



Baltimore Oriole feeding young. Photo by J. Dillon & J. Moser

FEATURE

Ciência Sem Fronteiras intern, Alaises Weber, shares her *rare* “science without borders” experience.


 Signs of spring at *rare*. Photo by D. Crowell

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Science without borders

By Alaises Weber, Canada-Brazil *Ciência Sem Fronteiras (CsF)* Intern at *rare*

Brazil’s *Ciência Sem Fronteiras*, or Science Without Borders, is a Brazilian government funded program awarding exchange scholarships to students studying in the fields of science, technology, engineering and mathematics. Enrolled in the Environmental Engineering program at the Federal University of Parana in Curitiba, Brazil, I had the opportunity to spend one year of my program as a student in the Environmental Engineering program at the University of Waterloo, followed by a research work term at the *rare* Charitable Research Reserve. This was a remarkable experience that allowed me to grow both from an academic perspective and as a human being. The admirable mission of *rare* consists of the conservation and restoration of lands stewarded on behalf of the community. This mission, along with the fact that *rare* is a charitable organisation, makes the experience of working at this Canadian institution unique.

My internship included the application of geographic information software and technical drawing software in planning

for the expansion of the *rare* ECO Centre parking lot. I observed just how critical engineering software is to the decision-making process of different environmental projects, and how the impact of projects on flora and fauna are considered in each phase so the most sustainable decisions are made.

My internship at *rare* also gave me my first field experience - I spent time with the land management team removing invasive species and learning how to manage them without chemical products. Seeing how an environmental organisation deals with invasive species and being in contact with such an amazing landscape were definitely highlights of my 15 weeks at *rare*, and also very inspiring. I will be able to take what I learned here and apply it to my education in my own country. For example, I learned about stream restoration and its relevance to certain species – the protection of streams is a global concern and has significant relevance to Brazil.

Even though I was away from my country, the fact that the work environment at *rare*

Science without borders

continued from cover

is welcoming made this period easier and pleasant! I am grateful for this experience – for what I learned, what I can apply back home, the connection to nature, and the personal growth - I will always be available to the *rare* Charitable Research Reserve. ■■



Above: Alaises in Indian Woods. Photo by T. Woodcock



Bumble bee at Springbank Farm. Photo by J. Dillon & J. Moser

If you build it, they will come; a bee (hi)story

By Erika Kastner

We were excited after a year hiatus to welcome our bee friends back to Springbank Farm last summer. The buzzing pollinators and their hives are used as a tool to educate *Every Child Outdoor* (ECO) participants and other visitors about the importance bees play in a healthy environment. After the harsh winter weather and disease destroyed the hives we had previously at Springbank Farm this was definitely welcomed news, and the timing couldn't be better as some bee news from across the pond also came through the wire.

There's no denying the importance of bees to the environment – just open up your daily digest and I guarantee you will find headlines advocating and educating the community of just that. Bees are probably

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one of the hardest workers on this planet, and the world as we know it would look drastically different if they simply ceased to exist – as pollinators they are responsible for the survival of the majority of flowering plants and agricultural crops around the world. It's no wonder these amazing little creatures show up as magical helpers in mythology and folklore from Egypt to Greece and even the British Isles.

What feels like many moons ago I worked as a stone conservator in Scotland for a company that restored heritage buildings and monuments. I worked on several projects but the one that spanned the entire two years I was there was Rosslyn Chapel. Made famous by Dan Brown's novel *The Da Vinci Code*, draped in symbology, the chapel was built in 1446 by William Sinclair, a well known knight in the exclusive Templar club. From carvings of mysterious musical notes to green men, and even what was then unknown and non-native plants like maize, it is no wonder that many believe the legend that Rosslyn Chapel is the resting place of the Holy Grail. Shortly before I joined the team, working on a pinnacle the masons found what was dubbed the oldest bee hive in the world (whether or not that distinguished title holds up is another story). The pinnacle's hallow nature and the decorative accents

with conspicuous holes led many to believe that this bee hive was no happy accident. It is thought that the freemasons in the 15th Century purposely built this pinnacle, and as we discovered other pinnacles on the chapel like it, as a safe haven for bees. The freemasons considered them sacred – small messengers of god - and the Scottish weather can be so cruel.

We had always hoped when rebuilding that one day the bees would return, and on an unusually sunny afternoon in Scotland last June, mere hours after we received news of our bee friends here at Springbank Farm, they did – and in full force!



Bees causing a buzz at Rosslyn. Photo reproduced by kind permission of Rosslyn Chapel Trust

When I got the news I couldn't help but smile from ear to ear. If you build it, they will come. Happy buzzing to our bee friends at Springbank Farm and Rosslyn Chapel. ■■

MIGHTY MITES



Velvet mite. Photo by Centre for Biodiversity Genomics

Mites (also known as Acari) belong to the class Arachnida, with close relatives such as spiders and scorpions.

