



Forest Health Monitoring

Situated alongside the Grand River, **rare** is a 900+ acre urban land trust that exists for the purposes of education, research, and conservation. Home to old growth forests, native prairie, limestone cliffs, wetlands, sustainable gardens, habitat gardens and living pond, trail networks and a diverse array of birds, plants, and animals, **rare** is an area of provincial, national, and international environmental significance.

At **rare**, we provide several opportunities for students and teachers to experience curriculum based learning *outside the classroom*. It is becoming increasingly important for students of all ages to be involved in a variety of outdoor education experiences. The programs provided at **rare** are helping to bridge the gap between the classroom and the natural environment through experiential and investigative hands-on learning. Home to over 24 habitat types, **rare** is an ideal location for curriculum based outdoor programming, providing students with the opportunities to develop the knowledge, skills, values, and motivation necessary to become responsible, environmental citizens. The “bigger picture” will be a key underlying theme to **rare’s** programming. Students will understand that the actions of today will greatly affect the outcomes of tomorrow.



Our programs at **rare** are based on two models of education: *Chain of Learning* and *Every Child Outdoors*. The *Chain of Learning* is a concept where knowledge, expertise, and ideas are directly transferred from researchers to high school students, elementary students, families and community members. *Every Child Outdoors* is a model of experiential learning, inspiring youth to adopt a sense of curiosity in the natural world through hands-on environmental learning in the out of doors.

## Mirrored Research Monitoring Modules

The objective of *rare's* Mirrored Research Program is to engage secondary school students in research and monitoring activities that are consistent with *rare's* existing research and monitoring framework. Through class visits from *rare* scientists and field trips to *rare*, students will have the opportunity to take part in hands-on experiential research and monitoring activities as they are performed by *rare* staff and others around the country. The results will be recorded and entered into a student database and the results will be shared with the scientific community, schools, both regionally and provincially.



Salamander Monitoring

Grade	Module Title	Dropoff/Pickup Location	Description	Fee	Booking Information
Open	<b>Salamander Monitoring</b>	ECO Centre	Students will have the opportunity to monitor salamander populations following EMAN protocol and procedure. Students will work with provided equipment to measure soil moisture, atmospheric parameters, and lifting Artificial Cover Objects (ACO's) to weigh and measure salamanders found underneath.	\$9.00 per student	Module available in Fall and May/June dependent on seasonal weather.
Open	<b>Butterfly Monitoring</b>	South Gate	Students will have the opportunity to identify and monitor butterflies in the fields, meadows, and wooded areas across the Thompson Tract. Students will work in pairs and be equipped with scientific grade butterfly nets, butterfly field guides, pencils, and clipboards while searching for butterflies along specific transects.	\$9.00 per student	Module available in Fall and May/June dependent on seasonal weather.

Open	<b>Forest Health Monitoring</b>	ECO Centre	Students will have the opportunity to identify and measure trees within permanent forest plots on <i>rare</i> property. Students will work in groups to measure tree height, diameter at breast height, identifying structure class, assessing crown health, and observing for signs of stress or disease on tree bark.	\$9.00 per student	Module available in Fall and Spring dependent on seasonal weather.
Open	<b>Ducks Unlimited Project Webfoot: Benthic Invertebrate Monitoring</b> 	ECO Centre	Students will hike to Grand River and/or nearby wetlands to extract samples with D-nets using the kick-sweep method. In groups, the students would then sieve and prepare the sample for identification in order to determine the final health rating of the sample site.	<b>FREE</b> of student costs, with a \$75 bus subsidy available through Ducks Unlimited Canada.	Module available in May/June dependent on and seasonal weather. Please inquire regarding availability of funding.
SNC2D SNC2P SBI4U SVN3M SVN3E SPH3U SPH4U SPH4C	<b>North House: Exploration of a Green Model Home</b>	Southside Lot	Students tour North House, a new and innovative pre-fabricated solar-powered green housing model that produces more energy than it consumes. Students will encounter technologies that make sustainable living both attractive and rewarding. Using infrared thermometers, students will measure North House's ability to regulate temperature using solar energy.	\$9.00 per student  <b>\$5.00 for Nov/Dec 2016 bookings! (1.5 hour program)</b>	North House module available from November to June.
SNC1D SNC1P SBI4U	<b>Local Ecology</b>	ECO Centre	Hike through undisturbed and disturbed natural landscapes, exploring the complexity of feedbacks between the biotic and abiotic environments. Discover how plants and animal interactions create stable ecosystems.	\$9.00 per student	Module available in Fall and Spring.

