

NEW PUBLICATIONS

Fishing in Algonquin Provincial Park

Algonquin is renowned for some of the finest fishing in Ontario, with hundreds of clear, cold lakes which are ideal for trout. Many visitors come to the Park with little or no idea of how or where to fish, or even the kinds of fish that might be expected. This book is intended to give you the knowledge that may make the difference between success and failure.

ONLY \$4.95



Lake Depth Maps of Algonquin Provincial Park

Colour maps showing depth contours as well as describing other key lake characteristics such as fish species present, maximum depth, and other interesting lake features and historical facts.

ONLY \$9.95



SHOP ONLINE:
algonquinpark.on.ca



Available at the Algonquin Visitor Centre Bookstore, the East Gate and West Gate

MOOSE VIEWING TIPS

In spring, Moose can be seen regularly along Highway 60, attracted to the slightly salty water left in roadside ditches after winter road maintenance. Unfortunately, the proximity of Moose to Highway 60 can create a serious hazard for motorists. Stay alert as Moose can be on the road or standing in the ditches and are often surprisingly hard to see. Each year too many Moose and other wildlife are killed in vehicle collisions. Reduce your speed (especially at night) and help save the lives of Algonquin Park's Moose and possibly even your own.

If you see a Moose, pull safely off the traveled portion of the road and turn on your hazard lights to warn other drivers. If possible, park in a nearby parking lot. If drivers flash their vehicle headlights at you in Algonquin Park, there's a good chance a Moose is ahead or maybe even a "Moose Jam" (a traffic jam caused by Moose watchers). If you exit the vehicle, watch for traffic and ensure you keep a safe and respectful distance from wildlife.



Cow Moose in spring.

JUSTIN PETER

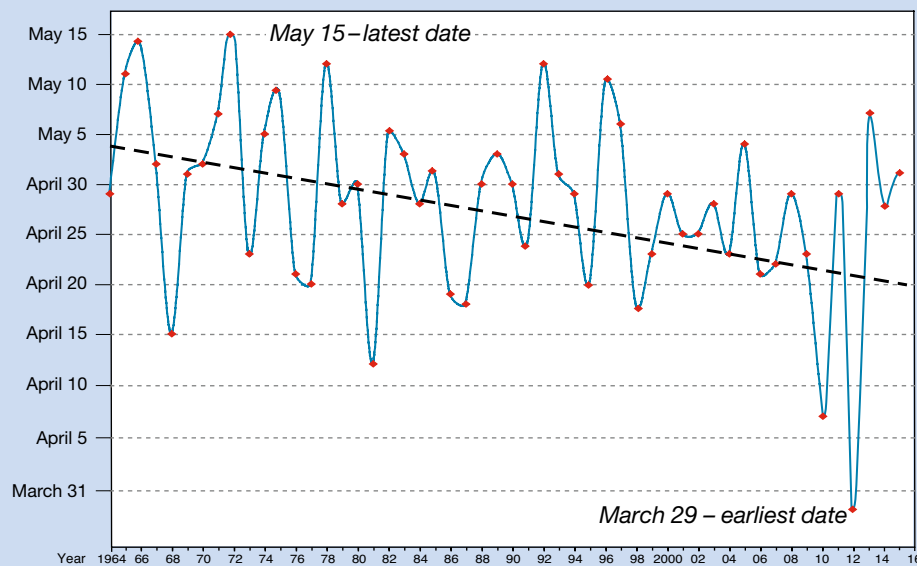
Moose are large and powerful animals. Please show them respect.

WINTER TICK IN SPRING

The winter tick is one of many parasites that affect moose. The aggressive engorgement of female winter ticks cause moose to obsessively groom, scratch with their hind hooves, and rub furiously against trees to relieve the irritation. This vigorous grooming results in damage to their protective coat of hair leading to premature winter hair loss.



Lake Opeongo Ice-out Dates Since 1964 Showing Trend



Compiled by Ontario Ministry of Natural Resources and Forestry: Algonquin Fisheries Assessment Unit

Be FishingSmart...

