



FEATURING
rare's response
to COVID-19



REVIEW

FALL/WINTER 2020

Chipmunk. Photo by J. Moser & J. Dillon



Reflecting on the impact of the pandemic on *rare*

By *Tamanna Kohi*, *rare Development & Communications Officer*

Change is the new normal as the landscape of work in corporations, businesses and non-profits shifts to accommodate life in a global pandemic. Non-profits in Waterloo Region are experiencing drastic disruption to essential community services and programs affecting the way youth, marginalized peoples, families and the environment are served.

At *rare*, many of the education, research and conservation programs that would have been conducted in-person were cancelled or postponed as an initial response to the pandemic in the spring — a prime fundraising period for charities and non-profits. With the cancellation of virtually every group-based fundraising event planned for the season, profound uncertainty related to funding and capacity has influenced every step forward for *rare*.

How has *rare* managed to stay financially afloat over the past eight months? Just as much as the pandemic has prevented us from gathering, so have many come together to invest in work centred in building relationships and community. Some supporters have contributed to general operating funds — funds we cannot survive without. Even some who face uncertainly themselves are contributing to Campaign 19 — *rare's* broad community request for \$19 to help mitigate the impact of COVID-19. And other major funders have allowed us to use their previously restricted, program-directed funding in any way we deemed necessary, giving us the flexibility to modify programs and respond to opportunities that help ease the pinch. In fact, many funders are changing their funding models based on this sort of feedback from their grantees during the pandemic.

Not only have the funds, of any size, given *rare* a financial stimulus, they have also given us a boost in morale. We know these investments — in spite of uncertain times for everyone — are rooted in trust and we work hard to be ever more worthy of it. We also know our funders share our dedication to building a resilient community in the region. We have always

planned for the long term, starting with our motto of “intact in perpetuity” to describe land securement, but also as a goal for our environmental institute as a whole. A great deal of this long-term thinking is embedded in our staff who have been busy creating new operating models in administration, education and garden departments, finding new ways to support vulnerable peoples and advocate for inclusive approaches to structural change. Among our enhancements are:

- pivoting our education programs from in-person school-led field trips to virtual events and piloting an outdoor school experience at *rare* to continue to provide valuable opportunities for learning and to foster a deep connection with the local environment for both children and adults as they cope with stress;
- using humorous videos to promote support and involvement — who knew we had such in-house talent!?
- taking advantage of the shutdown of our headquarters to do renovations that are overdue and that will allow us to invite in Indigenous Elders and other community leaders to work along side us, further helping to meet our goals for a new model of conservation in Canada;
- keeping our trails open and offering outdoor spaces for safe gatherings;
- finding creative ways to keep the gardens going; while we did not make our record of 9,000 lbs of organic produce donated to local food banks, it wasn't for lack of trying.

The work *rare* does to discover best practices for the planet is also critical to our community's health. It's clearer than ever that our theme of “connectivity,” an important concept in land conservation, is also critical to a healthy community. At no time have we needed each other more. We need collective action toward a healthier planet and we need to work together to show resilience during this global crisis.



Our long-term planning to serve the community with opportunities for mental well-being and food security has helped us get through what we hope is the worst of the crisis. But even if there is more to come, we will continue to be problem-solvers for our local community while we show what this area has to offer the world.

As a land trust and environmental institute, *rare's* ultimate goal is to make the world a more sustainable place. The United Nations Sustainable Development Goals state that providing good health and well-being are critical to becoming a more sustainable world. Our work at *rare* helps to close a major gap in the area, which currently needs more of our community-owned, land-based conservation efforts as well as related involvement opportunities.

We view the unprecedented changes of the pandemic as an opportunity to inspire collective action toward a more resilient community. By focusing on conservation, including land securement, ecological restoration, research and education with the trust of our donors dedicated to positive change, we believe it is possible to arise out of this crisis stronger than ever.

Stay tuned to learn about how we intend to build a more resilient community in our new Strategy and Plans for the next five years on our website, raresites.org.



Socially distanced Springbank Farm interns with a July harvest of carrots. Photo by T. Jarvis

Introducing: *rare's* Anti-Racism & Equity Building Task Force

Over the summer, the *rare* Charitable Research Reserve committed to ensuring BIPOC and LGBTQ+ communities and voices are reflected within and across our work by creating *rare's* first Anti-Racism & Equity Building Task Force. Through our Task Force, *rare* will continue to work to strengthen inclusivity through board, staffing and volunteer practices to uphold our responsibility within the non-profit sector to be accountable and hold space for more members of our diverse community.

