



# THE WOODLAND OBSERVER

DECEMBER 2016

NIPISSING NATURALISTS CLUB



From the editor:

# The magic of the season



Although the cover of this newsletter is of a photo I took in Laurier Woods one September, the colours represent those usually associated with December and in particular, the Christmas season.

This year, the winter solstice occurs on December 21 at 5:44 a.m. when most of us may still be asleep. It is the day in the Northern Hemisphere when the North Pole is tilted the furthest away from the sun and, therefore, the day with the fewest hours of sunlight. And as unbelievable as it seems at the time, the days start getting longer thereafter – not something we really notice until about mid-February.

The Winter Solstice usually occurs on the 21st or 22nd and rarely on the 20th and 23rd. The last December 23 Winter Solstice was in 1903 and it will not occur again until 2303; and the next Winter Solstice to fall on December 20 will be in 2080.

Although it gets dark very early these days, with the sun setting around 4:30, in November we had a Super Full Moon lighting our way on some of those dark nights; and on December 13, we will see another Super Moon. In this issue, you will find a photo of the Super Full Moon, as well as some photos of the spectacular sunsets we had in the early part of November.

The Solstice and the Moon somehow seem synonymous with the mysterious world of mushrooms. There is just something so magical and so enchanting about mushrooms, perhaps because they sprout up in all shapes and sizes seemingly overnight and perhaps because they figure in many of the fairy stories we read when we were young and impressionable. Mushrooms can sprout up in the grass forming a circle or, in folklore, a fairy ring where fairies come to dance. In Ireland, where I was born, mushrooms are umbrellas for the leprechauns. The *Amanita muscaria* or Fly Agaric, a beautiful but deadly mushroom, is the quintessential toadstool, the one upon which in picture stories, a fairy or a gnome



*Composite photo by Paul and Renee Levesque*

is perched. In more modern times, we think of the Amanita as looking like Smurf houses, the two-storey houses shaped like mushrooms in which Smurfs live. Interesting that such a deadly mushroom is the mushroom most often depicted in children's books. Read on and you will come across Lucy Emmett's article on mushrooms and see some photos I took of these forest floor beauties.

And then there is Larry Dyke's article on our walking on rock that is billions of years of age. Not much more magical than that!

It would seem that December's issue focuses on the magic of nature. Have a merry Christmas and a wonderful holiday season filled with all the magic that nature has to offer.

*-Renee Levesque*



# Hope Harris (1915-2016)

*By Dick Tafel*

Hope Harris, who up until the 1990s was a long-standing and dedicated member of the Nipissing Naturalists Club, died on November 3 at the age of 101. I knew her, as we all did, as a jovial, patient and generous woman.



From the obituary in the *North Bay Nugget*: In the mid-1940s, Hope and Deane moved to North Bay where they embraced everything the North had to offer – curling, hiking, downhill and cross-country skiing (see photo below), swimming, boating and cottaging on Lake Nipissing and on Trout Lake, culminating in ownership of Wasi Falls Resorts.

In addition to her involvement with the Nipissing Naturalist Club, Hope was also a member of the Stork Club, the North Bay Granite Club and the North Bay Choral Society. She and Deane were founding members of Christ Church Anglican, where Hope remained a faithful and active member until her move to Toronto three years ago.

Hope never lost interest in the world and the people around her. She devoured two newspapers every day and her love of learning and her inquisitive nature kept her young.

As a mother, Hope is remembered “*lovingly and with a certain degree of amazement*” by her two sons, Sid and Mike, and by her daughter, Mary. She clearly represented all the qualities one might wish for in a mother and, indeed, as a member of our club.

She is an inspiration to us all and will be sadly missed.

*(Photos courtesy of the Harris family.)*





*The wonderful world of mushrooms*



*Photo by Renee Lovesque*



# An astonishing array of shy beauties

*By Lucy Emmett, photos by Renee Levesque*

This year has been a wonderful year for abundance and variety in the fungal realm! Folks out in their favourite haunts were startled to find mushrooms they had never noticed there before. This was even true for Laurier Woods, a walker's paradise, but usually only ho-hum for visible fungi.

