Halton/North Peel Naturalist Club

The Esquesing

May-June 2015 Newsletter
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UPCOMING SPEAKERS

Meetings begin at 7:30 pm on the second Tuesday of each month, September to June. The meeting location is St. Alban the Martyr Anglican Church, 537 Main Street, Glen Williams.

May 12, 2015
Emma Garden, *Aquatic Insects*
Emma is a rising star in Credit Valley Conservation who has a special interest in the insects that live in water for all or part of their lives. These insects – their populations and diversity – are of critical importance to the health of aquatic ecosystems. Emma will introduce us to these important environmental role players. And, if we are nice to her, she may invite us out on a follow-up field trip to experience the critters first hand.

June 9, 2015
An outdoor indoor meeting
No indoor meeting. We will, instead, as per tradition, head out to enjoy an evening walk at Scotsdale to monitor nest boxes. We will meet at 7:30 in the main parking lot.
http://maps.google.com/?ll=43.686231,-79.989095&spn=0.013825,0.025513&t=m&z=16

September 8, 2015
Costa Rican sea turtles
Club favourite, Josh Feltham, a professor at Fleming College will kick off our new season with a talk about his conservation work with Costa Rican sea turtles. Josh is an entertaining speaker who engages his audiences through thought provoking questions and dialogue.

October 13, 2015
Whimbrels
Club member Johanna Perz has travelled to the Canadian Arctic to study whimbrels. These large sandpipers are seen in southern Ontario only on migration. Johanna will tell us about their fascinating biology.

November 10, 2015
The Once and Future Great Lakes Country
John Riley, a senior science advisor with the Nature Conservancy of Canada, will talk to us about *The Once and Future Great Lakes Country* his sweeping ecological and economic history of the Great Lakes watershed. His book is a triumph of painstaking research and has great resonance for all of us today. Read Don Scallen's review of John's book at http://www.inthehills.ca/2014/11/back/the-once-and-future-great-lakes-country/

December 8, 2015
Our annual pot luck dinner and slide sharing. Come for the conviviality and Ray Blower's legendary bean salad.

OUTDOOR EVENTS

Sun. May 17, 2015
Spring Birding at Thickson Wood, Lynde Shores Conservation Area and Cranberry Marsh: Leader, Ray Blower. If I had only one day in the spring to go birding, this is where I would go. These locations provide a wide variety of habitats including mature forest, meadows, swamps, marshes, old fields and Lake Ontario and its shoreline. The result is a diverse collection of bird species, especially during spring migration. Scheduling on the Sunday of the Victoria Day holiday weekend has resulted, so far, in trouble-free driving to and from these Whitby birding hot spots. Bring a lunch, water, hat, sunscreen, binoculars, etc. Call Ray (519-853-0171) for starting location and times

Mon. May 18, 2015 from 8-9:15PM…Acton
Sat. May 23, 2015 from 8-9:15PM…Milton
Thurs. June 4, 2015 from 8-9:15PM…Oakville
Mon. August 10, 2015 from 8-9:15PM…Oakville
Swift Night Out providing a chance for families, community members, biologists, and naturalists to enjoy the spectacular evening display of Chimney Swifts. If you're interested in joining us, please bring a lawn chair, camera, and binoculars and RSVP with Emily for more information (HaltonSwift@hotmail.com).

Saturday May 23: **Scotch Block Reservoir and the Reed's Heronry**. This outing is timed to allow us to see a great variety of songbirds and a good number of waterbirds at two sites, if you don't know your spring birds and were afraid to ask, this is the outing for you! We will be standing in open areas with a telescope so everyone can get great views of the birds, and all novice birders are most welcome. There is almost no walking involved. We will meet at the turnoff to Third Line, south of 15 Side Road (about 1.5 k east of Hwy 25) at 7:30 a.m. From there we can car pool to the reservoir with stops for Bobolinks and Meadowlarks en route. Later we will drive west to Laurie Reed's home to watch Great Blue Herons on their nests and see a variety of other birds. Leader: Fiona Reid (fiona.reid7243@gmail.com or 905-699-0705). Please RSVP prior to the trip - space on the deck overlooking the herons is limited.

Friday June 26. Moth Night! Head on over to Fiona's house in Speyside for a wild night of mothwatching. We will meet at about 8 p.m. to go out and bait trees with sticky-sweet glop and set up lights, then take a break indoors (perhaps enjoying a glass of wine or some dessert). After dark we will patrol the woods and gardens in search of moths, other insects, predatory spiders, spring peepers and more. Please call or email Fiona in advance. Rain date June 27th.

PRESIDENT'S MESSAGE

Hello to all our members!

Spring finally appeared and what could be more apt than, "the darling buds of May?" Take a moment to look at the budding trees in your neighbourhood. Wherever you live, buds are opening and trees are flowering. In the forest the trillium are now in full bloom, along with many other lovely wildflowers, so be sure to get out and enjoy the fleeting sights of spring in all its glory!

We have a great program of indoor and outdoor events coming up, from birding to pond-dipping, checking on our bird boxes, and much more. Don't forget the Monday evening walks – a great way to learn about a variety of aspects of the natural world. I hope to see you all at some of these outings.

Best wishes, Fiona

Did You Know….