Feeding community through thick and thin

By Taryn Jarvis, *rare* Property, Facility and Garden Coordinator

This year's global pandemic has affected everyone's lives in unprecedented ways and significantly impacted municipal services, including the operation of community gardens across Waterloo Region. The Springbank Community Garden at *rare* was no exception. The government-mandated garden closures early in the season had many participants worried about their access to fresh foods and regular exercise outdoors, and about their general quality of life.

Providing fresh, organic produce to the most vulnerable in our community has always been one of *rare's* commitments. As a response to the threat that many in our community would lose their access to these foods, the *rare* fundraising team launched Campaign 19 in April. Campaign 19 funds ensured that we could continue growing seedlings in the *rare* greenhouse, then transition the seedlings to the fields, and eventually donate the resulting produce to the Cambridge Self-Help Foodbank and the Food Bank of Waterloo Region. According to Food Banks Canada, the demand for the use of food banks across the country jumped 20 per cent on average during the pandemic. Support flooded in from so many community members. We are all immensely grateful to everyone who donated \$19 to help feed our community. Together, we raised over \$8,500 to support food production at the Springbank Food Bank Garden.

As the COVID-19 pandemic evolved, the Province of Ontario decided to re-open community gardens as an essential service. These gardens truly are a much needed and critical source of fresh food for many individuals and families, including those who face food insecurity. Being able to reopen lifted spirits and relieved a good deal of stress and worry for many. The gardens team at *rare* has kept in close contact with the Region of Waterloo Public Health and Emergency Services, seeking advice and recommendations on how to safely operate community gardens while ensuring physical distancing and cleanliness. New rules were established and most gardeners were able to return to their beloved gardens.

Despite all the negative impacts, we also experienced some positive changes. Many people had more time to garden this season. Some gardeners even chose to help those who were unable to come to the garden due to the pandemic. This demonstration of community spirit was heartwarming during these difficult times.

Although our community garden members were allowed to return, as per current public health regulations, the general public could not enter the garden area. We also needed to temporarily suspend all volunteer groups and the *Every Child Outdoors* (ECO) program in the gardens. In a normal year, hundreds of community volunteers join the *rare* team in the food bank gardens to grow food for the less fortunate. We simply could not proceed as usual this season. Despite these challenges, our limited staff and a handful of community garden members continued to work on the land to make the best out of what seemed like an impossible situation. Through these efforts, we managed to deliver 3,827 pounds of organic produce to the local food banks by the end of October, which is an incredible result of many hours of a true labour of love.

With all the new challenges and uncertainties that the pandemic continues to bring, it is easy to see how gardens play an important role in keeping our community healthy, happy, and connected to nature.

If you are interested in volunteering in the Springbank food bank gardens at *rare* or to learn more about how you can help at the Springbank Community Gardens, please contact Taryn at Taryn.Jarvis@reresites.org.

Turtles for hope

By Sarah Marshall, *rare* Conservation Technician



Baby snapping turtle with hypomelanism. Photo by S. Marshall

The 2020 *rare* Turtle Rescue Project is celebrating another astounding success! This popular program was launched in 2017 to mitigate turtle decline in Waterloo Region/Wellington. Although we enjoy a high diversity and concentration of turtles here, southwestern Ontario is also home to dense road networks and concentrated development that continues to expand. All eight species of turtles in Ontario are at risk, largely due to habitat loss and road mortality.

The Turtle Rescue Project collects vulnerable turtle nests from roadsides, bike trails, ball diamonds and many other high-risk areas. After spending approximately two months in the incubators, the hatchlings are released in a suitable wetland near their original nest location. This conservation work allows new generations of turtles to pass through the two most difficult parts of a turtle's life: surviving long enough to hatch and making it to water for the first time. This year, a *rare* Turtle Team comprised of staff and volunteers collected 74 nests and released over 1,700 hatchlings!

Due to COVID-19 related delays on permits from the Ministry of Natural Resources, the Turtle Team released a call to the community asking for nest protectors to be built using the schematic provided by Canadian Wildlife Federation. Met with overwhelming support and resources, the Turtle team was able to protect an additional 45 nests with the protectors throughout Waterloo Region/Wellington. In fact, the turtle nest protectors were such a success that they will continue to be used in future years.

