the rare review
Fall 2007

Carbon Capture Design Competition at rare

by Jason Bracey

Climate change is an issue of growing concern for many people and has become a dominant environmental issue in the media today. Linking increasing levels of carbon dioxide created by our day-to-day activities to climate change is an important first step in trying to mitigate this problem. With growing attention focused on developing solutions to this problem, ***rare*** was able to give two local schools the opportunity to try and do their part in reducing atmospheric carbon; an effort in keeping with ***rare's*** unique environmental education model, the Chain of Learning – which connects students at all levels from elementary to the most senior scientists.

This past spring, an exciting educational project was undertaken by students from Southwood Secondary School and Rockway Mennonite Collegiate. Led by teachers Jason Bracey (Head of Geography at Southwood), Steffen Pauls (Science Teacher at Rockway) and with guidance from Ken Dance an ecologist with 30 + years experience and co-author of ***rare's*** Environmental Management Plan, student teams were formed to tackle the challenge of climate change and carbon sequestration.

Research shows that trees can be effective "fixers" of carbon, storing atmospheric carbon for decades to centuries and can slow the effects of global climate change. The challenge presented to each team was to develop a half-acre planting plan, selecting the appropriate native trees that would maximize carbon sequestration over the long term.

As part of the competition, students had to research the growth characteristics of the different tree species, determine the characteristics of the soil profile at the planting site and collect data on other factors at the planting site to make appropriate tree selections. Once that was completed, students were required to review scientific literature to support their decisions and to determine the appropriate planting design that would promote maximum carbon sequestration over time.

Entries were submitted to ***rare*** and juried by a team that included Ken Dance, ***rare's*** Executive Director, Patti Leather, and University of Guelph Professor and co-Director of Research at ***rare***, Dr. Doug Larson. Congratulations go to the winning design team of Felipe Gonzalia, Tim McKague, Dan Kruger, Christina Martin, and Dean Steckley from Rockway Mennonite Collegiate. The winning team received a plaque from ***rare*** and a $400 award from Dance Environmental that will be donated to a charity of their choice.

What was especially rewarding about this particular project is that students did not simply research an environmental issue. Students had the chance to formulate solutions and then, most importantly, they were able to implement them.

continued on page 5

Carbon Capture Design Competition winning team from Rockway Mennonite Collegiate.

Inside This Issue

Profile of a Volunteer – Wynn Watson

It started with a bridge.

In 2001, when ***rare*** was just starting out under the name Cruickston Charitable Research Reserve, and the Region had just completed the Cambridge Area Route Selection Study (CARSS), an evaluation of proposed plans for the creation of a traffic corridor linking the east and west portions of Cambridge.

The proposal concerned both the reserve and Wynn Watson, a local resident and retired-Chair of Biology at Wilfrid Laurier University. Several of the proposals included bisecting the reserve with various major roads and, as Wynn so succinctly put it, "putting a bridge in our community's backyard." Joining forces with the reserve to convince planners to consider less environmentally-destructive options, Wynn started down a long road of association with the reserve, becoming a valued friend and an invaluable source of knowledge and support.

Wynn, who has devoted countless hours of his time to various endeavors on the reserve, specializes in entomology, but has always considered himself a generalist, "interested in everything biological." From his exploits catching bugs and examining fossils, his wide variety of interests have led to a rich and varied experience.

Wynn's undergraduate work was at the University of Toronto, where he also received a Ph.D. His entomology specialty led him to his first post at the Forest Insect Laboratory in Sault Ste. Marie, in the 1950s, studying ladybeetles and various pests. Some of the scourges of the day that he studied and attempted to control were the Spruce Budworm and the European Pine Shoot Moth, a pest he remembers as being particularly devastating to the Christmas tree industry. Wynn approaches many of these infestations somewhat philosophically after all these years of experience; although devastating economically, many infestations eventually balance themselves out. And Canada has one big advantage in the war against pest species; "our winter is a great bug control." This is a relative advantage and important, but now in danger of being mitigated by climate change.

It was in 1961 that he entered the University scene again, this time as a professor at Laurentian University, which was just starting up. Although the scenery in Sudbury was barren, the experience of guiding the formation of the Biology department there was extremely interesting. The department started in a small, two-room office space above a local theatre. Two years later, they had started building the current campus, and within six short years, had built a respectable three-year Biology program.

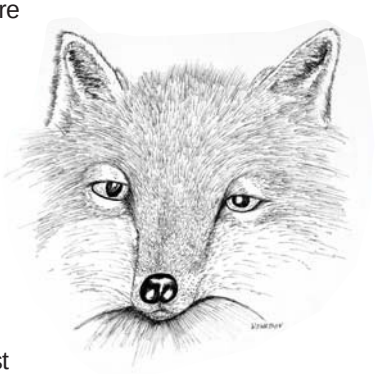
In 1974 he and his family moved to Waterloo to be closer to other members of the family and he accepted the position of Chair of the Biology Department at Wilfrid Laurier University. While he spent his time working with students in the class and in the field, his wife and youngest daughter developed a riding school called Camjay farms. It was during the last years of his time at Laurier that he became such a vital part of the volunteer community at ***rare***, becoming part of our Advisory team as Chair of the Research and Education Committee.

Having had his interest in mosses peaked by a catalogue done by the Museum in Ottawa that listed mosses by county, but had an incomplete list from Waterloo, he decided to embark on an inventory of mosses found in the region, including ***rare*** as his sample grounds. The study has since become part of ***rare's*** Environmental Management Plan. His collection is currently housed at Laurier.

Talk with Wynn these days, and it's clear that retirement hasn't cleared his schedule. If he isn't busy expanding his artistic abilities working on a new watercolour, you might find him at ***rare***, identifying pests for our organic farm or cataloguing fossils found in the area. ■

Get your own rare Species Note Cards *by artist Wynn Watson*

Coming later this fall, ***rare*** will have available a unique set of note cards for sale which feature the artistry of Wynn Watson. Wynn has spent many hours sketching mammals found on the ***rare*** Reserve. Wynn generously donated his original wildlife drawings to the charity, 16 in all.



Cards will be available in sets of 8 for $12.00, perfect for those holiday notes or a wonderful gift for your Naturalist friend. $2.00 from each set purchased will support our $2/square metre campaign, protecting ***rare*** intact and in perpetuity. Get your cards by calling Sharon in the ***rare*** office at 519-650-9336 ext 112 or by email srbowes@raresites.org.

Thanks Wynn!

