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Ontario’s Prehistoric Past

Ontario’s Great Lakes offer excellent reactional opportunities, but, if you know how to look, they can also take you on a journey millions of years back in time.

The Great Lakes themselves are quite young (geologically speaking) – they were carved out 12 000 years ago by the receding glaciers at the end of the ice age. The rocks the glaciers exposed are much, much older, typically between 360 and 450 million years old. Hundreds of millions of years ago, what we now identify as Ontario was a shallow tropical sea, more similar to what we now see in Florida. The seafloor was covered in mud and limestone (from shells and skeletons). Over time, these sediments hardened (or lithified) and became sandstones (from sand), shales (from mud), limestones (calcium carbonate), and dolomites (calcium magnesium carbonate). Plants and animals trapped in the sediments were in the ideal position to become fossils. These fossils are now common along our Great Lakes beaches!

A trip from Windsor, at the tip of Lake Erie, to Kingston, at the tip of Lake Ontario, covers 600 km and a span of over 120 million years in the rocks and fossils. Lake Erie exposes the youngest rocks – Devonian rocks (a geologic period that lasted between 420 and 359 million years ago). Lake Ontario exposes the oldest rocks – Ordovician rocks (a geologic period that lasted between 485 and 444 million years ago). Lake Huron exposes the greatest range in ages with both Devonian rocks and Silurian rocks (a geologic period that lasted between 444 and 420 million years ago).

Now you Try:
Visit the shores of Lakes Huron, Erie, Michigan, or Ontario. Find a beach with pebbles and rocks. Fossils come in all shapes and sizes, from tiny sea-lily stems a few millimetres across, to huge slabs containing hundreds of fossils. Since fossils are the remains of plants and animals, look for shapes that remind you of plants and animals! Looks for patterns, lines, ridges, spirals, and coils. The fossils will also be a slightly different colour than the rocks they are found in. Wet fossils are easier to spot than dry, so check the shoreline, or dip any suspected fossils in the water to see what is revealed. The most likely fossils on our shores include brachiopods, crinoids, corals, and bryzoans.

Brachiopod: Animals that live in two shells (like clams). But unlike clams, brachiopods have upper and lower shells, were clams have left and right shells.

Bryzoan: Filter feeders that use tentacles to capture food floating in the water.

Coral: Animals that live in compact colonies of identical clones. Many corals secrete calcium carbonate to create a hard skeleton.

Crinoid: Although they look like plants, these animals are related to sea stars. They are attached to the sea bottom by a stalk and use their feather-like arms to filter feed.

References:

- https://uwaterloo.ca/earth-sciences-museum/resources/fossils-ontario
- images from Wikipedia