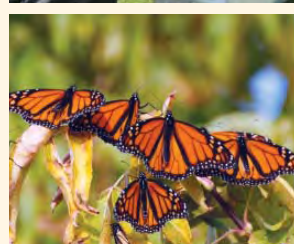
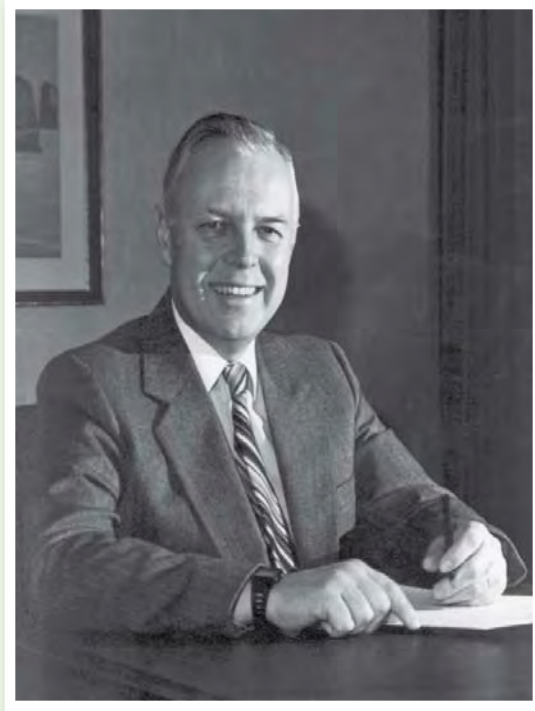


The Eco Advantage



TORONTO AND REGION CONSERVATION AUTHORITY
2009 ANNUAL REPORT

In Memoriam



Bill McLean

1935 – 2009

Since his conservation career began in 1959, Bill McLean dedicated his energy and efforts toward the protection of the environment and the natural resources of our region. Upon graduating in geography from McMaster University in 1959, Bill joined the Metropolitan Toronto and Region Conservation Authority (MTRCA) as a conservation area planner. He became conservation area administrator in 1961 and was appointed director of an inter-agency task force to establish a waterfront division at MTRCA in 1970. As the first administrator of the waterfront division, Bill was instrumental in developing a system of waterfront access and recreation sites over the 50-kilometre stretch of waterfront. He also initiated shoreline management measures such as erosion protection works and regulations controlling shoreline alterations.

Bill served as the director of planning and policy from 1975 to 1981. In this capacity he helped prepare a comprehensive watershed plan, setting new directions and priorities for MTRCA. Bill became deputy general manager in 1981 and was seconded to the Conservation Authorities Branch of the Ministry of Natural Resources in 1982 to prepare a provincial strategy for conservation authority parks. Upon his return to MTRCA, Bill was appointed general manager in 1983, a position which he held until his retirement in 1992.

When he retired from MTRCA, Bill directed his energy and dedication to The Conservation Foundation of Greater Toronto. He was a prominent member of the Conservation Foundation since 1992, including a four-year term as president. In addition, he was a member of the Canadian Water Resources Association and the Soil and Water Conservation Society of America, and he was president of the Canadian Parks and Recreation Association. In 2004, Bill wrote about the story of the Toronto and Region Conservation Authority in *Paths to The Living City*. Throughout his career, he was a strong supporter of the Association of Conservation Authorities of Ontario, now Conservation Ontario. Bill was a remarkable environmental and community leader and he will be greatly missed.

OUR VISION

The quality of life on Earth is being created in rapidly expanding city regions. Our vision is for a new kind of community—The Living City®—where human settlement can flourish forever as part of nature's beauty and diversity.

OUR MISSION

To work with our partners to ensure that The Living City® is built upon a natural foundation of healthy rivers and shorelines, greenspace and biodiversity, and sustainable communities.

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Message from the Chair

It is an honour to Chair an organization that works so passionately to protect and restore our environment through so many diverse programs.

Two highlights of 2009 were the opening of the Archetype Sustainable House on Earth Day with Minister Smitherman and the celebration of our solar produced boat at the Lake St. George Field Centre with Minister Kathleen Wynne.

The receipt of federal and provincial funding through the economic stimulus program is enabling new swimming pools to be built at Heart Lake Conservation Area and Petticoat Creek Conservation Area.

The progress within Rouge Park to secure the long term viability of farming is also something I am particularly pleased about.

We completed some key land requisitions on the Oak Ridges Moraine as we expand the greenspace system that TRCA has been securing for over 60 years.

We also began the Port Union Gateway Project to connect Pickering and Toronto with a beautiful new waterfront pedestrian trail.

Two of the most compelling projects for me, personally, are the efforts to find employment for internationally trained environmental professionals and our community building with the Jane/Finch – Green Change Project.

In closing, our progress is due in large measures to the strong financial support from our municipalities that we very much appreciate.

A handwritten signature in black ink, appearing to read 'Gerri O'Connor', with a long, sweeping flourish extending to the right.

Gerri Lynn O'Connor

Message from the CAO

Even in the face of a very serious economic downturn in 2009, the proliferation of our green products and services continued in the market place. The proclamation of the Green Energy Act encouraged even more interest in energy conservation and the integration of renewable energy sources. The pursuit of new green jobs to replace the thousands of jobs disappearing from traditional manufacturing processes began in earnest.

Energy and water conservation features are becoming the norm, not the exception, in new buildings, often at the forefront of advertising campaigns.

Whether teaching young people to become green roofing construction workers or renewable energy installers, TRCA's programs are extremely relevant in Ontario today.

Our stewardship, water conservation and greenspace management activities are highlighted throughout this report with particular emphasis on the ways in which our many partners are exploring the economic advantage of strategic "green" decisions.

We will continue to respond to the strong support from our municipalities with programs that assist them in their efforts to create more sustainable communities that celebrate natural heritage with enabling a strong economy for the future.



A handwritten signature in black ink that reads "Brian Denney". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Brian Denney, P. Eng.



Tommy Thompson Park

Healthy Rivers and Shorelines

Watersheds

Lake Ontario Waterfront

Remedial Action Plan (RAP)

The Toronto and Region RAP team consists of two representatives from each of Environment Canada, the Ministry of the Environment and the Ministry of Natural Resources, as well as four representatives from TRCA. On May 27, 2009, the *2007 Toronto and Region Remedial Action Plan (RAP) Progress Report, Moving Forward* was completed and released at a public event. The report illustrates the staggering number of challenges we face in order to restore environmental conditions, particularly those pertaining to water quality, in the Toronto and Region Area of Concern, given both the extent of historical impacts and the continued urbanization and development of the region. However, the Report observes that these challenges are being met with:

- comprehensive monitoring programs to provide vital information on the conditions of our watersheds and waterfront;
- long-term plans and legislation to prevent pollution and remediate degraded areas;
- watershed and habitat plans to guide restoration activities; and
- bold strategies for remediating aging infrastructure and retrofitting stormwater management facilities.

Among other initiatives undertaken in the past year, a public speaker's series that addresses some of the key issues facing Lake Ontario, titled Lake Ontario Evenings, hosted its first event on December 3, 2009. A second event, on the theme of biodiversity, is planned for March 23, 2010. In addition, both the Toronto and Region RAP logo and its website were redesigned in 2009. In November, the RAP's redeveloped website (www.torontorap.ca) went live in order to enhance the public's access to information and increase transparency in the Toronto and Region RAP process.



Port Union Waterfront Park - Phase 2 under construction.

Port Union Waterfront Park – Phase 2

In 2009, construction continued on Phase 2 of the Port Union Waterfront Park to provide a new 3.8 km section of the Waterfront Trail between Highland Creek and the Rouge River in Scarborough. The park features a series of six headlands and cobble beaches, as well as a pedestrian waterfront trail stretching between Chesterton Shores and Rouge Beach Park. Phase 1, covering the western end of the park area, was completed in late 2006; Phase 2, which covers the eastern end, is scheduled to be open to the public in the spring of 2012. Activities undertaken in 2009 included the construction of a new elevated boardwalk and waterfront trail section in the City of Pickering to create a key pedestrian connection between Toronto and Pickering. This project was made possible by a cost-sharing partnership between TRCA, the City of Pickering and Waterfront Toronto.

Tommy Thompson Park

Work on the Tommy Thompson Park (TTP) Master Plan Implementation Project continued in 2009. Projects undertaken in 2009 included:

- completion of the habitat improvements in Embayment A (to increase primary productivity, expand coastal wetlands and improve the physical and thermal refuges for fish and reptiles);
- establishment of native meadow and grassland habitats along the Neck, the old Toplands and around Cell One;
- the planting of over 5,500 deciduous trees and shrubs in various areas, concentrating on the four peninsula and embayment rehabilitation areas; and
- the planting of over 30,000 aquatic plants in the wetlands in Embayments A, C and D and Cell One.

Among the other developments or events hosted at the park, TRCA:


- received approval from the Waterfront Toronto Design Review Panel for conceptual designs for new park infrastructure, including a new entrance, staff booth, environmental shelter and ecological research station;
- held the biggest ever Spring Bird Festival on May 23, 2009, with over 2,000 visitors participating in guided bird hikes, bird banding demonstrations and other displays;
- partnered with Ontario Nature to host the first Monarch Migration Festival on September 13, 2009, with over 400 people in attendance;
- implemented the 2009 Cormorant Strategy and was successful in increasing ground nesting by 94 per cent and reducing tree nesting for the first time since colonization;
- collaborated with York University on colonial waterbird studies;
- completed the sixth year of operation at the Tommy Thompson Park Bird Research Station (TTPBRS), and documented two new species for the park – the worm-eating warbler and the cave swallow;
- TTPBRS volunteers contributed over 3,000 hours of monitoring at TTP and Peel restoration sites; and
- collaborated with the Aquatic Plants Program to deliver the Winged Migration program to students.



TRCA partnered with Ontario Nature to host the first Monarch Migration Festival on September 13, 2009, with over 400 people in attendance.

CLIMATE CHANGE: CRAFTING LOCAL SOLUTIONS TO A GLOBAL THREAT

In December 2009, global leaders converged in Copenhagen for the COP15 climate change talks. While the world kept a close eye on international developments, Toronto and Region Conservation Authority staff, together with our volunteers, municipal and business partners, continued to forge ahead with local climate change work in the Toronto Region. The results of the talks abroad were at the forefront, but it did not slow down the work being accomplished in communities across TRCA's watersheds.



Combating climate change on a local level is something TRCA does every day. We are encouraging local food production by renting 1,396 hectares of land for new near-urban agriculture and reducing our ecological footprint by providing residents with locally grown food. Last year, we officially opened the McVean Farm; 15 hectares of historical agricultural TRCA property leased to FarmStart to give up-and-coming farmers access to land, equipment and infrastructure and to support ecological food production during the first years of their farm businesses.

We are also involved in research that could help us to be better prepared for the impacts of climate change on our watersheds. Watershed modeling is being conducted for both the Humber and the Rouge watersheds to understand the environmental effects of increased temperatures on the local ecosystem.

Through our efforts we are helping to educate businesses and builders to take action on climate change. Through the Partners in Project Green, we are working with more than 12,500 businesses around Pearson International Airport to help them green their bottom line.

The 2009 grand opening of the Archetype Sustainable House at The Living City Campus at Kortright in Vaughan was one of the biggest projects we had last year. The two semi-detached units – one unit showcasing environmentally-sensitive methods of building currently available and the other showcasing the future of building green – serve as an education facility for trades and builders. It is projected that more than 150,000 students and members of the general public will visit the house annually.

We are also educating our leaders of tomorrow about climate change. Each year, thousands of kids participate in education programs at our field centres. They learn about “The Geography of Your Lunch”, which looks at the carbon footprint of a typical meal, and are taught about what a “Litterless Lunch” looks like and how they can be superheroes for taking one to school.

Protecting natural areas is the best way to adapt to climate change. With an objective to improve air quality, community health and biodiversity, we aim to acquire and enhance approximately 4,000 ha of greenspace with a projected purchase expense of approximately \$22.5 in the coming years. We also aim to achieve 30 per cent natural cover in our jurisdiction and develop species recovery plans to increase robustness of land base.

Disseminating climate data and impact analysis to municipalities and communities is at the forefront of TRCA's climate change agenda. To increase its capacity for regional climate modeling and to develop effective climate change adaptation strategies at a regional scale, TRCA, in partnership with York University, hosted a climate science workshop that was attended by Ontario's top environmental experts including: scientists, representatives from local conservation authorities, climate scientists working in the private sector, researchers from 11 universities, and policy makers from federal, provincial, and municipal governments. One very important outcome of this initiative was to establish a regional modeling consortium in Ontario. TRCA will be coordinating the facilitation of such a consortium in the coming months.

At TRCA, we walk the talk. We are on track to become a carbon neutral organization in all areas of our operations. We have a green procurement policy and a green fleet program. Currently over 20 per cent of our electricity needs derive from green energy sources. The Kortright Centre – at the heart of The Living City Campus – uses 100 per cent green energy.

There are many other ways in which TRCA works at a local level to combat climate change. For more information or ideas on how to take action go to www.trca.on.ca

Frenchman's Bay Harbour Entrance

The waterfront team, in partnership with the City of Pickering, completed the Frenchman's Bay Harbour Entrance Class Environmental Assessment (EA) project. The EA was approved by the Ministry of the Environment in the fall. The waterfront team will continue working with City of Pickering staff to complete the land acquisition and funding strategies in order to implement the works.

Great Waterfront Trail Adventure

The waterfront team worked with the Waterfront Regeneration Trust and local municipalities in the planning of the second annual Great Waterfront Trail Adventure, held in July. The Great Waterfront Trail Adventure is an annual tour that travels, over eight days, the whole 740 kilometre route of the Waterfront Trail from Niagara-on-the-Lake to Rivière-Beaudette on the Ontario-Quebec border. Participants are encouraged to set their own pace and discover the vibrant communities and beautiful parks along the route, experience delicious local food and entertainment, and enjoy charming shops and unique local businesses.

Shoreline Management Survey

As part of the Ministry of Natural Resources' Working Group, the waterfront team coordinated the Land Use—Shoreline Management Survey for the Lake Ontario-St. Lawrence River basin (encompassing the jurisdictions of 12 conservation authorities). This initiative is part of the International Joint Commission's work on formulating new orders of approval and a regulatory plan to regulate water levels and flows from Lake Ontario and St. Lawrence River through the Moses-Saunders Dam. Working with Ministry of Natural Resources, the report will be finalized and submitted to the International Joint Commission in 2010.

Habitat Restoration

Aquatic Habitat Toronto, a consensus-based partnership that includes Fisheries and Oceans Canada, Ministry of Natural Resources and TRCA in consultation with the City of Toronto, continued its implementation of the Toronto Waterfront Aquatic Habitat Restoration Strategy (TWAHRS). The Strategy strives to create a more sustainable waterfront by using an ecosystem approach to increase ecological integrity, to provide suitable conditions for the maintenance of self-sustaining aquatic communities and to improve ecological connectivity. In 2009, one project was approved, while the team provided advice on additional 15 projects.

Etobicoke and Mimico Creeks Watersheds

Watershed Plan Implementation

The 37 member Etobicoke-Mimico Watersheds Coalition is a volunteer, watershed-wide advisory committee created by TRCA to protect and regenerate the two watersheds and oversee implementation of the 2002 revitalization strategies document, *Greening Our Watersheds*. The Coalition completed its second term in 2009. During the past year, over 8,000 volunteers and community residents participated in 59 projects and events across the Etobicoke and Mimico watersheds. Approximately 9,000 trees and shrubs were planted and 49,000 m² of watershed were restored. To date, approximately two kilometres of upper Mimico Creek have been restored (see story on page 8) and the shoreline restoration at Heart Lake Conservation Area has been completed. A number of large scale projects, such as West Etobicoke Creek regeneration project, the Kennedy Valley Park rehabilitation, and the Sherway trail and valley restoration, were initiated.

Environmental Restoration Activities, 2009

	Etobicoke	Mimico	Peel	Toronto	Mississauga	Brampton	Caledon
Events	26	33	52	7	35	16	1
Attendance	6,320	1,813	7,339	794	1,139	6,185	15
Plantings	8,575	1,255	7,930	1,900	755	6,975	200
Restored (m ²)	38,890	10,360	38,110	11,140	8,660	28,450	1,000

Etobicoke Creek Trail

Construction of over 10 kilometres of Etobicoke Creek Trail has been initiated in Brampton, Mississauga and Toronto. Once all of the trail connections are completed, residents will be able to travel from the mouth of the Etobicoke Creek at Marie Curtis Park, north through Toronto, Mississauga and Brampton, and up to the headwaters of the creek in Caledon. A 3.7 kilometre section of the trail, starting south of Hwy. 401, will pass through Toronto Pearson International Airport along the Etobicoke Creek, just south of Hwy. 407. This section will begin construction in 2010. As part of the trail construction, TRCA will work with the City of Mississauga and businesses neighbouring the Etobicoke Creek valley, to complete a number of restoration initiatives, including streambank stabilization, wetland creation and riparian tree plantings. In addition, TRCA and the City of Mississauga will be constructing a green parking lot at the corner of Courtneypark Drive and Britannia Road on Greater Toronto Airports Authority (GTAA) property.



CELEBRATING THE “NATURALIZATION” OF UPPER MIMICO CREEK

On October 22, Toronto and Region Conservation Authority and its partners—the Region of Peel, City of Brampton, TD Friends of the Environment and students from local

high schools—celebrated the completion of the first three phases of the Upper Mimico Creek Aquatic Habitat Restoration project. Launched in 2006, the project is designed to naturalize a degraded urban watershed portion of the creek, enhance wildlife habitat, improve water quality, and help mitigate flood events. Phase 3 of the project entailed:

- the implementation of an additional 280 metres of natural corridor design, meaning that 1.8 kilometres of the creek has been renaturalized to date;
- the creation of a 0.5 hectare wetland, which was planted with aquatic and riparian vegetation; and
- the installation of essential wildlife habitat structures to enhance the overall value of the stream corridor.

Over the course of four years, at a cost of approximately \$400,000, more than 580 metres of hard engineered structures were removed and replaced with a natural corridor design, three wetlands were constructed, 900 metres of riparian zone were planted, and numerous essential habitat structures were created. The area surrounding the restored creek was planted with a total of 1,800 trees and shrubs providing greater habitat cover for bird, mammal and amphibian species within the area.

In addition, a partnership was established with Sithe Global’s Goreway Station to re-naturalize another 280 metres of urbanized stream during 2010 under Phase 4 of the project.

Heart Lake Master Plan

The Heart Lake Community Group continued to work with TRCA staff to successfully implement the Heart Lake Master Plan. Projects included:

- restoration of Heart Lake shoreline to improve aquatic habitat and water quality;
- monitoring of water quality to evaluate impacts of the solar powered “lake lung”;
- maintenance of trails;
- completion of a new splash pad, and
- planning and design of a new outdoor pool facility.

Over 9,000 students and other members of the community attended the 14th annual Peel Children’s Water Festival to learn about the importance of water.



Peel Children’s Water Festival

Over 9,000 students and other members of the community attended the 14th annual Peel Children’s Water Festival to learn about the importance of water. This annual event is hosted at Heart Lake Conservation Area by the Region of Peel. Events include a family fun day and barbecue lunch, trout release demonstration, electrofishing display, and a series of hands-on educational activities designed to teach elementary and high school students about water conservation, ecological cycles, water management, source protection and environmental planning.

Spill Decision Support System for the Region of Peel

Toronto and Region Conservation Authority formalized the partnership with a private sector firm to develop a web-based spill response system for the Region of Peel. The web-based tool utilizes sewer and topography data that will allow staff to determine a spill’s destination or trace its possible origins. As a result, emergency responders will be able to deal more effectively with oil and chemical spills, helping them minimize any damage to the environment and to the health of Canadians.

Aboriginal Medicine Wheel Garden

In a unique partnership with the Peel Aboriginal Network, a traditional Aboriginal Medicine Wheel Garden was created at Heart Lake Conservation Area. Planted with native plants with medicinal value, the space has been transformed into an area of healing, celebration and peace. While honouring Aboriginal people, their culture and teachings, the garden



Aboriginal Medicine Wheel Garden was created at Heart Lake Conservation Area.

also provides a unique opportunity to teach visitors to the conservation area about Aboriginal culture and its connection with nature. Approximately 1,200 wildflowers have already been planted; an additional 1,200 plants will be added in the spring of 2010, as part of the opening ceremony, along with 500 trees and shrubs that are to be planted as part of site restoration efforts near the garden.

Conservation Forest in Shelby Park

Shelby Park, Mississauga, is the third of six community forest projects planned for the Etobicoke and Mimico watersheds. Nearly 1,800 square metres in size, the area was planted with approximately 500 trees and shrubs by City of Mississauga area high school students. The goal was to naturalize a portion of this community park, develop a 200 metre informal trail, and create interpretive signage. Local students are committed to return over the next three years to monitor tree health.