As the Turtle Rescue Project has grown, media coverage of the work done at *rare* has grown too! The Turtle Team was featured in many heart-warming news stories in the Waterloo Record and Guelph Today. Segments on CBC-KW and CTV-Kitchener were shared nation-wide.

Two turtle hatchlings had their own time in the spotlight! Through an online draw on *rare's* social media platforms, Ben Ziegler, pictured below, won a socially-distanced visit to *rare*, where he joined the Turtle Team to name and release Shellby and Storm. This project's public platform has grown, and the communities involved have become more invested in turtle conservation. The importance of discussing bigger steps for turtle protection must also grow as well. Long-term solutions to turtle decline



Ben at Lamb's Inn with the turtles. Photo by K. Ziegler

Celebrating Award Recipients in the *rare* Community: Chris Gosselin and Joy Roberts

This October, Christopher Gosselin, recently retired Manager of Environmental Planning for the Region of Waterloo and current *raresites* Land Securement Team member was awarded the 2020 Ontario Land Trust Alliance (OLTA) Vision Award. We are also pleased to announce that recently, Joy Roberts, Chair of the *rare* Board; Musagetes Foundation Board Chair; Founder & Director, Eramosa Institute was awarded the highest Rotary International Award: the Paul Harris Fellow.

We congratulate Chris for all he has achieved to receive the OLTA Vision Award, recognizing him for his outstanding contribution to the land trust movement and conservation in Ontario.

The *rare* team is thrilled to celebrate Joy Roberts' recognition for her dedication to philanthropy and support of the Rotary Foundation's efforts to better our community.

need to be ecosystem-based and integrated into urban and rural development.

The next step for turtle conservation is turning the project's public support into public investment in proper wildlife crossings and in safe, natural nesting areas across the region. A great example of this approach is the new wildlife fencing and tunnels being installed on Roseville Road in North Dumfries. Projects like this prove that if enough community members get involved, call their local representatives and advocate for change, anything can happen!

If you see any local turtle nests next spring and summer, call Sarah Marshall at 519-650-9336 x114. To support the *rare* Turtle Rescue Project directly to ensure the work of releasing hatchlings continues, donate to the Turtle Rescue Project at raresites.org/donate.



Maple Lane. Photo by K. Martin

The world shut down, *rare*'s trails remained open: Embracing a socially distanced hiking season

By Tom Woodcock, *rare* Planning Ecologist

Sustainability is a goal that can be attained only if we work together towards responsible stewardship. This concept becomes increasingly important as the human population and its consumption increases, placing ever-greater demands on the environment. With a wide variety of woodland, wetland and meadow habitats providing home to thousands of species, *rare* makes a goal of promoting ecosystem conservation and promotes ways to support the community.

Living in proximity to large natural spaces such as those stewarded by *rare* can have a significant effect on a whole community's quality of life. The benefits of accessing nature for physical and mental health are extensively documented. During the COVID-19 pandemic and national lockdown, a time when most outdoor spaces in Waterloo Region/Wellington were closed, *rare*'s extensive eight kilometres of trails remained open. They continue to remain open for members of the community to get outside and experience the sights and sounds of nature within their social bubbles and socially distanced. Most hikers gladly complied to be able to enjoy a brisk walk outside. The *rare* trails can be a place of great joy for everyone. These natural spaces offer a place of solitude for those who have been cooped up at home all day, or can re-instill a sense of routine, or can provide a site to sit back and reflect on all the changes the world has been experiencing. Over the months, we have noticed some members of the community have left non-toxic painted

rocks with positive messages of encouragement for others to find. The trails have brought people together in unexpected ways!

That is not to say that use of the *rare* reserve was without challenges. With more people using the trails over the spring and summer, conflicts sometimes arose with those using trails for different purposes than intended, or disrespecting rules that are in place for the safety of everyone. It is imperative that visitors respect trail signage and posted rules while visiting *rare*. We all must remain six feet apart from others — which always includes keeping our furry friends on leash. These rules are in place for the benefit and protection of all visitors — and most importantly, to conserve our remaining habitats for the species that call them home.

If we all help by continuing to follow health and safety regulations, the trails will continue to remain open and conservation lands in Waterloo-Wellington can continue to be protected and enjoyed — no matter what.

You can watch the seasons transition from autumn to winter on the *rare* trails within the coming weeks. Visit raresites.org for a fulsome trail map. Be sure to take photos or selfies and tag *rare* on social media to show us how you enjoy the trails. We're always happy to see you in nature!