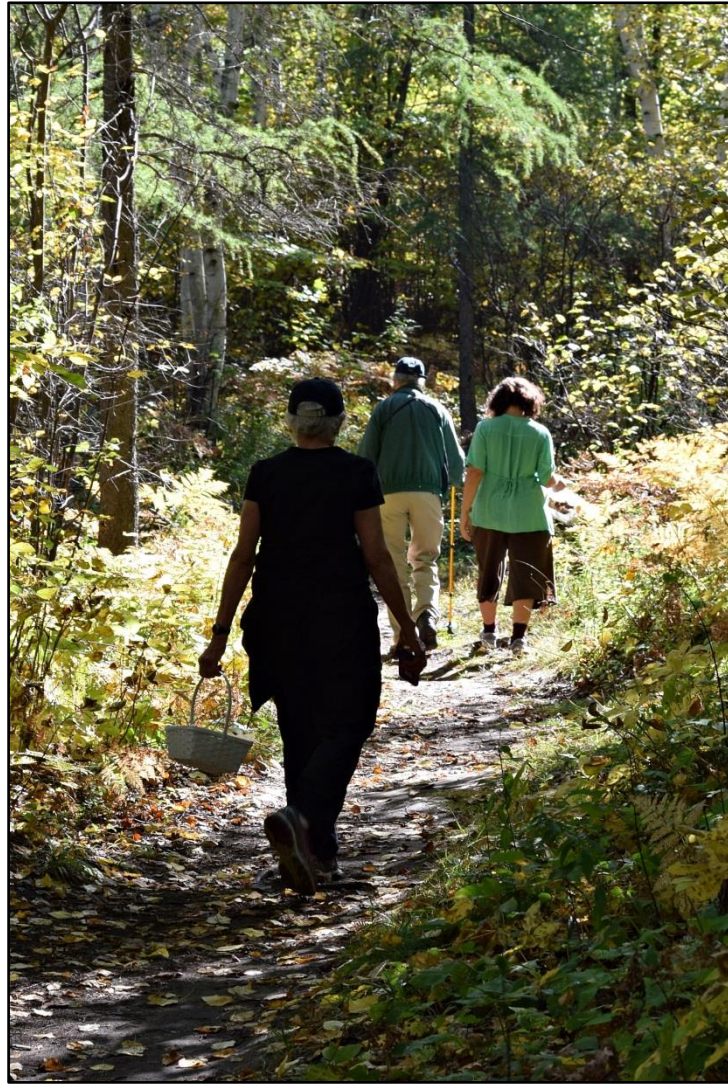
A small, impromptu group of Nipissing Naturalists Club members gathered in Laurier Woods on October 5 for an unseasonably lovely and productive hike in search of visible fungi. We were not disappointed.

In our area, we have perpetual fungi that we can always count on spotting, like the conchs, as well as common favourites that you can see most years, such as *Amanita muscaria*, the smurf-house mushroom (below left); Yellow Jellies; and the slime mold that looks like bubble gum, known as

Wolf's Milk (top right of next page). We also have, when the season's conditions allow, a multiplicity of surprising and highly interesting fungal forms.

Mushrooms, toadstools and their kin are usually the reproductive structures of fungi – the fruiting parts of much larger and complex structures that are out of sight but extremely active and ecologically important.

We spent some time looking at the mycelial network (or body) of mushrooms. This root-like web can be seen if you lift the bark on a fallen tree or lift leaves and needles from the decaying forest floor. Fungi cannot make their own food from the sun, like photosynthetic plants do, nor can they use carbon, like bacteria, during decomposition. Instead they use





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complex compounds for their energy and nutrition: sugars, cellulose, and lignin (wood fibres). Because of these needs and attributes, fungi have deep and often poorly understood relationships in our fields and forests. They partner with sugary-rooted plants, prey on lignin-rich trees, and have intricate alliances with microscopic creatures in the soil.

