

**Data on the Great Lakes System**

GENERAL LAKE DIMENSION	LAKE SUPERIOR	LAKE MICHIGAN	LAKE HURON	LAKE ST. CLAIR	LAKE ERIE	LAKE ONTARIO
Length in miles	350	307	206	26	241	193
Breadth in miles	180	183	183	24	57	53
Length in coastline (including islands)	2,730	1,640	3,830	237	871	712
Area in square miles	20,800	22,300	19,500	1,967	4,930	3,660
Water Surface United States	11,000	11,000	13,000	2,027	4,930	3,900
Water Surface Canada	9,800	11,300	6,500	960	0	0
Drainage Basin Land United States	16,000	45,000	16,200	2,800	18,000	12,000
Drainage Basin Land Canada	32,000	35,000	35,000	4,200	4,200	32,000
Drainage Basin Land Total	48,000	80,000	51,200	7,000	22,200	27,000
Drainage Basin Land & Water Total	81,000	67,000	74,000	7,200	32,000	38,000
Maximum Depth, Feet	1,333	93	750	219	210	802
Average Depth, Feet	489	279	195	110	62	283
Volume of Water in Cubic Miles	2,835	1,800	849	1	116	393

LENGTH OF "OUTFLOW"  
MILES (APPROX)

St. Marys	70					
St. Clair			27			
Detroit				32		
Niagara					37	
St. Lawrence						502

(1) Measured at wide point through Green Bay.  
(2) Measured at wide point through Georgian Bay.  
(3) Includes Georgian Bay and North Channel.  
(4) Including St. Marys River above Bruch Point.  
(5) Lake Michigan including Georgian Bay.  
(6) Including St. Marys River below Bruch Point.  
(7) Lake St. Clair, St. Clair and Detroit Rivers.  
(8) Lake Ontario including Niagara River and St. Lawrence River above Hogue Dam.  
(9) Maximum natural depth. Dredged national channel 27.5 foot depth.  
\*Length shown under Lake from which it flows.