The Shrouds of Fall *by Wynn Watson*

Early August and already signs of fall are showing. Shrouds of pale silk are being thrown over the leaves of many deciduous trees. The Fall Webworm is beginning its yearly infestation.

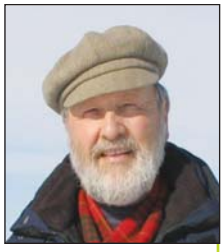
The webbing at first covers a few leaves towards the ends of the branches. As the season progresses more and more leaves are enclosed. Sometimes whole young trees can be covered. By the end of August, affected trees will have great unsightly, weather beaten webs covering large sections of the trees.

Within the webs early stages of pale larvae will feed in colonies. As more food is required the webs are enlarged. If the infestations are big, webs will often combine. Mature larvae will abandon the webs and feed singly and openly.

White moths emerge from late May until mid-July. After mating, females will lay masses of hair-covered eggs on the feed trees. Pale yellow larvae feed for a number of weeks, eventually deserting the webs and dropping to the ground to form pupae in the upper layers of soil cover.

Throughout its range in southern Canada, the webworm feeds on many kinds of deciduous trees. Although unsightly, the webbing and larval feeding do little damage to mature trees. Young trees, however, may be stripped and killed. The main dislike is aesthetic, for the wide-spread remnants of tattered, dirty, persistent webbing is not pretty. ■

Nature Notes *by Bill Wilson*



- A drake and two hen COMMON MERGANSERS remained along the shoreline of ***rare*** throughout April at least and until April 28. A winter visitor, this merganser is one of the most common breeding ducks in central and northern Ontario. Where shoreline habitat and nest trees are undisturbed this species is known to breed sporadically although rarely in southern Ontario. During 2006, common merganser – three drakes and one hen – remained until at least June 1 along the river. Perhaps a pair will breed at ***rare*** one of these years.
- On 26 April, Jerry Guenther and Bill Wilson, member of ***rare*** Ecological Advisory Team (EAT) located as many as five AMERICAN WOODCOCK southeast of the stone slit-barn. Woodcock are annually found in this area and known to breed. Andy Steinberg, accompanied by Jerry and Bill, heard at least three American woodcock high above the Cruickston Creek restoration site on 30 April. Male woodcock circle in full flight and song in an aerial courtship above their "strutting ground". Of interest is the landscape over which the birds displayed: only a brief five years ago, corn and soybeans were the seasonal vegetation. Today the restoration site has elements of a brushy meadow and habitat for a most interesting sandpiper (see ***rare*** Review, Spring 2002).
- During the last weekend of April, the early warbler migration was well underway: numbers of YELLOW-RUMPED, PALM and PINE WARBLERS were observed.
- Listing species of SPARROW on spring migration through ***rare*** regularly yields a dozen. Sparrows are birds of open country that frequent early succession and woodland edge. As the former increases substantially each year at ***rare*** so does the numbers of many of these species. Friends of ***rare*** are encouraged to record numbers as well as species of sparrow observed on their visits.
- Eight participants joined Andy Steinberg on May 12 on an outing to observe the spring migration at ***rare***. Sixty-two species were spotted including BLUE-GRAY GNATCATCHER, PHILADELPHIA VIREO, both GOLDEN-CROWNED and RUBY-CROWNED KINGLETS and six species of warblers.
- John Macdonald, EAT member, reported a pair of BALTIMORE ORIOLES on the front lawn of the Resource House on May 18.
- On Monday, May 21st, Kim Ruddy together with brother, Ray and husband Andy Kelly observed an adult BALD EAGLE perched in known perch trees (2) on ***rare*** during early morning. In one instance, this eagle dropped from its perch and harassed a RING-BILLED GULL and circled several times above minnows (presumably) and noisy CANADA GEESE and their broods. This same eagle was independently observed that morning by Michael McKeown.
- Visiting from New Zealand, birder Rod Orange accompanied Bill Wilson on May 24 for a morning of birding. Of interest were sightings of five species of shorebirds including LEAST SANDPIPERS, SEMI-PALMATED PLOVERS AND SOLITARY SANDPIPERS.
- For some shorebirds, the "fall migration" begins in early July. LESSER YELLOWLEGS AND LEAST SANDPIPERS were observed at the confluence on July 8. Both species breed on the northern edge of the boreal forest.
- Two COMMON TERNS flew through the confluence on July 8, only the second record of common tern for Bill Wilson at this site. This species breeds on the Great Lakes with the closest colonies located in Hamilton Harbour and Port Colborne. Small numbers of CASPIAN TERN continue to roost at the confluence and hunt the reach of the river above and below, throughout the summer. One juvenile roosted at the confluence throughout early August. No breeding records exist for either species in Waterloo Region. Both breed along the Great Lakes' shorelines. Inland nesting is restricted to the Trent Waterways System.
- Rosemary and Dave Stafford and several others observed 4 GREAT EGRETS at the confluence on August 5. Colour leg bands seen on one of the egrets by Jerry Guenther and Bill Wilson were reported to Environment Canada.
- Andy Steinberg has begun a systematic monitoring of the breeding birds of ***rare*** in the period May to July 2007. He will monitor the entire reserve over the next several years. His 2007 monitoring includes the Hogsback and the alvar on the eastern portion of the Cliffs and Alvars section. Breeding birds of regional significance include PINE WARBLER, NORTHERN WATERTHRUSH, BLUE-GRAY GNATCATCHER and VERSPER SPARROW. Andy located a BLACK-BILLED CUCKOO nest containing two eggs. A summary of his 2007 findings will be reported in the next newsletter. Both the Hogsback and east alvar were previously monitored in 1980, 1991 and 2001, providing an opportunity for comparisons over a 27-year period.
- On June 4, ***rare*** Archaeology Team member, Chris Dalton, led 50 grade 11 Sociology students from St. David's Catholic School in Waterloo on a walk through ***rare*** to learn about archaeology. They were also accompanied by teachers Anne Masojc, Garry Boland and Chaplin Dee Sproule, and Patti Leather, ***rare*** Executive Director. The students were quite excited when they came across a SNAPPING TURTLE in the process of laying her eggs in a newly dug hole just along the edge of the farm field closest to the river on the Blair Flats. In the area, there were a number of other recently dug holes but it was obvious to these observers that some nests had been disrupted and the eggs eaten by predators; other nests remained untouched.