- ...a Squirrels nest is called a drey
- ...a Pistol Shrimp can snap its specialized claw to create and propel a bubble at 100 km/h that can kill small fish
- …Porcupines have about 30,000 quills

Please feel free to submit any interesting one liner facts you have come across to newsletter coordinator for future newsletters

Past Events

April 17, 2015
Salamander and Owl outing at Silver Creek Education Centre

A large group of club members came out to this popular annual event. Eastern Screech Owls have been playing hard to get recently and this evening was no different. They chose to ignore the taped calls I played.

The salamanders however were more obliging. We assembled on the boardwalk to peer into the pond. (Credit Valley Conservation did a wonderful thing when they decided to put in this boardwalk. It protects the fragile margins of the pond and affords easy views of remarkable pond life. Kudos to those at CVC who spearheaded this endeavour!)

Spotted Salamanders were numerous and, despite the advancing season, a few Jefferson* Salamanders were also present. Spring peepers were in shrill voice all around the boardwalk.

A highlight was a lascivious Red-Spotted Newt that took a shine to a Spotted Salamander. The male newt, though much smaller than the spotted, held the salamander firmly in nuptial embrace. The spotted salamander objected to this interspecies romance however. She thrashed around violently, eventually shaking off her misguided suitor.

*I use the term “Jefferson” out of convenience. Please see my article on sperm-stealing salamanders elsewhere in this newsletter.

Spotted Samalander, photo by Don Scallen

April 25, 2015

Woodcocks, Frogs and Screech Owls at Terra Cotta Conservation Area

Eight club members enjoyed an evening out at TCCA in search of various nocturnal creatures. At dusk a Woodcock performed on cue. All a twitter, he rose into the heavens repeatedly, fell back to earth and then strutted around uttering the male Woodcocks' characteristic "peent". We were able to approach quite closely to the displaying Woodcock and Fiona – the only one with binoculars – graciously shared them with everyone else.

After the woodcock performance we stood beside a pond pulsing with the voices of hundreds of spring peepers. We peered into the cattails intently, but none of us were able to find a one.

I proceeded then to play my screech owl tape, but, as at Silver Creek a week earlier, there was no response. In this case it might have been because of the Great-horned Owl calling in the distance. It is probably quite prudent of a screech owl to keep a low profile in the presence of this awe-inspiring predator.

So, instead of the Eastern Screech Owl tape, I switched to Great-horned Owl calls. The response was immediate. We were treated to the silhouette of one of these magnificent birds sailing overhead and then, to its insistent hooting at close range.

Spring is a wonderful time of year to be outdoors during the day – and at night. Many birds, animals and insects conduct their affairs after sundown – behaviour that is fun to be privy to, if only briefly.

American Woodcock, photo by Don Scallen

Chimney Swifts – An Avian Species at Risk Found in Halton

By Emily Dobson, *Halton Regional SwiftWatch Coordinator*

Living in Halton, an incredible phenomenon happens at night in the spring; you just have to know where to look. If you happen to be out as the sun is setting, perhaps strolling in the older section of town, dozens of soaring birds high in the sky may catch your attention. If you're patient you may notice them circling in the air, gathering close together in an intricate and social dance. Suddenly, as a group they descend, disappearing one by one down the chimney flue of an old church, school or residence.

These birds are chimney swifts, a species at risk that has declined by 95% since 1968 (COSEWIC 2007).

Figure 1. Chimney swifts (a) soaring overhead, and (b) descending into a chimney to roost for the night. *Photo credit: Halton SwiftWatch Volunteer*

Bird Studies Canada is conducting a long-term monitoring program, called SwiftWatch, with the goal of raising awareness, monitoring known roosts, and finding new roost sites. The 2015 National Roost Monitoring Program is a continent-wide effort to study this species. If you would like to volunteer, you will be assigned to a known roost site in Halton that's easy for you to get to, and will spend one to four evenings monitoring it for bird activity. This year, monitoring will be taking place May 20, 24, 28 and June 1. If you are interested in volunteering with the Halton SwiftWatch Program, if you think you've seen a chimney swift or found a roost site, or would like to know more, please contact Emily Dobson (HaltonSwift@hotmail.com).

We will also be having several Swift Night Out events, which provide a chance for families, community members, biologist, and naturalists to enjoy the spectacular evening display of

swifts. If you're interested in joining us, please bring a lawn chair, camera, and binoculars and RSVP with Emily for more information. These will be taking place on the following days:

- **Acton: Monday, May 18, 2015 from 8-9:15PM**
- **Milton: Saturday, May 23, 2015 from 8-9:15PM**
- **Oakville: Thursday, June 4, 2015 from 8-9:15PM**
- **Oakville: Monday, August 10, 2015 from 8-9:15PM**

There are several possible reasons for the decline of this species:

- **Habitat loss:** Chimney swifts have historically roosted and nested in old growth trees, which have been significantly reduced. In urban areas, roosting more commonly occurs in chimneys, however these are increasingly being capped, lined or removed, to dissuade other creatures like raccoons from wreaking havoc and making noise, or being entirely removed due to disuse resulting in loss of habitat.
- **Food availability:** Chimney swifts are aerial insectivores, meaning they catch their prey while flying. Reduced insect availability can greatly impact their survival.
- **Climate change:** Mortality along their migration route and during the breeding season can occur due to climate change that affects the timing of insect emergence, reducing the availability of food sources.

