



White-throated Sparrow in snowfall. Photo by N. Lightfoot

FEATURE

Tom Woodcock, *rare* Planning Ecologist speaks out on protecting greenspaces and biodiversity



Photo by J. Moser and J. Dillon

INSIDE THIS ISSUE

- 2 Turtle Hatchery Project Update
- 3 North House Eastern Comma Residency 2017
- 4 The “Rise” of the Monarch Butterfly: Fake News, Debunked
- 5 *rare* is a Smudge-Friendly Space! The Impact of Dogs Off Leash: Why We Love Your Dogs and Want to Keep them Safe
- 6 Blitz Blitz BioBlitz! *rare* Recap 2017
- 8 Ask a Researcher: Xinda Lu
- 9 Nature Notes
- 10 Giving Back as a Group
- 11 Leadership

Spaces Mean Species:

Advancing Ecological Protection in Canada

By Tom Woodcock, *rare* Planning Ecologist

Even in densely populated Southern Ontario, we imagine Canada as a place where wildlife thrives and water is plentiful and clean. However, two reports released recently by the World Wildlife Fund (WWF) paint a different picture of ecological health in Canada, providing evidence that our current land protection efforts and management of land use and development are insufficient to protect biodiversity and the ecological services on which we all depend. As citizens of one of the world’s affluent nations and major per-capita consumers of resources, Canadians must do more to protect ecological systems within our borders.

Canada contains 20 per cent of the world’s fresh water. It may seem obvious that Canada should be a leader in water research and management. However, the WWF watershed report, the first national assessment of Canadian surface waters, based on an analysis of 167 sub-watersheds, demonstrated that the environmental quality of a significant proportion is impaired by pollution, climate change or habitat loss and fragmentation. Not

surprisingly, the most critical threats exist along the southern border of the country where most of the population lives. This is also the area of greatest fresh water demand, and watersheds such as the Grand River show additional threats of irresponsible water use and overuse. Larger than New York’s Central Park, *rare* is headquartered at the confluence of the Grand and Speed Rivers. With three cold water streams that flow into the Grand River Watershed, the largest in southern Ontario feeding into Lake Erie, *rare* is part of an interconnected system with the world’s largest freshwater surface area that provides drinking water for 40 million people. We offer front-line protection of what we all depend on: clean drinking water.

The second WWF report addresses the ecological performance of Canada in wildlife conservation, as measured by the Living Planet Index (LPI). The study, which examined changes in 3689 populations of 903 species of wild animals across the country, found declines in half of them. Of

continued on page 2
rare review 1

Spaces Mean Species

continued from cover

those that declined, the average decrease was 83%. Declines were discouraging in all groups of vertebrates (fish, reptiles, birds, and mammals), including those supposedly benefitting from Species at Risk protections. Invertebrates, which have the most diversity but are chronically understudied, are excluded from the LPI. Recent studies have shown declines in numbers and mass of flying insects of 75% or more across broad areas of the landscape. This landscape-wide effect has been called “clean windshield syndrome” arising from the decline in bug splatter on our automobiles. It indicates not only a loss of food for wildlife such as birds and bats, but is also a symptom of slowing ecological processes in our life support systems that depend on healthy ecosystems, such as food production, nutrient management, and pollination.

“WILDLIFE LOSS IS NOT SOMEONE ELSE’S PROBLEM. IT’S A CANADIAN PROBLEM. WE ALL, COLLECTIVELY, HAVE A MORAL DUTY — AND A SELF-INTEREST — TO HALT WILDLIFE DECLINE.” — DAVID MILLER, WWF PRESIDENT & CEO

Large areas of the country have very low human population density, giving the false impression that natural systems have a great deal of room. Canada has a federal goal to protect 17% of terrestrial, marine, and freshwater systems by 2020. This goal remains short of the 50% protection advocated by experts to conserve biodiversity — nature really does need half.

Conserving spaces, not species, is a good place to start. But regulators must do a better job of preventing damage to the landscape in all areas and government funding for land securement by independent bodies such as land trusts, like *rare*, needs to increase.

Increasing the size of officially-protected areas, whether managed by Indigenous communities, government agencies or charitable land trusts will provide habitat for species and space for ecological processes that make up our life support system. This in turn allows space for the ecological processes that improve our waters, and habitat for our wildlife.

Supporting the efforts of your local land trust is a grassroots effort that sends a strong signal that the land is important to you. ■■



It's not only the big flagship species that suffer, but often it's the little things that have as much impact on what we depend on for our well-being, such as this weevil. Photo by T. Woodcock

You can help us be a leader in protecting green spaces on a landscape scale across Waterloo Region/Wellington. For example, through an initiative called Turn the Map Green, everyone, the youngest children included, can symbolically adopt a square metre of sensitive lands for as little as \$2. Visit turnthemapgreen.ca and help finish paying for the original rare lands, or make a gift to support land stewardship and securement at rare.



Photo by M. Wilson

Turtle Hatchery Project Update

By Alissa Fraser, rare Conservation Technician

The first year of rescuing and artificially incubating vulnerable turtle nests within Waterloo Region and Wellington County has been a success! Community support exceeded expectations and resulted in the collection of 25 Snapping Turtle nests and 2 Midland Painted Turtle nests. Collected from trails, road shoulders, playgrounds, driveways, parking lots and recreational areas, these nests mostly likely would not have survived without relocation.

