations; industrial processes; electric power generation; navigation; sanitation; recreation; and habitat for fish, waterfowl and other aquatic organisms. In 1987, the Great Lakes states and provinces established at the Great Lakes Commission a regional water use data base for the Great Lakes basin and the individual lakes. However, as of 1989, it was not yet possible to obtain accurate information for all categories of water use in Lake Huron.

ECONOMIC IMPORTANCE

Tourism: Important source of income for regional economy. Five bottomland preserves and one underwater park. The lake area has thousands of seasonal homes.

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its AOCs. The governments will report to the IJC regularly on progress in developing and implementing the RAPs. New sewage treatment plants on the Saginaw River have met the goals of Michigan's Point Source Phosphorus Reduction Strategy, thus reducing the problem of phosphorus pollution in Saginaw Bay. The Michigan Department of Natural Resources has enacted rules requiring municipal wastewater treatment facilities to develop industrial pretreatment programs. Twenty-seven municipal plants in the Saginaw River basin receive industrial wastes.

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hardwood and softwood products in the Lake Huron basin. An apparent loss of 10 percent of forested land in the basin may indicate reduced productivity in the future.

Industry: One of the largest U.S. chemical producers is located along the southern shoreline. The largest petrochemical center in Canada is at Sarnia, Ontario. Michigan ranks fourth and sixth in the U.S. in the sale of portland and masonry cement, respectively, and much of the production occurs in the Lake Huron basin.

Mining: World's largest limestone quarry; major limestone and gypsum producer; 10 percent of the world's nickel reserves and 17.4 percent of nickel production; 10 percent of the uranium produced by non-communist countries. Copper, platinum, silver and gold deposits are located in the area of Ontario north of Lake Huron. There are major salt producers at Goderich and along the St. Clair River.

Agriculture: The world's major producing area of navy beans; ranked first in the U.S. for growing all varieties of dry beans. The region produces 20 percent of all dry beans in the U.S., and is the leading producer of dry white beans in Canada.

Fishery: Commercial fishing — Major species caught in U.S. waters: whitefish, catfish, carp, lake trout and chubs. Value in 1986 was $2,306,402 (U.S.) for 4,232,566 lb (1,923,894 kg). Major species caught in Canadian waters: lake whitefish, yellow perch, walleye and chubs. Value in 1986 was $6,966,480 (CDN) for 2,550,761 kg (5,611,674 lb). Sportfishing — Nearly 9 million angler days spent seeking yellow perch, walleye, bass, trout and salmon in 1985. Estimated annual economic impact of $129 million (U.S.) from angling in U.S. waters and $148 million (CDN) from Canadian waters.

RESOURCE ISSUES

Problem: Inadequate public access to shoreline.

Source: Private ownership and development.

Effects: Limits public recreational use and tourist revenues.

Improvement: Some shoreline property is acquired for public use as it comes on market.

Problem: Water quality. Industrial, navigational, municipal and recreational uses of the Great Lakes add pollutants to the ecosystem. Some of them may stay in the water or lake sediments for hundreds of years and affect other uses of the water. Pollution is usually most severe in major population centers on Great Lakes rivers, harbors and connecting channels. The types of problems include: toxic substances in water, sediments and fish; damage to other organisms living in or depending on the water; elevated levels of bacteria; high levels of phosphorus and other nutrients; heavy metals; and aesthetic problems. Overall, the water quality of Lake Huron is excellent. However, problems have been identified in Saginaw Bay and certain nearshore areas.

The types and severity of water quality problems vary throughout the Great Lakes basin. However, the International Joint Commission (IJC) and Great Lakes jurisdictions have designated 42 "areas of concern" (AOCs) because of their special water quality problems. Lake Huron has five AOCs, the fewest of any of the Great Lakes.

Sources: Primary sources of pollution include agricultural runoff, municipal wastewater treatment plants, automobile, chemical and petrochemical plants, atmospheric deposition, a pulp and paper mill and hazardous waste sites.

Effects: The effects of water quality problems vary with the types of pollutants in the area. Suspended solids: turbidity (reduced visibility that diminishes recreational and aesthetic enjoyment), which disturbs aquatic systems. Phosphorus: eutrophication (over-fertilized water, where excessive plants and algae grow). Toxic substances: contaminated fish, human health risks and resulting economic losses.

Improvements: In 1985, the Great Lakes states and provinces agreed to clean up and restore the AOCs in the basin. Each jurisdiction is developing "remedial action plans" (RAPs) to control and stop existing sources of pollution and restore water quality in

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Other publications in this series are: Great Lakes Basin (E-1865, MICHU-SG-89-503); Lake Superior (E-1866, MICHU-SG-89-504); Lake Michigan (E-1867, MICHU-SG-89-505); Lake Erie (E-1869, MICHU-SG-89-507); and Lake Ontario (E-1870, MICHU-SG-89-508). For additional copies, contact one of the organizations listed above, your county Extension office, or the MSU Bulletin Office, 10-B Agriculture Hall, East Lansing, MI 48824-1039.

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Lake Huron

Lake Huron, the second largest of the Great Lakes, has more than 30,000 islands.

