

# rush hour

no time to waste



Toronto and Region Conservation LEED Platinum Certified Restoration Services Centre.

# Contents

Message from the Chair	4
Message from the CAO	6
Healthy Rivers and Shorelines	10
Regional Biodiversity	28
Sustainable Communities	42
Business Excellence	64

**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** is 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.





## Message from the Chair

The environment is at the forefront of everyone's minds around the globe as we experience an increase in natural disasters, rising energy costs and an increase in health concerns related to environmental conditions—all linked to climate change. Toronto and Region Conservation (TRCA) is on the front lines of the battle against climate change, striving every day to create awareness of this ever-increasing threat to our quality of life, while taking measures to mitigate against its impacts.

Toronto and Region Conservation's stewardship, education and community transformation programs are at the heart of our work, trying to bring about change in the actions of people and organizations which affect our natural environment. The World Green Building Council secretariat was awarded to TRCA, furthering our green building agenda with an aim of reducing greenhouse gas emissions internationally. A shining example is TRCA's Restoration Services Centre which was awarded a LEED® (Leadership in Energy and Environmental Design) Platinum rating this year—Ontario's first LEED Platinum building and a model for future development.

Locally, pressures have been placed on TRCA's watersheds and waterfront with a higher number of extreme weather events increasing flood risks and erosion damage, accentuated by continuing development in the Toronto region. As a result, TRCA is currently developing the 'next generation' of watershed plans to address climate change and adaptive management, and instituted The Living City Policies to improve long-term planning in the Toronto region.

Toronto and Region Conservation is continuing its aggressive Greenspace Acquisitions Project, securing land for the protection of our natural and cultural heritage, air and water quality, and sustainable public use, with the intent of reversing the downward trend in greenlands per capita in TRCA's jurisdiction. Toronto and Region Conservation lands provide an opportunity for near-urban agriculture, providing farming opportunities and locally grown food within the Toronto region, thereby reducing the ecological footprint of communities. These lands also afford nature-based education and recreation opportunities in your backyard, providing the opportunity for human health and the environment to intersect.

At the core of all of TRCA's work are the people—board members, staff, volunteers, partners and the public. Together we work to battle climate change and mitigate against its impacts, through education, restoration, watershed management, the scientific study of the ecology of our region, monitoring, land securement, sustainable community development, recreation and more. In 2007 we made great strides toward building *The Living City*™, but much more action is needed if we are to protect our natural environment—the key to maintaining and improving the quality of life for all citizens. I congratulate everyone for their efforts toward achieving this monumental goal and encourage us all to be diligent in considering the environment in future decisions, as our actions today will be with us for generations.

A handwritten signature in black ink, appearing to read 'Gerri O'Connor'.

Gerri Lynn O'Connor



## Message from the CAO

Many will argue that the world awoke to the reality of climate change in 2007. Concerns for the environment crept to the top of opinion polls around the world, and managed to stay there, even as the first economic 'storm clouds' resulting from sub-prime mortgages were starting to form. It marked a resurgence in the Canadian environmental community that had not been felt for over a decade.

At TRCA, we began to see the results of our early work on climate change mitigation. The Mayors' Megawatt Challenge™ had encouraged many municipalities to adopt LEED or other rating systems to guide the construction of new buildings. Rapid growth in our Greening Health Care program was leading to significant, measurable savings in water and energy use. The wide range of energy use in 50 recently constructed schools across Canada, as documented in our Sustainable Schools program, provided excellent guidance for school boards in the design and operation of schools.

One of the highlights of the year was the substantial new funding provided by the Region of Peel for climate change-related initiatives. These new resources enabled TRCA to accelerate restoration work and continue to implement leading-edge projects for climate change adaptation and mitigation in Mississauga, Brampton and Caledon.

I was particularly pleased with the efforts of staff across the organization to grasp the challenges of sustainability and bring it to all aspects of our work. The discipline and creativity resulting from an integrated approach to city building can be seen in our policy development, our watershed plans, our facility programs and operations, our comments on planning applications and our own construction projects.

Taking delivery of the plug-in hybrid Prius engaged TRCA in a leading example of the next generation of the private automobile. At the same time, it was a lesson in the challenges facing Canada as the technology, which had been developed in the Greater Toronto Area, was soon sold to US interests.

Catching up to green technologies on a global scale and creating a climate where leading technologies and services are developed and retained in Canada, will take great effort and alignment between all governments, academia and industry.

A handwritten signature in black ink that reads "Brian Denney".

Brian Denney, P.Eng.



# Healthy watersheds = healthy communities

There has been a great deal of discussion about climate change and what we need to do to address its potentially devastating impacts. Although these discussions are healthy, there is still a lack of awareness of what really causes climate change, as witnessed in a recent issue of the Environmental Monitor where 59 per cent of respondents are concerned about climate change, however, the majority could not identify what causes it—greenhouse gas emissions (GHG).

But that is where the simplicity ends. The cause of and the solutions to greenhouse gas emissions are much more complex. Our love affair with the car has dominated the design of our communities and homes; our consumption patterns have resulted in a 5,000-mile family dinner and our broken relationship with nature has changed the fitness levels of our children.

Southern Ontario is beginning to experience an array of climatic changes ranging from increasing temperatures to erratic precipitation, drought, flooding and unpredictable weather. Toronto and Region Conservation recognizes that although the Greater Toronto Area (GTA) will be among the more fortunate areas of the world as the climate continues to change, serious challenges remain. For example:

- The hydrologic cycle and, therefore, water quantity and quality, will be affected by changing temperatures, as well as the changes in the seasonal distribution and intensity of precipitation.
- Air quality, already a significant issue in the GTA, may degrade as the climate becomes warmer, causing increased human health risks.
- Electricity shortfalls will likely grow as demand on the grid increases, thus increasing the likelihood of brownouts.
- Some invasive species, whose habitat was previously limited due to climate conditions, may now be able to survive in the GTA, resulting in a rise of invasive species and a strain on our natural systems. Increased potential for the spread of disease and pest infestation will stress local species and their habitat.

Scientists around the world are convinced that climate change is now underway and is principally caused by a build up of GHG in the atmosphere, the result of excessive burning of fossil fuels since the industrial revolution. According to international scientific consensus, it is too late to completely stop the advance of climate change. However, we can and should work to slow it down.

With adaptation and mitigation at the core of their efforts, TRCA is in a strong position to exemplify leadership and support their partners and communities in dealing with climate change, building on their strengths in adaptive watershed management and leadership in the application of sustainability at the local level.

This annual report is about the creation and implementation of multi-dimensional solutions to address climate change within Canada’s largest urban and urbanizing region. This is about action taken and to be taken. There are many points of intersection between environmental science and the human desire to create a better future. This report is about those crossroads and the partnerships between TRCA and those many people dedicated to meeting the challenge of climate change and finding local environmental solutions—now.

## Top 10 Accomplishments in 2007

1. The Restoration Services Centre achieved the ultimate standard of LEED certification—Platinum, the first of its kind in Ontario.
2. The 1994 Valley and Stream Corridor Management Program was updated and The Living City Policies were formulated to comply with Ontario Regulation 166/06 to improve long-term community planning.
3. Tommy Thompson Park was a resting point for 14,000 Monarch butterflies, making their fall migration to Mexico.
4. The World Green Building Council Secretariat was awarded to TRCA, to be housed in the Earth Rangers building at Kortright Centre.
5. A real-time stream gauge network was established to identify river areas of potential significant flooding during a storm, where corrective action would have to be taken immediately.
6. The Little Rouge Corridor Management Plan was completed.
7. The IS (Immigrant Success) Award was received from Toronto Region Immigrant Employment Services for TRCA’s commitment to assisting internationally trained professionals in finding employment opportunities in the GTA.
8. The Humber Watershed Report Card was published and the draft of the Humber Watershed Plan was written.
9. Drinking Water Source Protection boards were created and a board chair was recruited, in compliance with the *Clean Water Act*.
10. The Weston Environmental Leaders of Tomorrow three-year program was created at Lake St. George Field Centre.



# Healthy Rivers and Shorelines— the ‘lifeblood’ of the city region

The first of our corporate objectives, healthy rivers and shorelines, is at the intersection of environmental science and in-the-ground projects that improve environmental function and safety, especially of our water resources—at their very source.

## Drinking Water Source Protection

Throughout 2007, conservation authorities continued to work in partnership with the Province of Ontario to implement the *Clean Water Act, 2006*. The first phase of *Clean Water Act* regulations was passed in July and source protection authorities and watershed regions were formalized, then the process for the formation of source protection committees was established.

The duration of the summer was spent focusing on the formation of the Source Protection Committee (SPC). In November, the Toronto and Region Source Protection Authority (TRSPA) announced the appointment of all 21 members to the CTC SPC, following an extensive stakeholder consultation process.

The CTC Source Protection Committee will lead the development of local plans to protect municipal drinking water sources in the Credit Valley Conservation (CVC), Toronto and Region Conservation (TRCA) and Central Lake Ontario Conservation (CLOCA) source protection areas, which collectively comprise the CTC Source Protection Region. Under the *Clean Water Act* and associated regulations, communities are required—for the first time—to protect their drinking water supplies through the development of collaborative, locally driven, science-based source protection plans to protect both the quality and quantity of municipal drinking water sources.

Participation in this process, in the Greater Toronto Area, will be conducted through the CTC Source Protection Committee. Chaired by Susan Self, who was appointed by the Minister of the Environment in August, the committee includes representation from CTC municipalities, agriculture, the petrochemical industry, the golf course sector, aggregates, land development, the energy sector, environmental non-governmental organizations and citizens-at-large.

The focus of technical work in 2007 was on the completion of draft watershed characterization reports and continued progress on water budgets. The watershed characterization reports assemble a wide range of existing watershed data and information into one document. As well as foundation documents for the development of source protection plans, these reports will be a valuable reference for all watershed management programs. Water budget reports, once complete, will be important reference documents for the Low Water Response Program and future water allocation decisions.



The CTC Source Protection Committee will coordinate the development of a terms of reference, an assessment report and a source protection plan for each of the source protection areas in the CTC Source Protection Region. Public consultation will take place in July 2008.

**Drinking Water Source Protection Program Funding**

The *Clean Water Act* has created the Source Protection Program to help farmers and small businesses take action to reduce threats to local drinking water sources. It is one of two phases of funding under the *Clean Water Act*.

An outreach program was targeted at landowners within 100 metres of a municipal well, which is the first and minimum delineation of a Well Head Protection Area (WHPA) for each well.

**CTC Early Actions Funding Program**

In November 2007, TRCA on behalf of the CTC region, signed a Grant Agreement under the Source Protection Program for Early Actions Funds allocated by the Ministry of the Environment. This agreement allocates \$253,179 to TRCA for the sole purpose of reimbursing land-owners within 100 metres of a municipal well who implement source water protection projects on their property.

**The Waterfront**

It is often said that the waterfront of many great cities defines the beauty, and environmental and social quality of that city, and Toronto is no exception.

One of TRCA’s greatest partnerships is with Waterfront Toronto. Through this partnership we saw continuing work in the planning and implementation of two strategic projects: Port Union Waterfront Park—Phase 2 and Mimico Waterfront Linear Park—Phase 1. Toronto and Region Conservation carried out the land acquisition strategy in order to secure the necessary properties for Phase 2 of the Port Union project.



Construction of Phase 2 of the Port Union project commenced in the spring of 2008. Toronto and Region Conservation’s waterfront team carried out planning and approval activities necessary for the Mimico project, which is expected to be completed in mid-July 2008. In addition, the team continued to work with Waterfront Toronto in the planning and approvals phase to set the stage for the implementation of the Tommy Thompson Park Master Plan Implementation Project. The completion date of this project has been extended to 2009. Tommy Thompson Park remains an important rendezvous point for local bicyclists, joggers and other family-fitness enthusiasts.

The waterfront team’s partnership with Waterfront Toronto expanded to include the development of the Lake Ontario Park Master Plan, which encompasses Tommy Thompson Park. They also worked with the City of Toronto in the development of the Western Waterfront Master Plan, which will integrate land use, transportation, facility development and naturalization for the area between Ontario Place/Exhibition Grounds in the east to the Humber River in the west—a stretch of over four kilometres in length.

In the east end of TRCA’s jurisdiction, the waterfront team and City of Pickering partnered to undertake a Class Environmental Assessment (EA) of the harbour entrance at Frenchman’s Bay. The EA will be undertaken as a joint project in 2008.

Lastly, the intersection between TRCA and the community continued with interested citizens in the Lake Ontario watershed including the Lakeshore Grounds Coordinating Committee, Tommy Thompson Park Advisory Committee, Port Union Working Implementation Committee, Mimico Working Implementation Group and the newly formed Friends of Samuel Smith Park.

**Don River**

One cannot think about the intersection of the past and the future and not think about the Don River.

The mouth of the Don has evolved to meet the transportation and harbour needs over a period of 200 years, and now there is a new vision for the Don—embracing transformation into a sustainably designed community.

Under the leadership of Waterfront Toronto, the transformation began with the start of construction on two key pieces of flood protection works located in the West Don Lands area.

The West Don Lands flood protection project and the Don Mouth Naturalization and Port Lands flood protection design are examples of TRCA's approach of integrating reduction of flood risks into community design.

The Ontario Realty Corporation, owners of much of the West Don Lands, has been leading the construction of one component of the required flood protection works (a Flood Protection Landform), with the support of Waterfront Toronto, the City of Toronto and TRCA. This Flood Protection Landform (FPL) will be three to 3.5 metres high and 120 metres wide, consisting of earth and clay. The FPL will essentially extend the western wall of the Don Valley through the West Don Lands and connect it with the north side of the Kingston Subdivision Railway embankment. This FPL will effectively prevent large floods from extending westward towards the downtown area of Toronto. The works conducted in 2007 for this FPL included the removal of past building foundations, relocating and protecting aging municipal sanitary pipes, and installing thousands of spigots into the ground to accelerate the dewatering and settling process when materials for the FPL are put in place. Construction of the FPL is expected to be completed towards the end of 2009.

The second key piece of infrastructure that is required to provide downtown Toronto with protection against flooding included the construction of a bridge. Specifically, TRCA led the construction of a 23-metre-wide railway bridge that is designed to provide for the westward widening of the existing Kingston Subdivision Railway Bridge over the lower Don River and Don Valley Parkway. This bridge is required to pass flood waters under the elevated railway tracks, which would have otherwise been directed westward in the absence of the FPL currently under construction. In addition to providing increased flood conveyance under the railway tracks, construction of the railway bridge improves pedestrian access to the Martin Goodman Trail from the Don Watershed Trail, provides better aquatic habitat and paves the way for a 'new' Don. At the same time as the Don was evolving, there were discoveries of the past—blocks of stone



*Kingston and Bala construction in 2007.*



*Kingston Subdivision Railway embankment and trail—post-construction.*



*Kingston Subdivision Railway embankment and trail—post-construction.*

used for the abutment and concrete foundations for the water towers of the original Grand Trunk railway crossing of the Don in 1856. Construction of the railway bridge was completed in fall 2007.

The most exciting news being Waterfront Toronto's International Design Competition for the Lower Don Lands—a resounding success following the selection of a team, led by New York City-based Michael Van Valkenburg Associates (MVVA). Toronto and Region Conservation worked closely with MVVA throughout 2007 in order to successfully integrate the results of the design competition with the Don Mouth Naturalization and the Port Lands Flood Protection Project Environmental Assessment. The result of this has now allowed for the 'release' of a naturalized mouth of the Don from its fetters under the Gardiner Expressway, by allowing for an alternative to be considered further to the south in the Port Lands, along the existing Commissioner's Street alignment. The mouth of the Don now has the opportunity to return to a more natural state, and be better integrated with the future communities that will be developed along the central waterfront and Port Lands areas. The Don Mouth Environmental Assessment is anticipated to continue throughout 2008 and receive approvals by the end of 2009/early 2010.