Over the past three years, Bird Studies Canada has been monitoring population numbers during the spring migration in Halton to understand changes and trends which will help to inform a species recovery strategy. With the help of Conservation Halton staff and a very dedicated team of volunteers, we have found some interesting results.

Figure 2 shows the total number of Swifts recorded in each town, based on the maximum number at each roost during the spring migration. New roosts were located in Acton and Georgetown, while in Oakville and Burlington, some chimneys have been capped, removed, or were not monitored, possibly contributing to lower counts.

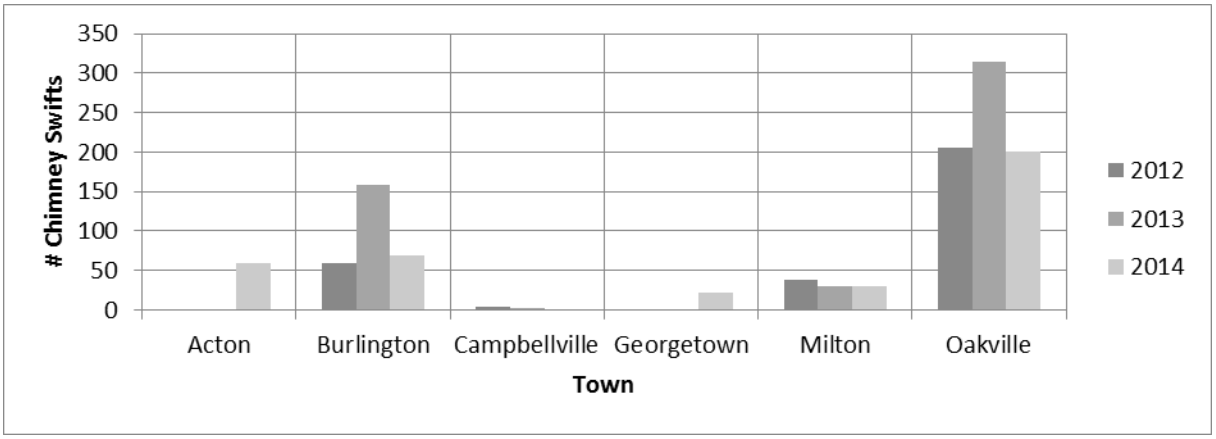

Figure 2. Peak number of swifts during the spring migration.

Figure 3 shows the proportion of habitat types used by chimney swifts in Halton. Schools are the most commonly used, and also house the two largest known roost sites in the region.

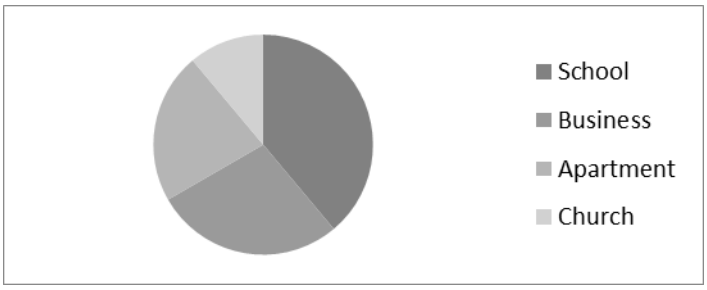

Figure 3. Halton chimney swift habitat by building (2014).

Figure 4 further explores changes in roosting over the last three years at the largest known sites in the region. In Burlington and Oakville, numbers of swifts were at their highest in 2013, with lower numbers observed in 2014, possibly due to mortality or relocation to more desirable habitat, while in Milton, the number of birds has remained fairly constant.

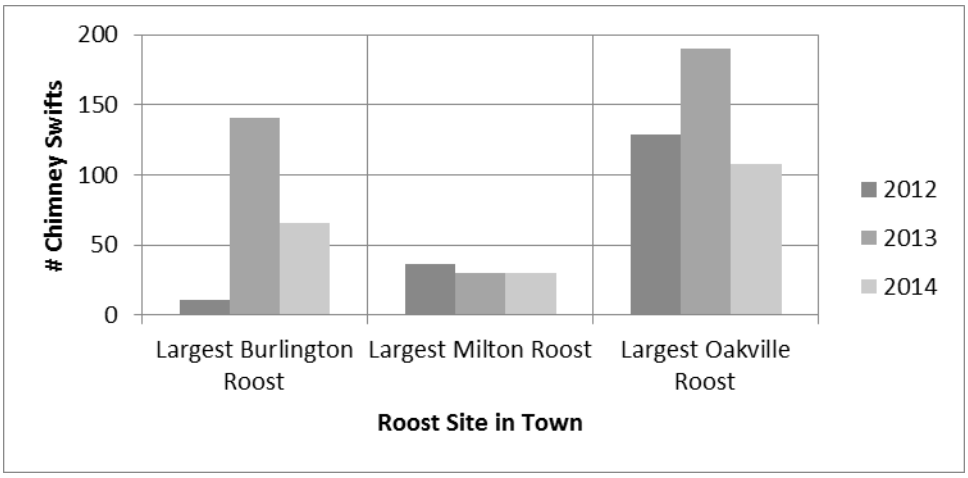

Figure 4. Change in swift numbers at specific roost sites.