Like their arachnid cousins, mites usually have eight legs, but they are typically very small (usually less than a millimeter), very abundant, and very diverse! There are over 50,000 described species across the globe, and some acarologists (mite scientists) estimate that perhaps a million species exist (*Global diversity of mites; Mites: Ecology, Evolution, and Behaviour*). Mites live in nearly every terrestrial and aquatic habitat imaginable; they've been found lurking in the dust in our homes, in the pores of our faces, and even riding along in the ears of moths. While obscure, peculiar, and often overlooked, mites fulfill a variety of important ecosystem roles. They represent nearly every feeding guild, from predators, parasites, and scavengers, to fungivores, detritivores, and omnivores. However, mites are difficult to study. Their small size means that high powered microscopes are necessary to identify specimens, and specialized training is required to recognise species.

Because of this, mites are rarely included in biodiversity studies, despite their ecosystem importance. As a result, species richness of mites is not well understood. It was suggested that at least 10,000 mite species occur in Canada (*Memoirs of the Entomological Society of Canada*), but we hardly know half of those species. DNA barcoding is helping to eliminate this issue and the goal of Monica's research is to improve our understanding of the diversity of mites in Canada by using DNA barcodes to estimate total mite species richness.

Did you know... rare's Executive Director, Stephanie Sobek-Swant, fears neither heights nor strange creatures and completed her undergraduate research thesis on tree-dwelling mites, taking samples at the Swiss Canopy Crane Project site near Basel, Switzerland.

Ask a researcher; meet Monica Young



Monica in Churchill. Photo by A. Chambers

Monica Young is a *rare* researcher and scientist working toward her PhD degree at the Centre for Biodiversity Genomics at the University of Guelph. Monica studies mites, one of the most abundant and diverse, but due to the minute size of the organisms often overlooked group of animals. Who is this young woman that loves hovering over a microscope to identify the myriads of tiny mites at *rare*? Meet Monica.

Q: If you were not a scientist, what would you choose to be?

Ever since I was a little girl I wanted to work with animals. I remember naively entering the university world thinking that I would love to be a large mammal research scientist. That dream slowly progressed into ideas of wildlife conservation and management, and then into evolutionary biology. In my current career I still work with animals, but I certainly never thought that would mean studying patterns of biodiversity and molecular evolution in

a group of tiny animals that are virtually invisible – that's a far cry from studying big cats on the savannah! I suppose that if I wasn't a scientist, I probably would have gone into not-for-profit work for animal advocacy. Or maybe I would just live on a farm and be a crazy cat lady!

Q: In your opinion, what is the most significant scientific discovery or advancement of the last 100 years?

I would have to say the discovery of DNA. It is utterly astounding how much we can learn about the history of life on earth by examining patterns coded by four little letters: A, T, G, and C.

Q: What do you like to do when you are not working?

I like to read, cook, knit, go on nature walks, and play with my two cats and two dogs. Oh, and Netflix of course!

Q: Who is your favourite musician and when do you most often listen to them?

I think the Wooden Sky is one of my favorite bands. They are often featured on CBC radio 3, which is a great station to listen to up and coming Canadian artists. I usually listen to music in the car, or when I'm cleaning house.

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

I had a really spectacular moment a few [months] ago. I've been collecting mites at *rare* weekly for a few months, and witnessed the gradual change of summer into fall. I usually visit *rare* alone, and I find it so serene to have a few moments to myself in the morning. One morning I was walking along the Grand Allée trail and found myself in a patch of golden sunlight that was passing through the turning leaves of a huge tree. The entire South Field seemed to be lit up in brilliant fall colours, and this particular stretch of trail was glorious. It's such a simple pleasure, but I cherish moments like that! ■■

What will YOU discover?

Join us on **Sunday, August 14, 2016** at the *rare* BioBlitz as we search the 900+ acres of diverse habitat for all the species that call this important space home. No matter your level of expertise, you can survey for birds, mammals, insects, reptiles, amphibians, plants and more! Opportunities abound to learn and explore at this free event, with the Centre for Biodiversity Genomics onsite prepping unknown species for DNA barcode identification. Reserve your spot at raresites.org/events.

Register online today!



Our family keeps growing; *rare* to me, Sarah Doze

By Kim Robichaud

Growing up with an appreciation for the environment, Sarah Doze always knew she would pursue a career in the environmental field. Being from Waterloo Region, what attracted Sarah to volunteer with *rare* was the opportunity to get involved with a local environmental organisation to gain practical experience. "My background is in resource management and conservation, so I was drawn to the work *rare* does to protect and restore land." Sarah said when interviewed about her motivation.

Sarah has been volunteering at *rare* since the fall of 2014. She works weekly in the office at Lamb's Inn assisting with administrative matters. Although Sarah is not directly involved in research projects and programs, she is an integral part of the *rare* puzzle and involved in the many moving wheels that make up a successful organisation. Working in an administrative capacity, Sarah enjoys being part of the team at *rare* and playing the very important role of being one of the faces of

the organisation by greeting people who come through the door or call over the phone. Sarah also enjoys seeing the big picture of *rare* as a growing land trust and environmental institute by chipping in wherever more support is needed, learning about the work of each department, and seeing how everyone's priorities align with each other to paint what *rare* is. When asked about her favourite part of *rare*, Sarah simply shared "it's how all the different pieces fit together to make something very unique."