When conditions are favourable for growth and reproduction (warmish and moist), we can see the wonderful array of reproductive structures of slime-molds and fungi. These include, but are not limited to, balls and parasols (below); nets and cups; shelves and fans; phallic towers; and frilled funnels.

On our hike in Laurier Woods, we saw some lovely representative specimens including:

Sporrelating Orange Peel and Cauldron Pezizas which blew spores back at us when we puffed at them.

Jellies: yellow, orange, and red.

Deliquescent Inky Cap Mushrooms which were turning to ooze.



Many Amanita, including Amanita muscaria and Amanita vaginatum.

Honey Mushrooms (bottom left of next page).

Trompet de Mort.

Beautiful Hericium or Bear's Claw (top right of next page).

Turkey Tails and their brethren.

Conchs and Chagga.



Slime molds: Wolfs Milk,  
Golden Disk and Chocolate  
Stamens.

Bluestain (below right).

Boletes and Suillus.

Oysters.

It was a lovely hike with great results. Next time you notice a few more mushrooms than normal, make a special effort to take your time and look at them carefully, for you will find an astonishing array of some of the shiest members of our natural areas.

*Editor's Note: Next month look for an article by Brent Turcotte on moss and lichen.*







Top row, from left:  
Shaggy Mane,  
*Suillus americanus*,  
Horse Mushroom.  
Middle row: Red  
Jelly, Orange Jelly,  
Yellow Jelly. Bottom  
row: *Russula*  
*emetica*, Witches'  
Butter, Puffball.