Of particular concern is the state of the Oakville roost, a derelict high school that provides habitat for the largest number of swifts in the Halton Region. The building has fallen into disrepair, with mold, rot and rodent issues. The related structural issues mean the building could become a safety hazard in the coming years. Additionally, the central location make the lot a prime development opportunity. Artificial chimneys have had little success in Ontario for a variety of reasons. However, with planning and community and government support, it would be wonderful to erect an artificial chimney prior to the removal of the existing structures, which may enable the birds to transition to the new habitat.

Vertebrate Remains in Escarpment Crevice Caves

By W.D. McIlveen

Interior of a cave at Rattlesnake Point during a visit by the Toronto Caving Group, August, 2008. (Photo Credit – Mike Davis, Niagara Escarpment Views)

The Niagara Escarpment has numerous caves that were created by dissolution of the rock leaving open cavities. As well, caves can form between blocks of rock that are separated by different types of jointing in the rock structure. As long as there is an opening to the surface of the escarpment, there is a potential for animals and other materials to enter and become trapped in the caves.

Depending upon the moisture regimes within the caves, there might be water seeping through the rock walls. When this happens, carbonate might precipitate anywhere on the surface of the cave. Stalactites and stalagmites are the most spectacular forms the precipitate. Less-spectacular precipitates on the cave floor may engulf any remains of the animals that had become trapped. The bones of the animals might then be cemented in place in insoluble materials. Several such situations have been found along the Niagara Escarpment. Of the five known caves on the Escarpment with vertebrate bones, four occur in Halton.

Some of the data was previously summarized by Karrow [1991] and updated by Harington [2009]. Two other data sets were also located and the information was combined and the species names were updated to reflect the most-recent taxonomic status of each. The oldest reports of bones were for five species of birds found in a cave in Burlington [Wetmore, 1958]. There is some doubt about these records, not so much because of their identity, but because they were mentioned as being of Pleistocene vintage. They are included here to make the record complete.

Robert Bateman [1961], the painter, once lived in Burlington so it was not unusual to learn that he had been to Mount Nemo. What he did though was visit one of the caves there. During that visit, he found and described the remains of four mammal species [1961]. Later, Churcher and Fenton [1979] examined a site at the Dickson quarry also near Mount Nemo. They found twelve species of reptiles and amphibians. Based on the presence on an Elk, they concluded that the deposit of bones was at least 200 years old. At one time, Elk were tolerably common in Southern Ontario but they were hunted to the point of extinction in that part of the Province. Some rare sightings of the species were reported after 1850 [MacCrimmon, 1977] but the picture is clouded by a number of attempts at re-introduction of the species through the 20th C.

The cave at Kelso is particularly interesting because the bones collected there included those of a giant extinct Pika (*Ochotona* sp.). That record suggests that the specimen predated the most

recent glaciation and was therefore about 150,000 years old. The cave no longer exists as all of the rock that formed the cave was removed during quarrying at that site. The quarry itself has now been closed but the site remains visible as the 'Milton Drop-off'. The most recent bone collections were made at the Elba Cave in Dufferin County [Brodie Club, 1990] during a visit by members of the Brodie Club. Those collections added several species to the cumulative list. The most unusual species at that location were Marten and Arctic Hare which are no longer resident species in the area. The list also includes an additional Pika that lends extra credence to the report from the Kelso Cave collection.

The records of Cottontail at Kelso and Elba Cave are interesting. Cottontail was not recorded in Ontario by the early settlers but the spread of the species across the southern part of the Province in the late 1800s and early 1900s suggested that it was an alien species spreading from south of the border [MacCrimmon, 1977]. Apparently, Cottontail bones were also recovered from an ancient First Nations site in Oxford in 1928 confirming this to be a native species. The cave specimens lend further credence to Cottontails being native to Ontario. It is still a mystery as to why the species had essentially disappeared from the Province for such a long period.

Considering the nature of the Niagara Escarpment with a large number of caves yet to be explored, there is a great potential for other old and unusual skeletal remains still to be found. Special care is needed for sites where quarries are excavating caves that are too small for humans to enter and explore yet other animals could have entered and left various forms of evidence of their visits or entombment.

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Vertebrates in Niagara Escarpment Crevice Caves						
Class / Order		Location				
Common Name	Latin Binomial	Burlington	Mt. Nemo	Dickson	Kelso	Elba Cave
Aves						
Barred Owl	*Strix varia*	x				x
Common Grackle	*Quiscalus quiscula*	x				
Hooded Merganser	*Lophodytes cucullatus*	x				
Long-tailed Duck	*Clangula hyemalis*	x				
Red-winged Blackbird	*Agelaius phoeniceus*	x				
Ruffed Grouse	*Bonasa umbellus*				x	x
Amphibia						
American Toad	*Anaxyrus americanus*				x	x
Reptilia						
Painted Turtle	*Chrysemys picta*			x		
Mammalia						
Insectivora						
North. Short-tailed Shrew	*Blarina brevicaudata*			x		x
Smoky Shrew	*Sorex fumeus*			x		
Chiroptera						
Big Brown Bat	*Eptesicus fuscus*			x		x
Eastern Pipistrel	*Pipistrellus subfavus*		x			
Keen's Myotis	*Myotis keenii*			x		x
Little Brown Bat	*Myotis lucifugus*		x	x	x	
North. Long-eared Bat	*Myotis septentrionalis*					x
Carnivora						
American Marten	*Martes americana*					x
Raccoon	*Procyon lotor*					x
Striped Skunk	*Mephitis mephitis*				x	
Lagomorpha						
Eastern Cottontail	*Sylvilagus floridanus*				x	x
Large Pika	*Ochotona sp*				x	x
Snowshoe Hare	*Lepus americanus*				x	
Arctic Hare	*Lepus arcticus*					x
Rodentia						
Beaver	*Castor canadensis*		x			
Deer Mouse	*Peromyscus maniculatus*			x	x	x
Meadow Vole	*Microtus pennsylvanicus*			x		x
Muskrat	*Ondatra zibethicus*		x	x	x	
Porcupine	*Erethizon dorsatum*					x
Red Squirrel	*Tamiasciurus hudsonicus*			x		x
South. Red-backed Vole	*Clethrionomys gapperi*			x		x
Mice/Mole/Shrew	Unidentified					x
Artiodactyla						
Elk	*Cervus elaphus*			x		
White-tailed Deer	*Odocoileus virginianus*		x			x
Compiled from Bateman, 1961, Brodie Club, 1990; Churcher and Fenton, 1968, Churcher and Dods, 1979, and Wetmore, 1958, Harington, 2009						