Snapping turtle in the process of laying her eggs

continued on page 4

Nature Notes *by Bill Wilson* *continued from page 4*

- On 16 April 2006, Geoff Ditner, Preston, spotted an OSPREY perched on a pole along Fountain Street. During the course of the next few weeks the osprey showed more interest in a nearby double hydro pole recently erected adjacent to the Fountain Street bridge, upstream side, to accommodate the wiring upgrade and the re-routing of hydro lines at the newly constructed roundabout at Fountain Street and Blair Road/Morningside Drive. Shortly after Geoff's initial sighting, a pair of osprey was observed and more significantly, nesting sticks appeared on the crossbars of the pair of hydro poles. Although ospreys traditionally select tall trees – usually dead ones – they are not averse to nesting on the crossbars of hydro poles. Nests built close to wires can lead to power interruptions, fires and electrocuted osprey. Throughout Ontario during the last decade or two, hydro crews have made significant contribution to public and osprey safety, and hence osprey conservation, by bolting safe platforms on poles specifically erected for nest sites rather than hydro wires. At the Fountain Street site, the pair of poles serve both osprey and hydro customers: Cambridge and North Dumfries Hydro Inc. increased the distance between the hydro wires and the crossbars to eliminate electrical shortage and to meet Ontario Ministry of Natural Resources approval. Observations made by local birders and residents indicate that no successful breeding occurred at the Fountain Street site in 2006. In spring 2007, Roy and Jeannine Barkhouse photographed two males and a female osprey on and around the nest platform located on the north side of the Fountain Street bridge on April 14. Marco DeBruin was travelling east on Fountain Street in early afternoon, April 18, when he saw a large bird swoop down on to the field by Moyer's Landing and pick up an object from the ground. He identified the bird as an osprey as it flew over his car and onto the nesting platform. The object carried by the osprey appeared to be black and rigid, possibly a piece of plastic to add to the nest structure. On June 29, 2007, Jerry Guenther, local birder and bald eagle monitor, observed three newly-hatched young with a female on the nest. Throughout July, the adult male continued to bring fish to his mate and nestlings. On August 4, Guenther observed 2 of the 3 juveniles in flight for the first time. As of August 6, the third juvenile continued to test its wings flapping vigorously from the rim of the nest but not yet ready to take flight according to observers Barb and Glenn Mockford.
- Bill Wilson observed a COMMON BUCKEYE on July 20 in the western alvar at ***rare***. This butterfly is normally a rare stray in Canada from the U.S., but can become locally common in good migrant years.

If you have a close encounter with anything here on the Reserve, call ***rare*** at 519-650-9336 x122. Please leave your name, telephone or email address; sighting details such as SPECIES, numbers, date, time and location are very useful. ■

Pavilion Project

If you were to have taken an evening stroll along the Grand River on Saturday, July 9, you would have come across an extraordinary sight. Intermingling with the natural beauty of the riverside setting was the spectacular handiwork – in the form of dining pavilions – designed and constructed by students from the University of Waterloo's School of Architecture.

Hours of hard work and numerous site visits were made evident when the designs came to life against the majestic backdrop of the Grand River. From suspended chairs and ethereal fabric to curving pieces of wood reaching up from running water, the pieces were nothing short of artwork. However, these young architects had to think about a great deal more than artistic qualities when designing their pieces. The relationship of a structure to its environmental context, the rituals associated with food and eating, and the poetic qualities of a temporary shelter were all considered. The pavilions had to be dismantled and removed from the site at the end of the evening, without leaving a trace on the land. The "no-trace" criterion of this project is one that ***rare*** finds especially important. The more we learn about how to make less of an impact on our environment, the more sustainable all of our activities become.

University of Waterloo' architecture students on their floating pavilion.

This is the third year that ***rare*** has been connected with the project, finding it an important aspect of the broad research agenda for the property. Geoffrey Thun, the project coordinator and professor at the School of Architecture, says the project "offers an unparalleled learning experience" for his students. They have the opportunity to take what they have been learning in the classroom and experiment in a real life situation. Having this experimentation occur in a location as environmentally significant as ***rare*** may make the project more challenging, but according to the students' comments, also more rewarding.

"It is very significant for us to be in such close proximity to ***rare***," says Thun " but more importantly, that ***rare*** is open to the kind of 'cultural research' that a project such as this embodies. For us to be able to work this way on a sensitive site where other research initiatives are underway only underlines our intentions that imagining the manner in which we build, gather, and celebrate must be conceived of as part of the larger ecological systems of which we form a part." ■

From the desk of rare's Executive Director...

I've been on staff at ***rare*** for nearly four years now. One of the most exciting things about my job is that I have opportunity to learn new things every day. What makes this learning opportunity unique is that on any given day we are just as likely to learn about osprey behaviour, or human interactions with the environment 9500 years ago, as we are to learn about a new organization that supports environmental charities.

What isn't new, however, is the ongoing importance of engaging people and building a robust community. Our newsletter is just one of the ways that we try to do this. But, I bet that at some point while you were (I hope!) sitting down to relax and read a past issue of the ***rare review***, you were left with an unanswered question.

Starting with this issue, I would like to introduce a new regular feature of our newsletter, **"Our Readers Ask."** This feature is your space. We want to hear your questions. Each issue, we will select a few questions from readers and attempt to provide answers, something we have a good chance of doing because we are fortunate to have an extensive network of scientists, environmentalists and advocates, each with a different background and area of expertise. A quick glance at the Leadership column provides a reminder of the veritable wealth of knowledge that surrounds us. And depending on how many of our programs you have taken part in, you may also feel that you've benefited from the offerings of the brilliant people who are part of ***rare***.

So, because there is always more to learn, especially about a landscape as diverse as this one, please send your questions to me at pleather@raresites.org or mail them to my attention at 1679 Blair Road, Cambridge N3H 4R8. In the meantime, enjoy learning about Alvars in this issue.

I look forward to hearing from you!

Carbon Capture Design Competition *continued from page 1*

Students from both schools joined together for a morning to plant over 900 trees in the carbon sequestration plots that are located just off the Grand Trunk Trail entrance in what was once a conventional corn field.

The hope is that the two half-acre plots will be monitored by secondary or post-secondary students in the future, to study the rate of carbon sequestration that takes place over time. This will provide future opportunities for students and citizens alike to participate in citizen science and monitoring.

Tree planting for winning design.

Additional benefits of the 900 plus trees that were planted will be improved air quality, soil stability, water retention, beautification and they will provide habitat for many organisms.

A special thanks to Ken Dance for his time and effort in helping to develop this project, picking up the trees and the time he, his wife Janet, and their two sons Kevin and Mathew gave to help plant the trees. Ken's work in this area is also important to ***rare's*** partnership with Zerofootprint and our efforts to make Waterloo Region a Zerofootprint community. http://zerofootprint.net/initiatives/889

Our Readers Ask...