Sarah is excited about her next step at *rare*. As a committed volunteer, she's transitioning into a staff role. Come June, Sarah will be filling a temporary vacancy of my role as the Administrative Coordinator while my husband and I begin an exciting new chapter in our lives - welcoming a little one to our family. Sarah's commitment and enthusiasm is appreciated by everyone around the office. We know she'll be a great addition to the staff at *rare*!



Sarah helping in the office. Photo by E. Kastner

There are many opportunities to become involved in a voluntary role at *rare*, and we would love to have you as a part of the *rare* family. Contact Cheyanne, *rare*'s Community Stewardship Coordinator, at cheyanne.richardson@reresites.org or 519-650-9336 x 126 for volunteer and other support opportunities. ■■

Eastern Comma Artist-in-residence Meg Harder. Photo provided by M. Harder

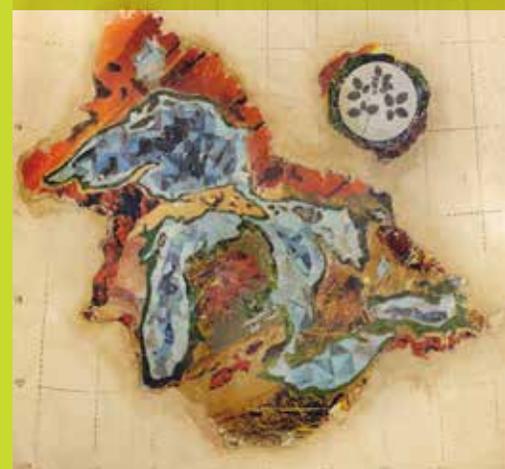


MOVING INTO NORTH HOUSE: MEET EASTERN COMMA VISUAL ARTIST-IN-RESIDENCE MEG HARDER

With the snow melting and the first signs of spring around the corner, North House is getting ready to welcome its latest guest- Meg Harder, a budding local artist who will be living at *rare* for two months and exploring the property to find inspiration for her eclectic work. Made possible with funding support from the Region of Waterloo Arts Fund and Musagetes, Harder's residency is the latest iteration of a creative Eastern

Comma partnership that was first launched in fall 2014, with Karen Houle as the inaugural writer-in-residence at North House. Due to the success of the project and a strong desire in the community to continue exploring the relationship of art and science using different mediums, the idea for a visual artist-in-residence, making North House home in spring, was born in early 2015.

Harder's work ranges from mixed media collages to installations and performances, and has been featured locally and internationally. In 2012, her work brought her to Jerusalem, and in 2014 Harder was the artist-in-residence of KwartzLab in Kitchener. While here, Harder expressed interest in potentially using invasive species to turn something detrimental into a beautiful work of art. Looking at her previous work generates much excitement for more and demonstrates how well-suited Harder is as *rare*'s first Eastern Comma Visual Artist-in-Residence as nature is front and center in many of her works. We are looking forward to where the path will lead her at *rare*.



Harder's art work, Elevation of the Great Lakes Region, 2015. Photo provided by M. Harder

Ecological skills are alive at *rare*

By Tom Woodcock

The *rare* Charitable Research Reserve encompasses 24 different habitat types, and is home to several thousand species of living things. Great effort goes into conserving and learning about them all, including finding the correct scientific names for as many as possible. An article published last year in *Times Higher Education* (*Save Field Biology Skills from Extinction Risk*, February 26, 2015) captured a troubling trend. Taxonomy (identification of organisms), systematics (understanding of evolutionary relationships and how to classify organisms) and field skills taught in university and college life science programs have been in steady decline or eliminated altogether.

The concept of biodiversity is widely misunderstood and underappreciated, and also unexpectedly difficult to explain in a way that does justice to its significance. We must appreciate the vast number of individual organisms that, by going about the daily act of living, enable the environment to provide food, clean water, air and a host of other processes that support our lives. These processes are collectively known as “ecological services.”

Many birds can be identified in the wild with sufficient experience and a quick eye. Similarly, mammals, herptiles, fish and plants can usually be identified in the field, sometimes with the aid of a strong hand lens. Invertebrates, however, are orders of magnitude more diverse, in addition to being considerably smaller.

Identifying most of them even partially (not to species level) requires significant time with a microscope and books, and generally killing the animal itself. While it is possible for one person to be an expert on all the birds, or mammals, or even plant species in an area like southern Ontario, developing expertise in more than one or a few closely related groups of insects is extraordinary.