Keeping environmental education running is more critical now than ever before

By Istafa Sufi & Matthew McGuire, *rare* Educators

According to a survey by the University of California, Berkeley, Lawrence Hall of Science, of the 1,000 environmental education or outdoor schools surveyed in the United States, 63% were uncertain whether they would remain open if COVID-19 restrictions last until the end of the year. These circumstances are echoed in Canada and come at an unfortunate time, as outdoor and environmental education is now more important than ever before. While we all deal with the COVID-19 crisis, a much bigger and even more challenging crisis continues to worsen — the climate crisis. To create solutions and adapt to the inevitable climate issues of the present and future, children today need to be educated about the natural world they live in. Other than preparing children for these difficult challenges or a better connection to nature, there are many more benefits of environmental education. Therapeutic effects of being in nature are well documented and help reduce stress, improve mental clarity and help promote positive mental health. This is especially important in this difficult time, as the current pandemic has taken a toll on the mental health of children and adults alike. There are also physical benefits to being outdoors, which usually involves movement, and in turn has additional positive benefits that improve mental health.

Therefore, as part of the *Every Child Outdoors* (ECO) program, *rare* continues to develop resources and activities to help families in our community keep their connection to nature alive during this difficult time. Throughout the last several months, we have created fun, educational activities including videos and Paw Prints activity sheets that can be found on the *rare* website. As we move into the school year, our network of teachers that visit *rare* each year have expressed a similar need: “We

need physically distanced outdoor activities!”

To address this need, we will continue to research and share nature-based activities that can take place outdoors at any school and help students to learn about and engage with the local environment. Nature Activity videos will be released throughout the fall and winter, and you can access them as soon as they are released by subscribing to *rare's* Youtube page. These videos will be accessible to anyone, free of charge, and will help children and adults connect with nature nearby. In addition, we are working on adapting our in-person programs to be able to bring students back to the outdoor classroom at *rare* in a more formal manner. Our current on-site programs are adjusted to small groups of learners. Over the course of eight weeks this autumn, a new pilot program, *rare* Nature School, will run once a week. This fully outdoor-based program gives children the opportunity to be outside all day, learning about the environment through hands-on inquiry. Children will be able to engage and interact with the *rare* lands and the local environment through art, movement and direct exploration. While adhering to physical distancing guidelines from the Ministry of Health, we will be able to offer a meaningful opportunity to connect students with the local environment and help to foster tomorrow's land stewards.

If you are looking for engaging videos, activities and experiments to watch and try alongside your children, visit *rare's* Activities for Kids page on raresites.org. To learn more about *rare* Nature School or to join the waiting list for our winter semester starting January 2021, please reach out to the education department at education@raresites.org.



rare Nature School in session. Photo by I. Sufi

Ask a Researcher: What's it like to conduct research during a pandemic?

By Aleksandra Dolezal, PhD Candidate at the University of Guelph and 2020 Ages Foundation Fellowship Recipient

Graduate students have always dealt with anxiety for the future, financial struggles, and high-pressure work environments. Since the onset of the COVID-19 pandemic, however, these students have faced unexpected new challenges. For many, their research has halted entirely. Having lost funding or access to the equipment and facilities necessary for their research, they have been unable to begin their programs. Universities and colleges closed their doors, and little is known when “scientific business” will be back to normal. We asked Aleksandra Dolezal to share her first-hand experience with our readers.

Q: Can you tell us about your research?

First, I want to say that I was fortunate enough to work at *rare* this summer in an isolated prairie grassland field. My research was deemed essential under the Ontario guidelines because it has an agricultural focus.

My research objective is to investigate the mechanisms underlying insect crop pest colonization, aggregation and damage in agroecosystems. I set out to test four core factors that can be especially influential on insect pests in agroecosystems: plant resources; predators; seasonality; and human impact, especially through the application of agro-chemicals such as fertilizers and pesticides. I created an experimental farm which consists of six treatments of soybeans.