Q: I've heard that one of the pre-settlement landscapes at ***rare*** is the Alvar. What exactly is an Alvar?

A: *By Susan Otten*

It looks like a barren field – mostly grasses and shrubs, with a few, scraggly trees dotting the landscape. In the heat of the day, nothing moves, save perhaps the shadow of a raptor circling high above. Years ago, such a landscape would have been prime real estate for development; what else to do with such a wasteland as this? The soil is thin over its rocky base, and the elements we traditionally associate with areas of high environmental importance – lush vegetation, towering trees, or magnificent vistas – are absent.

This is the alvar, a globally rare ecosystem that houses a startling array of species of global, provincial, or regional significance. Named after a similar bioregion in the North of Europe, the Alvars in North America are restricted to only a few areas, of which the scattered Alvars of Ontario make up a significant, but diminished, percentage. Alvar ecosystems might once have occupied up to one hundred and fifty thousand hectares of Ontario; the Nature Conservancy estimates that, now, approximately twelve thousand hectares of reasonably undegraded alvar habitat remain.

The limestone cliffs that form a unique and important part of the ***rare*** reserve – similar cliff series in the Niagara escarpment have been given a UNESCO World Biosphere Reserve Designation – hint at the foundation of what makes an alvar an alvar; the dolomitic limestone base that characterizes an environment under stress, with a thin layer of topsoil and a hydrologically-influenced landscape, by turns subject to seasonal drought or seasonal flooding.

The plants and animals that thrive here are adapted to handle the challenges the alvars present. The thin topsoil, so difficult for trees to grow in, provides perfect habitat for grasses, sedges and shrubs. Even where forest cover is present, it is patchy, with never more than 60% of the sky obscured. Light is one thing the alvar is well supplied with; grassland, savannah and shrubland plant communities dominate without the restrictive shade of forest cover.

Alvars tend to be spread out in small patches, so variety among them is great; and even a small alvar ecosystem is an important local feature, often overlooked. The alvar at ***rare***, for instance, is rich with grassland species, including a multitude of colourful asters and goldenrods. Regionally significant Hairy Beardtongue and American Plum are both present, while the native Crab Apple is the subject of ongoing scientific research.

The reptilian star of the ***rare*** alvar is the Smooth Green Snake, another regionally significant species in the Region of Waterloo. Once fairly common in southern Ontario, its populations have been in decline, due to habitat loss and possibly pesticide use. Its colouring allows it to blend in with grassy areas well, so seeing one is a rare treat.

It may take a second look to appreciate, but the beauty of the alvar – the poetry of scarcity – deserves our attention and respect.

For more information on the Alvars of Ontario, check out the Nature Conservancy's excellent Alvars report, Conserving Great Lakes Alvars. http://www.epa.gov/grtlakes/ecopage/shore/alvars/alvar.pdf

Osprey Nesting Platform Erected at rare

by Bill Wilson

The restoration and enhancement of the lower reach of Bauman Creek is an on-going priority for the Ecological Advisory Team (EAT) at ***rare*** Charitable Research Reserve. To date, this reach of the Creek has been monitored for its chemical and physical characteristics and surveyed for its aquatic life. Both vegetation analysis of the adjacent flood plain and breeding bird monitoring of the site have taken place. Based upon the above monitoring and analysis, and verification by the Ontario Ministry of Natural Resources (OMNR), the Ministry has included this reach of Bauman Creek in the Provincially Significant Wetland (PSW) known as *The Barrie's Lake-Bauman Creek Wetland Complex.* This PSW complex is now a significant component of *Environmentally Sensitive Landscape 2* (ESL2), one of two of Waterloo Region's recently described greenscape complexes.

Bolting platform to pole

Would the riparian landscape and adjacent riverscape at the outflow of Bauman Creek into the Grand River provide a nest site for osprey? Records of osprey sightings in the field journals of Bill Wilson and members of the Kitchener-Waterloo Field Naturalists (KWFN) describe the osprey as a spring and fall migrant along reaches of the Grand River. During the 1970s, ospreys were regularly observed moving through the area in April, August and as late as October. In the 1980s, members of KWFN led by Erwin Meissner and Glen Moores erected a nesting platform at Bannister's Lake, Wrigley Corners, without success. In the first half of the 1980s, three nests (confirmed breeding) were known in Waterloo-Wellington Regions. During the recent *Ontario Breeding Bird Atlas* (2001-2005), seven nests (confirmed breeding) were located in Waterloo-Wellington Regions.

In 2006, EAT proposed that a 2004 EAT recommendation to erect an osprey nesting platform be undertaken. EAT member, Larry Lamb, agreed to be project co-ordinator. Larry contacted Dan Schneider, resource interpreter, Guelph Lake Nature Centre, Grand River Conservation Authority (GRCA). Dan provided not only valuable advice, but also donated a platform constructed by participants in the Waterloo-Wellington Junior Rangers Stewardship Program in July 2004. Thanks, Dan and the 2004 Junior Rangers! Playing the role of an osprey, Larry gathered an appropriate number and size of sticks – thumb-sized, 1 to 1.5 m in length in sufficient number to cover the one-metre-square platform. Thanks, Larry! The platform with its 2 m x 6 m frame is lined with a wire cage to contain the sticks. The sticks are stapled to the platform which in turn is bolted to a substantial pole. Ospreys build nests on the tops of tall trees, more often dead ones, at variable heights but mostly 9 to 18 m (30 to 60 feet). The height of the osprey nesting platform at ***rare*** splits this difference. Thanks Guelph Utility Pole who generously donated a 45-foot western red cedar pole!

Bill and Heather Wilson located the site for the pole and platform.

Ospreys nest in marshes, swamps and flooded areas (e.g. Luther Marsh Conservation Authority) but also on shores of lakes (e.g. Guelph Lake) and rivers (e.g. Grand River near Bloomingdale). Nest trees are often standing in water but also on dry land near water. Observations by the Wilsons along the reach of the Grand River through ***rare*** since early 1970s include ospreys on perch trees along the river during spring and autumn migration; during the last 5 years or so, they have seen ospreys regularly during summer as well although, until 2006 and 2007, no nesting activity was confirmed on the Grand River in Cambridge.


Erecting the nesting platform pole

The site selected for the ***rare*** nesting platform is at the eastern end of Blair Flats and is located about 40 m from the river's edge for two reasons: the site had to be accessible by a hydro truck for installation and the site had to be back from the river to avoid the large blocks of ice that periodically scour the shoreline and would potentially damage the pole.