The Status of Bats in Ontario

By Emily Dobson

Figure 1. a) A healthy little brown bat. **b)** A little brown bat with White Nose Syndrome.

As naturalists, I am sure we have all enjoyed many evenings in our own backyard watching as bats soar overhead, catching the corner of our eye as dusk sets, and hearing the faint cricket-like sounds emitted for navigation using echolocation. Perhaps as kids we've encountered roosting or hibernating bats while spelunking around Limehouse, or cried out in surprise as a bat narrowly avoids colliding while cleaning out the attic. We appreciate their beauty, secrecy, and insect-regulation services, especially as we've noticed their numbers decline over the past few years.

Three species of bats found in Ontario – the Little Brown Myotis (*Myotis lucifugus*), the Northern Myotis (*Myotis septentrionalis*), formerly the Northern Long-Ear Bat, and the Tri-colored Bat (*Perimyotis subflavus*) have recently been classified as endangered under the Species At Risk Act (SARA), explaining their dwindling numbers on summer evenings. The main threat is due to White Nose Syndrome (WNS), with habitat loss, and human disturbance addition pressures that are leading to population declines in Ontario. In this article I will focus on the status of the Little Brown Myotis, commonly referred to as the little brown bat, but threats are similar for the other listed species.

Little brown bats are long-lived, nocturnal insectivores and the most common species of bat in North America. Unlike other bat species in Ontario, little brown bats hibernate in large colonies, rather than migrate south for the winter. Hibernating colonies prefer sites such as caves or abandoned mines that provide above-freezing temperatures and high humidity, and these colonies range in size from a few hundred to tens of thousands of individuals (1, 9). During hibernation, bats go into a state of torpor, reducing their body temperature and decreasing their oxygen

consumption to save energy. In the spring, females form maternity roosts, congregating in warmer habitats such as natural tree cavities or buildings (9), where they give birth to only a single offspring per year. Because little brown bats are long-lived, up to 30 years, and produce only a single pup per year, they are especially vulnerable to population crashes (6).

Of Ontario's eight bat species, all five that hibernate are susceptible to WNS, but little brown bats are most at risk because of their abundance and habitat preferences during winter. Little brown bats hibernate in large colonies, making them especially vulnerable to WNS. Once a bat within a colony becomes infected, WNS can quickly spread, infecting most, if not all, bats in a hibernaculum. WNS is a soil fungus (*Geomyces destructans*) that grows in the same environmental conditions as those found in bat hibernacula (2). Bats infected with WNS show a white powdery fungus on their nose, ears, or wings (Figure 1), and this fungus deteriorates the skin (2). It is unknown whether WNS is a primary or a secondary infection, but infected individuals are usually aroused during hibernation, in order to groom infected areas. These interruptions during hibernation cause bats to increase metabolic rates and general activity levels and result in lost fat reserves, emaciation, and premature mortality (1, 9). During the spring and summer months, the fungus is unable to grow because of warm temperatures (reducing, but not eliminating the risk of transmission within maternal colonies during the summer breeding season), but the spores may remain attached to the bat until the winter when conditions are favourable for its growth (3).

Little brown bats have shown unprecedented declines, making the possibility of losing this species more realistic. The impacts and unrealized contributions of little brown bats remains to be seen, as little brown bats effectively control insects, consuming 50 to 100 percent of their body weight each night (8), reducing the need for agricultural pesticides (6), which makes them ecologically and economically important.

The first case of WNS in bats was documented in New York State in February 2006. Since then, the disease has rapidly spread over a large geographical area, infecting millions of bats in north-eastern North America. It was first verified in Ontario and Quebec in March 2010, and New Brunswick in March 2011 (3). It was confirmed in Halton and Peel in 2012 (10).

The little brown bat is now listed as "endangerd" by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), therefore protecting the species and its habitat, and requiring the development and implementation of a recovery strategy (7). Ontario's two largest populations of 30,000 and 15,000 hibernate in abandoned mines in Renfrew County and have shown infection rates of up to 80 percent with precipitous downward population trends (3).

A lot remains unknown concerning the disease, but researchers are making disastrous predictions for little brown bats. Models suggest that populations in north-eastern North America will be extirpated in ten to twenty years which would have severe ecological affects (4, 5). At present researchers are monitoring and studying bat populations to better understand the spread of WNS, the extent of its impacts, and methods to control the disease.