LEGEND

- International Border
- State/Provincial Border
- Basin Boundary
- National Park
- State/Provincial Park
- National Forest
- Area of Concern
- City
- Bottomland Preserve
- Port

RECYCLED PAPER

LAKE HURON DIMENSIONS
(includes Georgian Bay and the North Channel)

LENGTH	206 mi / 331 km
BREADTH	183 mi / 294 km
DEPTH	194 ft / 59 m average; 748 ft / 229 m maximum
VOLUME	850 mi^3 / 3,540 km^3
WATER SURFACE AREA	22,973 mi^2 / 59,500 km^2
DRAINAGE BASIN AREA	50,700 mi^2 / 131,300 km^2
SHORELINE LENGTH	3,827 mi / 6,157 km (including islands)
ELEVATION	581 ft / 177 m
OUTLET	St. Clair River to Lake Erie
RETENTION/REPLACEMENT TIME	22 years
POPULATION	1,606,518 (U.S.); 941,300 (Canada)

LAND AND SHORELINE USE

The percentages below were calculated in the 1970s, based on information collected by the former Great Lakes Basin Commission. A study group formed by the International Joint Commission began to assemble current shoreline use information in 1987.

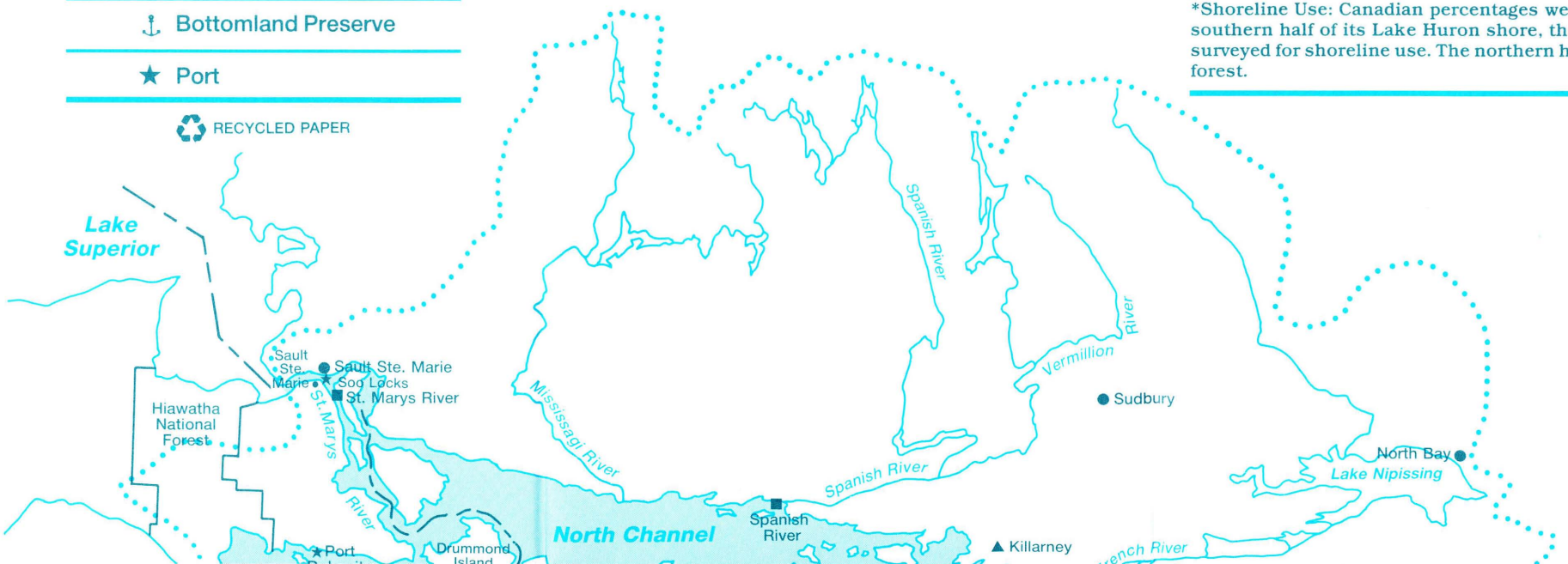
LAND USE (Percent of total)

	Canada	U.S.	Basin
Agricultural	21	40	27
Residential/industrial	1	6	2
Forest	75	52	68
Other	3	2	3

SHORELINE USE (Percent of total)

	Canada*	U.S.
Residential	34	42
Recreational	8	4
Agricultural	4	15
Vacant (Can.)	35	—
Forest (U.S.)	—	32
Other	19	7

*Shoreline Use: Canadian percentages were for the southern half of its Lake Huron shore, the only part surveyed for shoreline use. The northern half is mostly forest.




Straits of Mackinac
Straits of Mackinac
Mackinac Island
Bois Blanc Island
Old Mill Creek
Cheboygan
Cheboygan
Lake Michigan
Canada
United States
Manitoulin Island
Grundy Lake
Magnetawan River
Sturgeon Bay
P.H. Hoeft
Thompson's Harbor
Presque Isle
Sturgeon River
Black River
Thunder Bay River
Alpena
Thunder Bay Bottomland Preserve
Negwegon
Georgian Bay Islands
Fathom Five
Tobermory
Cyprus Lake
Georgian Bay
Killbear
Muskoka River
Bruce Peninsula
Georgian Bay Is.
Severn River
Awenda
Midland
Penetang-Sturgeon Bay
Au Sable River
Huron National Forest
Harrisville
Lake Huron
Sauble Falls
Owen Sound
Craigleth
Collingwood Harbor
Wasaga Beach
Lake Simcoe
MacGregor Point
Inverhuron
Tawas Point
Saugeen River
Michigan
Thumb Area
Port Crescent
Albert E. Sleeper
Saginaw Bay
Tittabawassee River
Bay City
Saginaw River-Bay
Midland
Bay City
Point Farms
Goderich
Ontario
Toronto
Sanilac Shores
Saginaw
Cass River
Shiawassee River
Lake Ontario
The Pinery
Ipperwash
Flint River
Flint
Lakeport
Port Huron
Sarnia
St. Clair River
Detroit
Lake Erie