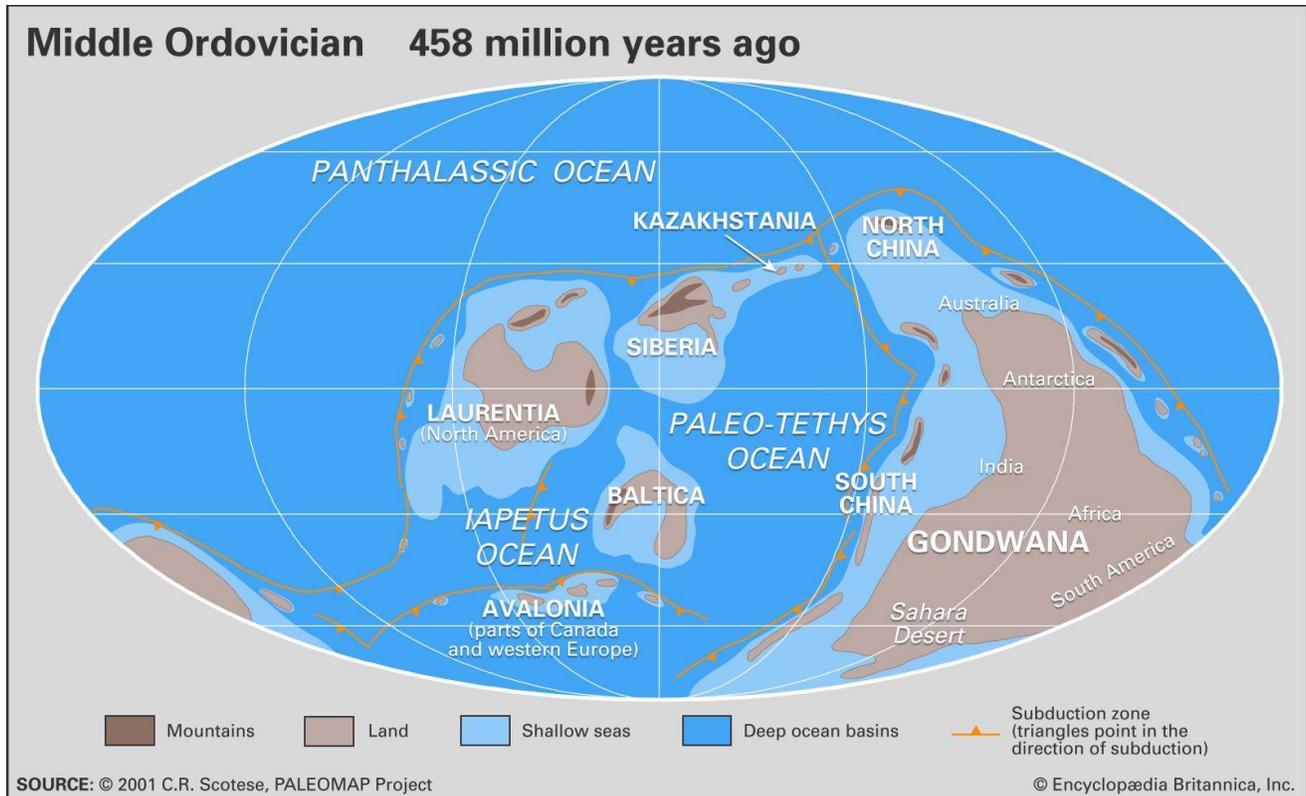
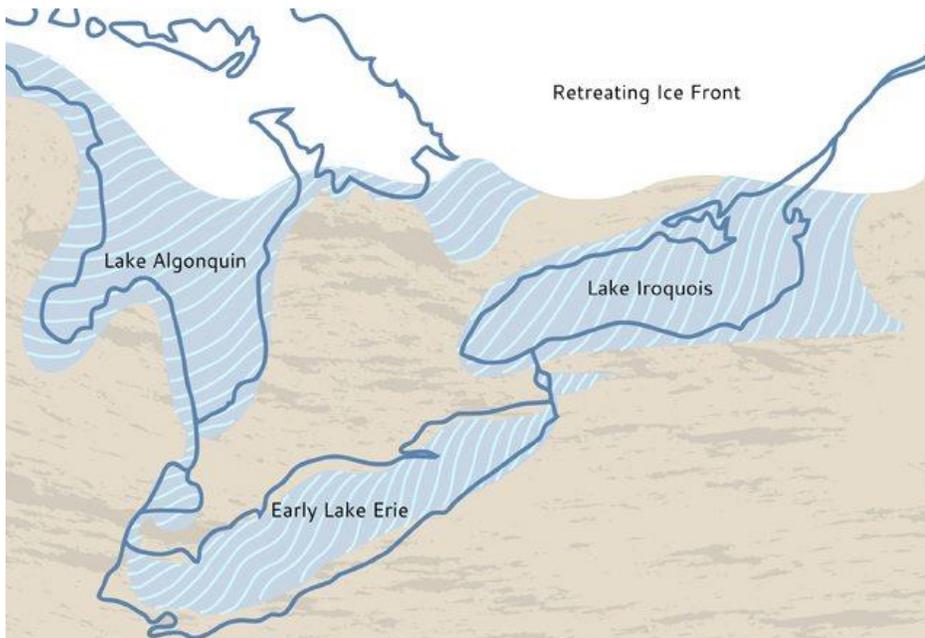