Nests were collected in various states of disturbance — some were found early enough to be in perfect condition while others had already been compacted or damaged in some way. Despite this, 622 collected eggs hatched successfully! This means, thanks to the concern and donations from the community, 622 baby turtles that had very low odds of survival have been released at or near the original sites of collection and made it safely to the water.

Special thanks to the County Road 35 Turtle Watch and the Donkey Sanctuary who, with 12 separate reports, were responsible for saving a large portion of the rescued nests. The Helen McCrea Peacock Foundation has committed funds to increasing the program capacity for the 2018 season, meaning even more nests can be saved! Please keep an eye out for turtles nesting next spring in areas that are at risk and report them to *rare*! ■■

North House Eastern Comma Residency 2017

By Janet Rogers, Eastern Comma Writer-in-Residence 2017

Upon arrival on September 1, I was struck by the beauty of the light within North House. The white furniture and kitchen set up helped boost the brightness and, for me, this is nothing short of pure inspiration. All the colours inside and outside the house reflect the natural surroundings; an unfinished wood deck, the smooth cream-coloured natural flooring inside, a sky-white ceiling textured to diffuse electric light and warm the sound. I quickly realized this house, with all its unique and quirky charm would be an artistic entity unto itself and an inanimate collaborator in whatever I would produce throughout the two month residency.

So what have I been up to?

During this time, I signed a contract for my newest book of poems with Bookland Press due out in September of 2018. Most, if not all, of the new poetry composed in North House will be part of that collection. One of the first pieces of writing was more of a prose piece inspired by the enormous full moon which shot up over the tree line east of the house. I opened all the drapes and lifted all the blinds to get a full view of her magnificent light, and energy. I watched her slide her way across the night sky like someone would watch a good movie. Transfixed. Completely engaged. The moon

seemed to emit electricity that I could taste in my mouth. The piece I wrote the next day was called Eating the Moon. It's a bit experimental but, boy, did I have fun writing it. That's another thing this house and residency has inspired in me — the permission to expand on my usual way of writing or telling a story. Eating the Moon needs some finessing but, as I said, I had fun writing that piece and I think the sense of joy is transmitted in the writing.

Cambridge is a perfect location. I've had many opportunities and invitations to participate in events in Toronto and on my home territory of Six Nations. Those events have also engendered new poetry. There is a small series of poems I wrote during my stay which reflect on the work of visual artists, Indigenous visual artists, in particular. Concurrently, I have a media installation showing at the newly-opened Onsite Gallery in Toronto titled For This Land: Inside Elemental. The artist talks from the Raise a Flag exhibition, also showing at the Onsite Gallery, as well as the 150 Acts: Art, Activism, Impact exhibition at the Art Gallery of Guelph, provided surges of new poetry drafts.

Outside of the writing at North House, I've been able to work with my traditional foods, having harvested white corn (specific

to Six Nations) and flint corn. I used the large outside deck to dry the corn, and do the messy work of braiding the corn cobs together for hanging. I've also put my camera to work photographing spider webs in the morning glow of light and sunflowers in the community gardens up the hill. North House and this residency have been an absolute pleasure and I feel so blessed and am so grateful to be lucky enough to be the 2017 Eastern Comma Writer-in-Residence. I will miss this house and my new friends in the Cambridge community very much.

Nia:wen Kowah Thank you very much for everything.

■ ■ ■
North House is rare's solar-powered, working model of green technology and a place for continued research. Its performance is monitored under a range of real-life conditions that educate the public and students through the Every Child Outdoors (ECO) program on the benefits of compact, sustainable living. It's also where science meets the arts when it serves as a home for several months of the year for rare's Eastern Comma Artists-in-Residence program.



Writer-in-Residence Janet Rogers

The “Rise” of the Monarch Butterfly: Fake News, Debunked

By Jenna Quinn, rare Program Scientist —

Research Priorities, Partnerships & Monitoring

This summer, an article by Margaret Wentz in the Globe and Mail declared “the monarch butterflies are back” and chastised “hysterical environmental groups” for catastrophizing the problem. We took the challenge and believe we can combat “hysteria” with solid science and learnings from *rare*’s butterfly monitoring program, and other data gathered in international research programs.

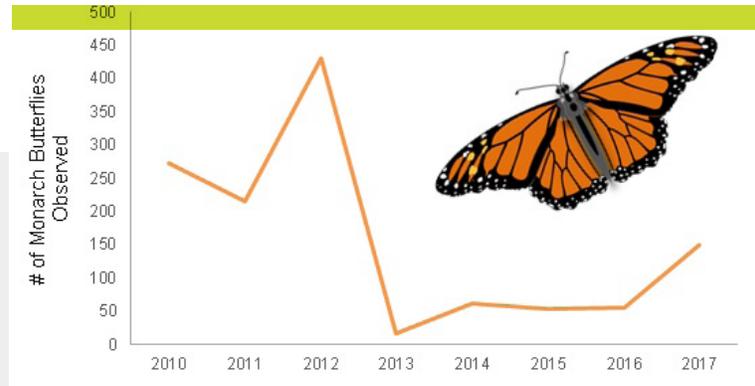
The Monarch Butterfly Biosphere Reserve and affiliates have been collecting monarch data since 1994, looking at the total forest area occupied by monarch colonies at their overwintering sites in Mexico. In the first decade of available records, monarch butterflies covered an average of 9 hectares of land each year in their winter refuge in the forested mountains of Mexico. In the last decade, coverage averaged only 2.8 hectares annually — that’s almost a 70% decline and surely grounds for worldwide concern.

