the rare review

Winter 2008

VISITORS VIEWS

Just a sampling of views from recent visitors to ***rare***…

Field Trip

Trees huddle motionless
in the quiet of a cloudless fall
tempting those with a rural thirst
to tramp in the trails
at Springbank Farm
Some downtown girls
gingerly tip-toe
through patchy rows of indigo,
marvel at the rosy crops
remember mothers' stories
of cabbage patch legends
of finding babies under lilac trees.

Others with farming roots
cradle tender growth,
riddle fingers
trail deep veins
claw fresh loam
just to sift soil between
their hands and breathe
familiar scents of woodsy earth.
A meadow vole
in search of sunflower seeds
scurries under grassy cover,
sunlight bathes through
burdened branches
canopies leaves
in autumn's early fading.
We picnic on the hill
while table nestled in the greens
watch the city in the distance
through twilight's crimson flush
now small and insignificant
compared with purists' dreams
and bones of sparrows.

By Diane Attwell Palfrey
Cambridge Writers' Collective

Cambridge Writers' Collective visited the Springbank Farm and wrote poems inspired by their experience which they shared at a ***rare*** Inspiration Poetry Night. They have since given ***rare*** framed copies of their work. Thank you! Please drop in to read others.

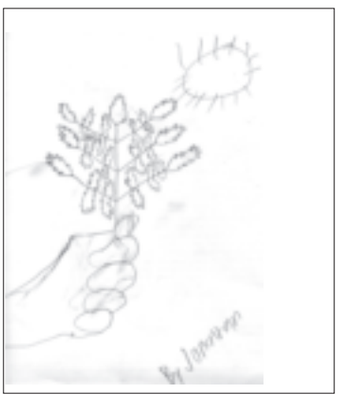
In September, nearly 100 people visited ***rare*** during Doors Open Waterloo Region. The theme of the event this year was Green Waterloo Region and over 95% of the people that hiked with us that day were first time visitors.

Doors Open.

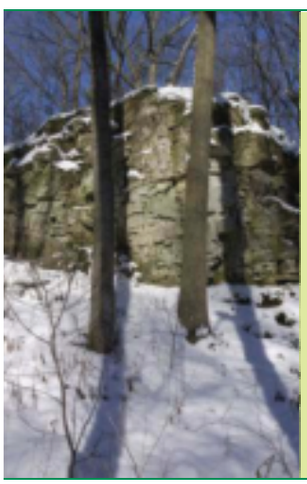
During this school year, we have had student groups out for hikes, stream studies, farm tours, etc. Still other classes donated their time to help do trail building and clean up, to work in the garden, assist with restoration projects and to instruct younger students. Each child visiting has a unique view of what makes ***rare*** special and interesting to them.

We listen to visitor's feedback: Our readers and event participants asked if we could have more ways for children to learn about nature and the environment; so we have added ***rare*** PAW PRINTS insert to our newsletter, full of activities for our younger readers and are including family-oriented outings in our Events Calendar.

Take a look and try out the activities!



Chocolate mint from the herb garden.



Inside This Issue

Volunteer Profile

Greg Vincent
& Jeanette MacDermott

If you're an avid hiker, chances are you've heard of Greg and Jeanette; or perhaps you've had the good fortune to hike with them. Their passion for nature will leave you breathless, as will trying to keep up with them on the trails. A young newcomer to Canada recently said of her school hike with Greg, "We were lucky because we had a very nice guider, Greg. He isn't so young, but he is so active and has power inside. And I loved him so much, because listening to his stories was a pleasure for me. And he was so funny too."

Greg and Jeanette have hiked in England, Ireland, Scotland, Wales and the U.S. Greg is a self-described "retiree from the rat-race," formerly an air-traffic controller, while Jeanette is a children's librarian.

As the seasons change, cross-country skiing and snowshoeing or canoeing and cycling provide a connection with nature of which they never tire. But it is always to hiking they return whether on the look out for the spring's first flowers or pursuing their goal to walk the Bruce Trail end-to-end again.

Since Greg now has more time, he studies the maps and plans the hikes, while Jeanette focuses on rounding up other participants. With First Aid training, a two-way radio system and a mapping GPS, safety is always top of mind – something a fellow hiker appreciated when he slipped on the Bruce Trail. He was stabilized and in hospital within thirty minutes!

Off the trails, Greg has written extensively on what a novice might need to know to enjoy a first attempt at hiking, or other outdoor activity, such as snowshoeing. As volunteers they have led hikes for the Bruce Trail Association, the Grand Valley Trails Association and the U.S. Sierra Club, providing hikes that, "enthrall, teach and tempt, instruct and impress." Check out the snowshoeing outing the pair is leading listed in the Events Guide accompanying this newsletter.

Greg and Jeanette first led a hike at ***rare*** in spring 2006 and consider the Reserve, particularly its Carolinian character in the midst of a growing urban area, to be a local treasure and something worth saving for future generations. They encourage those they are with to enjoy nature, but also to respect it, often repeating the saying, "take only photographs; leave only your thanks." They believe that nature does not need to be "improved upon," that it's best when left undisturbed.

We are truly grateful for the model they provide and for the energy they put into helping build a community spirit that embraces ***rare*** and all it has to offer for everyone.

The Hogsback Connection

by Amanda Newell

I walked the Hogsback for the first time during spring of this year. It was obvious right away that it is a unique, special place. It is a jewel nestled between suburban neighbourhoods and agricultural fields. The personal benefits of experiencing a natural space containing the rich abundance of biotic components (trees, birds, mammals, etc.) and abiotic characteristics (rolling landscapes, fresh air, springs and streams, etc.) that the Hogsback offers are intuitive and innate. There is something about being in nature that resonates with us whether or not we understand it.

