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Mysteries

of the Great Lakes

A Science North Production

THE GREAT LAKES – GEOGRAPHY AND HISTORY

The Great Lakes – Lake Superior, Lake Michigan, Lake Huron, Lake Erie and Lake Ontario -- are the largest group of fresh water lakes on Earth.

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Lake Superior alone holds as much water as all four of the other lakes combined. It is also the largest freshwater lake in the world by surface area. In the Ojibwe language, the lake is called *Gichigami*, meaning “big water”.

The size of Lake Superior creates a localized maritime climate, which is more typically seen in locations such as Nova Scotia.

The storms that lash Superior are oceanic in scope and scale. Just such a storm sent the legendary lake

freighter, S.S. Edmund Fitzgerald, to the bottom in a matter of minutes in November 1975. The Edmund Fitzgerald is still one of the most famous shipwrecks in the world, thanks – in part – to being immortalized in Gordon Lightfoot’s song of the same name.



Lake Michigan is the second largest of the Great Lakes by volume, and the third-largest by area. It is also the only Great Lake that is entirely in the US. This long, deep lake has over 2,000 miles of coastline bordering on four different states.





Like most of the Great Lakes, the bottom of Lake Huron is a graveyard of thousands of floundered ships. At Fathom Five National Marine Park in Tobermory, Ontario, the unusual clarity of the water and high concentration of shipwrecks have made it a paradise for underwater exploration by recreational SCUBA divers. There are over 30,000 islands in Lake Huron, including the world's largest fresh water island – Manitoulin Island - and that, along with the purity of its waters, is why the area is renowned by sailing enthusiasts around the world. The geological history of the region is also evident all around the Lake. During the last ice age, the movement of glaciers carved the shoreline into undulating, polished ribbons of rock.



spits of land at Rondeau, Long Point, Point Pelee and Presque Isle, stretch like fingers into the water and are stopovers for hundreds of thousands of migratory birds and butterflies.

Years of industrialization and development have taken their toll on Lake Erie. It was declared an ecological disaster a few decades ago. A massive cleanup effort appears to have had some effect, as water quality has improved, and fish populations are rebounding. However, new threats are on the horizon. Climate change models predict a significant drop in lake levels, drastically altering the coastline of all the lakes.

With environmental control of the water lying in multiple jurisdictions, the ongoing effort to clean up the Lakes is an international undertaking, requiring co-operation among scientists and governments on both sides of the border.

No tour of the Great Lakes would be complete without a plunge over one of the acknowledged Wonders of the Natural World. All of the water from the upper Great Lakes eventually must drop 360 feet from Lake Erie through the Niagara Gorge to Lake Ontario. Niagara Falls is constantly flowing, and loses nearly a foot of its rock face per year.



The shallowest of all the lakes, Erie is somewhat of an ecological anomaly. Part of its shoreline contains remnants of a Carolinian forest more akin to areas further south. Long



The smallest of the Great Lakes in surface area, Lake Ontario is home to a thriving sport-fishing industry worth millions of dollars.

The first lake to see significant European settlement, Ontario has a long and rich history, by new world standards, with centuries-old forts still dotting the shoreline. The first and last war to control the Lakes was fought in the early 1800s and today all the Lakes but Michigan are split in half by an imaginary border separating Canada and the USA.

As the ultimate outlet to the sea, the St. Lawrence is the final part of the Great Lakes story. At one end, a series of locks connects Lake Ontario to the river and on peak days cargo ships, each measuring more than two football fields in length, are backed up waiting their turn to enter. Commerce and transportation have always been driving forces in the Great Lakes story. Lumbering, mining, shipping and fishing have all played a role in the continent's development. The attempt to balance human needs with the needs of the environment is an ongoing struggle throughout the region.

