



The Woodland Observer

Nipissing Naturalists Club

April 2009

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Nature's Engineers - Love 'em or Hate 'em

By Matt Meade

Humans have had a long standing love-hate relationship with beavers, but after Dr. Brian Naylor's lecture last month, even if they haven't been convinced they at least better understand them. In his presentation, "*North American Beaver: Significance, Biology and Ecology Conservation Issues*," Dr. Naylor captivated the audience exploring the beaver's historical and cultural significance, reasons why beavers are important in our ecosystem, their biology and the challenges of conserving a declining population.

Dr. Naylor, the Forest Habitat Biologist for the OMNR in North Bay, showed us how the engineering role which beaver's play, positively impacts our environment. From Florida to Alaska and all areas in between, their dams offer excellent nesting areas for ducks and other waterfowl, as well as sunning places for creatures like snakes and turtles. In addition, the lake formed by a beaver dam prevents erosion, provides a home to new wildlife such as fish, insects, frogs, salamanders and several aquatic plants. When the dam finally breaks, a large area of rich, fertile land is left behind which will eventually progress into a "Beaver Meadow", stage three in the life cycle of a beaver pond (Newly Flooded! Stagnant! Beaver Meadow! Forest).



Did you know...?

- ◆ Beavers have the same mate for life.
- ◆ 1 ha of dense poplar can feed a family of beavers for 5-10 years.
- ◆ Beavers are Canada's largest rodent weighing between 15 – 35 kg.
- ◆ Trapping accounts for approximately 30% of beaver mortality in Ontario.
- ◆ A beaver alters its surroundings more than any other creature, except humans.

The Indoor Outing to Nipissing University's Animal Care Labs

By Fred Pinto

A small group of Nip Nats were toured around the labs at Nipissing University by Paul Smylie. Our first stop was a visit with students working on understanding the changes in sensory responses to food by Daphnia and Hydra. Daphnia are small fresh water planktonic crustaceans also called water fleas. Hydra are also a small freshwater organisms that are quite simple in structure. They are a polyp form belonging to the jellyfish phylum. The Hydra has tentacles that they use to capture food. Both these organisms are used to study the effects of toxins in the environment. Bill Shaver and Connor Edie were trying to determine if the behaviour of both organisms were affected by 3 concentrations (0, 3, 30 ppm) of Atrazine, a herbicide used to control broadleaf vegetation in corn fields.

Another group of students were trying to determine how fathead minnows learned to avoid predators. Kelly McLean is trying to determine whether minnows from metal contaminated lakes differ in their ability from minnows from clean lakes in learning how to avoid predators based on visual and chemical cues. To do so the minnows are placed in tanks where they can see a bass (predator), or a gold fish (not a predator) and then the behaviour of the minnows are recorded. When a fish is chomped up by a predator the skin and flesh of the prey release chemicals into the water. Healthy minnows should then associate the smell of bass with the possibility of being eaten. Angela Telfer is trying to

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What's your idea of "Warmth..."

Here's a friendly challenge that will put your photo and creative skills to the test! Each month, we'll present you with a concept that you need to represent in a photo. Photo's should be from the local area. Enter only once per topic.

Send your entry to Andrew Livitt, at: alivitt@hotmail.com The winning photo will be posted in the next newsletter. Call Andy at 705 223-8187 if you need any additional information.

Animal Care Lab, *continued from page 1...*

determine which of the chemicals released are sensed by the minnows that triggers avoidance behaviour. To do this, Angela makes an extract of minnow skin, and then runs it through the HPLC machine (High Performance Liquid Chromatograph) to separate the various chemicals that may be responsible for the alarm response in the minnows.

The university has a number of dead birds that people have donated. They thought that they would make a useful learning tool if they could get their skins prepared. Last week students in the Animal Ecology course had a lab where they learned to prepare a bird 'study skin'. We saw a Great horned Owl, Saw whet owl, Cedar waxwing, Ruffed grouse and snipe skin being dried in the ventilation hoods in one of the labs.

We knew we were walking into a lab with millions of fruit flies as we could detect the faint fruity smell of overripe fruit. The lab is also kept at 25C. Fruit flies are kept at 25 C to 27 C. At this temperature they will metamorphose from egg to adult in 10 days. Adults live for about 60 days. David Hunt, a student in the lab, is studying the effect of losing the gene for making the super-oxide dismutase enzyme, known as SOD. The SOD gene produces proteins that have an antioxidant effect. Without the gene other genes become active. The research at Nip U has shown that these newly active genes are detrimental to the fruit fly – they only live for about 5 days. The student plans to knock out the individual genes that have become active and determine what effect if any this has on the fruit fly. How do you knock out a gene? Through the use of RNAi.



