

# localnews

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## LIVING

# All the beauty, less of the fame

## Kawartha Lakes deserve recognition alongside better known watery icons

As Dr. Jim Buttle of Trent University writes in "Peterborough and the Kawarthas," the Kawartha Lakes region of Ontario deserves to be thought of as a "lake district" as much as the Muskoka Lakes, the Finger Lakes of New York State and the Lake District of northwest England.

Although our local lakes have not received as much attention as these other famous areas, they are in no way less interesting or deserving of appreciation. Anyone who has had a chance to spend time on the lakes as a cottager, boater, angler or nature enthusiast knows that we have something very special here. I remember that when I used to live in Quebec City and Edmonton, one of the things I missed most was the lack of easily accessible, high quality lakes within a short drive of these cities. There really were none. It's hard to over-emphasize just how fortunate we are in Peterborough to have such a wonderful opportunity for recreation right on our doorstep.



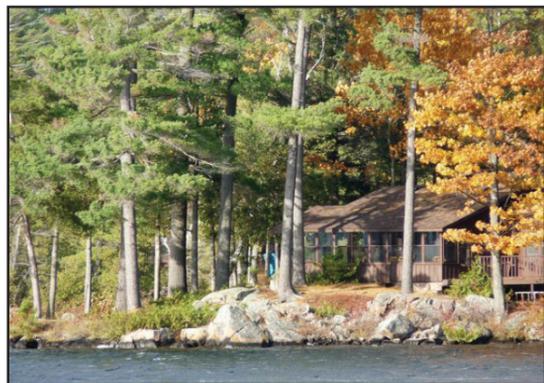
**DREW MONKMAN**

OUR CHANGING SEASONS

The Kawartha Lakes are the headwaters of the Trent River system, which drains into Lake Ontario. They include Balsam, Cameron, Scugog, Sturgeon, Pigeon, Little Bald, Big Bald, Buckhorn, Chemung, Upper Chemung, Lower Buckhorn, Lovesick, Stony, Clear, Katchewanooka (sometimes called "Katchiwano") and Rice. There are also many other smaller lakes such as Sandy, Coon Lake, and Big Cedar, and the many lakes that make up the new Kawartha Highlands Provincial Park north of Buckhorn and west of Apsley. This week, I'd like to continue with my recent investigation of local geology and landforms by explaining how the Kawartha Lakes themselves came to be. I will also begin to look at the effect of European settlement on the shape and size of the lakes and the Otonabee River.

### SHIELD-CONTACT LAKES

If you look carefully at a map of the Kawarthas, you will notice that the more northerly lakes - Stony, Lovesick, Lower Buckhorn and Bald - follow an irregular east-west orientation along the edge of the Canadian Shield. On the northern shores of these lakes lie the much older and harder Shield rocks such as granite. On the southern shore, we find younger and softer sedimentary rock, namely limestone. The lakes essentially lie in a groove or valley at the junction of the limestone and Shield rock types. Well before the first glaciers, the initial valley probably formed as a result of a river or river system flowing east along this junction. The flowing water found it much easier to cut down and southward through the relatively soft limestone than through the extremely erosion-resistant Shield rock on the northern shore. This erosion deepened and widened the lakes. It is interesting to note that some of Canada's most iconic lakes - Great Bear, Great Slave, Lake Athabasca, Lake Winnipeg and Lake Huron - were all formed in the same way, namely in a depression where hard, old Shield rock meets softer, younger sedimentary rock.



**DREW MONKMAN** photos  
Granite rock (top photo) typical of the northern shoreline of the Shield-edge lakes such as Lower Buckhorn and Stony. Granite shoreline (above) on the north shore of Lower Buckhorn. The limestone cliff or scarp that lies along the southern shoreline of Lower Buckhorn.



People who are familiar with the southern shorelines of the Shield-edge lakes of the Kawarthas might wonder why, in many areas, there are limestone cliffs. Some of these cliffs measure up to 30 metres high. An excellent example can be found along the south shore of Lower Buckhorn Lake, off Millage Rd. The presence of the cliffs is connected to the nature of the limestone itself. There are actually two kinds of limestone present - a bed of strong, more erosion resistant limestone lying on top of a weaker, softer form of the rock. However, the limestone beds do not lie parallel to the Earth's surface. Millions of years ago, they were uplifted and now angle slightly downward to the southwest. Because of this angled uplifting, part of the lower, weaker bed of limestone was brought to the surface. Although less than a kilometre wide in some areas, it is the layer that makes contact with the Shield. The harder variety becomes the surface rock a short distance south of the Shield, more or less starting at the south side of the village of Buckhorn.