The following are recommendations to minimize the spread of the disease and to maximize the species' recovery:

Preserving hibernacula: Caves and abandoned mines should be surveyed for evidence of hibernating bats in November and April. Caves and mines that support bats should receive a

fence 100 feet around the entrance to prevent disturbances during winter months, and each mine site eligible for closure be studied for bat activity before its entrance is sealed closed.

Maintaining maternity roosts: Forests that have numerous trees with natural cavities should be monitored for bat activity, and deforestation should be limited to between October and March to protect sensitive maternity roosts. Regulations for bat control in buildings should limit the demolition or extermination of buildings to between October and April to reduce offspring mortality, but should also aim to provide habitat to compensate for the loss of habitat in buildings. Bat houses that serve as alternative roosting sites can be made cheaply and efficiently.

Minimizing human disturbances: Signs should be posted near caves used by the public to raise awareness about bats and the threats they face, and how people can reduce their potential impacts on bats or their habitats. For scientists, regulations should be developed requiring bat research to be minimally invasive, especially during the reproductive and hibernation periods. Additionally, hygiene regulations should be made to reduce contamination and disease transmission.

Reducing mortality from wind turbines: Regulations should be enforced so that wind turbines are slowed or temporarily shut-off when there are slow wind speeds, therefore reducing bat mortality. Green energy grants should be available to fund research that will minimize negative effects of turbines to bats.

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Of Sperm-stealing Salamanders and Larcenous Ladies

By Don Scallen

Jefferson Salamander, photo by Don Scallen

I spent a lot of time pondside this spring, getting to know breeding salamanders a little better. The Spotted Salamanders are the show stoppers - brilliantly coloured and delightfully animated. The Jefferson Salamander's appeal is more understated. These slender gray animals are far less conspicuous, but their back story is full of intrigue.

To begin, the great majority of the salamanders we commonly refer to as "Jefferson salamanders" are not Jefferson salamanders at all. They are, instead, a complex array of unisexual females with genes derived in varying amounts from Jefferson salamanders and the smaller Blue-Spotted Salamanders.

These bizarre unisexuals attain even more mind-boggling complexity just south of Ontario. On Ohio's Kelly's island in Lake Erie there are salamanders that contain the genes of not only Jefferson and Blue-spotted but also Small-mouthed and Tiger Salamanders. The origin of these unisexuals likely stretches back thousands of years, and - here's where my brain synapses start to sputter – can be traced to another species called the Streamside Salamander. Streamside Salamanders are rather rare and occur in scattered populations in Kentucky, Ohio and a few other states. According to scientists with larger brains than mine, these salamanders somehow contributed mitochondrial DNA to the unisexual females.

As I understand it, the females took this mitochondrial DNA and "ran", all the way into our fair province, occasionally "stealing" DNA from other Ambystomatidae or Mole salamanders. Thus it is not correct, apparently, to call the unisexuals "hybrids." Jefferson and Blue-spotted Salamanders didn't get together and swap genes in a midnight tryst – instead the unisexuals picked up genes from both species independently. Are you with me so far!? Regardless though of how the unisexuals came to be, their confused genetics is astonishing.

Pure-blooded Blue-spotted and Jefferson salamander males service the unisexuals, but seldom is any of their genetic material passed on. The males' sperm simply stimulates ovulation in the females. The female unisexuals, in effect, "steal" sperm from pure-blooded males. It is

hypothesized that this sperm "stealing" may be a threat to purebred Jefferson salamanders, because it decreases the amount of sperm available to full-blooded females.

This sperm "theft" led Jim Bogart, Professor Emeritus at the University of Guelph, to coin the term "kleptogenesis" to describe it. Bogart says that this reproductive strategy is unique in the vertebrate world. Our Niagara Escarpment is home to a genetic phenomenon of global significance.

Only full blooded Jefferson salamanders are currently protected under the Endangered Species Act. The unisexuals, representing upwards of 90% of the "Jefferson" salamanders we see at the ponds each spring, currently are not protected. This may soon change. In Quebec City in April at the annual COSEWIC meeting Jim Bogart advocated that they should be declared endangered as well. I must confess to some confusion as to why this is necessary. It's not as if the pure blooded and unisexuals can be readily separated. You need a laboratory with gene sequencing equipment to do that.

A clue though, as to why the unisexuals might merit ESA status along with the pure-blooded Jeffersons, can be found in a pond in the Kitchener area that Bogart is currently monitoring. Bogart told me that this pond seems to have lost all of its pure-blooded male Jefferson salamanders – possibly through attrition caused by the sperm stealing females. The unisexuals return every year, but don't lay eggs because of the absence of male sperm donors. They then leave and absorb their infertile eggs. Bogart explains that this situation might prevail for some time – Jefferson salamanders and the unisexuals can live 30 years. But eventually the pond will be bereft of both.

Development interests could legally harm the salamanders at this pond, because they are not purebred Jeffersons. I wonder though - and here's where my head starts hurting again - how on earth would you go about protecting such a population, endangered or not? Re-introduce pure-blooded male Jefferson's and sacrifice them to the unisexuals??

If protection is extended to the unisexuals under the ESA, it will not be at the species level because their highly mutable and variable genetics renders them something other than species. Our habit of neatly organizing organisms into species, just doesn't work for these animals.