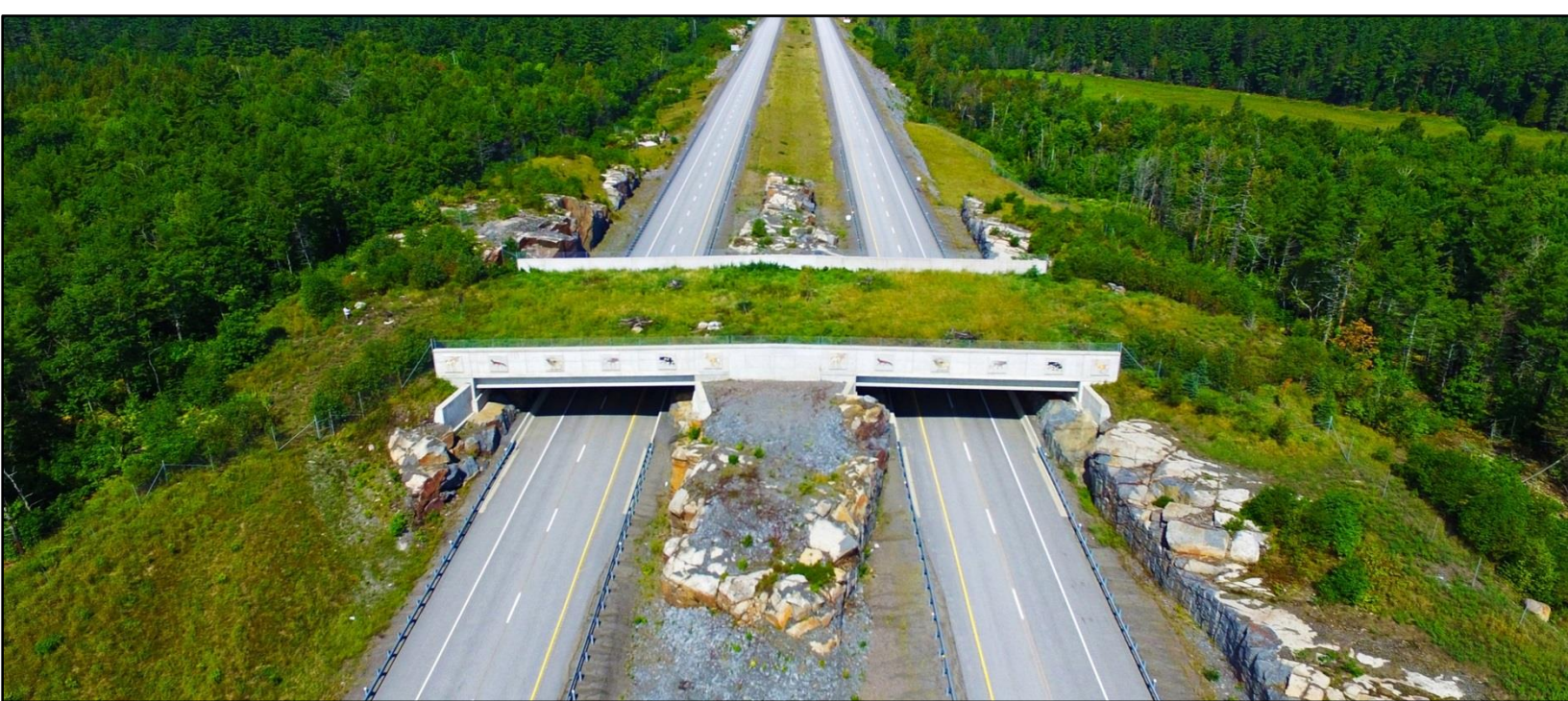




## Reducing wildlife collisions in Northeastern Ont.

*By Andrew Healy, Ministry of Transportation*

In 2006, the Ministry of Transportation (MTO) in Northeastern Region (NER) commenced a more proactive approach to reducing wildlife collisions by forming a Wildlife Action Plan Committee. The committee's mandate was to trial emerging methods that were being used in Europe and western North America to reduce wildlife collisions. As Committee Chair, I'm often asked by colleagues, friends and the media about the work we are doing. The following are some of the common questions/comments and my responses:



### **1. Are animals using the wildlife crossings?**

If you build it, they will come! The wildlife bridge on Highway 69 near Burwash (above) has had over 1,000 animal crossings in its first three years. Most of the crossings have been deer (74%), though moose, bear and wolf utilize it routinely. Similarly, the underpasses on Highway 69 and Highway 11 have been used by all species, though in smaller numbers than the bridge. We are also acquiring some interesting data on usage by season and by sex, demonstrating how the crossings are maintaining habitat connectivity.



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## 2. Has wildlife fencing reduced collisions?

The short answer is yes; however, it is not as simple as that. We have had varying effectiveness with different sections of fencing depending on the number of gaps in the fencing – at entrances and interchanges, for example – and whether safe crossings are available. Most of the fence breaches are by deer and bear. Moose are easier to keep out and, therefore, this limits the severity of collisions within fenced sections of the highway. The most substantial data analysis we have is for the section of fencing on Highway 69 north of the Highway 637 interchange, where wildlife collisions have been reduced by at least 75% and climbing.

## 3. How does the Ministry decide where to install wildlife fencing?

The main goal is to install fencing in areas that experience a high rate of wildlife collisions.

However, there are several other factors that come in to play. To date, fencing has been installed only on four-lane highways where higher traffic volumes and



faster vehicle speeds create the largest risk for motorists. Another important factor is whether the highway requires any gaps in the fencing for entrances or interchanges, and whether there are opportunities for wildlife to cross safely at a bridge overpass, a river crossing, a snowmobile culvert, or a designed wildlife crossing. Without these safe crossing opportunities, research has shown that wildlife will walk to the fence ends to cross and collisions, therefore, are not reduced.

## 4. I drove through a wildlife detection system and it didn't appear to be working.

The detection systems on Highway 6 and Highway 17 are triggered when an animal breaks the beam between two sensors and enters the right-of-way. Once triggered, the flashing warning lights will be engaged for a period of three minutes whether or not the animal is still visible. However, if an animal stays in the right-of-way for longer than three minutes, the warning lights stop flashing even though the animal may be in the middle of the highway. Because of these limitations, as well as the maintenance



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challenges to keep the systems running, MTO NER is currently planning to install a newer generation of technology on Highway 11 in 2017, one that uses continual radar detection rather than break-the-beam.

## **5. Why did MTO remove the deer reflectors on Highway 540?**

A collision analysis showed an increase in wildlife collisions for the five years following the installation of the reflectors. Leaving the reflectors in place would provide a false sense of security to motorists. It would also highlight the technology as being a viable option for other transportation jurisdictions.