**Charts on the Great Lakes and Adjacent Waters**

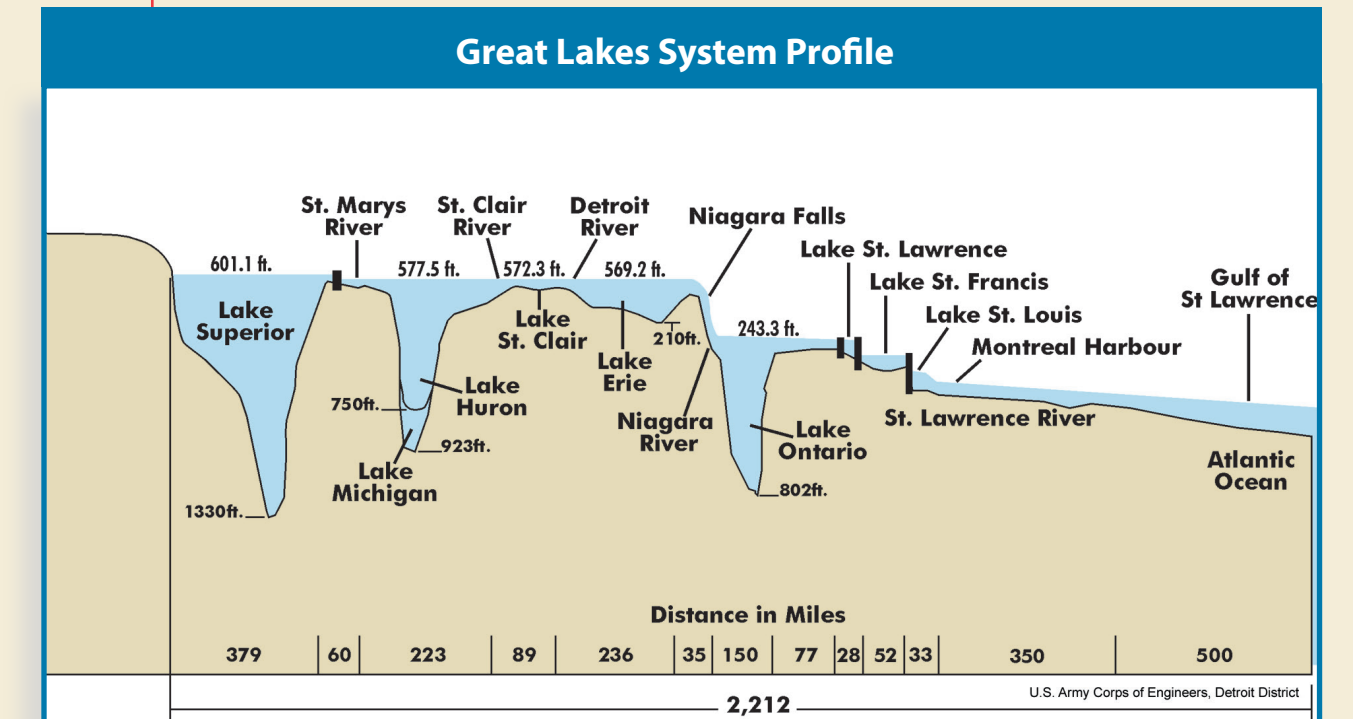
Chart Number	Title	Scale
14500	Great Lakes—Lake Champlain to Lake of the Woods	1:1,500,000
14501	ST. LAWRENCE RIVER	1:1,500,000
14770	Montreal, N.Y. to Butter Bay, Ont.	1:15,000
14771	Butter Bay, Ont. to Toronto, Ont.	1:15,000
14772	Toronto, Ont. to St. Lawrence Park, N.Y.	1:15,000
14773	Roussell Island, N.Y. and Georgian Bay, Ont. to White L. Ont.	1:15,000
14774	LAKE CHAMPLAIN	1:15,000
14781	River Richelieu to South Hero Island	1:40,000
14782	Camden Head to Four Brothers Islands	1:40,000
14783	Four Brothers Islands to Barber Point	1:40,000
14784	Barber Point to Whitefish	1:40,000
14785	Burlington Harbor	1:10,000
14786	NEW YORK STATE CANAL SYSTEM	Various
14787	Small-Craft Book Chart	Various
14788	New York State Canal System book of 61 Charts	Various
14791	Onondaga Lake to Lake Ontario	1:40,000
14792	Cayuga and Seneca Lakes	1:40,000
14793	Watkins Glen	1:10,000
14794	Ithaca	1:10,000
12343	Hudson River New York to Westinghouse Creek	1:40,000
12347	Hudson River Westinghouse Creek to Hudson	1:40,000
12348	Hudson River Hudson to Troy	1:40,000
14800	LAKE ONTARIO	1:40,000
14801	Lake Ontario (Metric)	1:40,000
14802	Clayton to Fallis Ducks Island	1:80,000
14803	Sea Mile south of Stony Point to Port Bay	1:80,000
14804	North Pond	1:20,000
14805	Little Sodus Bay	1:50,000
14806	Port Bay to Long Pond	1:80,000
14807	Port Bay Harbor	1:20,000
14808	Humboldt Bay	1:20,000
14809	Long Point to Thyrville Point	1:80,000
14810	Point Pelee Harbor	1:20,000
14811	Thyrville Point, New York, to Port Dalhousie, Ontario	1:80,000
14812	Chubbuck Harbor	1:20,000
14813	Wilson Harbor	1:20,000
14814	Ottawa, New York to Toronto, Ontario (Metric)	1:10,000
14815	Ottawa	1:10,000
14816	Chautauq, Henderson and Black River Bays	1:30,000
14817	Sackett Harbor	1:20,000
14818	Henderson Harbor	1:20,000
14819	Chautauq Harbor	1:20,000
14820	Chautauq	1:20,000
14821	Onondaga Harbor, including Genesee River to head of navigation	1:10,000
14822	Lower Niagara River	1:30,000
14823	LAKE ERIE	1:40,000
14824	Approaches to Niagara River and Welland Canal	1:80,000
14825	Shoreline from Toronto to Welland Canal	1:80,000
14826	Dunkirk Harbor	1:15,000
14827	Basin Harbor	1:15,000
14828	Sixteenmile Creek to Connaught	1:80,000
14829	Connaught Harbor	1:20,000
14830	Ashabua to Chagrin River	1:80,000
14831	Mentor Harbor	1:10,000
14832	Chagrin River Harbor	1:10,000
14833	Chagrin River Harbor	1:10,000
14834	Chagrin River Harbor	1:10,000
14835	Chagrin River Harbor	1:10,000
14836	West End of Lake Erie	1:10,000
14837	Port Clinton	1:10,000
14838	Monroe Harbor	1:10,000
14839	Monroe Harbor	1:10,000
14840	Monroe Harbor	1:10,000
14841	Monroe Harbor	1:10,000
14842	Monroe Harbor	1:10,000
14843	Monroe Harbor	1:10,000
14844	Monroe Harbor	1:10,000
14845	Monroe Harbor	1:10,000
14846	Monroe Harbor	1:10,000