Monarch butterflies at *rare* have been counted as part of an annual butterfly monitoring program, and data collected here show that 2017 observations are up threefold over the past five years. This is a cause for hope; but one year’s data does not constitute grounds for calling this a success in conservation.



Monarch Butterfly. Photo by J. Quinn

To send in a donation, fill in form and cut here.



Number of Monarch Butterflies observed annually at the *rare* Charitable Research Reserve during 14-week butterfly monitoring program from 2010-2017.

Likely, the abundance of monarchs this year felt even more significant because it followed the drastically low numbers recorded since 2013. Although the overwintering numbers this past year were similar to 2011-2012, our summer monitoring numbers were lower. Many factors contribute to monitoring observations so we need to continue the work to learn more about what helps monarchs thrive before anyone should be comfortable “calling off” an issue and considering a species to be safe. This means we need more places like *rare* where long-term research can take place, to let real patterns emerge from what otherwise may simply be short-term trends.

Contributors to monarch health can include optimal weather conditions, as we saw this year, for both successful migration from Mexico but also for growth of milkweed and other nectaring plants; positive results of citizen science initiatives to plant milkweed; and, positive legislation like the removal of milkweed from the noxious species list in Ontario and a reduction of neonicotinoid use. These are all steps in the right direction, but recent research shows that many of the common stewardship practices — for example planting milkweed along roadsides — may not be as effective as previously thought. More work is necessary that may include increased encouragement of milkweed in agricultural habitats, before we can truly say the Monarchs have been welcomed back and are thriving across their range. ■■



Yes! I want to give the gift of nature and renew my support for *rare*!

2X THE IMPACT

I've enclosed my donation that will be matched in the amount of:

- \$150 = \$300 of impact!
- \$100 = \$200 of impact!
- \$50 = \$100 of impact!
- Other \$ _____.



I'll help *rare* plan ahead by joining the **Bedrock Club** with a monthly donation of: \$ _____ to be automatically withdrawn on the 15th of every month. (void cheque attached)

Please send me information on how to name *rare* in my Will.

Donor Contact Information

Name _____ Telephone _____

Mailing Address with City and Postal Code _____

Email _____ Yes, I would like to receive email updates from *rare*

Payment Information

Please send cheques payable to: **rare Charitable Research Reserve**
1679 Blair Road
Cambridge, ON N3H 4R8

OR

Please charge my credit card: VISA M/C A/E

Card No. _____

Expiry _____ Signature _____ YE2017

rare is a Smudge-Friendly Space!

By Mackenzie Lespérance, rare Program Coordinator & Facilitator

Aaniin (Hello)! I am pleased to announce that *rare* has created indoor smudge-friendly spaces within all of our operational buildings. As an organization committed to a reciprocal relationship with Indigenous Peoples (status and non-status First Nations, Métis and Inuit), we want to respect and honour this ancient Indigenous practice involving the burning of one or many sacred medicines, mainly including sage, cedar, tobacco and sweetgrass. There are many ways in which a smudge can be done and not all Indigenous people take part in this practice. As well, many non-Indigenous people who are invited to participate find

it valuable, but no one, whether they are Indigenous or not is required to participate in a smudging ceremony. For many Indigenous people in Ontario, smudging is commonly used as a way to announce their spirit to creation, set their intentions for the day and to remove any negative thoughts and emotions within their sacred space in order to walk in a good way.

Next time you're here visiting *rare* please keep an eye out for new signage indicating where smudge-friendly spaces are located.



Photo by J. Quinn

Should you need any assistance finding these safe spaces or materials for smudging while you're visiting *rare*, please don't hesitate to contact medicine bundle carrier, Mackenzie Lespérance by phone at 519-650-9336 x 123 or by email,

mackenzie.lesperance@reresites.org.



Photo by T. Jarvis

You probably know that *rare* attempts to get the word out to communities across the country about the importance of getting *Every Child Outdoors* (ECO). But, of course, many of the same health and wellness benefits that accrue to children also pertain to adult walkers — and even their dogs!

That's why, even though *rare's* priority is conservation, we have created some trails that welcome dogs. All we ask in return is that dog-walkers respect a few simple rules meant to keep you, your friendly pooch and all our visitors safe.

Use Only the Trails Designated for Dogs

Dogs on leash are welcome on our ECO Centre, Grand Allee, Deer Run and Maple Lane Trails. That's 3 kilometers of beautiful scenery. As well, you will find a waste bin on the Grand Trunk Trail.