Why is it called the 'Hogsback'? In many cases, the term refers to a distinctive ridge in a landscape that, if one uses a little imagination, resembles the back of an old hog. When we at ***rare*** Charitable Research Reserve refer to the Hogsback, we're talking about a 17-hectare section of the charity's land that contains a series of low ridges of sandy loam soil amid organically-rich black muck that is often water-saturated. These 17 hectares are part of a 23-hectare fragment of mature upland mixed deciduous forest, lowland forest and mixed swamp. These woods are comprised of a wide diversity of flora and fauna. The raised Hogsback sections are home to upland species such as white oak, black oak, American beech, sugar maple, and shagbark hickory. The wet troughs between these ridges give rise to yellow birch, black ash and eastern white cedar.

Photographed by H. Wilson

Part of what makes the habitat of the Hogsback, and the ***rare*** property in general, distinctive is that we're on the northern edge of the Carolinian vegetation community type and the southern edge of the Great Lakes-St. Lawrence forest region. This means that there is a unique combination of northern and southern plant species present. The understory of the woods of the Hogsback, for instance, contains leatherwood, witch hazel, round-leaved hepatica, winterberry and the Regionally Rare hemlock parsley and poke milkweed. A notable northern element of the Hogsback found by Wynn Watson is Sphagnum moss, also known as peat moss. It has only been found in the Hogsback.

These plant species combined with a myriad of ferns, mosses, fungi and lichens create a fantastically diverse foundation for the animal components of the ecosystem. My favourite animal experience in the Hogsback so far was when a white-tailed deer and I crossed paths this spring. I noticed the deer when it was only 15 or so metres from me. It watched me as I settled onto the ground, and then relaxed back into grazing for about 10 minutes. Then something I didn't perceive made it bolt deeper into the woods. During the same walk, I scared a tailless raccoon up a white pine. He must have quite the story to tell!

Other animals in the Hogsback include blue-spotted and yellow-spotted salamanders, great-horned owl, ruffed grouse, golden-crowned kinglet, pileated woodpecker, flocks of wild turkey, Eastern screech owl, wood duck, purple finch and, of course, a plethora of interesting insect species.

That's one snap-shot of the Hogsback – an important fragment of southern Ontario habitat. A habitat 'fragment' is smaller and more isolated than the original habitat in the landscape. If these fragments are to be preserved for the well being of future generations, it's important to understand the impact they have on the bigger picture.

One very clear way in which the Hogsback is connected with the greater ecosystem is that its wetlands are the source of Cruickston Creek, which eventually flows into the Grand River. The groundwater that seeps from several areas of the Hogsback joins to give rise to the creek, which flows downhill towards Blair Road. This creek, in turn, gives rise to a diverse wetland system that includes marsh, wet meadow, shrub thicket and swamp habitat. These wetlands support no less than 17 Regionally Significant plant species. The Hogsback and its associated wetlands are all part of the Barrie's Lake – Bauman Creek Wetland Complex. Work is being done to restore the ecological integrity of sections of Cruickston Creek just downstream from the Hogsback. Agricultural land that slopes down either side of the creek has been taken out of production to decrease erosion and trees have been planted.

The long-term vision for the Hogsback is to extend the forested area into the adjacent marginal cropland and reconnect it to other fragmented habitat within ***rare*** Charitable Research Reserve. This will help ensure that these extraordinary pieces of nature are always here, which is a gift our future generations certainly deserve. To learn more about the ecological restoration work being done at ***rare***, please read "Ecological Restoration at ***rare***" by Bill Wilson on page 6 of this newsletter.

Nature Notes *by Bill Wilson*

- On August 4, four GREAT EGRETS fed in the shallows of the baylet on the Grand River above the Confluence. Post-breeding dispersal from nesting colonies on Lake Erie may bring these white heron-like birds to ***rare***. Nesting colonies also exist, however, in Georgian Bay and the Niagara River. So from where did these four egrets disperse? One of the Great Egrets observed by Jerry Guenther and several other observers, had identification leg bands which will allow us to determine where they were banded. Stay tuned.
- Many observers including Friends of ***rare*** have enjoyed observing the three Osprey young preparing to fledge from the nesting platform at Fountain Street bridge (see Fall 2007 newsletter). All three fledged by the 2nd week of August.
- Scores of BANK SWALLOWS swarmed about the Confluence on August 9. Aerial foragers, these swallows had begun their "fall" migration. One month later, on September 9, several hundred TREE SWALLOWS repeated this same activity for the same reason.
- Despite low water levels in late summer, few migrating shorebirds were observed along shorelines through ***rare***: PECTORAL SANDPIPER, LEAST SANDPIPER, KILLDEER, WILSON'S SNIPE, GREATER and LESSER YELLOWLEGS were reported in small numbers during September and October.
- Jerry Guenther tallied GREEN-WINGED TEAL, WOOD DUCK and NORTHERN PINTAIL on October 19 at the Confluence. On October 28, John Macdonald saw three BUFFLEHEAD below the Confluence – two male and a female. By early November, waterfowl arrivals included RING-NECKED DUCK, SCAUP SP., COMMON MERGANSER and COMMON GOLDENEYE.