Student holding a simple trap used to catch fruit flies that escape. The Trap is a bottle with a funnel firmly taped to the mouth. The liquid is vinegar with a drop of dish detergent.

RNAi was only discovered about 10 years ago. The discoverers won the Nobel Prize for Medicine about 3 years ago. These researchers were trying to develop a petunia that was extra purple. They knew which genes controlled for the purple colour so they kept adding it to the petunia thinking that the modified plant would produce flowers that were extra purple. However, the new petunia produced white flowers, indicating that somehow they deactivated a gene pathway by adding more of the 'purple'

gene. Some may have given up. However they tried to find out what was happening, resulting in the discovery of RNAi. To understand the significance of what these petunia geneticists found out you need to understand how the cells that have a nucleus, including those in humans, operate.

Most of our DNA is found in our nucleus. DNA uses RNA, its close molecular cousin, to ferry genetic information to other parts of the cell. This RNA is also called messenger RNA or mRNA. Everything in our body is made from genetic recipes found in our DNA. Once the mRNA transports the genetic recipe out of the nucleus its instructions are used by another structure in the cell called a ribosome to create the building blocks of all proteins that will become brain cells, skin cells, in fact any cell in your body. Viruses take advantage of this arrangement. Viruses are except for very few made up only of RNA. They can use our cells to manufacture additional copies of itself e.g. that is what the cold virus does. The petunia researchers found out that our cells have an interference RNA, called RNAi that protects us from many (but not all as some like the cold virus are very sneaky) of these viral invaders. As the petunia researchers inserted more purple genes into the petunia the plant's RNAi sensed too many mRNA coding for the purple colour and killed them off, hence white flowers! You probably understand the significance of this fundamental discovery for human health and many other fields of human enterprise.

Our final stop was in Dr. Dave Hackett's herpetology lab where students were trying to determine how red-backed salamanders sensed other salamanders and other competitors such

as centipedes, millipedes and beetles. The students were video taping the posture changes of the salamanders to the competitors and others of its kind. Mike Gemmel had looked at how the salamanders and its competitors partitioned their habitat in the wild. He laid out a ceramic tile array and looked under them to determine where the different organisms lived. For example, were these arthropod competitors living under the same tile or different tiles.

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Calendar of Events

Next General Meeting

Tuesday, April 14, 7:00 p.m.

The Galapagos Islands

With Lois and Jean-Marc Filion

The Galapagos Islands are the birth place of the Theory of Natural Selection based on the travels of Charles Darwin in the early 1830's. This year celebrates 150 years since the original publication of his theory, and is Darwin's 200th birthday.

The Galapagos Islands are perhaps one of the last places on earth where you can truly experience an intimate relationship with the other species of animals that adorn this planet. Come see, come listen. Guaranteed you will place the Galapagos Islands on your 'must visit' list of destinations. This video-presentation courtesy of Jean-Marc and Lois who have just returned from the Galapagos.

Tuesday, May 12, 2009

Dragonflies & Damselflies of Ontario

Colin Jones will be presenting a talk, complete with photographs, on "The Dragonflies and Damselflies of Ontario" during which he will cover aspects of their fascinating life history, their conservation, the habitats they are found in and how you can learn more about them yourselves by getting out there and watching them first-hand. He will also discuss the Ontario Odonata Atlas project, the yearly summary and publication entitled "Ontario Odonata" and how you can contribute.

Colin is a lifelong naturalist currently works for the Natural Heritage Information Centre, Ontario Ministry of Natural Resources in Peterborough where he deals primarily with rare species. Like many naturalists, Colin first developed a keen interest in birds and birding but this interest gradually grew into other areas. During the past 15 years, he has been very interested in the study of Odonata (dragonflies and damselflies). He is a coordinator of the Ontario Odonata Atlas project and is the co-editor of an annual publication called "Ontario Odonata". Most recently, he has co-authored "A Field Guide to the Dragonflies and Damselflies of Algonquin Provincial Park and Surrounding Area".

Mashkinonje Celebration; Sunday May 3rd at 1pm

Location: Mashkinonje Provincial Park, Loudon Peatland parking lot- Hwy 64, one km south of Musky Island Rd.

