

Great Lakes Shipwreck Preserves

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Great Lakes Shipwrecks

Fresh water has no wood consuming Teredo worms

Cold slows chemical corrosion ($\downarrow 10^{\circ}\text{C} \rightarrow \frac{1}{2}$ reaction rate)

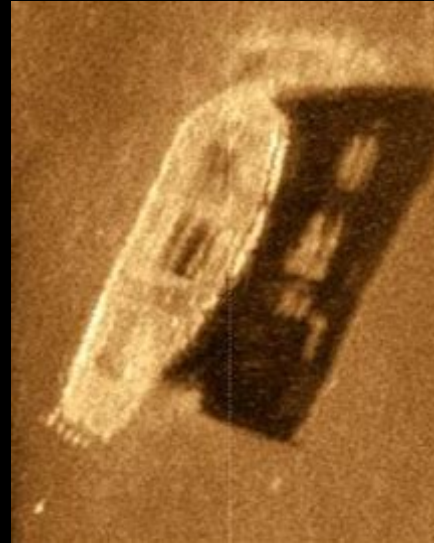
Estimates: 4000 - 18,000 shipwrecks

Causalities of war, poor navigation, boiler explosions, storms

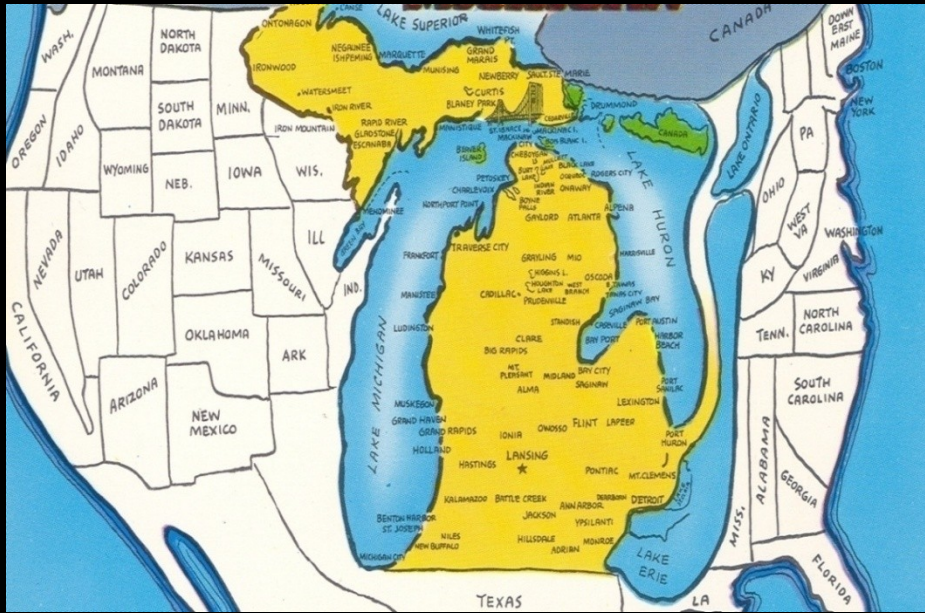


Great Lakes Shipwrecks

Cultural Time Capsules

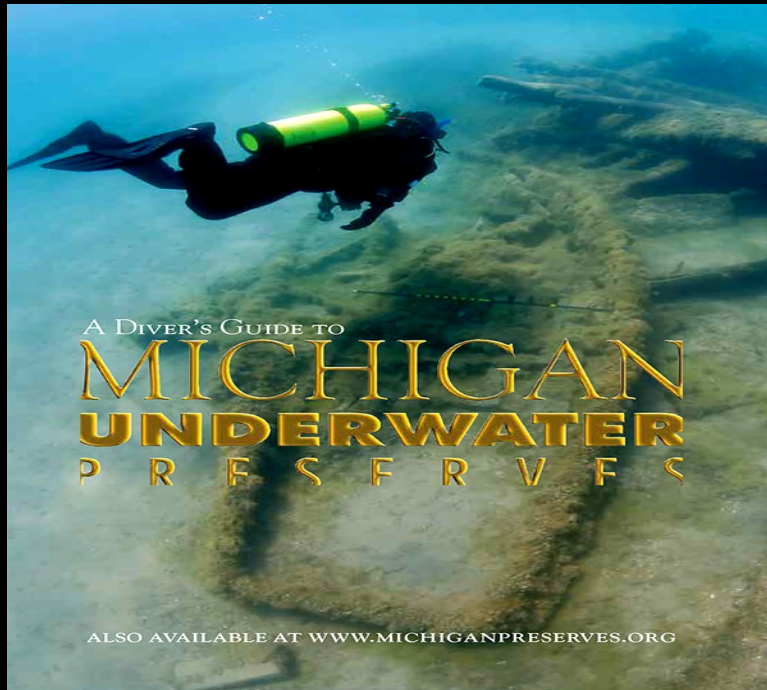


Michigan



One of world's best shipwreck diving locations
Shipwrecks considered "Underwater Museums"
> 200 known shipwrecks on Michigan Bottomlands
Scuba diving / Museums = source of tourist revenue

Michigan Underwater Preserves



Created by Michigan Legislature 1980

> 7000 square miles of protected bottomlands

Goal: Preserve shipwrecks for future generations

Administer Cultural Resources (Museums)

Felony to remove / disturb artifacts

Lose boat, car, dive equipment

Max 2 years prison and large fines



Michigan General Scuba Laws



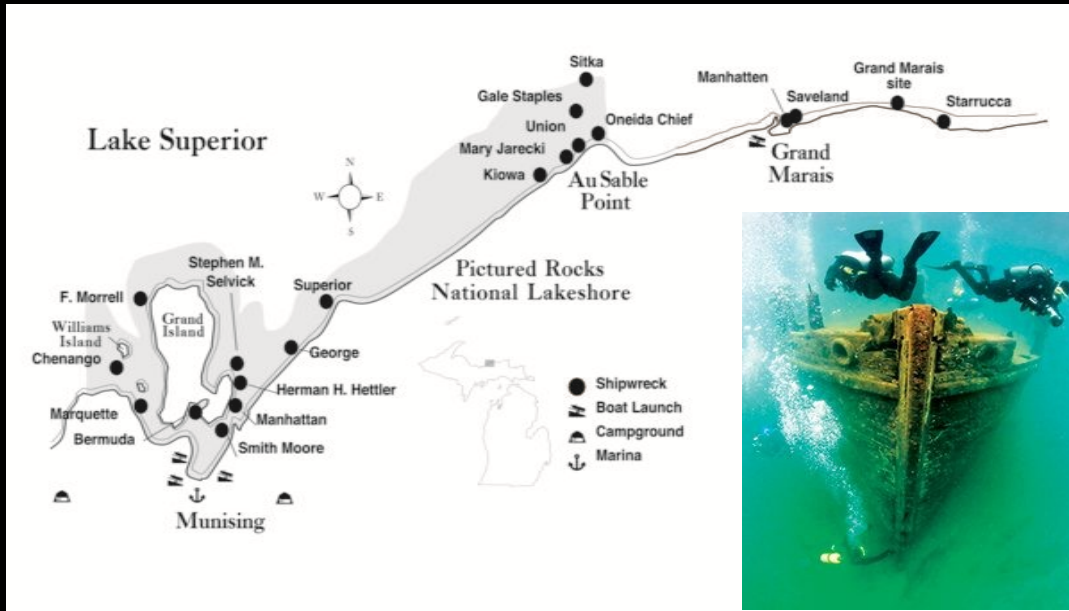
Michigan Law 324.76115 – Dangers Accepted by Scuba Divers

Each person who participates in the sport of scuba diving on the Great Lakes bottomlands accepts the dangers that adhere in that sport insofar as the dangers are obvious and necessary. Those dangers include, but are not limited to, injuries which can result from entanglements in sunken watercraft or aircraft; the condition of sunken watercraft or aircraft; the location of sunken watercraft or aircraft; the failure of the state to fund staff or programs at bottomlands preserves; and the depth of the objects and bottomlands within preserves.

Michigan Act 451 of 1994 324.80155

Any person diving or submerging in any of the waters of this state with the aid of a diving suit or other mechanical diving device shall place a buoy or boat in the water at or near the point of submergence. The buoy or boat shall bear a red flag not less than 14 inches by 16 inches with a 3-1/2 inch white stripe running from 1 upper corner to a diagonal lower corner. The flag shall be in place only while actual diving operations are in progress. A vessel shall not be operated within *200 feet* of a buoyed diver's flag unless it is involved in tendering the diving operation. A person diving shall stay within a surface area of *100 feet* of the diver's flag.