The Cambridge and North Dumfries Hydro Inc. volunteered to raise the pole and platform on-site. Unfortunately, wet ground prevented the work from being completed in summer 2006. The next window-of-opportunity, late November, was ruled out because the nest site was located in the High Risk Zone of wintering bald eagle as designated by OMNR and out-of-bounds to human activity or disturbance.

In early May 2007, weather, ground conditions and personnel were "in place" to raise the pole. EAT member, Chris Dalton and nephew, Jesse Dalton, bolted the platform on to the pole. The depth of soil at the site is relatively shallow – less than 1 m – making it necessary to place the pole in a corrugated steel crib holding several cubic metres of crushed rock. Thanks Al's Stone Service! Chris and Jesse bolted tight the crib, too. Thanks Chris and Jesse!

On the afternoon of May 9, 2007, the maintenance crew of Cambridge and North Dumfries Hydro Inc. including Mark Kingston, Greg Davidson and Brad England raised the pole (see insert). ***rare*** Executive Director, Patti Leather, was on hand to thank everyone especially the Hydro crew for their contribution of time, expertise and equipment (see photo). Thanks Energy+!


Filling crib with stone

Just prior to Victoria weekend, Preston resident, Klaus Mohn spotted an osprey perched on, and apparently investigating, the platform. Friends of ***rare*** are anticipating occupancy by osprey in

Osprey Facts

- ospreys return to Waterloo Region in early to mid-April. A few recent records exist for late March. With very few exceptions, ospreys have left southern Ontario by December 1. Neil Taylor and members of the KWFN observed an osprey at the Confluence on November 28, 2006.

In flight © Barkhouse Photography

- the same nest is occupied in successive years with nest sticks added annually.
- the female osprey lays three eggs in late April/early May.
- incubation lasts about 40 days. During this period the female incubates the eggs; the male provides all the food for the female. In fact, the male provides almost all of the fish for the entire family throughout the nesting period.
- chicks fledge when about 55 days old and remain about the nest for about three weeks during which time the parents feed them.
- osprey migrate to Central or South America and often spend their first two years there. Breeding usually begins when they are three to five years of age. When young birds return to breed, they tend to return within 50 km of where they were born.
- predators include racoons (eggs) and occasionally great horned owls (chicks and adults). Bald eagles steal fish from osprey and may force them from nest sites.

Osprey nesting on the tower © Barkhouse Photography

- since osprey nest on tops of trees or poles at heights of 10-15 m, the nest, eggs, nestlings may be exposed to strong winds, heavy rainfall and/or low temperatures all of which can result in significant nest failure or high mortality.
- as a top carnivore that feeds exclusively on fish, osprey serve as an excellent bio-indicator of environmental quality. Their ability to tolerate to some extent human activity means that they nest, raise their young and live on water systems shared with us and consequently are our "canary in the mine" concerning water quality.

Friends are *friends* – no matter what

Some of you may remember that in past years we have promoted our ***"Friends of rare"*** package. It was a way to engage people and bring them out to the Reserve with discount offerings on events, with many using this as a way to show their support. Some time ago, we took a long look at this package and tried to answer the question, "Who is it for?" We feel that whether you come out to our programs, volunteer, make a donation, or speak out on our behalf, you are a friend and will be invited to our annual soiree.

To receive discounts on events we now sell a – you guessed it! – a ***rare*** *Event Discount Card*. For just $30/year card-holders get free or, in some cases, reduced admission to most of our events.

Friends of rare are still welcome to show your support by making a financial donation. In return, we will provide you with a charitable tax receipt for income tax purposes and you will be listed in this year's printed donor listing and on our campaign wall, in perpetuity unless, of course, you wish to remain anonymous.

Please call Christine Rier (519-650-9336, x122) our Community Relations Manager to discuss your gift options. And, of course, volunteer friends are always welcome. Please call Sharon Bowes (x 112) if you would like to get involved.

Purchase a ***rare*** discount card and receive discounted and free admission to workshops and outings with advanced registration. Cost of the card is $30 per person and is valid from September 1, 2007 to August 31, 2008.

For more information, please contact
Sharon Bowes at 519-650-9336 x 112

Invasive Species Research at rare

Over the years, you may have noticed various plant species popping up in your garden that you don't remember ever planting. Ever wonder if these species occur naturally in the area or whether these new plants are going to take over your garden?

With financial assistance from and in conjunction with Carolinian Canada, a non-profit coalition of conservation groups, and the University of Waterloo's Environmental Resource Studies Department, ***rare*** hired a research intern this summer to identify, map, and determine the most effective methods for managing the invasive exotic plant species that have been thriving on ***rare*** property. It is highly likely that many of these species could be growing in your own backyard.

Lauren Cymbaly sitting next to Crown Vetch - *Coronilla Varia*

A number of the exotic species found on ***rare*** property are highly invasive; that is, because they do not occur naturally in the area, they have a competitive advantage over native plants. These advantages can be caused by a lack of predators, an ability to adapt quickly to changing conditions, or an ability to capture light, nutrients, or reproduce more efficiently, which enables them to succeed above others in local conditions. When an invasive species establishes itself, it can crowd out and replace native plants, changing the natural plant community composition and structure thereby reducing plant and animal diversity. In some cases, these plants even secrete chemical compounds into the soil to kill off the competition, a phenomenon called allelopathy. Garlic Mustard and Leafy Spurge are examples of allelopathic invasive species with the ability to alter the soil microbiota and chemical composition which changes the ecosystem's natural dynamics dramatically and consequently affects all that lives around it.

Cambridge is located within the Carolinian zone, which means that its physical environmental conditions can support Carolinian species. The Carolinian vegetation zone comprises only 1% of Canada's total land area, but supports a greater number of flora and fauna species than any other in Canada. While a plethora of foreign plants have entered Canada's ecosystems since the dawn of European settlement, many have immersed themselves into Canada's ecosystems with little to no disruption or have died out; not being able to grow in Canadian conditions. However, there are a number of exotic species thriving in the Carolinian zone and elsewhere with this ability to disrupt and impair the natural functions of various ecosystems. As an environmentally sensitive landscape home to a great number of rare and endangered plants and animals, it is these types of exotic species that have been termed invasive and which are of concern to ***rare***.

So, how can you identify which invasive species are present in your area and learn how to get rid of them?