The year 2007 marked the beginning of the fifth term of the Don Watershed Regeneration Council, TRCA's longest running watershed committee. Although the council's main responsibility, under a revised Terms of Reference, was to contribute to the ongoing development of the updated Don Watershed Plan by reviewing technical work undertaken by TRCA and providing advice based on local knowledge, the council also continued to participate in and advocate for the Don watershed in local and regional planning initiatives such as the City of Toronto's efforts to implement a mandatory downspout disconnection program, and supporting York Region's planning efforts to reduce the 'human footprint' through their Growth Management initiative and Sustainability Strategy. Members also continued their involvement in waterfront revitalization initiatives, with particular interest, of course, in the ongoing environmental assessment work underway in the Lower Don.





## Etobicoke and Mimico creeks

The Etobicoke and Mimico creeks are nestled in some of the most multicultural areas in TRCA's jurisdiction, and have experienced an incredible year of community engagement and outreach activities including the beginning of the second term of the 37-member Etobicoke-Mimico Watershed Coalition as advocates for community responsibility in building a more sustainable future.

Over 9,000 people participated in 42 projects and events across the Etobicoke and Mimico creeks watersheds, with approximately 24,700 trees and shrubs planted, and 120,000 square metres of land restored. A similar number of people, made up of members of the community and students, attended the Peel Children's Water Festival at Heart Lake—a festival connecting people and nature.

In 2007, TRCA began a major facelift of the Mimico headwaters to improve aquatic habitat, and a solar-powered "lake lung" was installed in Heart Lake to monitor and manage algae blooms and help sustain the warm-water fish community. Other natural-wonder restorations included the second of six community forests launched in Brampton, to celebrate 60 years of conservation in the Etobicoke Creek watershed. And in a wonderful partnership of community leaders, the Brampton Horticultural Society, the Chinguacousy Garden Club and the Peel Village Golf Course created a 300-square-metre butterfly garden, established 900 square metres of riparian habitat and planted over 200 indigenous tree seeds.

In an innovative intersection of the public and private sector, uniting to address climate change and initiate community transformation, the Greater Toronto Airports Authority (GTAA), the Region of Peel, City of Toronto, City of Mississauga, City of Brampton and TRCA began the development of North America's largest eco-business zone, encompassing 12,000 hectares of industrial and commercial land surrounding Toronto Pearson International Airport. This initiative has been coined *Partners in Project Green: A Pearson Eco-Business Zone* and is a new and robust business model for other climate change solutions with in-the-ground practical solutions, like state-of-the-art stormwater controls, habitat restoration and energy efficiency—the positive intersection of environmental and economic well-being.

## Humber River—A Canadian Heritage River

The Humber River watershed is the largest of TRCA's watersheds and is home to the only TRCA-based Canadian Heritage River. It represents the intersection of many communities and lifestyles, from downtown city dwellers to farmers and rural homeowners, and has proven to be a microcosm of the entire TRCA jurisdiction.

The first call for action came with the publishing of the Humber report card—*Listen to Your River: A Report Card on the Health of the Humber River Watershed*—the second of its kind for the Humber watershed. Overall, the grade was a disappointing "C," with a wide range of ratings for the conditions found. Six of the 26 indicators were graded either as very good or good. Most notable are the two indicators with a very good or "A" rating: the protection of significant landforms and the process in developing an inter-regional trail system. A "B" rating indicating good conditions was given to sustainable use of groundwater, protection of groundwater quality, amount of public greenspace and municipal stewardship.

One of the key roles that TRCA must play in the climate change response is as the monitor of ecological change and the signal for action—the veritable canary in the coal mine.

The accomplishments of this area target the very core of climate change problems, starting with finding solutions for sustainable food production and distribution in a market wanting fresh, healthy and plentiful food. In 2007, TRCA partnered with FarmStart to establish a training farm facility for new farmers on 37 acres at the historic McVean homestead in the Claireville Conservation Area—an ironic return-to-the-future scenario.

Site preparation was also completed for the Black Creek Urban Farm in Toronto. These urban farms represent the multi-layering of many intersections in building a better tomorrow, including:

- Decreasing the ecological footprint of residents.
- Creating jobs and new economic vitality in areas most in need.
- Creating community gardens that focus and celebrate the multicultural tapestry, as well as access to affordable fresh food.
- Adding a positive matrix influence for adjacent natural spaces with people reconnecting with nature.
- Inculcating sustainable agricultural practices into food production, at the same time as lowering the generation of GHG emissions.







Frenchman's Bay and Hydro Marsh.

The multidimensional approach to climate change is echoed in the work within the Humber River watershed. As important as in-the-ground activities are, there was also a commitment to longer-term environmental planning.

The first draft of the Humber River watershed plan, titled *Pathways to a Healthy Humber*, was completed. The plan provides information and guidance of the plans of TRCA, the provincial and federal governments and the municipalities within the watershed based on the state of the scientific studies, and public consultation and input. The watershed plans are the single most important documents published by TRCA and are influenced by many sources including the Oak Ridges Moraine Conservation Plan, the *Clean Water Act*, the Growth Plan for the Greater Golden Horseshoe, the City of Toronto's Wet Weather Flow Management Master Plan, as well as best management practices for landowners, official plans and government policies.

The Oak Ridges Corridor Park Management Plan was finalized and the first phase of the implementation was begun. This plan includes site securement work, and terrestrial and aquatic monitoring.

The Humber Watershed Alliance began its fourth term, with a continued commitment to the implementation of the Humber River watershed plan. The accomplishments of the alliance include the review and commentary on the watershed plan, the strategy and implementation for the restoration of the Claireville Conservation Area and the development of the agricultural policy and discussion paper for TRCA lands. Margaret Mead once said, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed it is the only thing that ever has." Our Humber Watershed Alliance members are a testament to that.

## Duffins and Carruthers creeks

The eastern portion of TRCA's jurisdiction embraces the quickly evolving watersheds in the Region of Durham: Petticoat Creek, Frenchman's Bay tributaries, Duffins Creek and Carruthers Creek. In 2003, a watershed plan was developed for Duffins Creek and Carruthers Creek. Implementation of this plan was coordinated by the Duffins and Carruther's Watershed Resource Group between 2004 and 2007. This advisory committee assisted TRCA and watershed municipalities in developing a successful implementation protocol, which built upon local environmental initiatives in the communities. As an outcome of this successful pilot work in the Duffins and Carruthers creeks watersheds, a decision was made in consultation with our municipal partners to extend our watershed efforts across the entire eastern portion of TRCA's jurisdiction.

Working in partnership with the City of Pickering, TRCA has been investigating mitigation measures for stormwater drainage into Frenchman's Bay. Building upon the successful watershed planning for Duffins and Carruthers creeks, efforts are now underway to develop an 'action plan' for the Petticoat Creek watershed. This action plan will identify required environmental studies and critical watershed issues, and will eventually set the stage for the progressive management of this often overlooked watershed.

One of the key factors has been the creative intersection provided by watershed municipalities and local community groups. Through these evolving partnerships, we are building momentum and bringing about a catalyst for change.

Testament to this is Uxbridge Township—its very active conservation groups have been leading the charge in trail building, management of conservation lands and the protection of the headwaters of Duffins Creek. Their watershed committee has been working closely with both



TRCA and the Lake Simcoe Conservation Authority to deliver coordinated watershed programs across their municipality. Not enough can be said about the Durham Conservation Association and the tireless leadership provided by their members: Brian Buckles, Michael Tucker and John McCutcheon.

The City of Pickering's emerging leadership in sustainability and community design is providing exciting new opportunities to implement watershed management in a more holistic manner with municipal-led community building. On-going planning for the Seaton Lands, with over 53 per cent of the land set aside for a Natural Heritage System by the Province of Ontario, is an example for others to follow on how to develop and still protect watersheds. The city's interest in energy, climate, air quality and human health are proving to be a good fit with TRCA's vision for *The Living City*; and is an example of how, on a local basis, things are getting done to combat the impacts of climate change.

The Town of Ajax—known as the “Community by the Lake”—exemplifies how municipalities residing on the shore of Lake Ontario can adopt holistic approaches for progressive growth and economic development while, at the same time, being champions for the environment. In 2007, Ajax began working with TRCA to assemble and manage public greenspaces including the entire waterfront, striving towards a healthy Lake Ontario. The town is also working with TRCA in 2008 and beyond to develop a strategy to protect and enhance their urban forest to address climate change and improve air quality. The Town of Ajax's role as an environmental leader is also evident through the council's 2007 decision to construct two LEED-certified municipal buildings.

# The Rouge River and Rouge Park

Rouge Park was expanded by six square kilometres in eastern York Region, bringing the size of Canada's “premier urban wilderness park” to over 46 square kilometres. The new lands in the Petticoat Creek and Duffins Creek watersheds will connect to important forests, meadows, sensitive areas and valley systems east of the park. The expansion of Rouge Park enhances the major ecological corridor joining the Oak Ridges Moraine to Lake Ontario, bridging Steeles Avenue East. It also allows Rouge Park to enlarge its protected Agricultural Heritage lands with long-term working farms.

This major increase to Rouge Park's landbase by the Ontario government demonstrates a new view: that “green infrastructure” is as important for Ontario as the conventional infrastructure of transportation, water and sewage servicing. Planning for transportation in this area can now consider how to best maintain this link for the free and safe passage of people and wildlife.



The first major interpretative signage initiative by the Rouge Park Alliance is a set of panels depicting the natural and cultural heritage of the park and Glen Eagles vista, one of the park's major gateways. These signs add to the real attraction of Glen Eagles Vista: the spectacular view. Informational signage will be expanded to all day-use areas in the coming years.

The Rouge River system is over 250 kilometres long and many road and trail crossings are inside the park. Working with the City of Toronto, signs with the name of each tributary were installed wherever a road crossed a stream, inside and outside of the park. This project is an expansion of an earlier initiative to place signs where trails crossed a stream. Now, park visitors and neighbours in Toronto will know which streams they are crossing in their neighbourhood. Rouge Park provides people with a sense of place and helps foster a message of stewardship for natural watercourses in the park's watersheds.

Brightly coloured and easy to navigate, a newly redesigned website makes visiting Rouge Park even more enticing. Rouge Park is a beautiful, natural haven in the midst of a bustling cityscape.

The new site supports a ‘visitor's experience’ approach by providing pre-trip planning, including suggested activities and destination information. In the “Explore” section of the website there is everything from directions to the park, trail locations and points of interest. Now visitors can find tips on spotting animals living in the park, where to have a family picnic and spend a night camping under the stars. Visitors can even send a postcard to friends, sharing the Rouge Park experience. Visit [www.rougepark.com](http://www.rougepark.com)

Restoring forests, meadows, streams and building new wetlands are important to the natural heritage of the park. In 2007, there was extensive planting resulting in over 22,000 trees and shrubs and a multitude of meadow vegetation being planted, restoring almost 14 hectares of habitat.

Each restoration project undertaken in Rouge Park requires an archaeological assessment, site preparation and communication with tenants and partners. In 2007 we completed the archaeological assessments and planning needed for implementation of all planned 2008, and some planned 2009 restoration projects. This allowed the groups who implemented the projects the maximum amount of time needed for planning. Rouge Park Alliance staff developed detailed strategies for all remaining restoration areas, guiding future habitat restoration efforts.

## Watershed Planning and Water Management

### Watershed Planning

Toronto and Region Conservation met the watershed planning requirements of the Oak Ridges Moraine Conservation Plan (ORMCP), on behalf of its partner municipalities on the Oak Ridges Moraine, for each of its four watersheds (Humber River, Don River, Rouge River and Duffins Creek). The use of watershed planning documents assisted in providing conformity for reviewing major development proposals on the Oak Ridges Moraine. Not only does this represent fulfillment of a legislated requirement, but the technical information contained in the watershed plans will contribute to improved land use planning decisions at the headwaters of local watersheds as the regions and the local municipalities develop their growth planning strategies.

The last phase of consultation on the final draft of the Rouge River watershed plan, implementation guide and all supporting documents included three public open houses throughout the watershed, a government review session and individual stakeholder meetings.

Watershed planning in 2007 saw a breakthrough in science with state-of-the-art modeling and analysis, and a draft Humber River watershed plan. Consultation on the draft Humber River watershed plan has included, much like the Rouge River watershed plan, circulation of the document to all key stakeholders, three public open houses held throughout the watershed and two government review sessions.

Feedback received during the consultation processes for the Rouge and Humber rivers watersheds plans acknowledged the scientific basis for the plans, the innovative and comprehensive planning approach and the action-oriented implementation directions.

Implementation guides for both the Rouge and Humber rivers watersheds plans were prepared to summarize the new policy directions, science-based regeneration priorities and other implementation directions arising from the watershed plans recommendations. In addition, the implementation guides summarize a 10-year workplan of projects. The guides are intended to assist practitioners in applying the plans' science and strategic recommendations, thus addressing a criticism that previous Ontario watershed plans lacked adequate implementation direction.

#### Watershed plans

Toronto and Region Conservation is currently developing the 'next generation' of watershed plans to address climate change and adaptive management. To maximize the effectiveness of the plans, TRCA is working with climate prediction models through the Rouge and Humber rivers watersheds plans to better prepare for future variability.



Two key technical components of the Don River watershed plan update were initiated, including development and preliminary application of a regeneration priority-setting methodology and a modeling study evaluating the relative effectiveness of extensive lot-level stormwater management retrofit measures. This work will contribute to the development of science-based strategic recommendations for the updated 2008 Don River watershed plan and associated implementation guidance.

Toronto and Region Conservation is committed to being a leader in advancing the science of integrated watershed planning in order to produce state-of-the-art watershed planning products that will provide a sound basis for effective management decisions. Some of the innovative aspects of this work included the following:

- Modeling and analysis of a watershed's response to future land use and management scenarios including various extents and forms of urban growth, stormwater retrofits, expanded natural cover and climate change.
- An integrated, interdisciplinary analysis that has improved our understanding of the watershed system and its sensitivities (e.g., interaction of surface and groundwater, effects of terrestrial natural heritage on hydrology, etc.).
- Social marketing studies in support of more strategic implementation recommendations for sustainable lot-level practices in business and residential sectors.

The good news is that regional and local municipalities have already begun to incorporate the Rouge and Humber rivers watersheds plans' recommendations and technical information into the studies and updated policies as part of their growth planning initiatives. Mitigating the impacts of climate change is about many people acting in unison, intersecting knowledge, collective will and good planning.

### Headwaters study

As development extends into the headwaters of TRCA's major watersheds, small headwater systems will be encountered. These headwater streams may provide important functions, however the science is lacking to provide management direction as lands urbanize. In 2007, following the completion of a literature review, TRCA worked with several GTA conservation authorities (Credit Valley, Lake Simcoe, Halton and Central Lake Ontario) to develop interim guidelines for the management of small headwater streams. A field research program was initiated in 2007 and will continue into 2008, to improve the understanding of the functions of headwater streams.



Flood Management

Flood Management is the genesis of TRCA and its evolving mandate, and 2007 was a banner year, taking a core function and investing in new ideas, new roles and new technologies.