Alger Underwater Preserve

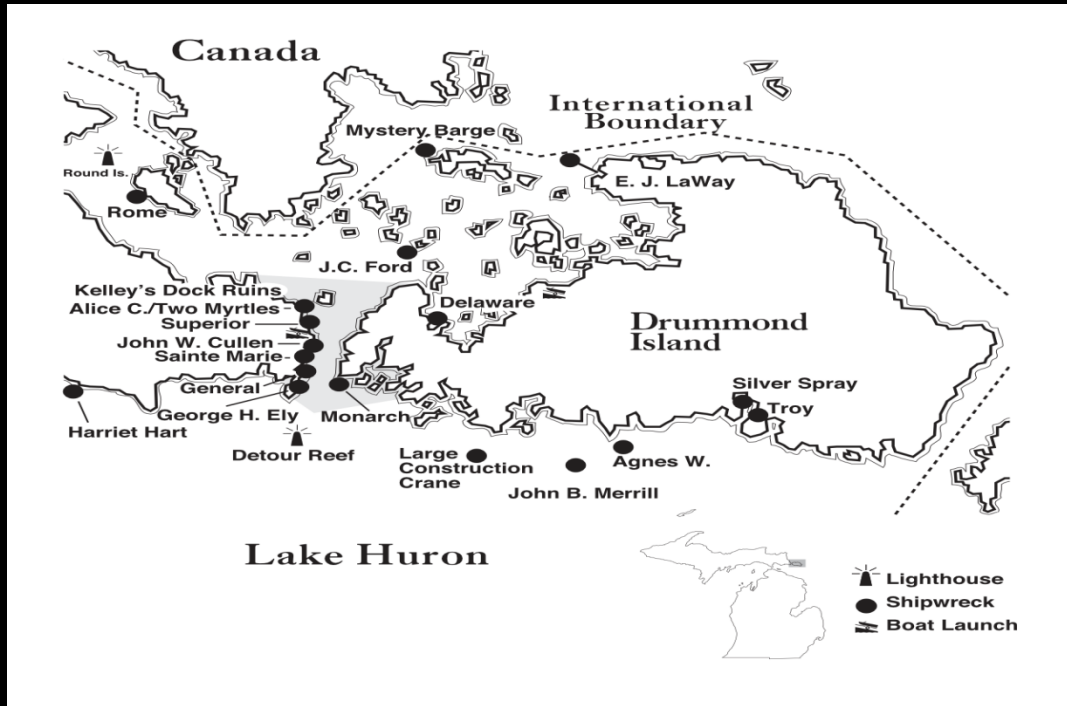


Established 1988
113 Square Miles
15 Major Shipwrecks
Sea Caves
Pictured Rocks
Glass-Bottomed Boats
Major City: Munising



<https://www.michiganpreserves.org/alger-underwater-preserve/>

DeTour Passage Underwater Preserve



Established 1991
Surrounds Drummond Island
13.6 Square Miles
20 Major Shipwrecks
Shore Accessible Wrecks
Old Dock Ruins
Watch Ships Passing
Local Historical Museum
DeTour Reef Light
Major city: Detour Village

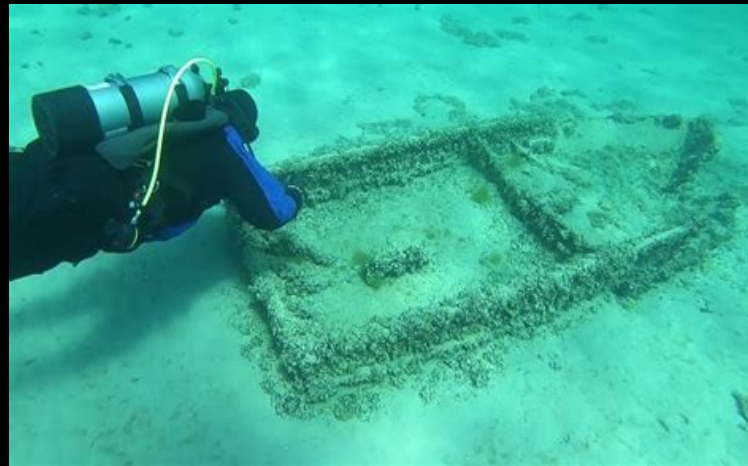


<https://www.michiganpreserves.org/detour-passage-underwater-preserve/>

Grand Traverse Bay Underwater Preserve



Established 2008
295 Square Miles
13 Major Shipwrecks
Waterfront Business Remains
“Junk pile”
“Pipeline”
Major city: Traverse City