One way is to join us for a hike scheduled for Saturday September 8th at ***rare*** led by Lauren Cymbaly, our research intern from the University of Waterloo, which aims to inform community members on how to identify and manage the various invasive alien species growing in this region. If you can't make the hike, not to worry; watch for a link on our website (www.raresites.org) entitled Invasive Plant Management Guideline coming later this fall. This link will serve to provide quick tips for easy recognition, photos, and the most effective ways to get rid of the invasive plant, according to existing research literature.

While a number of exotic species have not yet been proven to be invasive, it is important to note that what we know about all foreign plants introduced into Canada and their specific interactions with various species in a local, let alone national context, is still very limited. As such, the consequences of introducing exotic species, are still widely unknown. This is why using native plants in gardens and landscaping is an important way of minimizing the spread of potentially invasive exotic species, and optimizing native habitat for endangered birds, mammals and insects found in this area.

Garlic Mustard, *Alliaria petiolata*, in its first growing season (biennial)
Photographed by Lauren Cymbaly - July 3rd, 2007

How do you go about developing your own native ecological garden?

Plans to create a native plant demonstration garden at ***rare*** are in the process of being developed. This native garden will be located at Springbank Farm just east of its greenhouse and organic fields, where the charity's community and youth education gardens are also located. This ecological garden will serve as an example of the kinds of native plants you can purchase in this region and provide information on what species attract certain types of pollinators, birds and other wildlife. In addition, this garden will identify native vegetables and plants that can be used to dye fabric and colour foods! This garden will be set up as a self-guided tour, so that you can visit it at your leisure, examine the plant species present and find out where you can purchase them, as well as obtain ecological information on them by means of a corresponding brochure.

We're thankful for the help of Native Plant Source, a nursery located in Breslau, Ontario, who is donating the plants for the garden. For more information please see www.nativeplantsource.com.

For more information on the Charity's Youth Education and Community Gardens, please see the ***rare organics*** update in this newsletter or contact our ***rare organics*** Community Education Intern, David Fletcher at rareorganics@raresites.org.

Dame's Rocket - *Hesperis matronalis*
Photographed by Lauren Cymbaly

While importing foreign plants was a common phenomena in the past, these introductions are not done so lightheartedly anymore given that invasive alien species has been identified as one of the five main threats to biodiversity loss in Canada (Convention on Biological Diversity; Environment Canada). Find out more about what you can do, to reduce this threat in your neighbourhood.

Outings with Bill Wilson:
When Autumn Gives Way to Winter

Saturday, December 1st.

rare presents an opportunity to experience the change of seasons by participating in one or more of three outings taking place on December 1st:

Outing A: 8 a.m. to 9:30 a.m. Early morning observations of the river at three locations to view wintering waterfowl and shoreline birds. Minimal walking; each site visited by car pool.

Outing B: 10 a.m. to 11:30 a.m. Annually since 2003, selected agricultural lands are undergoing ecological restoration resulting in food and cover crops for a variety of birds and other wildlife. Search for lingering migrants and early winter arrivals. Walking distance approximately 1.5 km.

Lunch break from 11:45 to 12:45. Bring your lunch and join outing participants at ***rare*** headquarters, Lamb's Inn, 1679 Blair Road. Coffee/tea/apple cider/ hot chocolate provided.

Outing C: 1:00 p.m. to 3:00 p.m. A 4-km hike along existing roads, trails, hedgerows and forest edge to see the "back country" of ***rare***.

Each outing lasts approximately 90 minutes with washroom and "refreshment breaks" between Outings. Join us for the whole day, cost is $10.00; ***rare*** Discount Card holders are free. You can also join us for select outings. The cost for individual outings is $5.00; free to ***rare*** Discount Card Holders. When registering, please indicate which outing(s) you'll be attending and whether you'll be joining us during the lunch break. Coffee/tea/apple cider/ hot chocolate provided.

Inclement weather date: Saturday, December 8.

Dress in suitable outdoor clothing including footwear. Bring binoculars if possible. Telescopes are provided in Outing A.

All outings begin at ***rare*** 1679 Blair Road, Cambridge.

rare *organics* update

It is a new season of growth for ***rare organics***. Not only are the vegetables growing, but ideas about an ideal food system are also growing and in many cases coming to fruition. The ***rare organics'*** Community Shared Agriculture program is once again a nutritious success thanks to community members who are 'in the know' about how delicious and sustainable locally-grown organic produce can be. In addition to our CSA program, our new booth at the Kitchener Farmer's Market is becoming very popular. Farm Days have provided many families and other curious folks a relaxing and informative opportunity to explore the farm and participate in workshops and farmer-guided tours. And new this year is ***rare organics'*** Community Gardens.

The Community gardens make use of a unique format to provide area residents with accessible, informative space to meet, garden, share ideas and spread the word about sustainable food systems throughout the community. Whether used simply to grow flowers, or as a vegetable garden to provide a family with fresh vegetables, the community garden provides a welcoming atmosphere. The Cambridge Self-help Food bank has already taken up residence in the garden, and has a plot plump with fresh vegetables for their members. The garden's proximity to the operating organic farm means that questions from all gardeners can be fielded by ***rare organics*** farming staff, and a bulletin board encourages the sharing of garden and community information.

Also new this fall, coinciding with the new school year, will be the expanded resource provided by a youth education garden and a native plant demonstration garden. The youth education garden will be a place for classrooms to have a dedicated space where they can plant seeds and tend to them, while learning about soil, water, plant systems and health. The proximity to the farm in this situation is again key, as farm staff can provide guidance and visual aids in the form of five acres of organically-grown vegetables. Over winter, classes can plan out next year's gardens and start seedlings in the classroom, which will then be transplanted in the Spring.

The native plant garden will encourage the use of native plants by means of a self-guided tour, highlighting the benefits of these plants to the environment in which they are found, as well as some of the more practical aspects of using native plants in a household garden. Larry Lamb, a member of ***rare's*** Environmental Advisory Team, will help to design the garden, along with Jeff Thompson of Native Plant Source, who is generously donating the plant material.

The cohesive vision for all three aspects of the community garden is to become the focal point of accessibility for ***rare organics***. Having more community members involved in and thinking about sustainable agricultural practices means a more sustainable community for everyone, and ***rare organics***' community garden provides a place for these ideas to grow and flourish.

Remembering Jane Jacobs' Advice: Help us Build a "Hornets' Nest"

Have we mentioned lately how much we appreciate your support – and how much you are needed at this critical time?

Like many of ***rare's*** supporters, you are probably involved with a number of community efforts. But there is something rather special about your role in supporting this charity: this is a charity that has major assets and we all need to work to protect them on behalf of the public. The 913 acres of land that we are here to protect, in perpetuity, is priceless to our environmental protection effort in the Region and to future generations.