Photographed by W. Wilson

- Several trail walkers have remarked about water levels of the Grand River at ***rare***: "lowest ever seen"; "lowest in 40 years of living in Preston"; "never recall seeing such a large stretch of exposed cobbles downstream of the island" (see Photo). River observers can quantify their impressions by visiting the Grand River Conservation Authority online [http://www.grandriver.ca/index.cfm] to check daily river conditions.
- I have been asked why the gulls fly barely above the tree tops on the wooded slope downstream of the Confluence across the river from ***rare***. In mid to late October, when wind direction and force permits, RING-BILLED GULLS soar at canopy height above the HACKBERRY TREES, a significant tree species in Environmentally Sensitive Policy Area 36 (ESPA 36). The gulls are feeding on the hackberries. On occasion, a gull attempts to position itself to feed by placing its foot on one of the canopy twigs. The small diameter of the twig and the awkwardness of a webbed foot make the attempt more comical than practical. On occasions in ***rare*** forests, I have also observed PILEATED WOODPECKERS balancing among the canopy branches of Hackberry to strip twigs of hackberries. Taste one of the berries from a lower branch. Some describe the berries as having a taste similar to the coating of M & Ms. Beware the large, hard seed inside the berry.
- This fall, observers have reported raptors in the skies along the river and about ***rare***: RED-SHOULDERED HAWK (Hugh Pogue), MERLINS (Bill Read), COOPER'S HAWK (Shirley and Larry Allen; Bill Wilson). OSPREY (several observers)

continued on page 4

Nature Notes *continued from page 3*

BALD EAGLE (Michael McKeown) and resident RED-TAILED HAWKS, including juveniles (many observers). Michael McKeown observed an adult BALD EAGLE perched "in the usual dead tree" along the rare Cliffs in the early morning of November 14. Bald eagles overwintering on the reaches of the Grand River through rare arrive in mid to late November. Should an eagle or eagles be observed along the river below tree canopy and be observed perched, hunting, feeding for three consecutive days, the Bald Eagle monitoring team considers such eagles to be overwintering ones rather than those stopping over on southern migration. Migrants are observed as early as September and as late as November and appear for about a day.

- In the last issue of ***rare review***, an overwintering BLACK-CROWNED NIGHT-HERON was described. Andy Kelly reports both an adult and young on the river near the Cliffs in late summer. Marilyn Armstrong reported two Night-Herons in the Preston Sewage Treatment effluent stream across from ***rare*** in early fall. As yet, there is no confirmation of this species breeding in Waterloo Region.
- Wynn Watson reports observing small numbers of DOUBLE-CRESTED CORMORANTS periodically along the river this summer from his vantage point just downstream of ***rare***. The maximum observed on September 1 by Bill Wilson was five. The numbers observed on reaches of the river within ***rare*** has remained small since first observed in the late '90s.
- On October 20, The Mushroom Foray with the Toronto Mycological Society found and identified 63 species of fungi, more than half of which were gill fungi. Considering the dryness of the season the number of species found was higher than anticipated. There were 2 not common species found, these were the Tarzetta cupularis (common name Dentate Elf Cup) and the Irpex lacteus (common name Milk-white toothed-polypore). Additionally a branch with examples of Daedaleopsis confragosa (common name Thin-maze polypore) was found and brought back to the ***rare*** offices where it is now on display.

Compliments of Straford Field Naturalists.

- During the last six years, TRUMPETER SWANS have been observed in the Cambridge area in small numbers. In 2006, a pair, possibly breeding, was observed in the Barrie's Lake-Bauman Creek Wetland Complex of Environmentally Sensitive Landscape area 2 (ESL2) by Rod Orange and Bill Wilson. On September 28, 2007, Roger Fellows observed two adults and 1 immature Trumpeter Swan on Barrie's Lake, the southern end of the wetland complex. On November 4, Jerry Guenther and Bill Wilson observed two adults and an immature feeding in the reach of the Grand River near the mouth of Bauman Creek.
- During the Doors Open Hike at ***rare*** in September, Jason Bracey reported an AMERICAN DAGGER MOTH CATERPILLAR. In the caterpillar stage, its body is covered in bright yellow hairs with tufts of longer black ones. The Dagger Moth caterpillar feeds singularly on of a variety of deciduous tree leaves, particularly MANITOBA MAPLE.
- On November 9, Bill and Heather Wilson observed a flock of 200+ AMERICAN TREE SPARROWS circling above fields at ***rare*** that are undergoing restoration; the sparrows eventually settled to feed on the seed crop. In another restoration area at ***rare***, the Wilsons observed a flock of 16 WILD TURKEY. ■

A Highlight Of Upcoming Events

Naturally Nocturnal:
a rare night hike with Ken Dance
Saturday, April 26 from 7:00 pm – 9:00 pm

We will be exploring the sights and sounds of ***rare's*** nocturnal world. Come out and listen for the call of a Great Horned or Eastern Screech Owl and see if you can hear the woodland frogs singing. The noisy, spiral courtship flight of the American Woodcock is also easily observed during this hike.

Bald Eagle Monitoring Workshop with Bill Wilson
Saturday, February 9th from 8:00 am to 12:00 pm
This once-a-year workshop includes an outdoor component from 8:00 to 10:00 am followed by an indoor slideshow and snacks from 10:30 am to 12:00 pm. In addition this year, Ontario Ministry of Natural Resources (OMNR) ecologist, Donald Kirk, will speak about the OMNR guidelines being developed for mapping overwintering habitat of bald eagles. These guidelines and mapping of eagle distribution make possible reaches of the Grand River to be designated Environmental Protection Area (EPA) in the near future.

Winter Snowshoe Hike
with Greg Vincent and Jeanette MacDermott
Saturday, February 16 from 9:30 am - 1:00 pm
We start from the ***rare*** administration building at 9:30 am and walk through the village of Blair and onto the "back country" of the rare property close to the Hogsback – also

featured in this newsletter. We will finish the outing at the Springbank Farm about 1:00 pm. Bring lunch, a hot drink and your snowshoes. Poles, hiking/skiing, help. New to snowshoeing? We will help you. Need snowshoes? The first 25 people to register with us can borrow a pair loaned to us generously from Adventure Guide in Waterloo.

Please see the Events Calendar which accompanies this newsletter for full details on these and other great events.

Raise the Barn this Holiday Season!