<https://www.michiganpreserves.org/grand-traverse-bay-underwater-preserve/>

Keweenaw Underwater Preserve

“Catcher’s Mitt” for wayward Ships

Established 1991

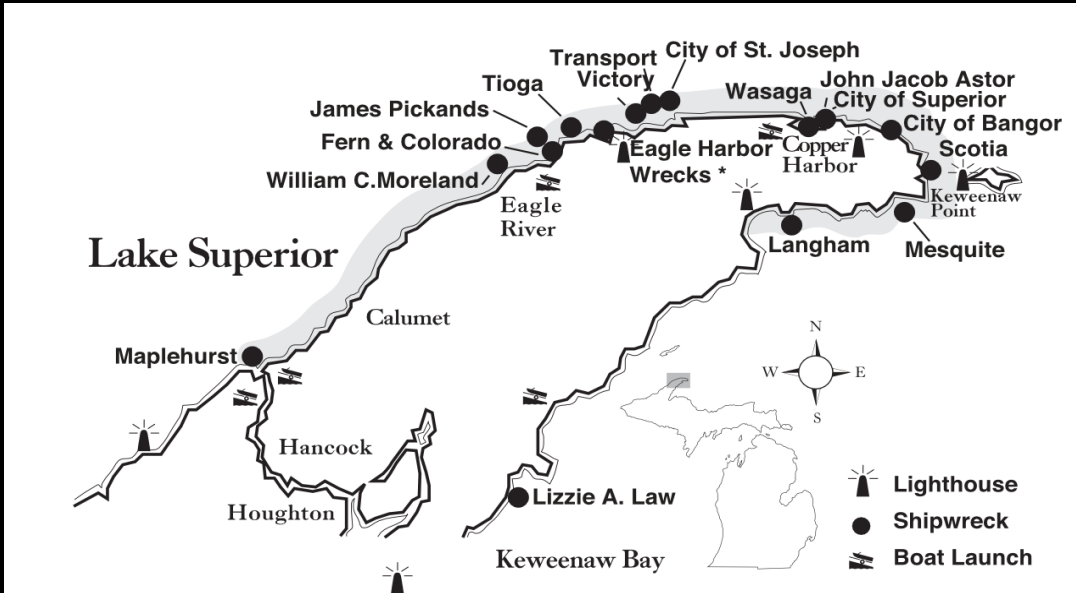
103 Square Miles

25 Major Shipwrecks

Esrey Geologic Park

Fort Wilkins

Major City: Copper Harbor



<https://www.michiganpreserves.org/keweenaw-underwater-preserve/>

Manitou Passage Underwater Preserve

Established 1988

282 Square Miles

Borders Sleeping Bear Dunes

14 Major Wrecks (Mostly Freighters)

Many Historic Lighthouses

Major City: Empire



<https://www.michiganpreserves.org/manitou-passage-underwater-preserve/>

Marquette Underwater Preserve

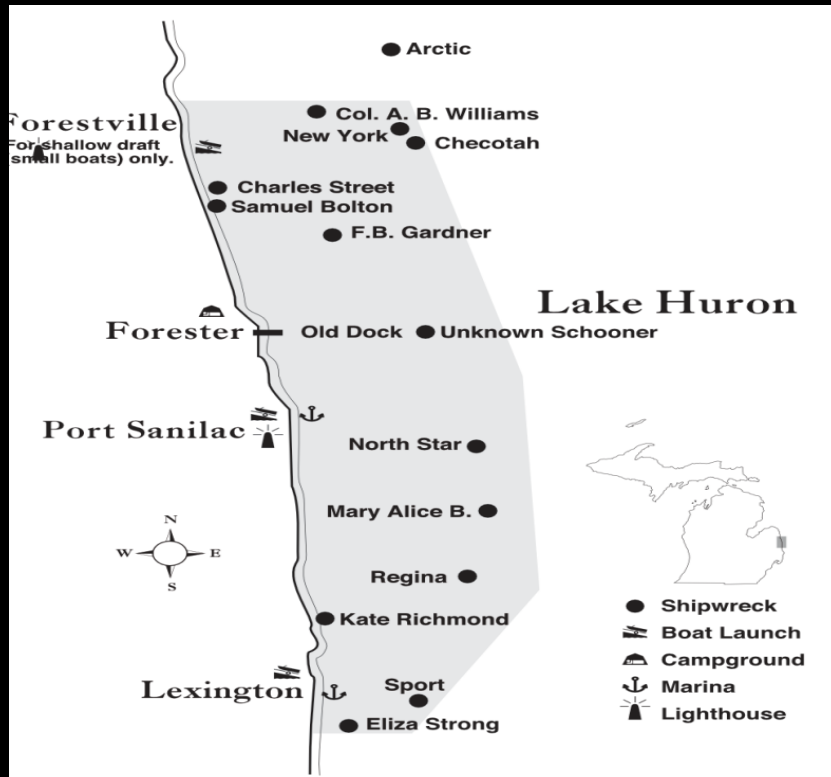


Established 1990
144 Square Miles
13 Major Shipwrecks
Black Rocks
Gold Mine Pinnacle
Major City: Marquette



<https://www.michiganpreserves.org/marquette-underwater-preserve>

Sanilac Shores Underwater Preserve



Established 1988