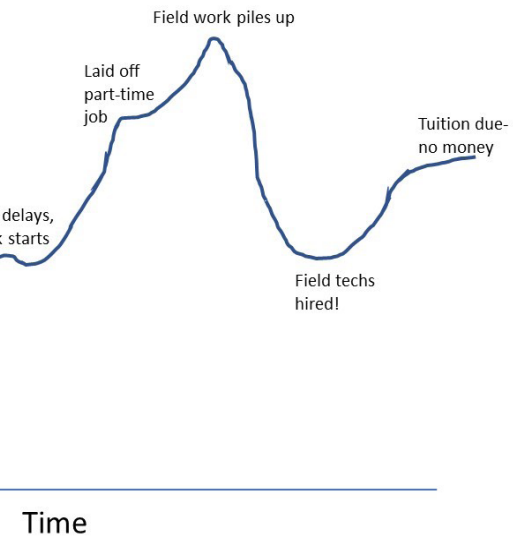
The goal of this experiment is to unravel which mechanisms are important for soybean crop damage and soybean aphid pest colonization through time and space. Understanding which mechanisms are important and at what stage of the crop development they are most important is necessary to devise creative solutions for disrupting pest colonization, aggregation, and damage.

Q: What has been your personal experience with conducting research and adapting to work in these uncertain times?

When COVID-19 was deemed a pandemic, my research was in the planning stage. There were

so many unknowns for the future of my research and as a PhD student starting my first year of fieldwork. This is when the panic set in. If I was unable to do my research, I was afraid of how the setback would harm my early career. I spent two months waiting at home with my eyes glued to my computer screen for updates from my university about field work approvals. I finally had my answer in May. What I have learned personally from this experience is that I am able to adapt to change quickly and not eager to quit no matter the pressure and anxiety (see figure of my anxieties above).

Many of my academic friends were also struggling with anxiety and experiencing different research struggles. Most work involves access to labs and facilities that our university had not opened yet. Everyone is struggling



financially. We are worried about paying tuition, having access to bus transportation or lab access, being hired as field technicians — all the things we routinely took for granted last year are unknown now and that's a very scary situation to be in. Understanding all these changes, how they impact students and research, and how they affect our future is crucial to begin to fix the situation and to continue our work and research throughout the pandemic.

Learn more about Aleksandra's research on *rare's* blog and YouTube channel, featured as part of *rare's* virtual Arts & Science Showcase in early October. How has the pandemic affected your research? Post and tag *rare* in your story on social media.



Small colony of aphids on a soybean leaf. Photo by A. Dolezal

Supporting young researchers: Ages Foundation Fellowship recipients 2020

By Jenna Quinn, *rare* Program Scientist — Research Priorities, Partnerships & Monitoring



Rohit Verma



Elaina Greaves



Aleksandra Dolezal



Kyle Schang

A graduate student's life can be a blur. Students often demonstrate intense dedication to their research project, focusing on the big picture while managing the smallest details. Enter 2020 and a global pandemic that forced many individuals to do the seemingly unthinkable — press pause without any clear idea when and if the work could continue. Students saw their projects at universities and colleges cancelled, delayed, or redesigned. Many had to cope with fewer resources and less support than ever before. It was therefore especially gratifying to award this year's Ages Foundation Fellowship and Bursaries to four students navigating the ins and outs of an unprecedented year.

Since 2010, *rare* has awarded more than \$70,000 to graduate students who are completing environmentally-relevant research projects on the reserve. A portion of the prize is earmarked for students to attend a conference or symposium in their discipline. We are pleased to announce this year's recipients of the Ages Foundation Fellowship and Bursaries program.

Rohit Verma, MES Candidate at the University of Waterloo, will test whether an Unmanned Aerial Vehicle (aka a drone) can be used to identify American Beech trees that are declining or dead due to Beech Bark Disease. Healthy and diseased trees have different canopy temperatures. By equipping the drone with a thermal infrared camera and flying overhead, Rohit hopes to capture these differences and ultimately improve forest management responses to this disease.

Elaina Greaves, MSc Candidate at the University of Guelph, wants her work to help conserve our native crabapple species. Her research could also eventually aid other native southern Ontario tree species that can reproduce with domestic relatives. Native crabapple trees are relatively uncommon in Ontario and often grow in areas close to domestic apple trees. This proximity can result in hybridization that produces offspring. Elaina completed a series of pollination treatments over the last two summers to better understand these interactions and their impacts on

crabapple population size and dynamics.

Aleksandra Dolezal, PhD Candidate at the University of Guelph, is investigating the mechanisms of insect crop colonization in one of *rare*'s long term research sites. She hopes to help better manage the crop damage resulting from pests by understanding how insect pests rapidly find and aggregate on crops. Another aspect of the project investigates the value of semi-natural habitat in stabilizing predator-prey populations in agricultural systems.