Help the Friends of Mashkinonje celebrate their new tower overlooking the Loudon Peatlands and view their new signs. The hike will be 3 km. You will see the peatlands from a new perspective and be able to distinguish the different types of wetlands. The 8 signs are beautiful, with original art, only to be seen in Mashkinonje. Questions? Contact Angela at 594-1153.

Animal Care Lab, *continued from page 3.*

Natasha Dombrowski is examining the 'Dear Neighbour Effect' in red-backed salamanders. For her research she is examining whether salamanders react differently to salamanders they are familiar with as opposed to those that are 'strangers'. This is done by housing salamanders of the same sex together and then testing whether they have preference for chemicals cues from the familiar salamander or for the scent of a stranger. She is also testing to see if the preference has a visual basis or if it is strictly based on scent. This is done by examining the behaviour of the salamanders in the dark by looking at them through an infrared camera.

We got a good overview of the variety of scientific methods the students were using to understand various parts of nature. Scientific inquiry requires thoughtful methods and analyses working on a step by step basis to control various factors that can confound your experiment. The students have our admiration for the work that they are undertaking.



Paul Smylie holds two jars with different species of Daphnia, a common fresh water organism. Students at Nipissing U are trying to determine if the feeding behaviour of Daphnia are affected by low levels of the herbicide Atrazine used to growing corn.

Monthly Bird-Bash

Sat & Sun, April 25 & 26 - average 99 species

Spend some time observing our local birds and report on how many species of birds you saw. Submit reports to Dick Tafel, rtafel@sympatico.ca or 472-7907.

Birdwing Meeting

Fourth Tuesday of each month at 7:00 p.m.

Bird watching topics will be discussed. Meet at the library (auditorium). Contact Dick Tafel, rtafel@sympatico.ca or 472-7907 for more information.

"Today was good. Today was fun. Tomorrow is another one."

I know what you're thinking, what does Dr. Seuss have to do with Species at Risk? While not an official doctor, his diagnosis above nicely sums up our Species at Risk (SAR) initiative. Over the past year the Canadian Institute of Forestry/Institut forestier du Canada (CIF/IFC), in partnership with the Canadian Ecology Centre (CEC) and the Nipissing Naturalists Club, have met the challenge of raising awareness and promoting understanding of Ontario's SAR. Our brand of education and outreach has been prescribed to approximately 1,600 people, effectively communicating the message and encouraging the stewardship for Ontario's SAR. From government institutions like the Department of Fisheries and Oceans, to grassroots organizations like the Friends of Algoma East, response to the seminars, short videos, electronic lectures and posters has been incredibly positive. Based at the CEC, with travel from Thunder Bay to North Bay targeting everything in between; all will agree, both good and fun, these seminars be.

With "Part 1" now complete and spring, the symbol of hope and renewal, just around the corner, it's only natural to begin looking forward. Our partnership has reapplied to the Species at Risk Stewardship Fund of the Ontario Ministry of Natural Resources, hoping to build on this year's accomplishments and success. The submitted proposal or "Part 2" will focus on stewardship, protection and recovery action for both turtle and bird species, considered at risk in Ontario. The planned approach, if approved, will utilize inventories, modern survey and



monitoring techniques to direct our actions, intent on improving the quality and amount of available habitat, ultimately supporting the protection and recovery of Species at Risk.

Proposed recovery actions, for at risk turtles will include the implementation of eco-passages and/or fencing aimed at greatly reducing or eliminating road mortality, in "turtle traffic" hot spots. In those locations where road mortality is extreme, "turtle crossing" road signs and billboards will be used to increase public awareness and knowledge about Ontario's at risk turtles, encouraging stewardship actions. Additionally, in regards to at risk birds, local expertise and knowledge, as well as Forest Resource Inventory (FRI) maps will aid in targeting suitable habitat areas, essential in conducting bird counts. Results of these counts will be used to create suitable habitat for the target species and where appropriate, nesting boxes or other species residences would be installed.

"We have reached a lot of people with our education and outreach program, but there is still a great deal of work to be done," said Matt Meade, the partnership's Species at Risk Coordinator. "I'm very

excited about the possibilities our new application proposes and if we use the bridges and friendships we've built this past year we can make a real difference in the recovery and protection of our species at risk," added Matt.