163 Square Miles
20 Major Shipwrecks
Port Sanilac Lighthouse
Sanilac Petroglyphs
Lake Huron Historic Museum

Major City: Port Sanilac



<https://www.michiganpreserves.org/sanilac-shores-underwater-preserve/>

Southwest Michigan Underwater Preserve



Established 1999

370 square miles

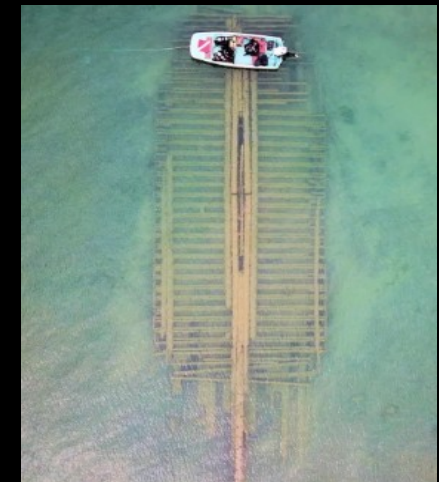
13 Major Shipwrecks

South Haven Maritime Museum

Does Archeology Projects

Major Cities: Benton Harbor

South Haven



<https://www.michiganpreserves.org/southwest-michigan-underwater-preserve>

Straits of Mackinac Shipwreck Preserve



Established 1988

148 Square Miles

26 documented wrecks

Major City: Mackinac City



<https://www.michiganpreserves.org/straits-of-mackinac-shipwreck-preserve>

Thunder Bay Underwater Preserve



Established 1981

288 Square Miles

27 Major Shipwrecks

Established NOAA Marine Sanctuary 2000

~ 116 Shipwrecks

Glass Bottom Boat (Alpena Museum)

Thunder Bay Film Festival (Alpena)