Work is underway to establish *Every Child Outdoors,* which will provide up to 20,000 elementary and secondary students over the next 3-4 years with the opportunity to experience their science curriculum in the context of their own backyard. In order to host the anticipated number of students, ***rare*** must develop appropriate facilities. Chief among these will be ***rare's*** Slit Barn c.1840, which will be renovated and transformed into a three-season open air interpretative facility used for education classes, a trail head, special events, lecture space, etc.

The Slit barn is one of the community's most recognizable landmarks for it has stood along Blair Road for almost 160 years. Given its heritage value and ideal location in the centre of the Reserve, together with ***rare's*** concern for the integrity of Reserve lands and properties, it simply doesn't make sense to build new facilities when historical properties can be saved and renovated to meet emerging needs without changing architectural footprints.

Strong support has secured significant commitments towards *Every Child Outdoors*, including a grant challenge from the Lyle S. Hallman Foundation for $165,000 conditional upon raising a matching amount by **December 31, 2007**.

Photographed by G. Paulter.

There has never been a better time to give to ***rare*** – include ***rare*** in your seasonal giving and double the value of your gift! Donate on-line at www.raretome.ca or use the enclosed reply slip and designate your gift to the Slit Barn. Any one sending a gift of $125.00 or more will receive a limited edition card printed with a beautiful painting of the Slit Barn by local artist Greg Pautler – yours to keep or give. Quantities are limited.

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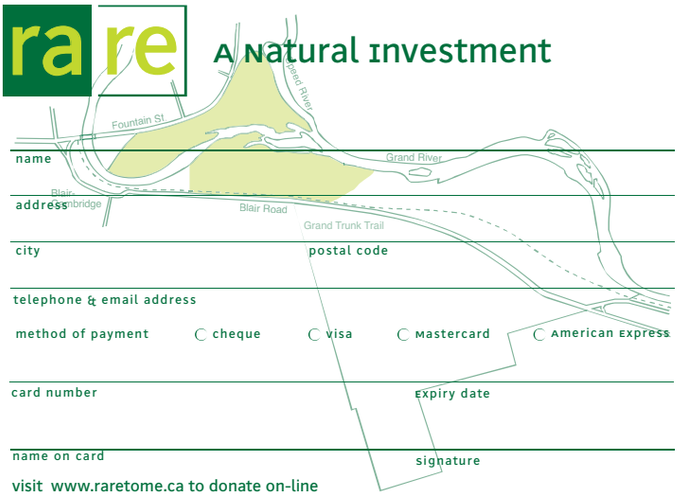
rare A natural investment



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telephone & email address

method of payment ○ cheque ○ visa ○ mastercard ○ American Express

card number expiry date

name on card signature

visit www.raretome.ca to donate on-line

○ yes! I would like to give a donation (a tax receipt will be automatically issued for all gifts over $10, under $10 upon request only)
☐ $25 ☐ $50 ☐ $100 ☐ $250 ☐ $500 ☐ other_____

○ yes! use my gift for the most pressing need.

○ If you wish, you can designate your gift to a specific project. Please specify. _____

○ yes! add my email address to your list to receive the ***rare's*** e-bulletin, notices, appeals and updates

○ I understand my name (or the name of someone I designate) will be displayed permanently on the property. Please indicate, clearly, exactly how you would like this name displayed. _____

we respect your privacy and carefully treat all personal information in accordance with applicable canadian privacy legislation. Please call 519-650-9336 x 111 if you wish to be removed from ***rare's*** mailing lists.

our charitable registration # is 87761 5914 RR0001.

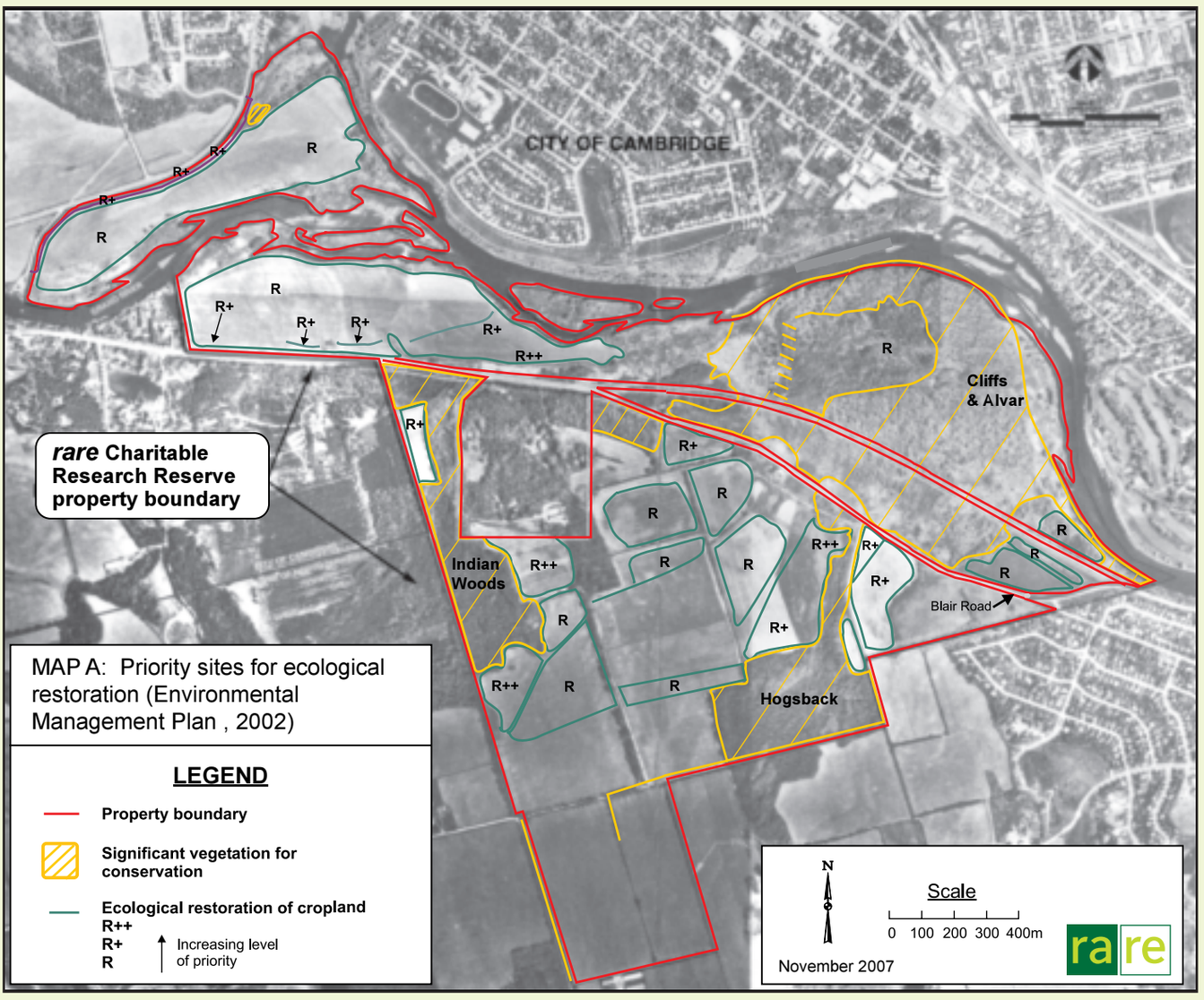
Restoration Ecology at rare *by Bill Wilson*