The past several decades have seen many biologists move indoors, as leaps in technology has increased the knowledge and efficiency of fields like biochemistry, genetics and other “molecular” fields at an unbelievable rate. The “reductionist” approach to understanding how small components of living systems work, whether by clinicians studying human health or ecologists studying the landscape on which we live, are highly valuable. By examining small parts in isolation we better understand the system. The price of this shift, however, has been a decrease in “holistic” study, which is central to understanding so-called emergent properties of a system functionally greater than the sum of its parts. Ecological services are such properties, and field and identification skills are central to interpretation of complex natural systems and the organisms that live within them. Naturalists and field biologists study this magnificent complexity. It is a race against time, as rapidly changing land use and climate alter our ecosystems and ecological services.

The *Times Higher Education* article concludes by saying that, “We have already lost a generation of field biologists... If the skill set is not totally to be lost, we need to act now to overcome this inertia and identify identification as a worthy and noble set of complex skills.”

Whether through our annual BioBlitz, hosting and leading world-class biodiversity research, or connecting conservationists of the future with nature through our innovative *Chain of Learning*, ecological skills are alive at *rare*. Help us keep them alive and train the next generation! ■■



Photo by T. Woodcock

Sweat bees in the genus *Lasioglossum* are tiny and incredibly diverse pollinators, with at least 35 species recorded at *rare*! They are important pollinators all over the world, but only a handful of specialists can reliably identify them (thanks to S. Dumesh)!



Yes – I can help save biology skills from extinction!

Donor Name _____

Mailing Address with City and Postal Code _____

Telephone _____ email _____

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

I'll join *rare*'s Bedrock Club! I would like *rare* to receive my pre-authorized monthly donation of \$ _____, to be automatically withdrawn on the 15th of every month through:

My chequing account (“Void” cheque enclosed)

Credit Card

I am enclosing a one-time gift of:

\$250 \$100 \$50 \$20 or \$ _____

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

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Please send cheques payable to

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Please provide credit card information VISA M/C A/E

Name as it appears on the card _____

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Expires _____ Signature _____

You may also donate securely online through raresites.org/donate

Name to appear on Founding Donors list, to be displayed permanently at *rare* upon completion of the capital campaign:



Peppers at Springbank Community Gardens. Photo by D. Crowell

Here we grow again!

By Dan Radoslav

The 2016 growing season will be an exciting one for every Springbank Community Gardener. If you are wondering why, it's not because we have magically banished all weeds from the gardens, but because we installed a brand new water line up the hill! This new line should be able to service up to six hoses running at once as opposed to the old system which would see a noticeable pressure drop when two hoses were running simultaneously.

The new lines mean so much more than just convenience. The extension of the water lines includes a feed to the Food Bank Garden allowing us to utilise our furthest fields that were previously limited in planting options, and to provide more fresh organic produce to the Cambridge Self Help Foodbank. It also includes a fully winterized greenhouse line to increase our productivity year round – and it means I won't have to melt snow or carry buckets of water up the hill to water seedlings before the spring planting.

It took a lot of support to update the irrigation system, and *rare* would like to thank the Walmart-Evergreen Green Grants program; Ages Foundation Fund,

Cambridge & North Dumfries Community Foundation; International Plowing Match (1995 and 2012) Fund held at The Kitchener and Waterloo Community Foundation; Union Gas; as well as the dedicated community gardeners who donated to see this project come to fruition. Even with all that outstanding financial help it still wouldn't have been possible without the support of Weitzel Pumps & Water Treatment who worked with us to stay within our budget - a special thanks to them as well. It is going to be a great year at the gardens and it is exciting to think where the new lines will take us for years to come! ■■



Pizza Oven at Springbank Community Gardens. Photos by E. Kastner

FROM FARM TO...OVEN!

There's another addition to Springbank Community Gardens this season! In the fall, DAAD RISE Research Intern David Winger, memorialised his time at *rare* by building a clay pizza oven in the gardens. Though not without some challenges – the Canadian climate so late in the year caused some headaches – Dave hopes the oven will help bring the community at the gardens closer together while they gather around to enjoy fresh, home-baked pizza with ingredients right from the soil.

Thanks Dave! And thank you to all the volunteers and donors who made this project possible, especially David Smith, Canadian Clay & Glass Gallery, Hilborn Pottery Design, The Home Depot (Cambridge), Mar-co Clay, and RONA (Cambridge). Check out *rare's* blog (raresites.wordpress.com) to learn more about how this project came to life.

SAVE THE DATE - 2016 Walk & Run for *rare*

Join us for the seventh annual Walk & Run for *rare* on Sunday, **September 25, 2016**. Our 5km family-friendly event generates funds and awareness to help support the *Every Child Outdoors* (ECO) program.

Dust off your running shoes and **register online starting mid-June**. Visit raresites.org for more details.

CONSERVATION HEROES WANTED!

There are many ways to get involved with the Walk & Run for *rare* - participate, fundraise, volunteer, or sponsor a participant or the event! For more information about how you can help visit raresites.org, and for **corporate opportunities** contact Cheyanne, *rare's* Community Stewardship Coordinator, at cheyanne.richardson@raresites.org or 519-650-9336 x 126.

