

Maddie of the Madawaska

By Peter Mills

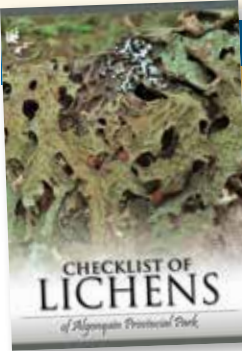


Photo by Sarah Lamond

This Northern Map Turtle was photographed in May 2022 on the Madawaska River near the village of Madawaska. The last time she was seen by Park staff was at Lake of Two Rivers in 2014, 55km upstream!

Way back in Volume 55, No. 3 (2014) of *The Raven*, we featured a short note about how turtle researchers captured a Northern Map Turtle in the Madawaska River just above Lake of Two Rivers. This observation was very notable because this species is not a part of Algonquin Park's regular turtle fauna. In fact, it is one of only two records ever made inside Park boundaries! The turtle's origin was a mystery, but we presumed she was most likely to have been transported here by people (that is, captured in an area where Northern Map Turtles are much more common, perhaps kept as a pet for a while, and then released in Algonquin Park). The closest natural population occurs on Round Lake beyond the Park's southeast boundary, but this is in an entirely different watershed and it seemed unlikely such an aquatic turtle would have made such a large dispersal that would involve long, overland travel. The closest natural population in the Madawaska watershed appears to be near Black Donald Lake, well outside Park boundaries and approximately 185 km from Lake of Two Rivers. This Northern Map Turtle would have had to be a very long-distance traveler to have originated from there and this notion seemed too outlandish to be possible. But we now have reason to think that perhaps this turtle really did travel to Lake of Two Rivers under her own steam, from some faraway population on the Madawaska River. In May 2022, park staff noticed a Northern Map Turtle basking on a log in the river near the village of Madawaska. One of our naturalists,

Sarah Lamond, was able to snap a photo of the turtle before it plunged into the water. Miraculously, study of the photo suggested this was the same turtle that had been caught at Lake of Two Rivers in 2014. A notch at the front of the shell, missing toes on the front left foot, and a stub-tail with a clubbed-tip were all consistent between the 2014 turtle and the 2022 turtle. This 2022 observation is at least 55 km downstream of the 2014 observation at Lake of Two Rivers! To "Maddie of the Madawaska"—we apologize for underestimating your capacity to move, and we wish you many more years of wandering up and down the mighty Madawaska River.



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ALGONQUIN VISITOR CENTRE

HOURS OF OPERATION

Algonquin Visitor Centre
April 22 to October 29, 2023
Open Daily 9 am - 5 pm

October 30 to December 23, 2023
Weekends 9 - 5 pm, full services
Weekdays 9 - 4 pm, limited services

Exhibits • Theatre
Bookstore & Nature Shop



Algonquin Logging Museum
June 10 to October 15, 2023
Open Daily 9 am - 5 pm

The 1.3-km trail with outdoor exhibits is available year-round.

OntarioParks.com • algonquinpark.on.ca

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A Bog's-Eye View

by Peter Mills

There are many things about the morning commute into Algonquin Park that force the cracking of a smile. Some days, it is seeing the mist-shrouded silhouette of a Moose standing in the ditch. Other days, it might be noticing the first orange-tipped branches on the Sugar Maples near the West Gate—proof that Algonquin's spectacular fall colours are on their way. Or other times, it is seeing our float plane sitting at its mooring docks on the shore of Smoke Lake, the bright yellow paint glistening with the nights' dew. If you've seen our 1966 de Havilland "Turbo Beaver" shimmer in the dappled light of a fresh Algonquin morning, you might know what we mean. But if you

aren't the type to find beauty in the contours of a float plane, seeing it parked there might be enough to make you smile anyways. The mere sight of the plane, landed and moored though it may be, is enough for the mind to begin picturing just how spectacular it would be to take a ride over the Park landscape in the fresh and fine morning sun.

Perhaps the most jaw-dropping thing about seeing Algonquin from above is the expanse of forested hills that extend out of sight in all directions. But when you're up there, it is clear the Park isn't just all trees. An essentially uncountable number of lakes break up the

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chains of forested hills, some with islands, other with peninsulas, and most connected to their neighbours by way of a river or stream. Another delightful thing about a high-altitude vantage over the Park is the ability to see certain landscape-level patterns. For example, it becomes apparent that almost all our lakes are ringed with a thin belt of evergreen trees that often contrast with the hills directly adjacent to them, which are more commonly covered with deciduous species. This pattern is the work of Beaver, who preferentially chew down and remove any deciduous trees along the shoreline but leave the unappealing, resinous, evergreen conifers alone. But there are other strange and striking features that become obvious from the air that lack such an obvious explanation.

Take, for example, the “black-hole” (or “eye”) that sits at the centre of so many of Algonquin’s bogs. Indeed, a common pattern seen over and over again across the Park are the occurrence of relatively small, circular wetlands, each with a concentric pattern of vegetation types that are especially obvious from the air. Around the edge of the bog, essentially brushing shoulder with the uplands forest at their “shore”, there is typically a ring of wet Black Spruce swamp. Moving inward

toward the centre of the circular bog, the ring of spruce gives way to an open mat of *Sphagnum* moss, and beyond that, right in the middle of the wetland, is the “Eye of the Bog”, which appears as a striking, bottomless, black-water pool from above.

