

Creating Common Ground



TORONTO AND REGION CONSERVATION AUTHORITY
2010 ANNUAL REPORT

OUR VISION

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

OUR MISSION

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

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MESSAGE FROM THE CHAIR

The year 2010 was yet again exciting and productive for Toronto and Region Conservation Authority (TRCA). Throughout this report, you will see examples of the partnerships TRCA enjoys with all levels of government, NGO's, educational groups, businesses, foundations and the general public. TRCA strives to cultivate partnerships in much of its work, a critical component in the successful and beneficial completion of numerous projects in the diverse Toronto region. These projects are of net benefit to the Toronto region, environmentally, socially, economically and culturally – meeting TRCA's vision "...where human settlement can flourish forever as part of nature's beauty and diversity."

TRCA provides important education and collaboration opportunities for: businesses in Partners in Project Green; community members with the Sustainable Neighbourhood Retrofit Action Plans; children through day and residential education programs, bringing them to the environment and bringing the environment to them; the overall community with The Living City® Report Card; professionals at The Living City Campus at Kortright; internationally trained professions with the M2P and PAIE programs; to name just a few. These and the many other programs conducted largely in partnership with various stakeholders, represent the guiding ethos of TRCA in ensuring the Toronto region is a greener, cleaner, healthier place for all of nature's wonders to live in harmony.

I am proud to lead this dedicated group of people as they strive to achieve the critical balance between the need for people to work, live and play, while ensuring a sustainable, healthy city region for all to enjoy and prosper in.

On behalf of the Authority, I thank our member municipalities and our many other partners for their tremendous support.

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

Gerri Lynn O'Connor

MESSAGE FROM THE CHIEF ADMINISTRATIVE OFFICER

The following pages provide highlights of another remarkable year in the history of the TRCA. The common ground for which we search, along with our many partners, is the shared passion, experience and expectations for a more sustainable urban region in the Greater Toronto Area (GTA). This summary of our accomplishments in 2010 gives hundreds of examples of progress in all aspects of community design, development and engagement.

Through the trials and tribulations of the requirement to comply with "Tangible Capital Asset Accounting," we determined that the assets of TRCA are now valued in excess of half a billion dollars. While that is an impressive number, we know that both the replacement cost of the great variety of assets TRCA has assembled, and the real contribution they provide to the communities we serve, are a great deal higher.

One of the particular accomplishments of 2010 was the compilation of The Living City® Report Card, released in January 2011. It was prepared through a partnership with Greening Greater Toronto, an initiative of CivicAction(formerly Toronto City summit Alliance), a coalition of leaders from the business, labour, non-profit sectors and government that was formed to address various challenges facing the GTA. The report card, provides a benchmark for future comparisons of progress and makes a compelling case for action in areas where GTA residents are anxious to see improvements.

I acknowledge the tremendous creativity and dedication of the staff team at TRCA. On behalf of all of the staff I want to express my appreciation to Chair O'Connor and the Board for the terrific support and encouragement we receive. Through the financial support provided by our member municipalities, and many other partners, we continue to make valuable contributions to this rapidly growing region.

A handwritten signature in black ink that reads "Brian Denney". The signature is fluid and cursive, with "Brian" on the top line and "Denney" on the bottom line.

Brian Denney, P. Eng.





Port Union Waterfront Park - Phase 2

HEALTHY RIVERS AND SHORELINES



Watersheds

Lake Ontario Waterfront

Port Union Waterfront Park – Phase 2

As part of the Port Union Waterfront Park project, clean fill is being used to create a variety of new recreational and public spaces. Construction of Phase 2 of the Port Union Waterfront Park continued in 2010 and will open to the public in summer 2012. The park features a series of six headlands and cobble beaches, as well as a pedestrian waterfront trail stretching between Chesterton Shores and Rouge Beach Park. In 2010, the Port Union project saw the completion of all headlands and beaches in preparation for the implementation of the landscape plan in 2011/2012. When completed, the Port Union Waterfront Park will include 3.8 kilometres of new waterfront trail stretching between Highland Creek and the Rouge River in Scarborough. These undertakings also serve to:

- increase property values for the surrounding community;
- promote healthy living by providing trails;
- improve habitat for terrestrial and aquatic life; and
- increase visibility for TRCA and Waterfront Toronto through public signage.

This project is funded by Waterfront Toronto as part of the revitalization of our waterfront.

Mimico Waterfront Linear Park – Phase 2

When completed, the Mimico Waterfront Linear Park will stretch along the Lake Ontario waterfront between Humber Bay Park West and Norris Crescent Parkette in the City of Toronto. Phase 1, from Superior Avenue to the Norris Crescent Parkette, was finished in July 2006. In 2010, TRCA continued to secure the properties necessary to undertake Phase 2 of the project. The acquisition strategy is scheduled to be completed in early 2011. Construction will begin in July 2011, and the park is expected to be open to the public in fall 2012.

Tommy Thompson Park

The Master Plan Implementation Project continued in 2010 under a funding agreement with Waterfront Toronto. The Design Review Panel of Waterfront Toronto approved the designs for a staff booth, an environmental shelter and an ecological research station. These will be constructed in 2011. Other activities in 2010 included the preparation of essential wildlife habitat, embayment and peninsula shoreline works, and the installation of trail signs.

On May 5, 2010, the Bird Research Station at Tommy Thompson Park captured a warbling vireo which was already banded. After looking it up in the database, it was discovered that this individual was banded on August 8, 2004! It has now been recaptured nine times since it was first banded, every year except 2009. It was banded as a hatch-year, making it almost six years old when it was recaptured! Warbling vireos nest throughout North America and winter in Central America as far south as Panama. This means this bird had survived 12 migrations to and from the tropics, clocking up to 46,000 kilometres. That he found his way back to the same exact spot to nest almost every summer is amazing, and it demonstrates the importance of migratory bird research and monitoring, as well as habitat conservation and restoration for our native species.

The whimbrel are long distance shorebird migrants that pass through Toronto every spring on their flight path to breeding grounds in the Hudson's Bay lowlands and the High Arctic. Whimbrel were outfitted with radio transmitters in Virginia and Georgia and radio receivers were installed by TRCA at Tommy Thompson Park and Colonel Samuel Smith Park to record their movement through the area. The data shows the migrants consistently stopover in Toronto within a narrow window, from May 22 to 27 each year. The collaborative research and monitoring program was undertaken by TRCA with the Center for Conservation Biology at the College of William and Mary and the Toronto Ornithological Club.



Activities in Tommy Thompson Park (TTP), 2010

TTP is the largest area of existing natural habitat on the central Toronto waterfront. It contains two Environmentally Significant Areas (ESAs) and is a globally significant Important Bird Area (IBA).

Natural Area Enhancement Plan Funded by Waterfront Toronto, the plan provides for wetland and shoreline enhancements, essential wildlife habitat, and terrestrial improvements, including native grassland restoration and successional forest enhancements.	Embayment A provides a thermal refuge for warm water fish and essential habitat for birds, reptiles and amphibians. Embayment A shoreline enhancements completed in 2010 provide an additional 1,000 metres of restored shoreline, five hectares of enhanced aquatic and riparian habitats, and one hectare of new wetland and riparian habitats. Deepwater enhancements to Embayments A, B and C were also completed to increase underwater structural habitat for native fish species.
Winter Waterfowl (March 2010)	The workshop showcased Toronto's winter ducks and informed the public about waterfowl ecology and the importance of Toronto's aquatic habitats to waterfowl.
Spring Bird Festival (May 2010)	The event provided a venue for local and provincial conservation and naturalist groups to promote ecological knowledge and bird conservation. The TTP Infrastructure Project was unveiled at the event by Councillor Paula Fletcher, Ontario Power Generation's Steve Hounsell, Waterfront Toronto's John Campbell and TRCA CAO Brian Denney.
Butterfly Festival (August 2010)	The festival celebrated butterfly diversity and the annual monarch butterfly migration. Attended by over 600 people, as well as naturalist and conservation groups. The event was featured on CBC's The National and local CTV news.
Bird Research Station This is one of 25 Canadian Migration Monitoring Network Stations that collect migratory bird data for use in local, regional, national and bi-national bird conservation initiatives.	In 2010, the TTP Bird Research Station celebrated its eighth year of operation. During the year, 25 volunteers who contributed more than 3,600 hours to station operations were able to further develop their ornithological skill. Funds from the McLean Foundation enabled the Station to hire an assistant bird bander. Outreach services have benefited over 1,000 members of the public as part of the Station's daily operations. In addition, funds from TD Friends of the Environment Foundation allowed more than 600 at risk youth to participate in the Winged Migration program.

REBUILT TRAIL RECONNECTS WATERFRONTS IN TORONTO AND PICKERING



Left to right: Wayne Arthurs MPP, Larry Field TRCA, Bonnie Littley Regional Councillor, Mayor David Ryan, Jennifer O'Connell Councillor, Bill McLean Councillor, Doug Dickerson Councillor, Ron Moeser Councillor

On June 9, 2010, Waterfront Toronto in partnership with TRCA and the City of Pickering officially opened the Western Gateway First Nations Trail, linking together waterfront trails in both Toronto and Pickering. Commemorating the history of Aboriginal settlement in the area, the new trail provides safe, scenic and seamless access between the Port Union Waterfront Park in Toronto and Frenchman's Bay in Pickering. Running from the footbridge over the Rouge River in Toronto to Bella Vista Drive and Dyson Road in Pickering, the First Nations Trail passes through both the Petticoat Creek Conservation Area and Rotary Frenchman's Bay West Park. The Western Gateway project saw the replacement of a deteriorating network of timber and asphalt steps and makes it easier for hikers, picnickers, families and fishermen from both cities to reach the lake.

and waterfront trail systems. Phase 1 of the Port Union Waterfront Park, opened in 2006, and included 1.8 kilometres of new waterfront trail and a headland and cobble beach system. Phase 2 is now under construction and expected to be completed in summer 2012. Once complete, an additional two kilometres of waterfront trail will make the connection between the mouth of Highland Creek and Rouge River.

In 2010, the staff continued to work with citizens in the Lake Ontario watershed community through the Lakeshore Grounds Coordinating Committee, Tommy Thompson Park Advisory Committee and the Port Union Working Implementation Committee.

Arsenal Lands Master Plan

TRCA continued to work with the Region of Peel, City of Mississauga and City of Toronto to advance the Arsenal Lands Master Plan, which is being integrated with Toronto's Marie Curtis Park Revitalization and Mississauga's Inspiration Lakeview projects. Staff also worked closely with the Lakeview Legacy Foundation to explore opportunities for the reuse of the Small Arms Building located on the Arsenal Lands. This facility will also be integrated into the Master Plan.