Of the 913 acres comprising ***rare*** Charitable Research Reserve, it is Indian Woods, the Cliffs and Alvar and the Hogsback (refer to Amanda Newell's Hogsback article in same issue) that are considered the "ecological gems" of the reserve. In total, they comprise approximately 30% of the land mass. To describe these sites as the ecological gems in no way diminishes the importance of the rest of the reserve. In fact, the rest of the reserve – primarily agricultural lands together with 7 km of hedgerows, a variety of wetlands and some early succession stages of meadows and shrubs – makes the ***rare*** vision possible.

The Environmental Management Plan (EMP) for ***rare*** describes the ecological make-up and biodiversity of ***rare*** and provides recommendations to promote and ensure the long-term health of its ecological gems. In 2002, these gems, or core areas of conservation concern as they are termed were, figuratively speaking, three islands of green (see map A). Ecologists – the scientists who study the relationships among living things and their environment – don't agree on every question and answer about their science but they all agree that fragmentation degrades the quality of living spaces or habitat for living things and diminishes biodiversity itself. Size matters.

In 2002, Brent Tegler, North-South Environmental Inc., toured

In 2008, restoration begins on the Preston and Blair Flats – expansive floodplains at the confluence of the Grand and Speed Rivers. Presently, along the reaches of these rivers that pass through ***rare***, a 10m to 30m buffer of vegetation – grasses, shrubs and small clusters of deciduous trees – separates crop-land from the river. This fall, areas coloured orange on Map B will be marked off and ecological restoration will begin, substantially increasing the width of the buffer along the river. The riparian zone of a river is an area of transition between the river and the up-lands. The zone may be a narrow corridor of vegetation hugging