Historic Lighthouses

Major City: Alpena



<https://www.michiganpreserves.org/thunder-bay-underwater-preserve/>

<https://thunderbay.noaa.gov/>

West Michigan Underwater Preserve



Established 2012

345 Square Miles

20 Major Shipwrecks

“Rock Pile” Near Muskegon

Great Lakes Naval Memorial Museum

USS Silversides Submarine

Major Cities: Muskegon

Grand Haven

White Hall

Ludington



<https://www.michiganpreserves.org/west-michigan-underwater-preserve>

Whitefish Point Underwater Preserve



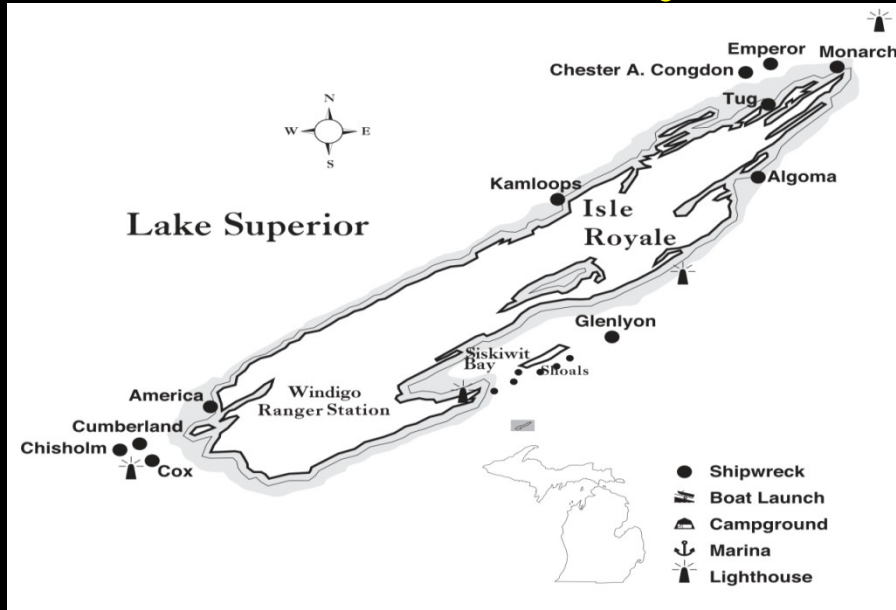
Established 1987
376 Square Miles
30 Major Shipwrecks
Lighthouse And Museum

Major Cities: Whitefish Point
Paradise



<https://www.michiganpreserves.org/whitefish-point-underwater-preserve/>

Isle Royale National Park



Park Established 1940
Surrounding Water 685 Square Miles
12 Major Shipwrecks
Aquarium
Accessible Only By Boat or Seaplane
Divers Must Register
Windigo Ranger Station

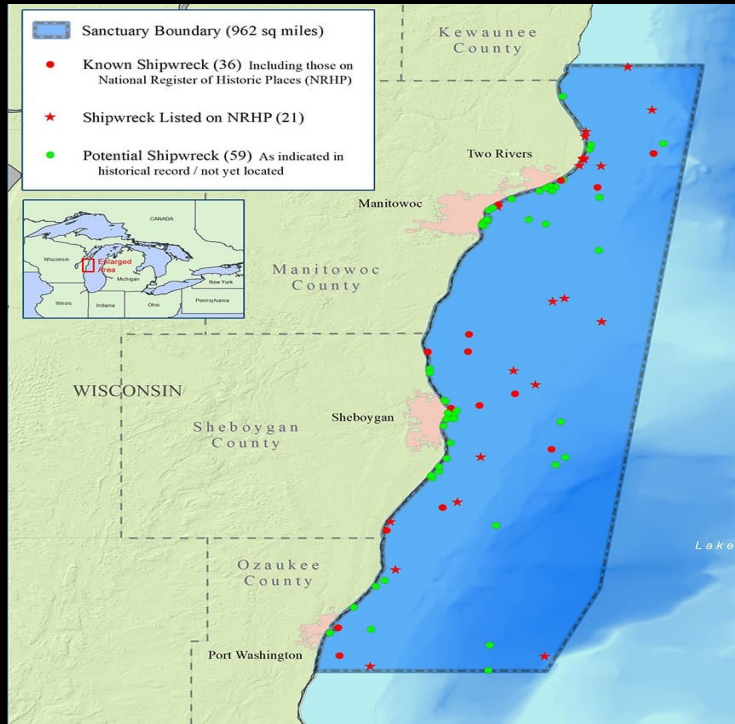


<https://www.michiganpreserves.org/isle-royale-national-park/>
<https://www.nps.gov/isro/planyourvisit/scuba-diving.htm>

Wisconsin



Wisconsin Shipwreck Coast National Marine Sanctuary



Established 2021

962 Square Miles

36 Major Shipwrecks

Suggested > 60 more

WI: >1000 Total Wrecks (Lakes & Rivers)