Great Waterfront Trail Adventure

TRCA worked with the Waterfront Regeneration Trust and local municipalities in the planning of the third annual Great Waterfront Trail Adventure, which took place in July 2010. Participants were invited to travel the entire 740 kilometre-route of the Waterfront Trail, from Niagara-on-the-Lake to Rivière-Beaudette, over eight days. This event provided an opportunity to discover vibrant communities and beautiful parks, to experience delicious local food and entertainment, and to enjoy charming shops and unique local businesses along our great waterfront.

Etobicoke and Mimico Creeks Watersheds

Etobicoke and Mimico Creeks Watersheds Coalition

The 37-member Etobicoke and Mimico Creeks Watersheds Coalition, which began its third term in 2010, is a volunteer, watershed-wide advisory committee created by TRCA to protect and regenerate the two watersheds and oversee implementation of watershed plans and technical studies.

During the past year, over 12,300 volunteers and community residents participated in six large scale restoration projects and 34 events across the Etobicoke and Mimico watersheds. Approximately 13,750 trees, shrubs and wildflowers were planted and 1.4 hectares of watershed were restored. A number of large scale projects, such as the West Etobicoke Creek Regeneration Project, the Kennedy Valley Park Rehabilitation, and the Sherway Trail and Valley Restoration project, entered the second phase of planning and implementation.

Etobicoke and Mimico Watershed Plan

The *Final Draft Report of the Etobicoke and Mimico Creeks Watersheds Technical Update* was completed and released for consultation. This study filled data gaps and analyzed technical information that had become available since publication of the watershed strategy *Greening Our Watersheds; Revitalization Strategies for Etobicoke and Mimico Creeks* (TRCA, 2002). The primary areas of focus included:

- analysis of groundwater level trends and interactions with surfacewater streams and wetlands;
- baseflow and water use assessment;
- stormwater management infrastructure database improvements;
- establishment of baseline channel morphology;
- assessment of in-stream structures as potential barriers to fish movement; and
- refinement of the target terrestrial natural heritage system and identification of priority management areas.

The updated technical information greatly advances our understanding of watershed systems and informs strategic management directions. Regeneration activities are central to the implementation directions for these degraded urban watersheds. Integrated, collaborative approaches to regeneration activities at a neighbourhood scale are recommended as effective ways to address the number of initiatives that will be needed to restore watershed health. Models of these types of collaborative projects are already underway in these watersheds, including the Pearson Eco-Business and County Court SNAP. The final report will support the watershed strategy and inform the on going implementation of policies and programs by TRCA and its partners.

Green Parking Lot Pilot Project

TRCA and the City of Mississauga have constructed a green parking lot at the corner of Courtney Park Drive and Britannia Road on Greater Toronto Airports Authority (GTAA) property along the Etobicoke Creek Trail. This demonstration project features a pervious concrete parking surface that allows rainwater to filter directly through the underlying aggregate layer and native soil. In addition, drought resistant native plants will reduce irrigation and maintenance costs, while vegetated bio retention swales will trap and treat stormwater runoff. Monitoring will be undertaken by TRCA and local businesses in order to better understand how these techniques can be deployed in the industrial areas surrounding Toronto Pearson International Airport.

LAKE ONTARIO EVENINGS: New speakers' series attracts committed audience

Lake Ontario is among the most stressed ecosystems in the Great Lakes system. With a major urban area located on its shores, what happens — or doesn't happen — in the Greater Toronto Area has serious consequences on the future health of the lake and its residents. With a view to the many concerns facing the lake, and the many organizations involved in addressing them, TRCA launched the new speakers' series *Lake Ontario Evenings* in December 2009.

This speakers' series has helped engage individuals and community groups in learning more about the issues being faced

by our Great Lakes, and participants are provided with examples of successful restoration projects and opportunities for action. During 2010, three Lake Ontario Evenings events — focusing on the shoreline, contaminants and biodiversity — were all well attended, showing the public's abiding interest for more information on lake issues.

"We have all heard about the stressors facing Lake Ontario, and about the negative effects we can have on the lake—both as individuals and as a region," said Brian Denney, CAO TRCA. "This public speakers' series has brought



together experts, community organizations, and the public to learn about the lake in an open discussion format."



Peel Children's Water Festival

The 2010 Peel Children's Water Festival (PCWF) was held from May 27 to June 2 at Heart Lake Conservation Area in Brampton. The primary theme of the 2010 PCWF was a celebration of the 15 year anniversary of the event. A new logo was designed to reflect the water festival's success and history of water related fun, while the festival website was redesigned to make it more user friendly. A secondary theme was "Wastewater: where does the water go after you use it?" Since its inception back in 1996, more than 70,000 Peel students have taken part in the festival, while thousands more residents have taken part in the annual Family Fun Day activities. In 2010, more than 9,000 members of the community and local students had the opportunity to interact and engage with the natural world around them through hands-on learning that showcased the importance of water.

Etobicoke Creek Natural Heritage Strategy

Building on the goals and objectives set out in TRCA's mandate to improve water quality management and to create healthy rivers, the City of Brampton began to devise a strategy to protect and restore the natural heritage of the Etobicoke Creek. This strategy should ensure the health and diversity of native species, habitats, landscapes and ecological processes, while maximizing connectivity between natural heritage features — the creek and ponds — to adjacent areas. Acknowledging TRCA's expertise in restoring natural systems, the City of Brampton approached Restoration Services and offered the opportunity to plan and implement the works within Chinguacousy Park.

Humber River

Humber Watershed Alliance

In 2010, the Humber Watershed Alliance started its fifth term. Formed in 1997 to help implement the Humber River Watershed Plan, *Legacy: A Strategy for a Healthy Humber*, the Alliance continues to work actively to achieve the guiding principles outlined in that management plan, as well as *Pathways to a Healthy Humber*. The Alliance comprises residents, as well as representatives from community groups, businesses, municipal governments and other public agencies, who have come together for the common purpose of protecting, regenerating and celebrating the Humber River watershed.

Accomplishments for 2010 include:

- trail upgrades in the Lower Humber watershed;
- restoration of 4.95 hectares of the watershed through local tree planting and community stewardship activities;
- various social media initiatives;
- community events to celebrate accomplishments and acknowledge partners; and
- heritage appreciation through hikes, signs and building restoration.

PARTNERS IN PROJECT GREEN: Collaboration produces faster results at lower costs

You can't solve all the world's problems by yourself. It takes teamwork to make a real difference! Partners in Project Green is transforming a nondescript industrial park on lands surrounding Toronto Pearson International Airport into the internationally recognized Pearson Eco-Business Zone. Whether it's bringing together businesses to work together on sustainability solutions or leveraging the interests of multiple municipalities to drive eco-economic development, Partners in Project Green is harnessing the creative capital of private and public sector leaders to achieve its green objectives.



Tom Heintzman President Bullfrog Power and Brian Denney CAO TRCA

Covering over 12,000 hectares of industrial and commercial land, the Eco-Business Zone is Canada's largest employment area, home to 12,500 businesses and more than 355,000 employees. During 2010, Partners in Project Green brought together companies in the hospitality, office, logistics and manufacturing fields to create a number of sector-based Sustainability Consortia. These peer groups are now leveraging their training, knowledge and best practices to drive sustainability in each of their member organizations. By building bridges among businesses, the consortia can tackle common problems and achieve greater results faster than any one company could on its own.

This collaborative model has also been extended to Partners in Project Green's municipal partners. Working together, the municipalities of Peel, Toronto, Mississauga and Brampton developed the Pearson Eco-Business Zone Policy Toolkit. This toolkit is designed to dismantle the barriers to eco-business

development, while helping build municipal capacity and support for the kind of eco-economic development that can attract and retain investments in the Pearson Eco-Business Zone.

These are just two examples of the great changes taking place in the Pearson Eco-Business Zone, as Partners in Project Green partners continue to cut costs, minimize wastes, and better utilize resources, infrastructure and people. To date, Partners in Project Green has engaged 608 businesses in sustainability related projects. In 2010, businesses in the Pearson Eco-Business Zone conserved 7,766.23 MWh of electricity , 8,500,000 M³ of natural gas and 322,295 M³ of water. By bringing businesses together to streamline operations and realize new business opportunities, Partners in Project Green and its partners are on the way to transforming the Pearson Eco-Business Zone into a sustainable high performance regional economy. For updates, visit www.partnersinprojectgreen.com

Sustainable Near-Urban Agriculture

Since its inception in 1957, TRCA has been involved in agriculture, from reducing rural water pollution to conserving agricultural land. Today, TRCA continues to play an active role in building a strong local food system through the implementation of its *Sustainable Near-Urban Agriculture Policy* (2008) and efforts at the Toronto Urban Farm in the City of Toronto, the McVean Incubator Farm in the City of Brampton and, very recently, the Albion Hills Community Farm in the Town of Caledon. These projects will help TRCA reach its goal of purchasing 40 per cent of its food requirements from local sources by 2012.

Toronto Urban Farm, City of Toronto — Entering its seventh season, the Toronto Urban Farm, which is operated under a management agreement with the City of Toronto, is located on 3.2 hectares (eight acres) of land at the southeast corner of Jane Street and Steeles Avenue. Each year, the farm project successfully employs many youth from the Jane and Finch community, providing them with valuable leadership, employment and skills training. In 2010, the Toronto Urban Farm supplied fresh produce to Black Creek Pioneer Village Food Services.



McVean Incubator Farm, City of Brampton — The McVean Incubator Farm, a partnership initiative between TRCA and FarmStart is entering its fourth season of operation in 2011. The farm continues to be a success, providing new farmers with support in their initial years of farming (i.e., equipment, infrastructure and business planning). In 2010, 19 farmers established operations at McVean on 15 hectares (37 acres) of TRCA-owned land in Claireville Conservation Area. These farmers, from all over the world, are growing a diversity of crops, from honey to mushrooms, to a hundred kinds of vegetables. Their produce is fresh picked and often sold directly to their consumers through farmers markets, restaurants, on-farm U-picks and at the McVean Farmers' Market. In 2010, the farm attracted approximately 500 people to its outdoor public events.

Downsview staff allotment gardens — For the third year, TRCA staff members at the Downsview Office have made a commitment to be sustainable, reduce their ecological footprint and maintain a healthy lifestyle by growing their own local food. In 2010, 15 staff tended to their organic allotment gardens and grew a wide variety of traditional, specialty and ethnic crops. By growing their own fresh seasonal food, staff are contributing to the reduction of food miles and greenhouse gas emissions related to food transportation, which will help to reduce the impacts of climate change. The allotment gardens also provide an opportunity to celebrate the cultural diversity of TRCA staff through the diverse varieties of crops being grown on site and by staff members sharing their experiences and their food related cultural associations.