PARTNERS IN PROJECT GREEN: A TRANSFORMATIONAL YEAR

The Partners in Project Green – a coalition of private companies, business groups and municipal representatives – are working together to transform the employment lands surrounding Toronto Pearson International Airport into an internationally recognized eco-business zone. Through new forms of business-to-business collaboration, Partners in Project Green delivers programming that helps businesses reduce energy and resource costs, uncover new business opportunities, and address everyday operational challenges in a green, sustainable and cost-effective manner.

In 2009 alone, through partnerships with Enersource Hydro Mississauga, Hydro One Brampton, Toronto Hydro, Enbridge, the Guelph Food Technology Centre, the Ontario Centre for Environmental Technology Advancement, and Natural Resources Canada, Partners in Project Green was able

to engage 2,525 local businesses in energy reduction activities, saving over 5.4 MW of electricity and 3.6 million m³ of natural gas. When it came to water savings, through efforts led by the Region of Peel and City of Toronto, 51 companies in the Pearson Eco-Business Zone were engaged in water conservation activities that realized 1,103 m³ per day in savings.

With the increased profile of the project and the various programs available through the Partners in Project Green partners, more and more businesses are walking the talk of sustainability and realizing the savings.

TRCA is a founding partner of the project and has been active in its development since its inception in 2008. To learn more and get involved visit www.partnersinprojectgreen.com



Training and networking events engaged over 200 businesses and 700 employees from the Pearson Eco-Business Zone. Above; participants in the Sustainable Business Tour enjoy a drink after their tour of Molson-Coors in Toronto.

West Deane Park and Valley Restoration

The West Deane Restoration Project, being delivered by TRCA in partnership with the City of Toronto, is focused on the lower Mimico Creek valley between Eglinton Avenue and Rathburn Road (within the City of Toronto). A four-year restoration and stewardship plan for West Deane Park will enhance the riparian cover, connect natural corridors, improve habitat opportunities for local wildlife, raise environmental awareness and encourage community stewardship. Local residents, schools and businesses will be kept informed about this project and be invited to participate in a series of native tree and shrub plantings, educational workshops and other stewardship activities.

Geotechnical Investigations

TRCA initiated a geotechnical investigation of Mimico Creek to complete a risk assessment of residential properties affected by a slope failure adjacent to Beaucourt Road. Other works completed as part of this program included bank stabilization and creek restoration in the Malton Greenway.

Two bank stabilization projects were completed on Etobicoke Creek in 2009. This includes works completed by TRCA at Conservation Drive in the City of Brampton, as well as a comprehensive inventory of all erosion control structures and erosion sites on Etobicoke Creek under TRCA's Erosion Control and Monitoring Program.

Humber River

Humber Watershed Alliance

The Humber Watershed Alliance is a community-based volunteer committee dedicated to the protection, restoration and celebration of the Humber River watershed. Major accomplishments from the fourth term of the Humber Watershed Alliance included:

- development of a Feasibility Study for The Living City® Farm at Kortright;
- publication of a book celebrating the Humber's 10th anniversary as a Canadian Heritage River;
- construction of pedestrian trails and bridges;
- habitat restoration, including reforestation and wetland creation;
- community events to celebrate accomplishments and acknowledge partners;
- heritage appreciation through hikes, monuments and building restoration;
- the Humber Bridge inventory; and
- the review and input on major projects that affect the watershed, such as environmental assessments and policy documents.

Left to right; Brian Denney, Chief Administrative Officer, TRCA, Vicky Dhillon, Councillor for the City of Brampton, Gary Wilkins, Humber River Watershed Specialist at the opening of McVean Farm.





McVean Farm opens at the Claireville Conservation Area.

McVean Farm Opens

On September 27, TRCA and FarmStart celebrated the grand opening of the McVean Farm at the Claireville Conservation Area in the City of Brampton. The farm consists of 37 hectares of TRCA's historical agricultural property in the heart of suburbia that has been leased to FarmStart to showcase near-urban agriculture. The project will provide up-and-coming farmers access to the land, equipment and infrastructure needed to support ecological food production during the first years of their farm business. In 2009, 13 new farmers from diverse backgrounds and communities across the GTA worked at the McVean Farm. Approximately 300 people attended the official ground breaking ceremony and participated in guided farm tours, face painting, tractor rides, a farmers' market and live music. Attendees also enjoyed food, showcasing the McVean Farm's unique and fresh produce, prepared by chefs from The Food School.

Oak Ridges Corridor Park

2009 marked the completion of Phase 2 of The Oak Ridges Corridor Park Initiative, a partnership between TRCA, the Oak Ridges Moraine Foundation, the Great Lakes Sustainability Fund, Environment Canada and the Town of Richmond Hill. This project implements a series of recommendations set forth in the 2006 Oak Ridges Corridor Park Management Plan, which establishes the principles, goals and objectives for the protection, restoration, use, operation and maintenance of this sensitive area on the Oak Ridges Moraine. Accomplishments for 2009 included:

44 hectares of the Oak Ridges Corridor Park were reforested with with 66,100 mixed species of seedlings planted.

- the reforestation of 44 hectares with 66,100 mixed species of seedlings planted;
- two hectares of buffer plantings, with 250 caliper trees planted;
- the installation of three trail head signs, along with five-kilometre markers (with associated directional signage) along main pedestrian trail;
- the design of a 1.5 hectare wetland; and
- a series of outreach and educational events, including a native plant garden demonstration, a Yellow Fish Road event with two local schools, a community planting, two nature hikes and one clean up.

Community Action Sites

In 2009, local residents, community groups and municipalities worked together at designated Community Action Sites throughout the watershed to implement the recommendations of the watershed plan. Priority projects in 2009 included:

- Town of Caledon: the Palgrave fishway was monitored and maintained, and 1,000 plants were planted to complement the Palgrave Rotary Pavilion.
- Town of Caledon: wetland management, in-stream fish habitat improvement and streambank planting projects were undertaken in Caledon East.



CELEBRATING THE 10TH ANNIVERSARY OF THE HUMBER'S DESIGNATION AS A HERITAGE RIVER

Based on its rich history, the Humber River was designated as a Canadian Heritage River on September 25, 1999, the only waterway to receive this designation in the Greater Toronto Area and one of only 41 heritage rivers in the country as a whole. The Humber River was designated for its outstanding human heritage and the contributions it has made to the development of Canada. The river and its tributaries served as an important

transport route—the famous Carrying Place Trail—for the Aboriginal peoples who originally occupied the region, as well as the early explorers, traders and the settlers that followed. The Humber was also a vital source of food, water and power to those who lived and worked along its banks.

On September 19, Toronto and Region Conservation Authority celebrated the 10th anniversary of the Humber River's designation at a special event at Étienne Brûlé Park in the City of Toronto. More than 400 participants

Left to right; Doug Stewart, *Chair of the Canadian Heritage Rivers Board*, Toronto Mayor David Miller, Stewart Deline, *Mohawks of The Bay of Quinte*, Donna Cansfield, *Minister of Natural Resources*, Gerri Lynn O'Connor, *Chair of TRCA*.

enjoyed a traditional drumming ceremony and First Nations prayer, a song created for the celebration and historical vignettes presented by the Humber River Shakespeare Theatre Group, and remarks by the Minister of Natural Resources Donna Cansfield and Toronto Mayor David Miller.

To commemorate the 10th anniversary, TRCA also published *Humber River: The Carrying Place*, a spectacular collection of colour images and rare archival photos that showcase the natural and cultural treasures that define the river. A series of essays shed light on how the river and its watershed have evolved, and examine the challenges the ecosystem faces in the future. In addition, the book presents a series of milestones in the river's history, as well as a short atlas that describes interesting facts and figures about the Humber. The book retails for \$39.99 at TRCA facilities and profits will be directed to projects to help protect and restore the Humber River watershed.

- City of Toronto: 300 volunteers planted 1,000 trees and shrubs in Downsview Park to support Earth Day.
- City of Brampton: one hectare of trees and shrubs was planted in the West Humber Valley to complement City of Brampton's valley land naturalization program.
- City of Brampton: a one-hectare wetland was constructed and 2.7 hectares of trees and shrubs and 8,500 aquatic plants were planted in the Claireville Conservation Area.
- Town of Richmond Hill: 12 fish habitat structures were installed in Lake Wilcox and 5,700 aquatic plants were used to naturalize the shoreline.
- City of Vaughan: 300 students from local schools planted 450 trees and shrubs and 500 aquatic plants in Elder Mills to enhance valley land habitat.

Community Program for Stormwater Management

The goal of the Community Program for Stormwater Management (CPSWM) is to fund projects which complement the City of Toronto's Wet Weather Flow Management Master Plan (WWFMMP) and reduce and ultimately eliminate the adverse effects of wet weather flow. In 2009, eight community groups were awarded approximately \$186,000 from the CPSWM for undertaking community naturalization, stewardship and public outreach projects. The range of projects approved under CPSWM for 2009 include:

- replacement of impervious surfaces;
- community tree plantings;
- downspout disconnection;
- demonstration residential landscaping;
- stormwater flow atlas web-based tool;
- rainwater harvesting; and
- multicultural outreach.

Ten-Year Humber River Monitoring Report

To maintain the Humber River's status as a Canadian Heritage River, a 10-year monitoring report was submitted to the Canadian Heritage River Systems Board. The report provides a current assessment of the heritage values, including improvements and losses, which earned the Humber River its original status of a Canadian Heritage River. The report also provides a summary of actions undertaken over the last ten years that have led to the identification, protection, documentation and celebration of the watershed's heritage resources.

Humber Heritage Bridge Inventory

Bridges have been essential to the development of communities from the headwaters to the mouth of the river. As physical remnants of the past, bridges help demonstrate the historical significance of waterways to the development of the country, and serve as important community and watershed landmarks. The inventory of bridges in the Humber River watershed identifies those worthy of designation under the *Ontario Heritage Act*.

The Shared Path: Toronto Historical Park

The Toronto Historical Park—A Shared Path for a Shared Past—is a destination park within the City of Toronto's Lower Humber Valley that tells the story of the early history of Toronto from a First Nations, French and English perspective. It employs art and multilingual signage to highlight significant cultural heritage features in the valley landscape. It also features story telling circles and the construction of the Dundas Street Pedestrian Bridge. Working in partnership with City of Toronto, Heritage Toronto and La Société d'histoire de Toronto, TRCA is actively engaged in the development and implementation of this initiative. Development during 2009 included:

- partnership with Heritage Toronto and Parks, Forestry & Recreation to research and produce interpretive signage for the Toronto Historical Park;
- completion of infrastructure upgrades to Kingsway/Queensway interchange, including relocation of Provincial Rousseau plaque;
- a community tree planting initiative at Étienne Brûlé Park; and
- partnership with Ministry of Natural Resources, Ontario Streams, and Parks, Forestry & Recreation to commence a Stewardship EA process for Restoration of Lower Humber Marshes Wetland Complex.

"905" Celebrate Canadian Heritage River

In 2009, TRCA partnered with community groups and the "905" municipalities surrounding the City of Toronto to recognize partnerships, acknowledge accomplishments and celebrate the 10th anniversary of the Humber's designation as a Canadian Heritage River. Approximately 900 individuals joined in the festivities at five separate venues.

- The Art Society of King hosted an afternoon of music, theatre and fine food at the Township of King Museum.
- Cold Creek Day was hosted by the local stewardship committee, Township of King staff and TRCA. Attendees enjoyed music, wildlife demonstrations, displays, and outdoor theatre by the Humber River Shakespeare Theatre Group.
- Oak Ridges Corridor Park in the Town of Richmond Hill was the location for interpretive hikes and stewardship activities.
- Caledon Trailway Day celebrated the local heritage with food, wildlife demonstrations and public recognition of Conn Smyth, a prominent individual who resided in the community.
- Albion-Bolton Fair provided the perfect venue to display local archaeological artifacts, hold wildlife demonstrations and distribute watershed information.

Geotechnical Investigations

In 2009, TRCA initiated three geotechnical investigations to determine risk and potential remedial actions to address slope failures adjacent to the Humber River or one of its tributaries. One of the sites as illustrated to the right is located on the main Humber River and is affecting homes located on Dennison Road in the City of Toronto.



Humber River geotechnical investigation.



DON WATERSHED PLAN APPROVED BY THE AUTHORITY

In September 2009, Toronto and Region Conservation Authority approved *The Don River Watershed Plan – Beyond Forty Steps*, which was produced in consultation with the Don River Watershed Regeneration Council, watershed municipalities and the public. The full watershed plan provides an updated direction for the Don River Watershed that reflects new science and recent policy and planning developments, such as the *Oak Ridges Moraine Conservation Plan 2002*, that have taken place since *Forty Steps to a New Don* was published in 1994.

Beyond Forty Steps provides an in-depth look at the gains made to date in protecting, regenerating and taking collective responsibility for the Don River Watershed. It marks the next stage in the plan to revitalize the Don into a healthy urban river that will enhance and support The Living City® of the future. For a more complete description of the Don River Watershed Plan, see below. Electronic copies of the plan can be found at:

<http://trca.on.ca/protect/watersheds/don-river/don-river-watershed-plan.dot>

Don River Watershed

Don River Watershed Plan: Beyond Forty Steps

The watershed plan is intended to inform and guide municipalities, provincial and federal governments, and TRCA as they update their policies and programs for environmental protection, conservation and restoration within the contexts of land and water use and the planning of future urban growth and intensification. The plan also provides direction to local non-governmental organizations and private landowners with regard to best management practices and environmental stewardship.

The study focused mainly on filling information gaps, guiding land use planning and approval decisions (particularly redevelopment), and providing direction to advance implementation of regeneration priorities. The study also developed a new set of “concept site plans”, similar to the successful approach used in *Forty Steps to a New Don*, to illustrate how the watershed plan’s recommendations could be implemented at the local level and provide tools to facilitate the renewed engagement of community leaders in watershed regeneration. The City of Vaughan has already begun implementation of the Maple Reserve Concept Site in the upper East Don subwatershed.

The Don River Watershed Plan concludes that we are beginning to “hold the line” on further degradation of the watershed. Going forward, our primary challenge will be to better manage wet weather flows and to restore a more balanced flow regime to the river and its tributaries. With the build-out of the watershed nearly complete, the Don has been transformed into an almost fully urbanized watershed. The focus is now shifting from greenfield development towards redevelopment, intensification, infilling and infrastructure renewal to accommodate the anticipated growth of the GTA and neighbouring regions. This period of urban renewal affords us an opportunity to implement a number of the measures required to improve watershed health. We must take advantage of every opportunity to achieve an overall net gain in watershed conditions.

The watershed plan identifies three strategic themes for the regeneration of the watershed:

1. Build, re-build and retrofit our communities to restore water balance and improve sustainability.
2. Regenerate the aquatic and terrestrial landscapes.
3. Engage the people of the Don

With approval of the watershed plan, the Authority also approved its supporting documents for use in fulfilling the watershed planning requirements of the Oak Ridges Moraine Conservation Plan. TRCA directed staff to use these documents in the review of major development proposals on the Oak Ridges Moraine.

Funding for the Don River watershed planning study was provided by York Region and City of Toronto as part of the municipal capital budgets for TRCA. Additional funding was provided by Canada Mortgage and Housing Corporation and Environment Canada's Great Lakes Sustainability Fund in support of the watershed modelling and subwatershed regeneration plans, respectively.

Don Watershed Regeneration Council

2009 marked the completion of the 5th term of the Don Watershed Regeneration Council (DWRC). During the year, the Council continued to assist TRCA in the development and review of the updated *Don River Watershed Plan: Beyond Forty Steps* and associated implementation guide, which was completed and approved by the TRCA board in September 2009. The DWRC also provided input to the implementation of municipal strategic plans, such as York Region's Water and Waste Water Master Plan and the Region's Transportation Master Plan.

Don Mouth Naturalization and Port Lands Flood Protection Project EA

Extensive technical studies were undertaken throughout 2009 in support of the Environmental Assessment of the Don Mouth Naturalization and Port Lands Flood Protection Project (DMNP EA), the large-scale study that TRCA has been undertaking on behalf of Waterfront Toronto since 2004. These studies have largely focused on how the preferred alternative would function and included:

- extensive computer modelling to confirm that floodwaters would be conveyed into the Inner Harbour;
- an examination of how the proposed wetlands would function in relation to lake level fluctuations;
- of the proposed lakefilling the project would be more than compensated by the creation of extensive wetlands which provide high quality fish habitat;
- confirmation that impacts to navigation in the Inner Harbour would be negligible;
- the development of a generalized "river-first" construction phasing strategy;
- a better understanding of the range of soil and groundwater contaminants that are found in the Port Lands area;
- a generalized approach to address contaminated soils and groundwater; and
- integration with infrastructure required for the build-out of the Keating and River Precincts, which make up the larger Lower Don Lands area.



Ground based image looking southeast across future river mouth.
Renderings are property of Waterfront Toronto.

The preferred alternative was presented to the public on May 9, 2009, at the St. Lawrence Hall in concert with Waterfront Toronto's final public meeting for the Lower Don Lands Framework Plan, Lower Don Lands Master Servicing Plan and Keating Precinct Plan. This meeting was attended by more than 150 people and the project received strong support. Towards the end of 2009, the team was focusing on the impact assessment of the preferred alternative, and drafting the EA report. It is anticipated that the EA will be submitted to provincial and federal agencies for approval in 2010.

Lower Don River West Remedial Flood Protection Project EA

Toronto and Region Conservation Authority continues to work with Waterfront Toronto and the Ontario Realty Corporation to ensure that the Flood Protection Landform (FPL) is constructed in accordance with the conditions of the EA approvals. Significant progress has been made in 2009 on the construction of the landform and it is anticipated that the final tie-offs will be made in mid-2010. TRCA will continue to work with Waterfront Toronto as construction of the Don River Park, located on the FPL, starts in earnest throughout the remainder of 2010 and into 2011.

Maple Nature Reserve Quonset Hut Site

Construction began on the Maple Nature Reserve Quonset Hut Site, a wetland and forest regeneration project in Vaughan. The project is one of the 'concept sites' contained in the new Don River Watershed Plan, which are intended to serve as models for regeneration projects elsewhere in the watershed and the region. Funds raised from "Paddle the Don" contributed to the production of detailed designs for the construction project. In addition, over \$500,000 was provided by the federal government through the infrastructure stimulus funding program to the City of Vaughan for the construction.

Maple Nature Reserve Quonset Hut Site concept plan.



Watercourse ID signs

Watercourse ID signs were unveiled at watercourse road and bridge crossings at various locations throughout the Don watershed in the City of Toronto. The program is designed to educate area residents and visitors about the location, size and extent of the watershed in which they are travelling. The signs will help people make a connection between the neighbourhoods in which they live or work and the natural environment in which their homes and businesses are situated. In May 2009, the City of Toronto Works and Infrastructure Committee recommended the signage program be phased in over the five remaining watersheds across the city, and support for this initiative has been ongoing. Planning is underway for watercourse signage installation in the Don in the Town of Markham.

Mill Pond Splash

The 11th annual Mill Pond Splash was held on May 20, 2009, attracting more than 1,200 visitors to Richmond Hill's only annual environmental fair. This edition of the "Splash" featured tree and shrub planting, nature walks, bird-box building, an "eco-art" show by local artists, and exhibits of native mammals, reptiles, birds-of-prey and fish. There were also displays from more than two dozen local community groups and municipal government agencies on topics ranging from the use of native plants in gardening, to vermicomposting, to local wildlife and conservation initiatives. Splash partners included the Richmond Hill Naturalists, the Town of Richmond Hill, TRCA and the Don Watershed Regeneration Council, while financial support was received from the TD Friends of the Environment Foundation and the Walmart – Evergreen Green Grant program.



The 11th annual Mill Pond Splash

Paddle the Don

The 16th annual Paddle the Don, held May 3, 2009, saw more than 170 canoes and kayaks travel down the Don from the entry point at Ernest Thompson Seton Park, just north of Eglinton Avenue, to the finish point at the Keating Channel at the mouth of the river. In addition to the fresh air, recreation and spiritual renewal, participants also enjoyed lunch, a glass of wine and the displays set up at the landing site. While there is no charge to participate, \$50,000 was raised through pledges and the fundraising efforts of individual paddlers and corporations, and will support regeneration efforts in the Don watershed. Since the pledge program began in 2002, paddlers have raised an incredible \$230,000. Terrapex Environmental Limited raised the most donations in 2009 and was named the Banrock Station Corporate Team Canoe Challenge winner. Paddle the Don partners included The Conservation Foundation of Greater Toronto, the Wilderness Canoe Association and the Don Watershed Regeneration Council (DWRC). The event was also supported by the City of Toronto, and relies on the services of over 100 staff and volunteers from TRCA, DWRC, Wilderness Canoe Association and 14th Willowdale Scouts.



The 16th annual Paddle the Don, held May 3, 2009, saw more than 170 canoes and kayaks travel down the Don River.