The tireless work of the late Jane Jacobs is well known to many of us. She kept ***rare*** volunteers motivated, even when the effort to protect the lands was at its most exhausting. She related her own experiences and encouraged us to keep going, in the strongest terms. "It's wicked to get into a fight you don't intend to win," she said. "It's wicked because when you give up you let down a lot of people who helped. And it's wicked because it discourages others who come after you from even attempting the fight. … What you need first and foremost is a 'nest of hornets' that can be stirred into action if there are ever any threats to the project."

Join ***rare's*** Hornets' Nest and encourage others to do the same. When the land is threatened raise your voice, along with all members of the ***rare*** community, and help us spread the message of environmental awareness and protection amongst your colleagues, friends, and family.

By using the convenient tear off form below, you can help us grow our network and base of support:

1. If we don't already have your email and/or mailing address, send it to us so that we can keep in touch with you and let you know of any imminent threats to the property.
2. Tell your network (friends, family, colleagues) about this very important effort to protect these significant 913 acres for future generations and ask them to send us their email or mailing address.

When you do, you are investing in our future, in the children who visit our unique outdoor "class room" and develop a deep respect and appreciation for nature. Your involvement declares that the work we do is valued and supported by our community. It also sends a message to funders who are considering supporting ***rare***.

Jane Jacobs deserves the last word: asked if we could pass on any comments to others involved, especially to our volunteers, Jane said: "Tell them 'Thanks. Thanks from all of us.' This sort of thing helps everyone, whether they know it or not. 'So thanks. And congratulations.'" ■

Yes, I want to support ***rare***!

name

address

city postal code

telephone & email address

method of giving ○ cheque ○ Visa ○ Mastercard ○ American Express

card number expiry date

name on card signature

1679 Blair Road
Cambridge, Ontario
Canada N3H 4R8

+1 519 650 9336 voice
+1 519 650 5923 fax

rare@raresites.org
www.raresites.org

○ I would like to preserve
☐ 20 sq.m. – $40 ☐ 125 sq.m. – $250 ☐ 500 sq.m. – $1000
☐ 50 sq.m. – $100 ☐ 250 sq.m. – $500 ☐ other $ _____

OR

○ Please use my gift for the most pressing need.

○ Please add my email address to your Hornets' Nest to receive information about imminent threats to the property, exciting news, wildlife sightings on the property, etc.
email address – _____

○ As a donor, 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. _____

Our charitable registration # is 87761 5914 RR0001.

CanadaHelps.org – a Greener Way to Give

This secure and convenient on-line donation portal is also an environmentally friendly way to make your credit card donations.

When you visit CanadaHelps.org or click on the Donate Now button on our web site and enter ***rare*** or our full name, ***rare*** Charitable Research Reserve, you can make a one-time or monthly donation without using a single piece of paper or diverting valuable ***rare*** resources to administrative costs.

Your donation is processed quickly and safely electronically, including your receipt, which is forwarded to you by CanadaHelps.

At the same time, CanadaHelps gives you the opportunity to let us know how you would like your donation used and if or how you would like to hear from us. You can even create a GivingPage for that special occasion in your life that you'd like to share with ***rare***.

For all these reasons, next time you make a credit card donation consider the convenience, security and efficiency of *CanadaHelps.org*, and make your gift just that little bit more green!

What is rare to you?

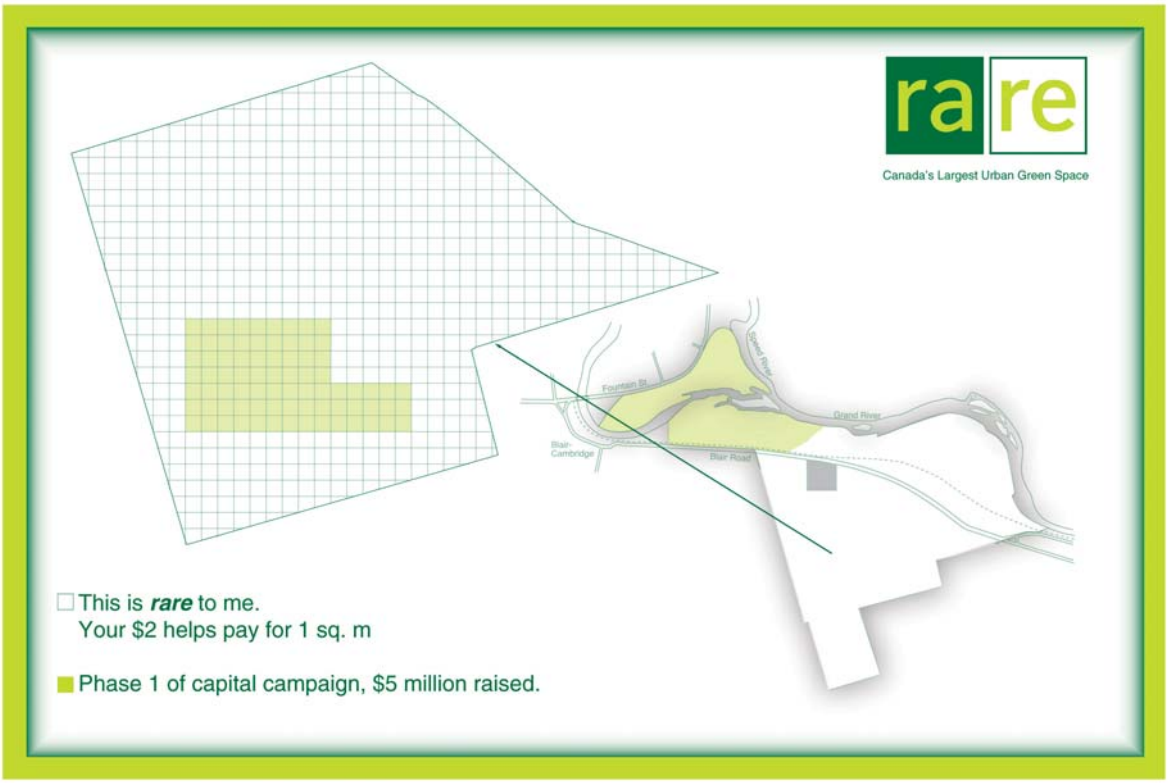
Use Your Toonie to Help Colour the Map Green!

For the cost of a cup of coffee you can help preserve ***rare*** lands - trees that are over 300 years old; 6 different types of habitat that are home to 55 rare and endangered species; and 201 species of birds. All in the heartland of the Grand River watershed in Waterloo Region, one of Canada's fastest growing urban areas.

