

ALGONQUIN PARK IS BLACK BEAR COUNTRY

For most Park visitors, seeing a Black Bear in its natural environment is an exciting experience. However, the excitement diminishes when that Black Bear is rummaging through your cooler or tent, searching for food. As visitors camping in bear country, you have a responsibility to follow the bear rules and to know what to do if you encounter a bear.



PETER FERGLUSON



Rules in Bear Country

Each year, Park staff spend hundreds of hours dealing with problem bears – help our staff by following the rules when camping in bear country.

1 Never feed or approach bears

The Black Bear is an intelligent animal, with the ability to remember food locations and can quickly become accustomed to human sources of food. People who feed bears create problems for everyone.

2 Store food out of reach of bears

In campgrounds and picnic areas, store all food (including pet food) inside the closed trunk of your vehicle, if possible. Do not store food, cooking utensils or fragrant items, such as soap, toothpaste, or shaving cream in your tent.

When camping in the backcountry, put all food in a pack and hang it well off the ground—at least four metres off the ground and two metres away from the tree trunk—and away from the vicinity of your tent.

3 Keep your campsite clean

In campgrounds, reduce the availability of garbage, and consequently garbage odours, by depositing your sealed bags of garbage daily in the bear-proof waste containers. Clean your picnic table and barbecue after every use, and clean up any spilled grease.

When camping in the backcountry, burn any food scraps and fat drippings thoroughly in a hot fire. Any remaining garbage should be placed in your litter bag and suspended along with the food. To eliminate food odours, dishes should be washed immediately after each meal (preferably well away from your campsite).

Charges can be laid for leaving out items which may serve as attractants to any wildlife.

BEAR SPRAY is pepper spray with a strength, and a propellant, specifically formulated to deter bears when it is sprayed in their eyes. Know how to properly use, store, and carry this product (available from many outfitters). Keep in mind that bear spray is no replacement for appropriate conduct in the outdoors.

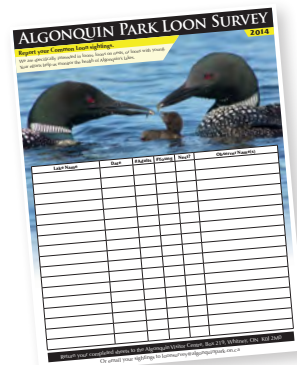
Algonquin Park 2015 Loon Survey

The haunting calls of the Common Loon symbolize Algonquin's wild country for many people. Nearly every small lake has a breeding pair and there are multiple pairs on the larger lakes. Unfortunately, there are environmental threats to loons throughout their range that could potentially affect numbers here in the Park. These include reduced reproductive success caused by acid precipitation, and loons dying during migration due to avian botulism.



GUSTAV NORRÅ

In 1981, we began a project to help determine just how well loons were doing in Algonquin. Visitors and staff report the lakes where they see adult loons, their nests and young. On average, nests or young were observed on 40% of lakes where loons were reported during the 34 years from 1981 to 2014. Only a long-term monitoring program can distinguish real trends from normal yearly fluctuations and we need observations from as many lakes as possible.



Please give us a hand by reporting your loon sightings this year. Report forms are available at park offices and the Visitor Centre.

Loon Reproduction in Algonquin Park Since 1981

Year	# of lakes surveyed	% with nest/young
1981	121	38
1982	184	28
1983	237	21
1984	298	34
1985	210	37
1986	216	35
1987	261	43
1988	260	40
1989	240	41
1990	248	40
1991	201	50
1992	203	39
1993	232	43
1994	183	46
1995	223	45
1996	219	42
1997	173	45
1998	175	42
1999	190	33
2000	216	44
2001	168	39
2002	143	41
2003	120	46
2004	144	41
2005	156	40
2006	147	41
2007	138	43
2008	169	39
2009	146	40
2010	138	36
2011	134	51
2012	128	48
2013	120	52
2014	152	41



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



Algonquin

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Drill Rigs in Algonquin Park?

by David LeGros

The fine summer weather is encouraging us to get out and hike some of the many trails here in Algonquin Park. Out in nature, we can get away from our home towns and cities, the noises of commerce and industry and really “get away from it all”. Here, we listen to the songs of birds and the chirps of crickets, watch ripples in the streams and clouds floating over pine-clad hills. It is comforting to have places like this to visit. In fact, apart from a few mosquito bites, everything seems right in the world. However, on these summer days there are drill rigs operating here in the Park – and right in plain sight!