Walk the Don Trail Guides

The Walk the Don series of self-guided interpretive walks was expanded to include guides for the Forks of the Don and Lower Bartley Smith Greenway. These new titles join the guides that have already been prepared for Burke Brook, Wilket Creek and the Lower Don. All walks use prepared trails and are suitable for family use. It is expected that additional guides will be issued in 2010.

Don River Geotechnical Investigations

TRCA completed numerous erosion control projects in the Don River watershed in 2009, as well as one geotechnical investigation to address issues of slope instability and bank erosion. Many projects were designed to replace failing structures, including a 60 metre-long section of concrete slab revetment adjacent to the Don Valley Parkway and replacement of embankment protection beneath the Cummer Avenue bridge. Other projects involved bank restoration, trail re-alignments and bank stabilization.

Rouge River and Rouge Park

Rouge Park Governance Review

Since its inception, Rouge Park has grown considerably and continues to evolve. While the goal and vision of the park remain true today, the Rouge Park Alliance needed to consider its structure, funding and partnerships so that they can continue to strongly lead the park into the future. As such, in August 2009, the Rouge Park Alliance retained StrategyCorp Inc. in collaboration with Hemson Consulting Ltd. to undertake this review of Rouge Park. The purpose was to make recommendations on options for its future leadership, financing and organization, with a view to fulfilling the Vision of the Park. The report is to be finalized in February 2010, and the Rouge Park Alliance is currently reviewing the recommendations.

Trails Master Plan

Rouge Park is in the process of developing a Rouge Park Trails Master Plan. This will mean expanding the trail system to one that is able to connect with the Greater Greenbelt, joining with the Oak Ridges Trail in the north, the Seaton Trails to the east, and forming a stronger link to the Waterfront Trail and Trans Canada Trail. With a diverse trail system supported by a volunteer-led trail association, visitors will experience a rewarding, refreshing and exciting outdoor adventure, take part in interesting interpretive opportunities and learn about responsible trail use. With the addition of a trail coordinator to Rouge Park's staff, we have begun to offer a variety of guided outings in the Park. As the program grows, we will be enlisting and training volunteer trail leaders, and exploring beyond Park boundaries.

Rouge Park is in the process of developing a Rouge Park Trails Master Plan.



Rouge Park Award

The Rouge Park Alliance has honoured the Rouge Valley Foundation by presenting this important conservation group with the 2009 Rouge Park Award. Members of the Foundation have played an essential role in the creation of Rouge Park and continually show their commitment to the park through fundraising and volunteer efforts. The Foundation has been active for 25 years, supporting and fostering many conservation initiatives, including 10,000 Trees for the Rouge, Citizen Scientists and the Rouge Valley Conservation centre.

Partnership Projects

We often describe Rouge Park as a “partnership park”, for without partners and the work of many volunteers, we would not be celebrating as many accomplishments as we do. We recognize that our partners and teams of volunteers have much to contribute to the restoration and enhancement of the Park, and we welcomed the opportunity to team a few of these park stewards together. The team, made up of representatives from TRCA, York Region, Rouge Valley Naturalists, Trees Ontario, numerous students and Rouge Park, tackled two major restoration projects: one along 16th Avenue and the other on Reesor Road in Markham. Additionally, we supported numerous natural heritage projects implemented by Friends of the Rouge watershed, Rouge Valley Naturalists, Citizen Scientists, 10,000 Trees for the Rouge and Ontario Streams.

Monitoring Initiatives

With nearly 5,000 hectares of land to manage, and many ongoing habitat creation and enhancement projects, it is important to be aware of wildlife populations and how they are responding to our efforts to improve the Park. This year, Rouge Park has begun several projects to study natural systems and their flora and fauna:

- Volunteers participating in our Frog Watch program record the dates of frog mating calls and what types of frogs are present. Other volunteers assist us by setting up and monitoring ‘salamander subdivisions,’ a series of wooden disks set in a grid pattern to form the ideal salamander habitat.
- Our breeding bird surveys and winter bird count help us monitor bird populations in various areas of Rouge Park in the winter, spring and summer, investigating which species of birds are nesting in the park, which areas are most important to them, and what threats they may be facing.
- We have installed two ‘bug houses’ to study the composition of insect populations, their food sources, parasites and other aspects of their life cycles, one near the Rouge Valley Mennonite Church on Reesor Road, and a second at Whittamore’s Farm on Steeles Avenue.

Working with the Agricultural Community

The earliest Rouge Park plans set aside land as an Agricultural Heritage Reserve because Park farmland provides wildlife habitats, scenic rural landscapes for visitors and opportunities to directly supply food for local consumers, while embracing the agricultural heritage of the area. Farming will remain active on the Agricultural Heritage Reserve lands. We have met with farmers to discuss how the transition between agriculture and natural habitats would be least disruptive of the farming operations. We discussed scheduling of restoration and targeting of fields so that everyone has fair and reasonable advance notice of when restoration will occur. We have also been developing an agricultural policy that will guide farming in the future. Farming in the Park may be different than farming elsewhere in Ontario and we intend to work closely with the Park’s farm community to make sure that the Park’s values and farmers’ needs are met on the same lands. The Park will continue to work with the farm community to find ways for farmers to have an opportunity to increase crop diversity and provide food for local communities. Additionally, we will be exploring ways that a diverse mix of wildlife species can be encouraged on the farm lands using techniques such as planting small woodlots and encouraging hedgerows.



Agriculture is an important piece of Rouge Park’s natural heritage mosaic.

Rouge Park's Markham East Lands

Along with Rouge Park's most recent expansion comes the important task of planning how to manage these lands consistent with Rouge Park's overall objectives. The 600 hectares of land dedicated by the Ontario government in 2007 boast a rich natural and cultural heritage. Rouge Park's staff, along with a steering committee consisting of partners and stakeholders, have begun to plan for how this new addition will be managed. This section of the Park, which is referred to as the East Lands, presents many opportunities for the future. The area is ecologically significant as it straddles three watersheds: the Rouge, Petticoat and Duffins. This will allow for greater protection of these watercourses and many of their tributaries, and will provide the opportunity to create stronger ecological linkages across watersheds. The East Lands have a rich cultural heritage, containing a number of working farms, designated heritage buildings and strong local communities. Representatives from the farming community have been integrated into the East Lands Steering Committee in order to help sustain the agricultural heritage of this area, which is part of the Duffins-Rouge Agricultural Preserve.

Duffins, Carruthers and Petticoat Creeks

In 2009, some 450,000 fry, fingerling and adult salmon were stocked in the watersheds of Duffins Creek, the Credit River and Cobourg Brook.

Atlantic Salmon Restoration

One of the key accomplishments in 2009 was the continuation of efforts to restore self-sustaining populations of Atlantic salmon in Duffins Creek. The Atlantic Salmon Restoration Program is a project led by the Ontario Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters. In 2009, some 450,000 fry, fingerling and adult salmon were stocked in the watersheds of Duffins Creek, the Credit River and Cobourg Brook. Students attending the Lake St. George and Claremont Field Centres, as well as several local area schools, helped raise salmon fry in a classroom hatchery. In early May, these fish were released into the creek. The classroom salmon release was widely covered by local media and was also very popular with the children. Adult salmon are expected to return to Duffins Creek to spawn for the first time in 2010.

Adult salmon are expected to return to Duffins Creek to spawn for the first time in 2010.



City of Pickering

Toronto and Region Conservation Authority worked in partnership with Rouge Park and the City of Pickering to develop a Watershed Action Plan for the Petticoat Creek watershed. This plan is intended to develop tangible actions that can be undertaken to improve the health of this watershed. A portion of the watershed extends into York Region and the City of Toronto. These areas fall within Rouge Park and efforts are underway to ensure management planning for the Rouge Park considers restoration opportunities that benefit Petticoat Creek. This plan is scheduled to be completed in the summer of 2010 and has included public input from various watershed stakeholder groups.

Town of Ajax

Toronto and Region Conservation Authority is working in partnership with the Town of Ajax to undertake a comprehensive stormwater management retrofit study for the portion of the municipality which lacks modern stormwater controls. Runoff from these 14 sewersheds discharges directly to the Lake Ontario waterfront and the Duffins Creek Marsh, and contributes to water quality problems on the waterfront, including the closing of swimming beaches. The Town of Ajax and TRCA are also participating in investigations of the nearshore areas of Lake Ontario, together with the Ontario Ministry of the Environment, Ontario Power Generation (Pickering Nuclear Generating Station) and the regional municipalities of York and Durham. These studies are investigating factors responsible for beach closings and the growth of attached algae which is fouling the shoreline.

Township of Uxbridge

The headwaters of Duffins Creek arise in the Oak Ridges Moraine in the Township of Uxbridge. In cooperation with the municipality and The John & Pat McCutcheon Charitable Foundation, our efforts have been focusing on the restoration of an abandoned gravel pit.

Highland Creek

Greening Strategy for the Highland Creek Watershed

With support from City of Toronto Water, the development of a Greening Strategy for the Highland Creek Watershed has begun. The Greening Strategy will focus on identifying opportunities and needs to increase wetland, forest and riparian cover, protect critical habitat, manage stormwater at the lot level, establish trail linkages, and engage community stewardship activities. Work on the strategy includes integration with the City of Toronto's five-year Parks Plan and Toronto Water's Geomorphic Systems Master Plan. Components of the strategy in development in 2009 include a baseline characteristics report, a Habitat Implementation Plan (HIP) and a strategy for community engagement.



The Greening Strategy for the Highland Creek watershed will focus on identifying opportunities and needs to increase wetland, forest and riparian cover, protect critical habitat, manage stormwater at the lot level, establish trail linkages, and engage community stewardship activities.

Watershed Planning and Management

2009 Regional Watershed Monitoring Activities, by Watershed

	Etobicoke	Mimico	Humber	Don	Highland	Rouge	Petticoat	Duffins	Carruthers	Other ¹	TOTAL
Fish species & aquatic habitat	2	5	2	1	0	22	0	21	3	0	56
Algae biomonitoring ²	—	—	—	—	—	—	—	—	—	—	—
Benthic invertebrates	15	10	44	24	11	24	4	21	3	4	160
Fluvial geomorphology	1	0	0	0	0	0	9	31	10	0	51
West Nile virus monitoring	3	1	16	4	2	3	1	7	2	6	45
Surface water quality	3	2	11	5	1	7	1	6	1	1	38
Baseflow	7	2	14	7	6	9	2	9	4	4	64
Stream flow	2	1	5	8	0	3	1	7	1	2	30
Precipitation	4	0	11	6	2	4	1	4	1	0	33
Snow	1	0	4	1	0	2	0	2	0	0	10
Groundwater quality & quantity	2	0	9	1	0	3	0	6	0	0	21
Terrestrial natural heritage ³	40	5	30	105	16	115	63	573	100	0	1,047
Terrestrial volunteer monitoring	5	2	19	6	3	7	1	8	1	4	56
Climate change	0	0	3	1	0	1	0	2	0	0	7
Water temperature	0	0	0	1	1	25	0	21	3	0	51

1. Other minor watersheds including Frenchman's Bay

2. Algae was sampled outside TRCA's jurisdiction in 2009

3. Italicized numbers are the number of hectares monitored

2009 Regional Watershed Monitoring Activities, by Region

	Durham	Peel	Toronto	York	Other ¹	TOTAL
Fish species & aquatic Habitat	23	7	6	20	0	56
Algae ²	—	—	—	—	—	—
Benthic invertebrates	30	34	45	49	2	160
Fluvial geomorphology	48	1	0	2	0	51
West Nile virus monitoring	10	10	11	14	0	45
Surface water quality	9	5	13	11	0	38
Baseflow	18	12	21	13	0	64
Stream flow	11	5	10	4	0	30
Precipitation	5	9	10	9	0	33
Snow	2	3	1	4	0	10
Groundwater	6	7	2	6	0	21
Terrestrial natural heritage ³	736	69	66	176	0	1,047
Terrestrial volunteer monitoring	11	15	17	12	1	56
Climate change	2	1	1	3	0	7
Water temperature	23	0	8	20	0	51

1. Dufferin/Simcoe

2. Algae was sampled outside TRCA's jurisdiction in 2009

3. Italicized numbers are the number of hectares monitored

Source Water Protection

In partnership with the Province of Ontario, TRCA has been tasked with supporting municipalities in implementing the *Clean Water Act, 2006*. This work began with the establishment of source protection areas, source protection authorities and source protection committees, building on the extensive knowledge of conservation authorities to guide scientific studies and develop local source protection plans to ensure that our drinking water sources are clean, healthy and protected for future generations.

Source protection authorities have been established to match the boundaries of the Credit Valley Conservation (CVC), Toronto and Region Conservation Authority (TRCA) and Central Lake Ontario Conservation Authority (CLOCA) areas. As the lead Source Protection Authority in the CTC Source Protection Region, the Toronto and Region Source Protection Authority (TRSPA) is responsible for ensuring that the CTC Source Protection Committee achieves its goals by providing technical and administrative support and budget management.

TRSPA is responsible for appointing members to the Source Protection Committee (SPC). The CTC SPC is composed of 21 local representatives, plus a chair, equally representing the municipal, economic and public sectors. The CTC SPC is responsible for developing the source protection plans, as well as the necessary scientific work which will inform the plans.

Continuing development of this scientific knowledge will be the work of the TRSPA and the CTC SPC through most of 2010. Once the analysis of the local water landscape is complete the CTC SPC will hold public consultation meetings on the Assessment Report work, likely in June 2010.

The Assessment Report is required to identify the parts of the TRSPA that are considered vulnerable to contamination or over use that could or does pose a threat to drinking water systems from groundwater or surface water. The focus of the work is municipal residential drinking water systems. The Assessment Report will likely be submitted to the Ministry of the Environment in the fall of 2010. Working with municipal partners and TRSPA staff, the CTC SPC will start the work to develop source protection plans in mid-2010 and begin focused stakeholder discussions in late 2010 or early 2011.

Flood Management

The weather systems of 2009 did not present any extraordinary conditions with respect to riverine flooding within the Greater Toronto Area (GTA). In total, 15 messages were issued in 2009, including: 11 High Water Safety Bulletins, three Flood Advisories and one Flood Warning. This is slightly lower than the annual average. Once again, the systems that were in place for our forecasting and warning system functioned as expected and staff were able to confidently carry out their duties during all of the severe weather events.

While TRCA has one of the most advanced mapping programs in Ontario, there are areas within TRCA's jurisdiction that have experienced significant increases in flow or for which new information has become available, resulting in subsequent changes to floodlines. A comprehensive program that includes accurate identification of flood risk, communication with TRCA's municipal partners and implementation of the Flood Protection Strategy is required to address these issues, and will be a core focus of our work in 2010.

The 2010 work plan will maintain the momentum and see the completion of a number of initiatives begun in previous years. These include the Flood Protection and Remedial Capital Works Strategy and the expansion of the NexFlood system to other watersheds within our jurisdiction, beginning with the Don River watershed (which is quick to respond to rainfall events). In addition, a public communications strategy will be developed and implemented.



TRCA owns and operates flood control infrastructure, such as large and small scale dams, flood control channels and dykes.

In 2009, a number of significant goals were realized and are highlighted below.

Emergency Management Program

TRCA strives to provide a comprehensive, risk-based emergency management program with respect to flood events. Under the *Emergency Management and Civil Protection Act* and Ontario Regulation 380/04 under the Act, municipalities are required to conduct an emergency exercise each year. TRCA staff assisted the Region of Durham in their 2009 exercise: Operation Weather Woes. In addition to the municipalities within Durham Region, staff also worked closely with Town of Markham, City of Toronto and City of Brampton staff in the development of their emergency response plans and exercises.

Workshops

"Floods Happen: are you ready?" was a workshop conducted in coordination with the Credit Valley Conservation Authority (CVC) and Lake Simcoe and Region Conservation Authority (LSRCA). The workshop was geared toward presenting our shared municipalities with information about our respective flood forecasting and warning programs, as well as the roles and responsibilities of each agency. The workshop also provided a forum for feedback from municipal staff involved in "response" to flood events. The workshop was well received in 2009 and will be continued annually (with the addition of Halton Conservation and Environment Canada in 2010).

Automated water quality monitoring station located in the Don Watershed, for the City of Toronto's Wet Weather Flow Monitoring.



Rockcliffe Special Policy Area EA

As part of the Flood Protection and Remedial Capital Works Strategy project, a pilot Environmental Assessment (EA) project was initiated in the Rockcliffe Special Policy Area (Black Creek between Weston Road and Scarlett Road, in the City of Toronto). The EA study was completed in 2009 (draft report) and will be filed in early 2010 with recommendations for methods to reduce the risk of flooding within the community. As the most effective options will also require significant capital funds (e.g., replacement of the Jane Street bridge), recommendations for incorporating flood remedial works into future capital projects for road works are presented, along with some options for reducing the frequency of flooding within the area by implementing smaller scale projects.

Flood Control Infrastructure Maintenance

Toronto and Region Conservation Authority owns and operates flood control infrastructure, such as large and small scale dams, flood control channels and dykes. In 2009, channel inspections were conducted at four large dams, six small dams and 16 flood control channels. A number of maintenance or repair projects were undertaken, including:

- hydraulic assessment, maintenance and improvement study for Pickering/Ajax Dyke;
- hydraulic, structural and ecological assessment for Yonge/York Mills Channel;



Emergency repair of erosion scar at Secord Dam.

Before



After

- Albion Hills Dam safety booms installed;
- emergency repair of erosion scar at Secord Dam;
- debris and vegetation removal at G. Ross Lord Dam;
- completion of the operations and maintenance manuals for Milne Dam and Stouffville Dam; and
- analysis of the flood control infrastructure for input to the TRCA Tangible Capital Asset Project.

Real-Time Gauging Network

The real-time gauging network was expanded with the installation of one new real-time precipitation gauge at the Brick Works and an upgrade of the precipitation gauge at the Dufferin Reservoir to real-time. Interest from other agencies has been growing steadily since the launch of the real-time network, and in 2009 TRCA staff expanded the network to the Credit Valley Conservation Authority (CVC) with a real-time pilot project in Cooksville Creek. In addition, a number of website enhancements have been made that allow for quicker access to information for flood duty officers, enhanced reporting (Google maps and precipitation reports), RSS feed, a link to TRCA corporate website, as well as improved accessibility to information by the public.

Flood Warning Program

In 2009, several areas received updated digital elevation mapping to facilitate future updates to floodlines, including three special policy areas within the Humber River watershed, and select areas of the Mimico Creek, Don River, Highland Creek, Adams Creek and Rouge River watersheds. In addition, the first phase of the NexFlood system, a radar-based TRCA flood forecasting model, was completed for use within Peel Region (Etobicoke Creek).

Hydrometrics

Projects undertaken in 2009 included the following:

- data collected at 64 Low Flow indicator sites;
- stream Monitoring Techniques Course presented by TRCA staff;
- continued monitoring and maintenance of 31 existing stream gauges;
- continued monitoring and maintenance of seven weather stations;
- installed, maintained, monitored and retrieved rainfall data from 33 precipitation stations;
- continued monitoring at 10 snow course locations; and
- installed, maintained, monitored and retrieved water quantity and quality data from 14 wet weather sampling stations in partnership with the City of Toronto.



In 2009, several areas received updated digital elevation mapping to facilitate future updates to floodlines.



Lake St. George, in Oak Ridges Moraine

Regional Biodiversity

Conservation Lands

Oak Ridges Corridor Park (ORCP) East Lands Management Plan

The plan for these lands will ensure protection of the area's key natural heritage features, as well as integrate the lands with other surrounding natural areas. ORCP-East contains a number of key natural heritage features, including kettle lakes, wetlands and forests. This part of the Oak Ridges Moraine is home to many wildlife and plant species that are unique to this habitat, and represents one of the more diverse collections of habitat on the Moraine. These lands also play an integral role in the recharge of the headwater streams of both the Humber River and Rouge River watersheds. Works undertaken in 2009 included the following:

- all trails and hazards were inventoried and geo-referenced;
- removal of all dumped materials and majority of bike structures from entire property was completed;
- background report drafted;
- two public events were held in advance of the public information sessions to promote the meetings and build engagement from the community;
- five public advisory committee meetings and two public information sessions were held, with 35-50 participants at each;
- two newsletters were developed and distributed to over 8,000 households and businesses;
- management zones and a trail plan have been drafted; and
- management recommendations have been initiated and will be completed in 2010.

Aggregate Pit Restoration Project

This project restores an abandoned gravel pit on the Oak Ridges Moraine, which is a key recharge area for the East Duffins Creek headwaters. Conservation Lands have realized how important partnerships are towards successfully implementing a diverse and multi-faceted project that requires a variety of expertise. In 2009, two trail and viewing areas were improved, the parking lot expanded, interpretive signage installed, and four habitat planting nodes and monitoring sites established.