Sharing knowledge with the community — In 2010, TRCA had the opportunity to profile four pilot urban agriculture projects in *The Edible City: Toronto's Food from Farm to Fork*, released by Coach House Books. TRCA also contributed material to the *Ontario Planning Journal*, a publication of the Ontario Professional Planners Institute. The articles highlight TRCA's agricultural history, its commitment towards conserving its agricultural land base for local food production, the important partnerships that TRCA has formed over the years which support its Sustainable Communities objective, and the opportunities that exist for regional food systems planning within its jurisdiction.

Oak Ridges Corridor Park

Oak Ridges Corridor Park is the last remaining natural link between the eastern and western parts of the Oak Ridges Moraine in the Town of Richmond Hill. It includes two kettle lakes, wetlands and forest: diverse habitats that are home to many wildlife and plant species. The Corridor Park is located between Bathurst Street and Bayview Avenue, approximately south of the community of Oak Ridges to Jefferson Sideroad and Stouffville Road. The property includes the Bathurst Glen Golf Course.

Projects undertaken in 2010 include: the planting of 1,765 mixed seedlings on 3.4 hectares of reclaimed farm fields; the planting of a one-hectare buffer strip with 235 caliper trees; a 0.25 hectare site reforested by volunteers with 925 trees, shrubs and conifers; and the collection of terrestrial and aquatic baseline data.

The Shared Path/Le Sentier Partagé: Toronto Historical Park

The Shared Path/Le Sentier Partagé, a historical park located by the mouth of the Humber River, provides a journey back through time. The new Discovery Walk trail follows the banks of the Humber River (designated a Canadian Heritage River in 1999), connecting an ancient Aboriginal transportation route to modern roads and railways, First Nation settlements to 18th century French trading posts, and the ruins of water-powered mills to the birth of industrial Toronto. The Discovery Walk highlights how the river has been transformed by human hands, while providing a vital link to our shared past. This truly unique concept came to fruition through a partnership between seven City of Toronto departments, Heritage Toronto, La Société d'histoire de Toronto and TRCA. Setting the stage for the renewal of the Discovery Walk system, the Historical Park is a legacy project for the Humber River that highlights the significance of the watershed to the development of Canada from a First Nations, French and British perspective. The park is scheduled to be officially launched in 2011.

Canadian Rivers Day

Pedal the Humber was launched by TRCA as an annual ride event to explore and celebrate the Humber River. Pedal the Humber was held in conjunction with an interpretative walk of the Humber led by La Société d'histoire de Toronto and Les Indisciplinés. Approximately 130 participants took a conversational ride along the Humber, learning about its environmental history and future potential, listening to personal stories and enjoying live music.

Arts Society of King Soirée hosted their annual Soirée promoting the unique heritage of the Humber River through the artwork of local watershed residents.



KidsFest was hosted by Arts Society King, the King Township Museum and TRCA.

Approximately 130 elementary school students celebrated the Humber River watershed at the end of June. Since 2009, this partnership has brought hundreds of students to the East Humber River to learn through archaeology activities, historical re-enactments and native tree planting activities.

Humber River Day was hosted at Cold Creek Conservation Area. Participants enjoyed art displays, wildlife demonstrations and nature hikes.

Parc Downsview Park Earth Day Celebrations

Parc Downsview Park, in partnership with TRCA and Evergreen, hosted its annual planting event in celebration of Earth Day on April 24, 2010. Over 600 people attended the event and approximately 2,195 trees and shrubs were planted.

RBC Blue Water Project

On June 9, 2010, 50 Royal Bank employees were treated to a canoeing adventure on the Humber River. TRCA staff hosted the event to complement RBC's Blue Water Program, which helps foster a culture of water stewardship amongst its employees and the public. Participants learned about the plants and animals found along the Humber, challenging environmental issues, and potential solutions for protecting our natural and human heritage.

Community Program for Stormwater Management

The Community Program for Stormwater Management (CPSWM) funds projects which complement the City of Toronto's Wet Weather Flow Master Plan to reduce and ultimately eliminate the adverse effects of wet weather flow. When implemented, The Master Plan will make our streams, rivers and waterfront cleaner and healthier.

In 2010, six community groups funded by CPSWM undertook community projects related to naturalization, stewardship and public outreach. Examples of projects include: construction of rain gardens and greenroofs, tree and shrub plantings, multicultural outreach, and educational workshops.



Humber River on Facebook

As part of the social media and communications strategy for the Humber River watershed, TRCA staff established an online social networking community on Facebook under "The Humber River, Ontario" page. The objective of the Humber River Facebook page is to increase the profile of the watershed and the Canadian Heritage Rivers System, as well as the work of Alliance members. It also improves public awareness of current initiatives, accomplishments and challenges, while providing an opportunity to engage in meaningful conversation. By posting and distributing more information online, we can also reduce paper printing costs and, consequently, the ecological footprint of our operations. Looking forward, staff will continue to use social media platforms, such as Facebook, to reach broader audiences.

Don River Watershed

Don Watershed Regeneration Council

The Don Watershed Regeneration Council (DWRC) is a community-based committee established by TRCA in 1994 to help restore the Don River watershed to a healthy, sustainable natural environment. The DWRC reports to the Authority on a regular basis and comprises community members, elected officials and representatives from businesses, agencies, environmental groups and academic institutions located within or concerned about the future of the Don River watershed.

The sixth term of the DWRC began in early 2010 with the inaugural meeting held in March. The Council continued to act as the Don watershed advocate in large projects that cross municipal boundaries. The Council also supported the implementation of recommendations and programs outlined in *Beyond Forty Steps*, the updated 2009 Don River Watershed Plan.

In 2010, two subcommittees of the DWRC were appointed: (1) Policy and Advocacy, and (2) Community Outreach (which also includes a communications group). Two bus tours were held to introduce members to key sites in the Don watershed. Policy review and advocacy continued through the DWRCs Policy and Advocacy subcommittee and, in some instances, jointly with other TRCA watershed/waterfront groups, such as the Etobicoke and Mimico Watersheds Coalition and the Humber Watershed Alliance, where there were common issues of concern. In 2010, the DWRC submitted comments on the following key issues:

- Ontario's *Water Opportunities and Water Conservation Act* (2010) (as well as a deputation to the Standing Committee on General Government which was previewing the draft legislation);
- *Cleaning up our Waterways: Don River and Central Waterfront Project*, Toronto's Combined Sewer Overflow (CSO) Plan (a presentation at a Public Information session was also made and members met separately with project staff to provide advice from a public perspective);
- Vaughan Official Plan (two deputations were made to Vaughan Council);
- the review of the 2005 Provincial Policy Statement (comments were prepared jointly with the other TRCA watershed groups);
- Don Mouth Naturalization and Port Lands Flood Protection Project and Lower Don Lands Plan (a deputation was also made at the City of Toronto's Executive Committee meeting); and
- the Town of Markham's Greenprint Sustainability Plan.

Maple Nature Reserve Concept Site

The Quonset Hut Site Wetland and Forest Regeneration Concept Site project was one of the first regeneration sites from *Beyond Forty Steps* to be tackled. The Quonset Hut and the associated wood framed buildings on the site of a former forest research station were demolished and the site was restored to enhance local biodiversity and complement the surrounding Maple Uplands Environmentally Significant Area (ESA) in Vaughan. Located on the edge of a core forest, this project added approximately one hectare of additional core forest habitat, expanding the total core area to more than 10 hectares.

The Maple Nature Reserve Concept Site was completed in the summer of 2010. Regeneration of the site also included the creation of several small ponds, wetlands, thickets and forested areas, new trails and a viewing area. Interpretive signage is planned. The restored habitat will provide additional breeding grounds for turtles and amphibians (including wood frogs), and support rare plant species and interior-forest birds.

To raise awareness of the ecological significance of the reserve and the role the community plays in ensuring its protection, a community planting of over 250 shrubs, wildflowers and wetland plants was held in June. Regional Councillor (and TRCA board member) Gino Rosati attended. As part of the day's activities, volunteers enjoyed a guided hike along the new trail system.



East Don Trail Project

The East Don Trail Project envisions a publicly accessible multi-use trail system through the Charles Sauriol Nature Reserve, linking Milne Hollow and the Forks of the Don. This project is being undertaken by the City of Toronto in partnership with TRCA. The trail system will provide improved access to local parklands for exercise, dog walking, bird watching, and other nature appreciation activities. The formal trail system replaces an existing network of narrow, informal footpaths in the valley, and the installation of pedestrian bridges will allow safe crossing of the Don River. In addition, the trail system will be paved, to allow for enhanced accessibility for people with disabilities.

Phase 1 established the link over the East Don River to connect Milne Hollow Park to the Wynford Heights/Concorde Place community. Construction of Phase 1 started in summer 2009 and was completed by February 2010 with the placement of the first 35 metre-long pedestrian bridge. Phase 2 continued throughout 2010, establishing a permanent trail link with Moccasin Trail Park via a second 35-metre bridge over the East Don River and a connecting trail through the "Rainbow Culvert"—a local Toronto icon—under the Don Valley Parkway. Completion of Phase 2 works, including the installation of two overhead protective canopies at the CN and CP rail crossings, as well as pathway paving, is scheduled for spring 2011.

At the same time, an extension of the East Don Trail, northward from Taylor Creek Park at the Forks of the Don, is being implemented through a mutually beneficial arrangement with Toronto Water. This trail extension will provide access for future pathway completion and much needed access to existing critical Toronto Water sanitary infrastructure for monitoring and maintenance. Future phases of this trail project are being planned to establish connections between the northern and southern reaches of the East Don.

Paddle the Don

Once a year, TRCA provides a unique opportunity for people to paddle the Don River from Ernest Thompson Seton Park to the mouth at the Keating Channel. Paddle the Don is all about having fun, enjoying nature and celebrating the Don River watershed. Paddle the Don remains a free event; however donations to regenerate the Don are encouraged and used to fund regeneration projects in the Don watershed (as identified in *Beyond Forty Steps*).



The 17th annual Paddle the Don event was held May 2, 2010. A total of 427 paddlers in 250 canoes and kayaks took part. Partners included The Conservation Foundation of Greater Toronto (CFGHT), the Don Watershed Regeneration Council (DWRC), the Wilderness Canoe Association and the City of Toronto. In 2010, a total of 21 teams from 17 corporations were involved in the Banrock Station Corporate Canoe Challenge. Terrapex Environmental Limited was the winner, raising \$10,065 (in 2009 they raised \$6,240)! Overall, \$61,000 was raised, which have helped support the Milne House Restoration project and the Maple Nature Reserve Quonset Hut Site Wetland and Forest Regeneration project.

Paddle the Don relies on the help and support of numerous sponsors, supporters and volunteers, including the Toronto Police Auxiliary Marine Unit, Pickering Auxiliary Rescue Association, Wilderness Canoe Association, DWRC, the 14th Willowdale Scout Group and TRCA staff.