SNC1D SNC1P SBI4U SES4U CGC1D CGC1P CGF3M	<b>Landscapes in Transition</b>	ECO Centre	Explore the sedimentary limestone cliffs for fossils of ancient sea creatures that characterized the shallow equatorial seas that once covered southern Ontario. Discover evidence of local glaciation and current fluvial processes of the Grand River.	\$9.00 per student	Module available in Fall and Spring.
SNC1D SNC1P SVN3M SVN3E CGR4M CGR4E	<b>Sustaining Healthy Ecosystems</b>	South Gate	Trek through old growth and managed forests and meadows. Students will explore how plants change the physical environment through the process of succession. Observe the results of human impact and land use management.	\$9.00 per student	Module available year-round.
SBI3C SBI3U SBI4U	<b>Biodiversity</b>	South Gate	A hike through Indian Woods takes students through a variety of local habitats. Students will examine forest composition, tree age, and the physical environment to investigate forest restoration, regeneration, and human impacts on the diversity of our natural spaces.	\$9.00 per student	Module available year-round.
SBI3U SBI3C	<b>Naturally Organic</b>	Southside Lot	Learn about the different agricultural practices and their impact on biodiversity and human health. Students explore different composting practices and the effects of soil types and plant growth.	\$9.00 per student	Module available in Fall and Spring.
SVN3M CGC1D CGC1P	<b>Becoming a Locavore</b>	Southside Lot	What are the impacts of our choices on local, regional, and global resources? Students will engage in organic farming activities to learn first-hand about local food operations.	\$9.00 per student	Module available in Fall and Spring.

CGC1D CGC1P SNC1D SNC1P SNC2D SNC2P	<b>Snow Study</b>	ECO Centre	Students snowshoe to a location where they will investigate the physical characteristics of snow. Students will dig a snow profile, observe snow crystals, and measure temperature gradients in the snow. Students also explore how snow can affect the survival of animals in winter.	\$9.00 per student	Module available in Winter, dependent on seasonal weather and snow accumulation.
SNC1D SNC1P SNC2D SNC2P SBI3U SBI4U	<b>Migration, Hibernation, and Dormancy</b>	ECO Centre	Students will visit forest and meadow habitats to investigate animal hibernation, signs of winter animal activity, and plant dormancy. Observe the links between physiological, behavioural, and morphological adaptations of the biota that allow survival.	\$9.00 per student	Module available in Winter, dependent on seasonal weather. In the event of minimal snow accumulation, module can be delivered without snowshoes.



## Secondary Modules at *rare*

At *rare*, we provide several opportunities for students and teachers to experience curriculum based learning outside the classroom. It is becoming increasingly important for students of all ages to be involved in a variety of outdoor education experiences. The modules provided at *rare* are helping to bridge the gap between the classroom and the natural environment through experiential and investigative hands-on learning. Home to over 24 habitat types, *rare* is an ideal location for curriculum based outdoor programming, providing students with the opportunities to develop the knowledge, skills, values, and motivation necessary to become responsible, environmental citizens. The “bigger picture” will be a key underlying theme to *rare*'s programming. Students will understand that the actions of today will greatly affect the outcomes of tomorrow.



Our modules at *rare* are based on two models of education: *Chain of Learning* and *Every Child Outdoors*. The *Chain of Learning* is a concept where knowledge, expertise, and ideas are directly transferred from researchers to high school students, elementary students, families and community members. *Every Child Outdoors* is a model of experiential learning, inspiring youth to adopt a sense of curiosity in the natural world through hands-on environmental learning in the out of doors.

## Booking Information

- Modules will be offered from September 12, 2016 to June 30, 2017
- All modules are offered as half day (2.0-2.5 hours in length) with flexible start times
- Limited number of spaces available, please book well ahead of time
- For groups of less than 15, there is a minimum fee of \$135.00
- Modules are weather permitting; trips may be cancelled with impending inclement weather
- \*\*Full day modules are available upon request

The modules are not limited to the outlines listed above; modules can be tailored for specific course requirements and student needs. We also offer exciting opportunities for school environmental clubs.