At the COSEWIC meeting Bogart used the term "designatable units" instead of "species" in his pitch to protect them. Rolls off the tongue doesn't it? "Designatable units" is a term that is sometimes used to denote assemblages of animals distinct from the species level. For example, a strain of a species of salmon running up a particular river in B.C. might receive protection as a "designatable unit" for example, even if the species itself is not threatened.

Jefferson salamanders and the unisexuals are not easy to study. They are only readily observed when they come to the ponds in early spring. Outside of this brief window, they conduct their affairs underground. There is still a great deal to be discovered about them. One mystery that Professor Bogart wonders about, for example, is why the unisexuals don't "steal" sperm from the abundant spotted salamanders that share their ponds in springtime.

I'm fascinated that we have these salamanders in our midst. North Halton, in fact, is an epicentre of their distribution in the province. I'll be out again next spring watching them and wondering which ones are the diabolical larcenous ladies**.**

NEWSLETTER SUBMISSIONS & ADS

The Halton/North Peel Naturalist Club newsletter is published five times a year – every two months except July and August. Contributions from members are welcome.

Halton/North Peel Naturalist Club, Box 115, Georgetown, Ontario L7G 4T1
Charity Registration number: 869778761RR0001

Executive			**Appointments**		
President:	*Vacant*		Membership:	Valerie Dobson	(905) 828-1729
Past President:	Fiona Reid	(905) 693-9719	Publicity:	Johanna Perz	(647) 289-9386
Vice-President:	Don Scallen	(905) 877-2876	Ontario Nature Representative:	Katie MacDonnell	
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			Webmaster:	John Beaudette	
Treasurer:	Janice Sukhiani	(647) 408-9515			
			Stewards:		
Roving:	William McIlveen, Kevin Kerr, Nikki Pineau, Anne Fraser		Crozier Property:	Marg Wilkes	
			Hardy Property:	Ray Blower	

Membership for one year: $30 Single; $40 Family
The Halton/North Peel Naturalist Club is an affiliated member of Ontario Nature.
www.hnpnc.com | info@hnpnc.com

WELCOME NEW MEMBERS!

Sandra Heimbecker, Helen Pettingill and Grace Szydlowski

Halton/North Peel Naturalist Club Membership Form

_____ Renewal or _____ New Member(s) Date_____

Name(s): _____

Address: _____

Postal Code: _____ Telephone: _____

E-mail: _____

Membership renewal fee
from September through to August _____ Single ($30.00) _____ Family ($40.00)

New members' fees from sign-up date:
December through to August _____ Single ($22.50) _____ Family ($30.00)
March through to August _____ Single ($15.00) _____ Family ($20.00)
June through to August _____ Single ($ 7.50) _____ Family ($10.00)

Do you have any suggestions for programs or field trips?

WAIVER OF LIABILITY
(must be signed by anyone planning to attend field trips or other outdoor activities)

In making this application, I affirm that I am in good health, capable of performing the exercise required to participate, and that I accept as my personal risk the hazards of such participation and will not hold the Halton/North Peel Naturalist Club or its representatives responsible.

In consideration of the Halton/North Peel Naturalist Club accepting my application, I hereby and forever release and discharge the Halton/North Peel Naturalist Club and its officers, directors, servants and agents from any liability whatsoever arising as a result of my participation in these trips and declare that this is binding upon me, my heirs, executors, administrators and assigned.

Signature(s): _____ Date: _____

_____ Date: _____

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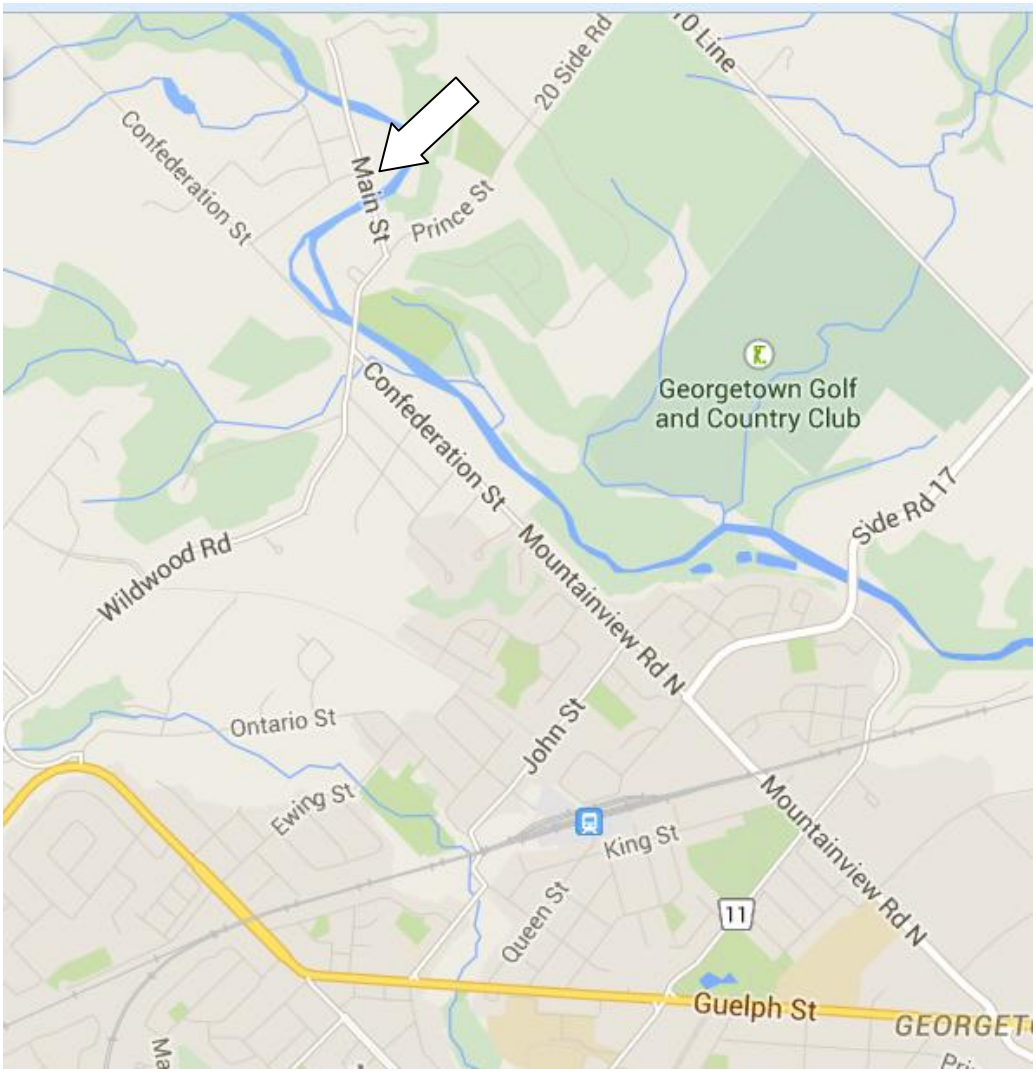
Please fill out this form and bring it in to next indoor meeting or mail with payment to:

Halton/North Peel Naturalist Club,
P.O. Box 115,
Georgetown, Ontario, L7G 4T1

Halton/North Peel Naturalist Club
Meeting Location

St. Alban the Martyr Anglican Church, 537 Main Street, Glen Williams



Naturalist Club Evening Walks - Summer 2015

Halton/North Peel Naturalists and South Peel Naturalist Clubs

All walks are on Mondays and start at the meeting location at 7:00pm sharp.
Please wear appropriate clothing and footwear and be prepared for biting insects.

Date	Location	Meeting Place	Leader
18-May-2015	Acton Swift Watch	Acton Downtown	Emily Dobson
25-May-2015	Cox Tract	Hwy 401 at Hwy 25	Bill McIlveen
1-Jun-2015	Milton Pond	Hwy 401 at Hwy 25	Bill McIlveen
8-Jun-2015	Scotsdale Bird Boxes*	Scotsdale Farm	Dawn Renfrew
15-Jun-2015	Hardy & Crozier Tracts	Hwy 401 at Hwy 25	Ray Blower
22-Jun-2015	Boston Mills Sideroad	Boston Mills Sideroad	Dawn Renfrew
29-Jun-2015	Joshua's Creek Trail	Maple Grove Arena	Bill McIlveen
6-Jul-2015	Nassagaweya Canyon N.	Hwy 401 at Hwy 25	Bill McIlveen
13-Jul-2015	McCraney Creek	Glen Abbey Comm. C.	Bill McIlveen
20-Jul-2015	Halton Hills Town Line N.	Hwy 401 at Hwy 25	Bill McIlveen
27-Jul-2015	Lion's Valley	Lion's Valley	Bill McIlveen
3-Aug-2015	Currie Tract	Campbellville Parking	Don Scallen
10-Aug-2015	Swift Night Out	Oakville	Emily Dobson
17-Aug-2015	Shadfly Festival	St. Albans Church	Bill McIlveen
24-Aug-2015	Rattray	Green Glade School	Kirsten Burling

Acton Downtown – parking lot just northeast of stop lights at Hwy 25 and Mill Street, Acton, (across from Giant Tiger). We will check waterfowl at Fairy Lake and check for Chimney Swifts in Town.

Hwy 401 at Hwy 25 – Commuter parking lot at SE intersection of Hwy 401 and Hwy 25, Milton

Scotsdale Farm - parking lot at Scotsdale Farm, east side Trafalgar Road north of Sideroad 27, Silver Creek

Boston Mills Sideroad – West end of Boston Mills west of Mississauga Road (west of Cheltenham)

Maple Grove Arena - 2237 Devon Road, Oakville, Parking lot north side of Devon Road west of Ford Drive

Glen Abbey Comm. Centre – Parking lot nearest intersection of Third Line at Glen Abby Gate

Lion's Valley – Parking area in valley at south side of Hwy 5 immediately east of Sixteen Mile Creek

Campbellville Parking – Commuter parking at west of Guelph Line at intersection with Hwy 401, Enter off Reid Sideroad

Oakville – Old high school (closed) east of Reynolds Street between Sheddon Ave and Oakville Trafalgar Hospital

St. Albans Church – parking lot at church hall, 537 Main Street, Glen Williams

Green Glade School – Green Glade off Meadow Wood Road, Clarkson

* A second night to complete the bird box monitoring at Scotsdale will follow on Tuesday, June 9 as the last regular HNP meeting of the year.

For more information, call Bill McIlveen (519) 853-3948 or cell (905) 867-9294