East Duffins Headwaters Land Management

This is the largest composite of TRCA land holdings on the Oak Ridges Moraine, an area where significant natural heritage features need to be protected. The area provides incredible trail user experiences, and contains the most extensive TRCA trail network that connects communities and regions together. Both the Oak Ridges Moraine Trail and the Trans Canada Trail link across this property. Works undertaken in 2009 included the following:

- three trail projects (1.5 km) were completed;
- a 'Day of Action' was held to remove garlic mustard, and six dog strangling vine sites and six buckthorn sites were treated;
- a Community Invasive Species Workshop was conducted;
- location signs were installed;
- three community newsletters were published, and four community stewardship committee meetings were held; and
- the infrastructure audit and resolution was completed, and the Management Plan update for the property was initiated.

Conservation Lands has been very impressed with the level of volunteer effort and commitment being provided by members of the community who have varied and diverse interests, though they are all working to protect and enjoy the lands in a sustainable way.

HELPING TO PRESERVE BIOLOGICAL DIVERSITY THROUGH LAND ACQUISITION

Acquiring land and associated land care is vital to the ecological health of our watersheds. Since its formation in 1957, TRCA has acquired 16,625 hectares (41,079 acres) of land in the watersheds of the Greater Toronto Area, making us one of the largest landowners in the GTA. By protecting natural areas through acquisitions, we hope to achieve 30 per cent natural cover in our jurisdiction. Acquisitions also help to control rampant urbanization and improve the ecological diversity of our communities.

In 2009, Toronto and Region Conservation Authority secured 80 hectares (198 acres) of environmentally important land through acquisitions and easements. Significant acquisitions in 2009 include:

- purchase of 16.2 hectares (40 acres) of the former Klees property, the last remaining large privately owned property in the Jefferson Forest, which is an Environmentally Significant Area (ESA) on the Oak Ridges Moraine, in the Rouge River watershed, in the Town of Richmond Hill. The property also provides a strategic link to other public lands. Including this purchase, TRCA has assembled 158.6 hectares (392 acres) of the Jefferson Forest, which when added to the provincially-owned Corridor Park creates a 586.4 hectare (1,449 acre) block of connected greenspace and wildlife habitat. Funding for the purchase of the property was provided by the City of Toronto, the Town of Richmond Hill and the Regional Municipality of York.
- purchase of two hectares (five acres) of the former Muise property, designated as Natural Core Area in the Oak Ridges Moraine and head waters of the Humber River. The property contains a mosaic of forest, wetland and meadow habitats that contribute to a larger and contiguous habitat located on adjacent TRCA property. Mr. Muise generously donated one half of the property value (\$145,000) to TRCA through the Ecological Gift Program, administered by Environment Canada.



- purchase of 3.2 hectares (8 acres) of former CN property in the Rouge Park, in the City of Toronto. This significant forested property is adjacent to TRCA lands and provides a strategic piece of habitat within the Rouge Park. The City of Toronto, through its Source Water Protection Reserve Fund, provided the funding for this purchase.
- purchase of a 1.6 hectare (4 acre) parcel, the former Beare property, in Rouge Park and 40 hectares (100 acres) at the Skyloft Ski Resort in the Region of Durham (in partnership with Ontario Heritage Trust and Region of Durham).

Seaton Natural Heritage System and Hiking Trail Improvement Project

This project helps to complete public safety improvements to the 12 kilometre hiking trail, protects sensitive habitat features, establishes restoration areas, builds community support for the trail and is consistent with an integrated watershed management approach and watershed public use initiatives of TRCA. Works completed in 2009 included the following:

A total of 30 metres of boardwalk was constructed at five locations in the Seaton Natural Heritage System.

- two trail head improvement projects were completed;
- a total of 30 metres of boardwalk at five locations was constructed;
- some 67 metres of trail were resurfaced;
- all potential restoration sites were mapped;
- all project and trail signs were designed; and
- a community outreach plan was developed.

Conservation Lands have received many positive comments and compliments from the public regarding the trail improvements. We have also seen a reduction in illegal use on lands close to the trail.

Partnerships

In connection with the funding received for the purchase of the Bayview Oakridges Estates Inc. property, TRCA received funding from the Town of Richmond Hill, York Region, the Oak Ridges Moraine Foundation, the City of Toronto and The Conservation Foundation of Greater Toronto to develop a management plan for the Oak Ridges Corridor Park (ORCP) East lands. The management plan will be integrated with plans for the provincially-owned Oak Ridges Corridor Park to the west, as well as other natural areas.

Another important partnership project is the Aggregate Pit Restoration project in the East Duffins Headwaters. This was the final year of a three-year project with receipt of \$20,000 in grant funds annually from the John & Pat McCutcheon Charitable Foundation towards habitat enhancement and public use enjoyment. Other important partners on this project included the Ministry of Natural Resources and Trent University. Both of these partners are providing in-kind contributions towards monitoring the restoration and habitat improvements on the site, which helps measure success and provides valuable interpretative information.

Conservation Lands is working closely with the East Duffins Headwaters Stewardship Committee, which is made up of a number of special interest groups and community associations that have strong links to local and regional communities. Thanks to these partnerships TRCA has been successful in obtaining grants in the amount of \$38,000 for invasive plant species management and \$26,000 for trail development.

Seaton Natural Heritage System and Hiking Trail Improvement Project is a partnership with the Province of Ontario, which provided \$786,000 to complete the work. We are also consulting with the City of Pickering and the Friends of Seaton Trail on the project to obtain support and coordinate the work.

Peel Land Care Program

The Peel Land Care Program was implemented by Conservation Lands in 2009 and complements broader corporate directives through the environmental principles of respect, protect and regenerate. Sustaining The Living City® requires a commitment to these principles. This commitment is critical to the future health of our communities and to maintaining TRCA as one of the premier providers of publicly accessible greenspace in the Greater Toronto Area (GTA). Proper planning, care and management of our greenspace lands supports The Living City® vision and its objectives.

Thanks to our partners on the East Duffins Headwaters Stewardship Committee, TRCA has been successful in obtaining grants in the amount of \$38,000 for invasive plant species management and \$26,000 for trail development.



Public use safety and encroachment issue - Before and after removal.

The program aims to establish the best possible land care and asset management practices, reduce the risk from hazards on the property, deter and mitigate encroachments and discourage vandalism, dumping, poaching and trespassing. The program strives to provide a safe environment for the public, while at the same time enhancing the visitor experience and protecting the environment.

The development of a web-based Land Care Database also began in 2009 and will be fully operational in early 2010. This database will house all current and future data and will allow TRCA staff to query property information. This data will allow Conservation Lands to populate the Lotus Notes-based Conservation Lands Work Order Database that was also developed in 2009. Using this database, recommendations arising from the Peel Land Care Program and annual report are ranked by priority and are tracked to provide accountability and thoroughness to ensure action and completion. The priority system used ensures public safety concerns are dealt with on a priority basis, followed by environmental protection and site securement concerns.

The funding provided by Peel is essential to the protection of greenspace lands in the Region and will allow TRCA to further The Living City® vision.

Conservation Lands is working closely with the Heart Lake Community Action Group. The group will assist in educating their neighbours about the ecological effects of encroachments and how TRCA is losing a considerable amount of greenspace hectares and habitat from the cumulative intrusion into its properties. Conservation Lands saw noticeable decrease in encroachments at two properties in Peel, with high expectations for decreases at more properties in 2010.

The Peel Land Care Program has seen many outcomes and benefits in 2009:

- eight properties in Peel Region were inventoried and audited, including Bolton Resource Management Tract, Claireville Conservation Area, Palgrave Forest and Wildlife Area and surrounding tracts, Caledon Tract, and Albion Hills and Heart Lake Conservation Areas;
- over 200 encroachments were identified and catalogued;
- we resolved 50 per cent of encroachments in Claireville C.A. and 43 per cent of encroachments in Bolton Resource Management Tract;
- public safety hazards were identified and removed, including four unauthorized play structures and one unsafe bridge;
- the program led to the discovery of 74 marijuana plants on TRCA property and staff directed police to the location;
- a total of 194 kilometres of trails were mapped to assist in the development and implementation of trail plans, management plans and master plans;
- an annual report was produced, outlining the findings at each property with recommendations to improve the health of TRCA's conservation lands;
- more detailed and comprehensive GIS layers were created;
- natural and cultural heritage features were noted to complement these broader programs; and
- the health of conservation lands in Peel Region was improved and public safety on conservation lands was increased.

A total of 194 kilometres of trails were mapped to assist in the development and implementation of trail plans, management plans and master plans.

TRCA'S TERRESTRIAL NATURAL HERITAGE

As part of TRCA's vision for The Living City®, we need to learn how to protect and enhance the biodiversity of our watersheds, forests, wetlands, animals and plants. This becomes more pressing as we face growing pressures of urbanization. Currently, natural cover, forests and wetlands in the TRCA region stands at approximately 16 per cent and falls as low as five per cent in some municipalities.

TRCA's Terrestrial Natural Heritage (TNH) Program provides extensive data, scientific models, mapping and guidance for TRCA staff, TRCA's partner municipalities and community groups for achieving natural heritage protection objectives. TNH includes plants, animals and natural communities associated with the land. It encompasses wetlands, plants and animals (such as amphibians and waterfowl) that require terrestrial habitat for at least part of their life cycle.

Through TNH, TRCA is able to identify the ideal conditions needed for a healthy functioning ecosystem. Terrestrial Natural Heritage also provides a science-based tool that will help inform planning and development decisions that protect important natural features and functions. The information also allows TRCA to set priorities for protection and expansion of habitats as urbanization continues and to improve planning for restoration work to create habitats that will thrive.

The initial strategy, developed in 2007, addressed heritage at a larger, regional scale and relied on remotely sensed information. TRCA took the regional system and refined it at the watershed scale for the Don, Rouge, Humber and Etobicoke and Mimico watersheds using more detailed and up-to-date information on land uses and habitats. Additional analysis was undertaken to incorporate the hydrology and aquatic habitats of the watershed with an eye to multiple benefits for overall watershed health and sustainability. This systems-based approach uncovers the linkages between terrestrial natural systems and aquatic systems, water management and hydrologic systems, and considers protection of biodiversity, protection against natural hazards (flooding, erosion and water quality), outdoor recreation and aesthetics.

TRCA is taking a leadership role in advancing the science of sustainable ecosystem management for regional biodiversity. TRCA's model is setting a new standard in natural heritage

planning and is being embraced by more and more municipalities which are looking to re-evaluate their own natural heritage systems requirements as they plan for growth and more sustainable communities. TRCA staff are assisting local and regional municipalities to adapt the TNH to develop their own customized system that will protect and restore local natural heritage, as well as contribute to the larger watershed and regional systems.

TRCA is also helping guide municipalities on the difficult task of tying their own natural heritage network and restoration objectives to their policy and official plans. Through the TNH, TRCA provides expertise for decisions in OMB hearings and interpretations, applications in development and reviews of official plans and site specific plans.

"The new approach to Natural Heritage protection looks not only at our current inventory of forests and wetlands, animals and plants, but also at how to strategically expand, enhance and protect the system while providing for growth," said Dena Lewis, Manager, Terrestrial and Aquatic Ecology, Ecology Division, TRCA. "There has been very good uptake so far with our work with municipalities who are now looking at natural heritage as a set of goods and services with intrinsic value that will benefit their community in the long-term."

You'll learn more about TNHS system through many of TRCA's activities including watershed planning, land securement, land stewardship, conservation land planning, restoration planning and education. For more information visit:

<http://trca.on.ca/protect/land/terrestrial-natural-heritage/>

Natural Heritage

The Importance of Headwater Drainage Features

Toronto and Region Conservation Authority has been undertaking field research for the last three years on headwater systems in order to better understand their functions and habitat contributions to the watershed. Headwater drainage features are small temporarily-flowing streams or swales and wetlands, which usually exhibit flow or standing water in spring and after large rain events. Headwaters can account for 70-80 per cent of the total catchment area in a watershed. Furthermore, 90 per cent of a river's flow may be derived from these small headwater drainage features.

In 2009, field research focused on the role small drainage features play in terms of habitat for fish and amphibians. Because they can be dry during the summer months, they are not often considered as providing direct aquatic habitat. However, the findings of our field investigations in 2009 tell a different story. The preliminary results indicate that these features can provide important spawning and seasonal habitat for fish. Fish were captured at about 80 per cent of the study sites and evidence of fish spawning was observed at nearly 60 per cent. All fish observed were native species. These features also appear to be important for amphibians, which were observed at 75 per cent of the study sites.

Toronto and Region Conservation Authority, in partnership with Credit Valley Conservation (CVC), has developed an interim guideline for the evaluation, classification and management of headwater drainage features. The development of this guideline has been informed and refined by the field research that TRCA has led. It is being used by proponents of development when preparing development plans with the goal of maintaining the function of the headwater drainage features post-development.

Biodiversity and Climate Change

Systems that exhibit a high degree of biodiversity will have a greater inherent ability to adapt to and recover from the environmental impacts that are anticipated to accompany climate change. With TRCA's focus on protecting and enhancing regional biodiversity, it was important to find out what plant and animal species, on the land and in the streams, might be at greatest risk from climate change stress. This year, TRCA and Beacon Environmental Consultants developed a risk assessment tool that can provide management guidance for individual species and communities, based on the best climate change predictions and science available. The draft risk assessment tool was presented at a workshop in 2009 to a number of experts in climate change, as well as municipal staff, and was very well received. As TRCA continues to develop targets for species and natural habitat, it is important that we consider their vulnerability to climate change.

Terrestrial Invasive Plant Strategy

Worldwide, the negative impact on biodiversity from non-native, invasive species is second only to habitat destruction. These impacts are pervasive within TRCA's jurisdiction and are likely to worsen as the range of additional invasive species expands north with a warming climate. Species like dog-strangling vine, garlic mustard and common buckthorn now dominate some of our natural areas and threaten others. In 2009, TRCA developed a GIS model, using our terrestrial natural heritage field data, that links the known location of small infestations with high functioning natural areas. This was used to develop a Terrestrial Invasive Plant Strategy (TIPS) that provides direction on where current invasive plant species are threatening high functioning natural areas and where management action is a priority. The goal of the strategy is to locate and manage small infestations in and near high quality habitats before they become too large to manage. The TIPS tool was used in 2009 at Glen Major to direct active invasive species management.



Wood frog

A close-up photograph of a person's hand holding a small, slender fish with a yellowish-brown stripe along its side. The background is a dense field of tall green grass. The fish is being held gently in the palm of the hand, which is positioned over the grass. The fish's body is elongated with a slightly rounded snout and a visible dorsal fin.

FIGHT TO SAFEGUARD THE REDSIDE DACE AND ITS HABITAT

Through our vision for The Living City®, we are committed to protecting our natural areas for the benefit of all living things. We are working hard to build critical networks of natural habitats that will help maintain biodiversity and a healthy environment for all our residents, including the wildlife, that depend on it.

One endangered species that TRCA is working hard to protect is the redbside dace (*Clinostomus elongatus*), a small minnow protected under the provincial Endangered Species Act, 2007 and nationally listed as a Species of Concern under the federal *Species at Risk Act* (2002). This minnow is of specific interest to TRCA because 80 per cent of the Canadian population of redbside dace is located in the Golden Horseshoe region of Ontario, with the vast majority within our watersheds. The Rouge River watershed supports one of the largest remaining populations of redbside dace.

TRCA staff is undertaking a multi-year technical study to quantify the response of redbside dace to changes in surrounding land use that affect stream habitat. The results from this study, which is scheduled for completion in 2010/2011, will be used to better inform future planning and development decisions with respect to redbside dace protection.

The next step will be to more fully engage the local business and land owner communities to adopt stream-friendly operations and maintenance practices on properties adjacent to redbside dace habitat. The development of a local business outreach program is one of 15 projects in the GTA that benefitted from the 2009/2010 Species at Risk Stewardship Fund of the Ministry of Natural Resources.

"The survival of the redbside dace is an indicator of overall stream health, which is linked to what is happening on the landscape," said Christine Tu, Supervisor of Aquatic Management, TRCA. "These minnows like clean, clear water, they thrive on that. The lands here are highly urbanized and include residential, commercial and industrial development. We're creating a business stewardship program and educational materials to help area businesses make practical, informed decisions on how they can conduct their operations in a highly sensitive eco-area."

Natural Heritage System Recovery Planning

As part of the Terrestrial Natural Heritage System Strategy (2007), approximately 30,000 hectares were identified as being critical for the expansion and augmentation of the existing natural habitats within the natural heritage system. The next challenge was setting priorities for which of these lands should be actively restored to achieve the greatest benefit and deciding what species and habitat types should be targeted. Toronto and Region Conservation Authority has used a multi-scaled approach to Ecosystem Recovery Planning. At the broad scale, landscape level parameters (e.g., proximity to forests, concentrations of species) have been used to develop priority geographic areas for restoration. At the vegetation community level, target habitat types have been established. Predictive GIS modelling is helping to determine which target habitats can be restored. Finally, TRCA has developed a list of “focal” species (the presence of which in a particular ecosystem indicates that the ecosystem is likely healthy and functioning well). Predictive GIS modelling is underway to allow us to determine where the focal species can be restored in the landscape. This multi-layered approach provides a robust and flexible method for helping to inform restoration actions. The Ecosystem Recovery Planning tools have been incorporated into the planning and design process used by Restoration Services staff.

Urban Forest

The study and effective management of urban forests, as an important part of the “green infrastructure” of sustainable communities, has become an increasingly important issue for TRCA municipalities. TRCA has managed the urban forest studies for a number of our municipalities and facilitated communications among those embarking on urban forest studies. As a result, we have a uniform data set across our region. This allows us to assist our municipalities in the development of high level strategies under which their individual, detailed management plans will nest. The completion of the Ajax study, including a successful stakeholder workshop and public open house in 2009 will set the stage and template for six more studies in 2010. Ajax will be taking the results of the study and developing a detailed urban forest management plan.

Habitat Restoration

Toronto and Region Conservation Authority is one of the leading agencies for ecological restoration in the Greater Toronto Area. Past restoration planning has had a terrestrial emphasis, while perhaps lacking a complete picture of hydrology. In order to effectively meet natural cover targets across the watershed, TRCA has created a process utilizing desktop and field techniques to identify and prioritize restoration opportunities on a hydrologic systems basis. The desktop approach is rooted in an understanding of topography and drainage to delineate and prioritize restoration opportunities (wetland, riparian and forest), which are then verified in the field. Drainage lines and catchment boundaries are derived using GIS, allowing assessors to determine the intermittent and permanent flow of water, as well as depressions on the landscape for riparian or wetland restoration projects. Catchments are delineated that can be overlaid onto other GIS information layers (wetland, forest, riparian cover, etc.). Summary statistics on per cent cover can be calculated and compared across a given watershed to prioritize areas for restoration and protection. Armed with the desktop information, restoration opportunities are identified in the field across a given watershed. Resources are then allocated to restore and protect high priority areas.

Tree, Shrub and Aquatic Plantings

In 2009, TRCA planted 353,018 native trees, shrubs and aquatic/herbaceous plants within TRCA's watersheds. An additional 2,269 plants were supplied to other Greater Toronto Area conservation authorities and partnering NGOs for planting within their respective watersheds.



TRCA has managed the urban forest studies for a number of our municipalities and facilitated communications among those embarking on urban forest studies.

In 2009, TRCA planted 353,018 native trees, shrubs and aquatic/herbaceous plants within TRCA's watersheds.

Habitat Restoration Activities by Watershed, 2009

Watershed	Wetland creation & enhancement (ha)	Wetland buffer plantings (ha)	Riparian plantings (ha)	Tree & shrub plantings (ha)	Stream/shoreline restored (m)	Total # seedlings	Bioengineering	Total # trees & shrubs	Aquatic plants (units)
Etobicoke-Mimico	1.0	0.4	1.4	0.6	280	—	1,160	4,835	5,000
Humber	6.9	7.9	8.7	4.9	—	2,035	50	37,735	17,400
Don	0.9	1.2	—	—	—	—	—	1,905	—
Rouge	2.3	—	0.1	8.4	—	—	—	13,535	—
Duffins-Carruthers	2.7	0.2	1.2	0.3	324	—	—	4,800	—
Waterfront	8.0	0.4	0.7	1.6	1,030	—	—	5,875	30,000
TOTAL	21.8	10.1	12.1	15.8	1,634	2,035	1,210	68,685	52,400

TRCA Tree and Shrub Planting (all projects) 2009

Planting Goals	Private land	Authority land	Municipal land	Federal/ Provincial lands	Total planted (*)
Reforestation	87,650	20,020	—	66,000	173,670
Conservation Services	27,923	103,532	44,718	5,444	181,617
TOTAL	115,573	123,552	44,718	71,444	355,287

(*) - includes all projects utilizing TRCA Nursery plants

TRCA Planting by Watershed 2009

Watershed	Shrubs	Trees	Bioengineering/Aquatics	Reforestation Seedlings	Total Planted
Etobicoke/Mimico	10,234	3,595	13,774	6,475	34,078
Humber	35,695	22,830	24,909	139,655	223,089
Don/Highland	8,713	2,025	4,553	20	15,311
Rouge	6,167	2,334	2,484	27,220	38,205
Duffins	3,885	1,355	1,500	150	6,890
Petticoat/Frenchman's Bay	—	—	—	—	—
Waterfront	6,588	2,002	26,705	150	35,445
TOTAL	71,282	22,904	73,925	173,670	353,018



REGIONAL MONITORING NETWORK

Since 1954's Hurricane Hazel, environmental monitoring has been at the heart of TRCA's environmental work

in watershed planning and is a key part of The Living City's objective for Healthy Rivers and Shorelines, and Biodiversity.