Nearest Cities: Manitowoc

Sheboygan

Port Washington



<https://wisconsinshipwrecks.org/>

<https://sanctuaries.noaa.gov/wisconsin>

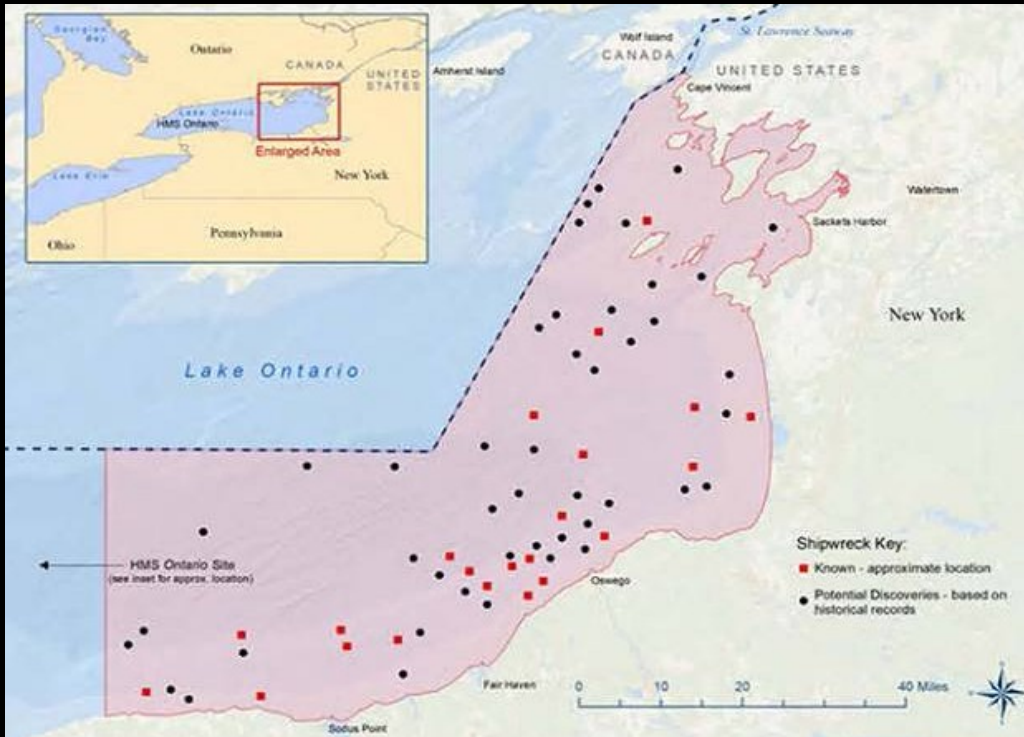
New York



Lake Ontario National Marine Sanctuary

Established 2024
1722 Square Miles
41 Known Shipwrecks

Major Cities: Cape Vincent
Oswego
Pultneyville



<https://sanctuaries.noaa.gov/lake-ontario/>

Canada



Thousands of Shipwrecks in Canadian Waters

Fathom Five National Marine Park



Established 1987
43 Square Miles
22 Known Shipwrecks
Historic Lighthouses
Flowerpot Geologic Features
Glass Bottom Boats
Major Village: Tobermory



<https://www.fathomfivenationalmarinepark.com/>

The Edmund Fitzgerald

Perhaps The Most Famous Great Lakes Shipwreck
Largest Ship Lost On The Great Lakes
Sank During Intense Storm Of November 10, 1975



Canadian Historical Heritage Site
530 FFW Below Surface Of Lake Superior
Forbidden: All Activity Within 500 meters
Penalty: Fines Up To \$ 1 Million (CAD)



<https://ssedmundfitzgerald.org/>

Great Lakes Maritime Museums

Lake Superior

Maritime Visitor Center -Duluth, MN
SS Meteor Whaleback -Superior, WI
Bayfield Maritime-Bayfield, WI
Marquette Maritime-Marquette, MI
Shipwreck Museum-Paradise, MI
SS Valley Camp-Sault Ste. Marie, MI

Lake Michigan

Wisconsin Maritime-Manitowoc, WI
Ludington Maritime-Ludington, MI
USS Silversides-Muskegon, WI
Michigan Maritime-South Haven, MI
Chicago Maritime-Chicago, IL

Lake Huron

Great Lakes Lore-Rogers City, MI
Maritime Heritage-Alpena, MI
Huron Lightship-Port Huron, MI
Maritime Center-Port Huron, MI

Lake Erie

National Museum-Toledo, OH
Maritime Museum-Sandusky, OH
Steamship W.G. Mather-Cleveland, OH
Erie Maritime-Erie, PA
Port Burwell-Port Burwell, ON, Canada

Lake Ontario

HMCS Naida-Hamilton, ON, Canada
Niagara-On-The-Lake, ON, Canada
Maritime Museum-Kingston, ON, Canada

Detroit

Dossin Museum-Belle Isle, Detroit, MI





In addition to references on individual slides:

Michigan Underwater Preserves

<https://www.michiganpreserves.org/>

Dan Friedhoff

NOAA National Marine Sanctuaries

<https://sanctuaries.noaa.gov/>

Additional Images: From DuckDuckGo Search Engine