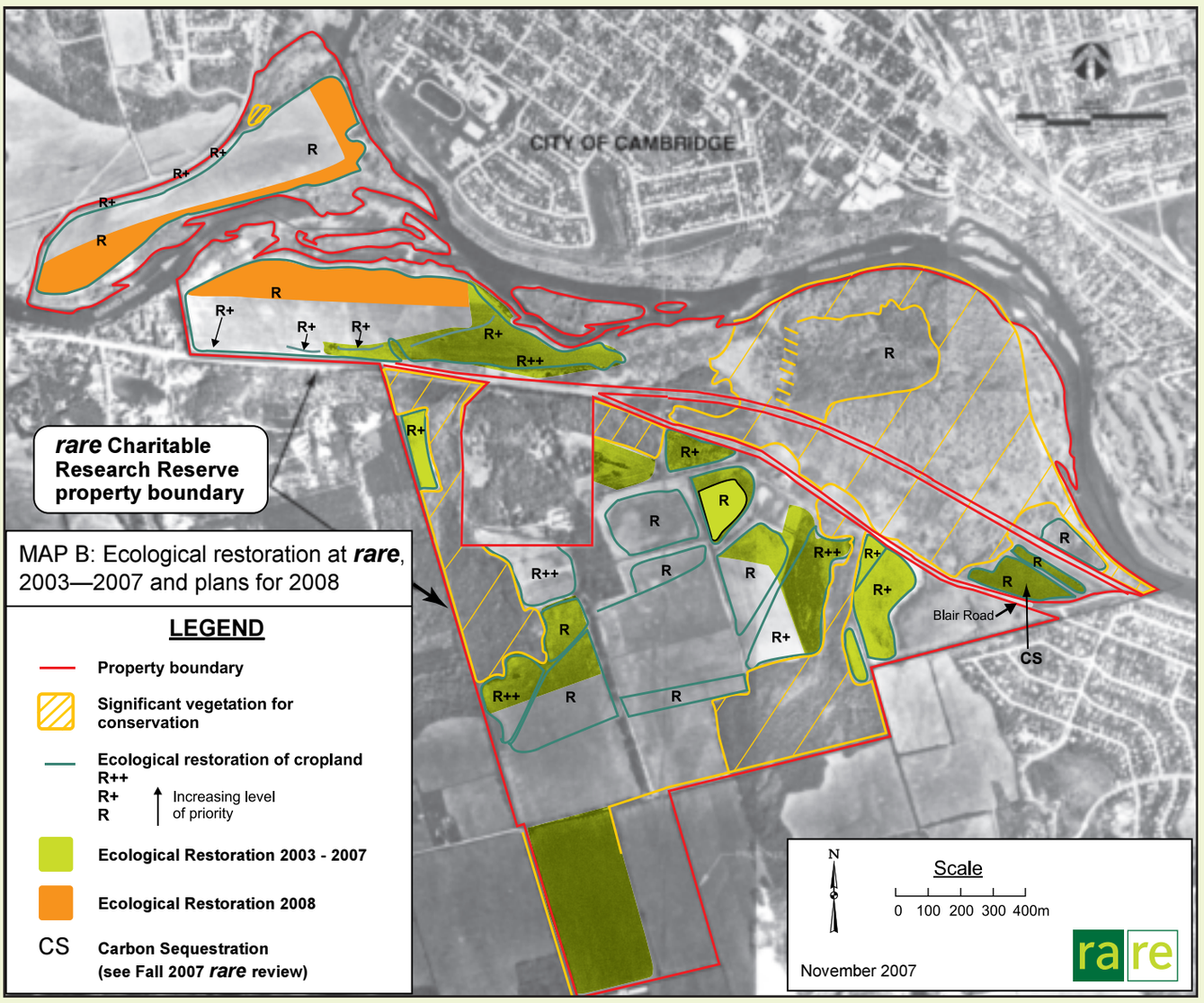


rare with members of the Ecological Advisory Team (EAT) and, based upon the data of the EMP, prepared The Environmental Management Framework. This document links the findings and recommendations of the EMP with current ecological thinking and science-based studies. In particular, The Framework substantiates the need to establish (1) buffers of vegetation around core areas of conservation concern, (2) corridors of vegetations linking the core areas and (3) links between the core areas within the reserve to vegetation units adjacent to and beyond its borders. In time, then, much of the 913 acres of ***rare*** would be comprised of forests in various stages of succession, meadows and wetlands. The islands of green so conspicuous on 2002 mapping would be replaced by an archipelago of green and, ultimately, a sea of green.

How to achieve this "sea change"? Restoration ecology is a recent addition to the science of ecology. Restoration ecologists study principles and their applications in population and community ecology with the goal of rehabilitating and restoring disturbed or degraded ecosystems to their more natural state. EAT recommended that ***rare*** proceed with ecological restoration of its agricultural lands, eroded hillsides and disturbed portions of alvar and forest. Furthermore, the existing landscape of ***rare*** provides an excellent opportunity for on-site research in ecological restoration for interested

continued on page 8

the river or an extensive network of wetlands that extend well into the floodplain. Riparian vegetation includes meadow, shrub thicket and forest that provide critical habitat for amphibians, invertebrates and for a large number of birds at some point throughout the year, e.g. breeding, feeding, over-wintering, roosting and migration stopover habitat. Studies have shown that the width of riparian vegetation determines the number and diversity of birds found within it. A study in Pennsylvania, for example, indicates that a 125-m strip of riparian habitat supported the full complement of riparian bird species in that region.



Restoration Ecology continued from page 7

scientists and their students.

Map A outlines the 2002 recommendations made by EAT for ecological restoration at ***rare***. Restoration sites were prioritized according to their contributions to the enhancement and preservation of the core areas of conservation concern. Factors considered in prioritizing sites for ecological restoration included: adding to the forest edge and thereby increasing the size of the forest-interior; restoring vegetation along edges of streams; eliminating gully erosion on steep slopes; providing vegetation cover surrounding groundwater seeps thus increasing soil moisture and wetlands; establishing shelter belts, green screens and wind screens; forming linkages and corridors of vegetation between existing forests; and expanding the width and layering of hedgerows.

EAT considers natural succession augmented by judicious use of adaptive management techniques to be the method-of-choice to ecologically restore **rare**. Yes, one can plant trees (a good choice in some environmental initiatives), but, one cannot plant a forest. Restoration ecology provides guidelines and means to "tweak" natural succession but not to replace "Mother Nature." For example, provide tree guards to give small saplings protection from browsing deer; remove from selected locations, aggressive, invasive plants that can out-compete native plants; collect and broadcast native plant seed in appropriate locations; and, plant shelter belts of fast-growing trees for the short/medium-term to modify the micro-climate of a site to the benefit of some plant and animal communities.

Larry Lamb, EAT member and vegetation analyst, has been pleased with how the early stages of plant succession has proceeded on agricultural lands. Goldenrod, asters and dogwood shrubs have quickly dominated the sites. The early succession stages of plant growth attract hundreds of fall-migrating, seed-eating birds. Flocks of sparrows and finches linger long in the winter period feeding within the expansive, early-succession growth of perennials and shrubs, seeking shelter as well as food along the hedgerows.

EAT has approved more aggressive human intervention at a few sites. The very first restoration site, along Cruickston Creek at the northern end of the Hogsback, provided opportunities for community volunteers to contribute to restoration of the streambank including the steep slope adjacent to it (see Fall 2003 newsletter: http://raresites.org/newsletters.html). A generous contribution of native plant materials in 2004 – all from Regional stock – permitted ***rare*** volunteers to augment plantings about cultural landscapes on the reserve and initiate a green screen buffer along the property boundary on Whistle Bare Road.

Map B highlights ecological restoration at ***rare***, 2003-2007, and delineates the locations where restoration will commence in 2008 (see Insert). Three of the four sites designated top priority for ecological restoration (R++) in the EMP are now in early stages of plant succession. The fourth site remains in discussion pending decisions concerning green screening and selection of plant materials. Six of ten sites designated R+ are currently under restoration. Those remaining will be primarily green screens requiring appropriate plant materials and volunteers. Larry Lamb and University of Waterloo students undertook green screen planting in 2006 along Blair Road. Of 15 sites designated R, five are currently undergoing restoration. One of the sites is associated with ***rare*** Organics and two others with the Carbon Sequestering project (see Fall 2007 newsletter, http://raresites.org/newsletters.html). Restoration at sites adjacent to core areas of conservation forms a significant buffer and will, in time, result in these core areas having larger forest interiors.