Toronto and Region Conservation’s Flood Forecasting and Warning Program realized a number of significant goals in 2007:

- 1. A Flood Forecasting and Warning Centre was created on TRCA’s website with the current state of flood conditions displayed “at a glance” on the homepage. The website now provides quick access to current messages, safety tips, documents (such as the GTA Flood Contingency Plan and the History of Flood Control), a photo submission feature and a Frequently Asked Questions section.
- 2. The chief flood duty officer role was created, in order to increase the daily involvement of senior water management staff in the Flood Forecasting and Warning Program. A chief flood duty officer is on-call (along with a flood duty officer) 24 hours a day, seven days a week, and is responsible for major decisions during a flood event. The chief flood duty officer also provides technical support to the flood duty officer.
- 3. The Real-time Gauging Network was expanded and flood duty officers were able to improve efficiency in decision-making by accessing current water levels in the streams across the jurisdiction on the gauging website in real-time.
- 4. Advances in the prediction tools available for flood duty officers were also made. The flood forecasting model, which was created in coordination with the GTA Flood Group, was calibrated for select flood-vulnerable areas and allows for the forecasting of flood risk based on more detailed and accurate information than previous tools. Calibration of the flood forecasting model for nine gauges within TRCA’s jurisdiction was completed in 2007.



Flood management to reduce risk

With the increasing frequency of extreme weather events, Flood Forecasting and Early Warning Systems have been updated. State-of-risk information is communicated to partner municipalities and the public to ensure that the risks to life and property as a result of flooding are effectively managed.



Flood forecasting equipment.



Flood projection.

climate change and potential impacts within TRCA’s jurisdiction

- Annual volumes of precipitation in TRCA’s jurisdiction may increase or decrease; patterns and distribution are expected to change.
- As a result of increased average temperatures, the ratio of snow to total annual precipitation will likely decrease. There is potential for a shorter snow accumulation period, greater winter runoff and reduced summer flows.
- There may be an increase in the frequency and magnitude of storm events, increased surface runoff, as well as erosion and sediment loading in rivers.
- The volume of water available to both surface and groundwater systems could potentially increase or decrease depending on the relative proportion of temperature and precipitation changes, the seasonal distribution of change and the change in the frequency of intense (storm) precipitation events. These changes may result in potential impacts on the groundwater systems.
- Change in the pattern of water supply, which will increase pressure on source water resources and impact municipal management.

This model is currently being used in conjunction with the Daily Planning Cycle for flood forecasting and provides real-time forecasting of flood levels based on the past 24 hours of precipitation and the precipitation forecast for the next 72 hours.

- 5. A Watershed Response project was also initiated that will produce detailed characterizations for all of the watersheds in TRCA’s jurisdiction. In order to more accurately assess the risks due to flooding during an event, this study is examining a variety of rainfall events (based on historical rainfall) and how water levels change within the watersheds. The study includes an analysis of the timing of the response within the watershed (which is critical information for emergency responders). The first phase of the project, which involved the development of a tool to convert radar data to a suitable format for input to a continuous simulation hydraulic model, was completed in 2007.
- 6. Enforcement staff participated in the River Watch program and provided “eyes in the field” for flood duty officers on a number of occasions in 2007.
- 7. Staff training was a main focus of the program in 2007. Eleven training modules were developed that will form the basis for annual training in the future. A key focus of the training was on safety and preparedness.
- 8. Completed updates of floodplain mapping in 2007:
  - Etobicoke Creek hydrology update
  - Humber River mapping
  - Don River mapping (2007 workplan included new map sheets in the East Don River, West Don River and Taylor Massey Creek)
  - Highland Creek mapping
  - Carruther’s Creek mapping
  - Miller’s Creek mapping
  - Pine and Dunbarton creeks mapping

the metrics

- During 2007, the floodwarning system operated 24 hours a day, seven days a week, 365 days a year; a total of 11 messages were issued including eight High Water Safety Bulletins and three Flood Advisories, no Flood Warnings were issued in 2007.
- Installation and upgrade of 13 real-time, web-based gauging stations within TRCA's jurisdiction.
- Continued monitoring and maintenance of 17 existing stream gauges.
- Continued monitoring at 10 snow-course locations.
- Installed, maintained, monitored and retrieved rainfall data from 32 precipitation stations.
- Installed GEONOR snow gauges at Cold Creek in Bolton, Stouffville Dam and Claireville Dam.

Watershed Monitoring and Reporting

Watershed monitoring data provides the platform for many of the regular reporting tools used by TRCA. Without current data on the various watershed health indicators, these reports could not be created nor updated in an effective manner.

Toronto and Region Conservation's Regional Watershed Monitoring Program focused on the long-term monitoring of aquatic and terrestrial ecosystems at the subwatershed and watershed scale, and across the region as a whole. The program provided the underlying scientific data that informs the key planning and reporting mechanisms of TRCA.

Not only is this about the collection of data, but also the engagement of the community in understanding their 'nature neighbours,' with the involvement of trained volunteers and partnerships with community groups and non-government organizations (NGOs).

There are many incidences of how this data is used within TRCA and with their partners to further their understanding of the state of the watersheds. However, in this portion of the annual report, TRCA wants to share their discoveries.

A healthy, very mature Butternut tree (*Juglans cinerea*) was found at Dagmar Conservation Area, one of many in TRCA's jurisdiction, although they were designated endangered in 2003 under the *Species at Risk Act*.

The provincially rare False Mermaid (*Floerkea proserpinacoides*) was found in the Bolton area—a rare species throughout much of North America.

Southern avifauna (bird) species such as Northern Mockingbirds, Orchard Orioles, Hooded Warblers and Yellow-billed Cuckoos are becoming abundant, and this may be due to climate change facilitating the northward migration.

On the aquatic side there was both good and bad news. The Redside Dace (*Clinostomatus elongates*), an endangered species, was found in the Humber River watershed. Unfortunately, Round Gobies (*Neogobius melanostomus*), an invasive species, was also found in the lower Humber River.

And lastly, through the comparison of Hilsenhoff scores calculated for 2006–2007, the benthic macroinvertebrates collected across TRCA watersheds indicated improvements in water quality for Frenchman's Bay and Highland Creek, while the Humber, Don and Rouge rivers showed some level of deterioration, year over year.

Comparison of Hilsenhoff Water Quality Ratings for 2006–2007

Number of sites in 2006					
Watershed	Good	Fair	Fairly poor	Poor	Very poor
Etobicoke Creek	—	—	2	11	1
Mimico Creek	—	—	—	3	2
Humber River	1	7	20	7	2
Don River	—	4	5	8	6
Rouge River	2	8	11	5	—
Highland Creek	—	—	1	8	2
Petticoat Creek	—	—	1	—	1
Duffins Creek	—	6	11	3	1
Frenchman's Bay	—	—	—	2	2
Carruthers Creek	—	—	3	—	—

Number of sites in 2007					
Watershed	Good	Fair	Fairly poor	Poor	Very poor
Etobicoke Creek	—	—	4	9	1
Mimico Creek	—	—	—	2	3
Humber River	1	7	15	14	—
Don River	—	3	1	12	7
Rouge River	—	5	11	9	1
Highland Creek	—	—	4	5	2
Petticoat Creek	—	—	1	1	—
Duffins Creek	—	6	10	5	—
Frenchman's Bay	—	—	—	4	—
Carruthers Creek	—	—	3	—	—



# Regional Biodiversity—

inspiration for a greener,  
healthier Toronto region

Under a climate change ‘umbrella,’ regional biodiversity is usually about losses or unwelcome invasive species such as zebra mussels, however 2007 was about gains—in land securement, trail systems and easements.

## Conservation Lands

Regional biodiversity is important for climate change, as well as other elements of our ecology including human health. Conservation Lands programs are developed and implemented when the protection of habitat coalesces with the human need to connect with nature. With books now being written about “nature deficit syndrome” in children, TRCA responds by creating more trail systems to provide the intersection of human family and their direct link with their environment.

Here are just a few success stories:

### **Palgrave Forest and Wildlife Area (PFWA) Trail Plan**

Through diligent implementation of this plan, the PFWA will be further enhanced as a valuable environmental, recreational and educational resource for residents of the Toronto region. The plan was approved in 2007 but will have implications for the Palgrave area for many years.

### **Enhancing greenspace**

Toronto and Region Conservation is the largest landowner (15,000 hectares) in the GTA region. The purpose of TRCA’s Greenlands Acquisition Project is to secure public greenspace for the protection of our natural heritage, air quality and the health of the population.

A Terrestrial Natural Heritage Systems Strategy (TNHSS) has been developed to protect and enhance regional biodiversity within TRCA’s jurisdiction with a target of 30 per cent natural cover.

To assist partner municipalities and communities in reducing urban heat island effects and to ensure improved air quality, TRCA planted more than 250,000 trees in 2007 alone. Additionally, TRCA is implementing the Urban Tree Canopy targets for the City of Toronto and will continue to augment existing forest cover wherever appropriate.



Garlic mustard



Manitoba maple

#### Claireville Ecosystem Management Project

This project promises to improve biodiversity of TRCA lands through the removal of invasive species like Manitoba Maple, common Buckthorn and common reed. Restoration plantings and reforestation efforts assist with greenhouse gas reduction and habitat enhancement objectives providing a win-win—for people and the flora and fauna in the area.

Total combined area managed for invasive species is approximately 5.7 hectares and 31.5 hectares (78 acres) in planting and archaeological survey work.

#### North Peel Ecosystem Management Project

A project that achieves TRCA land management and property securement objectives, and improves biodiversity of TRCA lands through the removal of invasive species.

Over 1,500 Buckthorn plants were removed across a combined area of five hectares of affected forest. This accompanied a concerted effort to rebuild fencing, survey for priority areas for future infrastructure improvements and installation of improved signage.

#### Bolton Resource Management Tract Management Plan

Toronto and Region Conservation initiated the management planning process for its Bolton Resource Management Tract in Caledon. A public advisory committee of partners, local interest groups and local residents was formed to help develop the management plan, and held two meetings. A public meeting to introduce the project was hosted in June 2007.

#### Heart Lake Conservation Area Master Plan Implementation

In 2007, the Heart Lake Community Action Group was established, a stewardship group to help TRCA implement the master plan and other projects in the Brampton area of the Etobicoke and Mimico creeks watershed.

#### Claireville Conservation Area Management Plan Update

The first review and update of the management plan will incorporate TRCA's Terrestrial Natural Heritage System Strategy, new public use enhancements, ecosystem management initiatives and surrounding land use changes. A comprehensive trail plan will enhance this conservation area as a valuable environmental, recreational and educational resource for residents of the Toronto region.

#### Bruce's Mill Conservation Area Master Plan

The master plan will aim to address property management and public safety issues, respond to future demands and growth in the region, integrate and implement Rouge River watershed management strategies, establish appropriate environmental protection and restoration

techniques, receive public input regarding appropriate use, development and management of lands, and create a sense of stewardship among users and adjacent land owners. As a result of the management plan, TRCA will work to protect, conserve and manage the property within an ecosystem framework thus, in consultation with the community, ensuring watershed health, public enjoyment and environmental sustainability.

#### Oak Ridges Corridor Park East Management Plan

The management plan will aim to address property management and public safety issues, respond to future demands and growth in the region, integrate and implement Humber and Rouge rivers watersheds' management strategies, establish appropriate environmental protection and restoration techniques, receive public input regarding appropriate use, development and management of lands, and create a sense of stewardship among users and adjacent land owners. As with the Bruce's Mill plan, this park, too, shall be managed within an ecosystem framework.

#### Altona Forest – Property enhancement and community partnership

Surrounded by urban development, Altona Forest has been impacted for years. Management efforts have helped to promote the importance of restoring and protecting the forest including trail improvements, wetland restoration, hydrologic monitoring and invasive species management.

#### Transport Canada Lands – Property enhancement and community partnership

Through a management agreement with Transport Canada, TRCA has been able to develop a two-kilometre trail system in a portion of the Federal Greenspace Lands. This development also included parking lot improvements, creation of a trail map and fostered community support.

The recreational access to these lands, in turn, helps to raise awareness of the importance of greenspace protection to the community.





**Glen Major Forest and Walker Woods – Property enhancement and community partnership**  
The Glen Major Forest and Walker Woods lands are perhaps the most naturally significant of TRCA's land holdings. In conjunction with the local stewardship committee and area landowners, TRCA has worked to enhance the lands, including an addition of 1.5 kilometres of trail, and strike a balance between natural heritage protection and recreation opportunities. The engagement of enthusiastic volunteers has increased community support and participation in the stewardship of this spectacular property.

**Timbers Gravel Pit – Site restoration**  
Building on previous restoration efforts, recent improvements have increased public access to the site and helped to improve the outdoor recreation opportunities of this area. This, in turn, has helped to build awareness of the importance of restoration of former aggregate extraction sites and has promoted industry cooperation on the project.

**Greenlands Acquisition Project**  
The greenlands acquired offer many benefits that allow communities to thrive and grow. These acquisitions protect our lands and waters, support biodiversity and provide opportunities for resource-based recreation and outdoor education that are compatible with ecological values.

**Land Securement**

Toronto and Region Conservation have partnered with the City of Toronto, Region of Peel, City of Pickering, the Oak Ridges Moraine Foundation and Waterfront Toronto to purchase these important properties in 2007:

- Region of Peel**
- Campbell Estate, 92 acres, Humber River headwaters
  - Boyer Estate, five acres, Humber River headwaters/source protection



- York Region**
- Bob Hunter Park, 476 acres, Rouge Park
- Regional Municipality of Durham**
- Purcell, 50-acre donation valued at \$380,000, Duffins Creek headwaters
  - Five separate properties purchased, totaling 13 acres for important trail connections between TRCA properties; additional trail length provided is approximately three kilometres.

- City of Toronto**
- Purchase of four residential properties that permitted Phase II of the Port Union Shoreline Improvement Project to proceed.

If there is one thing that makes land securement such a successful and enduring strategy is the engagement of the local community, the public and private sectors and municipal staff in the defining of a sustainable community. This section ends with a short list of the many groups who think globally, act locally and with a tremendous passion.

- Palgrave Forest and Wildlife Area Trail Plan**
- Advisory committee members including Caledon Cycling Club, Caledon Hills Bruce Trail Club, Humber Valley Heritage Trail Association, Oak Ridges Trail Association, Region of Peel, Town of Caledon, and Caledon Environmental Advisory Committee
- Outcomes**
- Trail plan endorsed
  - Caledon Cycling Club, Caledon Hills Bruce Trail Club, Humber Valley Heritage Trail Association and Oak Ridges Trail Association to manage portions of the trail system under trail agreements

- Bolton Resource Management Tract Management Plan**
- Advisory committee members including Caledon Cycling Club, Humber Valley Heritage Trail Association, Region of Peel, Town of Caledon, Caledon Environmental Advisory Committee, Save the Oak Ridges Moraine, and Ontario Heritage Trust
- Outcomes**
- Participating on Management Plan Advisory Committee

- Bruce’s Mill Conservation Area Conservation Plan**
- Advisory committee members including Town of Whitchurch-Stouffville, Whitchurch-Stouffville Chamber of Commerce, Whitchurch-Stouffville Soccer Association, Whitchurch-Stouffville Museum, YMCA, Rouge Park, Rouge Park Alliance, Community Safety Village of York Region, Meadowbrook Golf & Country Club, Whitchurch Highlands Public School, Oak Ridges Trail Association, and Rotary Club of Stouffville
- Outcomes**
- Participating on Management Plan Advisory Committee

- Oak Ridges Corridor Park East Management Plan**
- Technical advisory team members including York Region, Town of Richmond Hill, and Ontario Realty Corporation
- Outcomes**
- Participation in development of site securement and protection plan including implementation of securement actions





Claireville Conservation Area

- Steering committee members including York Region and Ontario Realty Corporation

**Outcomes**

- Will be participating on Management Plan Advisory Committee

**Glen Major Forest and Walker Woods Stewardship Committee**

- Stewardship committee members including Township of Uxbridge, Regional Municipality of Durham, Ontario Heritage Trust, Durham Conservation Association, Oak Ridges Trail Association, Uxbridge Horsemen’s Association, Durham Mountain Bicycling Association and many area landowners

**Outcomes**

- Participation in stewardship of Glen Major Forest and Walker Woods lands

**Altona Forest Stewardship Committee**

- Stewardship committee members including City of Pickering, St. Elizabeth Seton School, Pickering Field Naturalists and many area landowners

**Outcomes**

- Participation in stewardship of Altona Forest

**climate change and potential impacts within TRCA’s jurisdiction**

- Northward expansion of the Carolinian Zone. Most tree species migrate at a rate of only four to 200 kilometres per century. Models predict a northward shift of more than 500 kilometres per century. Unable to keep pace with climate change, woodlots are more likely to become stressed or die out, leading to loss of native biodiversity (Source: *Environment Canada, An Introduction to Climate Change: A Canadian Perspective, 2005*).
- While warmer landscapes will support greater biodiversity, the increase in future species may originate from invasion of exotics and loss of native biodiversity.
- Species loss as a result of habitat change (e.g., grassland birds will shift northwards but their habitat will not likely move at the same rate).
- Species loss as a result of inability to compete with invasive species and decoupled species relationships.
- Proliferation of over-wintering insect pests which will impact agricultural and forestry production.
- Where land use creates barriers to dispersal of native species and facilitates dispersal of exotic species, climate change in urban areas/human-dominated landscapes of the GTA is likely to produce more exotic species than native species.
- Plants growing earlier in the spring with earlier germination leaf-out and flowering times.
- Increased decline of some tree species such as pines and maples.
- Uncertain impacts on wetlands: structure, function, and hydrology.