The weaker, Shield-contact limestone bed is the layer that was eroded by the ancient, eastward-flowing rivers described above. However, as the river cut laterally and southward through this softer limestone, the harder bed of lime-

stone lying above it (but located a little to the south) was eventually undermined by the water. Large blocks of this harder variety eventually broke off and came crashing down into the valley below. The end result was a steep, cliff face of hard limestone that faces north.

### SOUTHERN LAKES

The other large Kawartha Lakes such as Clear, Chemung, Buckhorn, Pigeon and Rice also occupy valleys that were cut into the Ordovician limestone bedrock by ancient rivers. These rivers initially drained into present-day Lake Ontario. These valleys lie on a north-east-southwest orientation, the same orientation that the ice sheets followed. The ice sheets deepened the valleys as they moved southward and also left behind thick deposits of rock, gravel and sand on the uplands between the valleys. However, when the last ice sheet melted and the Oak Ridges Moraine was formed, the resulting hill ended up blocking the rivers that drained into Lake Ontario. The moraine forced the rivers to change their course and to flow northward into what are now Stony, Lovesick, Lower Buckhorn and Bald lakes.

The water draining into the Kawartha Lakes comes largely from the Canadian Shield through tributaries such as the

Gull River (drains into the northern end of Balsam Lake, the highest of the Kawartha Lakes), the Burnt River (drains into Cameron Lake), the Mississauga River (drains into Lower Buckhorn Lake), Nogies Creek (drains into Pigeon Lake) and Eel's Creek (drains into Stony Lake). However, a few rivers that feed the lakes flow from non-Shield origins and drain the low-lying areas of limestone bedrock and glacial till in the southern Kawartha region. For example, the Scugog and Pigeon rivers actually flow northwards into the lakes of the same names; Jackson Creek flows eastward from the Cavan Swamp into the Otonabee River; and the Ouse River flows southward from sources off the Shield into Rice Lake. The Indian River, too, flows into Rice Lake but actually delivers water from Stony Lake.

### LAKES HAVE CHANGED

If it was possible to travel back in time a couple of hundred years, the first thing you would notice is how much smaller the lakes used to be. This is especially true for the southwest-northwest oriented lakes such as Chemung, Pigeon and Clear. For example, much of the southern end of Pigeon and Scugog lakes would only have been marshland while Upper Chemung was connected to Lower Chemung by only a small

stream. Maybe the least recognizable body of water in pre-settlement times, however, would have been Rice Lake. Huge beds of wild rice grew around the perimeter of the lake and were harvested by native people. They were destroyed when water levels were raised during the construction of the waterway.

The Otonabee River was quite different, too. Before the construction of locks and dams, the stretch of the river between Peterborough and Lakefield was characterized by extensive sections of rapids. They were a huge obstacle to transportation. Rather than carry their canoes around the many rapids, local native peoples and the first Europeans often preferred to take the portage route that used to run between Little Lake and Chemung Lake. As for Lake Katchewanooka, most of it wasn't really a lake at all but rather the upper section of the Otonabee River. Susanna Moodie, the famous, English-born Canadian author who wrote about her experiences as one of the first settlers in the Kawarthas, actually located her homestead on Lake Katchewanooka. She wrote that "the lake on which our clearing stood was about a mile and a half in length..." This would have made the lake only about a third as long as it is today. The rest would simply have been river.

### EFFECTS OF DAMS

Prior to European settlement water levels would have changed markedly over the course of the year. Because there were no dams to store water, the run-off from spring snowmelt would have drained fairly quickly through the system, probably causing considerable flooding some years. This quick spring runoff, coupled with the high degree of evaporation during the warm weather months, would have meant that the lakes would have dropped much lower in summer than they do today. One can only speculate on how this would have affected the flora and fauna but it's fair to assume that a muddy, late summer fringe of exposed lake bottom would have created excellent foraging habitat for migrating shorebirds. This same habitat would also have supported a more varied flora than today and would have probably included Atlantic coastal plain plant communities and species such as Virginia meadow beauty. These plants depend on low, late-summer water levels to germinate and thrive on the exposed mud shores.

In the last 200 years, by far the biggest changes to the Kawartha Lakes have come as a result of European settlement. Because of the need for water power and transportation links between the various towns and villages, dams and locks were built in what was to become the Trent-Severn Waterway system. Because of the highly-controlled water levels, many of the lakes have become both deeper and wider. What were once simply low-lying forests around the perimeter of the original lakes are now shallow bays, often full of submerged logs and tree stumps.

I will continue my investigation of human influences on the Kawartha Lakes as well as themes such as fish populations in future articles.

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