Pack a Leash

We know it's tempting to let Rover run loose on secluded hiking trails or in the woods. However, it is the law and one that

The Impact of Dogs Off Leash:

Why We Love Your Dogs and Want to Keep them Safe

By Mark Wilson, rare Conservation Ecologist Assistant

is especially important to obey at *rare* since the trails pass through incredibly sensitive ecosystems, subject to multiple stressors that threaten biodiversity. Please consider that *rare* is home to various vulnerable species. Damage to even a few of these sensitive plants could put the entire population of them at risk.

Invasive plants are also found in large concentrations around trails, and a dog moving through the vegetation can spread seeds further into the natural area.

The abundance of wildlife found at *rare* is just too tempting for many dogs. From squirrels — even our elusive flying squirrel (see article on Bioblitz) isn't always flying! — through rabbits and ground-nesting birds, to white-tailed deer and coyotes, all the wildlife plays an important role in promoting biodiversity. And some of the animals that call *rare* home can injure your dog or you if they feel threatened.

Pick Up After Your Dog

Need we say more? It's not acceptable anywhere to leave your dog's waste; but at *rare* the digested seeds have a better chance of surviving in our healthy soil and of doing damage.

Stay Healthy

When you and your dog stay on the trails

there is also a high likelihood that you will both stay healthy. Poison ivy oils on your dog's fur can cause an outbreak even after you are home and someone with sensitivity to it pats your dog. Wildlife can transmit diseases or parasites, including some that can affect dog owners. Off-leash dogs have significantly increased risk of getting a disease-infected tick and possibly passing it along.

Be Kind

We want all trail-users to feel safe and comfortable while enjoying the trails. Some visitors may be small children, or have had bad experiences with dogs, and an off-leash dog may be intimidating to them.

Show Us Some Love!

We also notice and appreciate the care that many people take to obey the rules and leave the trails better than they found them, picking up garbage and greeting others along the way. So please be kind to us and our many trail volunteers by respecting the constant effort and hard work that goes into maintaining the trails and improving the lands.

We thank you and hope that we can continue to offer a place you — and your dog — enjoy visiting!





Photo by CBG

Blitz-Blitz-BioBlitz! *rare* Recap 2017

By Jenna Quinn, *rare* Program Scientist — Research Priorities, Partnerships & Monitoring
 Mackenzie Lespérance, *rare* Program Coordinator & Facilitator

24 hours. 200 people. 3000 observations.

In celebration of Canada 150, citizens and scientists from coast to coast to coast took part in BioBlitz events to collect a snapshot of Canadian biodiversity in this “milestone year”. For *rare* it was the third annual BioBlitz, made more special by funding (see page 7) that allowed it to extend over 24 hours.

On July 15, the day began with a heartfelt verbal acknowledgement of our ongoing commitment to reconciliation with the Onkwehonwe People of Six Nations of the Grand River First Nation and the Anishinaabe People of Mississauga of the New Credit First Nation on whose treaty and ancestral territory we live, learn and work, respectively. Additional sentiments were made, recognizing Indigenous Peoples as the original prosperous stewards of these lands beyond Canada’s 150 years of Confederacy. The

acknowledgement ended with the sentiment that we must learn to work together towards sustaining Mother Earth, followed by greetings from every level of government in celebration and appreciation for Canada’s natural world, including Lieutenant Governor Elizabeth Dowdeswell.

Then off they went! Two hundred community members, led by experts, collected data on various species groups throughout the day — including lichen, insects, reptiles, amphibians, birds, mammals, spiders, fish and plants. A Kiwenzie’ led a special walk-about to identify plants with medicinal properties. And behind the scenes, other scientists intensively blitzed different habitats across the 900+ acre property, with a focus on aquatic species spearheaded by the Centre for Biodiversity Institute in Guelph, where the innovative DNA barcoding program originated and has been said to have the potential to be “one of this country’s most significant contributions

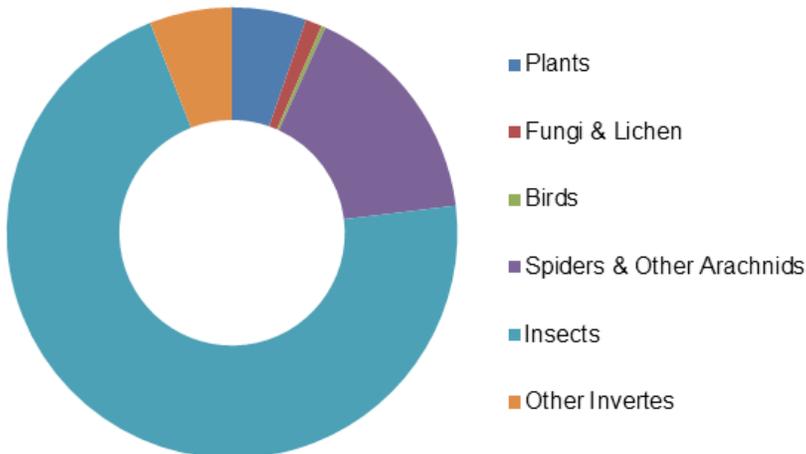
to the world in any domain.”

With the help of the community, *rare* added 346 new species to our property inventory, with the bulk of new additions being insects.