## **6. Are those gates and ramps for the animals to use? Do they use them?**

Yes, wildlife fencing includes one-way escapes as a means for trapped animals to exit the right-of-way. Both gates and ramps have been used in small numbers by deer and bear. They have not yet been used by moose, though there are fewer moose breaches of the fencing. Some gates have been problematic in allowing deer and bear to move through them both ways; therefore, instead of gates, only escape ramps will be included in the next phase of the expansion of Highway 69.



## **7. Do wildlife crossings provide a golden opportunity for predator and hunter?**

Research out of Banff National Park has debunked the predator myth at wildlife crossings. Similarly, our monitoring efforts have not observed one instance of predation at a wildlife crossing, nor have we seen evidence of hunting activity. (Photo below is of a wolf using the overpass.)

*Editor's Note: The above article is based on Andrew's presentation to Nipissing Naturalists at their meeting on November 3, 2016. Photos courtesy of Andrew Healy.*







# 'Neath the cover of November skies

Photo by Gary Sturge

On November 14, we had the second of our three Supermoons for 2016. The first was on October 16 and the third will be on December 13. But the Super Full Moon of November was the closest a Full Moon has been to Earth since January 26, 1948, and it will not be until November 25, 2034, that we will see a Full Moon that will be even closer to Earth. This November, it was 356,511 km (221,526 miles) from the centre of Earth, and in November 2034, it will be 355,665 km or (221,485 miles) from the centre of Earth.

For those with a good memory, you will recall that *The Woodland Observer* of November 2015 featured a photo of the Supermoon of September 28, 2015, by **Kaye Edmonds**. Kaye returned with a photo of this November's Super Full Moon as pictured at left.



In some areas, the Super Full Moon could be seen with a 22-degree halo around it. Gary and Connie Sturge were fortunate enough to see the halo as they stood on their deck watching this beauty of the night. (Halos, caused by both refraction and reflection of light, are a sign of high thin cirrus clouds containing millions of ice crystals.)



In the first half of November, in addition to the Super Full Moon, the late afternoon, evening and night sky was often quite spectacular. We were privileged to see some wonderful cloud formations with refracted light; some brilliant sunsets; the planets, Jupiter, Saturn and Venus; and, if we were truly fortunate, meteor showers.

I did see a “shooting star” very early one morning around November 10 from my bedroom window. The photos on these pages highlight some of the many November sky delights.



*Photo by Renee Levesque*



*Photo by Dick Tafel*



# Four billion years in the making

*By Larry Dyke, geologist; photos by Renee Levesque*

What is the oldest object you know of? Countless galaxies in deep space were formed billions of years ago. No one will reach these faint glimmers in foreseeable times, but by merely walking on rock around North Bay, you touch something that still needs numbers in the billions to describe the age. And in Canada, we have rocks that date to just over four billion years, not too long after the Earth formed.



Twenty-four participants joined the guided hike in Laurier Woods on November 5 to examine some North Bay rocks and to try to comprehend their enormous age. A convenient start is the isolated outcrop in the middle of the first marsh. The pronounced layering that typifies much of the rock in the conservation area is easy to see, thanks to the concentrated foot traffic that has worn away the otherwise prevalent lichen cover.

This rock is a metasediment, meaning that the layering of the original sedimentary rock remains, but the metamorphism has transformed the sediment into a metamorphic rock, called gneiss.



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The original mineral grains in the sediment have been metamorphosed or changed because they were buried deeply enough to raise the temperature to several hundred degrees Centigrade. This temperature would not be hot enough to melt the rock, but the constituent atoms would still be mobilized, thus enabling the minerals to recrystallize. This is why the texture is much coarser than the silt and clay particles of the original shale or siltstone sediments.

How can this rock now be at the Earth's surface when it needed to be deep enough beneath the surface to have the heat required for the recrystallization? The answer is plate tectonics, massive pieces of the Earth's crust that interact with each other. This theory was fleshed out during the 1960s with the discovery of the major structures that divide up the Earth's crust: mid-ocean ridges; subduction zones, regions of the Earth's crust where tectonic plates meet and where heating-up can take place; and transform faults, faults whose relative motion is predominantly horizontal.