Undesignated agricultural lands will continue in crop production for the foreseeable future although, each year, ecological restoration will begin on designated sites. Now that restoration is well underway, land as yet undesignated for restoration will come under review for inclusion. Such implementation has already begun. During 2004 to 2006, the hedgerows along portions of the large field at the south end of ***rare*** were widened and augmented with donated plant materials of Regionally grown stock. In 2007, discussions between Larry Lamb and farm lessee, Brian Domm, led to the field being planted in a mix of grasses and legumes for hay cropping. This agreement permits the annual removal of a hay crop for Brian Domm Farms Inc. and results in a 40-acre meadow community for ***rare***.

The vision of ***rare*** includes ecological research and environmental education. This partnership not only benefits researchers and educators but also the entire Regional community. Underpinning this opportunity to understand our environment and the ecological processes that sustain it, is the ecological restoration of ***rare***, intact and in perpetuity.

"Each town should have a park or rather a primitive forest, of five hundred or a thousand acres, where a stick should never be cut for fuel, a common possession forever, for instruction and recreation". (Henry David Thoreau, 1859) ■

References:

Dance, K. W., L. E. Lamb, D. W. Larson and W. G. Wilson. 2002. Cruickston Park Into the Future: The Environmental Management Plan. http://raresites.org/links.html (2007)

Fielder, P. L. and S. K. Jain, eds. 1992. Conservation Biology: The Theory and Practice of Nature, Conservation, Practice, and Management, New York

Klapproth, J.C. and James E. Johnson. 2000. "Understanding the Science Behind Riparian Forest Buffers: Effects on Plant and Animal Communities." College of Natural Resources, Virginia Cooperative Extension. Publication Number 420-152

North-South Environmental Inc. 2001. Draft Management

Framework for Cruickston Park. http://raresites.org/links.html (2007)

Rosenzweig, Michael L. 2003. Win-Win Ecology: How the Earth's Species Can Survive in the Midst of Human Enterprise.

Our Readers Ask…

Q: As I drive along Blair Road, I've noticed several flags in the field beside the historic Slit Barn. What's going on there?

A: The flags denote a research project underway at ***rare***. One of ***rare's*** important contributions to the environment is to provide a site that researchers can be assured of having access to – in perpetuity – so that their experiments can be undertaken over many generations, if necessary. And not only is it science that may have long-term value, it is also science of international value.

There is no other property in Ontario that provides what ***rare*** has to offer. Researchers apply to rare for approval to conduct their work on the site. A team of advisors ensures that the work meets the guidelines set out for research on the property. You can find more information on this on our website at http://www.raresites.org/research.html.

The website also answers related questions about research at ***rare*** and why it's important to support such activities. I encourage you to read about it at your leisure, but perhaps a couple of key points are worth repeating here. The 913 acres at ***rare*** are ideally suited for research in conservation and restoration because:

- the property is large and has had few owners since it was cleared;
- the agricultural lands provide sites that could be used to develop a scientific basis for restoration ecology for streams, shorelines, alvars, cliffs and forests;
- the property sits within the northern limit of the Carolinian forest zone of North America (ie is within the biological zone with the greatest biodiversity in Canada);
- the property includes a wide variety of habitat types and at least one parcel of old-growth deciduous forest;
- the proximity of rapid urban growth provides much to study; and
- ***rare*** has programs to help interpret the research results for even the youngest member of the community through its *Chain of Learning* programs with a goal of *Every Child Outdoors.*

To come back to the flags beside the Slit Barn, they denote a research project undertaken by Mark Sherrard of the Integrative Biology department at the University of Guelph. He is using the Smooth Brome Grass in this area to determine if physiology and plant performance differs depending on the environment. Not only is this important to the field of evolutionary ecology but also to global climate change biology. For example, as soils warm up and dry out, can we find ways to predict which crops will be productive in a particular area? Mark describes the project in detail below:

"In plants, physiological traits control the uptake of carbon, nutrients and water, which ultimately regulates growth, development and total seed production. Despite this clear functional and reproductive importance, plants still exhibit surprising physiological variation within a species. One possible explanation for this variation is that the relationship between physiology and plant performance differs depending on the environment. For example, a high photosynthetic rate may increase seed production in wet environments because it maximizes plant growth; however, a low photosynthetic rate may increase seed production in dry environments because it minimizes plant water loss. As global climate change threatens to decrease soil water availability in the future, understanding how environmental variation contributes to physiological variation will improve our ability to predict future productivity in plant communities. The goal of my PhD research at the University of Guelph is to determine whether soil resource availability affects the relationship between photosynthetic physiology and seed production.

Photographed by M. Sherrard.

To analyze this relationship, I used three naturally occurring populations of smooth brome grass (Bromus inermis) in Southern Ontario. Bromus has been widely used throughout North America, both as a forage grass and in erosion control;

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however, it has also become quite dominant in many old-field communities, such as those on the ***rare*** property. This species was ideal for my study because it is common and grows in soils of varying quality. I chose three experimental sites which differed in phosphorus, nitrogen and water availability. The Long Term Mycorrhizal Research Site (LTMRS), in Guelph, has low phosphorus but high nitrogen and water availability. Joker's Hill, in Newmarket, has high phosphorus and nitrogen but low water availability. ***rare***, was characterized as a high resource site (see Figure), having high phosphorus, nitrogen and water availability. At each site, I measured several physiological traits, such as photosynthetic rate and chlorophyll concentration, as well as total seed production for 125 plants. I then tested whether the relationship between physiology and seed production differed between sites.