An elusive flying squirrel, spotted during evening surveys, was a definite highlight of the event, as was the more than 180 moth species, two thirds of which are new to our inventory. Overall, more than 3000 observations were made of 969 species, with the monarch butterfly and American Goldfinch being the most commonly-reported animals. If you are interested in the results from BioBlitz events across Canada this year, visit iNaturalist.ca.

In recognition of the expertise gained from over a decade of monitoring programs and three BioBlitzes, *rare* staff were invited to partner with the Upper Canada College Norval Outdoor Education Centre for their first blitz on October 1st in Georgetown. With the help of scientists, local naturalists and many of UCC’s students and parents, 526 species were observed by 185 people.

A taxonomic breakdown of the 2016 *rare* BioBlitz species observations



Look closely to see two elusive Flying Squirrels at Apps’ Mill Centre in early 2017. Photo by T. Anderson, Grand River Conservation Authority.

MISSED YOUR CHANCE TO BLITZ, OR READY FOR MORE?

Next year *rare* is teaming up with partners across Waterloo Region to compete in the City Nature Challenge. This friendly international competition will take place from April 27-30 and challenges urban residents to record as many wildlife observations as possible within their city limits. Waterloo Region is one of just two Canadian cities currently participating, and in addition to helping identify and record local biodiversity, it is a great opportunity to learn more about the distribution of flora and fauna on a global scale. Keep an eye out for events in your area in April!

1. *Kiwenzie* means 'wise one' in the Anishinaabe language. Our *Kiwenzie* joined us from the Chippewas of Nawash Unceded First Nation.



Photo by CBG

2017 *rare* Community BioBlitz Results

	NEW SPECIES OBSERVED & HISTORICAL SPECIES CONFIRMED	TOTAL SPECIES OBSERVED @ BIOBLITZ
	25	231
	4	26
	1	13
	1	74
	0	11
	0	9
	55	124
	240	444
	20	37
TOTAL	346	969

ICON CREDITS: M. Caron, Creative Stall, P. Kolodziejewski, J. Santos, A. Chen, J. Cozzette, Giulia, A. Mc, E. Boatman, M. Schmitt, CS. Touati, aLf, L. Patrick



Photo by J. Quinn

THANKS

SAVE THE DATE

Celebrate ecological diversity with us April 27-30, 2018 for the City Nature Challenge in Waterloo Region. Check out our Calendar of Events for more details!

Thanks to all the participants, volunteers and funders who made the 2017 Bioblitz event a success. This Canada 150 Signature Project was made possible with support from TD Friends of the Environment and the Community Fund for Canada's 150th, a collaboration between Cambridge & North Dumfries Community Foundation, the Government of Canada and extraordinary leaders from coast to coast to coast.





Photo by J. Quinn



Photo by J. Neufeld

ASK A RESEARCHER

Xinda Lu is a *rare* researcher and scientist working toward his Ph.D., supervised by Dr. Josh Neufeld in the Department of Biology at the University of Waterloo. Xinda studies soil microbes called ammonia-oxidizing archaea or AOA, which play an important, albeit not well understood, role within soil nitrogen cycling. His work aims to provide better understand of the ecology, physiology and metabolism of AOA by collecting soil samples and documenting AOA activity under various conditions. Who is this scientist investigating mysteries beneath the soil? Meet Xinda.

If you ever see something at *rare* that leaves you wondering, don't hesitate to get in touch with us. We welcome your calls and emails to 519-650-9336 or rare@raresites.org.

To learn more about Xinda:
<http://www.xindaosu.com/>

QUESTION

If you weren't a scientist, what would you choose to be?

ANSWER Growing up in China, my childhood dream was to be a journalist, reporting the truth. But I started to fall in love with science when I entered middle school, and started doing well in physics, chemistry and biology. Excelling in school pointed me toward an academic career path, step by step. Now, as a scientist, I think I am fulfilling my childhood dream, in a broader perspective, finding the truth and reporting it — like a journalist, but in a scientific way.

QUESTION

If you were waiting for some discovery, what would it be?

ANSWER I am waiting to see new microorganisms involved in soil nitrogen cycling discovered and isolated. It's always exciting to witness the turning of unknown into known, and ask why this organism is there and how it could be influential to our environment.

QUESTION

What natural talent would you like to be gifted with?

ANSWER Unlimited memory. Sometimes when I hear my friends talk, off the top of their heads, about how their professors know every detail in a paper, page number, authors names, publication date, methods they used, I wish I had the talent of memorizing papers like a scanner and never having it fade.

QUESTION

What are you secretly afraid of?

ANSWER Bugs. Although I am a soil scientist, I am afraid of bugs... Yeah, that sounds crazy.

QUESTION

What is the biggest challenge facing scientists?

ANSWER Funding, funding, funding! In both the U.S. and Canada, getting enough funding to support scientific research, especially fundamental scientific research, is tough these days, which is a threat to innovation because it relies on fundamental research.

QUESTION

What has been your best moment at *rare* since you began researching here?

ANSWER John MacDonald, *rare's* Environmental Advisory Committee member and retired archaeologist, showed me the community gardens and gave me tomatoes he grew for free! This isn't science but it was the best moment for me.