Plate tectonics has assembled the Canadian Shield and, in fact, the entire array of continents that cover the Earth. The assembly in our region, extending from about 100 km north of North Bay to Lake Ontario, started taking place about 1.2 billion years ago as thickened pieces of crust collided with the much larger mass of the Canadian Shield that already existed. The collisions resulted in these crustal segments being forced beneath the greater mass of the Canadian Shield to depths hot enough for metamorphism. As the Earth's surface was elevated to make room for these crustal fragments, erosion, and maybe even glaciation, would have created a major mountain range. The time that has elapsed until now has been long enough for the resulting erosion to cut down to the level where the metamorphism took place.

Later geological events added other features that still contribute to the landscape. Shortly after crossing the second boardwalk and turning right onto the Purple Trail, we passed a sharp escarpment forming the north side of a large outcrop as depicted in the photo below. The east-west orientation of this escarpment makes it parallel to a group of faults that form the valley occupied by Lake Nipissing, the Mattawa River and the lakes connected by the river. Some of





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these faults became conduits for magma-feeding volcanoes that have long since been eroded, along with the ancient mountain range. These magmas, mixtures of molten or semi-molten rock, volatiles and solids that are found beneath the surface of the Earth, give dates of about 580 million years. The fact that we can still see evidence of these faults, especially the escarpment that rises immediately north of the city, indicates that these faults have been active since they were first formed; otherwise, they would have been completely obliterated by erosion.

We had hoped to find what would have been the highlight of the walk, a pegmatite vein, but I lost my bearings and was not able to locate this vein. A pegmatite is a rock that has unusually large crystal sizes of the constituent minerals composed, in this case, of quartz, feldspar and mica. This is an isolated occurrence but, on a much smaller scale, is the same material that was exploited in the Purdy Mica Mine, located just north of Samuel de Champlain Provincial Park.



These pegmatites would have been formed as the last stage of solidification of magmas generated where heating was enough to melt crust that had otherwise only been metamorphosed into gneiss. However, some of the participants did locate quartz in a very small pegmatite vein. The photo above is of this vein which is approximately 3 cm thick. Quartz and mica are so different, the former hard and homogeneous, the latter flexible and easily split into thin layers. Yet both are formed from the same basic structural unit – the silica tetrahedron.

The two most common elements in the Earth's crust, silicon and oxygen, combine to form a tetrahedron with four oxygen atoms surrounding a silicon atom. In quartz, the tetrahedra are interlinked in a three-dimensional structure with bonds between tetrahedra in all directions. This explains the hardness of this mineral. In mica, the tetrahedra are arranged in two facing layers held together by a metallic atom, usually potassium, magnesium or iron. But each pair of layers is only weakly bonded to the next pair. This weak bonding gives rise to the pronounced cleavage or ease of splitting.

Geology can be an examination of the Earth at all scales, from the size of the Earth itself to atoms forming a mineral. We scientists try to keep open minds and recognize the need to draw from all the sources of information around us. But some of the best fun is giving some of that information back and sharing imaginations with you!



# Guided walks in Laurier Woods

The final Laurier Woods walk of the year will take place on **Saturday, December 3, from 10:00 a.m. to noon**, when Jordan MacMillan, Technical Extension Coordinator, Canadian Institute of Forestry, will lead a walk on **how foresters protect biodiversity**. Because foresters can determine the effects of landscape and site changes due to natural disturbances on native trees, they can ensure that forestry operations more closely emulate those disturbances. The photo below shows an Eastern Hemlock stand, with trees marked for removal and retention.

Walks will resume again in the spring with weekly Saturday morning bird walks throughout May with Dick Tafel.



*Photo by Renee Levesque*



*Photo by Fred Pinto*



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# The last of the old year, the first of the new: Upcoming Nipissing Naturalists Club meetings

Nipissing Naturalists Club meets the **second Tuesday** of every month in the auditorium at Cassellholme, starting at 7:00 p.m.