When we think of drilling, resource extraction immediately comes to mind; to access water, mineral deposits or oil. There is something buried deep below, and it is hard to get at it but it can be well worth the effort. Because the resources are hidden from view, we humans have developed sophisticated equipment to let us “see” what is hidden below ground. Then, using powerful drills, we can bore deeply through the overburden such as sand, clay and even rocks like the Canadian Shield to get at the riches below. Once the resource is found, workers may need to access



PHOTO: DAWN SHERMAN



it, often through mine shafts and elevators, so elaborate tunnels must be built to get workers, equipment and the resources in and out.

Do not fear, there is no mining or oil exploration in Algonquin Park, but there are active drill rigs all over in our forests. While the driller in this story isn't boring through the Canadian Shield after mineral wealth, it does have some specialized senses and equipment to get the job done.

Many years ago, while admiring a large Yellow Birch tree, some friends and I noticed something drift past us at eye level through the forest. Whatever it was, it flew slowly and seemed to trail a long, dark thread or wire behind it. In the dappled sun and shade of the forest, it was difficult to tell what it was. We followed this mysterious creature for about 10 metres before it landed on a large, dead, yet standing Sugar Maple. When it sat still for a moment, we realized it was an enormous yellow and brown insect of bizarre proportions.

It had long, spider-like legs, thin and constantly moving antennae, a slender abdomen that was broadest near the end, and the striking warning coloration of a bee. Upon getting home, we had to look it up in a field guide – it was called a Giant Ichneumon (Ick-new-mon) wasp, or as foresters know them, Stump Stabbers. Perhaps the most noticeable thing about them is the incredibly long, wiry ovipositor (egg-laying body part) of the female; in total, the wasp may be up to 15 cm long! There are two relatively conspicuous species in the area: the yellow and brown *Megarhyssa macrurus*, and the metallic blue-black and orange, *Megarhyssa atrata*.



Giant Ichneumon (*Megarhyssa macrurus*)

To fully appreciate the story of the Stump Stabbers, we first need to understand a bit about another large wasp, the Pigeon Horntail, and where they cross paths. These wood-boring wasps lay their eggs in dead and decaying trees, which the female injects into the wood with her “horn tail” or ovipositor. Once an egg hatches, the horntail larva feeds on decaying wood, but the mother also packed it a special meal. Not only does the female deposit an egg into the wood, but she also inoculates the wood with a fungus – a fungus that will begin to grow, becoming food for the hungry larva. The grub-like horntail larva grows to large size, even larger than the adult horntail, which is about 30 mm in length! Many insects that undergo metamorphosis have larvae much larger than the adult; and the amazing transformation is done without the benefit of eating to fuel growth.



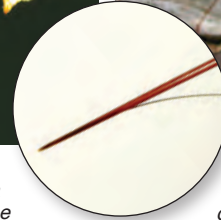
Pinned specimen of the adult Pigeon Horntail. This large, wood boring wasp is the host for the Stump Stabber.

The Pigeon Horntail has a fascinating life cycle, but its story becomes intertwined with the Stump Stabber – and the horntail larvae will play the role of unwilling nursery. Instead of feeding on decomposing wood and fungus, the Stump Stabber larvae feed on the larvae of the horntail. Now you are probably thinking, how does the female Stump Stabber find the larva of the horntail, let alone get at it while it is deep in a rotting tree? This might be a nearly impossible task for you and I, but the Stump Stabber has the right tools – highly acute sensory equipment. Once the female Stump Stabber is on a tree that is likely to harbour horntail larvae, she quickly crawls all over, rapidly drumming her antennae on the trunk. It is thought she uses a combination of scent and



C. LEE-COMEAU

A female Stump Stabber (*Megarhyssa macrurus*) drilling into a dead tree to deposit her eggs near the larva of the Pigeon Horntail. Note the wiry ovipositor extending from the abdomen, entering the wood between the second and third pair of legs.