The Regional Watershed Monitoring Program (RWMP) is a science based, long-term monitoring initiative developed by TRCA. Its purpose is to collect aquatic and terrestrial ecosystem data at the watershed and subwatershed scale, and across the region as a whole. The network focuses on five primary areas: climate and hydrology, water quality in the rivers, aquatic habitat and species, terrestrial natural heritage, and groundwater quantity and quality. Through this program the Network collected data at more than 670 sites in 2009.

The program provides the data and information that informs TRCA's key planning and reporting mechanisms. It is also shared with partner municipalities and other agencies, and is used for planning, implementation and reporting activities. When possible, community outreach and education are included in the monitoring program and involves training volunteers (e.g., Terrestrial Volunteer Monitoring Program), partnerships with community groups and other non-governmental organizations, and special community events.

More information about the Regional Watershed Monitoring Program can be found online at <http://trca.on.ca/protect>

Other Achievements

- TRCA collaborated with The Center for Conservation Biology (CCB) of The College of William & Mary and Virginia Commonwealth University on whimbrel (*Numenius phaeopus*) migration through Toronto at Colonel Sam Smith Park.
- Collaborated with the City of Toronto and other local groups to publish *Birds of Toronto*, the first book in a planned biodiversity series.
- Presented at the American Fisheries Society Annual General Meeting; the City of Toronto Symposium on Bird Conservation In Urban Areas; the Royal Ontario Museum lecture series on Miraculous Migrants; cormorant and common tern work at the Waterbird Society meeting; the Toronto Field Naturalist's monthly meeting; the Society of Ecological Restoration of Ontario's Annual General Meeting.
- Sponsored an MNR Stewardship Rangers crew (for 17-year-old students) to undertake restoration projects throughout the jurisdiction.
- Articles on habitat restoration and environmental monitoring work appeared in *The Toronto Sun*, *The Toronto Star* and local community papers.
- Adopted a new technique for planning the implementation of restoration opportunities on a watershed basis utilizing hydrology, topography and natural cover parameters.
- Collaborated with Fisheries and Oceans Canada on deep water fish trawling surveys across the waterfront. Among the catch, we recorded a juvenile round whitefish, a native coldwater species.
- Electrofishing surveys near the Lake Wilcox restored shoreline found an American eel, a provincially designated endangered species and a federally listed Species of Special Concern.
- Electrofishing surveys near the mouth of the Don River found a quillback sucker, a native species never before recorded in the TRCA jurisdiction.
- Hosted Living with Urban Deer Workshop and Public Meeting in the Humber watershed.
- Designed, constructed and installed two nesting/roosting towers for chimney swifts, a threatened species in the Rouge River watershed.
- Collaborated with the Ontario Federation of Anglers and Hunters on continued implementation of the Atlantic salmon restoration program in the Duffins Creek watershed.
- Don Ford of the Conservation Authority Geoscientists Committee chaired a two-day symposium on Earth Energy Systems at the Kortright Centre for Conservation in October 2009. This event was held in partnership with Conservation Ontario, the Ontario Centre for Engineering and Public Policy, and the Canadian Geoexchange Coalition. Speakers from Ontario, Quebec, Nova Scotia, and the Netherlands provided insight into the environmental issues and opportunities for this rapidly growing technology to more than 60 participants from across Ontario.

Collaborated with the City of Toronto and other local groups to publish *Birds of Toronto*, the first book in a planned biodiversity series.

TRCA designed, constructed and installed two nesting/roosting towers for chimney swifts, a threatened species in the Rouge River watershed.



Left to right: Leith Moore, *Chair of BILD*, George Smitherman, *Former Minister of Energy*, Alex Waters, *Manager at Kortright Centre for Conservation*, Larry Brydon, *Reliance Home Comfort*, Brian Denney, *Chief Administrative Officer, TRCA*, at the opening of Archetype Sustainable House.

Sustainable Communities **The Living City®**

Under the banner of The Living City®, TRCA has continued to make strides in engaging key sectors in taking measurable action toward sustainability.

- The Mayors' Megawatt Challenge continued to engage municipalities in and around the GTA to take action on energy efficiency in their facilities. Participating municipalities reduced their total energy use in 2009 by 4 per cent, saving over \$600,000 and reducing GHG emissions by over 2,000 tonnes.
- Greening Health Care engaged more than 40 hospitals in 2009, helping them to document savings of more than 1,000,000 m³ of natural gas and to receive more than \$100,000 in incentive payments for their savings.
- Greening Retail completed its second research project in partnership with Ryerson University in Canada, Stirling University in Scotland, ESADE in Spain and Hitotsubashi University in Japan. The work documented the environmental best practices of leading retailers from around the world, including Aeon in Japan, Tesco in the United Kingdom, Wal-Mart in Canada, H-E-B in the US, and Carrefour in France, to name just a few. The research was launched at the International Council of Shopping Centres conference in Toronto during September 2009.
- Working in partnership with the University of Toronto, TRCA staff prepared a report *Getting to Carbon Neutral: A Guide for Canadian Municipalities*. The report helps municipalities understand the concept of carbon neutrality, assess the options available for reducing greenhouse gas emissions and develop a practical action strategy to assist them in achieving that goal. The results of the report were published by the World Bank following a presentation at a conference in Marseille, France, in June 2009.

- Working in partnership with York University, TRCA staff completed a report on *Ontario's Road Map to Prosperity: Developing Renewable Energy to its Full Potential*. In addition, a series of workshops was held to help identify gaps in Ontario's recently enacted *Green Energy and Green Economy Act, 2009* and to identify the next steps to help transform the market for renewable energy in Ontario.

Sustainable Neighbourhood Retrofit Action Plan (SNAP)

The Sustainable Neighbourhood Retrofit Action Plan (SNAP) projects, led by TRCA and its municipal and community partners, engage a diverse range of stakeholders in the development of action-oriented plans for improving environmental sustainability and increasing climate change resilience in established urban neighbourhoods.



County Court SNAP in the City of Brampton.

The SNAPs identify priority actions on private and public property to address five core areas (natural heritage, stormwater management, water conservation, energy, and green buildings) within the context of a broader sustainability framework. Key features of the projects include:

- science-based approaches for identifying integrated solutions that achieve multiple objectives;
- market research to understand barriers and motivations to behaviour change;
- analysis of the business case for retrofits; and
- community engagement through demonstration projects and stewardship programs.

The implementation of environmental improvements in established urban settings faces unique challenges, including multiple landownership, competing demands for land, complex community networks and cost. It is anticipated that this integrated, neighbourhood scale approach at retrofit planning will lead to synergistic and cost effective solutions among diverse landowners. It will guide strategic infrastructure investments that will implement watershed plans, municipal plans and climate change strategies at the ground level. Lessons learned from pilot projects can be used to accelerate the transformation of other urban communities.

This year saw the launch of the first two pilot projects.

- The County Court SNAP in the City of Brampton focuses on the retrofit of an existing stormwater management pond in conjunction with lot level measures throughout a 30-year-old neighbourhood of various land uses. The Region of Peel and City of Brampton are core partners. Toronto and Region Conservation Authority's stewardship staff is leading a number of community events, including educational workshops, nature walks and other Healthy Yards programs as ways to engage the residents.



BUILDING A MORE SUSTAINABLE COMMUNITY AT JANE & FINCH

Building sustainable communities is an important part of Toronto and Region Conservation Authority's objective. Through unique partnerships and outreach activities, TRCA is helping people better understand and take care of their environment through innovative hands-on community programs and through a green media relations strategy.

For example, our partnership with the Jane/Finch Community and Family Centre focuses directly on engaging the residents that live in the high and low-rise apartment complexes in the area. The program, called Green Change, trains local volunteers to act as community animators and get residents interested in reducing their carbon footprint through environmental audits made on their household.

Each participating household receives a zerofootprint™ website account to track the actions they pledge to complete and their progress towards their goals. A successful launch event took place in 2009 at Black Creek Pioneer Village; 300 local residents enjoyed an evening of environmental presentations, games and displays. TRCA provided training on energy efficiency practices at the Archetype Sustainable House at The Living City Campus at Kortright Centre, and have been actively involved on the project's advisory committee.

- The Lake Wilcox SNAP in the Town of Richmond Hill focuses on measures to reduce phosphorus loads to Lake Wilcox and ensure stewardship of local natural heritage resources. York Region, Town of Richmond Hill and Oak Ridges Friends of the Environment are core partners in this project.

A third SNAP project is being developed in the vicinity of TRCA's Head Office in the Black Creek-Jane/Finch area. This project builds upon TRCA's partnerships with several local community groups, including the Jane/Finch Community Family Centre, the Black Creek Environmental Project and the City of Toronto. A focus of this project will be on seeking options for improved water management and other related environmental solutions that can also help address socio-economic challenges in this area.

The SNAPs follow a three-phased planning process, including: characterization of current conditions and assessment of a long list of options; evaluation of integrated scenarios of options; and action plan development. Community engagement and demonstration projects are integral throughout the planning process. We have completed Phase 1 and part of Phase 2 for the County Court SNAP. The Lake Wilcox and Black Creek SNAPs are just beginning Phase 1. We hope to near completion of these projects in 2010.

Planning and Development Division

In 2009, TRCA's Planning and Development Division made tremendous strides in integrating The Living City® vision into our planning, environmental assessment and regulatory functions.

Review of Official Plans

As several of our municipalities were completing official plan (OP) reviews to achieve conformity with the province's Growth Plan for the Greater Golden Horseshoe, planning and development team helped municipal partners develop sustainable community planning policies in natural hazard management (Special Policy Areas in particular), natural heritage systems, climate change and green infrastructure. Staff reviewed OP updates for the towns of Ajax, Richmond Hill and Markham, the Cities of Vaughan and Mississauga, and the regions of Peel, York and Durham. Moreover, staff worked with the development industry and the towns of Caledon, Markham and Richmond Hill, and the cities of Brampton and Vaughan to integrate best management practices, low impact development, sustainability measures, and monitoring guidelines into the creation and refinement of Master Environmental Servicing Plans (MESPs) for new development and redevelopment areas.

Environmental Assessment Review

Planning and development division's environmental assessment (EA) review team continued to help build infrastructure for The Living City® in 2009 with a major emphasis on public transit EAs, including the Toronto-York Spadina Subway Extension, and Eglinton Avenue and Scarborough-Malvern LRTs (Light Rail Transit projects). Moreover, EA staff managed to meet strict deadlines for federally-funded infrastructure projects for bridges, watermains and sewers. With a focus on improving communications with project managers from both the private and public sectors, the group also hosted the first annual Environmental Partnerships Workshop.

Planning and Development Division's environmental assessment (EA) review team continued to help build infrastructure for The Living City® in 2009.

Ontario Municipal Board

Planning and development division's involvement in Ontario Municipal Board hearings in 2009 resulted in a number of major wins for the natural system and, in turn, for TRCA and like-minded municipal partners. These hearings included Intracorp (Brampton), Greco (Vaughan) and Terranova (Toronto). Moreover, the appeal of TRCA's refusal to grant a permit application under our Regulation (that proposed to remove a portion of forested valley in favour of a single residential development - 119R Glen Road, Toronto) was dismissed in May 2009 by the Mining and Lands Commissioner (MLC). Staff's argument that even a single residential development should not be allowed to negate protection and expansion of natural cover, based on the regulatory test of conservation of land, was firmly validated by the MLC's dismissal. The Commissioner's "Reasons and Findings" stated that:

"This loss has an impact on the conservation of land through the effect on the overall ecosystem of the valley corridor...despite its actual size."

"A review of the Terrestrial Natural Heritage System Strategy has convinced the tribunal of the merit of the guidelines outlined in that document."

"The tribunal finds that a conservation authority's jurisdiction for policy development and implementation is clearly mandated under the *Conservation Authorities Act*. As to the matter of weight, the tribunal accepts the TRCA's policy documents as providing the detailed application of the Authority's goals (objects)."

These MLC endorsements were a highlight of the year for both TRCA and Conservation Authorities overall. It was particularly timely for staff endeavouring to incorporate the Terrestrial Natural Heritage System Strategy into municipal OPs and in our own draft of The Living City® Policies.

Permitting and Planning

The following summary indicates the number and types of applications for which TRCA staff provided their professional expertise in 2009 to assist municipalities and landowners in meeting their environmental requirements.

Activities	2008	2009
Planning Applications Processed	708	538
Development Permit Applications Received & Processed	1,000	1,022
Development Applications Issued	923	849
Permissions for Minor Works Issued	NA	225
Renewals and Revisions	145	95
Environmental Assessments	177	125
Permissions for Routine Infrastructure	NA	58
Solicitor/Realty Enquiries	631	520
Concept Development Enquiries	252	130
Violations Issued	125	91
Active, Open Permits Requiring Monitoring & Inspection	1,694	1,810
Active OMB/Mining and Lands Commissioner Hearings	8	11

Other Achievements

Planning and development division lent its expertise to large scale community planning exercises and corresponding MESP's for Mayfield (Caledon), Seaton (Pickering), Cornell (Markham) and Stouffville Stage 2 (Whitchurch-Stouffville).

Planning and development division staff, along with Rouge Park staff, carried on discussions with the Agricultural Community Working Group in the Rouge River watershed to work on refinement of the Rouge East Lands Management Plan.

Another notable achievement for staff in 2009 was our assistance to Whitchurch-Stouffville planning staff in developing a new zoning by-law that incorporates TRCA's updated flood plain and headwaters mapping and Key Natural Heritage Features of the Oak Ridges Moraine. The by-law is expected to facilitate considerable improvement in planning clarity for the Town where natural heritage protection and natural hazard management are concerned.

Staff continued to liaise with the development community, having conducted several working sessions with BILD (Building Industry and Land Development) representatives related to our planning and permitting mandate, service delivery and refinement of our development review fee process for 2010 and 2011.

Staff also continued to participate in the Conservation Authorities Moraine Coalition (CAMC), which acquired 182 hectares (ha) of environmentally sensitive lands on the Oak Ridges Moraine (ORM) and completed 77 stewardship projects with partners on the ORM. This resulted in: 65 ha of reforestation; 12 ha of prairie restoration; 3.4 km of riparian restoration; 7.5 ha of wetland creation/enhancement; plus 17 educational workshops attracting over 385 landowners.

Finally, the York-Peel-Durham-Toronto Groundwater Study, led and managed by the CAMC, was profiled as a good example in a federally funded report, *The Sustainable Management of Groundwater in Canada*, by the Council of Canadian Academies.

Stewardship

Rural Clean Water Program

TRCA received three years of funding support from the Ontario Soil and Crop Association to explore the development of a stewardship program for the equine community. The response for an education outreach program has been a resounding YES! A highlight for 2009 was being given the opportunity to present information about the Healthy Lands for Healthy Horses project to the Ontario Equine Federation at their annual general meeting.

Ontario Drinking Water Stewardship Program

In 2009, TRCA co-hosted two workshops for well and septic service providers to inform and educate them about the grant funds available to private landowners who implemented well or septic upgrade work on their property. These workshops, combined with ongoing outreach to those property owners within close proximity to municipal drinking water wells, resulted in \$163,000 grant funding being dispersed in 2009 on behalf of the Ministry of the Environment.

Multicultural Environmental Stewardship Program

Stewardship was recognized by Career Edge Organization which awarded the 2008/2009 "Most Valued Internship Experience Award" for the Environmental Ambassador Program. This award recognizes a host organization that demonstrated leadership in providing a supportive environment, facilitated personal and professional growth, and promoted opportunities to allow interns to contribute to the organization thereby enhancing the internship experience.

TRCA completed 77 stewardship projects with partners on the Oak Ridges Moraine.

Stewardship was recognized by Career Edge Organization, which awarded us the 2008/2009 "Most Valued Internship Experience Award" for our Environmental Ambassador Program.



Don River Stewardship

Funding was secured through EcoAction (\$24,500, over two years) to support the Don Water Wise Stewardship Project - Wetlands for Water Quality. This is a two-year project that will result in the planting of 3,000 aquatic plants at two restored wetlands in the Don River watershed by 800 students, and the development of an educational classroom resource to extend the students' experience. In 2009, 430 students planted 1,200 aquatic plants at E.T. Seton Park in the West Don as part of this project.

Highland Creek Stewardship

Twelve interpretive/educational activities and three litter cleanups were held in the Highland Creek watershed and Toronto waterfront region, engaging approximately 370 participants.

Environmental Stewardship Pickering

The first annual Environmental Leadership Forum was hosted by the Environmental Stewardship collaborative partners in Pickering.

Healthy Headwaters Stewardship Project

Located in the upper reaches of the Petticoat Creek watershed; this two year EcoAction funded project received \$50,000. TRCA engaged very active local residents in hands-on activities, including nature hikes, native tree and shrub plantings, community monitoring projects, and the creation of a wildflower meadow.

Port Union Stewardship Initiative

With the help of community members and local interest groups, TRCA completed the Port Union Stewardship Initiative in the City of Toronto. Funding of \$55,000 was provided by EcoAction. This two-year project involved engaging the community in restoration planting along the Port Union Waterfront Park, bird box building and cleanup events.

Etobicoke – Mimico Stewardship Project

The inaugural TD Great Canadian Shoreline Cleanup of the Etobicoke Creek engaged 60 volunteers. City of Brampton staff, Brampton Scouts and local residents assisted in the removal of shopping carts, couches, mattresses, metal drums and other debris from a four-kilometre stretch of Etobicoke Creek, south of Sandalwood Parkway.

In April 2009, 60 grade six students from St. Maria Goretti planted 200 trees and shrubs along the Etobicoke Creek in Brampton. Two months later, the same grade six students came back to begin monitoring the trees they had planted; this is a site they will return to annually to see how their newly planted trees and shrubs are doing.

In 2009, 430 students planted 1,200 aquatic plants at E.T. Seton Park in the West Don.



Environmental Education

While 2009 marked a new beginning in environmental education, it was also a year of significant challenges and emerging opportunities.



Students experiencing outdoor education.



Policy Framework on Environmental Education

On February 25, 2009, the Ontario Minister of Education launched *Acting Today, Shaping Tomorrow, A Policy Framework on Environmental Education*, at a two day Environmental Education Symposium for teams of administrators, curriculum consultants, teachers and practitioners from school boards across the province. The Policy Framework establishes a mechanism for integrating learning *in, for and about* the environment into the daily lives of students and teachers, increasing student engagement and action within their communities, and building system capacity to support environmental education programming, practices and operations. This Policy Framework begins the process of reinserting environmental education and environmental issues, 15 years after being removed, back into the provincial curriculum.

Held in Toronto, the Environmental Education Symposium allowed representatives from school boards to meet and share effective practices and resources to support the implementation of the new Policy Framework. The Symposium also provided opportunities for environmental education stakeholders, including other government agencies, non-governmental organizations (NGOs), practitioners, associations, private outdoor education operators and conservation authorities to lead workshops and provide presentations on environmental education programs and practices. Toronto and Region Conservation Authority staff presented three workshops to 155 of the approximately 700 participants.

The workshops provided were:

- A Systems Thinking Approach to Learning in The Living City®;
- Getting Hands-On with Climate Change in the Elementary Classroom;
- Reduce Your School's Carbon Footprint – A Focus on Renewable Energy.

Regional Environmental Education Leads

In September 2009, the Ministry of Education announced that they were creating six English language and three French language Regional Environmental Education Leads (REELs) across the province. The REELs have four strategic priorities:

- establish a network of environmental contacts in all boards in the region;
- develop and share a network of community partners who can assist schools and boards in accessing and enhancing resources that support teaching and learning about the environment;
- develop a provincial and regional plan for building and sustaining environmental education leadership capacity; and
- support boards in revising or developing a board environmental education policy aligned with the provincial policy framework.

Toronto and Region Conservation Authority, along with Conservation Ontario, undertook an awareness campaign to engage the REELs from our school districts to ensure that they understand what TRCA has to offer. Working with the REELs is part of the broader effort to engage the Ministry of Education in the learning programs that TRCA provides on a daily basis. 2009 represented a strong step forward in this relationship, as TRCA staff participated in a number of formal and informal meetings with Ministry of Education staff, either through Conservation Ontario or during TRCA-specific initiatives. As a result, Ministry of Education staff has become engaged in a number of ongoing development programs being led by TRCA.