Richmond Hill Mill Pond Splash

The Mill Pond Splash is an annual spring environmental festival held at the popular Mill Pond Park close to downtown Richmond Hill. The event was initiated in 1999 by the Don Watershed Regeneration Council as a community outreach project to encourage community stewardship of the headwaters of the Don River. It is now organized jointly with TRCA, the Town of Richmond Hill, DWRC and the Richmond Hill Naturalists. It also enjoys strong support from local political representatives at all levels of government, and financial assistance or in-kind support from local businesses (including Canadian Tire Corporation, TD Friends of the Environment Foundation, Walmart Canada, Evergreen, Lowe's Canada, The Home Depot Canada, Tim Hortons and Enbridge Inc.).

The Mill Pond Splash continues to emphasize a watershed stewardship theme, but has

now grown to encompass many other aspects of conservation, increased awareness of environmental threats, recycling and "greener" lifestyle options. The 12th annual Mill Pond Splash was held on Sunday, June 6, 2010. The 2010 event featured tree and shrub plantings, nature walks, bird box building, an organic food market, a local landscape art show, displays of native wildlife, and exhibits of eco-friendly gardening, energy conservation and waste management options.

Walk the Don Trail Guides

Walk the Don is a series of self-guided interpretive walks. All walks use prepared trails and are suitable for family use. The fifth Walk the Don Guide — *Forks of the Don* — was released at the end of December. This brings to a close the first phase of the project. It is expected that additional guides will be issued in 2011 during a second phase.

On the Don newsletter

On the Don is a newsletter about the Don River watershed and the efforts being made to rehabilitate its waters and lands. It is published by TRCA in partnership with the Don Watershed Regeneration Council. Spring, summer and fall issues of the *On the Don* newsletter were released to more than 1,200 subscribers in 2010.



Don Mouth Naturalization and Port Lands Flood Protection Project EA

The environmental assessment (EA) sets forth the plan details, requirements and initial approvals required to transform the mouth of the Don River from a concrete-encased channel bounded by derelict brownfields into hectares of coastal wetlands and spectacular parks bounded by sustainable mixed use redevelopment. The Don Mouth Naturalization Project (DMNP) EA was submitted to the Ministry of the Environment for approval on December 17, 2010. During the summer of 2010, Toronto City Council approved the DMNP EA and amended their Central Waterfront Secondary Plan to reflect the new alignment for the Don River in the Lower Don Lands area.

Canadian Society of Landscape Architects Award of Merit

Designed by Schollen & Company Inc., the Don River Watershed Regeneration Concept Sites included in *Beyond Forty Steps* won a 2010 Canadian Society of Landscape Architects (CSLA) Regional (Ontario) Award of Merit. The CSLA Awards recognize "excellence in all aspects of the profession through its honours and awards programs, which also promote awareness of landscape architecture as a profession professionally, academically, in communities, and acknowledge the work of its members within the profession."

Rouge River and Rouge Park

Rouge River Watershed Plan Case Study

TRCA's Rouge River Watershed Plan served as the basis for an economic valuation study, commissioned by the Ontario Ministry of the Environment (MOE) in 2010. The study analyzed the costs of watershed management intervention strategies and benefits in terms of the resulting watershed and nearshore health (e.g., water quality, recreational uses, heat island reduction, energy use, air quality, etc.). The study determined that \$687 million in net present value benefits have accrued from implementing the Rouge sustainable communities management strategies. These strategies included expanding natural cover (in accordance with the targeted terrestrial natural heritage system) and implementing sustainable community designs, including low impact development stormwater management practices in greenfield and urban retrofit settings. These strategies form the basis of the Rouge River Watershed Plan, and are similar to directions of TRCA's other watershed plans.

The study found the overall benefit-cost ratio ranges from 1.6 to 2.4 when extrapolated to four other similar Lake Ontario watersheds in the Golden Horseshoe, showing significant gains with a net present value of benefits in the range of \$4.011 billion to \$17.704 billion.

This information provides an economic rationale for the continued implementation of TRCA's watershed plans. Results of the study will be used by MOE to guide Great Lakes

policy and program development, particularly in support of negotiations on the *Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem* (COA) and the *Great Lakes Water Quality Agreement* (GLWQA).

Rouge Park Trails Master Plan

The Rouge Park Trails Master Plan will detail the connection of Rouge Park trails with those in our neighbouring communities in the greater Greenbelt, including the Oak Ridges Trail to the north and the Waterfront Trail to the south. The Plan will also embrace accessibility, offer interesting interpretive opportunities and foster responsible trail use. Phase 1 of the Plan has been completed. This entailed the collection and analysis of data from a variety of sources, as well as ground level explorations and the analysis of proposed connections within the park and beyond. A public information session was also held. The project is continuing in 2011.

Volunteer Led Guided Walks

Rouge Park's volunteer led guided hikes have been a huge success. In 2010, Rouge Park welcomed over 1,600 walkers who trekked nearly 1,000 kilometres during almost 200 walks. In addition to sharing Rouge Park stories and experiences with visitors, hike leaders also encourage appropriate park behavior (such as keeping pets leashed), promote other areas of the park, and help compile a better understanding of visitor demographics. The 22 volunteer leaders are not only fun, enthusiastic and knowledgeable; they have also been certified by Hike Ontario and received standard first aid training from the Canadian Red Cross.



ROUGE DAYS 2010:

The biggest watershed celebration in the GTA

From May 26 to 29, 2010, local families and neighbours joined with nature lovers from across the GTA to discover the cultural, recreational and natural heritage treasures of the Rouge River watershed during the inaugural "Rouge Days" event. For four days, visitors enjoyed family-friendly activities, hands-on demonstrations, nature hikes, tree planting events, fishing and much more. Native Leader Stephen Paquette provided a

First Nations perspective to the kick off event at the Glen Rouge Campground, leading visitors in a traditional opening song and prayer, a smudge ceremony and traditional dances. Subsequent events were organized into four theme days: "History Day" included history tours; "Critter Day" included fishing, a frog watch and a herpetology awareness hike; "Arts and Culture Day" included wine tasting and a wonderful selection of music, art and photography; and "Nature Day" included tree planting, bird banding, and nature walks.

"The Rouge River watershed continues to serve as an integral part of Markham's heritage and natural environment that links communities in York Region and Toronto," said Markham Mayor Frank Scarpitti. "Events such as the Rouge Days Celebration will help promote the importance of preserving and enhancing our watersheds, while fostering more balanced and sustainable communities."

The Rouge Days organizing committee included Rouge Park, TRCA and representatives from Toronto, Region of York, Markham, Durham, Pickering, Whitchurch-Stouffville and Richmond Hill. Our partners included the Ontario Ministry of Natural Resources, Toronto Zoo, Ontario Nature, Rouge Valley Mennonite Church, Markham Museum, Native Child and Family Services, and Ontario Streams. The 2010 event was such a success that we plan to hold the event annually. More information is available on the Rouge Days website at www.rougedays.ca

BOB HUNTER MEMORIAL PARK

TRCA works with Rouge Park and York Region to restore park

What better way to honour one of Canada's premier environmentalists than creating a park that embraces the principles of biodiversity and ecological preservation? Stretching from just north of Steeles, across 14th Avenue almost to Highway 407, the Bob Hunter Memorial Park adds another 193 hectares of rolling fields, woodlots and ravines to the western margins of Rouge Park. Officially opened in 2006 by Ontario Premier Dalton McGuinty, the park commemorates the late Bob Hunter, a popular broadcaster and author, co-founder of Greenpeace, and one of the "Eco-heroes" of the 20th century as recognized by TIME magazine.



Left to right: Alan Wells, Chair Rouge Park Alliance, Bobbi Hunter, Bob Hunter's wife, and Emily Hunter, Bob's daughter

The Bob Hunter Memorial Park provides the community with a place to enjoy and learn about our natural and cultural heritage. At the same time, the ongoing restoration of forest, wetland and riparian areas will increase the quality of the natural environment in Markham. The park has been designated part of the provincial Greenbelt, 728,000 hectares of permanently protected greenspace in Ontario. In 2010, TRCA, Rouge Park and York Region worked together to restore meadow and wetland habitat in the park.

The comprehensive plans for the park balance the twin objectives of protecting this precious green space and ensuring the public gets an opportunity to share and enjoy it. A central corridor of mixed recreational amenities, including picnic sites, viewing areas and looping rustic trails for both the novice and more experienced hiker, will bisect the land from east to west. To the south, the park's beautiful Box Grove Forest will be extended and reconnected to the core forests of Little Rouge Creek, while to the north the creek beds will be renaturalized and a variety of types of wetlands will be restored.

The natural heritage features include the restoration of wetlands, rehabilitation of riparian zones, establishing natural cover including meadow habitats and forests. The recreation plan includes the development of multi-use trails, a nature trail, bridge crossings, parking and interpretive signage. Together the wetlands and meadows provide a multitude of habitats for amphibians, waterfowl, sandpipers, dragonflies, egrets and other small animals.

The habitat restoration work will fulfill our natural heritage objective for this area, provide ecologically appropriate natural cover, and restore

altered hydrology. In total, there will be approximately four hectares of wetlands, 26 hectares of riparian cover and 27 hectares of forest cover created within Bob Hunter Memorial Park.

A unique component of the plan is the establishment of approximately 24 hectares of meadow and grassland habitat. Roadside buffers have been planted along Reesor Road and 14th Avenue, and the tile drainage on more than 50 hectares of restored farmland has been decommissioned to reestablish natural hydrology including wetland habitats in the meadow area

In addition, trails have been constructed north of 14th Avenue. This extensive new trail network will provide community access in an orderly way to the environmental features of the Bob Hunter Memorial Park and Rouge Park, while at the same time ensure the integrity of the Parks are maintained as a natural habitat. The trail systems will be aligned and maximizing the public's enjoyment of the parks including an educational opportunity of the parks natural features including signage and an interpretation of park history from the early First Nations to present day.

Site preparation has been organized and reforestation sites allocated to community group, including Friends of the Rouge Watershed and 10,000 Trees for the Rouge. The Rural Lambton Stewardship Network, the leading native grass meadow establishment expert in Ontario, is supporting the project by providing staff time and equipment and sharing expertise to cooperatively plant the grass meadows with TRCA and Rouge Park Alliance staff.

In Rouge River watershed, habitat restoration efforts in 2010 resulted in 66 hectares of habitat restored, one kilometre of stream rehabilitated and eight new wetlands built.

Species at Risk

Targeted searches for species at risk were carried out in Rouge Park in 2010. Staff confirmed that at least ten listed species at risk are protected within Rouge Park. Staff also collected updated information on their habitat usage. Stewardship projects have been initiated to protect these species at risk.