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The urban life of first peoples?

By Joy Roberts

Every now and then a discovery causes us to rethink some of the most central assumptions in our culture — and our place in it.

One reminder of a surprise in our past sits in the field just off the Butterfly Trail at Springbank Farm, near the community gardens and the Kavelman Fonn pavilion. It's a conceptual longhouse, demonstrating with stakes and markers the scope and design of living quarters of aboriginal peoples, including the Five Nations of the Iroquois Confederacy (Haudenosaunee): Seneca, Cayuga, Onondaga, Oneida and Mohawk; the Wyandot (also called Huron) and Erie.

And the surprise?

Excavations near Stouffville, Ontario, at what is referred to as the Mantle site, from 2003-05, uncovered 98 longhouses, a palisade of three rows and about 200,000 artefacts, including art showing haunting human faces and depictions of animals. Headlines, like those on Huffington Post, called it the Ancient "New York City" of Canada indicating that 500 years ago, at a time when Europeans were just beginning to arrive, this settlement was the biggest, most complex, cosmopolitan place in the region.

Settled by the Wendat (Huron), with some of the structures reaching over 150 feet in length, the site was occupied primarily during the sixteenth century. Longhouses typically were the home of a single clan led

by a clan mother. Children took the clan of their mother and were raised in their clan longhouse. Men came in as "guests" of the women, and were often away in hunting and scouting parties. The structures included room for councils, storytelling and skills training and are often called a metaphor for Wendat life, with all economic and social needs shared by a collection of connected families.

While on faculty at the University of Waterloo School of Architecture, Dr. William Woodworth, a Mohawk at Six Nations Reserve, designed and built the structure at *rare* during Common Ground — part exhibition, part public art, part landscape/environment awareness event, and a catalyst for broad community involvement. His dream is to see a full scale longhouse erected on the site, something that only requires a willing team of volunteers and some donated materials.

It seems appropriate to have the conceptual longhouse at *rare*, where artefacts going back more than 10,500 years have been discovered. Because of the richness of the site, *rare* has a policy of doing archaeological surveys before any alterations take place in the landscape. Former provincial archaeologist, John MacDonald, and avocational archaeologist, Chris Dalton, are advisors to *rare* in this area and have contributed significantly to *rare's* growing understanding of its indigenous heritage. ■■



Food Bank Garden harvest. Photo by B. Burt

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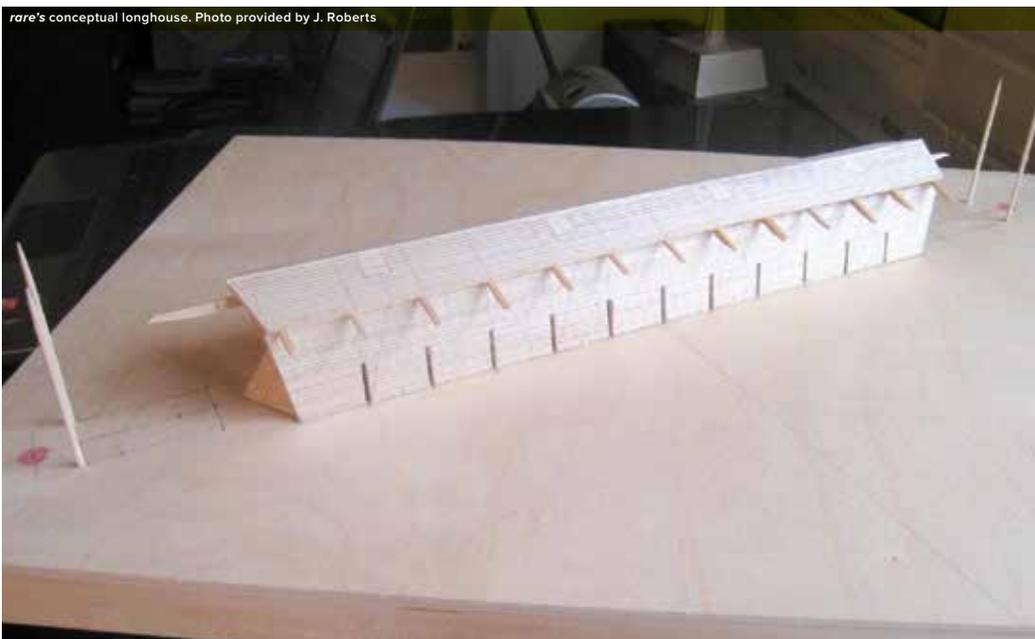
We're excited to announce a new partnership with Toyota Motor Manufacturing Canada!

Food security is a major global concern, and here in Waterloo Region *rare* and Toyota are taking steps to help be a part of the solution. Springbank Community Gardens serve as a hub for the community at large to benefit from growing local organic produce. The 110 community plots available to the public provide garden space to those that may not have the room to garden at home, and the Education and Demonstration Garden teaches the public how to grow, and the benefits of growing, your own organic produce. Springbank Community Gardens also includes the Food Bank Garden which provides fresh produce to those in our community that need it the most. The 15,000 square foot garden is planted and maintained almost entirely by volunteers and has harvested over 4,300 pounds of produce in the last three years, all delivered to the Cambridge Self Help Food Bank.