Bridging the Gap

The work that TRCA began in 2008 with *Bridging the Gap: A Roundtable on Environmental and Sustainability Education in the Toronto Region* has positioned TRCA in a leadership role by establishing a network of partners and stakeholders that are prepared to serve the formal education community. 2009 work related to Bridging the Gap include:

- development of a draft list of indicators of environmental and sustainable education; and
- development of survey functions used to collect information on programs, services and facilities that currently serve the formal education system.

TRCA Education Strategic Plan

In April 2009, TRCA began a strategic planning process for education programs. This strategic plan will provide a framework and implementation measures for strengthening TRCA education into the future. The strategic planning process engaged a wide range of TRCA education staff, as well as external stakeholders, seeking input on how to best meet and respond to the needs of students, teachers and the communities of the Toronto region. The TRCA Education Strategic Plan is anticipated to be completed in the spring of 2010.

TRCA Teaching Staff Professional Development

On September 9, 10 and 11, 2009, TRCA educators and teaching staff, as well as teaching staff from a number of partner organizations, participated in TRCA's inaugural teacher professional development days. Over the three days, close to 100 TRCA teaching staff participated in over 25 sessions and workshops ranging from renewable energy to stream ecology and from cultural heritage to sustainable development. Programs were designed to strengthen knowledge, develop skills and enhance understanding of the complex environmental, cultural and sustainability issues that exist both globally and locally.

As part of TRCA's inaugural professional development days for teaching staff, close to 100 TRCA teaching staff participated in over 25 sessions and workshops.

Investing in the ongoing training and development of TRCA teaching staff is a critical component of ensuring that our programs are of the highest quality, meet provincial curriculum and exceed teacher expectations. The launch of the TRCA Teaching Staff Professional Development days is a strong first step in this regard. Ministry of Education staff that participated in the TRCA Teaching Staff Professional Development days provided a number of compliments on the organization, depth and breadth of sessions and quality of speakers.

Teacher Professional Development

In 2009, TRCA educators exceeded their goals in delivering quality environmental education opportunities for the formal teaching community. Sixteen professional development sessions were held, with a variety of topics covered, including climate change, systems thinking, carbon footprints and renewable energy, the Oak Ridges Moraine, pre-service/in-service teacher engagement and GPS.

An increased presence at symposiums and conferences improved the profile of TRCA education programs. In 2009, education staff presented at, or for, the Ministry of Education Environmental Education Symposium, the 5th World Congress of Environmental Education, the Science Teachers' Association of Ontario (STAO), the Ontario Society of Environmental Educators (OSEE) and York University, as well as in local parks, schools and TRCA facilities. Booths and displays at STAO, the World Congress and multiple school board events offered further opportunities to showcase TRCA education programs.

Pre-Service Teacher Candidate Practicums

Student teachers must complete a series of practice teaching sessions, or practicums, before graduating. 2009 saw an increase in applications from teacher candidates to complete portions of their practicum or alternative placement with TRCA. This demonstrates an increased awareness of TRCA's education programs and facilities, the result of continued outreach to the Faculties of Education in the Toronto region, as well as increased demand for environmental knowledge as a consequence of the release of the *Policy Framework on Environmental Education*.

Ontario EcoSchools

For the fifth year, TRCA's five education facilities were certified Ontario EcoSchools. The Ontario EcoSchools program measures facility performance and student engagement related to climate change mitigation and adaptation measures. Ontario EcoSchools has four pillars: energy conservation, waste reduction, school ground greening and ecological literacy.

In addition to this, TRCA, as lead organization supporting the implementation of Ontario EcoSchools in the Peel school boards, was instrumental in the certification of 17 schools from Peel District School Board as Ontario EcoSchools. This exceeded the Year One target for certified schools.

Renewable Energy Infrastructure and Carbon Neutrality

Lake St. George Field Centre has seen a significant decrease in its carbon footprint. With the delivery of North America's largest solar-powered electric pontoon boat, the "Kathleen Wynne", as well as the installation of geothermal heating and cooling and propane fired on-demand hot water, this facility is moving rapidly towards carbon neutrality.

Carbon neutrality is a working target for TRCA's five education centres as they strive to reduce their carbon footprints and model the ethos, values and behaviour that TRCA works to instill and inform in program participants. In 2009, TRCA began working with the consulting firm Pinchin Environmental and CarbonCounted, a Canadian-based not-for-profit organization, both of which donated their time and energy. Together, we began the process of mapping the carbon footprint of a large segment of the day-to-day operations. This process will form a framework for a carbon reduction strategy and assist with capital planning for major and minor infrastructure renewal that reduce emissions.

Funding Issues and Declining Attendance

In spite of the launch of the new Policy Framework on Environmental Education, 2009 was a challenging year for TRCA education facilities. Little public funding was available for student field trips and, again, visitation was affected. Year over year attendance at the Kortright Centre dropped considerably, while Black Creek Pioneer Village remained relatively stable and the three field centres saw a small overall decrease in attendance. Overall participation in TRCA education dropped to 157,894 participants, down from 173,000 participants in 2008.

TRCA was instrumental in the certification of 17 schools from Peel District School Board as Ontario EcoSchools.

In March of 2009, the Toronto Catholic District School Board notified TRCA that they no longer had the budgetary resources to provide funding for students visiting the Claremont and Albion Hills Field Centres. This resulted in a loss of fifteen weeks of student visits for these centres. Coupled with the ongoing economic downturn and less parent funding available for student participation in field trips, led to a decline in attendance.

Overall, cost continues to be a significant factor affecting student participation in field trips to TRCA facilities. In addition to this, transportation constraints further impair class participation by increasing costs and compressing time spent on site.

2009 Education Program Participants Summary

Field Centres	
Lake St. George	3,005
Claremont	2,539
Albion Hills	1,863
Total	7,407
Black Creek Pioneer Village	
General School	49,936
Dixon Hill	2,947
Total	52,883
Kortright Centre	45,516
Watershed On Wheels	
WOW	22,219
Yellow Fish Road	977
Aquatic Plants Program	4,852
MESP Adult EESP participants	745
MESP Adult ESL LINC engagement	826
Family Nature Events (public engagement)	1,635
Total	28,793
Investigating The Living City® Spaces	
Boyd Archaeological Field School	35
Archaeology In-Class Sessions	125
Archaeology Classes in the Field Sessions	50
Total	210
York Children's Water Festival	5,528
Peel Children's Water Festival	5,573
Albion Hills Ski Program	2,297
Bruce's Mill Maple Syrup School Program	6,536
Special Workshops, Conferences & Presentations	
Teacher PD Sessions	16
Pre-Service Teacher Candidates	12
Conferences and Symposiums	1,328
EcoSchools Sessions	540
(Weston Environmental Leaders of Tomorrow, Peel Enviro Weeks, in-class sessions)	23
Total	1,920
TOTAL	157,894



CHANGING THE EDUCATIONAL LANDSCAPE

Since 1957, Toronto and Region Conservation Authority has been leading the way on environmental conservation. TRCA believes in education through exploration and connects classes with the outdoors through environmental education and cultural heritage programs. Through our efforts and partnerships with school boards across the GTA, we are seeing some inspiring results.

Last year, two grade six classes from Sixteenth Avenue Public School in Richmond Hill participated in TRCA's Weston Environmental Leaders of Tomorrow program, tackling a research project on electronic waste or 'e-waste'. The classes created an art installation that was exhibited at the Schad Gallery of the Royal Ontario Museum and brought much needed attention to the global e-waste crisis. According to the UN Environment Program, an estimated 50 million tonnes of e-waste is being thrown away every year, releasing toxic substances that pollute the water, soil and air.

The core of the installation consisted of a mound of electronics destined for the landfill, including televisions, computers, cell phones, toys and kitchen appliances; these were painted and carried a personal message from each student. The students' literary work—essays, poetry and letters—was displayed around the mound, expressing their findings and thoughts about the need to re-think the issue of e-waste.

"We are proud of the efforts of these students and their teachers to not only create a powerful piece of environmental art, but also their actions to make sure that others learn from it," said

Darryl Gray, TRCA's acting Manager of Education. "We have just completed our second year of the Weston Environmental Leaders of Tomorrow program and we're seeing that students want to tackle these issues if they are given the chance to. Many of the students had never heard of the term e-waste or thought about what happens to the products once it hits the landfill; it's not only amazing what they took away from the program, but what they are inspired to do when they leave the program."

The Weston Leaders of Tomorrow program is generously supported by The W. Garfield Weston Foundation, The Conservation Foundation of Greater Toronto and TRCA. The program ensures that 60 classes of grade six students from the GTA will have the opportunity to immerse themselves in environmental leadership and learning both at the Lake St. George Field Centre in Richmond Hill and in their own school. The program is defined with three core guiding principles: environmental leadership, community action and ecological literacy.

Weston Environmental Leaders of Tomorrow



Students participating in battery recycling and zero waste program.

The Weston Environmental Leaders of Tomorrow program surpassed all expectations in 2009. The integrated education model incorporates a series of learning events and activities, which successively build upon one another, to create a learning experience that is more deeply understood, of greater personal relevance and apt to inspire meaningful action. Students are engaged by multiple sources at multiple levels, in multiple venues and with multiple formats, including in-class visits from TRCA's Watershed on Wheels program and by field centre instructors. Pre and post visit lessons are delivered by the classroom teacher, and are directly linked to the residential excursion the students experience at Lake St. George Field Centre. Projects undertaken by participating classes in 2009 included a ZERO waste assembly for an entire school, battery recycling programs, the planting of trees, herbs and wildflowers, the development of a compost/recycling program and an electronic waste art installation featured at the ROM. For more information on the Weston program see our story "Changing the educational landscape" on page 46 of this Annual Report.

The Weston Environmental Leaders of Tomorrow program surpassed all expectations in 2009.

Lake St. George Field Centre



New solar powered electric pontoon.

Toronto and Region Conservation Authority launched North America's largest commercial solar-powered electric pontoon boat at Lake St. George in 2009. The 10x4 metre floating classroom is used to deliver the field centre's lessons about the fragile kettle lake ecosystems that are found along the Oak Ridges Moraine. The vessel was officially christened the "*Kathleen Wynne*" on October 2, by the then Education Minister during a ceremony at the field centre.

Lake St. George Field Centre took a major stride toward carbon neutrality in 2009. In late summer, the electric air conditioners, oil furnaces and oil tanks were replaced with 3,600-foot, closed loop geothermal heating and cooling systems at each of the student dormitory residences.

Students were introduced to a new digital photography program, which allows them a unique way to explore and study the beautiful habitats in which they are immersed during their stay.

Albion Hills Field Centre



Albion Hills Field Centre piloted the first Biodiversity-themed visits in the spring of 2009 with three schools from the Toronto Catholic District School Board.

Albion Hills Field Centre piloted the first biodiversity-themed visits in the spring of 2009 with three schools from the Toronto Catholic District School Board. During their two-and-a-half day visit, students participated in a “Biodiversity Safari” to investigate both the Centreville Stream and several sites within the naturalized “Husky/Earth Rangers Wetland”. This hands-on monitoring program involved student observation, classification and measurement of biodiversity. Students assessed their findings and made connections about the importance of biodiversity through a systems thinking lens. As an action project, students made native seed ‘spheres’ to replace invasive species back in their school neighborhood.

Beginning in June 2009, the first two phases of significant renovations and upgrades took place at the Albion Hills Field Centre. These included replacing the previous roof with a high reflectivity, high R-value roof system. The reflective outer membrane covers R22-rated closed cell insulation beneath, which has significantly increased the efficiency of the building envelope.

Inside the building, the conventional electric water heaters and electric-powered kitchen appliances were replaced with new high efficiency propane-fired equipment. In addition, multiple stand alone refrigerators and an inefficient walk-in freezer were replaced with a high efficiency walk-in fridge and freezers. To augment this, the installation of a state-of-the-art monitoring system provides a means of managing energy use in order to reduce carbon emissions and address climate change.

Claremont Field Centre



Students from West Creek Public School (Durham District Board of Education) helped to celebrate the benefits of environmental stewardship by devoting an entire day to the joy of recreational flight.

The Atlantic Salmon Hatchery in the classroom at the Claremont Field Centre provided visiting students with an understanding of the life cycle and migration patterns of the Atlantic salmon, an extirpated species in Lake Ontario. The Atlantic Salmon Hatchery project coincides well with Claremont’s stream study program, which taught students about the effects of climate change on local fish habitat, the importance of the health of local streams and the benefits of restoration of aquatic species.

On February 21, 46 grade six students from West Creek Public School (Durham District Board of Education) helped to celebrate the benefits of environmental stewardship by devoting an entire day to the joy of recreational flight. After a lesson on the principles of flight (an essential component of the new Ontario Science and Technology Curriculum), each student was given an opportunity to build, decorate and personalize their own kite before going outdoors for a test-flight. Then, to highlight the festival, hot air balloons were created from brightly coloured tissue paper. Outdoors, students watched and cheered as they released their balloons, using heat from a Coleman stove.

Black Creek Pioneer Village

The 2009 season was a challenging one in education at Black Creek Pioneer Village. As with most venues, the overall education program numbers were lower than in 2008 (although overall attendance was up by 4.1 per cent). Historic programs were still very popular and many positive comments were received from teachers and visiting groups. Participatory programs, in particular, did well in maintaining the interest of school users. The program “Many Hands”, “A Stitch in Time” and “Hands on History” were well-booked and continue to provide students with a great heritage experience at the Village. In addition, the September to December period saw an increase in bookings by ESL schools.

Kortright Centre for Conservation

In response to the new Grade 10 curriculum and the need to educate the community about the impacts of our changing climate, Kortright launched a new Climate Change Program for Secondary Students. In this all day program, the students learn about the science behind climate change, as well as what they can do to have an immediate and measureable effect on their carbon footprint. A highlight of the program is the visit to the LEED Platinum Archetype Sustainable House, which showcase different renewable technologies and resources which are available to consumers.

Installed in 2009, the low ropes course has been a success; many groups have participated in a new Low Ropes and Teambuilding Program which promotes teambuilding, group skills, leadership and cooperation. The program is designed to accommodate Grade five to high school groups and provides a new attraction for school groups interested in rounding out their education visit to Kortright with some group dynamics workshops.

Regional Centre of Expertise

In April 2009, the Toronto Regional Centre of Expertise (RCE), a United Nations initiative intended to be a framework for collaboration amongst education for sustainable development (ESD) programs and providers, was formally suspended by the steering committee. TRCA had participated in the Toronto RCE since its inception in 2005, and had tried on a number of occasions to find a focus for the Toronto RCE.

Outreach Education

Watershed on Wheels

Watershed on Wheels (WOW) is TRCA's mobile environmental education classroom, providing unique conservation education programs and engaging elementary students in hands-on learning experiences within their communities. 2009 was a record year for WOW, with a total of 22,219 participants engaged in interactive, curriculum-linked environmental education programs.

Traditionally, this program has been delivered across TRCA's jurisdiction within the City of Toronto and portions of the regions of Peel, York and Durham. This is the second year additional funding was provided by the Region of Peel and a partnership continued with Credit Valley Conservation (CVC), which enabled the WOW program to expand into the CVC jurisdiction of Peel Region and allowed all elementary schools located within Peel Region access to this innovative program. As a result, 8,692 participants were engaged in the WOW program within the Region of Peel in 2009, a record number for that region. A new climate change secondary program was developed and added to WOW programs in 2009.

Yellow Fish Road

Under the Yellow Fish Road program, local volunteers educate residents about the importance of keeping household hazardous wastes out of storm drains. In 2009, a total of 977 volunteers painted, with non-toxic paint, 1,541 storm drains with the distinctive yellow fish symbol and handed out fish-shaped leaflets carrying the program's water quality message to 5,425 neighbourhood homes. In addition, TRCA purchased 250 Yellow Fish Road badges for Girl Guide and Scout groups that take part in the program.

A partnership established with the City of Pickering enabled 222 elementary students and teachers from three different schools to take part in a pilot project. The traditional painted fish were replaced with yellow and black discs that read "storm drains flow into rivers and lakes". The discs are expected to last longer, are more visible and carry a printed message and phone number. The participants of this pilot project marked 442 drains and reached 1,640 homes with the anti-pollution message. Ten thousand educational leaflets were purchased for distribution in areas where storm drains are marked. The leaflets contain information on non-point source pollution causes, effects and solutions. Each leaflet contains a telephone number of a local household hazardous waste depot.



A highlight of the climate change program for secondary school students is a visit to the LEED Platinum Archetype Sustainable House.

2009 was a record year for the Watershed on Wheels (WOW) program, with a total of 22,219 participants engaged in interactive, curriculum-linked environmental education programs.

Under TRCA's Aquatic Plants Program, 4,852 students at 16 priority wetland restoration sites...grew and planted 10,271 native aquatic plants across the GTA.

Aquatic Plants Program

Under the Aquatic Plants Program, classrooms across the GTA are provided with growing kits to raise the plants used in local wetland restoration projects. During a half-day field trip, students plant the vegetation they helped raise, learn about the value of wetlands, take part in an interpretive wetland hike, and participate in other fun activities. This free program, which is booked to capacity each year, enjoyed a record year in 2009, engaging 4,852 students at 16 priority wetland restoration sites. These students grew and planted 10,271 native aquatic plants across the GTA.

In 2009, a partnership with Credit Valley Conservation and the City of Mississauga permitted the addition of two new sites, including one waterfront site, within CVC's jurisdiction. At these two sites, 176 elementary students planted 532 native aquatic plants in Peel Region.

Three TRCA staff are dedicated to monitoring and tending the community stewardship terrestrial planting sites and some aquatic planting sites. The monitoring data collected will be used to compare plant survival rates, and assist in selecting appropriate plant material, planting locations and sites for future restoration efforts.

Parks and Conservation Areas

The Petticoat Creek Conservation Area celebrated the season opening of the largest outdoor pool in Ontario with Summer Splash '09.

Petticoat Creek Conservation Area

The Recreational Infrastructure Canada (RInC) Program funded pool replacement, which included: demolition of the existing pool, plumbing and mechanical infrastructure; re-grading and earth work; installation of a new aquatic facility, plumbing and mechanical infrastructure; concrete works, including pool shell and decking; utilization of green technologies; renovations to existing washrooms, change rooms and staff facilities; and various soft and hard landscaping.

The Conservation Area celebrated the season opening of the largest outdoor pool in Ontario with Summer Splash '09. This new event featured live stage performances with reptiles from "Reptilia", live music, kids' entertainment and dancing, face painting, a hotdog and hamburger BBQ, and traveling buskers.

Kortright Centre for Conservation

The Archetype Sustainable House was completed in 2009 and officially opened by the Minister of Energy and Infrastructure on Earth Day 2009, with more than 300 guests present. The Archetype Sustainable House received the LEED Platinum designation by the Canada Green Building Council in the fall of 2009. In addition, Kortright installed two wind turbines and over 8 kilowatts in solar power capacity.

With the passage of the *Green Energy and Green Economy Act, 2009*, demand for training workshops soared at Kortright with attendance up by 300 per cent.

Bruce's Mill Conservation Area

The 2009 Sugarbush Maple Syrup Festival at Bruce's Mill marked the 41st edition of the event and turned out to be a resounding success. The addition of a traditional native demonstration was of particular interest to both returning and new visitors. For the first time in the history of the event, attendance exceeded 28,000 visitors. A new waste diversion strategy, including the composting of most consumables, was implemented and proved to significantly decrease the amount of waste sent to landfills. The addition of new events and activities are sure to make the 2010 festival the most successful yet!

Under the Hydro One Power Savings Blitz retrofits program, all lights at the entire facility were replaced with energy efficient T8 lamps and electronic ballasts. In addition, new roofs were installed on the sugar shack and the park office.

Albion Hills Conservation Area

Albion Hills Conservation Area and Campground is a multi-purpose recreation facility that supports many popular recreational activities, such as hiking, trail running, mountain biking and cross country skiing. It is one of Ontario's top mountain biking and hiking destinations, providing recreational activities to over 40,000 visitors annually.

The Albion Hills CA Trail Enhancement Project consists of: enhancements to the existing trails (re-surfacing, trail widening, bridge and rock work); improvements to interpretive, educational and directional signage; installation of accessible and barrier-free trails; hazardous tree, shrub and debris trimming and removal; and the creation of 20 kilometres of new mountain biking and fitness trails in order to meet current public demand.

Other projects undertaken in 2009 include:

- new culvert on trail network by Chalet;
- new admission sign at gatehouse;
- Sleepy Hollow bathroom renovations;
- beach centre café reconstruction and lifeguard facility renovations;
- pool and splash pad facility;
- House on the hill bathroom renovations;
- disabled bathroom built at beach centre;
- kiosks built at major trail heads; and
- new efficient laundry and dryer machines.