The last meeting of 2016 will be held on **Tuesday, December 13**, when **Rebecca Geauvreau**, Biologist, FRi Ecological Services, will describe the **bats that live around North Bay** and how members of Nipissing Naturalists Club went about monitoring them. She will also provide the preliminary findings of the monitoring. The photo at right shows three members, Sarah Wheelan, Paul Smylie and Marc Buchanan, back in June setting up the monitoring system.

During the December meeting, members will **vote** on what they consider to be the **best photo** taken by club members in the four categories: flora, fauna, landscape and people enjoying nature.

As this is also the last meeting before Christmas, it is requested **members bring some Christmas goodies** for the social following the meeting.

As always, the first meeting of the New Year will consist of the Annual General Meeting (AGM). It will be held at the **North Bay-Mattawa Conservation Authority on Tuesday, January 10**, starting at 6:00 p.m.

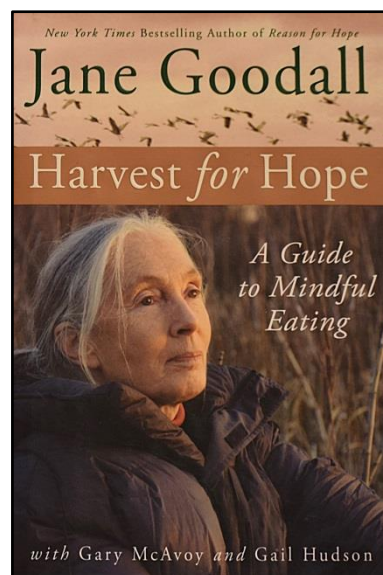
The North Bay-Mattawa Conservation Authority is located at **15 Janey Avenue, North Bay**.

The AGM will be preceded by a **potluck dinner**, so be sure to bring something for all to **share in**. Following the meeting, there will be a **silent auction** to raise funds for the club.

**Bring any items you would like to donate.** They don't have to be related to nature. Some eclectic items being donated are shown at right. (Book is signed.)



*Photo by Fred Pinto*





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## Board of Directors, 2016

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## Bird Wing

Dick Tafel, Chairman: [rtafel@sympatico.ca](mailto:rtafel@sympatico.ca). 705-472-7907

Gary Sturge, Treasurer

Renee Levesque, Bird Wing Scribe.

The Bird Wing newsletter is published each month, except December, and sent to members by email and posted on Nipissing Naturalists Club website, <http://www.nipnats.com/club-activities/bird-wing/>. Also posted on the website are the monthly Bird Bash results and Year-end reports by Dick Tafel, as well as the Christmas Bird Count Reports by Lori Anderson.

*The Woodland Observer* is published electronically each month from September to June and sent to members by email and posted on Nipissing Naturalists Club website, <http://www.nipnats.com/> under the link, "Newsletter".

**Editor:** Renee Levesque: [rlevesque1948@gmail.com](mailto:rlevesque1948@gmail.com)

**Contributors this issue:** Larry Dyke, Kaye Edwards, Lucy Emmett, Andrew Healy, Paul Levesque, Renee Levesque, Fred Pinto, Gary Sturge and Dick Tafel.

**Special thanks to:** The family of Hope Harris, in particular, daughter, Mary Kirton, for the use of photographs of Hope; and to Paul Levesque, my brother-in-law, for helping me put together the composite photo of the "mushroom" from my collection; Yosemite from Paul's collection; and the gnome, well, no idea where he came from. He just arrived and claimed his place atop the mushroom.

## Membership Fees

Annual Nipissing Naturalists Club membership fees are: single \$20.00; family \$30.00.

There is an **additional annual \$5.00 membership fee for Bird Wing** which meets the **fourth Tuesday of every month in the auditorium of the North Bay Public Library from 6:30 to 9:00 p.m.** This fee is paid directly to Bird Wing.



The Nipissing Naturalist Club is affiliated with Ontario Nature: <http://www.ontarionature.org/>.