As Xinda rightfully points out, sometimes a love for science and nature is most easily instilled by experiencing it with all your senses — including tasting sun-warmed tomatoes fresh off the plant! That's why rare has developed a unique method of conservation, called the rare Chain of Learning that promotes the lands as a living laboratory for research. This research, in turn, informs restoration practices and education programs through a Chain of Learning that reaches even the youngest citizen in a program called Every Child Outdoors (ECO), a model of hands-on environmental learning, in the out-of-doors.

NATURE SIGHTINGS:

#rareMoment



Two Common Merganser spotted on October 3. Photo by H. Bragg

Nature Notes

By Bill Wilson & Ross Dickson, Community Volunteers

The confluence of the Grand and Speed rivers, the meeting place of several habitats, is unmatched at *rare* as a place to view uncommon wildlife species in any season. Summer highlights recorded there by Bill Wilson included twelve GREAT BLUE HERONS July 16 — a large number; a LAUGHING GULL photographed August 24, the first accepted record of its species in Waterloo Region; and, on September 13, a LESSER BLACK-BACKED GULL in breeding plumage, a plumage rarely observed in this species in Ontario.

A BALD EAGLE pair fledged two young from a nest upstream. Sightings of local and migrant eagles still excite casual and veteran birders.

Wood warblers, many brightly coloured, often sing as they forage among bare tree branches during spring migration. In autumn, the same species in relatively drab colours and “chipping” rather than singing within the dense foliage may be a challenge to identify. And yet, *rare's* bird migration monitors found 24 species. Highlights included a PRAIRIE WARBLER (4th record for *rare*) seen by Larry Hubble, and two CONNECTICUT WARBLERS (4th & 5th records) by Tony Zammit and Ross Dickson. A YELLOW-BREASTED CHAT listed as Endangered in Ontario and found near the Hogsback by Larry Hubble is the first record at *rare* and the sixth for Waterloo Region.

Interesting photographs by Heather Bragg included an OLIVE-SIDED FLYCATCHER August 23, now designated as Threatened in Canada, and the brilliant orange feet of

COMMON MERGANSER (see photo).

The annual North American Butterfly Association count on July 15 recorded 32 BUTTERFLY species. Allie Abram, Ecological Monitoring Technician at *rare*, found an ACADIAN HAIRSTREAK, the first one recorded since 2008. The Endangered MONARCH total was 19, up from recent years; sightings occurred into early October.

Noteworthy butterfly species sightings this summer included: GREY COMMA July 17, AMERICAN SNOUT August 1, HARVESTER August 1, all three seen by Owen Lucas; TAWNY EMPEROR July 21 by Alissa Fraser; LEONARD'S SKIPPER in August by Julie Reid; and MOURNING CLOAK October 3 by Jenna Quinn.

Julie Reid reported a LANCE-TIPPED DARNER dragonfly September 15.

Lauren Smith discovered two new CATERPILLAR species to *rare* at the Community Gardens this fall: BEDSTRAW HAWKMOTH, *Hyles gallii* September 26; and WHITE MARKED TUSSOCK MOTH, *Orgyia leucostigma* September 28.

Don Thomas saw an AMERICAN MINK with a fish in the Grand River on August 28 (see photo). Its diet includes fish, crustaceans, frogs and rodents. He photographed a WHITE-TAILED DEER herd crossing the Grand River September 28. Early-morning frolicking by 13 deer near the Confluence was noted October 2 by Bill Wilson.



A hungry Mink with a fish late August. Photo by D. Thomas

Do you have a memorable nature sighting you wish to share? Tweet or Instagram using the hashtag #rareMoment or submit to rare@raresites.org with the subject line: *rare* Moment



White-Tailed Deer in late September. Photo by D. Thomas

HAVE SOME *rare* FINDS OF YOUR OWN? 

Contact *rare Nature notes* by emailing rare@raresites.org with “Nature notes” in the subject line.

Giving Back as a Group

By Laura Klein, *rare* Gosling Engagement Coordinator

“Our employees cherish the time spent outside of the city in the sunshine, which keeps them energized for days on end.” — Katie Allen, *Fiix*, Toronto

Many hands make light work. Those words have been passed down over the years and nowhere are they more true than at *rare* where we are working to preserve and restore landscape-sized properties.

Imagine, then, how we feel when corporations and organizations volunteer to work on the land with us. This year we welcomed many groups to assist with land management and gardening projects, and saw over 800 hours of group volunteering take place. That equals a lot of smiles, a lot of meaningful work and a lot of engagement. The power of people makes things happen that otherwise would not be possible.

“It can be really challenging to manage invasive species without sufficient human power,” says Alissa Fraser, *rare*’s Conservation Technician. “Many of the species need to be targeted during specific times of the year, so corporate volunteer days allow us to remove or control large areas of the invasive species during the optimum time period.” This year, corporate groups helped to remove European or Common Buckthorn, introduced from Europe, likely around the 1880s as hedgerows. In addition to having many sharp thorns, it can grow 20 feet and out-compete other native plants. It also hosts oat crown rust and the soybean aphid, both of which reduce crop yields. European Buckthorn’s removal at *rare* made room to plant 300 native trees and shrubs.