Kyle Schang, PhD Candidate at the University of Waterloo, is part of a new study just beginning at *rare*. This study examines the shifting range limits of Carolinian forest species in response to climate change.

Congratulations to all the fellowship and bursary recipients this year! Visit reresites.org to learn more about their projects featured during *rare*'s first virtual Arts & Science Community Showcase and for the upcoming 2021 call for applications.

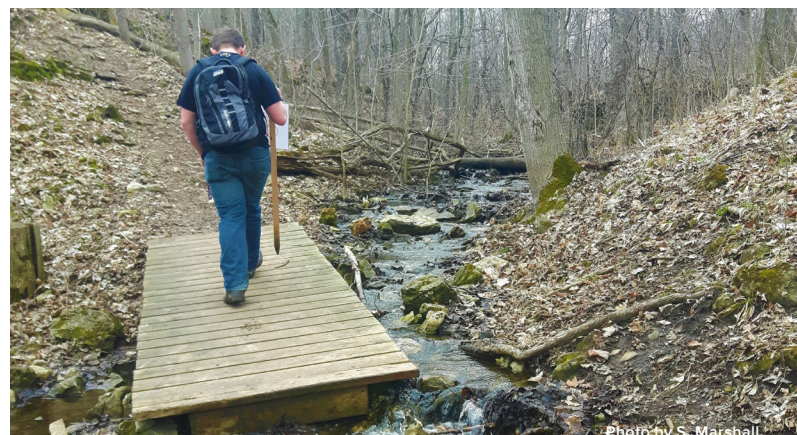


Photo by S. Marshall

Elusive sights in the field

By Jordan Wrobel, *rare* Terrestrial Monitoring Intern

Working with *rare* means becoming a part of a friendly and welcoming organization that is dedicated to addressing environmental issues, through stewarding over 900 acres of highly sensitive lands and promoting education. Many research and monitoring projects are completed throughout the year and across *rare*'s many different habitats, which include alvars, meadows, woodlots, and floodplains. This exceptional variety allows researchers to observe many beautiful flora and fauna species, from the Eastern Red-backed Salamander and Dekay's Brownsnake, to Canada Columbine and Yellow Lady's Slippers.

Butterfly monitoring is a long-term project at *rare*. This monitoring consists of identifying and recording all butterflies observed on the *rare* reserve and watching how the butterfly population changes throughout the summer and between years. A quiet and calm landscape can suddenly explode into a place dancing with the life of these delicate and beautiful creatures of different colours, sizes and behaviours. This summer, approximately 5,000 butterflies were observed at *rare*, belonging to 51 different species! Some of the elusive butterfly species sighted included the Baltimore Checkerspot, Eastern Pine Elfin, Hackberry Emperor and Dion Skipper.

What is *rare* to me?

One of the most remarkable aspects of this organization is the amazing group of staff and volunteers. They are enthusiastic and devoted to expanding our knowledge of the natural world. Together, we take steps to protect and restore ecologically important lands.

Butterfly monitoring this summer involved dedicated volunteers such as Jacqueline Haynes, a student from Wilfrid Laurier University. Jacqueline gained as much from this experience as she provided, "My experience with *rare* this past summer has been very rewarding and educational." says Jacqueline, "I learned many new aspects about conservation, data collection and the environment. As I am continuing school in Environmental Studies, I feel as though this experience has allowed me to grow, gain more knowledge, and have more involvement in the community. Overall, working with *rare*'s team was a wonderful and positive experience, and I look forward to helping in the future."

Our work at *rare* is made possible by assistance



from like-minded individuals such as Jacqueline. These volunteers are ambitious and determined to make a difference in the world. We are looking forward to continuing our fall monitoring before transitioning into the winter.

What is *rare* to you? Email us your story at Tamanna.Kohi@reresites.org — we would love to hear from you! To learn more about upcoming volunteering opportunities with *rare*, email Laura Klein, *rare* Gosling Engagement Coordinator at Laura.Klein@reresites.org.

Celebrating our corporate support in uncertain times



for



This year marks a historic moment: we hosted our 11th annual Walk & Run for *rare* virtually for the first time! When we faced uncertainty about whether to host the event in-person or online, MacPherson Builders pledged their support and became the Title Sponsor. It enabled us to move ahead and plan a fun-filled month-long virtual event between September 1 - 27. As one of the original *Corporations for Conservation* (C4C), MacPherson Builders has supported *rare* since 2013. They continue to be unwavering champions for *rare*'s mission of conservation, research and education. Thank you, MacPherson Builders!