Rouge Park Stewardship Events

Stewardship activities offer exciting opportunities for our park neighbours and visitors to become informed, inspired and involved in Rouge Park and make that important connection between people and the environment. There were 20 stewardship events held in 2010, including the 7th Annual Winter Bird Count, the Rouge Park "Hoot and Howl," the Rouge Park Frog Watch, the Earth Day Tree Planting, the Reptile and Amphibian Awareness Day, and the TD Great Canadian Shoreline Cleanup. None of these events could occur without the support of volunteers; in 2010, some 874 volunteers helped make Rouge Park stewardship events a success.

Celebrating the Year of Biodiversity

Rouge Park's fall biodiversity walks, undertaken in partnership with Ontario Power Generation (OPG), were a great success. The walks offered a special opportunity for both new visitors and old friends to rediscover this unique urban ecological park. The partnership with OPG allowed for a substantial expansion of the guided walks program, doubling both the number of walks available, and the number of trained volunteer walk leaders. Nearly 800 hikers participated; this was thanks, in part, to strong media promotion and \$20,000 in funding that supported the guided walks program, the printing of visitor guides and the installation of interpretive signs.

2010 Rouge Park Awards

Each year, the Rouge Park Alliance recognizes members of the community who have made outstanding contributions to the goal, vision and objectives of Rouge Park. Recipients of the 2010 Rouge Park Awards were The Honourable Thomas McMillan, former Federal Minister of the Environment, and the grassroots group 10,000 Trees for the Rouge Valley. Both recipients were actively involved in preserving Rouge Park before the park even existed. The Hon. Tom McMillan played a key role in securing the funds needed to establish the park; a \$10 million grant from the federal government continues to provide almost half of the funds needed to operate the park today. 10,000 Trees for the Rouge Valley hosts annual tree planting events, attracting thousands of dedicated volunteers. To date, they have planted 155,000 trees and restored approximately 64 hectares (158 acres) of the watershed back to natural cover. The recipients commitment to the park has continued to the present: 10,000 Trees for the Rouge Valley held their 21st planting in April 2010, while The Hon. Tom McMillan has announced his support for the campaign to make the Rouge Park a National Park.

"With Ontario Nature's support, in addition to the unanimous support of all Alliance member organizations, it is clear that the National Park campaign has great potential," said Alan Wells, Chair of the Rouge Park Alliance. "We are optimistic and encouraged by the overwhelming support of our peers."

Rouge River Watershed-based Fisheries Management Plan

Throughout Ontario, there is increased recognition of the need to protect and manage fish and other aquatic resources on an ecosystem and watershed basis. That is particularly true in the TRCA jurisdiction where the historic progression of land use change makes it challenging to balance aquatic system integrity with the complex mosaic of human activities within our watersheds.

In 2010, TRCA, in partnership with the Ministry of Natural Resources, Rouge Park, and Fisheries and Oceans Canada, completed the new Rouge River Fisheries Management Plan (FMP). This plan boldly makes the connection between the aquatic community and the characteristics of the surrounding landscape that affect habitat quality. Consultation was undertaken with stakeholder groups, such as Metro East Anglers, Building Industry and Land Development, Lake Ontario Assessment Unit, TRCA's municipal partners and the general public, through multiple information sessions.

The Plan will go through a final round of review on the provincial Environmental Registry; in the interim, all authoring agencies support the posting of the Plan on the TRCA website for general use and application of the progressive management direction and tangible opportunities for implementation across the watershed.

Duffins, Carruthers and Petticoat Creeks



Watershed Linkages with Lake Ontario

The health of Durham's western watersheds relies mainly on TRCA's restoration activities, land stewardship, and conservation lands management plans. These watershed-wide efforts will also lead to local improvements in the water quality along the Lake Ontario shoreline, which supplies drinking water for over six million Ontario residents. TRCA staff work in partnership with York and Durham regions, the Ontario Ministry of the Environment, Environment Canada and the Lake Ontario Drinking Water Collaborative, to study how and when watershed pollutants are discharged to Lake Ontario and the resulting changes in lake water quality. These studies will determine which actions should be taken to ensure that the nearshore areas of Lake Ontario continue to be a safe and reliable water supply.

Findings from these collaborative studies are also extended lake-wide in support of Source Protection studies for Lake Ontario drinking water intakes, under the overall direction of the Credit Valley -Toronto and Region -Central Lake Ontario (CTC) Source Protection Committee. Staff presented this research at the May 2010 "International Great Lakes Research Conference" in Toronto. Working collaboratively, scientists from the United States, Environment Canada, the Ontario Ministry of the Environment and TRCA are preparing an update on the amount of nutrients discharged from watersheds, water pollution control plants and the upper Great Lakes via the Niagara River. Results from these studies will inform on going discussions leading to the renegotiation of the *Great Lakes Water Quality Agreement* and the signing of the next *Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem* (COA).

Atlantic Salmon Restoration in Duffins Creek

2010 was the fifth year of the Atlantic Salmon Restoration Program, an effort to restore self-sustaining populations of this species in Duffins Creek, the Credit River and Cobourg Brook by the Ontario Ministry of Natural Resources, Ontario Federation of Anglers and Hunters (OFAH) and Ontario Streams. In 2010, 6,800 fry were stocked in Duffins Creek; these fry (young fish) were raised in classroom hatcheries by students who attend TRCA's

Lake St. George and Claremont field centres, as well as several local schools. In early May, the release of the fry into Duffins Creek was widely covered by local media.

TRCA, in partnership with OFAH, conducted special surveys in spring and fall to track movements of the salmon in and out of the Duffins Creek watershed. Adult salmon are expected to return to Duffins Creek to spawn in larger numbers in 2011, partly due to various habitat projects which have been undertaken by TRCA and its partners.

Watershed Action Plan for the Petticoat Creek

TRCA worked with Rouge Park and the City of Pickering to begin the development of a Watershed Action Plan for the Petticoat Creek watershed that identifies tangible actions to improve the health of this watershed. A portion of the watershed extends into York Region and the City of Toronto, areas which are within Rouge Park, and efforts are underway to ensure that planning for Rouge Park and its trail network include opportunities in the Petticoat Creek watershed. This plan is scheduled to be completed in spring 2011.

Ajax Stormwater Management Retrofit

TRCA partnered with the Town of Ajax to undertake a comprehensive stormwater management retrofit study for an area of the town lacking modern stormwater controls. In this area, the runoff from 14 "sewersheds" (i.e., the land area drained by a sewer) discharges directly to Lake Ontario through the Duffins Creek Marsh. The discharge contains bacteria, oil and other contaminants that contribute to water quality problems on the waterfront and resulted in the closure of swimming beaches. Mitigation strategies for priority sewersheds were completed, and TRCA staff assisted the Town of Ajax with a public meeting on treatment options.

The Town of Ajax and TRCA are also participating in investigations of the nearshore areas of Lake Ontario, together with the Ontario Ministry of the Environment, Ontario Power Generation (Pickering Nuclear Generating Station) and the regions of York and Durham. Efforts in 2010 focused on peer review of the monitoring program for the waterfront, including aesthetics, water quality for swimming, and factors responsible for the growth of *Cladophora* (a genus of green algae), which fouls the shoreline. Based on the information gained from these investigations, the Town of Ajax developed a Waterfront Improvement Strategy to decide on actions needed to enhance public use of the waterfront.



Restoration of Abandoned Gravel Pit

The headwaters of Duffins Creek arise in the Oak Ridges Moraine in the Township of Uxbridge, where there has been much aggregate extraction over the years. Three years ago, an opportunity arose to begin the ecological restoration of an abandoned gravel pit in this area, in cooperation with the municipality and The John & Pat McCutcheon Charitable Foundation. The primary objectives of the three-year project were to increase site habitat, improve public use opportunities and showcase innovative ways of gravel pit restoration for the industry and general public. In 2010, we held a special event celebrating the project's success to date, including work done that year to open and upgrade two kilometres of trails, install new interpretive signs and viewing areas, expand the parking lot for equestrian trailers, and undertake significant ecological restoration work, which was completed with the support of local aggregate producers. Partnerships were also developed with the Ministry of Natural Resources for future research opportunities and with Trent University to use the site for future project studies.



SUNNY DAYS FOR CONSERVATION: Fundraiser boosts conservation in Western Durham

In early 2010, Deer Creek Golf and Banquet Facility in Ajax, Ontario, approached TRCA and offered to host an event that would support conservation efforts in the community. The result was the first ever "Sunny Days for Conservation" fundraiser, which was held on Earth Day 2010. The celebration brought together 250 participants — ranging from developers and business people to golfers and local conservationists — for a delicious dinner, silent auction and wonderful evening of live music.

"As Pickering residents we want to give back to our community and we believe conservation is an important part of a healthy community," said Ron Halliday, development manager for Deer Creek and a Durham resident. "We are responsible members of the development community and are moving towards sustainable subdivisions, including the first Energy Star project in Pickering. We are happy to host Sunny Days for Conservation and bring together the development and conservation communities to celebrate Earth Day."

Attendees raised money for Atlantic salmon restoration projects, for children's outdoor education at Claremont Field Centre, and for trail maintenance on conservation lands on TRCA properties in Durham Region. In addition to building long term partnerships, it was also a fun evening that featured an unforgettable performance by the renowned Canadian band Lighthouse. More information is available on the event website at www.sunnydaysforconservation.ca

Highland Creek

Highland Creek Watershed Greening Strategy

The Greening Strategy will focus on identifying requirements and opportunities to increase wetland, forest and riparian cover, protect critical habitat, manage stormwater at the lot level, establish trail linkages, and engage community stewardship activities. The strategy will serve as a strategic restoration plan to accompany the City of Toronto's Highland Creek Geomorphic Systems Master Implementation Plan, as well as an action plan for landowners, land managers, community groups and residents to direct priority projects in valleylands and on the tableland.

The strategy will identify priority projects for terrestrial and aquatic habitat restoration, trail and recreation amenity improvements and sustainable community initiatives, such as implementing lot level stormwater management practices. Activities undertaken in 2010 have included the completion of a draft Habitat Implementation Plan (HIP) and scoping for an Aquatic Habitat Management Plan to inform the strategy direction.

Highland Creek Neighbourhood Greening Project

The objective of the project is to build the capacity of communities in three neighbourhoods to address the key issues facing the Highland Creek watershed — urban stormwater runoff and degradation of natural heritage systems. The project will:

- use education and engagement activities to build the capacity of communities to develop a vision for neighbourhood greening activities in the Highland Creek watershed;
- develop Neighbourhood Greening Concept Plans for three focus areas within the watershed; and
- establish "Green Teams" and resources for each of the three focus areas to move concept plans forward to the planning and implementation stage.

Over 250 volunteers took part in interpretive walks, planting events and community clean-up activities during the fall of 2010.