#### climate change and potential impacts within TRCA's jurisdiction

- As surface temperatures increase, water temperatures are expected to rise as well. Warmer waters may result in sensitive aquatic species moving upstream to maintain temperature conditions resulting in the loss of cold-water fisheries, e.g., trout and salmon; the invasion of non-native species such as common carp and zebra mussels, which will alter fish communities.
- Reduced ice cover which, when coupled with an increase in extreme events, will increase erosion and sediment loading.
- Rapid spring warming may cause shallower and steeper thermoclines.

## Natural Heritage Terrestrial

In early 2007, after several years of research, development and consultation, Toronto and Region Conservation's Terrestrial Natural Heritage System Strategy was adopted. Following workshops with municipal partners in the spring of 2007, TRCA staff is now working with them to incorporate natural heritage systems as part of municipal growth planning.

## Aquatic Systems

In 2007, TRCA, in collaboration with the University of Toronto and the Ministry of Natural Resources, completed the first year of research on the Redside Dace (*Clinostomus elongatus*). This small, colourful minnow is a Species at Risk and is considered "endangered" in Ontario. Toronto and Region Conservation's jurisdiction is among only a handful of watersheds that support the entire Canadian population of this fish. This research will provide a better understanding and quantification of the effects of landscape change on the habitat for this species in order to provide improved direction for the protection of Redside Dace and its habitat.

## Restoration and Regeneration

Greening our space is one of the most important responses to climate change, as we need to protect what is healthy, plan for the future and restore and regenerate those areas in need now. Restoration projects have the Pygmalion effect on our community, not only addressing the needs for improved ecological health, but also inspiring nature lovers to become more involved in solving the larger watershed issues.

Here are some of TRCA's accomplishments in 2007:

### Guildwood Parkway Erosion Control Project at the waterfront — Phase 2 (Class Environmental Assessment)

Commenced construction of multi-year shoreline protection works to protect six residential properties from the hazards of erosion along the Scarborough Bluffs. Outcomes and benefits include the protection of life and property, as well as improving aesthetics and the creation of local aquatic habitat.

### Mimico Waterfront Linear Park at the waterfront (Environmental Assessment)

Construction is ongoing. Completed all shoreline work and on-site fish habitat compensation works as part of the improvements to 1.1 kilometres of waterfront from Humber Bay to Norris Crescent.

### Edwards Gardens storm damage restoration in Wilket Creek – Don River

Major erosion control works in Edwards Gardens at Lawrence Avenue. Part of large sole-source special funding to TRCA to implement city-wide repairs from the August 2005 flood. Outcomes and benefits include the protection of life and property, as well as improving aesthetics and the creation of local aquatic and terrestrial habitat.

### Wicksteed Avenue Erosion Control Project – Don River (Class Environmental Assessment)

Construction is ongoing. Completed large-scale channel realignment and construction of a floodplain pond in Serena Gundy Park to protect private property against the hazards of erosion and slope instability. This was an important step forward in erosion control by using the principles of natural channel design which takes a comprehensive, holistic approach to watershed restoration. Outcomes and benefits include the protection of life and property, as well as improving aesthetics and the creation of local aquatic habitat.

### Highway 10 and Steeles Avenue Erosion Control Maintenance Project – Etobicoke Creek

This project was comprised of a \$200,000 replacement of a large retaining wall in Kiwanis Memorial Park (Brampton) to protect several residential properties at the top of slope. The associated costs were funded out of the 2007 Peel Enhanced Budget for Climate Change and Peel Erosion Monitoring and Maintenance. Outcomes and benefits include the protection of life and property and improved aesthetics of the park.



Highway 10 and Steeles Ave., Erosion Control Maintenance Project—before.



Highway 10 and Steeles Ave., Erosion Control Maintenance Project—after.

**121–129 Col. Danforth Trail Erosion Control Project – Highland Creek**  
**(Class Environmental Assessment)**

An undertaking of channel realignment and slope stabilization works to protect four residential properties on Highland Creek from erosion and slope instability. Bioengineering and principles of natural channel design were utilized to provide long-term, sustainable protection against erosion. Outcomes and benefits include the protection of life and property, as well as improved aesthetics and the creation of aquatic and terrestrial habitat.

**221 Martin Grove Road Erosion Control Project – Mimico Creek**

A slope stabilization project was completed in Hampshire Heights Park to protect a private residence at 221 Martin Grove Road in Toronto. Outcomes and benefits include the protection of life and property, as well as improved aesthetics and the creation of aquatic and terrestrial habitat.

**Edwards Gardens**

Following the August 19, 2005 storm event, the City of Toronto retained TRCA to carry out city-wide repairs on behalf of the Parks Department. A top-priority area amongst the hundreds of sites was Edwards Gardens, which is a popular public amenity in the City of Toronto, particularly for the horticultural community.

Following several studies to determine the cause and extent of the damage, 14 key areas of concern were identified for repair, including several sections of bank stabilization works down-



stream of the Lawrence Avenue culvert, several pedestrian bridges, and an online pond used for irrigation in the park and as a backdrop for wedding photographs.

Staff completed restoration works in the spring of 2008, in time for the park’s busy summer season.

Restoration services is continuing to foster partnerships with the City of Toronto, particularly Toronto Water and Parks, Forestry and Recreation for stream restoration works.

Funding partnerships with the Ministry of Natural Resources under the Water and Erosion Control Infrastructure (WECI) program, for the repair of flood and erosion control structures, continued for the fifth year in a row.

Tree and shrub plantings 2007					
Planting goals	Private land	TRCA land	Municipal land	Federal/provincial lands	Total planted
Reforestation	45,915	45,275	1,110	8,350	100,650
Conservation services	23,453	94,758	25,997	13,665	157,873
Total	69,368	140,033	27,107	22,015	258,523

Planting by watershed 2007					
Watershed	Shrubs	Trees	Bioengineered aquatics	Reforestation seedlings	Total planted
Etobicoke/Mimico	8,973	1,662	8,480	30	19,145
Humber	22,567	17,933	10,266	47,280	98,046
Don/Highland	4,467	1,833	6,924	20	13,244
Rouge	6,010	939	2,756	20	9,725
Duffins	12,990	9,883	3,033	52,450	78,356
Petticoat/Frenchman’s Bay	775	170	0	0	945
Waterfront	1,635	507	33,228	0	35,370
Total	57,417	32,927	64,687	99,800	254,831

- Planted 254,831 indigenous trees, shrubs and aquatic/herbaceous plants in 2007 within TRCA’s watersheds.
- Additional 3,692 plants were supplied to other Greater Toronto Area conservation authorities and partnering NGOs for planting within their respective watersheds.



Planning and Development

In 2007, TRCA’s planning and development staff were very busy in the planning of development sites, permitting function, undertaking several policy planning and procedural projects that advanced streamlining, and a new policy framework for future official plan updating within TRCA’s jurisdiction based on watershed plan research and findings. Planning and development’s expertise in environmental planning, in co-operation with ecology and watershed planning staff, advances natural heritage conservation and ensures proper management of natural hazards within the development process with a view to mitigating the impacts of climate change.

- As a commitment to better customer service and process transparency, a Planning and Development Procedural Manual was developed, outlining the requirements for approvals—the first of its kind in Ontario.
- In another exercise to create greater consistency among conservation authorities in the Greater Golden Horseshoe, a review of all policies was conducted to ensure existing and future policies are aligned in their interpretation.
- As climate change impacts increase, TRCA staff worked with provincial staff to create solutions where existing flood-prone areas may need new responses in intensified urban areas. The Special Policy Area (SPA) committee is focused on the hazard management in a climatic change environment.
- The Valley and Stream Corridor Management Program was updated to reflect the current practice-in-plan review.
- There is a plan for a truly sustainable community using the Seaton property. This innovatively designed community began its first phase with the development of the Seaton Master Environmental Servicing process.
- Rio-Trin North Leslie lands in Richmond Hill included a new 30-metre-wide environmental buffer to the adjacent sensitive Rouge River tributary, implementation of new water balance objectives in stormwater management techniques and maintenance of groundwater infiltration via infiltration basins.

climate change and potential impacts within TRCA’s jurisdiction

- Increased risk to municipal infrastructure, (e.g., increase in road washouts, increased stress on floodwater management system, increased capacity demands on storm sewers and stormwater management systems).
- Increased cost of insurance as a result of flooded basements and buildings and extreme weather (insurance losses multiplied more than 13 times from 1960 to 1999); source: *Clean Air Partnership, Cities Preparing for Climate Change: A Study of Six Urban Regions, 2007.*
- Increase in temperature and extreme events may pose a risk to the integrity and longevity of built heritage structures.
- Increase in freeze/thaw cycles may create premature deterioration of roads.



Tree frog



Wetland

- Other achievements in establishing environmental advances in ecological net gain, state-of-the-art stormwater management and water balance initiatives include Hoover Park Town Centre in Stouffville, Angus Glen West Village in Markham, Evergreen at the Brick Works, and completion of the Little Rouge Corridor Management Plan and the Bob Hunter Memorial Park Plan.
- Significant achievements in natural heritage protection and enhancement of biodiversity and climate change adaptation have been made in Ontario Municipal Board negotiations and hearings throughout TRCA’s jurisdiction.
- The environmental assessment review team continued the partnership with York Region, Peel Region and the City of Brampton in an increased commitment to building the infrastructure for future growth in the area.
- The Conservation Authorities Moraine Coalition acquired 278 hectares of environmentally sensitive lands on the Oak Ridges Moraine and completed 54 stewardship projects that resulted in 80 hectares of reforestation, 14 hectares of prairie restoration, 7.6 kilometres of riparian restoration, three hectares of wetland creation and enhancement, plus 14 educational workshops for landowners.

the metrics

- 717 *Planning Act* applications reviewed.
- 110 environmental assessments initiated.
- 947 permits issued.
- 86 planning violations issued.



# Sustainable Communities—

our environment comes alive

Sustainable communities is about building economically viable, environmentally responsible, socially equitable and politically supported communities of the future. Much of 2007, was about exploring the intersection between and among these sectors, which, in the past, have been viewed as competing—like the environment and the economy.

## Market Transformation Programs

The intersection of the economy and the environment is proving to be a good kind of “green field,” where new partnerships are emerging out of a mutual interest in “doing good and doing well.”

### Greening Retail

Toronto and Region Conservation’s Greening Retail program engages the retail business community in the implementation of environmental best practices. The retail sector has the potential to have a significant, positive impact on the environment.

This program has found that there are significant synergies between the environment and the economy and, as such, retailers can implement many environmental practices that reduce their costs, in addition to reducing their impact on the environment. Many leading retailers are volunteering to help TRCA identify and disseminate environmental best practices for the sector.

### Renewable Energy Road Map

There is a defined need to understand the strategic actions that can be taken by TRCA and others in order to build the market for renewable energy.

Toronto and Region Conservation staff have compiled and synthesized all of the recommendations made in strategic documents prepared by government and non-government organizations in Ontario. Staff have also initiated a partnership with York University to consult with industry experts and hold a workshop in 2008.



**Sustainable community development**

The Block 39 project, located in the City of Vaughan, is currently the largest Energy Star community under development in Ontario. Facilitated by TRCA, this project has been supported by the developer, the builders, the gas and electric utilities, the City of Vaughan and Canada Mortgage and Housing Corporation (CMHC). Block 39 will be a local example of the sustainable technologies that The Living City Campus at Kortright will be demonstrating.

**Community transformation**

Several programs dealing with greening retail, health care and municipal facilities are underway. One such program, the Mayors’ Megawatt Challenge, has already achieved a total energy savings of two per cent. This energy savings has resulted in the reduction of 1,500 tonnes of green house gas emissions since 2003.

**Renewable Energy Business Case**

The business case for using renewable energy is likely the most significant barrier to the market adoption of various technologies.

In 2007, TRCA staff entered into a partnership with the University of Toronto and a number of private firms to articulate the business case for renewables for five specific technologies and five target audiences. This initiative will be completed in the fall of 2008.

**Sustainable Schools**

The project compared energy performance of recently built schools to identify operational and design best practices. The results of the program were the catalyst for the Canadian Green Building Council to begin modification of the LEED rating system to incorporate performance metrics.

The project found that despite similarities in building profile of recently built schools in four school boards, electricity use varied by a factor of three, gas use by a factor of four and water use by a factor of five. The project concluded that small differences in design or operational practices can have a significant effect on energy use. As such, measures of building performance were needed to ensure desired outcomes were achieved.

**Greening Health Care**

Toronto and Region Conservation’s Greening Health Care program helps hospitals across Ontario to benchmark and share best practices to improve the environmental performance of their facilities.

In 2007, more than 40 hospitals in the Greater Toronto Area and in eastern Ontario participated in the program. The results of which were quite impressive: Greening Health Care program members achieved energy savings which reduced greenhouse gas emissions by 10,000 tonnes. This is the equivalent of taking over 1,500 cars off our roads for a full year.

**Mayors’ Megawatt Challenge**

The Mayors’ Megawatt Challenge helps municipalities across the Greater Golden Horseshoe to benchmark and share best practices to improve the environmental performance of their facilities.

In 2007, participating municipalities achieved energy savings which reduced greenhouse gas emissions by 3,055 tonnes. This is the equivalent of taking 555 cars off our roads for a year. Membership in the program grew to 15 Ontario municipalities, representing close to five million residents.

Impacting climate change through partnerships:

- The Greening Health Care program helped the Hospital for Sick Children in Toronto to apply for and receive an incentive payment of more than \$80,000 from Enbridge Gas Distribution. The payment was for reductions in the use of natural gas totaling more than 1.6 million m³, a savings of 24 per cent of the hospital’s total annual gas consumption. In addition, there were electricity savings of more than 1.3 million kWh and water savings of 68,976 m³, for a total green house gas emissions reduction of 3,300 tonnes per year.
- In partnership with Evans and Company, TRCA conducted interviews with leading retailers including HEB in Texas, WalMart Canada and IKEA Canada. All three major retailers are cooperating fully with the program to share their environmental best practices. The results of these interviews will be compiled with the outcomes of an additional 12 interviews with leading retailers in Europe and North America. The final report, which will be completed late in 2008, will be disseminated through the Greening Retail website, as well as business schools and the Retail Council of Canada.
- The Community Transformation programs are performed in partnership with a variety of organizations including: Ryerson University, York University, Smart Centres, Mondial Energy and the Retail Council of Canada, to name a few. Of particular note is the sponsorship of the Greening Retail program by Smart Centres. Their contribution of \$155,000 has allowed TRCA to undertake research with leading retailers in North America and Europe. Greening Retail is being developed and implemented in a private public partnership with Evans and Company.