Two community organizations, **Adults in Motion** and **Community Living**, had volunteer groups visit the property to assist with trail monitoring. They walked the trails, picking up garbage and keeping an eye out for trail obstructions. “These groups are very helpful because they are extra eyes on the trail, and the trails look better than ever because of their help,” says Alissa.

The *rare* Springbank Foodbank Gardens are very dependent on group volunteering, and this year 17 different corporations and organizations assisted with weeding, watering, planting and harvesting. Not only do volunteer groups at the garden help to bring fresh produce to foodbanks in Waterloo Region, but they may also get some benefits they didn’t expect. Corporate volunteer, Lisa Huang, CMMS

Solutions Specialist at *Fiix*, a Toronto-based tech company, reflected on her volunteer day saying, “Learning how food can be naturally, responsibly grown and produced made me want to start my own garden.”

And when asked why her team continues to support *rare* with group volunteering, Katie Allen, Corporate Social Responsibility Manager from *Fiix*, said “Volunteering with *rare* gives our employees the opportunity to get fresh air and engage with the community. Our employees cherish the time spent outside of the city in the sunshine, which keeps them energized for days on end. This helps us foster a culture of engagement, while also providing extra help where it is most needed”.

Thank you to all the groups that came out and gave back by volunteering at *rare* this past year. We are now looking ahead, and have set goals to have a volunteer group in the community garden once a week from May to October in 2018, and to continue to see more groups assisting with invasive species removal, trail maintenance and other stewardship or research projects.

If you would like to have your corporation or organization involved at *rare*, we would love to hear from you. Contact Laura Klein, Gosling Engagement Coordinator at laura.klein@rarsites.org or 519-650-9336 x126



Our lovely volunteers. Photo by A. Fraser

Leadership

BOARD OF DIRECTORS

Keith Ainsworth, Chair of the Board; Electrical Engineer; retired CEO, COM DEV International
Gerald Achtymichuk, Family Physician
Peter Krause, President, Krause Corporate Solutions
Brian McGee, Chartered Accountant; Partner, Zeifman & Company LLP
Angela Tsementzis, Architect; B.E.S. B.Arch, OAA, LEED AP

INTERNATIONAL AMBASSADORS

Ljubodrag Andric, Photographer; latest work Visible Cities
Michael Barnstijn, retired Partner, RIM; Philanthropist; Musagetes Foundation
David Buckland, Founder, Cape Farewell www.capefarewell.com; Director of Art from a Changing Arctic
Ed Burzynsky, OC; Photographer; Subject of award-winning documentary, Manufactured Landscapes
Geneviève Caron, Award-winning Photographer
Severn Cullis-Suzuki, Environmental Activist; Speaker; Television host; Author
Ron Dembo, Founder, Zerofootprint
Louise MacCallum, retired Software Engineer; Philanthropist; Musagetes Foundation
R. Murray Schafer, Composer; Educator; Environmentalist
Sheila O'Donovan, Founder, Lisaard House
Jane Urquhart, OC; Author
Morden Yolles, Multi-award-winning Structural Engineer; Restaurateur; Photographer

ENVIRONMENTAL ADVISORY COMMITTEE (EAC)

Chris Dalton, Avocational Archaeologist, Licensed by the Province of Ontario
John MacDonald, Archaeologist
Stephen Murphy, Professor and Associate Chair, Undergraduate Studies, Environment and Resource Studies, University of Waterloo
Mark Pomeroy, Fisheries Biologist, Stantec Consulting Ltd.
Bill Wilson, retired Teacher; Naturalist; Bird Monitoring Coordinator, *rare* Charitable Research Reserve
Brett Woodman, Terrestrial and Wetland Biologist, Natural Resource Solutions Inc.
Tony Zammit, Aquatic and Terrestrial Ecologist, Grand River Conservation Authority

EDUCATION ADVISORY COMMITTEE (EDAC)

Jason Bracey, Teacher, Department Head of Geography, Southwood Secondary School
Colinda Clyne, Curriculum Leader for First Nations, Metis and Inuit Education, Upper Grand District School Board
Louise Dawe, retired Teacher; Community volunteer
Christopher Giesler, Teacher, Southwood Secondary School
Dan Schneider, Outdoor Educator and Naturalist, GRCA, retired

RESEARCH ADVISORY COMMITTEE (RAC)

Stephen Murphy (see previous)
Rick Haldenby, Professor, Architecture, University of Waterloo
David Lieberman, Associate Professor, John H. Daniels Faculty of Architecture, Landscape and Design, University of Toronto
John Straube, Associate Professor, Civil and Environmental Engineering, University of Waterloo

EASTERN COMMA COMMITTEE

Shawn Van Sluys, Executive Director, Musagetes
Karen Houle, poet & philosopher, University of Guelph
Elwood Jimmy, Musagetes Program Coordinator