We are also pleased to announce our newest C4C member and 2020 Walk & Run for *rare* sponsor, Marcangelo Foods. Marcangelo Foods manufactures, packages and distributes meat products. They have already shown their support for *rare* by donating a BBQ to complement our historic Slit Barn, where we will be cooking some of their delicious products once we are able to return to working in our offices full-time.

Thank you to MacPherson Builders, Marcangelo Foods and all our C4C partners for their incredible support! To learn more about C4C opportunities, contact Chris Ainsworth, Sponsorship & Events Manager at Chris.Ainsworth@reresites.org.



Everton: the Monarch Capital of Canada?

By Joy Roberts, *rare* Chair of the Board

Yes, Montréal is the first city in Canada to be granted GOLD status as a monarch-friendly community, but surely there must be some reward for Everton, Ontario. This community may well have more butterflies per capita than any other community, thanks in great part to the work of artist Susan Strachan Johnson.

Not only has Susan checked roadside milkweed for eggs and young caterpillars that she takes home to shelter, thereby increasing their likelihood of survival, but she mentors others of us who want to help as well. Thanks to Susan, I can now spot even an egg or the tiniest caterpillar! And when the caterpillars I sheltered started to escape my vase and turn into chrysalises high up on the beams of our kitchen, Susan showed up with a “nursery” fashioned out of a recycled clear plastic cookie container, complete with a device she invented from found materials to help keep the milkweed leaves moist once washed thoroughly in the kitchen. Now a 20-foot ladder isn’t required to release a newly hatched butterfly!

The mortality rate for Monarch caterpillars is very high, due to a host of diseases and parasites and the many risks associated with living in a human-dominated landscape. If Monarch caterpillars are found in high risk locations such as where vegetation is being removed or human activity is imminent (e.g. on a picnic table, doorway, or play structure), it may be safer for the caterpillar to be moved indoors locally and

raised and released. We have now learned that the Ontario Ministry of Natural Resources and Forests regulates the collection, transportation, rearing, and release of wildlife species at risk, including the Monarch, and so next year we will first contact the MNRF for permit requirements, or work with an organization like Toronto Entomologists Association who can provide permit coverage for members.

At last count, Susan had released 36 butterflies. My 10 have joined them in the greater Everton area. Apparently, the season isn’t over until October, with the most butterflies in our area appearing between September 6 and 15. It’s fascinating to think of these delicate creatures, flitting through Eramosa on their way to Mexico. Jenna Quinn, Program Scientist, at *rare* that now owns lands along the Eramosa River and is creating a Conservation Corridor, recommends a number of websites to offer details on Monarch habits and to allow researchers access to our observations: eButterfly that also offers webinars for those who want more information; iNaturalist offers an app for phones to help get the information to researchers; and for those of us rearing and releasing monarchs, Monarch Watch actually allows us to order kits in January so we can tag the butterflies we release! The main indicator of how well we are all doing to stop the collapse of the Monarch population is how many acres they cover when they arrive in the pine and fir forests in the



Monarch in chrysalis. Photo by N. Lightfoot

mountains of central Mexico. In the winter of 2019, researchers reported butterflies occupying just under 15 acres, up from just over six acres the year before. The low was a mere 1.66 acres in 2013 and 2014.

Although progress has been made, a lot remains to be done. It is still estimated that in 20 years the Monarch could be extinct. It is the only butterfly known to make a true migration as birds do. Since they cannot survive the cold winters of northern climates, various environmental cues tell them it's time to travel south, with some flying up to 3,000 miles to reach their winter home. And, yes, one generation makes the journey South, but as many as four generations make the journey North.

To learn more about monarch butterflies and butterfly monitoring at *rare*, visit raredesites.org/research/ecological-monitoring/butterflies, or read about the most recent butterfly monitoring season on the *rare* blog.



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



Yes! I want to support conservation, research & education at *rare*!