Heart Lake Conservation Area

The Heart Lake swimming pool construction project entailed: re-grading and earth work; installation of new swimming pool, plumbing and mechanical infrastructure; concrete works, including pool shell and decking; utilization of green technologies; renovations to existing washroom, change room and staff facilities; and various soft and hard landscaping.

Indian Line Campground

Projects undertaken in 2009 included a CSA-approved salt water system for pool, and hillview pull-through sites.

Boyd Conservation Area

Annual events held at Boyd Conservation Area included the "Girls on the Run" run/walk program (which attracted 50-75 participants), the 12-hour "Relay for Life" cancer fundraiser (75-100 participants), a charity walk for earthquake relief in Italy (100-120 participants), and the all Ontario cross-country races (with 1,500 runners plus spectators).

Claireville Conservation Area

Projects undertaken in 2009 included a new parking lot at the Regional Road 50 entrance, and renovations to the Paul Flood building.

Bathurst Glen Golf Course

The Bathurst Glen Gold Course installed a closed-loop equipment wash station which reduced wash water use by 625,000 litres (165,000 gallons) per year and eliminated the output of wash water contaminants into the natural environment by 99 per cent.

The facility conducted a golf cart study to examine and compare the use of gas, electric and solar-powered golf carts. With the help of Bennett Golf Carts, each cart was compared to see the differences in: energy-use, greenhouse gas emissions, travel distance, operational maintenance and customer satisfaction. The purpose of the study is to better understand the benefits of using solar powered golf carts and the impacts of golf carts on the environment. The facility also achieved accreditation in five of six categories for Audubon accreditation. The final category was submitted in December 2009 and will be fully accredited by spring 2010.



The facility hosted several Oak Ridges Corridor Park community events, including bird watching, nature walks, and amphibian adventures, and incorporated an environmental education component into its junior golf program. Topics included water conservation, native species and native habitats.

Finally, the facility converted diesel fuel use to biodiesel (B10) for all applicable operating equipment.

Cultural Heritage

Black Creek Pioneer Village

Black Creek Historic Brewery opened in 2009, introducing audiences to traditional brewing methods, the history of brewing and a distinctive line of Black Creek Ales. With the historic brewery and the new brewery restaurant and pub, Black Creek Pioneer Village is attracting new audiences and providing an exceptional visitor experience. See the full story on page 53 of this year’s annual report.

2009 was also the 200th anniversary of the Schmidt Dalziel Barn, one of Canada’s most important historic barns. Pioneer Village hosted a special Bicentennial Celebration for the barn, attended by 200 guests, who were afforded the opportunity to tour the magnificent structure. BCPV also launched a comprehensive website dedicated to this historic building.

The Village’s travelling exhibit, “Gateway to the Greenbelt”, completed an 83-venue tour schedule, reaching an audience of 620,000 visitors over its 18-month tour. This exhibit has helped increase awareness of residents across the Golden Horseshoe about the vitality and economic significance of the Greenbelt.

Black Creek Pioneer Village also received EcoSchool certification, Gold Level, for its efforts regarding sustainable practices.

2009 Attendance at Black Creek Pioneer Village

General attendance	Increased by 4.1%
Education program attendance	Decreased by 9.0%
Brewery tour participants	2,000
Visitors through the City of Toronto’s free Museum & Library Pass Program	13,000
Visitors at Doors Open Toronto	10,000
TOTAL ATTENDANCE	Increased by 1.2%



A SWEET BEGINNING TO A NEW SEASON

For the first time in a long time, Black Creek Pioneer Village broke with tradition and opened during the 2009 March school break. The week was filled with great activities designed especially for children at discounted, family-friendly prices. March Break Fun combined elements of a maple syrup festival—including an all-day pancake breakfast and maple sugar treats—with archaeological explorations and pioneer life experiences.

Visitors were offered the chance to go to school in 1860, Victorian dancing lessons, maple sugar treats and lots more. In the Exhibit Gallery, families could watch a short film about the history of Black Creek.

For new visitors, horse-drawn wagon rides provided a great way to obtain an overview of pioneer life. Children also learned about spinning “from sheep to shawl”, experienced printing demonstrations on our restored printing press and, of course, saw maple syrup made over an open fire.

We received great feedback from parents in Toronto and the surrounding communities who were looking for new options for entertaining their kids during the spring break from school. The week-long event is now part of the many annual programs offered at Black Creek Pioneer Village for families to enjoy.

DISCOVER CANADA'S BEER MAKING TRADITIONS

In 2009, Black Creek Pioneer Village opened the Black Creek Historic Brewery—an authentic working reproduction of a 19th century brewery—and it is quickly becoming a popular tourist destination for beer enthusiasts and the general public alike. The brewery uses only traditional tools, techniques and recipes to recreate the ales, stouts and porters enjoyed in Upper Canada before Confederation. Development of the brewery was supported through a \$40,000 grant from the Ontario Ministry of Culture's Cultural Strategic Investment Fund.

During twice-daily tours, visitors learn the brew master's art: from growing the ingredients to sampling the final product from oak barrels. Visitors see where the grain is milled, how the barrels are made and even the hops growing in village gardens. Visitors also get to learn about the interesting politics and social customs of the brewing industry and Temperance movement of the 1800s. Committed to sourcing all ingredients locally, the brewery will start growing and malting barley on-site over the next few years. Beer lovers can expect to enjoy a full schedule of tastings and other events at the brewery during the summer months.



Archaeology

Cultural Heritage Detectives

The pilot project 'Heritage Stewards in the Field' was initiated for the Claireville Conservation Area in 2008 to introduce the general public to the identification of heritage landscapes. This program was expanded to the Claremont property in 2009 with a guided walking tour of the heritage sites on the property. One benefit of this project has been the identification of heritage plantings that indicate the potential location of buried or invisible heritage structures, such as house foundations and laneways. This knowledge has since been used, not only by the general public interested in the identification and conservation of heritage properties, but also by in-house archaeological field staff to identify and locate heritage resources.

Claremont Archaeology Festival

The first Archaeology Festival, hosted by TRCA at the Claremont Field Centre, gave the public an opportunity to learn about the investigation and protection of culturally significant heritage resources within their community. Almost half of the 230 people who attended had a chance to excavate at the Graham House archaeological site on the property and experience the thrill of discovering artifacts that had lain below the ground for close to 200 years. Attendees learned about the life of local blacksmith George Graham, his family and the mill complex that once operated on the property. The festival provided a range of heritage displays to inform and educate the public on the depth of archeological resources within the extended community.

Cultural Heritage Master Plan

TRCA has an obligation to identify and responsibly manage non-renewable cultural heritage resources on our lands. Since the original Archaeological Master Plan was completed in 1990, TRCA land base has quadrupled and the definition of valuable archaeological and other cultural heritage resources has expanded. Inventory projects on TRCA lands as part of our on-going effort to identify and manage heritage resources on our property continued throughout 2009.

The Albion Hills Conservation Area and the Claremont Field Centre properties have undergone desktop review to broaden the understanding and mapping of known or potentially intact cultural heritage landscapes. Field verification was undertaken and several sites were identified and investigated. In the case of the Claremont Field Centre, a thorough ground survey identified remnants of an extensive mill complex consisting of dams, mill races and mill foundations that have since been widely used for educational purposes with the general public and with students at the field centre.

Working with municipal partners has resulted in a study of King Township properties that identified a number of previously unknown archaeological sites. The Oak Ridges Moraine landscape, formed over 10,000 years ago, has remained relatively stable, meaning that study of this rural area has the potential to dramatically increase our knowledge of ancient Aboriginal land use, with the potential to extend that knowledge to southern Ontario as a whole.

Boyd Archaeological Field School

Having completed its 33rd season, the Boyd Archaeological Field School continues to train and inspire teenage students with an interest in pursuing archaeology and related professions. In 2009, 34 high school students from across Ontario and the United States attended the field school, a 62 per cent increase in enrolment over 2008. For the second year in a row, the home of a 19th century blacksmith and his family was excavated. Fieldstone foundations and thousands of related artifacts were recovered. This site, located on the Claremont Field Centre property, has enhanced the local archaeological record, as well as the rich historical context for the field centre. Testimonials speak to the impact that this course has on the students both personally and academically.

Archaeology Programs	Participants in 2009
Students at the Boyd Archaeological Field School	34, an increase of 62 per cent over 2008 enrolment
Attendees at the Claremont Archaeology Festival	226, of which 116 participated in the excavation at the Graham House site
Staff and volunteers at Archaeology Resource Management Services	23 plus 4 volunteers (including 1 co-op student)
Archaeological consulting projects conducted by TRCA's licensed archaeologists	50 Stage 1/2 (exploratory fieldwork); 3 Stage 3/4 (site excavations)
New archaeological sites registered as a result of 2009 field assessments	138



WHAT'S OLD IS NEW AGAIN

Uncovering Ontario's hidden past is a way for us to understand the future. Legislated by the *Planning Act* and the *Environmental Assessment Act*, in-house archaeologists at TRCA identify culturally significant sites prior to ground-altering activities. Using established professional standards, TRCA archaeologists conducted 53 archaeological

assessment projects for external clients (municipalities and Rouge Park) and internal clients in 2009, identifying 138 previously unknown sites. Of these, 125 are considered pre-contact Aboriginal sites and 13 are 19th century Euro-Canadian settler sites.

A significant site was discovered during the installation of the Medicine Garden at Heart Lake; this site was particularly

meaningful for local members of the Peel Aboriginal Network who participated in the garden project. The Aboriginal stone tool artifacts recovered show that 10,000 years ago people visited this location overlooking Heart Lake to hunt and camp.

Another significant site identified in 2009 was a 16th century Iroquoian campsite encountered during the assessment for the Western Vaughan IEA project. As a result, widening of Major Mackenzie Road was redesigned in consultation with Ontario Heritage Trust (the landowner), First Nations representatives and the Regional Municipality of York, to bypass and protect the site.

The artifacts found will be added to the approximately 1.2 million already uncovered by TRCA in other sites across the Greater Toronto Area.



TRCA staff celebrate the Multicultural Day at Downsview Office.

Business Excellence

Information and Technology Services

Information Systems and Technology (IS/IT)

In 2009, Information and Technology Services staff responded to and completed approximately 700 individual IT service requests from TRCA staff. In addition, staff prepared and released a Request for Proposals for a significant Head Office IT centre server upgrade. This upgrade will utilize server virtualization technology to minimize the number of servers, improve energy efficiency, decrease redundancy, and increase the ability of IT staff to deploy new application servers quickly and efficiently. This project will be complete by the summer of 2010.

Other significant developments in 2009 included the following:

- over 80 new personal computers were purchased and deployed to staff;
- Lotus Notes Application development continued in order to improve business efficiency and reduce paper use;
- a Conservation Lands Management Database was developed using a MS SQL relational database;
- ongoing development and enhancement of the EnviroBase relational database for scientific analysis continued; and
- network up-time for the entire TRCA-wide area network exceeded 99.9 per cent.

Geomatics - Geographic Information Systems

Projects undertaken in 2009 included the following:

- completed 846 individual GIS requests of varying size and complexity in 2009;
- developed the protocol and standards for Generic Regulation updates;
- continued development of ArcServer Technology to provide TRCA with enhanced GIS capabilities;
- provided GIS analysis for the Headwater Study (Planning Ecology) utilizing the ArcHydro model and products;

- participated in the development of a provincial Assessment Report Database (ARDB) for all water systems (Phase 1) of the Source Water Protection data delivery;
- assisted in the preparation of database training documentation for the 19 Source Protection Regions (SPRs);
- finalized the water budget component of the Assessment Report and incorporated peer review comments;
- identified the Significant Groundwater Recharge Areas (SGRAs) of the TRSPA;
- completed the Aquifer Vulnerability Analysis, identifying areas of high aquifer vulnerability across the CTC jurisdiction (TRSPA, CVSPA & CLOSPA);
- worked with Stewardship staff to compile a contact list of businesses/landowners within the "Early Actions" areas for Source Water Protection funding;
- geocoded 10,000 drinking water systems on behalf of Ministry of Environment (MOE) for distribution to each CA in the province;
- undertook Urban Forest Study analysis for Ajax and Peel;
- performed airphoto interpretation and digitizing for a natural cover update for the entire TRCA jurisdiction (with over 22,000 habitat polygons captured);
- assessed and generated trawl transects for Toronto waterfront trawls with Fisheries and Oceans Canada;
- hosted Conservation Authority Regional GIS meeting;
- completed Don Watershed Plan; and
- completed Conservation Land Tax Incentive Program submissions.

Records Management and Office Services

Central files created	2,476
Files sent to secure off-site storage	1,905
Files requested from off-site storage	1,428
Files destroyed as per File Retention Policy	933
Records and folders created in LaserFiche Document Management System	19,586

Restoration Services Centre

Located at TRCA's Living City Campus at Kortright, the Restoration Services Centre's innovative, award winning design incorporates creative, adaptive and cost conscious solutions to achieve significant energy and water conservation targets. Completed in 2007, it has been in full operational mode for more than two years. A recent energy performance audit, undertaken by Enermodal Engineering Ltd. has provided results in a year over year comparison, confirms the function of building systems is within design specifications and operating norms. For the two year period ending June 2009, the Restoration Services Centre continues to deliver energy cost savings of more than \$21,000 per year. Water saving strategies, including composting toilets and ultra-low flow faucets, also yield an astonishing 95 per cent potable water cost savings over conventional technologies. With these cost savings it is anticipated that the 9.6 per cent capital cost premium to achieve LEED Platinum certification will be offset within 13 years of building completion.

Sustainability Management Systems

Projects undertaken in 2009 included the following:

- geothermal energy retrofitted into Downsview office;
- fleet audit shows TRCA's fleet is one of the province's greenest;
- major upgrades were made to the waste management system in public use areas;
- progressed (ahead of schedule) toward Audubon Cooperative Sanctuary designation for TRCA public facilities;
- continued EcoSchools and EcoOffices certifications at nine TRCA workplaces; and
- inter-departmental team initiated work on carbon footprinting TRCA and its facilities.

	2007-07 through 2008-06	2008-07 through 2009-06	Change (%)
Total Energy (kWh)	156,899	167,479	6.7%
Total Intensity (kWh/m2)	151	62	6.7%
Baseline Electricity (kWh)	280,682	280,682	
Baseline Gas (kWh)	169,100	169,100	
Total Baseline (kWh)	449,782	449,782	
Savings over Baseline	65%	63%	-3.6%
Baseline Cost	\$34,529	\$34,529	
Actual Cost	\$12,270	\$13,337	8.7%
Annual Cost Savings	\$22,258	\$21,192	-4.8%
Cost Savings (%)	64%	61%	-4.8%

The table summarizes the performance of the building and compares it to a simulated reference building.

Downsview Staff Allotment Gardens

For the second year in a row, TRCA staff at the Downsview Office have committed to being sustainable, reducing their ecological footprint and maintaining a healthy lifestyle by growing their own food at the office. In 2009, 12 staff members tended to their organic allotment gardens and grew a wide variety of traditional, specialty and ethnic crops. By growing their own fresh seasonal food, TRCA employees are cutting the food miles and associated greenhouse gas emissions needed to transport food to urban markets.

Volunteerism and Diversity

Environmental Volunteer Network

Since 2002, the Environmental Volunteer Network (EVN) has been enabling the volunteer sector. A new and improved EVN database was launched in August, providing member organizations with the ability to post volunteer opportunities and access over 1,500 potential candidates registered in our network. EVN also offers the Volunteer Toolkit and Diversity Toolkit at no charge to all member organizations that register.

EVN encourages new Canadians to participate and gain Canadian work experience and education in the environmental sector and newcomers to make the transition into a new community. Volunteering provides volunteers with hands-on work experience and education in the field of conservation and environment and assists highly skilled newcomers find jobs. It also provides non-profit environmental and municipal agencies within the TRCA jurisdiction with capable environmental volunteers. There is no cost for members to post volunteer opportunities within the environmental sector across the GTA.

Statistics for 2009:

- over 50 new postings were generated by various member organizations seeking over 550 volunteers;
- there are over 1,900 registered volunteers in the database, with over 300 new volunteer registrations added in 2009;
- over 2,030 volunteers worked for TRCA between May 2008 and May 2009; and
- 212 volunteers submitted their volunteer logs to EVN coordinators and collected over 7,850 hours in vital experience. In turn, EVN issued 202 volunteer passes for participants who accrued at least 30 hours of volunteer work.

Mentoring to Placement (M2P) for Environmental Professionals

Finding meaningful employment can be a challenge for internationally trained professionals new to Canada and the M2P program is helping to break down these barriers. As part of its investment in bridge training programs throughout the province, the Ministry of Citizenship and Immigration approved TRCA's M2P Program with funding support in the amount of \$756,370. This important initiative, launched in June 2009, is an Ontario bridge training program that opens the door to employment opportunities for 40 internationally trained environmental professionals (ITP's) with a background in biology, ecology, green building technology and/or environmental planning. The main components of the program include mentoring, a paid work placement and technical and soft skills training that will assist ITP's to transition into Ontario's workforce. The program was offered in partnership with Skills for Change and ACCES Employment Services.

Over 2,030 volunteers have worked for TRCA between May 2008 and May 2009.

As part of its investment in bridge training programs throughout the province, the Ministry of Citizenship and Immigration approved TRCA's M2P Program with funding support in the amount of \$756,370.

PAIE – THE NEXT GENERATION

Thousands of trained and educated professionals immigrate to Canada every year with the intention of building a better life, advancing their careers, and contributing to the Canadian economy. However, significant barriers restrict internationally trained professionals from continuing their careers in Canada. TRCA is taking action to promote access to the Canadian work experience through the Professional Access and Integration Enhancement (PAIE) Program for Internationally Trained Environmental Professionals, a program that is funded by federal and provincial governments through Citizenship and Immigration Canada and the Ministry of Citizenship and Immigration.



Now in its fourth year, PAIE is well established and recognized as a successful mechanism to connect employers with highly skilled talent. PAIE is also helping to offset the labour shortage and fill employment gaps that have been identified in the environmental sector. Finally, it provides much-needed Canadian experience to deserving candidates.

Forty-five internationally trained environmental engineers participated in the PAIE Program and received 150 hours of enhanced language training for the professional workplace, as well as over 80 hours of technical training through a series of workshops and hands-on field excursions led by TRCA and industry experts. In addition, the program offered highly-skilled 12-month paid engineering work placements with host employers in the public and private sectors.

Host employers, like Brian Wolf, engineering manager with the Environmental Services Department at York Region, have been extremely satisfied with PAIE participants like Meranda Morcos.

Meranda's experience included strong tunneling and construction methodology, which made her a perfect fit for work placement with York Region.

"In our industry, the jobs we do require highly skilled candidates," said Brian Wolf. "Being internationally trained provides the advantage of diversity in experience which fosters innovation and brings new ideas to the table. The PAIE Program is an excellent resource when trying to find skilled engineers and the results have been great. Bridging programs like these should be part of everyone's corporate recruitment strategy."

After Meranda completed her PAIE placement, she obtained her professional engineer designation with Professional Engineers Ontario and was offered a permanent position as a special project technologist with York Region.

Marketing and Communications

Fueled by rapid changes in digital technologies, the communication tools and methods used by the communities TRCA serves are evolving quickly. Toronto and Region Conservation Authority made strides in 2009 to respond to those changes, while continuing to develop and evolve traditional communication vehicles.

The published book was one traditional communication vehicle put to good use in 2009. *Humber River: The Carrying Place* was published independently by TRCA in commemoration of the tenth anniversary of the designation of the Humber River as a Canadian Heritage River. A delightful journey along the Humber River and its watershed, this hardcover collection of insightful essays and spectacular images carries readers through the history and geography of one of Canada's most important rivers.

The new TRCA website (www.trca.on.ca) was also launched in 2009. Built-in features include an intuitive content management system that allows TRCA staff experts to make page edits, and dynamic content that delivers packets of information to relevant parts of the site automatically. These make the TRCA web site more flexible, content rich and ready for the integration of e-commerce and social networking applications in the future.

The transition from traditional to emerging communications tools is also evident in TRCA's approach to public relations in 2009. While broadcast and print media continued to be vital vehicles for public relations, these were augmented by TRCA's use of social networking tools, such as Twitter and blogs.

The emergence of new communications tools does not mean the death of traditional ones. Old and new work together to create a media landscape that TRCA will continue to navigate as it engages diverse segments of the community to generate understanding and coordinated action toward the building of The Living City®.



The new, more flexible and content rich TRCA website (www.trca.on.ca) was launched in 2009.

Recognition Awards

The Recognition Awards Program, adopted in 1976, pays tribute to those who have contributed to the work of Toronto and Region Conservation Authority, and includes Honour Roll Awards and Service Recognition Awards.

Honour Roll Awards

Honour Roll Awards are granted to persons and/or corporate bodies who have made a significant contribution to the aims and objectives of Toronto and Region Conservation Authority. Each honouree receives a framed citation and has a tree planted in their name.