In my first field season (2006), I found that the relationship between physiology and seed production indeed differed depending on soil resource availability. For example, I found that plants with a higher photosynthetic rate and chlorophyll concentration produced more seeds at ***rare***, where phosphorus, nitrogen and water availability were high. In contrast, these traits were not correlated with seed production at Joker's Hill, where soil water was limiting. If these correlations remain consistent over time, then natural selection should create variation between these populations for these traits. Furthermore, if increased photosynthetic physiology only benefits plants in populations with high water availability and global climate change reduces water availability, then we may expect to see reduced plant photosynthesis in the future.

These resource-based differences in the relationship between physiology and seed production prompted me to test for year-to-year differences as well. As a result, I will replicate this experiment over two more field seasons.

My research at ***rare*** has produced interesting results that should improve our understanding of physiological variation in natural plant populations. I think this research represents a novel and significant contribution to the fields of evolutionary ecology and global change biology.

A Summer on the Farm:

Reflections of *rare* organics Education & Community Intern David Fletcher

My experience growing vegetables was somewhat limited when I signed on for a seven month contract; but I was excited to learn, and more excited still to be working at a unique place like ***rare***. It gave me the opportunity to learn about some of the environmental issues I had an interest in: sustainable living, conservation, restoration, and community involvement in all of those things. This internship was also unique in that it gave me opportunities to engage and educate community members and school groups about what we were doing on the farm, helping me learn valuable skills towards my goal of becoming a teacher.

Amanda Newell was my farming mentor for the season. While new to ***rare*** herself, she had the greenest thumbs of anyone I had met before, and it was surprisingly easy to turn what seemed to be an insurmountable task of farming five acres of southern Ontario, into an opportunity to learn and grow my farming skills. The sight of our first delicate onion, leek and cabbage shoots rising so slowly from their earthy homes was the first of many wonderful rewards of my internship.

The season began to warm, and with the warmth came opportunities to share our organics farm with the general public through bi-weekly events we called 'Farm Days'. Farm Days, along with school group visits, gave me the chance to take people on tours of the farm, showing them what was going on in the fields that day, and encouraging them to work in the fields, planting, weeding, watering, or any of the other thousands of jobs there always seem to be on a farm. Seeing a working alternative food source was thrilling to many people who only knew the look and methods of larger, conventional farms. For some people, our hand-worked, patchwork fields were a look to the past, while others considered the farm to be on the cutting edge of agricultural practices. I'm convinced that organic farming is somewhere in between as organic methods take the best things from our societies' rich, agricultural past, and mixes them with the technology and needs of today, all while keeping an eye on the health of the soil, water, plants and animals that surround the farm.

As part of the educational side of my role at ***rare***, I had the pleasure of working with the 'Go Green Club' from Lincoln Avenue Public School. Headed by teacher, Louise Dawe, the Go Green Club is a group of students interested in ecology and helping the environment. Through ***rare***, I was able to give them the opportunity to plan and plant their very own garden plot next to the 'big farm' on Springbank Hill. The students in the club have committed to tending the garden in the Spring, and many of them have expressed interest in taking care of the garden after the school year, in the summer. A project like this is a good example of the adaptability of ***rare***. The Go Green Club

is a pilot group in what I like to call ***rare*** organics' 'Student Farmer Program.' If the project is deemed successful, we could see more classes and groups of students getting their hands dirty on Springbank Hill. Young people who understand the hard work that goes into food production, and understand the importance of sustainable farming practices, are more likely to make wiser decisions about their food and where it comes from in the future.

Farm Team.

As my internship draws to a close I find myself reflecting on everything I've seen and how much I have learned. From those first chilly days tending to seedlings in the greenhouse, to our last farm harvest box that left our hands heavy and brimming with delicious food, I've realized that my experience with ***rare*** has been one of change. Not just for me, as I leave here with a new appreciation for the true value of food, but change as well for everyone who came to the farm. I had the chance to see a wide-range of reactions to the message ***rare*** and ***rare*** organics wanted to express: that we need to understand
better our role in nature, and find better ways of working with her to fulfill our needs. Maybe we can work with the planet to provide for our needs without leeching it dry and desolate first, and maybe I can make a difference.

David and Neil..

A Gentle, and friendly reminder about rare trails

Our primary and most popular trails include about of natural pathways through the Cliffs and Alvars section of the Reserve. These trails run off of the Grand Trunk Trail as it passes through rare's lands, following the historic railway line, owned and managed by the City of Cambridge.

Because of the 'nature' of our trail system, use is encouraged but not always in the same manner as one might expect from experience on other trail systems. Yes, at rare Bald Eagles, ancient Cedars, globally rare alvar habitat and provincially significant snakes do dictate how and when our current trails should be used.

Photographed by L. Lamb.

So simply and respectfully put, please:

- refrain from using the cliffs and alvars trail between Nov. 15 and late March in accordance with Ministry of Natural Resources designation of the Bald Eagle High Risk Zone. Trail users are encouraged to use the Grand Trunk Trail, Galt to Blair, or the Linear Trail in Preston. Both afford views of the rare landscape;
- walk your dog along the Grand Trunk trail only, on leash. Many species that make their home within the Nature Reserve are extremely sensitive and reactive to the presence of dogs;
- don't participate in unauthorized geo-caching at rare; it's extremely detrimental in habitats with rare plants, where ecological restoration is taking place, and/or where research is underway; and,
- do not bike on these natural paths; tree roots and important geological features get disturbed (plus it's unsafe for the rider).

If you see tell tale signs of these activities call us at 519-650-9336; we would be happy to discuss the issue or follow up as appropriate. It's difficult to have vigilance on a property that spans 913 acres. Please help us educate others in our community about the importance of protecting and respecting an incredible greenspace such as rare.

We are also pleased to tell you that we have plans, big plans, in fact, for future trail development that will provide for an extensive view of other areas of the property and key features, many of which are readily accessible (on foot, by bike, in strollers, etc). As time and financial resources allow, we will implement these priority plans. Thanks for your support.

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