Your "toonie" will save one square metre of land, and help colour the map green! Use the reply form on p.10 to let us know how many square metres you wish to preserve. Protect 50 square metres and you provide enough land to sustain 11 trees!

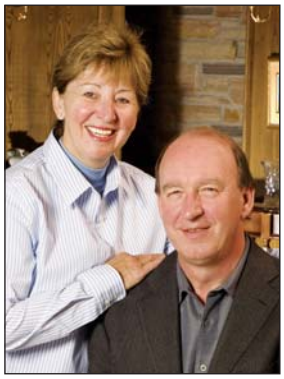
Or consider including a $2 payroll designation to ***rare*** Charitable Research Reserve in your workplace giving. Just imagine how much land you will keep green now - and forever!

For more information on preserving ***rare*** intact and in perpetuity, please contact Christine Rier, Community Relations Manager, by phone at 519-650-9336, by email at cmrier@raresites.org or visit www.raretome.ca.



2007 Conestoga Golf Classic Honours Keith and Sheila Ainsworth

The outstanding community leadership and support of Keith and Sheila Ainsworth were recognized early this summer when over 140 local business leaders chose to honour them at the 12th annual Conestoga Golf Classic held at Rebel Creek Golf Club.



Sheila and Keith Ainsworth

Dr. John Tibbits, President of Conestoga College, made a presentation to Keith and Sheila; a group of ***rare*** *Charitable Research Reserve* supporters were on hand to echo these thanks and words of appreciation. Keith is Chair of the board at ***rare*** and Sheila is a tireless volunteer and advisor.

They are also key volunteers and supporters of many other organizations: Keith serves as a board member for the Cambridge & North Dumfries Community Foundation, Junior Achievement and the Waterloo Regional Children's Museum; Sheila for KidsAbility, Lisaard House, where she is also a founder and President, and is a member of the advocacy committee for the Waterloo Wellington End of Life Network.

In his remarks, Keith noted that he and Sheila have focussed on making long-term investments in the young people of our community. After commenting on the good work of the organizations listed above, Keith turned his comments to ***rare*** and said,

> "The ***rare*** Charitable Research Reserve might, at first glance, appear to be a misfit amongst this group of worthy causes. But to me, and thankfully to others, it represents a wonderful opportunity to protect a natural area of land that I believe future generations will probably appreciate far more than most of us here today. As our children and grandchildren together with future immigrants continue to make this region succeed and grow, I truly believe that a large natural greenspace in the middle of a huge urban area will add enormously to the quality of life for future generations in Waterloo Region, and will be seen to add another dimension to the intelligence of the area."

And with the usual wit and generosity that are hallmarks of the Ainsworths, he concluded by saying,

> "Finally, I should say that in working with these charities, we have come into contact with a great many truly dedicated staff, fundraisers and volunteers who are the lifeblood of these organisations. We would like to say 'thank you' to all of them, for without their hard work and commitment, some of the rest of us would not look nearly so good."

From everyone at ***rare***, congratulations and many thanks to Keith and Sheila.

Contact Us

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Websites: www.raretome.ca www.raresites.org

rare Staff

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Erin Aucoin, Intern, ***rare organics***
Sharon Bowes, Community Outreach Coordinator
Ken Dance, Senior Project Manager, Zerofootprint Waterloo Region
David Fletcher, Community and Education Intern, ***rare organics***
Lisa Hagen, Assistant Farm Manager, ***rare organics***
Amanda Newell, Farm Manager, ***rare organics***
Christine Rier, Community Relations Manager
Ian Rowett, Bookkeeper
Erik Silby, Intern, ***rare organics***

rare Leadership

Board of Directors

Keith Ainsworth, Chair of the Board; Chairman COM DEV International
Gerald Achtymichuk, Family Physician
Paul Koch, Marketing & Management Consultant; Civic Entrepreneur
Peter Krause, Trillium Environmental Consulting Inc.; International Director of International River Foundation
Brian McGee, Chartered Accountant; Partner, Zeifman & Company LLP
Angela Tsementzis, Architect

Environmental Advisory Team/Committee

Chris Dalton, Avocational Archaeologist, Licensed by the Province of Ontario
Larry Lamb, Manager Ecology Lab, Adjunct Lecturer, Environmental Studies, University of Waterloo
Doug Larson, Faculty Member, College of Biological Sciences, University of Guelph
Alan Morgan, Faculty Member, Earth Sciences, University of Waterloo
Stephen Murphy, Faculty Member, Environment & Resource Studies, University of Waterloo
Martin Neumann, Supervisor of Terrestrial Resources, Grand River Conservation Authority
Bill Wilson, retired Teacher; Naturalist; Regional Co-ordinator, Ontario Breeding Bird Atlas

Ambassadors

Michael Barnstijn, retired partner RIM; Philanthropist; Musagetes Foundation
David Buckland, Founder, Cape Farewell Project www.capefarewell.com; director of the film *Art from a Changing Artic*
Ed Burtunsky, Photographer; subject of award-winning documentary, *Manufactured Landscapes*
Severn Cullis-Suzuki, Environmental activist; speaker; television host; author
Ron Dembo, Founder, Zerofootprint www.zerofootprint.net
Jane Jacobs, Urban Planner; author; activist (deceased)
Louise MacCallum, retired software engineer; Philanthropist; Musagetes Foundation
Jane Urquhart, Author
Morden Yolles, Multi-Award winning Canadian structural engineer, restaurateur and photographer

Building Committee

Chris Dalton, (see previous)
Graham Lobban, Lobban Stroud Building Inspections
Robert Milligan, Environmental Health Analyst
Val Rynnimeri, Faculty Member, School of Architecture, University of Waterloo

Archaeology Committee

Chris Dalton, (see previous)
John MacDonald, Archaeologist/Heritage Planner, Ministry of Culture, Province of Ontario

Education Committee

Jason Bracey, Teacher, Southwood Secondary School, Cambridge
Susan Trotter, Teacher, New Dundee Public School

Directors of Research

Doug Larson, Co-Director (see previous)
Stephen Murphy, Co-Director (see previous)

Campaign Cabinet

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John K. Bell, Chairman, The Onbelay Group
Greg Buzbuzian, Owner, Knar Jewellery
Stewart Campbell, BlackTree Capital
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Joy Roberts, retired; community volunteer
Hugh Thompson, President, Cambridge Towel and CEO Thompson Centre for Art and Design

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