- The Greening Health Care, Mayors' Megawatt Challenge and Sustainable Schools programs have been created and are implemented through a private public partnership with Enerlife Consulting. In this partnership the consultant provides the technical services, while TRCA staff provide the marketing and client management.

## World Green Building Council

May 2007 was an exciting month for TRCA and marked a turning point in their history as they looked to improve the development of new homes and businesses under a sustainable umbrella, not only in the GTA but as a partner in a worldwide network of like-minded people. This is more than an intersection, but rather a dome of intersections—the first of its kind.

Toronto and Region Conservation won the bid to provide the World Green Building Council (WGBC) with a secretariat and a home for their base operations. The Province of Ontario provided \$500,000 to facilitate the start-up of the secretariat. The World Green Building Council Secretariat is housed in the offices of TRCA's long-term partner, Earth Rangers at Kortright. The Region of Peel also provided some funding towards WGBC activities. Within the first two months of the initiation of the secretariat, the WGBC planned and hosted the WorldGBC International Congress, attended by over 350 delegates from 25 countries. The WGBC Secretariat also partnered with the US Green Building Council to showcase best practice approaches to global sustainable development at the Green Build International Forum in Chicago, attended by 500 delegates from over 25 countries.

With a goal of 100 member countries, the first year of the operation of the secretariat has been successful at engaging 15 more countries as they pursue member status of the WGBC.

## Sustainable Technologies

In the spring of 2007, the Sustainable Technologies Evaluation Program (STEP) completed a study of the costs and savings to building owners in the GTA. The study compared the capital and life-cycle costs of green roofs to conventional roofs in order to better understand the value of municipal incentives needed to promote broader adoption of this technology. The study has been used by Toronto and other municipalities to inform green roof policies and incentive programs.

A final report is currently being completed on a three-year monitoring evaluation of permeable interlocking concrete pavers and a bioretention swale at Seneca College's King Campus. Technology

### Water balance

To address the impact of the increased surface runoff from urban sprawl, innovative stormwater management and water balance technologies are being developed through the STEP. Examples include permeable pavement, bioretention swales, rainwater harvesting systems, erosion and sediment control ponds, air biofiltration systems and rooftop gardens.



*Green roof at York University*

performance information from earlier years has been the subject of several papers and reports, and over 40 tours have been conducted since the project was initiated in the fall of 2005. Several older permeable pavement and bioretention swale sites were also evaluated as part of the project to determine how well these technologies perform over time. The evaluation is being used to provide guidance on the construction, application and stormwater management benefits of the technologies.

There has been growing interest among municipalities in the use of rainwater as a non-potable source of water for toilet flushing, landscape irrigation, vehicle washing and even laundry. The Sustainable Technologies Evaluation Program has been monitoring a rainwater harvesting system at a commercial printing facility in east Toronto since September 2006. In 2007, two new sites were selected for monitoring. The first of the two new sites is a newly constructed apartment complex in downtown Toronto. The second is a large public school in east Toronto. Together, the three sites represent a good cross-section of different designs and water-use needs. The information collected from these evaluations will serve as the basis for the development of guidelines and design tools intended to help encourage broader consideration of rainwater as a viable source for non-potable supplies of water.

Excess sediment release from construction sites has been an ongoing problem for many years in TRCA's jurisdiction. A new set of guidelines released in 2006 by the Greater Golden Horseshoe area conservation authorities sets out more stringent requirements for preventing erosion and minimizing discharge of sediment from construction sites. A large construction site in the city of Vaughan was selected to monitor the individual and combined effectiveness of the practices outlined in the guideline, with a focus specifically on those implemented upstream of the temporary erosion and sediment control pond. The project also demonstrates a web-based inspection tool designed to improve communication among stakeholders regarding inspection outcomes. The study results and practical knowledge acquired through this process will be applied in future Excess Sediment Control training workshops and guideline updates.



climate change and potential impacts within TRCA's jurisdiction

- Both positive and negative impacts are expected—longer frost-free periods could extend the growing season and potential for new crop varieties.
- Longer frost-free periods support invasion of pests and disease, leading to greater crop losses [Source: *Natural Resources Canada, From Impacts to Adaptation: Canada in a Changing Climate, 2008*].
- Potential for more local production in the GTA.
- High plant productivity due to increased CO<sup>2</sup>.
- Climate variability—severe drought and floods could damage crops.
- High temperatures may stress livestock, lowering dairy production and weight gains in beef cattle [Source: *Kling et al., Confronting Climate Change in the Great Lakes Region: Impacts on Our Communities and Ecosystems. Union of Concerned Scientists, Cambridge, Massachusetts, and Ecological Society of America, Washington, D.C., 2003*].

In 2007, TRCA entered into a partnership with the Toronto Atmospheric Fund to provide expert technical advice and review several solar pilot installations and programs in the City of Toronto. This successful initiative has led to further discussions of partnership opportunities to expand the scope of STEP to assess greenhouse gas emission technologies, and develop the solar technologies component of the existing STEP website.

Near-urban Agriculture

Toronto and Region Conservation began acquiring land in the 1950s for flood and erosion control purposes, which resulted in the inventory of productive agricultural lands. Toronto and Region Conservation has historically leased some of their land for agricultural purposes on an annual basis. However, agriculture has always been regarded as an interim use, to be reforested sometime in the future or used for other purposes.

Due to this land management approach, TRCA's agricultural land rentals have been declining over the past 25 years. Short-term leases have also made it difficult for agricultural tenants to make the personal investment to implement more long-term and often more costly best management practices (BMPs). Accessibility to farmlands due to land fragmentation, parcel locations, congested roadways, urbanization and urban sprawl have also had an economic impact on the farmer.

Today, a vision for a new form of agriculture on TRCA lands includes continuing to make their agricultural lands profitable through the use of new and innovative agricultural production methods (e.g., a combination of technology, BMPs, Community Shared Agriculture (CSA), community gardens, etc.), which can be a contrast to the traditional agricultural industry. These options support the local food system, are often community-based and promote environmental sustainability.

- Supported the GTA Agricultural Action Plan by providing office space, technological and professional assistance for the GTA Agricultural Action Plan Board and staff at Black Creek Pioneer Village.

- Initiated consultations with a wide range of potential partners interested in working with TRCA to pursue new sustainable agricultural opportunities on its lands. These groups include: GTA Agricultural Action Plan, University of Guelph-Centre for Land and Water Stewardship, Community Economic Development for Immigrant Women, FarmStart and Ontario Farmland Trust.
- Site preparation at the Toronto Urban Farm, located at Black Creek Pioneer Village, was completed. The Toronto Urban Farm was developed as an urban farm in response to a community need for greater access to affordable and ethno-specific foods. There was a recognized need by the community to create employment and leadership/learning opportunities for young people in this high-density area. This high-profile site, located near the south-east corner of Steeles Avenue West and Jane Street, lies on the west side of the Black Creek valley corridor. Reflecting the heritage of Black Creek Pioneer Village, this site had been used as agricultural land in the first half of the 20th century, but had been left fallow since it was acquired by TRCA in 1952. The City of Toronto is currently administering this project under a management agreement with TRCA.
- Partnered with FarmStart, a not-for-profit organization working towards increasing the presence of young and new farmers operating their own farm enterprises within the agriculture community. This fitting partnership has resulted in the establishment of a research and training farm facility to support new farmers and immigrant communities through collaborative community development projects and cultural animation strategies at the historic McVean property, at Claireville Conservation Area.

Stewardship

The stewardship team continues to grow and maintain their 'front line' role in reaching out to local communities. This is accomplished through two successful models: community stewardship and private land stewardship, with a goal to meet people face-to-face, listen and learn.

What inspires individuals and groups to try something new and make a change that they can sustain over time? If challenges exist, what are the limitations and restrictions to making those changes that impact our water, land and air?







This personal feedback and the bank of knowledge it provides allows the stewardship team the opportunity to customize programs to meet the needs of diverse and ever-changing communities.

These programs include hands-on demonstrations, private landowner workshops, healthy homes and garden sessions, nature walks, planting and clean-up activities.

The information pieces developed, skills shared and props used allow people the opportunity to make local changes in their own backyard, to address the global issue of climate change locally.

Many people are already taking action that addresses climate change. Some just have not made the connection between how their smaller personal efforts positively impact the environment on a collective scale. And this is where and why TRCA intersects on a community level.

Stewardship program highlights of 2007 include:

- Confirmation of \$110,000 to initiate community-focused stewardship programs in Pickering and along the Port Union waterfront.
- A successful application to the Ministry of Environment resulting in a \$92,000 grant to lead a door-to-door education program about impacts upon municipal drinking water, and administering \$253,000 in grants to landowners who complete Early Actions projects.
- Securing a \$ 5,000 grant from the United Way to plan and implement a Malton Stewardship Day in Mississauga, engaging hundreds of “new” Canadians in a full day of environmental activities along their community trail.
- The installation of three interpretive signs in Wildwood Park in Malton, sharing the historical significance of the park and facts about wetlands.
- Highland Creek stewardship linked Scarborough youth with arts and the environment. They created a 12-foot-high wood carving from a recycled hydro pole that was installed in a bed of native wildflowers in a community park.
- The Stewards in the Field pilot project was launched at Claireville Conservation Area. This project was designed to give local residents the tools, training and a team setting to go into the field and perform monitoring activities on their own.
- Engaged over 400 members of the public and students from the Albion Hills Field Centre in the restoration of Taylor Pond. Activities included trail creation, installation of habitat features and native tree and shrub plantings.
- Celebrated the opening of Waterside Marsh with the community volunteers who assisted with its restoration. This one-hectare historical wetland in the upper west Don River watershed now boasts two offline wetlands, native trees and shrubs, bird-nesting boxes and a new pedestrian bridge.



## Education

Education is a keystone in any climate change strategy and our education group has risen to the challenge with expansion of both the scope and depth of its efforts.

### Bondar Report

In 2007, the Ontario Ministry of Education’s Curriculum Council convened a task force to report on how children learn about the environment. This task force was chaired by Dr. Roberta Bondar and was comprised of a team of experts from the environmental and sustainability education field. Tasked with assessing the current policies, programs and practices with regard to environmental education in Ontario, they conducted extensive research into effective environmental practices locally, nationally and internationally (TRCA was cited within the document for their “systems-thinking curriculum”). The task force also reviewed the responses from the Ministry of Education’s call for public comments (TRCA provided comments as part of Conservation Ontario’s submission). The findings resulted in the working group’s recommendation to the ministry to develop an environmental education policy for Ontario schools, focusing on the following core components:

- Leadership and Accountability
- Curriculum
- Teaching and Resources

A key aspect of the report is its definition of “environmental education,” which follows:

*Environmental education is education about the environment, for the environment, and in the environment that promotes an understanding of, rich and active experience in, and an appreciation for the dynamic interactions of:*

- *The Earth’s physical and biological systems.*
- *The dependency of our social and economic systems on these natural systems.*
- *The scientific and human dimensions of environmental issues.*
- *The positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems.*

On June 22, 2007, the Ministry of Education announced that it would be implementing the 32 recommendations put forth by the Working Group on Environmental Education in their document *Shaping Our Schools, Shaping Our Future*. Considered the most significant curriculum recommendations in decades, the *Shaping Our Schools, Shaping Our Future* report acknowledges that our sustainability as a province is inextricably linked to our environment and that educating our children is the first and most crucial step towards a sustainable future.

#### Education and outreach

Toronto and Region Conservation has been a partner in the Ontario EcoSchools program since 2002 and is the first conservation authority, and Black Creek Pioneer Village the first museum, to achieve Ontario EcoSchools certification.



In response to the *Shaping Our Schools, Shaping Our Future* report, TRCA has begun to develop programs to meet the recommendations as outlined. Specifically, TRCA has already developed a strategy to guide teacher professional development and engagement programs contained within the report. Further to this, in response to the other recommendations in the *Shaping Our Schools, Shaping Our Future* report, TRCA continues to work closely with local school boards and education partners to ensure that our students are prepared to meet the challenge of sustainability currently facing our communities.

A big part of the climate change strategy is to inform, educate and influence behaviours. In the education group, this has been the mandate for many years and 2007 was a particularly remarkable one.

Here are just a few of their many accomplishments:

#### Launch of a new TRCA education website

Increased and improved web presence, supporting sales of education programs and providing clearer information on TRCA education offerings.

#### Development of *Life in a New Land* program at Black Creek Pioneer Village

This program helps students understand early Canadian history and the connection to present Canadian society with an emphasis on immigration then and now. This provides an insight into how Canada has evolved. It also enables students to understand and appreciate our multicultural society and various Canadian cultural backgrounds. It is growing in numbers.

#### Weston Environmental Leaders of Tomorrow

An exciting program that is the result of a three-year funding commitment from the W. Garfield Weston Foundation to support 60 class visits (over three years) to Lake St. George Field Centre for classes from high-priority neighbourhoods in Toronto. This represents environmental learning opportunities for students that would not normally have the chance to participate in a residential visit.

#### Certification of Black Creek Pioneer Village, Lake St. George, Claremont and Albion Hills field centres as EcoSchools

Toronto and Region Conservation’s EcoSchools are leaders for other outdoor education centres and conservation authorities taking action on climate change. EcoSchool designation recognizes efforts made towards reduced energy demands, reduced waste and ‘greener’ facilities.



### Field Centre Food Service Strategic Review

With a goal to be formalized in 2008, the Field Centre Food Service Strategic Review responds to clients’ needs, mitigates climate change, supports local agriculture and the field centres become more operationally efficient. Two critical components of this is compiling baseline data around carbon impacts of the operations and identifying reduction opportunities while supporting local agriculture and local economies.

- Menus have been redesigned to provide healthy meal choices, including whole-wheat products, zero-trans-fat cooking oils and fruit available at all meals/snacks.
- Delivery miles have been reduced through consolidated ordering and the placement of larger orders.
- Created guidelines for the purchase of local food supplies, when available.

The education group continued to expand their participation in strategic partnerships:

- The education group is taking a leading role in supporting water education programs across the province through their involvement with the Children’s Water Education Council (CWEC), with staff sitting on the board of directors. One key mandate of CWEC is to act as the supporting body for the 22 children’s water festivals currently operating across the province. This relationship will serve to expand TRCA’s network of education partners and, because the board of CWEC is made up of stakeholders from a variety of private and public organizations, it will provide TRCA with access to a broad range of expertise.
- Black Creek Pioneer Village has developed a partnership with Shoreham Public School. This enables economically disadvantaged students in the Downsview community to visit the village free of charge during certain hours. Students have a chance to experience the village and participate in activities. This opportunity fosters appreciation of Canadian cultural identity and is a great opportunity for these students, who would otherwise not be able to enjoy such an experience.
- In 2006, through a joint submission to the Ontario Ministry of Research and Innovation (OMRI) under its Youth Science and Technology Outreach Program, TRCA and the Toronto District School Board (TDSB) were successful in securing a three-year \$115,000 grant to offer academically ‘at-risk’ Grades 7–9 students a summer science and technology camp experience at TRCA’s Lake St. George Field Centre.

The camp is called Research and Innovation Science Camp (RISC) and brings researchers and innovators to the students at Lake St. George, to provide hands-on scientific and technological experiences, supported by lectures on a variety of current issues affecting the GTA. Led by TRCA and TDSB staff, the camp engages researchers and innovators from TRCA, universities and colleges and other professionals to provide daily discussions on a wide range of science and technology topics. A number of these topics are environmentally based and will contribute to TRCA’s overall goal of learning in *The Living City*.