With Toyota's generous support Springbank Community Gardens will expand to include dedicated plots for several other food banks in the area, providing a fresh and healthy alternative to those in our community that rely on their services. Toyota has already committed to the growing concern of supply and demand food banks in the region face, and this partnership will leverage our efforts in addressing food security issues. Thank You!

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rare's conceptual longhouse. Photo provided by J. Roberts





The Every Child Outdoors program in action. Photo by N. Adams

THE COWAN FOUNDATION SUPPORTS EVERY CHILD OUTDOORS



A huge THANK YOU to our new friends at The Cowan Foundation for their generous support of *rare's* Every Child Outdoors (ECO) program.

“The *Every Child Outdoors* program has great potential to foster the healthy development of our youngest citizens,” said Heather McLachlin, President, Cowan Insurance Group. “By donating to this program, we are supporting an important initiative that will help cultivate a new generation of environmental conservationists.”

ECO is the school-based and youth environmental education program at *rare*; a name signifying our belief that all children deserve the opportunity to be active in nature. The ECO program is a model of experiential learning, inspiring youth to adopt a sense of curiosity in the natural world through hands-on, inquiry-based environmental learning in the out-of-doors. By working with school and community groups, we have brought close to 13,000 children and youth to our property for hands-on environmental learning opportunities tailored to fit with the Ontario school curriculum.

Thank you to The Cowan Foundation for helping train the next generation of conservationists through your generous support!

Beyond crisis

By Kai Reimer-Watts, Master of Climate Change (MCC) graduate

Last November *rare* was thrilled to partner with Community Renewable Energy Waterloo (CREW), Divest Waterloo and BRIDGE Centre for Architecture and Design to host *ArtCOP21 in Waterloo Region – Inspired by Change*. The public was invited to celebrate the initiative - which according to *ArtCOP21* organisers was started to spark inspiration and conversation surrounding climate change in alignment with COP21 - through an art exhibit and a series of film screenings. At *rare's* North House, groups gathered on two separate nights to participate in an interactive screening of vignettes as a collaborative preview of the *Beyond Crisis* film, which is still a work in progress

Beyond Crisis director Kai Reimer-Watts, who is originally from Kitchener, skyped in from India both nights for an audience engaged discussion about the film – its progress, its message, and how it made the audience feel. After nights of lively discussion and debate at North House, Kai took some time to reflect on his experience participating in *ArtCOP21*.

In the lead-up to COP21, like many people I think I was feeling a bit lost – uncertain what to do in connection to this huge, world-changing event. While COP21 felt very big and important to my own life, it was clear that for many other people, it wasn't. How do we change that, connecting action on climate change to each of our daily lives? Art and storytelling are both great ways to “break the silence” and get people talking.

*Good storytelling, discussion and art practice can all help encourage people to open up and talk frankly about the complex, often frightening natures of change within a safe environment, expanding and challenging our opinions. Such experiences of profound discussion and reflection on the issues at stake can be transformative, which I was happy to see from *ArtCOP21* [at *rare*]*



Beyond Crisis director, Kai Reimer-Watts. Photo provided by K. Reimer-Watts

as it evolved into a space for conversation and community engagement.

*Having gone through this experience, I believe it's critical that going forward we work to create more and more such “safe spaces” for deep discussion of change. Just imagine how much better the world would be dealing with climate change already today if many more organisations like *rare* existed!*

*And this, in the end, is what *Beyond Crisis* is meant to help facilitate: growing the range of what is “socially acceptable” to talk about on climate, until talking about these issues become simply commonplace. At times, we push our work one step further by also connecting it directly to specific actions one can take, but this always starts from the belief that informed discussion and reflection are both very important precursors to action. Not shying away from the facts, and where they might lead you, is a prerequisite to transformation.*

*We believe now more than ever is the time to make these conversations happen, and are open to partnering with others interested in using our work as a tool for change. To reach a tipping point of transformation towards a brighter, clean energy future, we need to be willing to talk about it. *ArtCOP21* was certainly a great test of this exciting new model for engagement, and a great place to start. ■■*

WHAT'S YOUR FAVOURITE *rare* TRAIL?

Tell us your favourite trail! Snap a *rare* “trail-selfie” and post it to your social media pages with the tag #rareto me from April to June, and you could win a *rare* Events Discount Card!

Want to know more? Check out the trail pages at raresites.org for trail maps, terrain information and permitted activities.



In partnership with Mountain Equipment Co-op Access and Activity Community Investment Fund.



Gerrit, *rare's* Lead Educator & Program Facilitator, takes a trail-selfie.