Geology of Presqu'ile

Presqu'ile's origin goes back 450 million years to the middle Ordovician period. At that time a warm, shallow sea covered this part of North America. At the bottom of this sea, limey sediment and shell fragments from the sea's inhabitants slowly accumulated. Southern Ontario was covered by this sea for almost 150 million years and, by the time the water was gone 300 million years ago, the sediments at the bottom of the sea had been squeezed and turned into a package of sedimentary rock at least five kilometres thick. Many of the sea creature's shells had been transformed into fossils in this rock.



In the millions of years since the sea disappeared, this package of rocks had been eroding away. For the last two million years, the time of tropical seas had long passed, and this part of North America had been subjected to a series of ice ages, with kilometre-thick ice sheets scouring the land and further eroding away the rocks. When the last ice sheet melted about 12,000 years ago, it left behind vast quantities of sand, gravel, and boulders that it had scoured from the land beneath it. It also left behind a lot of water which filled the low areas of the land forming the Glacial Great Lakes, much like the Great Lakes we see today but even bigger.



The blue border shows the outline of the Great Lakes today. The colour shapes with the wavy lines show the glacial lakes as they were 12 000 years ago. Torontoist.com

The glacial lake that covered Presqu'île was Lake Iroquois and its former shoreline is now marked by a long, gentle escarpment or, in other places, a low ridge of old beach deposits that parallels today's Lake Ontario shoreline.

If you stand on the beach at Presqu'île and look North you can see a hill. This hill is a remanent of the old Lake Iroquois shoreline. Many of the roads north of County Road 2 just west of Brighton take you up this old beach escarpment and provide a spectacular view

of Presqu'île in the lake below. Take a drive up Fiddick, Trenear or Jackson Roads and see for yourself.

Over the last few thousand years Lake Iroquois drained to form our present-day Lake Ontario. As it did so, five islands appeared offshore of the mainland. These islands are comprised of limestone, part of that package of rocks formed so long ago in the Ordovician. This limestone has now been designated as part of the Lindsay Formation and is described as thin, crystalline to nodular limestone with very thin shaley seams (Peterson, 1969). This means that the rocks break up quite easily and form the low rubble cliffs found today on the south shore of Presqu'île. This also means that the rock is not very suitable for building stone as demonstrated by the fate of the Presqu'île Lighthouse (see the History section [here](#)). This rock is full of fossils, primarily crinoids, brachiopods, trilobites, and cephalopods, in decreasing order of abundance. Most of these fossils are fragments of the animals' shells, as they probably tumbled down a slope on the seabed before coming to their final resting place to begin the process of fossilization.

Examples of these fossils can be found along any of the Park's shorelines where rock is exposed. We ask that you do not take fossils home with you but leave them here for future visitors to enjoy. You can also bring your fossils to the Nature Centre (open July and August) and add them to our collection.

[Click Here](#) for a handout to the Fossils of Presqu'île

Reference: Peterson, N.N. (1969). Carbonate Petrology, Structure and Stratigraphy of the Middle Ordovician Carbonate Rocks in the vicinity of Kingston, Ontario. Unpublished Ph.D. Thesis, Queen's University, Kingston.