In July of 2007, TRCA and TDSB hosted the first two camps at Lake St. George. The RISC program helps students develop skills and networks based on personally significant research and innovation topics that will lead to participation in science and technology celebrations during the year. The researchers and innovators are also available via the Internet and, where possible, as face-to-face mentors to help students develop their capabilities as researchers and technological innovators.

### Outreach Education Watershed on Wheels

The Watershed on Wheels (WOW) Program brings exciting and unique conservation education programs into Grades 1–8 classrooms. All the necessary equipment is provided to engage students in fun and educational, hands-on activities. Programs can be conducted in a classroom or an outdoor setting.

### Aquatic Plants Program

The Aquatic Plants Program supplies students with everything they need to grow seeds of aquatic plants right in their classroom. It allows students the hands-on experience of growing and caring for aquatic plants right from the germination of a seed. When the plants are ready, the class takes a spring field trip to a nearby wetland to do an aquatic planting and learn about the ecology of a wetland. There are currently 17 designated community wetland rehabilitation sites across the GTA that the students visit.

### Yellow Fish Road® Program

This hands-on activity focuses on school and community youth groups to illustrate a water quality message: What goes into the storm drain on your street can end up in our rivers and lakes. A slide presentation, in-class demonstration and interactive model help participants learn how storm drains are linked to local water bodies. An outdoor component involves marking storm drains in the local community and distributing flyers to increase public awareness. Children discover how water in storm drains travels to the nearest body of water without treatment.





Once educated, these ‘environmental guardians’ create public awareness by painting a yellow fish beside each storm drain they pass and deliver fish-shaped flyers explaining the dilemma.

Outreach Education 2007 program highlights include:

- Engaged over 1,000 volunteers in the Yellow Fish Road storm drain marking program. Almost 2,000 storm drains were marked and 7,034 homes were reached with a non-point source pollution message.
- Developed of an interactive model illustrating non-point source pollution and landscaping for energy conservation for use in curriculum programs and public events as an awareness-building and education tool.
- Developed In-class program, titled *Climate Calamity*, which educated Grade 5 and Grade 10 students about climate change causes and solutions.
- Developed Oak Ridges Moraine (ORM) in-class program for Grades 5, 8 and 10 students, which educated students about the importance of the ORM as a necessary natural resource.
- Engaged 10,323 students in conservation education programs through TRCA’s Watershed on Wheels Program.
- Engaged 3,311 students in planting 17,000 plants at 16 wetland restoration sites across TRCA’s jurisdiction through the Aquatic Plants Program.
- Approved to pilot Yellow Fish Road disc program within the City of Toronto at identified high-priority non-point source pollution sites.
- Aquatic Plants Program featured on *Recreating Eden* television series in partnership with Evergreen.

## TRCA Parks

Toronto and Region Conservation parks once again hosted, and participated in, the Peel and York regions’ children’s water festivals at Heart Lake and Bruce’s Mill conservation areas respectively. Collectively, and with the support of TRCA volunteers, 11,000 students experienced education in these outdoor classrooms, building their knowledge and skills about our regional water resources.



Peel Children’s Water Festival.



## Archaeology

The scale of climate change mitigation and its impact on landscape may be very significant. Adapting is probably what humans do best, so archaeologists should be well-positioned to use an understanding of past successes and failures to give a perspective to the changes that are happening now. That is a genuine contribution that only archaeology can make to people’s understanding of the context of climate change; and an opportunity that perhaps has not been grasped yet. The other big contribution that archaeology can offer is an opportunity for people to take part in monitoring and recording the changes that are happening at the very local level. It is here that we intersect with those passionate about preserving our past, to partner in the common goal to mitigate climate change and preserve yesterday’s heritage for tomorrow.

Archaeological sites on TRCA lands span 11,000 years of human habitation in southern Ontario. To date, approximately 1,200 acres of TRCA property have been examined for archaeological sites and more than 100 sites have been located. Archaeological resources on TRCA lands will be managed as a community resource.

Archaeological highlights from 2007 include:

### Stop-over site excavation for the Mayfield Road stormwater pond

Excavation was necessary in order to learn as much from the site as possible ahead of construction, in an area of the Etobicoke Creek headwaters where few sites are currently known. This affords TRCA the documentation of a previously unknown site with components dating as far back as 7,000–8,000 years and included hands-on involvement by the Peel Aboriginal Network and Métis community.





Boyd Archaeological Field School.



Students screening for artifacts at the Lewis site near Stouffville.

#### Kleinburg Ossuary re-discovery

A First Nations burial dating to the turn of the 17th century, thought to have been fully excavated in 1970. The analysis of this 're-discovery' is in concert with the Ontario Heritage Trust, and TRCA is in preliminary discussions with the Huron-Wendat and other Nations for long-term planning of this protected area.

#### Archaeological collections upgrade

Triggered by the shift of the archaeology unit into the new Restoration Services Centre, the opportunity was seized to incorporate the latest in best management practices for the long-term care of differing types of archaeological resources, such as an on-going process to evaluate and upgrade the artifact collections housed at this location, which will result in better access and interpretive opportunities for the collections.

#### Archaeological Master Plan update initiated in 2007

Toronto and Region Conservation's Archaeological Master Plan is focusing on the protocols, practices and guidelines for archaeology and other cultural heritage work, as well as communications and partnerships with Aboriginal communities of sites specifically on TRCA lands, and also incorporates a pilot project in Peel Region to better understand the needs for a local repository for the archaeological site documentation and resulting artifact collections.

The master plan is now anticipated to include updated guidelines for current protocols in archaeological practice, including formalized communications and partnerships with descendant Aboriginal communities. And Peel Region, a prime example of a rapidly expanding urban area with an equally rapid increase in archaeological investigations, provides substantial information for sites and collections both on and off TRCA property; the research conducted here will benefit discussions and plans for the best practices relating to artifact and documentary collections, and new interpretive opportunities across southern Ontario.

#### 31st Boyd Archaeological Field School

Toronto and Region Conservation has a strong role to play in informing the public of the importance of managing the cultural resources found in the environment. To that end, the Boyd Archaeological Field School (a high school credit course) is designed to disseminate this knowledge to various levels of students.

The Boyd Archaeological Field School is TRCA's long-term, renowned secondary school for-credit program and one of the only of its kind in Canada. In 2007, 26 students graduated from the course with a much greater understanding of the value of local heritage roots and the tools employed in archaeology and related fields, to discover and interpret the lives of past peoples through their site.

#### King Township Cultural Heritage project

Initiated in 2007 and continuing into 2008 with funding from King Township, this research will provide a basic planning tool by highlighting the known heritage resources within the township and modeling high probability locations for future attention. This project is anticipated to result in an enhanced understanding of King Township's heritage resources, both known and currently unknown, which may influence future municipal planning, stewardship and interpretive opportunities (affecting the Carrying Place Trail and related sites, for instance).

#### Lewis site excavation for the Stouffville Road widening

A successful excavation and documentation of an important early 19th-century local industry at this homestead with a previously unknown pottery kiln. This excavation included involvement by the local community and the students of the 31st Boyd Archaeological Field School.

*"There are unique insights that archaeology as a discipline can make to the national debate about climate change. We are thus privileged to understand that our much-loved historic buildings and landscapes are simply the latest in an endless sequence of modifications to a constantly evolving environment. It is, therefore, ironic that in our passionate determination to protect the legacy of the past we can too easily forget that it is change rather than continuity that is actually the natural condition of our species."*

—Council for British Archaeology, Newsletter, August 2007

## Parks and Culture

The Earth's climate is changing—and parks are not immune. Global warming is already having serious consequences for species and their habitats (a preliminary study released by Environment Canada and Parks Canada examines 39 of Canada's national parks and leaves no doubt that the implications of global warming are indeed serious for the future of our parks). In the future, parks and wilderness areas across Canada could look very different than they do today. But we can help







climate change and potential impacts within TRCA's jurisdiction

- Warmer temperatures exacerbate air quality problems in urban centres and may result in increased production of ozone and other photochemical components of smog (*Source: Natural Resources Canada, From Impacts to Adaptation: Canada in a Changing Climate, 2008*); increased occurrence of human respirator difficulties; risk of solar radiation during outdoor recreation; and likely increase in vector-borne diseases such as malaria, Lyme disease and West Nile virus; water-borne diseases and heat-related illnesses.
- Extreme weather events may further cause risks to human life and property due to flooding.
- Changes in flora and fauna may have impacts on nature-based recreation such as bird-watching, angling and nature viewing; however, climate change may result in a net positive impact on nature-based tourism and outdoor recreation in TRCA's jurisdiction due to increasing season length for warm-weather activities.
- Canoeing may be limited due to potential reduction in baseflow in some lower tributaries of the watersheds.
- Loss of swimming days due to beach closures because of bacteria.

nature cope with climate change. In Ontario, conservation authorities play a pivotal role intersecting with and involving governments at all levels, industry and individuals in addressing climate change, altering our lifestyles to protect our parks—which will also result in many health and economic benefits.

It is with those health benefits in mind that TRCA's parks and culture divisions' strategies are a counterpoint to this concern by making natural and cultural heritage interactive, affordable, fun and good for you, too. This is the intersection of human health and the environment, and focuses on an immediate and critical issue for our children.

In his book, *Last Child in the Woods*, Richard Louv described how children are separated from nature to such a degree that they are suffering from 'Natural Deficit Disorder,' are increasingly less active and will suffer prematurely from arthritis, diabetes, hypertension and diseases associated with aging.

"I like to play indoors, 'cause that's where all the electrical outlets are" is a quote from a fourth-grader in *Last Child in the Woods*. This sentiment is a motivating factor in parks and culture's strategy of engagement, especially of young families to overcome the lack of interest in nature or even the perceived fear of it.

Bathurst Glen Golf Course

The point of intersection for the golf course and the environment was around the Audubon Certification Program. Although still on-going, Bathurst Glen Golf Course has received three out of six required components. So far, the golf course has naturalized over 12 acres of previously managed turf course, planted over 300 native stock on the course and limited the use of chemical fertilizers, decreased water usage and used 80 per cent organic-based chemicals.





Building on parks and culture’s strategy of engaging children, Bathurst Glen Golf Course partnered with Henry Brunton Golf and Timberland Health Club in an effort to develop an interest in golfing among young people with clinics and junior camps.

Black Creek Pioneer Village

The village is a part of the TRCA family of services, where the past and the present positively coalesce and 2007 was no exception.

Black Creek Pioneer Village created a *Gateway to the Greenbelt* in partnership with the Friends of the Greenbelt Foundation. This ‘traveling’ exhibit was produced to increase awareness about cultural and natural heritage in the Greenbelt. This program addressed several issues including the tourist value of the Greenbelt, its role in food production and distribution, and a greater understanding of rural culture

To attract new audiences and motivate families to come and be part of the community, and maybe even learn something new, Black Creek Pioneer Village introduced new programming; All Hallow’s Eve was sufficiently scary to entertain everyone in attendance.

In 2007, Black Creek Pioneer Village eliminated the price barrier for targeted communities so that the village was accessible to all and strengthens the bond that TRCA, including the village, has in the immediate geographical community.

Kortright Centre for Conservation

Kortright maintained its dedication to quality education and social marketing with many innovative programs that address the issues of climate change head on.

- After a successful competition to find the best design for a sustainable house of the future, a partnership was forged with BILD (formerly the UDI and Greater Toronto Builders Association) to make the dream a reality. Plans were crafted in 2007 for implementation in 2008 for two homes through the generous participation of many volunteers and members of BILD.

- The partnership with Ducks Unlimited ended with an enhanced waterfowl habitat with wetland interpretation.
- Kortright staff completed the Energy Plan for The Living City Campus for ultimate energy self-sufficiency. The education staff, York Region and York Catholic District School Board, Ontario Ecoschools, York Region Health Services and the Clean Air Partnership intersected with PowerStream to create a community-integrated energy education and action program. Forty-two classes and 1,025 students had a free visit to Kortright to participate in the energy programs with an integration of teacher training, in-class and at-home activities, and a field trip together in Ontario.

In some cases, Kortright’s energy programs were ahead of their time. However, the impacts of climate change have indicated that time is not on our side and more is needed—sooner. A challenge TRCA is more than willing to take on.

the metrics

PARK ATTENDANCE IN 2007

Black Creek Pioneer Village

137,747 visitors in 2007  
13,000 volunteer hours including 7,000 for special events  
Digital images made for over 2,000 artifacts

Bruce’s Mill

General Public — 35,742  
Students — 4,768

Glen Haffy

General Public — 22,824  
Students — 700

Heart Lake

General Public — 41,647  
Students — 1,888

Indian Line

General Public — 77,661  
Students — 634

Petticoat Creek

General Public — 58,657  
Students — 4,552





## Business Excellence— responding to nature

The overriding environmental challenge of our time is climate change. In relation to Kyoto and beyond, humanity is facing some really tough choices. There is no such thing as a handful of simple short-term solutions. Economy, energy and environment are closely interlinked, so we have to realize that we are implementing a major shift in the world economy that will ultimately influence everything and everybody and that a long-term perspective must be applied. Combating climate change must and will be a part of everyday life all over the globe.

We believe that acting sustainably in our everyday activities is important to adapt and mitigate against climate change. Due to this belief, TRCA has been incorporating sustainable thinking and values into its operations and programs since its incorporation in 1957.

From water management to energy conservation, TRCA has positioned itself well within the community and with its partners. Toronto and Region Conservation is not only integrating climate change into their own business operations, they are also proposing new partnerships and leveraging advanced science to meet the climate challenge on a local, regional and national scale.



#### Greening operations

Toronto and Region Conservation has incorporated sustainable thinking and values into its own buildings, lands, operations and programs since 1957. Points of pride for the organization are the Leadership in Energy and Environmental Design (LEED) Platinum certification of the Restoration Services Centre and the fact that the building uses 100 per cent green energy. The Kortright Centre, which is at the heart of The Living City Campus at Kortright, uses 100 per cent green energy.

The Living City Campus at Kortright offers a model for sustainable design and practices. As a centre of excellence, it has the potential to be a global centre of research and development in climate change adaptation and mitigation within urban environments.

### Restoration Services Centre— Awarded LEED® Canada-NC 1.0 Platinum rating

Awarded November 6, 2007 by the Canada Green Building Council, TRCA's Restoration Services Centre represents Ontario's first LEED Platinum building and the second highest LEED Platinum building in the country at the time of certification—TRCA's proudest accomplishment in fighting climate change.

The Restoration Services Centre is located in Vaughan, Ontario, and serves TRCA as a showcase of sustainable design and a centre for the organization's habitat regeneration and restoration projects. The two-storey, 1,095 m<sup>2</sup> building comprises office space for 25 staff and a works garage. The construction is engineered wood framing with brick and wood siding.