Muskrat & Beavers on *rare* shoreline. Photo by D. Thomas

Nature notes

By Bill Wilson

Variable weather conditions and river levels contributed to wildlife sightings at *rare* this winter from Settlers Fork at the Confluence. On November 5, Bill Wilson observed a RIVER OTTER slithering over partially submerged cobblestones along the island shoreline. Several sightings were made of MINK; on November 14, one surfaced on the Speed just above the Confluence with a 25cm WHITE SUCKER. Many observers saw WHITE-TAILED DEER and COYOTE crossing the river between *rare* shorelines during low water levels. Almost daily sightings of MUSKRAT were reported as were BEAVER “workings.” Although a food cache of deciduous branches and a bank den were seen on one of *rare’s* islands, no beaver – which are primarily nocturnal – were observed until January 14. With rising water levels and ice conditions dislodging the food cache and likely disrupting den life, as many as five beaver were spotted in the open during that day by Jerry Guenther, Don Thomas and Bill Wilson.

High spring water levels deposit debris on *rare* shorelines. A large, dead tree with a five metre+ branch extending diagonally from its trunk lies along the edge of a Confluence island. This happenstance perch is well-worth watching; BELTED KINGFISHER, GREAT BLUE HERON, RED-TAILED HAWK, MALLARD and PEREGRINE FALCON have all perched on it during late fall/early winter.

Seven CACKLING GEESE, a miniature version of its “sister” species, Canada Goose, were located in the large roosting flocks of CANADA GEESE at *rare* during the late November field harvest.

In early December, Preston resident, Larry Allen, discovered a dead, banded female DOWNY WOODPECKER beneath his home window. Volunteer *rare* bird bander, Ross

Dickson had banded this female at *rare* as a hatch-year bird earlier in 2015.

An overall total of 44 species of birds were tallied on *rare* lands during the Kitchener (December 19) and Cambridge (December 20) Christmas Bird Counts. Highlights included two COMMON RAVENS (six observers), five species of raptors including NORTHERN HARRIER and ROUGH-LEGGED HAWK (Jason Bracey, Todd Hagedorn), AMERICAN WIGEON (Barb Mockford, Julie Mercer), GADWALL and NORTHERN PINTAIL (Bill Wilson).

The forested areas at *rare* provide significant seasonal habitat for many bird species including respites from disturbance, inclement weather and for nocturnal roosting. Five species of woodpecker, CEDAR WAXWING and AMERICAN ROBINS were observed feeding throughout December and into mid-January along the south-facing slope of the Grand River across from *rare* where several large, berry-laden HACKBERRY TREES provide a significant early winter food supply.

Overwintering BALD EAGLES were regularly reported by several observers within the river corridor through *rare*, e.g. five reported by Tony Zammit on January 23.

Gerrit Kamminga, *rare* Lead Educator & Program Facilitator, and a group of Grade four students from Blair Road Public School had an unusual sighting on February 3 – EASTERN GARTERSNAKE. Likely no chance that they saw its shadow!

On February 11, Jason Bracey accompanied the Laurier Naturalists on a *rare* owl prowl during which participants observed EASTERN SCREECH-OWL.

Throughout the winter at *rare*, many observers reported TRUMPETER and MUTE SWANS flying over *rare* and feeding and roosting in the river reaches, e.g. on February 14, eight Trumpeters and seven Mute Swans upstream of the Confluence. ■■

NATURE SIGHTINGS:

#rareMoment

“I would unhesitatingly call *rare’s* [Springbank] Community Gardens a paradise. All is lush and green, and there is always a chance of seeing some critters. This past summer I lifted up a plastic tote I use for storage - partly to get at a giant thistle, partly to see what was growing underneath. To my surprise a family of Northern Short-tailed Shrews (*Blarina brevicauda*) had hollowed out a perfect nest, using my tote as a ceiling! I just caught a glimpse of the hairless pinkies, eyes closed, before gently replacing the tote. Afterwards I started to notice the adult using the entrance right beside my giant thistle. About two weeks later the nest was empty. Perhaps the pinkies matured and left, but who knows, I also see many garter snakes!”

– Sophie Gibbs, *rare* Gardener, June 2015

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



Sophie's garden plot. Photo by S. Gibbs

HAVE SOME *rare* FINDS OF YOUR OWN?

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

TURN THE MAP GREEN - MEET PEDRO

Frequent flyer, Pedro, and his friend Luis, showed up in the *rare* bird banding program three years in a row, having made the 4,000 km trek to South America and back each time.

For as little as \$2 a square meter, you can help the *rare* Charitable Research Reserve protect habitat that is important nationally and internationally.

Visit turnthemapgreen.ca to symbolically adopt what's *rare* to you, today!



Pedro, the Yellow Warbler. Photo by J. Dillon & J. Moser

CONSIDER A GIFT THAT COSTS YOU NOTHING IN YOUR LIFETIME

Legacy gifts have a long-lasting impact on the future sustainability of the lands you have committed to preserving intact and in perpetuity for generations to come.