GETTING THE WORD OUT

Raising community awareness about the environmental activities that TRCA is involved in— from planting a tree, to protecting an endangered species, to environmental restoration projects— is communicated through TRCA public relations. This year we issued more than 35 news stories to the media. Hundreds of TRCA stories appeared in community papers throughout our nine watersheds, in major dailies, magazines, radios, TV programs, and on-line websites. Sharing our stories with the GTA media is helping people better understand and look after the environment. We are seeing more attendance at our festivals, and more people are interested in the work we do. If you have an interesting story to tell about your participation in one of our programs let us know! We're always happy to hear your story about how you are making your community greener and healthier.



On September 25, the following individuals and groups were honoured during a ceremony held at Black Creek Pioneer Village.

Markland Wood Golf Club: For its leadership in adopting sustainable golf course management practices; for its investment in restoring the health of Etobicoke and Renforth Creeks; and for becoming the first privately-owned golf course in the Etobicoke watershed to achieve Audubon Cooperative Sanctuary Program Certification.

William R. Livingston (deceased): For his relentless energy and passion to the cause of conservation; for his driving force in reshaping the Conservation Foundation to enhance its fundraising capability; for being a dedicated Chair of the Foundation (1998-2005); for challenging the Foundation to successfully undertake large campaigns, particularly with the Don Valley Brick Works; and for leaving a lasting legacy for conservation by being one of the founding members of The Living City® Circle. We still miss and will always remember Bill's commanding presence, his infectious humour and that sparkle in his eye.

Peel Environmental Youth Alliance (PEYA): For engaging youth across the Region of Peel in action-oriented projects that respond to locally relevant and globally significant environmental issues; and for their five years of commitment to building and supporting a student network that provides innovative and collaborative learning opportunities, fosters the development of young leaders, and has a significant impact in both the schools where students learn and in the communities where they live.

Heather Broadbent: For 15 years of dedicated service to Toronto and Region Conservation Authority as a member of both the Humber Watershed Task Force and Humber Watershed Alliance, working on projects that protect, restore and celebrate the Humber—a Canadian Heritage River; for her long-term commitment to watershed advocacy and the mobilization of people for the betterment of community health; and for her devotion and tireless efforts as an expert local historian to identify, conserve and promote the culture and heritage resources of the region.

Bill Wilson: For 15 years of dedicated service to Toronto and Region Conservation Authority as a member of both the Humber Watershed Task Force and Humber Watershed Alliance, working on projects that protect, restore and celebrate the Humber—a Canadian Heritage River; for his long-term commitment to community advocacy and the mobilization of people for the betterment of community health; and for his devotion and tireless efforts on behalf of the Humber Valley Heritage Trail Association to provide knowledge and encourage public participation in nature-based recreational use in the Humber River watershed.

Service Recognition Awards

Awards are presented to members, staff and volunteers for their years of dedicated service. In 2009, the staff and members recognized had devoted more than 400 years of service to our programs and services. TRCA's Employee/Recognition Sub-Committee is comprised of Authority Chair Gerri Lynn O'Connor and members David Barrow, Suzan Hall and Maja Prentice.

On staff days, held February 9 and 10, 19 full time and supplementary staff received ten-year awards; three staff received 15-year awards; and six staff members were honoured for their 25 years of service. On September 25, Authority members Paul Ainslie received a three-year and Linda Pabst and David Barrow received ten-year awards.

Conservation Foundation

In 2009, the Conservation Foundation confirmed that residents in the greater Toronto region would respond favourably to a request to support TRCA's work on a monthly basis. In the most competitive fundraising market in Canada, potential donors welcomed the foundation's offer to "Look After Where You Live." The foundation hopes to build on this success.

The foundation also attracted significant grants from foundations and corporations to help build The Living City®. Special mention should be made of the Weston Foundation for its pioneering support of our Environmental Leaders of Tomorrow program at the Lake St. George Field Centre. A leadership gift was also made by HSBC Bank Canada to the Powertrip Trail, a part of the Living City Campus at Kortright.

2009 was an active year on the events front. In the spring, our Paddle the Don event once again gave individual and corporate paddlers a unique opportunity to explore the river in a canoe or kayak. Money raised went to restoration projects in Canada's most urbanized watershed.

In the fall, the 16th annual Charles Sauriol Environmental Dinner was a resounding success. Nearly 900 people packed the Pearson Convention Center in Brampton to hear an inspiring musical and dramatic presentation from Gord Downie and his colleagues involved with Lake Ontario Waterkeeper. A record amount of money was raised for land conservation on the Oak Ridges Moraine.



Left to right: Brian Denney, *Chief Administrative Officer, TRCA*, Gord Downie, Joseph Boyden, Gerri Lynn O'Connor, *Chair, TRCA*, Mark Mattson, *Lake Ontario Waterkeeper*.

Financial Overview

In 2009, TRCA budgeted \$92.7 million for conservation and environmental programs and projects, an increase of \$3.4 million over 2008 or 3.8 per cent. The increase in expenditures reflected the broader public sector response to the 2009 Canadian economic situation that required careful, consistent spending. TRCA's municipal partners continued their strong support of the work of TRCA, investing \$44 million or about 47 per cent of the 2009 budget funding, an increase of 2.2 per cent over 2008.

Revenue generated from the fees, sales, rentals and contract services is the second largest component of the 2009 revenue budget at 22 per cent of revenue or \$20.8 million. Within this category fees charged for permits and development approvals were conservatively budgeted due to anticipated impacts of the economic downturn in the development industry. This component of the budget increased by 4.2 per cent over 2008.

Waterfront Toronto contributions totalling \$11.1 million continue to be a significant component of the capital program.

TRCA continues to receive funding through The Conservation Foundation of Greater Toronto. The proposed target for the funding from donations raised by the Conservation Foundation, which enjoys continued success, was reduced in 2009 to more closely match predicted donation levels. The adjustment results in a decrease of funding from

the Foundation of 16.5 per cent to \$1.4 million. Significant contributors to the 2009 deficit include the Conservation Foundation's unrestricted contribution of funds to TRCA programs falling short of its target by about \$250,000 as the foundation struggles to raise unrestricted funds.

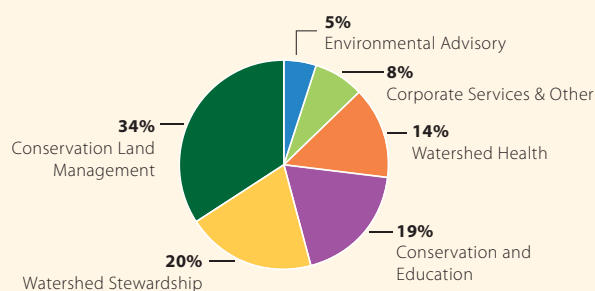
TRCA restrained expenditures as revenue sources were determined to be less than expected. The 2009 cost of living adjustment on salaries and wages was held at zero per cent, position reclassifications were limited and vacant positions were not filled.

The Financial Statements for 2009 were not available at time of printing of the annual report but preliminary indications show that there will be a year end deficit. One contributor to the deficit was poor attendance due to inclement weather during the summer which impacted the conservation areas and Black Creek Pioneer Village with a projected net shortfall of approximately \$450,000. A land sale that was anticipated in 2009 which was to be used to reduce the cumulative deficit will not occur until 2010. Finally, the combination of reduced inland fill revenues due to reduced supply of clean inland fill resulted in a projected revenue shortfall in 2009.

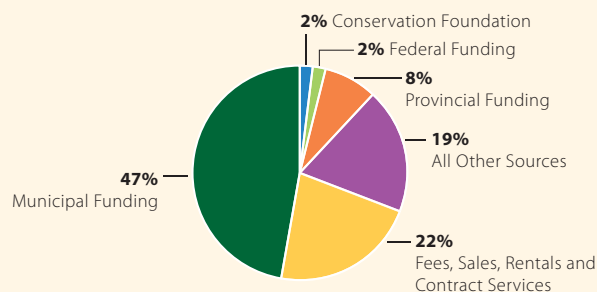
The successful conclusion to an ongoing dispute with Ministry of Natural Resources over the eligibility of various TRCA lands for special property tax abatements under its Conservation Lands Tax Incentive Program produced additional revenue which, together with projected provincial sales tax rebates in excess of budget, will produce additional revenues of approximately \$497,500 in 2009.

To enhance future revenue growth, TRCA is investing in new water play facilities at its conservation parks, partially with the assistance of federal/provincial infrastructure funding. In 2009, the water play park at Heart Lake Conservation Area was operational. Completed late in 2009, a water play park will be available at the Albion Hills Conservation Area in 2010 and in 2011, the refurbished Petticoat Creek pool will open. Also, staff will continue a program of fiscal constraint into 2010.

Expenditures	2009 Budget
Watershed Health	\$ 13,125,800.00
Environmental Advisory	4,512,200.00
Watershed Stewardship	18,423,000.00
Conservation Land Management	32,088,000.00
Conservation and Education	17,305,800.00
Corporate Services & Other	7,231,000.00
	\$ 92,685,800.00



Revenue	2009 Budget	
Municipal Funding	\$ 43,987,500.00	47%
Provincial Funding	7,077,000.00	8%
Federal Funding	1,571,500.00	2%
Conservation Foundation	1,408,500.00	2%
Fees, Sales, Rentals and Contract Services	20,777,500.00	22%
All Other Sources	17,863,800.00	19%
	\$ 92,685,800.00	



Toronto and Region Conservation Authority Member Municipalities and Members 2009

Town of Mono & Township Of Adjala-Tosorontio

G. Mason

The Regional Municipality of York

D. Barrow *
B. Fisch
J. Heath *
L. Pabst
G. Rosati

*Executive Committee Members

The Regional Municipality of Durham

C. Jordan *
B. Littley
G. L. O'Connor (Chair)*

The Regional Municipality Of Peel

E. Adams
G. Gibson
M. Prentice *
J. Sprovieri
R. Whitehead *

City of Toronto

P. Ainslie
M. Augimeri *
B. Bertie
L. Bruce
G. Cowbourne
G. De Baeremaeker
M. Del Grande
L. Griffin
S. Hall *
R. Mathivanan *
P. Milczyn
R. Moeser *
J. Parker
A. Perruzza *

Executive Committee

Chief Administrative Officer/Secretary-Treasurer

B. Denney

Director, Watershed Management

A. Freeman

Director, Finance and Business Services

J. Dillane

Director, Planning and Development

C. Woodland

Director, Restoration Services

N. Saccone

Director, Parks and Culture

D. Edwards

Director, Ecology

D. Martin-Downs

Director, Human Resources, Marketing and Communications

C. MacEwen

JANUARY

Oak Ridges Moraine Foundation contributed \$3.6 million over the past six years for land acquisition, habitat restoration, monitoring and research.

Over 750 people now donate monthly to TRCA's good work.

Snowy winter means a record year for cross-country skiing at Albion Hills.

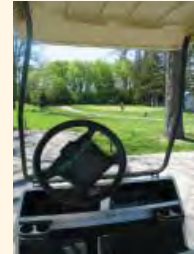
The Toronto Waterfront Revitalization Corporation (TWRC) approved gateway for the Port Union project into Petticoat Creek.

TRCA received \$50,000 from the Ministry of the Environment for stormwater management initiatives in light of climate change.

There are flocks of white-winged cross-bills at Head Office. These colourful finches are irregular visitors.



Greatest Hits 20



FEBRUARY

Canadian Institute of Planners gave Honourable Mention to Region of Peel Greenlands Securement Project.

Parks and Culture facilities are switching from traditional fuel to biodiesel in equipment and fleet of 35 golf carts.

Oak Ridges Moraine Foundation approved over \$726,000 for year four of the Caring for the Moraine Project.

Lake St. George Field Centre took delivery of the first solar powered electric pontoon boat used for commercial uses in North America, for use as a zero-emission floating classroom for students.

More common redpolls than usual have been seen in our jurisdiction including a number of the rarer, and paler, hoary redpolls.

MARCH

Glenn MacMillan, TRCA's Senior Manager, Water and Energy Management, was elected to the Canada Green Building Council Greater Toronto Chapter Board of Directors.

Maple Syrup Festival and March Break program at Black Creek Pioneer Village saw record numbers of visitors.

Tommy Thompson Park joins an illustrious group of 25 sites in Canada to have official status with the Canadian Migratory Bird Network.

The Rouge North plan is now included in Markham's Official Plan.

LEED for Homes Canada was launched at The Living City Campus at Kortright.

Spring came to our jurisdiction with the arrival of trumpeter swans. Hunted to extirpation in Ontario, these beautiful birds have returned thanks to a successful reintroduction program.



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JUNE

Minister of Culture, Aileen Carroll, officially opened the Black Creek Historic Brewery.

All five TRCA education facilities and 950 schools (including 17 schools from the Peel EcoSchools program) from 32 school boards across the province were certified as EcoSchools.

World Green Building Council and York University launched program to involve students in green building from an international perspective.

TRCA and York University deliver renewable energy road map workshop to 35 stakeholders to address issues and barriers not in *Green Energy Act*.

Over 300 residents of the Jane/Finch neighbourhood attended Green Change Project launch hosted by Black Creek Pioneer Village.

Previously unrecorded in Lake Ontario, a quillback sucker (fish) was caught by waterfront monitoring staff.



MAY

TRCA policy and Terrestrial Natural Heritage System Strategy is upheld in an important decision from Mining and Lands Commissioner.

Lower Don Lands announced as one of 16 founding projects of the Climate Positive Development Program of the Clinton Climate Initiative program.

Over 150,000 trees and shrubs planted in the spring.

Record attendance of 9,918 at Black Creek Pioneer Village for Doors Open Toronto.

Toronto and Region Remedial Action Plan five year progress report was launched at the Gladstone Hotel.

Caledon site supporting a healthy contingent of mink frogs.



APRIL

Minister Smitherman celebrated the opening of the Archetype Sustainable House with over 350 guests on Earth Day. Daily Planet launched Earth Week from the sustainable house.

Minister Cansfield and volunteers planted 1,000 native trees and shrubs and cleaned up the creek at the West Deane Earth Day Tree Planting Celebration.

Even during belt buckling times, the Authority was still able to approve a \$92 million budget for the environment.

There is still a healthy population of wood frogs in the Rouge Marshes. There are very few urban sites that are still able to support wood frogs.





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SUMMER



The Greater Toronto Airports Authority (GTAA) won the 2009 Airport Council International Creative Innovations Award for leading the Pearson Eco-Business Zone Initiative.

HSBC Bank Canada approved \$100,000 in funding for the Power Trip Trail at The Living City Campus at Kortright.

Source Water Protection Plan Terms of Reference approved by the Minister.

\$3 million in Recreational Infrastructure Canada Program funding approved for Albion Hills, Heart Lake and Petticoat Creek Conservation Areas.

Mentoring to Placement for Environmental Professionals Program funded by the Ontario Ministry of Citizenship and Immigration was launched.

Black vultures, normally seen much farther south, were spotted a number of times this summer in TRCA's jurisdiction.



SEPTEMBER

Don Watershed Plan approved by the Authority.

Weston Environmental Leaders program received another three years of funding from the W. Garfield Weston Foundation.

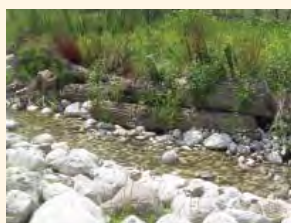
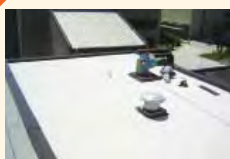
Humber River 10th anniversary as a Canadian Heritage River was celebrated. Humber River book launched as part of the celebration.

Greening Retail Program released our best practices report at the International Council of Shopping Centres Conference.

Round white fish, a native fish, found for the first time in the Toronto harbour.



9



OCTOBER

Renaturalized portion of the Upper Mimico channel garners interest from the Global in investing in future restorative works on the channel.

Partnered with Nature Conservancy Canada for the first time to purchase 50 acres in the Happy Valley area.

Grants awarded from City of Toronto EcoRoof program for the white roofs at Head Office and Black Creek Pioneer Village Visitors Centre.

Whimbrels visiting restored Toronto waterfront in the spring on their way from Virginia to the Arctic.

NOVEMBER

More than 800 supporters were entertained by Lake Ontario Waterkeeper at the Charles Sauriol Environmental Dinner for The Living City®.

J. Craig Mather, former TRCA Chief Administrative Officer, received the Conservation Pioneer Award for his significant contributions to the conservation movement in Ontario.

Archaeological study completed to assist King Township in protecting its cultural heritage.

110 people attended the Understanding Erosion and Sediment Control Workshop.

Atlantic salmon, an indigenous species which disappeared 150 years ago, was caught in the lower Humber River, an indication of some success in restocking.

DECEMBER

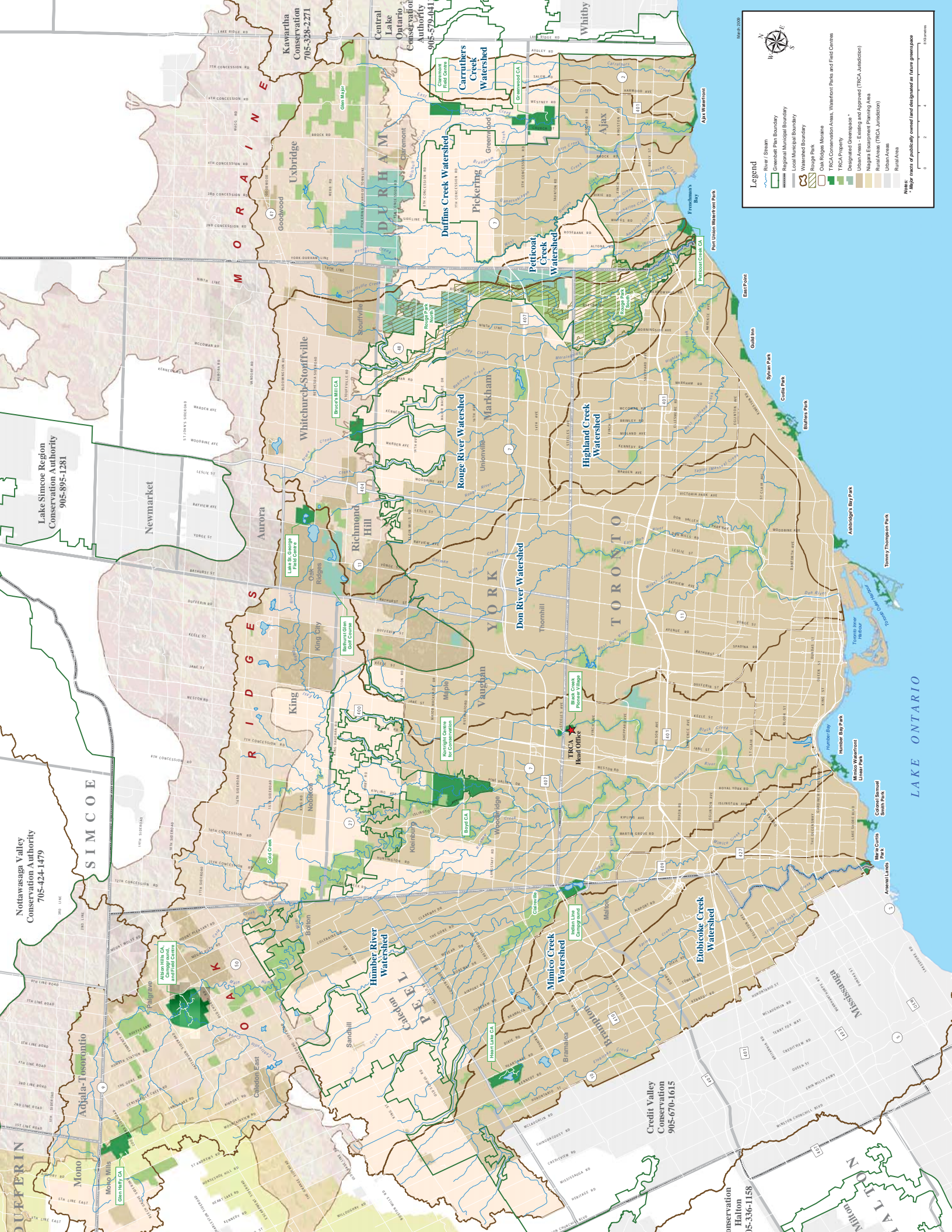
Archetype Sustainable House at The Living City Campus at Kortright achieved LEED Platinum designation.

TRCA watershed water quality modelling work in Duffins Creek was adopted by the United Nations as part of their Waterbase Project - to advance water resources in developing countries.

Peel and York regions approved TRCA's 2010 budget requests including significant increases in capital funding.

TRCA's vehicle fleet rated by FleetChallenge Ontario as the "Greenest Municipal Fleet in Ontario" for fuel efficiency and emission levels.

Purchased 15.8 hectares of land in Richmond Hill from Shirley Klees, adding to TRCA's landholdings in the Rouge River watershed.





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Member of Conservation Ontario