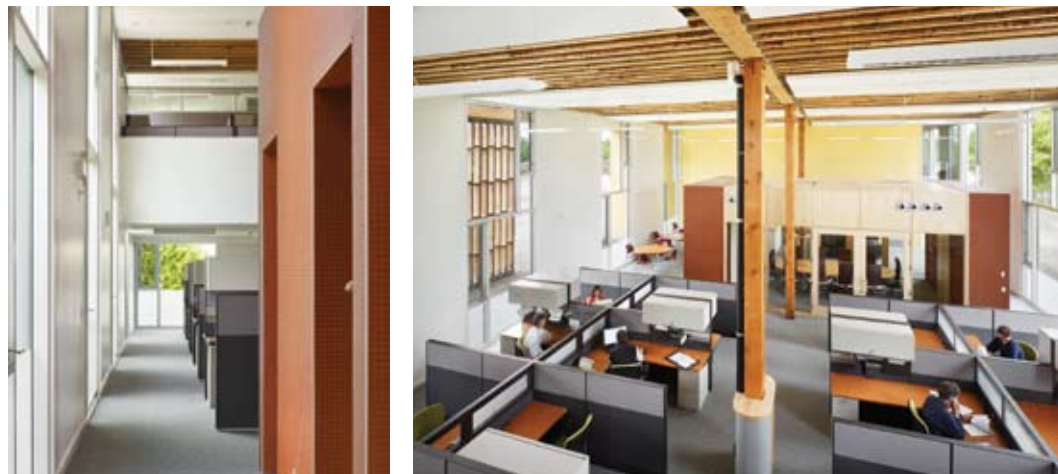
Careful planning minimized the environmental impact of building design, construction and operation. These efforts were rewarded: the Restoration Services Centre is Ontario's first LEED Platinum building and a recipient of the 2007 Green Design award from Ontario Wood WORKS! (Canadian Wood Council). The design team paid particular attention to energy conservation—the building achieved all 10 LEED energy credits. Water conservation was also an important design priority: the centre uses no water for wastewater conveyance and reduces overall indoor water consumption by 80 per cent from a traditional building.

The Restoration Services Centre is expected to achieve a remarkable 66 per cent annual energy savings. Heating is provided by a heat pump system with a slinky ground-source loop. This loop design requires less ground area than conventional loops and is less costly than vertical boreholes. Heat is delivered to the offices through tubing in concrete flooring. The garage is heated only by gas radiant tube heaters. Cooling is supplied largely through chilled-water fan coils. Supplemental cooling is provided from slightly cooled flooring, using the same tubing as the radiant heating system.

Several innovative methods deliver ventilation air. A concrete 'earth tube' delivers outdoor air to the basement mechanical equipment. Two heat-recovery ventilators deliver 100 per cent outside air to the offices via displacement ventilation. Despite the sophistication of the HVAC system, it is largely invisible to the occupant. Most ductwork is hidden underslab, integrated with the slab-on-grade floor and insulation, and most ventilation diffusers are inconspicuous.







Restoration Services Centre

A photovoltaic system provides the facility with a portion of its electricity. Toronto and Region Conservation is committed to buying electrical power for two years from a supplier of green (renewable) power—Bullfrog Power.

A building automation system (BAS) integrates the control of heating, cooling and ventilation. This system also measures and records building performance, including building temperatures and humidity, ventilation rates, indoor air quality, and electricity and water use.

As with the HVAC system, the water conservation technologies implemented at the centre are both innovative and effective. The combination of composting toilets (rarely used in offices) and waterless urinals means that the centre does not use water for wastewater conveyance. These technologies, together with low-flow plumbing fixtures throughout the building conserve 80 per cent of the potable indoor water normally used in a building of this size.

A pond supplies water for the nursery irrigation requirements. Rainwater is harvested from the roof and surface drainage and is sent to the pond, so no cistern is required for rainwater storage.

The Restoration Services Centre design addresses workplace quality through the provision of good-quality indoor air, adequate ventilation and abundant natural light. Building occupants in perimeter spaces have windows and lighting controls. Building occupants in non-perimeter spaces have individual control over airflow, temperature and lighting. Over 95 per cent of regularly occupied spaces have an abundance of daylighting and 90 per cent of these spaces have a view to the outdoors.

Systems furniture and seating in the offices helps protect indoor air from contaminants because this furniture is certified as “low off-gassing.”

## Information Technology and Services

Information Technology and services are the heart of TRCA’s effectiveness strategy and 2007 was a busy year of interesting communication management technology, meeting our employees’ needs to reach their stakeholder communities. Here are just a few success stories.

Departmental highlights of 2007 include:

### Information technology (IT) group

- Over 50 new PCs were purchased and deployed in 2007.
- To improve energy consumption, IT replaced over 80 CRT PC monitors with new energy-efficient flat-screen LCDs.
- Upgraded servers for Downsview Office and Boyd Office, and acquired new storage array for Head Office, which provided over one terabyte of storage capacity.
- Contracted development of a number of new Lotus Notes applications and enhancements to improve workflow and efficiencies.
- Upgraded Internet bandwidth to 10 MB Fibre LAN extension for Head Office.
- Installation of second server rack at Head Office central IT facility.
- Completion of IT infrastructure at the new Restoration Services Centre.
- Installed new high-capacity tape back-up system for Head Office.



- Installed and integrated a remote network node to support the World Green Building Council Secretariat at the Earth Rangers facility.
- Exceeded an overall 99.9 per cent network up-time for the entire TRCA Wide Area Network.

#### Records management/office services

- Continued implementation of the Electronic Document Management System.
- Completed a review and implementation of a new Records Classification System to better reflect the organizational structure of TRCA and also reflect the types of work they do.
- Added more than 8,000 new digital documents into the corporate Electronic Document Management System.

#### GIS/mapping

GIS/mapping is a very important mode of not just analysis but of communicating the changes in our total jurisdiction. This is a key element for public consultation and general understanding of our environment often from a bird's-eye view. Here are just a few success stories:

- Finalized 59 new floodline maps were
- Produced Palgrave Trail Plan
- Completed The Living City Campus at Kortright mapping
- Produced Glen Major Forest and Walker Woods Trail mapping
- Updated Claireville Conservation Area Trails Plan and Management Zones
- Updated trail mapping in the Don River watershed

Through analytical and mapping processes, supported the following programs:

- Don River watershed reports
- Oak Ridges Corridor Park East Management Plan
- Humber River and Rouge River watershed plans
- Conservation Lands Tax Incentive Program
- School maps for outreach education
- TRCA's real-time gauging website
- Waterfront Strategic Plan
- Kettle Lakes East (Jefferson Forest) Management Plan
- Don River subwatershed impervious statistics
- Paddle the Don
- North Peel and Claireville Restoration Project
- Rouge River watershed plan
- Terrestrial Natural Heritage
- Species scoring database
- Purchased Trimble GPS/datalogger
- Collected site-level soils data
- Launched pilot website using web mapping technology. Project is a partnership between TRCA, five other conservation authorities and the Ministry of Natural Resources.

## Volunteerism and Diversity

Toronto and Region Conservation received the prestigious IS (Immigrant Success) award from the Toronto Region Immigration Employment Council in the 'large employer' category due to their commitment to providing new opportunities for skilled immigrants and expanding programs to diversify its workforce. Toronto and Region Conservation offers the Professional Access and Integration Enhancement (PAIE) Program, funded by the Ontario Ministry of Citizenship and



Immigration, which is a one-year program for internationally trained professionals. Through training, mentorship and paid placements, participants gain Canadian experience that can help them find work. In 2006/2007, the PAIE Program focused on working with internationally trained geoscientists and planners. Toronto and Region Conservation is developing a similar program for environmental engineers.

Toronto and Region Conservation participates in the YMCA's Newcomer Work Experience Program and The Mentoring Partnership. The organization also works with World Education Services to assess international education credentials. Toronto and Region Conservation disseminates job openings through immigrant service organizations, organizes environmental career expos for 'new' Canadians, and hosts an annual Canadian Multiculturalism Day to promote greater awareness of the challenges and opportunities created by an increasingly diverse workforce. Ten per cent of TRCA's 713 employees are considered skilled immigrants.

In 2007, TRCA created a diversity committee, which has delivered cultural competency training to 400 full-time staff and volunteers. In addition, TRCA has exported its very own Diversity Training Toolkit, offering guidance to other environmental organizations about creating a comfortable environment where new Canadians can thrive.



PAIE Participants



# Health and Safety

Toronto and Region Conservation experienced a safer and healthier environment in 2007. With a change in their employee benefit provider, employees now have access to a list of personal consulting services through an employee assistance program with Sheppell-fgi, a national leader in wellness in the workplace. This private and confidential service allows employees to address their needs for support in financial management, family relationships and general well-being.

This year saw TRCA being recognized for their commitment to safety with a WSIB insurance rebate of over \$150,000. Their commitment to employee safety extends beyond day-to-day responsibilities, taking a holistic approach such as a one-day training session for staff about how to prepare for just about anything when working around water.

# Sustainable Management System

Commitment about changing the consumption patterns of our communities begins with us and the family of TRCA divisions and groups. This needs to be an enduring and sustainable change, hence the history of the Sustainable Management System—as a role model for employees and communities.

It is critical that TRCA both live up to its own vision of *The Living City* agency and model innovations that help lead our society towards the ultimate goal of sustainability.

## New LEED® Platinum Restoration Services Centre

Only the second LEED Platinum building in Canada. More efficient buildings are critical to addressing climate change and TRCA's most efficient building.

## EcoOffices program

EcoTeams began greening offices at Boyd Office and Restoration Services Centre, Head Office and the Downsview Office through the innovative re-use of the Ontario EcoSchools program—in an office landscape. Three vital 'EcoTeams' have been established throughout the organization, and electrical savings are already occurring in many locations.

## EcoSchools

In 2007, TRCA field centres and Black Creek Pioneer Village once again became certified EcoSchools. Certification demands high environmental performance and the integration of sustainable operations into the education curriculum. This is a major development and a laudable achievement.



Health and safety training.



New white roof at head office.

## climate change and potential impacts within TRCA's jurisdiction

- Peak summer power demand has already shifted the way energy is produced and distributed. Rising energy costs, growing demand for energy, higher peak energy demand due to challenging weather conditions, and aging infrastructure are all challenges Toronto will face in the coming years (*Source: Energy Efficiency Office, Energy Efficiency and Beyond: Toronto's Sustainable Energy Plan – Staff Background Report, 2007*).
- As a result, in part, of increasing demand for summer cooling and decreasing hydroelectric capacity, Ontario's electricity supply will need to be replaced with a combination of new supply/peak demand management and conservation (*Source: Natural Resources Canada, From Impacts to Adaptation: Canada in a Changing Climate, 2008*).
- In recent years, rising water temperatures in the Great Lakes have impacted electricity generation by reducing the efficiency of cooling systems within nuclear and coal-fired plants (*Source: Natural Resources Canada, From Impacts to Adaptation: Canada in a Changing Climate, 2008*).

Being part of EcoSchools increases the sustainability of our educational facility operations, as well as supports one of the most successful environmental outreach programs in Ontario.

## Downsview Office

The energy and GHG savings obtained by simply reducing lighting and turning off equipment when not in use resulted in a 10 per cent reduction in hydro.

## Waste management

A true 'living city' will drastically curtail waste, reducing, reusing and recycling to an unprecedented degree. Toronto and Region Conservation's Downsview Office and Head Office experienced a diversion rate of waste from landfills of 78 and 80 per cent respectively.

## Claremont Field Centre

This field centre is a fine example of how energy-efficient appliances (in this case, an air conditioner), coupled with air-handling redesigns can dramatically reduce electricity use. In this case, a 40 to 50 per cent decrease in hydro use per year was realized—even with the addition of air conditioning in the dorms.

## Albion Hills Field Centre

Region of Peel support will afford TRCA the opportunity to redesign and retrofit the Albion Hill's Field Centre to a model of efficiency.

## Greening the fleet

Toronto and Region Conservation's retrofitted hybrid car (known as a "plug-in hybrid" vehicle) is achieving a 27 per cent increase in fuel efficiency over the conventional hybrid-electric vehicle mode. As well, TRCA has experienced a decrease of GHG emissions of 76 kilograms for this vehicle alone. Given these results, an additional hybrid car was purchased, which is obtaining 100 kilometres/five litres of fuel. Toronto and Region Conservation also obtained a Toyota Yaris—a recognized vehicle under the federal government's Eco Auto rebate program. The remaining



purchases were comprised of pick-up trucks and vans. These vehicles have small V6 and V8 engines, powering the vehicles with the least amount of fuel possible.

Toronto and Region Conservation joined the innovative Fleet Challenge Ontario with the eventual goal of having their fleet monitored and recognized as a continually improving 'green fleet.' Sponsored by Fleet Challenge Consulting Group Inc.

**Head Office**

When it came time to replace the roof of TRCA's Head Office, a green approach was taken; replacing the existing tar and gravel roof with a PVC membrane white roof that is recyclable and 'greener' than a tar-and-gravel roof.

**Conservation Foundation**

In 2007, the Conservation Foundation went door-to-door in some GTA neighbourhoods, inviting people to become monthly supporters of the work TRCA does to build *The Living City*, making the Toronto region a cleaner, greener, healthier place to live. Canvassers were warmly welcomed and the Conservatio Foundation now has a small and growing number of monthly supporters. The Conservation Foundation is planning a very special event for these partners in the fall of 2008. The monthly campaign is clearly about generating investment dollars for TRCA environmental activities, however it is also an engagement strategy, as climate change will not be solved without individual people and families seeing that they can make a difference and that a single act implemented by a million people will create an enormous sea of change.

Once again, the Conservatio Foundation, with their partner the Oak Ridges Moraine Land Trust, hosted The Charles Sauriol Environmental Dinner in November. This is the largest 'green' dinner in the country, honouring champions who help build *The Living City*. The guest speaker, Robert F. Kennedy Jr.—back by popular demand—provided thoughtful comments on current environmental issues.



Robert F. Kennedy, Jr. and Brian Denney, CAO of TRCA, at the 14th annual Charles Sauriol Environmental Dinner.

**Marketing and Communications**

Public interest in environmental issues continued to grow in 2007 and appears likely to continue growing for years to come. While TRCA delivered communications materials to generate awareness of the wide array of its activities and programs, 2007 saw a marked increase in communications aimed at engaging people and organizations in building *The Living City*. This was most evident in the development of new websites and web services including:

- A new TRCA homepage with a flood warning indicator ([www.trca.on.ca](http://www.trca.on.ca)).
- The new Paddle the Don website with online registration and the "challenge a corporation" feature ([www.paddlhedon.ca](http://www.paddlhedon.ca)).
- A new Greening Retail website with searchable best practices database ([www.greeningretail.ca](http://www.greeningretail.ca)).
- Launch of a new Source Water Protection website ([www.ctcswp.ca](http://www.ctcswp.ca)).
- A new Black Creek Pioneer Village interactive website for children ([www.blackcreekforkids.ca](http://www.blackcreekforkids.ca)).
- A redesign of the Charles Sauriol Environmental Dinner website ([www.charlessauriol.ca](http://www.charlessauriol.ca)) with an online reservation feature.
- Redesign of the Bathurst Glen Golf Course website with a "book your tee time" feature ([www.bathurstglengolf.ca](http://www.bathurstglengolf.ca)).
- A new World Green Building Council (WorldGBC) online conference registration website ([www.worldgbcregistration.org](http://www.worldgbcregistration.org)).
- A new TRCA Education website ([www.trca-education.ca](http://www.trca-education.ca)).

While the Internet offers cost-effective vehicles for engaging people and inviting them to participate in building *The Living City*, TRCA also found new opportunities to interact with people in other ways. Toronto and Region Conservation was a prominent exhibitor in the inaugural Toronto Green Living Show, where TRCA staff engaged with many of the 20,000 visitors. Toronto and Region Conservation also exhibited for the first time at the Green Toronto Festival (organized by the City of Toronto) and the Ajax Green Star Expo.

Toronto and Region conservation areas and other public venues provide exceptional opportunities to engage the public in enjoying and protecting greenspace, biodiversity and sustainable living. Working with Ducks Unlimited, TRCA developed compelling new interpretive signs at Kortright Centre to help more visitors gain a better understanding of the importance of wetlands. Visitor engagement at Tommy Thompson Park was also enhanced with an updated logo, a new Bird Checklist booklet created for birders at the park, a new park brochure, new signage at the Bird Research Station and a virtual tour feature on its website.