Eight public community events were held in the fall of 2010 to involve residents of the local community in the Neighbourhood Greening Project.

The three neighbourhood focus areas in the Highland Creek are: the Milliken Park area, the Cedarbrook Park area and the Centennial College/Morningside Park area. The Neighbourhood Greening Project will work to inform the community about local environmental issues, increase awareness of the connection between everyday activities and the health of the watershed, and build capacity of the community to take action in their homes, schools, parks and other sites around the neighbourhood.

Activities undertaken in 2010 have included the launch of the project, establishment of the Project Advisory Team, and community engagement events, such as tree plantings, an interpretive walk, clean-ups, information sessions and running the Yellow Fish Road program with a local school. A funding request was approved in full by the Ontario Trillium Foundation in the amount of \$131,000 over two years for the Highland Watershed Neighbourhood Greening Project.

Project Advisory Team — The team, comprising project partners and community representatives, was formed to guide project activities and cultivate further community connections. Members include representatives from Toronto Water, City of Toronto's Parks, Forestry & Recreation division, ACORN Canada, Centennial College, Centennial College's Environmental Student Society, Live Green Toronto, Toronto Chinese for Ecological Living, The Conservation Foundation of Greater Toronto and TRCA.

Concept Site Plan Development — Under a partnership agreement with Centennial College Applied Biological and Environmental Sciences, third year students are reviewing the Highland Creek watershed initiatives and developing concept site plans for greening projects in the three project neighbourhoods. Proposed greening Initiatives will be reviewed and concept plans discussed with community members to address watershed issues and solutions at the community level.

Public Walks — In October 2010, an interpretive walk hosted by Toronto Field Naturalists and co-led by City of Toronto and TRCA staff engaged over 50 people in Morningside Park to view the fall salmon run, discuss the creek restoration work underway and introduce the Highland Creek Neighbourhood Greening Project. Many of the people attending, including nearby residents, had never been in Morningside Park. Future walks are planned to encourage residents to explore the nature in their back yards and to better understand the connection between our daily activities and the health of the watershed.



HIGHLAND CREEK GREENING STRATEGY: Students “dream green” for three neighbourhoods

In the fall of 2010, students in Centennial College's Environmental Protection Technology program worked in partnership with TRCA, City of Toronto and community partners to create concept plans that would green three neighbourhoods in the Highland Creek watershed. These concept plans incorporate initiatives that address stormwater management, improve terrestrial habitat and promote green energy opportunities in the three target areas – the neighbourhoods around Milliken Park, Morningside Park and Cedarbrook Park. The students' plans were the first step in the development of final concept site plans for the three focus areas.

While the Highland Creek watershed is one of the most urbanized in the Toronto region, the creek and its tributary streams still provide an extensive network of greenspace, trails, parks and habitat for a variety of plants and animals. Local gems like Morningside Park, Stephenson's Swamp and Milliken Park not only provide an escape from busy city life, but help to clean our air and water and play an important role in flood protection. Once the concept plans are completed, workshops and projects in the three model neighbourhoods should spark discussion about the greening initiatives that can be taken in other communities throughout the watershed.

ONTARIO REGIONAL CLIMATE CHANGE CONSORTIUM:

Providing accurate data, analysis and expertise

If we hope to address the challenges of climate change effectively, we will have to transform Ontario into a climate-resilient, climate-ready province. The adaptive plans and mitigation strategies we are drafting today will help us cope with the increasing impacts of climate change tomorrow. However, these plans require the application of state-of-the art climate science at the local level and the accumulation of consistent, high quality data. The Ontario Regional Climate Change Consortium (ORCCC) or (Consortium) — and its network of scientists, researchers, and public and private members — is a province-wide initiative to fill any data gaps and provide the needed climate services.



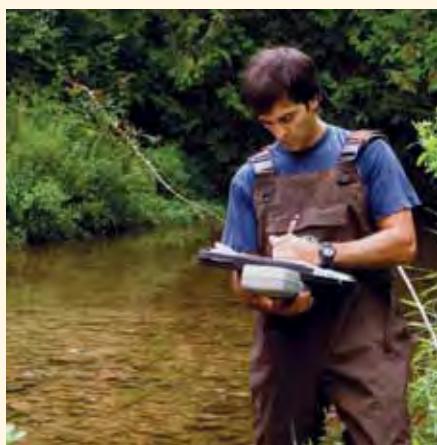
The Consortium currently comprises 12 universities, all levels of governments, conservation authorities, NGOs and the private sector. It actively identified the capacity for a province-wide initiative to serve as an efficient mechanism for the generation, delivery and application of climate services. The secretarial services and organization of the Consortium have been provided by The Climate Consortium for Research Action and Integration (CC-RAI), a partnership between York University and TRCA. The Consortium builds upon the well-established climate science expertise located within partner universities and the practical experience of end-users such as GTA's large urban municipalities and conservation authorities across the province. By facilitating cross-sector coordination and enhancing our ability to assess, understand and resolve issues of regional climate uncertainty, the Consortium is a compelling response to the Ontario Government's Expert Panel Report on Climate Adaptation.

The Consortium will address major gaps in regional climate data, modelling, and research and analysis services by coordinating dispersed resources and expertise into a network of universities, government agencies and private sector stakeholders. This will allow decision-makers across Ontario to make informed decisions on their own climate adaptation responses and ensure an integrated plan — Ontario response to climate change adaptation.

The economic, social and environmental impacts of climate change are diverse, far-reaching and complex. In response, the Consortium will help key sectors to proactively and effectively manage those impacts that are critical to the continued economic development, social well-being, and health of Ontario residents and ecosystems. The Consortium will also accelerate proactive adaptation planning in Ontario by providing a one-window resource to help decision makers formulate strategic, coordinated, and scientifically informed responses to climate adaptation.

Through retention, training and placement opportunities, the Consortium is creating a unique knowledge advantage in Ontario that will attract leading scientific and technical expertise critical to sustaining a competitive edge in the global marketplace. In this regard, the Consortium will play a key role in developing the next generation of highly skilled and technically proficient personnel.

Most importantly, over the next five years, the Consortium aims to support ongoing investments in key facets of Ontario's social and economic foundation by facilitating access to better climate services in six priority sectors: health, water, infrastructure, tourism, agriculture and forestry. Such targeted end-user focus will strengthen the capacity of the province to respond to urgent climate threats, while positioning Ontario at the global forefront of climate change thought and action.



Watershed Planning and Management

Regional Watershed Monitoring Program

The Regional Watershed Monitoring Program (RWMP) is a long term monitoring initiative which collects ecosystem data at the watershed and subwatershed scale, as well as across TRCA's region as a whole. Since its inception in 2001, the program has enhanced the planning and coordination of monitoring activities, helped standardize protocols, and filled several key data gaps that have been identified. The RWMP focuses on key components including the following.

- Climate and Hydrology – Monitors changes in the water level of the region's watercourses, as well as contributing precipitation (rain and snow).
- Water Quality – Samples a variety of basic water chemistry, metals and microbiological parameters of rivers.
- Aquatic Habitat and Species – Samples benthic macroinvertebrates, fish and algae, as well as fluvial geomorphology, stream temperature and larval West Nile virus vector mosquitoes.
- Terrestrial Natural Heritage – Monitors flora and fauna species and communities through biological inventories and fixed plots.
- Groundwater Quantity and Quality – Monitors a series of wells for water quantity and quality throughout the region.

2010 Regional Watershed Monitoring Activities, by Watershed											
	Etobicoke	Mimico	Humber	Don	Highland	Rouge	Petticoat	Duffins	Carruthers	Other ¹	TOTAL
Fish Species & Aquatic Habitat	13	—	35	2	4	6	—	4	—	—	64
Algae Biomonitoring	2	1	12	5	4	5	2	8	—	—	39
Benthic Invertebrates	13	5	37	24	14	26	4	26	3	4	156
Fluvial Geomorphology	10	5	35	—	—	—	—	—	—	—	50
West Nile Virus Monitoring	2	—	17	6	2	3	1	7	2	7	47
Surface Water Quality	3	2	11	5	1	7	1	6	1	1	38
Baseflow	7	2	11	5	6	100	14	8	3	4	160
Stream Flow	3	1	7	7	2	3	1	6	1	2	33
Precipitation	4	—	9	5	2	4	1	4	—	2	31
Snow	1	—	3	1	—	—	2	3	—	—	10
Groundwater Quality & Quantity	2	—	9	1	—	3	—	6	—	—	21
Terrestrial Natural Heritage ²	77	—	500	265	—	380	11	327	—	—	1,560
Terrestrial Volunteer Monitoring	5	1	20	8	2	7	1	7	1	3	55
Meteorological (Climate Monitoring) ³	1	—	7	—	—	3	—	4	—	—	15
Water Temperature	14	—	38	—	—	—	—	8	—	—	60

1. Other minor watersheds including tributaries of Frenchman's Bay and Toronto waterfront

2. Italicized numbers are the number of hectares monitored

3. Includes both meteorological stations and "stand alone" air temperature stations

2010 Regional Watershed Monitoring Activities by Region						
	Durham	Peel	Toronto	York	Other ¹	TOTAL
Fish Species & Aquatic Habitat	4	24	15	19	2	64
Algae Biomonitoring	9	7	13	9	1	39
Benthic Invertebrates	35	26	46	47	2	156
Fluvial Geomorphology	—	21	12	16	1	50
West Nile Virus Monitoring	10	9	12	16	—	47
Surface Water Quality	9	5	13	11	—	38
Baseflow	27	12	24	97	—	160
Stream Flow	10	6	8	5	4	33
Precipitation	5	8	8	10	—	31
Snow	3	3	1	3	—	10
Groundwater	6	7	2	6	—	21
Terrestrial Natural Heritage ²	327	<i>365</i>	788	80	—	1560
Terrestrial Volunteer Monitoring	10	13	19	13	—	55
Meteorological (Climate Monitoring) ³	4	2	2	7	—	15
Water Temperature	2	23	12	14	9	60

1. Dufferin/Simcoe

2. Italicized numbers are the number of hectares monitored

3. Includes both meteorological stations and "stand alone" air temperature stations

Terrestrial Habitat and Species

The Terrestrial Natural Heritage component of the RWMP builds on data collected under the Environmentally Significant Areas (ESA) Program for 15 years. The core focus has been systematic inventories of habitats and species throughout the region. Terrestrial data has been key to the development and testing of terrestrial ecosystem modelling and the development of the Terrestrial Natural Heritage System Strategy. Monitoring at a number of fixed plots throughout the Toronto region began in 2008 and is continuing at a small number of plots pending additional funding. This component of the program will identify species and vegetation community trends that are occurring across the jurisdiction over time.