May 9th Outing - Biological Survey of the Cache Bay Wetlands

On Saturday May 9th, the Nipissing Naturalists are invited to participate in a biological survey of the Cache Bay wetlands. This Provincially Significant Wetland area covers over 3,900 ha on Lake Nipissing, near Sturgeon. Details are pending, but the event will likely begin with an information session Friday night or early Saturday morning. Saturday activities include a full day of sampling and observation. Participants are asked to register for one of the following areas of interest:

- ◆ Birds
- ◆ Amphibians and Reptiles
- ◆ Insects and lichens
- ◆ Baitfish and other small fishes

Separate teams will investigate portions of the wetlands by foot, waders, and watercraft. Participation may be capped, so please register if you plan to attend.

Contact: Jeremy St.Onge at 497-7785 or email jeremy_st_ong@hotmail.com

Friday, the 13th (of March) A Lucky Day of Adventure and Discovery

By Janis Reed

The day dawned perfectly. After our stick-to-your-ribs breakfasts, my two year old grandson and I went out to play and ended up with an adventure.

We started by jumping on the thin ice that had formed on the grass near the bottom of the downspout. I have always loved breaking the super thin ice on puddles in the spring; now I had a chance to share my passion. I grabbed Sebastien and plunked his feet down hard on the ice to show him what fun it was. He was enamoured and eagerly joined in.

When all possible bits of ice were shattered, we expanded our walk to the woods around the house and I got to share another of my springtime fancies – snow-walking. We could walk anywhere and not sink into the deep snow beneath the crust. So we kept going and soon discovered the tops of several tiny spruce trees that Grandpa had planted over the years, just peeking through the snow. We touched them all very gently to welcome them to spring.

As we moved on, several tall balsam firs invited us to hide amongst their low hanging branches. As we ventured further into the woods, we discovered poop. Not just any poop – deer poop! And lots of it. Soon Sebastien was finding it himself. He would squat and study it intensely, commenting, “Poop.”

Also peeking above the snow were stumps from many trees that Grandpa cut for firewood to heat our house in the winter. Tentatively at first and needing Grandma’s hand to support him but with growing courage, Sebastien climbed onto these stumps. We would both throw our hands into the air and yell, “Yay!” as he jumped onto the snow below. Emerging rocks joined the ranks of the stumps as jump-offs.

We found a rotten old Aspen tree with a very large hole in it and lots of wood chips scattered around the tree. I explained that a woodpecker, the kind that visits our feeder, had made the hole. Sebastien then wrapped his arms around the tree and put his face in the hole – a budding tree hugger!

Somewhere along our route, Sebastien noted two little orbs joined with a stem and commented, “Poop.” I explained to him that they weren’t poop but (basswood) seeds to make trees grow. I don’t know if that lesson will stick or not.

By this time we had reached the reforested area of our property next to the beaver pond where several firs had come down in the winter due to strong winds. As I pointed these out to Sebastien, we decided to call them “broken”. He pointed to several other “broken” trees. On our return passage, we found another broken tree that he could walk along, balancing carefully, and then jump off. It warranted several turns.

As we neared the house, we stopped to watch Foxy, our German shepherd, as she checked out the woodpiles for an emerging chipmunk or squirrel. We were getting pretty tired by this time (an hour and a half since we left the house) and were so happy to hear Grandpa ring the dinner bell, announcing lunch. I yelled back, “We’re coming,” several times and soon Sebastien took up the call, yelling, “Coming, Grandpa!”

We ate heartily, and then my weary little man went for his afternoon nap, dreaming perhaps of future adventures with Grandma.

PS – The next adventure included Grandpa too ...and more poop!



Field Guide to Dragonflies and Damselflies of Algonquin Park and Surrounding Area

A comprehensive guide to 135 species of dragonflies and damselflies across south-central Ontario. The guide provides information on identification, life cycle, habitat, behaviour, flight period and more.

Soft cover: 14 x 21 cm, 263 pages : Price: \$28.95

Available from:

The Friends of Algonquin Park
Box 248 Whitney, ON K0J 2M0
Phone: (613) 637-2828
Fax: (613) 637-2138

receivables@algonquinpark.on.ca
www.algonquinpark.on.ca

Welcome! - New Member

Irene Kasch

Contact Fred Pinto at 705 476-9006 or Jeremy St. Onge at 705 497-7785 if you have speaker or trip suggestions. They’ll get things moving!

Send observations, events, stories, trip reviews and pictures for newsletter to: crispy@vianet.ca