Generating awareness of TRCA and its activities is vital. However, as more people in communities, in businesses, in schools, in the trades and at all levels become interested in building a greener, cleaner, healthier place to live, TRCA has the opportunity to move beyond building awareness, to engaging people into taking action.

**Recognition Events**

There is talk about local heroes in the community, who bind the 'DNA' of everyday life into something special, something better and something much needed. At TRCA, they try to recognize a few



of those special people who change the world we live in. The two groups are community ‘leaders’ and their employees, without whom true and enduring change would not happen. Let’s begin with community leaders.

The Recognition Awards Program, adopted in 1976, pays tribute to those who have made a significant contribution to the work of TRCA and includes Honour Roll Awards and Service Recognition Awards.

The Honour Roll Awards were presented on Friday, October 26, 2007, at Black Creek Pioneer Village.

• **Pauline Browes**

For her significant contribution to the work of TRCA through her personal dedication to the protection of the Rouge River valley for over two decades; for her tireless efforts and determination which initiated the creation of the Rouge Park, the largest natural environment park in an urban area in North America; and for being a committed environmentalist and powerful advocate for the preservation of greenspace in keeping with TRCA’s vision for *The Living City*.

• **Brian Buckles**

For his vision and understanding while volunteering his time and efforts for over 15 years in partnership with TRCA for the future health of the Oak Ridges Moraine and the Duffins Creek watershed; for his dedication and leadership, continually raising awareness and understanding of environmental stewardship, greenspace system planning and natural linkages, and helping to raise over \$230,000 towards conservation implementation efforts on Oak Ridges Moraine lands; for being a leader and advocate for land securement in the community, including the donation of a conservation easement on his property and \$100,000 for stewardship and land securement projects; and for his personal commitment to maintaining, protecting, preserving and enhancing the natural environment in Durham Region.

• **Luciano Martin**

For his personal support while serving as an advisory board member of TRCA and a member of the Humber Watershed Task Force and Alliance working on projects that protect, restore and celebrate the Humber—a Canadian Heritage River; for his long-term commitment to environmental management, particularly as the founder and president of Action to Restore a Clean Humber (ARCH), an advocacy group dedicated to the protection and management of the Humber River watershed; and for his devotion and tireless efforts in north Etobicoke community events increasing public awareness, providing knowledge and encouraging public participation in the wise use and management of TRCA watersheds.

• **William A. McLean**

For his personal dedication and devotion to the conservation authority movement for the past five decades, including 33 years of tremendous support and dedication as a staff member of TRCA, starting in 1959; for his critical leadership of the waterfront project beginning in 1970; for his vision, determination and leadership while serving as TRCA’s chief administrative officer from 1983 until his retirement in 1992; for authoring *Paths to The Living City: The Story of the Toronto and Region Conservation Authority*; and for his outstanding and continuing contribution as a director, vice president and president of The Conservation Foundation since June 1992.



Pauline Browes



Brian Buckles



Luciano Martin



William A. McLean

• **Community members of the Port Union Working Implementation Committee**

For their persistence in pursuing the community’s vision, along with their valuable insights and advice during countless meetings of the Port Union Working Implementation Committee over the past 10 years; for their determination and personal commitment to the Port Union Waterfront Project and its implementation, resulting in the official opening of Phase I in September 2006; and for their dedication and tireless volunteer efforts towards the revitalization of Toronto’s [Scarborough sector] waterfront, providing community access and amenities along the Lake Ontario shoreline, in keeping with TRCA’s vision for *The Living City*.

The Service Recognition Awards are based on years of service by members, staff and volunteers. Members’ awards were also presented on October 26, 2007 to the following:

**Silver logo pins for three years of service:**

Bill Fisch	David Gurin	Andrew Schulz
Gay Cowbourne	Colleen Jordan	John Sprovieri
Frank Dale	Glenn Mason	Nancy Stewart
Glenn De Baeremaeker	Elaine Moore	Michael Thompson

**Gold logo pins and lifetime passes for six years of service:**

Rob Ford	Bill O’Donnell
Suzan Hall	Linda Pabst
Peter Milczyn	Dave Ryan

**Gold medallion for ten years of service:**

Michael Di Biase

The TRCA employee/recognition sub-committee is comprised of board chair Gerri Lynn O’Connor and members David Barrow, Suzan Hall and Maja Prentice.

Employee Random Acts of Recognition

In 2007, 24 employees were nominated by their fellow employees for making significant and positive contributions to the quality of work life at TRCA. The employee awards are for those employees, the unsung heroes of the organization, who assist others to be more successful with their wisdom and advice, positive attitude and helpful approach. The award categories include the Wise Owl, the Good Sport, the Smile and I Couldn’t Do it Without You awards

Financial Overview

In 2007, TRCA approved a very ambitious expenditure plan of approximately \$87 million. Municipal contributions of \$30.3 million were the most significant source of funding at 35 per cent of gross expenditures, a reflection of the healthy support TRCA’s municipal partners have for the work of TRCA. This strong municipal support is best exemplified by the Region of Peel’s increased funding of the climate change mitigation initiatives, which saw an increase of almost 100 per cent, to about \$4.7 million for 2007.

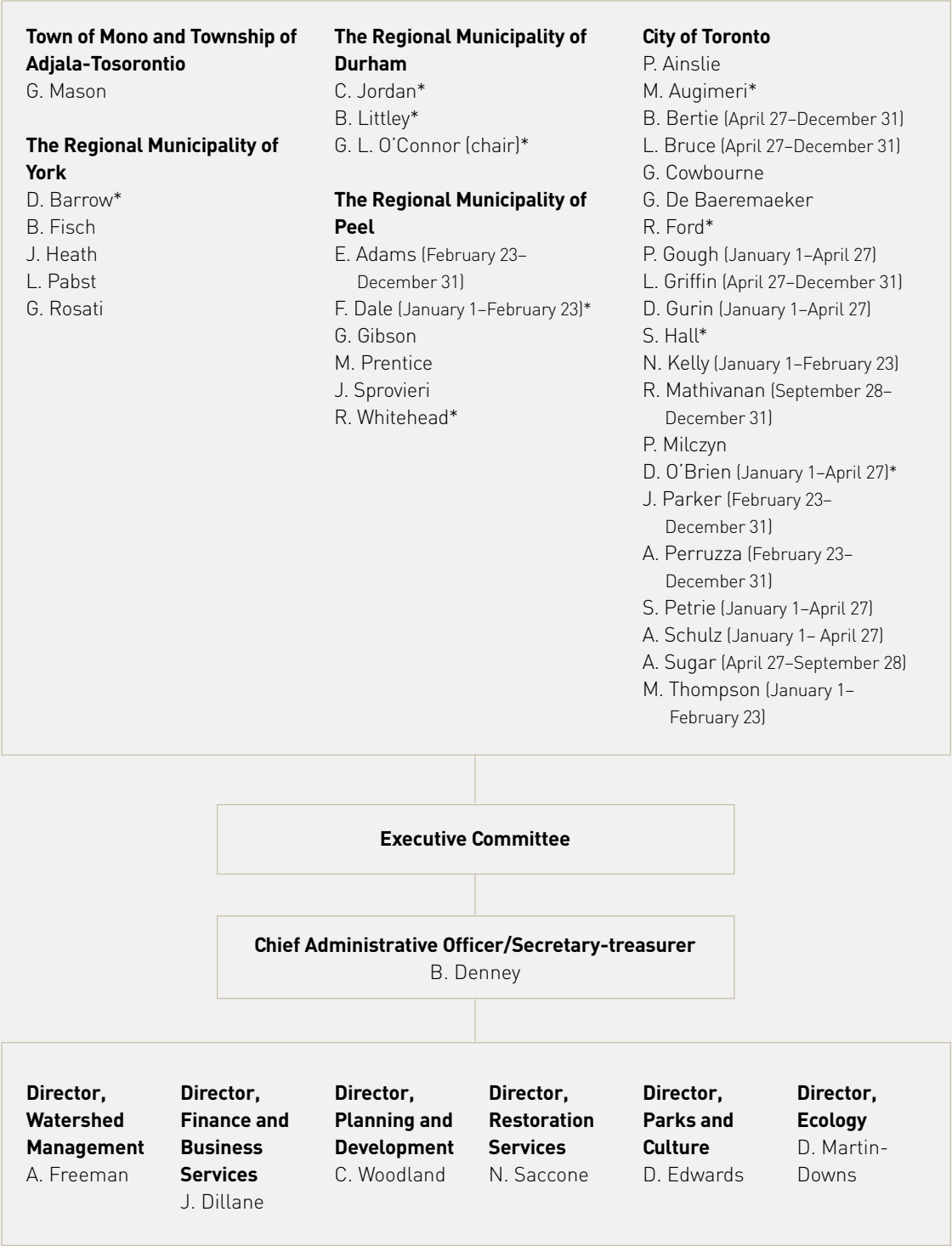
Waterfront Toronto contributions of about \$18.7 (\$13.8 million actual) continue to be a significant component of TRCA’s capital program.

A major component of TRCA’s funding model is the revenues generated from user fees, such as admissions, parking, retail sales and development reviews, which amounted to just over \$13.4 million in 2007, a 5.8 per cent increase over the 2006 actual results, and justly slightly below target. This is one area of the budget that has experienced significant growth, as demonstrated by a comparison to user fees in 2003, which then totaled just over \$8.7 million.

From a ‘bottom line’ perspective, the 2007 net operating results were substantially worse than expected. Toronto and Region Conservation had budgeted for an excess of expenditures over revenue in the amount of \$514,400. The actual results came in at a deficit of just over \$1.694 million, and the accumulated deficit at December 31, 2007, now stands at \$2.525 million. Of this amount, \$1.119 million is directly attributable to the construction costs for the Restoration Services Centre, for which there is a repayment plan in place that has already generated funding in excess of \$687,0000 since 2006. It will take several more years to completely finance costs associated with the Restoration Services Centre, consistent with long-term financing plan.

The balance of the deficit incurred in 2007 amounts to \$935,000 and can be generally attributable to a shortfall in general funding from The Conservation Foundation of Greater Toronto (CFGT) and from property tax rebates that had been accrued for 2005 and 2006, and budgeted for 2007 that were not realized. Although TRCA continues to pursue every opportunity with the Ontario Ministry of Natural Resources and other avenues for appeal, there now exists sufficient uncertainty such that no further accruals for tax refunds have been recorded. As for the CFGT funding short fall, management of both organizations are confident that measures instituted for 2008, anchored by a healthy individual donor program, will ensure that there will not be a repeat of a similar funding shortfall in 2008. Toronto and Region Conservation cash flows are sufficient to ensure that no borrowing is required.

Toronto and Region Conservation Authority  
Member Municipalities and Members 2007



\*Executive Committee Members



# Toronto and Region Conservation Authority

## Summarized Financial Statements

### December 31, 2007

#### Auditors' report

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To the Members of **Toronto and Region Conservation Authority:**

The accompanying summarized statements of financial position and financial activities and deficit are derived from the complete financial statements of the Toronto and Region Conservation Authority ("TRCA") as at December 31, 2007 and for the year then ended on which we expressed an opinion without reservation dated April 4, 2008. The fair summarization of the complete financial statements is the responsibility of TRCA's management. Our responsibility, in accordance with the applicable Assurance Guideline of the Canadian Institute of Chartered Accountants, is to report on the summarized financial statements.

In our opinion, the accompanying financial statements fairly summarize, in all material respects, the related complete financial statements in accordance with the criteria described in the Guideline referred to above.

These summarized financial statements do not contain all the disclosures required by Canadian, generally accepted accounting principles. Readers are cautioned that these statements may not be appropriate for their purposes. For more information on TRCA's financial position and results of financial activities and cash flows, reference should be made to the related complete financial statements.

Markham, Canada  
 April 4, 2008  
 Chartered Accountants  
 Licensed Public Accountants

# Toronto and Region Conservation Authority

## Summarized Statement of Financial Activities and Deficit

Year ended December 31

	2007 Budget	2007 Actual	2006 Actual
Expenditures			
Watershed management and health monitoring	\$17,966,800	<b>\$15,508,116</b>	\$17,719,799
Environmental advisory services	4,094,200	<b>4,052,229</b>	3,692,577
Watershed stewardship	14,105,900	<b>12,554,262</b>	10,593,489
Conservation land management, development and acquisition	28,046,200	<b>18,644,488</b>	35,070,628
Conservation and education programming	16,314,900	<b>16,169,963</b>	15,254,922
Corporate services	6,267,400	<b>5,807,710</b>	5,244,585
Vehicle and equipment, net of usage charged	–	<b>10,160</b>	27,129
	<u>86,795,400</u>	<u><b>72,746,928</b></u>	<u>87,603,129</u>
Revenue			
<b>Municipal</b>			
Levies	30,251,400	<b>24,975,111</b>	21,097,727
Other	8,386,700	<b>4,716,807</b>	8,081,985
<b>Government grants</b>			
MNR transfer payments	845,000	<b>845,753</b>	845,753
Provincial (other)	4,519,700	<b>4,214,599</b>	5,552,902
Federal	1,312,600	<b>1,341,593</b>	1,588,217
<b>TRCA generated</b>			
User fees, sales and admissions	14,017,400	<b>13,440,279</b>	12,704,491
Contract services	1,655,300	<b>956,072</b>	632,993
Interest income	425,000	<b>525,521</b>	473,446
Proceeds from sale of properties	450,000	<b>374,458</b>	330,658
The Conservation Foundation of Greater Toronto	1,307,200	<b>1,334,502</b>	2,896,712
Donations and fundraising	914,500	<b>1,383,758</b>	1,154,588
Facility and property rentals	2,092,100	<b>2,261,976</b>	2,218,706
Canada Post Corporation agreement	186,100	<b>9,721</b>	34,946
ORM Corridor Park contribution agreement	357,200	<b>123,842</b>	1,054,085
Waterfront Toronto	18,731,700	<b>13,771,773</b>	26,420,408
Sales and property tax refunds	55,000	<b>163,891</b>	244,350
Sundry	600,500	<b>788,324</b>	676,731
	<u>86,107,400</u>	<u><b>71,227,980</b></u>	<u>86,008,698</u>
<b>Excess of expenditures over revenue</b>	(688,000)	<b>(1,518,948)</b>	(1,594,431)
Appropriations from (to) reserves	173,600	<b>(175,110)</b>	1,353,517
	(514,400)	<b>(1,694,058)</b>	(240,914)
Deficit, beginning of year	(830,664)	<b>(830,664)</b>	(589,750)
Deficit, end of year	<u>\$(1,345,064)</u>	<u><b>\$(2,524,722)</b></u>	<u>\$(830,664)</u>

Toronto and Region Conservation Authority  
Summarized Statement of Financial Position  
December 31

	2007	2006
Assets		
Cash and cash equivalents	\$7,477,394	\$10,618,733
Marketable securities	3,657,281	3,998,647
Receivables	11,810,580	13,552,566
Inventory	529,359	521,009
Prepays	193,468	185,403
	<u>\$23,668,082</u>	<u>\$28,876,358</u>
Liabilities		
Payables and accruals	\$9,089,751	\$ 15,478,710
Deferred revenue		
Municipal levies	6,592,885	6,372,978
Capital, special projects and other	8,461,908	5,982,184
Vacation pay and sick leave entitlements	1,738,335	1,645,898
	<u>25,882,879</u>	<u>29,479,770</u>
Fund Balances		
Reserves	2,048,260	1,873,150
Deficit	(2,524,722)	(830,664)
Amounts to be funded in future years	(476,462)	1,042,486
	<u>(1,738,335)</u>	<u>(1,645,898)</u>
	<u>(2,214,797)</u>	<u>(603,412)</u>
	<u>\$23,668,082</u>	<u>\$28,876,358</u>
On behalf of TRCA		
Chair		
Secretary-Treasurer		







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