**Explore, Learn, Be Curious, Be Inspired, Be Active!**



For more information, please contact:

**Gerrit Kamminga**  
Lead Educator & Program Facilitator

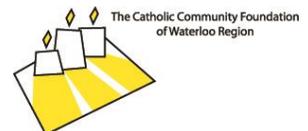
[education@raresites.org](mailto:education@raresites.org)

p. 519-650-9336 x123

f. 519-650-5923



**Ducks Unlimited Canada**  
Conserving Canada's Wetlands



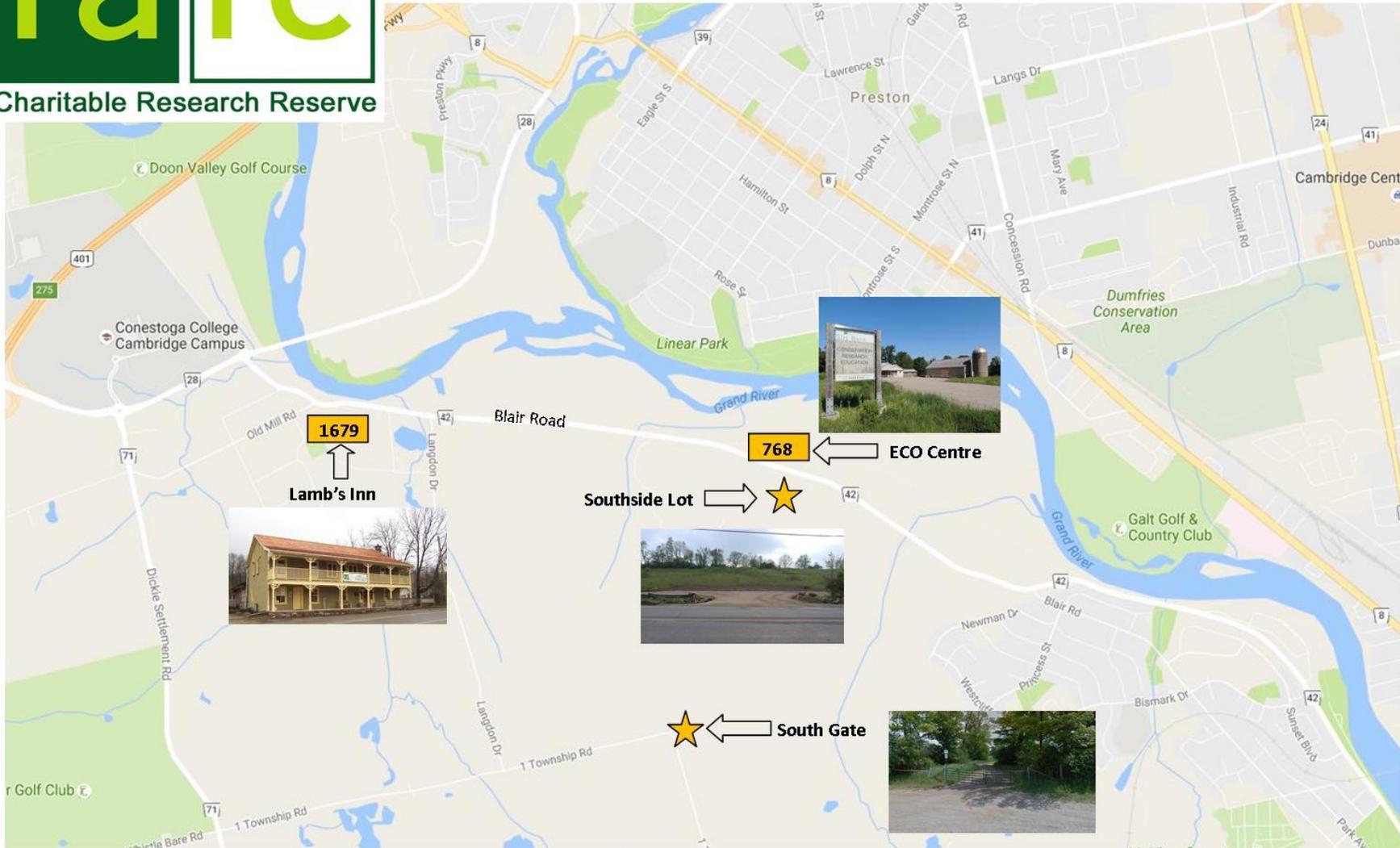
**rare Charitable Research Reserve**  
1679 Blair Rd.  
Cambridge, ON  
N3H 4R8

For more information, visit us at  
[www.raresites.org](http://www.raresites.org)



Charitable Research Reserve

# rare Charitable Research Reserve Module Locations



Lamb's Inn: 1679 Blair Rd.

ECO Centre: 768 Blair Rd.

South Gate: L-Bend on 1 Township Rd.  
(Whistle Bare Rd.)

Southside Lot: Across Blair Rd.  
from ECO Centre