- Long term monitoring data was collected at 24 forest plots, 18 wetland plots and 13 meadow plots. Fifteen sites, covering approximately 1,560 hectares, were inventoried for vegetation community, flora and fauna species.
- A new native flora species for TRCA jurisdiction was identified in Rouge Park — *Senecio pauperulus*. This species belongs to the aster family and is generally found in alvar communities.
- Over 20 hectares of seepage fen vegetation communities were identified on the Brock North property. Fens are an unusual vegetation community in the TRCA jurisdiction and often support sensitive flora species of concern. Species such as *Spiranthes cernua* (nodding ladies' tresses), *Eriophorum viridi-carinatum* (thin-leaved cotton-grass), *Carex flava* (yellow sedge), *Carex viridula* (greenish sedge), and *Panicum acuminatum var. lindheimeri* (Lindheimer's panic grass), which are all species of regional conservation concern, were identified on this property.
- The Downsview Dells long term monitoring plot, situated along the Humber River and within the City of Toronto, was found to have the highest number of red-backed salamanders compared to any other plot throughout TRCA region. It was anticipated that

HUMBER MARSHES

The Humber Marshes area was found to have oak savannah and woodland habitat which are provincially significant ecosystems. Only a tiny proportion of this habitat type is left in Ontario. The examples near Humber Marshes are part of the historic Humber Plains prairie and savannah complex, which includes High Park and Lambton Prairie. Flora species of concern found there included *Quercus velutina* (black oak), *Sassafras albidum* (sassafras), *Salix humilis* (prairie willow), *Penstemon hirsutus* (hairy beard-tongue), *Comandra umbellata* (bastard toadflax), *Andropogon gerardii* (big bluestem) and *Carex siccata* (hay sedge).



monitoring plots located in the more rural parts of the jurisdiction would have a higher abundance of this species than plots located in the urban core. It is not clear why the numbers are so high at this urban location; perhaps additional monitoring will help to determine the reason.

Terrestrial Volunteer Monitoring Program

The Terrestrial Volunteer Monitoring Program (TVMP), in operation since 2002, uses trained volunteers to survey fixed sites, 10 hectares in size distributed throughout the region. Volunteers collect data on the presence of a set of 50 amphibian, mammal, bird, vascular plant and lichen indicator species. Beginning in 2009, the volunteers also conducted surveys to establish the occurrence and extent of eight selected invasive exotic plants. Data are analyzed by TRCA to report on the condition of the terrestrial ecosystem and major habitats of the region, document differences between urbanization zones and monitor change over time.

Two of the TVMP volunteers progressed to employment with TRCA this year, while others reported that the experience gained in the program had been helpful in securing employment with other organizations.



Fish Community and Habitat Surveys

Fish community and habitat are monitored at approximately 50 sites annually, on a three-year rotation. Standardized sampling methods are used to allow for the comparison of the fish community with the physical conditions of streams, both spatially and temporally, across the jurisdiction. Overall, a total of 151 RWMP stream sites have been established for long term monitoring.

- The redside dace population in the Humber River appears to be relatively stable.
- A common shiner/creek chub hybrid was found for the first time in the TRCA jurisdiction in the Humber River.
- The round goby is an invasive exotic species that was introduced into the Great Lakes basin in 1990 via ship ballast water. This species was first identified in our watersheds in 2007 in Etobicoke Creek and the Humber River. Round goby were also found at the mouth of Duffins Creek (2008) and Mimico Creek (2009). The 2010 survey found round

goby in the same sites in Etobicoke Creek and Humber River as the 2007 survey. It appears that there has been no further movement of the species upstream in the past three years.

Algae Biomonitoring

In 2008, TRCA and the Ministry of the Environment partnered to introduce and promote an Algae Bioassessment Protocol (ABP) under the RWMP. Until recently, the importance of plants (and particularly algae and diatoms) has been undervalued in watershed monitoring. Algae, including diatoms, are among the first group of organisms to be impacted by shifts in chemical conditions in a waterbody, as they are very sensitive to changes in basic water chemistry.

In 2010, a study examined the diatom community in relation to water quality within TRCA's jurisdiction. Sites were selected for this study by ranking them based on the percentage of agriculture, the percentage of natural cover (including forest, water, wetland and bare land) and the road density in the upstream drainage area.



Surface Water Quality

Since 2002, TRCA has partnered with the Ontario Ministry of the Environment to monitor surface water quality throughout TRCA's jurisdiction. In 2010, surface water quality samples were collected monthly at 38 sites across the jurisdiction and analyzed for basic water chemistry (total suspended solids, chloride, etc.), metals and microbiology.

Benthic Invertebrates

The benthic biomonitoring program has been used to track changes in the aquatic biota and water quality of the nine watersheds across TRCA's jurisdiction since 2001. The different ecological requirements, as well as the sensitivity of various benthic organisms to pollution, make them ideal candidates for biomonitoring purposes. A total of 140 RWMP stations and 16 special project stations were sampled in 2010.

West Nile Virus Vector Monitoring

TRCA West Nile Virus (WNV) Monitoring and Surveillance Program was established in 2003 with the objective of conducting vector larval monitoring for the presence of two key vector mosquito species — namely, *Culex pipiens* and *Culex restuans* — on TRCA properties. The monitoring activities carried out in the wetlands and selected stormwater ponds complement the WNV vector source reduction activities carried out by Regional Health partners in Durham, Peel, York and the City of Toronto. Public outreach and education involves addressing any public or staff concerns about WNV through TRCA's Standing Water Complaint Procedure. RWMP staff members collaborate with the Regional Health Units through participation in WNV advisory committees, information sharing and notification about vector hot spots.

In 2010, TRCA received eight standing water complaints, four of which were associated with TRCA properties. Of the four complaints, three were directly managed properties and the one remaining property is under a management agreement with the York Region. None of the complaint site investigations resulted in larvicide application.

Groundwater Quality and Quantity

The Provincial Groundwater Monitoring Network (PGMN) is a partnership between the Ministry of the Environment (MOE) and conservation authorities to efficiently utilize staff and resources. RWMP staff conduct all field operations and data analysis/reporting on a local level. The MOE's role in the network is to set policy direction, strategic objectives and maintain the Provincial Groundwater Monitoring Information System (PGMIS) database for the program. As a program partner, the mandate of TRCA is to maintain the telemetry systems, collect water level data, and collect and arrange for chemical analysis of water quality samples at dedicated wells on an ongoing basis.



ONTARIO REGIONAL ADAPTATION COLLABORATIVE:

Helping communities prepare for climate change

It's going to take coordinated adaptation planning and proactive decision making to prepare for, reduce where possible, and mitigate where needed the inevitable impacts of global climate change. As a member of the Ontario Regional Adaptation Collaborative (Ontario RAC), TRCA is partnering with the federal and Ontario governments, conservation authorities, academic institutions, municipalities, industry and NGOs to assess the risks and reduce our vulnerability to a changing climate.

Ontario RAC is a three year, cost-shared federal program to help Canadians reduce the risks and maximize the opportunities posed by climate change. **The goal of the Program is to catalyze coordinated and sustained adaptation planning, decision**

making and action, across Canada's diverse regions.

TRCA is collaborating with the Ministry of Environment (MOE) Drinking Water Source Protection Branch, Ministry of Natural Resources and York University to assess, understand the impacts of climate change on drinking water sources.

Comprehensive guidance and training on integrating climate change into drinking water source protection plans is being developed. This training will allow water protection practitioners from all parts of the province to develop and utilize the same baseline level of knowledge in the area of climate change and water resource management.

In 2010, water quality samples were collected at 14 sites across the jurisdiction. In conjunction with MOE and the University of Waterloo, an isotopic study was undertaken to gather useful information on groundwater recharge, discharge and relative age.

Water Quantity - Baseflow

Baseflow conditions represent the lowest stream flows that typically occur in a watercourse, and are usually supplied primarily by groundwater discharge occurring along the stream corridor and the gradual release of water from wetlands. The Low Flow Monitoring Program monitors conditions during the drier summer season between June and September. The program consists of more than 1,100 individual monitoring stations, with on going summer monthly monitoring occurring at approximately 70 stations per year. These "indicator stations" are usually located at the outflow of each major subwatershed. The other stations are distributed throughout each watershed and are measured systematically every five to seven years in order to provide a higher resolution of ground and surface water interactions.

During 2010, the annual precipitation was comparable to 2009 (less than a one per cent increase); however, roughly 42 per cent less precipitation was recorded during the winter and spring seasons. During the field season, however, there was 14 per cent more precipitation as compared to 2009; a particularly wet June accounted for nearly half of rainfall, allowing for more intensive monitoring later in the season. Baseflows were lower in 2010 when compared to 2009, which can be attributed to the drier winter and spring seasons leading up to the summer of 2010.

Meteorological (Climate Monitoring)

No longer just an esoteric scientific theory, climate change has become a prominent national issue for governments and a commonly discussed concern among the public. TRCA identified climate change as an important issue related to its Watershed Management mandate in the mid-1990s. While it is well known that urbanization has an impact on natural systems, the additional stress of climate change will serve to further modify our natural systems and create new or increased challenges to TRCA's management objectives. Conservation authorities are in a unique position to be able to

deal with climate change from both an adaptive and mitigation perspective, since we are strategically placed to provide our clients with effective direction and input around managing local ecosystems under the challenges that climate change can create. TRCA partners continue to rely on our data collection services and monitoring expertise to provide them with as much information regarding their watersheds as possible. This, in context with TRCA's flood warning, infrastructure/water budget modelling, and natural heritage needs, led to the development of TRCA's Meteorological (MET) Network. Currently, the MET network consists of a variety of sensory devices, including generic climate stations, evaporation pans, and specialty instrumentation designed by York University.

- York University published its third monitoring report, entitled *Evaporation Comparison between the Kortright Conservation Area and Downsview Park: April to November, 2010*, based on data collected from two Bowen Ratio Energy Balance (BREB) systems and a Class A Evaporation Pan.
- York University and TRCA have partnered with the Climate Consortium for Research Action and Integration (CC-RAI) to accelerate regional action on climate change by fostering high quality regional climate research, building capacity through training and acting as a catalyst for collaborative action. Recently, the TRCA/York University Evapotranspiration study was featured on the CC-RAI website titled "Where Does the Water Go? Evapotranspiration in Toronto" and can be found at <http://www.climateconsortium.ca>.
- Environment Canada has indicated that we need to partner on local climate change studies in preparation of 2015 Pan Am Games.

Training and Workshops

TRCA's Ecology Division is committed to the belief that both the transfer of knowledge and continuous education are critical elements in the effective management of our environmental resources. In addition to attending various training sessions, Watershed Monitoring and Reporting Section conducted several workshops for both internal and external participants. Six different courses were offered by in 2010.