I've enclosed my donation in the amount of:

- ☐ \$100
- ☐ \$75
- ☐ \$50
- ☐ \$25
- ☐ 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)

Donor Contact Information

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Please send cheques payable to: ***rare* Charitable Research Reserve**
1679 Blair Road
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Please charge my credit card: ☐ VISA ☐ M/C ☐ A/E

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FWN2020

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Ljubodrag Andric, Photographer; latest work Visible Cities
Michael Barnstijn, retired Partner, RIM; Philanthropist; Founder, Musagetes Foundation
Kehkashan Basu, Founder, Green Hope Foundation
David Buckland, Founder, Cape Farewell
www.capefarewell.com; Director of Art from a Changing Arctic
Ed Burtynsky, 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; Founder, Musagetes Foundation
R. Murray Schafer, Composer; Educator; Environmentalist
Gerry Remers, Former President and COO, Christie Digital Canada & former co-chair Communitech
Jane Urquhart, OC; Author
Frances Westley, Chair of Social Innovation Generation
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 & Resource Studies, University of Waterloo
Mark Pomeroy, Fisheries Biologist, Stantec Ltd.
Don Russell, Qalipu Mi'kmaq/Acadian French Artist
Bill Wilson, retired Teacher; Naturalist; Bird Monitoring Coordinator, *rare*
Brett Woodman, Terrestrial & Wetland Biologist, Natural Resource Solutions Inc.
Tony Zammit, Aquatic & Terrestrial Ecologist, Grand River Conservation Authority

EDUCATION ADVISORY COMMITTEE (EDAC)

Jason Bracey, Teacher, Southwood Secondary School
Colinda Clyne, Curriculum Leader for First Nations, Métis & Inuit Education, Upper Grand District School Board
Louise Dawe, retired Teacher; Community volunteer
Christine Lefebvre (Karonhyakatste), Haudenosaunee Knowledge Guardian
Lynda McCarthy, Professor, Ryerson University
Nicole Robinson, Equity & Inclusion Officer – Aboriginal Focus, Waterloo Region District School Board
Dan Schneider, Outdoor Educator & Naturalist, GRCA, retired
Matthew Suhadolc, U-Turn Diversion Teacher, Waterloo Region District School Board

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 & Design, University of Toronto
John Straube, Associate Professor, Civil & Environmental Engineering, University of Waterloo

EASTERN COMMA COMMITTEE

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Karen Houle, Poet & Philosopher, University of Guelph
Elwood Jimmy, Musagetes Program Coordinator

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Sheila Ainsworth, Chair, Lisaard House
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John English, CM; FRSC; Director, Bill Graham Centre for Contemporary International History, Trinity College/
Munk School of Global Affairs, University of Toronto
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Adrian Hammoud, Owner, Salon Butterfly
Jackie Hatherly-Martin, FCPA FCA, SHAD Canada
Thiam Lim, former *rare* Board Member
Keith Martin, CPA CA, HM Advisors
Douglas McMullen, FCPA, FCA; retired, Sr. V.P. CIBC
Carolyn Meili, President, Stonefields Management
David Mitten, retired; Executive Director, Siding & 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, (see previous)
Paul Ross, Partner, KPMG
Irene Schmidt-Adeney, Writer, Ayr News
Hugh Thompson, CEO, Thompson Centre for Art & Design

VOLUNTEER AND CONSULTING ADVISORS

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Affiliate Member, Professor, Conestoga College
David Beatty, (see previous)
Ken Dance, President, Dance Environmental Inc.
Valerie Hall (see previous)
Joy Roberts (see previous)

RARESITES LAND SECUREMENT TEAM

Graham Buck, Ministry of Natural Resources & Forestry
Kathryn Enders, Ontario Farmland Trust
Chris Gosselin, retired Manager of Environmental Planning, Region of Waterloo
Kate Hagerman, Manager of Environmental Planning & Sustainability, Region of Waterloo
Peter Krause, (see previous)
Dr. Greg C. Michalenko, Grand River Environmental Network
Dave Montgomery, Premier Environmental Services
Bill Mungall, retired
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 & Environmental Sciences, University of Waterloo
Angela Tsementzis, Architect; B.E.S. B.Arch, OAA, LEED AP

STAFF

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Sponsorship & Events Manager

Veronica Chapman

Manager of Finance, Fundraising & Administration

Gabby Crowley

Administrative Assistant

Taryn Jarvis

Property, Facility & Garden Coordinator

Laura Klein

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Tamanna Kohi

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Sarah Marshall

Conservation Technician

Matthew McGuire

Gill Ratcliffe Educator

Jenna Quinn

Program Scientist — Research Priorities, Partnerships & Monitoring

Mackenzie Ramsay (Smiling Water)

Indigenous Research Fellow

Kim Robichaud

Administrative Coordinator

Istafa Sufi

Educator

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@rarsites.org
rarsites.org



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Review Fall / Winter

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