Reminders while fishing in Algonquin:

- No live baitfish are permitted.
- No fishing is permitted within 100 m of a water control dam.
- No fishing within 300 metres downstream of Lake Opeongo's Annie Bay dam.
- Daily catch and possession limit for Lake Trout is 2 per person (1 per person with a Conservation Licence).
- Daily catch and possession limit for trout is 5 per person, no more than two of which can be Lake Trout (2 per person with not more than one Lake Trout, with a Conservation Licence).
- Be aware some lakes have slot limits. Check the Algonquin Information Guide for a list.
- Worms are not native to Algonquin and remaining worms should be taken home or thrown in the trash—not on the ground!

* refer to the Ontario Recreational Fishing Regulations Summary for complete details



The Visitor Centre offers **FREE WiFi** internet access
...and while there, don't forget to check out The Friends of Algonquin Park Bookstore and Nature Shop, or the Sunday Creek Café.

algonquinpark.on.ca

MNR# 4575 5K P.R. 06 01 15
ISSN 0701-6972 (print) ISSN 1927-8624 (online) © Queen's Printer for Ontario, 2015



Algonquin

Vol. 56, No. 1 • June 1, 2015

The Raven

A Natural and Cultural History Digest

Something in your nose?

by David LeGros

A little while ago I had a bit of a sinus infection, my nose was stuffed up, and I had a bad headache and some serious pressure behind my eyes. It almost felt like something was moving around in there and growing. This was pretty uncomfortable and I wished it would go away. After a home remedy of lemon juice, ginger and cayenne pepper tea, I felt some relief, but this got me thinking about creatures that make a living in the snouts of other animals, and that I really didn't have it too bad.

A snail, a weasel, a snake and a worm walk into the Highland Inn and order drinks...

bad jokes aside; they do have something in common.

When we think of parasites, we may cringe as we imagine ticks sucking our blood, tapeworms lining our intestines, or some single-celled organism making us ill. Parasites make their living by feeding on other creatures, often in a subtle and unnoticeable way. In fact, most parasites don't want their host to get sick, or to even know they exist at all. If the host is healthy, the parasite usually is too (it is difficult to survive in a sick or dead host). Regardless of their courtesy to the host and the creepy feeling we get from parasites, you cannot deny that they are fascinating. For example, many parasitic worms, like tapeworms, flukes and nematodes



The American Mink regularly eats prey, such as frogs, which may be infected with Sinus Nematode larvae.



have complex lifecycles, often requiring a succession of hosts and some ingenious ways to get their eggs into the intermediate host and finally into the definitive, or final host.

Once my sinus pain subsided, I began my investigation into creatures living in the noses of wildlife. This led me to the Sinus Nematode. Like many parasitic worms, the story of the Sinus Nematode of the genus *Skrjabinylus* (*SKRA-bing-JYE-lus*), begins with a hungry snail or slug. The hapless gastropod accidentally eats the infective stage of the parasite while grazing on algae or vegetation. Once inside the snail, the nematode begins to grow, and moult its skin twice while in this slow moving incubator—the nematode’s first intermediate host. Once growth is complete, the nematode larva is awaiting the next stage of its life. Escargot is on the menu for many creatures; some snakes, amphibians, and even some small mammals eagerly consume snails. The parasite passes from the snail into the creature that ate it—the second intermediate host. Now in the late stages of development, the Sinus Nematode larvae become encapsulated in the tissue of their new intermediate host, and don’t appear to be noticed. For the next stage the parasite will need an upgrade in accommodations, and like before, the predator that consumes the second intermediate host ends up as the final or definitive host.

Small animals infected with Sinus Nematodes are eaten by mid-sized predators, like weasels. Algonquin is home to a variety of

weasels, ranging from small to large, each with a particular habitat and niches; Long-tailed and Short-tailed Weasel, Mink, American

Marten, Fisher, Otter, and the occasional Striped Skunk. Although not very big, these weasels are amazing predators with hearty appetites and the infected frog, snake or mammal is eaten with gusto. This is where the Sinus Nematode story gets even more strange. Once ingested, the maturing parasite escapes the stomach and body cavity, and heads for the central nervous system. The central nervous system runs along the inside of the spinal column, all the way to the weasel’s brain. Once here, the parasite knows just where to go: the sinuses! The mature nematode is a small (1-3 cm), red worm living and feeding in the sinus. It is here where the Sinus Nematode does its most noticeable work. As it grows it causes some swelling in the sinus, and the parasite begins to push on the frontal bones of the skull. Over a period of months a dark discoloration would be visible in minor cases, but in severe cases there appears to be small holes or “bubbling” in these bones,

which cause lesions and even perforations in the skull. However, we would never notice these under the skin and fur of a living weasel. From this safe place, the parasite lays eggs that eventually travel down the back of the hosts’ throat, where they get swallowed and after passing through the gut, see the light of day to start the whole cycle over again.