Contact Christine Thompson today to learn more at 519-650-9336 x 118 or christine.thompson@raresites.org.

Introducing International Ambassadors Ljubodrag Andric and Geneviève Caron

By Joy Roberts

Renowned photographers Ljubodrag Andric and Geneviève Caron recently joined Canadian composer, R. Murray Schafer; UK artist and environmentalist, David Buckland; fellow photographer Edward Burtynsky; and activist Severn Cullis-Suzuki, among others, as *rare's* newest International Ambassadors. Together, the couple helps blaze the trail for *rare* to become known as Canada's leading environmental institute, bringing together the brightest minds in ecological and cultural research with artists, authors, and the broader community.

Born and raised in Belgrade, Andric has worked in photography since his teenage years. After moving to Italy, where two of his daughters were born, he fast became known as one of the world's top commercial photographers, shooting global campaigns for the likes of B&B Italia, Samsung, Intel, TD Bank and countless others. In 2015, Andric won Best of Show at the prestigious APA Awards.

After moving to Canada in 2002, Andric also began making time to work on his own artistic portfolio. Unveiling it only in the past couple of years, he has had shows in Los Angeles, Toronto and Milan. Art critic and art historian, Barry Schwabsky, says "I have rarely seen images so utterly unlike snapshots as those made by this artist. They don't, in fact, stop time. Rather, what they do is slow it down, so that time itself can be examined—and more than that, so that it can be experienced, and savored, in its subtly colored vicissitudes." Andric's style is exceptionally clean, intriguingly hyper-realistic and always a combination of effortless visual simplicity and refined mood. His imagery is often infused with understated humour, but always elegant and iconic. "A good image should always leave some questions unanswered, remaining interesting in a new way every time we see it," he says.

In Canada, Andric met Geneviève Caron. Born in Chicoutimi, Quebec, Caron was pursuing her photographic career in Montreal. She, too, has worked with the



Ljubodrag Andric & Geneviève Caron. Photo by G. Caron

world's best-known household brands, including Coca-Cola, BMO, and Toyota, among many others. But perhaps it was their relationship to light and shadow that brought them together. Caron's mesmerising portfolio features the human face with minimal interference from props and background features. Her stunning photography often highlights the beauty of diversity, with people of all ages and colours, many of them children. Each image in her visionary portfolio reflects her trademarks of minimalism, lightness and restraint. Her work has appeared in many well-known magazines, such as *Chatelaine*, *Glow* and *Canadian Living*. A graduate of Laval University in Quebec City, Geneviève is the winner of numerous North American photography awards, including first prize in the fine art category of the 2009 APA National competition.

These citizens of the world have more than *rare* to unite them in Waterloo Region: although shot years apart, Andric has photographed the BlackBerry while Geneviève was commissioned by The Globe and Mail to photograph BlackBerry CEO John Chen.

They are both also outdoor enthusiasts, holding their wedding in Algonquin Park, and both do pro-bono work for their favourite causes, including *rare*. The couple live in Toronto with daughters Veronica (21) and Cecilia (6), while Lucrezia (19) is studying in Rome. ■■

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Artefacts found on the property go back more than 10,500 years and the *rare* Charitable Research Reserve acknowledges the Chonnonton people (“people of the deer”) on whose traditional territory we live and work, and we offer respect to our Haudenosaunee, Anishinaabe, and Métis neighbours as we strengthen our relationships with them.



First year Garlic Mustard basal rosettes are best for pesto. Photo by L. Cymbaly

Garlic Mustard Pesto

Managing invasive species is important to protecting our natural landscapes, but just because you are removing them, doesn't mean you can't eat them! Species like Garlic Mustard (*Allaria petiolata*) are a versatile twist to most recipes that call for herbs. Remember to collect garlic mustard from areas that have not been sprayed (avoid roadside infestations) and always research an invasive species before eating it!

Makes about 1 cup

*3 cups packed Garlic Mustard green (young leaves from first year basal rosettes work best)

*1/2 cup freshly grated Parmesan Reggiano cheese

*1 cup extra virgin olive oil

*1 cup pine nuts (or substitute for walnuts)

*1-2 minced cloves of garlic

*Salt & pepper to taste

1. Thoroughly wash Garlic Mustard greens, discarding stems which can be bitter. Pat dry and roughly chop.

2. Place Garlic Mustard greens, nuts, and garlic in a food processor. Run food processor on high for at least a minute to combine ingredients.

3. With the food processor running, add olive oil slowly in a steady stream.

4. Turn off food processor and add cheese. Pulse food processor to combine. Add salt and pepper to taste.

There are plenty of ways to enjoy this delicious recipe: on pasta, as a spread on crackers, as a topping for grilled meats and fish, or as a topping on a pizza!

Looking for more? Why not try making a Garlic Mustard chimichurri or a horseradish substitute using the second year taproot of Garlic Mustard!

FEATURE

Ciência Sem Fronteiras intern, Alaises Weber, shares her *rare* "science without borders" experience.

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