**Charts on the Great Lakes and Adjacent Waters**

Chart Number	Title	Scale
14847	Toledo Harbor	1:20,000
14848	Entrance Channel	1:40,000
14849	Lake Winnebago and Lower Fox River (book of 34 charts)	1:30,000
14850	Lake St. Clair	1:60,000
14851	St. Clair River	1:60,000
14852	Head of St. Clair River	1:15,000
14853	SMALL-CRAFT BOOK CHART	Various
14854	Detroit River Lake St. Clair and St. Clair River (book of 47 charts)	Various
14855	Traverse Channel and River Rouge	1:15,000
14856	LAKE HURON	1:500,000
14857	Port Huron to Pelee Islands	1:20,000
14858	Port Sanilac Harbor	1:10,000
14859	Harbor Beach	1:10,000
14860	Saginaw Bay	1:10,000
14861	Calumet and Indiana Harbors	1:10,000
14862	Port Austin	1:10,000
14863	Canfield Harbor	1:10,000
14864	Sebewing Harbor	1:20,000
14865	Entrance to Au Sable River	1:10,000
14866	St. Ignace Harbor	1:15,000
14867	Huron Harbor	1:20,000
14868	Huron Harbor	1:20,000
14869	Huron Harbor	1:20,000
14870	Huron Harbor	1:20,000
14871	Huron Harbor	1:20,000
14872	Huron Harbor	1:20,000
14873	Huron Harbor	1:20,000
14874	Huron Harbor	1:20,000
14875	Huron Harbor	1:20,000
14876	Huron Harbor	1:20,000
14877	Huron Harbor	1:20,000
14878	Huron Harbor	1:20,000
14879	Huron Harbor	1:20,000
14880	Huron Harbor	1:20,000
14881	Huron Harbor	1:20,000
14882	Huron Harbor	1:20,000
14883	Huron Harbor	1:20,000
14884	Huron Harbor	1:20,000
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14889	Huron Harbor	1:20,000
14890	Huron Harbor	1:20,000
14891	Huron Harbor	1:20,000
14892	Huron Harbor	1:20,000
14893	Huron Harbor	1:20,000
14894	Huron Harbor	1:20,000
14895	Huron Harbor	1:20,000
14896	Huron Harbor	1:20,000
14897	Huron Harbor	1:20,000
14898	Huron Harbor	1:20,000
14899	Huron Harbor	1:20,000
14900	Huron Harbor	1:20,000

**Charts on the Great Lakes and Adjacent Waters**

Chart Number	Title	Scale
14915	Little Bay de Noc	1:30,000
14916	SMALL-CRAFT BOOK CHART	Various
14917	Lake Winnebago and Lower Fox River (book of 34 charts)	1:30,000
14918	Menominee and Marinette Harbors	1:15,000
14919	Head of Green Bay including Fox River below De Pere	1:25,000
14920	Green Bay	1:10,000
14921	Sturgeon and Canal	1:30,000
14922	Sturgeon Bay	1:10,000
14923	Manitowish and Sheboygan	1:10,000
14924	Milwaukee Harbor	1:10,000
14925	Acme Harbor	1:10,000
14926	Grand River from Dennis Bay to Bass River	1:15,000
14927	Entrance to Au Sable River	1:15,000
14928	Holland Harbor	1:15,000
14929	Grand Haven including Spring Lake and Lower Grand River	1:15,000
14930	Muskegon Lake, including Muskegon Harbor	1:15,000
14931	White Lake	1:15,000
14932	Ludington Harbor	1:5,000
14933	Manitou Harbor	1:10,000
14934	Manitou Harbor	1:10,000
14935	Manitou Harbor	1:10,000
14936	Manitou Harbor	1:10,000
14937	Manitou Harbor	1:10,000
14938	Manitou Harbor	1:10,000
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14940	Manitou Harbor	1:10,000
14941	Manitou Harbor	1:10,000
14942	Manitou Harbor	1:10,000
14943	Manitou Harbor	1:10,000
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14945	Manitou Harbor	1:10,000
14946	Manitou Harbor	1:10,000
14947	Manitou Harbor	1:10,000
14948	Manitou Harbor	1:10,000
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14959	Manitou Harbor	1:10,000
14960	Manitou Harbor	1:10,000
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14963	Manitou Harbor	1:10,000
14964	Manitou Harbor	1:10,000
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14971	Manitou Harbor	1:10,000
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14974	Manitou Harbor	1:10,000
14975	Manitou Harbor	1:10,000
14976	Manitou Harbor	1:10,000
14977	Manitou Harbor	1:10,000
14978	Manitou Harbor	1:10,000
14979	Manitou Harbor	1:10,000
14980	Manitou Harbor	1:10,000



**The Great Lakes and connecting channels**

Four of the five Great Lakes are at different elevations, leading like a series of steps toward the Atlantic Ocean. The five individual lakes are connected to each other through channels, forming one system. Water continually flows from the headwaters of the Lake Superior basin through the remainder of this system.