The Sinus Nematode is a strange parasite, but it got me thinking about how often does this actually happen in nature? I decided to check out the Algonquin Park Museum’s collection



Mink are often the host for Sinus Nematodes. The complicated lifecycle of the nematode ends with the parasite living in the sinus of the weasel, often creating a 'bubble' on the skull, seen here.

of specimens. A quick look at the collection of skulls reveals that this type of parasitism is fairly common—1 in 5 Mink, 1 of 2 River Otters, 4 in 5 Long-tailed Weasels and 2 of 2 Short-tailed Weasels in the collection were visibly infected. In reality, large-scale studies from animals trapped in Ontario revealed that River Otters had Sinus Nematode prevalence of 51% and Mink up to 80%! As unappealing as having something living in your snout and disfiguring your skull is, there are other negative impacts of Sinus Nematodes beyond aesthetics. Researchers have found that the presence of the parasite and its growth can alter the shape of the skull and lead to some deformities (see photo), but also reduce the size of the animals’ braincase.

Now, here is the really fascinating part. In wildlife reproductive strategies, we often hear about how the females make the big energetic investments in reproduction; they produce and care for the young while males often seem to have minimal investment and little responsibility. River Otters are sexually dimorphic; the males are considerably larger than



Several of the Long-tailed Weasels skulls from the Algonquin Park Museum’s collection showed signs of Sinus Nematode infection. Most individuals show darkened or discoloured areas, and some, small perforations in the skull.

the females, and females prefer larger males as mates. Bigger is better, right? Being big, however, is costly; you have to eat a lot to grow large. The masculinizing hormone testosterone helps to fuel this growth, which in theory will make the male more attractive to females. However, a male putting all this energy into growth means that some other body system is not at peak operation, and that is the immune system. Researchers have found that even though male and female River Otters have the same rate of infection for Sinus Nematodes, males were most affected because the parasite grew larger, altered the shape of the skull and ultimately shrank the animal’s brain case! I suppose this is just another example of the headaches of reproduction. This shrinking of the brain case is thought to lead to neurological issues and reduced survival, but this has been difficult for researchers to assess. It is possible

that this phenomenon is connected to male-biased mortality in some weasels.

While we may often consider the effects of a parasite on the individual, we rarely think about how they impact a species or landscape. In nature, species and individuals

compete for resources like space, food, water and mates. In ecological terms, we may think of parasites as another competitor, but rather than two species of animal competing for the same food on the landscape, the parasite and the host are competing, one inside the other. The parasite constantly has to adapt to the host’s defences to avoid being detected and destroyed, and the host constantly has

to compensate for nourishment the parasite takes. In nature, no one ever has the upper hand for long; it is an ever-evolving arms race.

So next time you have a stuffed up nose or sinus infection, and it feels like something is living in there, be thankful you haven’t been eating creatures infected with Sinus Nematodes. And not to worry, humans don’t get Sinus Nematodes.

Ontario Reptile and Amphibian Atlas

Ontario Nature protects wild species and wild spaces through conservation, education and public engagement. The Ontario Reptile and Amphibian Atlas (ORAA) is a citizen science project that maps the distribution of reptiles and amphibians across the province over time.

In Ontario, 75 percent of reptiles and 35 percent of amphibians are at risk of disappearing. The ORAA uses more than 200,000 observations submitted by partners and thousands of individuals to inform conservation, stewardship and management planning for reptiles and amphibians.

Ontario Nature welcomes sightings and photos of any snake, lizard, frog, toad, turtle, or salamander in Ontario. For more information and to submit sightings, visit ontarionature.org/atlas.



Citizen science GOES MOBILE!

IMPRESS YOUR FRIENDS

with your knowledge of reptiles and amphibians while contributing to conservation in Ontario.

The Ontario Reptile and Amphibian Atlas app is a field guide that allows you to easily report your sightings.

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Ontario Nature

A registered charity protecting Ontario's wild species and wild spaces since 1931.