

From “Wind Swept” November 2014 - by Mark Harvey

My name is Mark Harvey and I am your new “Wind Swept” editor. I am very pleased to be given this opportunity to contribute to the LMAA. Following is my first “Wind Swept” story. It is about rocks that surround us on Lake Manitou and how the rocks impact those who live around the lake.

The Rocks of Lake Manitou

When looking at the rock around the lake my first question is how it got here. Well there are 2 basic types of rock under Lake Manitou. The first type of rock is buried down deep in what might be called the basement. These rocks are approximately 2 billion years old. We don't see this rock on Lake Manitou because it is buried. It pops up to the surface in a few places at Sheguiandah and up along Highway # 6 past Birch Island and all along the north shore of the North Channel. This is a very hard rock made of quartzite or small pieces of quartz sand that became cemented together and as you might guess it is often white in colour. Quartzite rock formations can be mined for glass making, used in processing copper and nickel and are very scenic. In fact the Group of Seven painted a lot of pictures here in what is now Killarney Provincial Park. We are in some ways lucky this rock is buried well down beneath Lake Manitou. Read a bit further and you will find out why I think our rock is better for the lake.

If you dug down about 1000 feet through the rock below Lake Manitou you would go through many layers of softer much younger rocks until you hit the basement, the much older much harder quartzite rocks.

There is a big gap in age between the basement rocks and the softer upper layers. The explanation for this gap in age is there were not many rock building processes for a long time and any rocks that did form during the age gap were eroded away.

It is these upper softer layers of rock that have created our lake's signature landforms including the bluffs of the cup and saucer to the west of the lake. This softer younger rock is also present as bedrock outcrops, boulders and gravel everywhere on the bottom of the lake, scattered around the shore and up on land. This rock is so numerous that the farmers needed to pick it off their fields and left piles of it along the old fence lines. It is these limestone and shale rocks that give Lake Manitou its foundation and has a huge impact on water quality and productivity of plants and animals in the lake.



Limestone dominated landscape of Lake Manitou as seen looking east from the top of the Cup and Saucer

So what does this rock do for our lake and surrounding area?

The layering of the rock allows it to chip off in nice flat chunks that are great for building walls and patios. The sea creatures that were present when these rocks formed in shallow warm water 300 - 400 million years ago have turned to fossils. Fossil collecting is fun and a great way to engage folks of all ages, especially children in outdoor activities and education. These upper layers of rock are full of calcium carbonate. Calcium is great for garden soil. Plants and animals do well in calcium rich environments. In fact I suspect the lake owes much of its excellent fishing to the bedrock geology and its effect on water chemistry, structure and wildlife habitat.

Rocks of all sizes provide homes, habitat and structure used by so many organisms that make up the food chain in the lake. These range from tiny algae and invertebrates to large fish that are so much fun to catch. Think of all the cracks and crevasses in the rock around the lake that allow water to flow into the lake as underground cold springs. Nice cold fresh clean water. But best of all Lake Manitou is largely immune to the effects of acid rain that killed many of the quartzite dominated lakes just to the north of Manitoulin Island.

When the smelting processes started at Sudbury early in the early 1900's train loads of logs were dumped on the ground in huge pits and started on fire. Then the mined nickel and copper ore was placed on top of the burning logs and roasted to drive off sulphur laden impurities. The smoke and fumes that came off of this created a poisonous gas full of acid forming materials. This was the start of the great killing of plants and animals all around Sudbury and the creation of dozens of dead acidified lakes in the region.

Fortunately any of this cloud of acid fumes or acid rain that reached into Lake Manitou was neutralized by the calcium compounds in and on the bottom of our Lake and it was spared. The result, an ecosystem largely intact and a fishery in Lake Manitou that is the envy of so many. The fishery is so good it helps support a large important fish hatchery at Blue Jay Creek and Sandfield.

Now we must not forget over the last million years a series of glaciations affected our lake. These had a big impact on the lake scouring out the lake bed, and depositing huge amounts of loose rock and soil into hills and ridges. Many of the islands and shoals in the lake are the remnants of these ridges or drumlins as they are called. Lake Manitou was not so long ago connected to the North Channel and Lake Huron. This was caused by glacial melt waters floods and a landscape that had been depressed by the weight of ice but was just starting to rebound upwards as ice was removed by melting. Maybe that is how we ended up with so many different fish species they just swam in and stayed once Lake Manitou became separated from the Great Lakes. We have much to thank the Rocks of Lake Manitou for because without them there wouldn't be a lake. I think the rocks of Lake Manitou play an important role in keeping "Our Lake Great" and making it an interesting, healthy, fun and full of life place to live.

Pat Costigan came up with the idea for LMAA members to write a story for "Wind Swept" that expresses **"what it is about the lake and area that attracted them to the lake"**. In my case the geology is one such thing that interests me about the lake. We hope this is the first in what will be series of stories from our members on a variety of topics whether it be the history, the people, the scenery or whatever. If this interests you please send in your stories so that you can share this with other Lake Manitou residents.

Written by Mark Harvey for the Nov. 2014 issue of "Windswept", the LMAA Newsletter.