CAMPAIGN AND COMMUNITY CABINET

Keith Ainsworth (see previous)
Sheila Ainsworth, Chair, Lisaard House
John K. Bell, FCPA, FCA; Chairman, The Onbelay Group
Greg Buzbuzian, Owner, Knar Jewellery
Rob Connell, Partner, KPMG
John English, CM; FRSC; Director, Bill Graham Centre for Contemporary International History, Trinity College/Munk School of Global Affairs, University of Toronto
Bruce Gordon, Chairman, Manulife Assurance Canada; Sr. Exec. V.P., General Manager, Canada
Valerie Hall, President, Stonefields Management Inc.
Adrian Hammoud, Owner, Salon Butterfly
Peter Hatch, composer, music curator and teacher
Jackie Hatherly-Martin, CPA CA, HM Advisors
Thiam Lim, former *rare* Board Member
Keith Martin, CPA CA, HM Advisors
Douglas McMullen, FCPA, FCA; retired, Sr. V.P. CIBC
David Mitten, retired; Executive Director, Siding and Window Dealers Association of Canada
Leslie Pearson, Community Volunteer, Oakville
Dean Peroff, LLP, Partner, Peroff Professional Group
Simon Poladian, Owner, Eagle Towing Equipment
Joy Roberts, Ph.D., Board Chair, Musagetes Foundation; Founder and Director, Eramosa Institute
Paul Ross, Partner, KPMG
Irene Schmidt-Adeney, Writer, Ayr News
Hugh Thompson, CEO, Thompson Centre for Art and Design

VOLUNTEER AND CONSULTING ADVISORS

John Baljkas, Graphic design consultant, MFA, RGD Affiliate Member, Professor, Conestoga College
Ken Dance, President, Dance Environmental Inc.
Valerie Hall (see previous)
Joy Roberts (see previous)

RARESITES LAND SECUREMENT TEAM

Graham Buck, Ministry of Natural Resources and Forestry
Paul General, Six Nations Lands & Resources
Chris Gosselin, retired
Peter Krause, *rare* Board of Directors
Dr. Greg C. Michalenko, Grand River Environmental Network
Dave Montgomery, Premier Environmental Services Inc.
Krista Long, Ontario Farmland Trust
John Prescott, Nature Guelph
Josh Shea, Waterloo Stewardship Council
Roger Suffling, Waterloo Region Nature
Tony Zammit (see previous)

EMERITUS

Paul Koch, Marketing & Management Consultant; Civic entrepreneur, Ottawa
Doug Larson, Professor Emeritus, College of Biological Sciences, University of Guelph
Colleen Mercer Clarke, Coastal Ecologist, Landscape Architect, University of Waterloo
Alan Morgan, Professor Emeritus, Earth and Environmental Sciences, University of Waterloo

STAFF

Stephanie Sobek-Swant

Executive Director

Roger Oei

Senior Operating Officer

Allie Abram

Ecological Monitoring Technician

Chris Ainsworth

Sponsorships & Events Manager

Alissa Fraser

Conservation Ecology Intern

Taryn Jarvis

Property, Facility & Garden Coordinator

Laura Klein

Gosling Engagement Coordinator

Tamanna Kohi

Development & Communications Officer

Emily Leslie

Gill Ratcliffe Educator

Mackenzie Lespérance

Program Coordinator & Facilitator

Jenna Quinn

Program Scientist — Research Priorities,

Partnerships & Monitoring

Kim Robichaud

Administrative Coordinator

Christine Thompson

Major Gifts Manager

Tom Woodcock

Planning Ecologist

CONTACT US

1679 Blair Road
Cambridge, ON N3H 4R8

Phone: 519-650-9336

Toll Free: 1-866-927-3866

Fax: 519-650-5923

rare@raresites.org

raresites.org

rare acknowledges and offers gratitude to all the original stewards of the land in which *rare* resides, within the Haldimand Treaty, spanning six miles on either side of the Grand River from source to mouth.

We would like to say *Nia:wen* (thank you) to the Haudenauonee Peoples of Six Nations of the Grand River First Nation for sharing their treaty lands with us. We acknowledge the ancestral land holders, the Mississauga of the Credit First Nation of the Anishinaabek Peoples by saying *Miigwetch* (thank you). Lastly, we acknowledge those Indigenous peoples who live, work and learn in the urban landscape around us such as the Métis, Inuit and other status and non-status First Nations People.

As a community it is crucial that we honour and uphold our role as treaty people by caring for the land and all of its inhabitants including the plants, the animals, the water, the fire, each other and our ancestors. Please keep the land and its inhabitants in your minds and hearts as you enjoy your time with us at *rare*.



You can
Turn the Map Green
 for as little as \$2

Symbolically adopt your favourite place at *rare*, for yourself or as a gift.

www.turnthemapgreen.ca

Photo by J. Dillon & J. Moser



FEATURE

Tom Woodcock, *rare* Planning Ecologist speaks out on protecting greenspaces and biodiversity

INSIDE THIS ISSUE

- 2 Turtle Hatchery Project Update
- 3 North House Eastern Comma Residency 2017
- 4 The “Rise” of the Monarch Butterfly: Fake News, Debunked
- 5 *rare* is a Smudge-Friendly Space! The Impact of Dogs Off Leash: Why We Love Your Dogs and Want to Keep them Safe
- 6 Blitz Blitz BioBlitz! *rare* Recap 2017
- 8 Ask a Researcher: Xinda Lu
- 9 Nature Notes
- 10 Giving Back as a Group
- 11 Leadership