The St. Marys River is a 46-mile waterway flowing from Lake Superior down to Lake Huron, descending more than 20 feet in elevation. Lakes Michigan and Huron are connected by the deep Straits of Mackinac, and are considered to be one lake hydraulically with lake levels rising and falling together. The St. Clair and Detroit rivers, and Lake St. Clair between them, form an 89-mile long channel connecting Lake Huron with Lake Erie. The fall between Lake Huron and Lake Erie is only 8 feet. The 35-mile Niagara River links lakes Erie and Ontario, with the majority of the 232-foot difference in elevation occurring at Niagara Falls. The man-made Welland Canal also links the two lakes, providing a detour around Niagara Falls. From Ontario, water flows into the St. Lawrence River, which converges with the Ottawa River near Montreal to flow to the Atlantic Ocean.

**Navigational Data**

Waterway	Depth	Width	Length	Vertical Clearance	Number of Locks	Notes
St. Lawrence River	26 (7.9)	76 (23.16)	730 (222.5)	740 (225.5) when certain conditions are met	117 (35.6)	7 A and B
Mississippi River-Illinois Waterway	9 (2.7)	80 (24.38)	600 (182.88)	17 (5.18)	8	C
New York State Canals (Hudson River to Oswego, N.Y.)	13 (4)	43.5 (13.2)	300 (91.4)	20 (6.1)	30	C
Hudson River to Whitehall, and from Three Rivers to Ithaca, Montour Falls, and Tonawanda	12 (3.66)	43.5 (13.2)	300 (91.4)	15 (4.57)	16	C
Riviere Richelieu (Lake Champlain to St. Lawrence River)	6 (1.8)	232 (70.7)	111.4 (33.8)	29 (8.8)	10	D
Welland Canal	26 (7.9)	76 (23.16)	730 (222.5)	740 (225.5) when certain conditions are met	117 (35.6)	8 B

St. Marys Falls Canal (See Locks) [See Limiting Dimensions of Through Channel, chapter 12, St. Marys River]

Note A: Minimum limiting measurements for transit of the entire Seaway by recreational craft are a deadweight of 1 short ton (0.9 metric ton) or 20 feet (6.1 meters) in overall length. These control factors are based on requirements for passage through the South Shore Canal, Beauharnois Canal, and the Welland Canal.

Note B: Recreational craft toll charges are \$20.00 per vessel per lock, between Montreal and Lake Ontario, and in Welland Canal.

Note C: Permits are required for Commercial Vessels and Passes are required for recreational craft. Passage information is available from: New York State Canal Corporation 209 Southern Blvd., P.O. Box 189 Albany, NY 12201-0189 (518) 436-2700 www.nyscanals.ny.gov/index.html

**Great Lakes—and Adjacent Waterways**  
Catalog of Charts & Publications  
2017

Nautical charts are designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions or comments for improving charts to the Nautical Discrepancy Reporting System at [www.nauticalcharts.noaa.gov/nsd/services.htm](http://www.nauticalcharts.noaa.gov/nsd/services.htm)

**Color Key for Charts**

Type of Chart	Scale	Purpose
<b>HARBOR CHARTS</b> (outlined in red)	1:50,000 and larger	For navigation and anchorage in harbors and small waterways.
<b>COAST CHARTS</b> (outlined in purple)	1:50,000 to 1:150,000	For coastwise navigation inside the offshore reefs and shoals, entering bays and harbors of considerable size, and navigating certain inland waterways.
<b>GENERAL CHARTS</b> (outlined in purple)	1:150,000 to 1:600,000	For use when a vessel's course is offshore but when its position can be fixed by landmarks, lights, buoys, and characteristic soundings.
<b>SAILING CHARTS</b> (outlined in purple)	1:600,000 and smaller	Plotting charts used for offshore sailing between distant coastal ports and for approaching the coast from the open ocean.
<b>SMALL-CRAFT CHARTS</b> (outlined in green)	1:80,000 and larger	Specialty designed charts with small craft information.
<b>CANADIAN CHARTS</b> (outlined in grey)	All Scales	For charts of areas north of International Boundary, consult Canadian Hydrographic Service Chart Catalogue 3 Ontario Manitoba, including the Great Lakes.

The scale of a chart is the ratio of a given distance on the chart to the actual distance that it represents on the earth. (Example: One unit of measurement on a 1:10,000 scale chart is equal to 10,000 of the same unit on the earth's surface.) Large scale charts show greater detail of a relatively small area. Small scale charts show less detail, but cover a larger area. Certain hydrographic information may be omitted on smaller-scale charts. Mariners should always obtain the largest-scale coverage for near-shore navigation.