ERIKANFRODE

A female Stump Stabber (*Megarhyssa atrata*) sending its tiny, almost fluid egg down the ovipositor to deposit on the surface of the larva. The three filaments of the Stump Stabber's ovipositor (inset), typically, are all held together.

the sound of the horntail larva chewing through wood to locate it. Another sign that she is in the right place is the detection of the beneficial fungus left by the horntail mother – betrayal by fungi! The sophisticated detection equipment of the wasp has put her in the right place.

The horntail larva may be several centi-

metres into the rotten wood. The female Stump Stabber must get her egg to the horntail larva. This will require the drill rig! The nearly 10 cm-long, wiry ovipositor will be pushed into the wood, reaching the larva. But before she does this, she raises her abdomen high above her head, and spreads each of her six legs

Our apologies to Algonquin Outfitters—we neglected to include this advertisement in our 2015 Information Guide.

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wide to act as stabilizers. The ovipositor is bent into a tight arch, with the wood-boring tip immediately under her body, then slowly but surely, she drives her ovipositor into the rotting wood until it reaches the nearly defenseless horntail within. This is how the Stump Stabber got its name!

If you look carefully at the ovipositor of the Stump Stabber, you may notice that it is composed of three filaments, not just one. The two outside filaments are like sheaths; these are used for the drilling. The filament in the centre is a bit thinner, about the diameter of a human hair. The two outer filaments protect and guide the central filament, which carries venom to immobilize the horntail larva and deposits the egg. In order for the egg to pass through the hair-like ovipositor, it actually changes shape at the time of laying, becoming a long narrow strand. The drilling and egg-laying process may take up to an hour, and many females seem to congregate on the same tree trunk, indicating there are many horntail larvae inside, so it is possible to get a good look at several at once. During egg-laying, females are vulnerable to predators, such as birds, as they are “stuck” into the wood and cannot fly off to safety. Sometimes, a keen observer may find only the ovipositor sticking straight out of the trunk.

The tiny, grub-like Stump Stabber larva hatches and soon begins feeding on the giant yet paralyzed horntail. Here, the Stump Stabber larva can feed on the fresh flesh of the horntail, beginning with the least vital organs so as to keep its host alive until it is fully grown. Creatures that feed on a live host until it dies are known as parasitoids. Metamorphosis occurs where it fed on the horntail, but how to get out of there? The adult female Stump Stabber drilled a very small hole through the wood to deposit the egg, but now the fully grown wasp must emerge and there is no shaft or elevator to get to the surface. The newly metamorphosed Stump Stabber must chew its way to the surface of the log. In the case of an emerging female, the sound of her chewing attracts the attention of males – often upon emerging there is a male

waiting to mate with her, and sometimes over 20. Once having mated, a female may search hundreds of square metres to find horntail larvae, and she will lay many eggs a day. After all, she is in a hurry – adult Stump Stabbers only live for about a month and they do not feed at all, instead relying on stored nutrients from the horntail feast.

Although we do not have ongoing mineral exploration here in the Park, we do have a fascinating insect that extracts resources with all the skill and equipment of a mining operation. In the early stages of the project, the female Stump Stabber locates the horntail larva with senses rivalling ground penetrating sonar. Then she drills into the tree trunk with the precision of an oil rig. Later, once the young Stump Stabber is ready to emerge, it must create its own escape shaft to freedom to repeat the cycle over again. And like many lucrative mining operations, there is no shortage of interested suitors wishing to partner up!

Wasps Part of the order Hymenoptera (bees, wasps and ants), there are over 100,000 described species worldwide. The group of wasps described in this article are the “Killer Wasps” or parasitoid wasps. There are over 7,500 described species in North America alone. While all lay eggs on or in their prey, they vary in their chosen hosts, typically insects and spiders. Many species of parasitoid wasps are valuable as natural pest control.

Parasites Are organisms that feed off of another organism (the host) which gets nothing in return. Parasites do not usually kill their host. Some parasites live on the outside of the host (ectoparasites, like fleas), or on the inside of the host (endoparasites, like a tapeworm).

Parasitoid An organism that lives on or in the host, feeding on it until it has completed growing, and the host dies. Many wasps are parasitoids, and they will subdue a host with a venomous sting to paralyze it so their offspring may feed freely.