These features—a round wetland ringed with spruce, then an inner donut of moss, followed by a black, central pool—are called “kettle bogs” and their origin dates back to the time the continental glaciers were melting off of what would become the Park landscape. At that time, immense chunks of ice broke off the front of the melting glacier and came to rest on the ground (picture an iceberg that got “beached” because, in the case of the Algonquin area, there was no ocean at the foot of the glacier to carry away these immense blocks of ice). But shortly after becoming “beached”, these icebergs also became partially buried in sand and gravel. We often think of glacial meltwater as being crystal clear and appealing to drink, but in reality it is absolutely loaded with sediment and looks more like gritty chocolate milk. After all, these glaciers did grind and gouge their way across the land for millennia, and in doing so accumulated huge quantities of sand, gravel, stone, clay, silt, and muck in their

ice. And so, when glacial ice finally melts, huge quantities of “grit” get flushed out in front of the ice sheet along with the meltwater. In the case of our “beached icebergs”, this meant they would usually become partially entombed in sand or gravel and only the tip of the ice block remained visible above the ground.

In due time, these beached, partly-buried icebergs melted along with the disappearing glacier. However, as these icebergs melted, they would leave two obvious marks behind. First—an immense pit in the sand and gravel that had previously been occupied by the iceberg. And second—water to fill that pit, which was left behind as the iceberg transformed from a solid into a liquid. These pits are still strikingly obvious even millennia after the glacial ice has disappeared, and they even remain filled with water. However, we do feel it is important to point out the water in these pits is not the original meltwater left behind by the iceberg. Rather, the water in these pits has been sustained by inputs from rainfall and snowmelt.

The way we see these pits today is quite different from how they would have first looked shortly after deglaciation, when they were essentially sterile “bowls” of water set in cold, barren, plains of sand and gravel. Over the intervening millennia between then and now,

vegetation began to proliferate around the shore of these bowls and even “invade” out into the open water on floating mats of moss. Indeed, the amount of open water in a kettle bog becomes less and less over the centuries, since the floating and invading mats of vegetation grow inward (i.e., toward the centre of the pool), thereby creating an ever-constricting black “eye” of water set into the ever-encroaching mat of moss and other vegetation. One could say that the “eye” of a kettle bog starts out wide open, but gradually winks shut as these floating plants grow inward. In fact, given enough time, some kettle bogs close over completely and instead of presenting as a circular pit of black water, they are instead wet, circular clearings in the forest. But even in these closed-over kettle bogs, the sopping wet moss can be a dead giveaway that there is still a deep pocket of water beneath you, which is further indicated by wobbly “ground” since the floating moss “ceiling” that has grown over the water is not rooted onto anything firm. With this knowledge in mind, it is especially delightful to set eyes on a kettle bog and its black eye from our yellow plane, and to picture the block of ice that became buried there about ten thousand years ago. But these flights also indicate this isn’t the whole story when it comes to

understanding why these kettle bogs take on the shape that they do. From way up in the air, it is apparent that some kettle bogs also have a circular moat of deep water around the edges. One can hardly help but to ask why a subset of these kettle bogs have this moat and a striking “floating-donut” appearance.

Careful observation of this subset of kettle bogs with “floating-donuts” indicates it is Beaver who are responsible for creating this feature. All of these kettle bogs have had their outflow streams dammed, backing up the water that otherwise would have drained out of them, which has the overall effect of raising the water level in the kettle bog itself. But, of course an increase in the volume of water doesn’t just cause things to rise. Around the edges, the wetland actually expands outward as it accommodates the extra water, and this is what

gives rise to the moat-like ring of water around these dammed kettle bogs. A phenomenal place to see exactly this feature is at Wolf Howl Pond on the Mizzy Lake Trail, where a long-standing Beaver dam has created a moat around the “floating donut” of the original kettle bog.

Taken together, this little narrative underscores two important reminders about the Algonquin landscape. The first is that most of the Park’s topography can be explained through the fascinating lens of glacial processes, which moved, shaped, and arranged the materials that have become the ground beneath our feet. And the second is that Beaver—mighty, mighty Beaver—have a similar power to fundamentally shape and alter the environment we explore and find so beautiful during our visits to Algonquin Park.

Beavers build dams that alter the shape of kettle bogs. (Jess McComb)



When this block of ice melts, a water-filled hole will be created and set up the conditions for the formation of a kettle bog. (Image created using Stable Diffusion software)



Before they get a ring of spruce trees and floating moss, kettle bogs appear as cold, round, lakes. (Wikimedia Commons)



The “Eye of the Bog”. (Ontario Parks)

The “floating donut” at Wolf Howl Pond was created when a beaver dam was built [foreground] and caused the area containing the kettle bog to flood. (Ontario Parks)