- Terrestrial Volunteer Monitoring Seasonal Training was conducted during November/December 2009, March 2010, May 2010 and September 2010, with a total of 126 attendees.
- West Nile Virus Vector Mosquito Larvae Identification Course was conducted for 19 people (Durham, Hamilton and Halton Health Unit staff).
- Algae Bioassessment Protocol Sample Collection Training was conducted for nine TRCA staff members.
- TRCA Stream Flow Monitoring Course was held at the Albion Hills Conservation Area in June 2010.
- Class 2 Backpack Crew Leader Electrofishing Course was conducted for 20 people (6 internal, 14 external) in June 2010.
- Ontario Stream Assessment Protocol Training Course was held at Durham College in Oshawa in June 2010. The course was taught in conjunction with the Ontario Ministry of Natural Resources and Ontario Ministry of the Environment, as well as several other conservation authorities. TRCA was the course administrator and several staff led training sessions.

In addition, TRCA staff organized, hosted and made a number of presentations at the Greater Toronto Area Conservation Authorities Watershed Monitoring Forum in April 2010. Conservation authority staff gave presentations on local monitoring efforts. The forum was intended to help improve data sharing and to foster networking and collaboration amongst the various conservation authorities staff.

Source Water Protection

As a result of the tainted water tragedy in Walkerton in 2000, the Province of Ontario has recognized the need to protect our municipal drinking water at its source. The *Clean Water Act, 2006* establishes 19 Source Protection Regions (SPRs) throughout the province. These SPRs have been working on developing science-based policies to protect drinking water from current and future threats. In the GTA, the local Source Protection Region comprises three conservation authorities (called Source Protection Authorities or SPAs for the purpose of the program): (1) the Credit Valley Source Protection Authority (CVSPA), (2) the Toronto and Region Source Protection Authority (TRSPA), and (3) the Central Lake Ontario Source Protection Authority (CLOSPA). Together, they make up the CTC Source Protection Region (CTC SPR). The CTC SPR is represented by a group of 21 local stakeholders, plus chair, called the Source Protection Committee (SPC). As the lead Source Protection Authority, the TRSPA is responsible for ensuring that the CTC Source Protection Committee achieves its goals by providing technical and administrative support and budget management.

The CTC SPR is responsible for three deliverables to the province: (1) its Terms of Reference, completed in 2008 and approved in 2009; (2) the Assessment Report, which constitutes the technical assessment of the water sources of the region, including the enumeration of drinking water threats; and (3) the Source Protection Plan, which is the policy document that will outline how threats are to be managed and mitigated.

Preparation of Assessment Reports

The bulk of the work done in 2010 was the development, consultation on and submission of the three Assessment Reports (one for each Source Protection Area). The reports cover: watershed characterization, water budgets, delineation of areas vulnerable to contamination around drinking water sources, and enumeration of activities in these areas which may pose a threat to drinking water. The reports also included a number of peer-reviewed studies.

After being accepted by the Source Protection Committee, a four-month consultation process began. In the fall of 2010, over 16,000 landowners were notified that they lived in a vulnerable area near a drinking water source and 10 public meetings were held for the public to get more information. A magazine was published which summarizes the results of the Assessment Reports and is available by request to sourcewater@trca.on.ca.

In December 2010, after a second round of public consultation, the Assessment Reports for the three Source Protection Areas were submitted to the province and are awaiting approval.

Stormwater Management

Low Impact Development

Effective management of stormwater is critical to the continued health of our streams, rivers, lakes, fisheries and terrestrial habitats. The practice of managing stormwater is continuing to evolve as the science of watershed management and the understanding of our watersheds grow. TRCA has been involved in integrated watershed planning and monitoring activities for many years, and the results of this work have revealed that the health of a watershed declines with increasing urbanization. This deterioration has occurred despite widespread adoption of conventional stormwater management planning and design approaches that rely heavily on end-of-pipe practices, such as retention ponds. Watershed studies, such as TRCA's watershed plans for the Rouge (2007), Humber (2008) and Don (2009) rivers, have concluded that supplementing conventional stormwater management approaches with low impact development practices is essential to protect watershed health and improve resiliency to anticipated impacts of climate change.



In 2010, TRCA and the Credit Valley Conservation Authority finalized the *Low Impact Development Stormwater Management Planning and Design Guide (LID Guide)* and provided LID training to our municipal partners and the development industry. This internationally recognized document, the first of its kind in Ontario, contributes to the further evolution of stormwater management locally and globally. The *LID Guide* is a tool to help developers, consultants, municipalities and landowners understand and implement more sustainable stormwater practices in TRCA's watersheds. The guide provides information and direction to assist engineers, ecologists, landscape architects and planners in landscape-based stormwater management planning and in the selection, design and construction of sustainable stormwater practices, such as greenroofs, bioretention, permeable pavement and rainwater harvesting. In addition to providing design guidance on innovative structural stormwater management practices, the *LID Guide* provides planning and site design strategies aimed at reducing runoff and preventing pollution. It also includes 11 fact sheet posters covering structural and non-structural low impact development practices that distill the detailed guidance provided in the chapters into a quick reference format. Electronic copies of the guide can be downloaded from TRCA's Sustainable Technologies Evaluation Program website, www.sustainabletechnologies.ca

Flood Management

Flooding is the leading cause of public emergencies in Ontario. The Ministry of Natural Resources and Ontario municipalities have a statutory obligation to respond to and manage flooding. Conservation authorities have been delegated flood management responsibilities at a watershed scale throughout most of southern Ontario and, where they exist, in northern Ontario.

Several severe flood events were experienced around the globe in 2010, resulting in devastating social and environmental impacts. The tragedies experienced in Pakistan, Australia and closer to home on Canada's East Coast (during Hurricane Earl) remind us of the power of water and the need for everyone to be prepared. In Ontario, we have taken the lessons learned from 1954's Hurricane Hazel and implemented policies to greatly reduce the risk to life and property due to flooding. However, we are not immune to flood risk in our jurisdiction, and TRCA continues to ensure community safety and resilience to flooding. The core function of TRCA's Flood Management Service is to protect the public from loss of life and property due to riverine flooding.

Flood Risk Management

We are continually advancing the program to meet the needs of our unique urbanized jurisdiction, which has a population of over five million people. Currently, there are close to 8,000 structures at risk due to flooding across TRCA's nine watersheds. This translates to over 36,000 people at risk and \$3.1 billion dollars in potential flood damages, not including potential damage to public infrastructure.



In contrast to global events, 2010 was a quiet year in TRCA's jurisdiction in terms of flooding. Although we experienced many rainfall events, they generally did not cause the rivers to overtop their banks and cause flooding. We issued only seven High Water Safety Bulletins in 2010: one in April, three in June, one in July and two in November. There were no Flood Advisories or Flood Warnings issued in 2010. During an average year, TRCA issues approximately 20 flood messages. June was a month of particular interest, as we measured precipitation amounts that were 150 per cent higher than expected.

In 2010, we held our second annual "Floods Happen: Are you ready?" workshop for our municipal partners. The need to address urban flooding issues, as well as riverine flooding, was a key outcome of the workshop. Through initiatives such as this workshop, TRCA is reinforcing our partnerships with municipal Emergency Management Offices to ensure effective and efficient operations during flood events. We also reached out to academic institutions and contributed to York University's Disaster and Emergency Management program in 2010 – a partnership that we hope to expand in future years.

Flood Protection and Remedial Capital Works Strategy

There are several ways to reduce flood risk: policies help to keep new development out of the floodplain; emergency management and planning can reduce response times to reach people in flood-prone areas; and education helps to inform people about how to protect themselves during a flood. Perhaps the most effective method to reduce flood risk is to actually change the way water flows. The flood protection and remedial capital works strategy is TRCA's long term plan for undertaking such works. Through the development of the strategy, we have identified 44 "Flood Vulnerable Area Clusters," or areas where there are high concentrations of flood vulnerable structure and/or roads. Due to their location, some clusters may always be at some risk of flooding (e.g., areas with limited land to construct flood control infrastructure). However, it may be possible to remove the risk, or at least reduce the risk.

Flood Infrastructure

TRCA's Flood Infrastructure Group maintains four large flood control dams, six small dams, 16 flood control channels and several other structures (berms and dykes). As such, asset management is the main priority of this group. Asset management consists of delivering an annual program of work that involves long term planning, inspection and maintenance on the ground. All work must be carried out in an efficient, cost effective, safe and environmentally-friendly manner. Another responsibility of the team is to react to non-planned and emergency asset maintenance work. The team also works with the flood risk management group in the planning, programming and building of future improvement schemes (flood protection and capital works projects). Several Flood Infrastructure projects of note were undertaken in 2010, including the following.



- At the G. Ross Lord Dam, dredging of both the low flow and emergency spillways was completed. The transfer switch at G. Ross Lord Dam, which is a critical component of the emergency electrical system, was also replaced. These projects were part of the on going maintenance of G. Ross Lord Dam, one of two major dams in TRCA's jurisdiction.
- TRCA's standard practice is to undertake Dam Safety Reviews (DSRs) for all dams within our jurisdiction. A DSR investigates the current condition of the dam and outlines the repairs needed to ensure the structure meets current dam safety guidelines. In 2010, the DSR for Secord Dam was completed.
- An assessment of the Yonge/York Mills Flood Control Channel was completed in 2010. The report documents the condition of the existing channel and outlines the work required to restore the channel to its original capacity. Construction will begin in 2011.

TRCA's flood control infrastructure requires on going maintenance, repair and replacement to operate effectively and safely. A recent economic study by Conservation Ontario, *Protecting People and Property: a business case for investing in flood prevention and control, 2009*, estimated that a three-fold increase, province wide, in current funding levels is required to meet our current obligations for maintaining flood infrastructure. With aging infrastructure and an

increasing population (resulting in higher risk levels), TRCA is working closely with our partners to ensure a sustainable long term program for flood control asset management.

Hydrometrics and Data Management

TRCA maintains and operates over 120 gauging stations, measuring stream flow, precipitation, snow pack, baseflow, water quality and climate. The various networks produce more than 5,000 individual measurements on a daily basis. The chief objective of the Data Management Team is to provide staff, the public and stakeholders easy and timely access to accurate information, analysis and data. In 2010, this group contributed to the surface water hydrology assessment and analysis for Source Water Protection, modelling for Sustainable Neighbourhood Retrofit Action Plan (SNAP) projects, and the development of data management tracking systems for various initiatives. Of note, a collaborative project with the GTA Flood Group was initiated in 2010 to develop a state-of-the-art system for documenting flood events.



In addition to conducting annual maintenance and operation of our extensive gauging network, the Hydrometric Group increased TRCA's ability to collect precipitation data year round through the installation of three new four-season precipitation gauges. Several other technologies were employed in 2010 to enhance our current knowledge and flood forecasting/warning capabilities. These included installation of a new real-time video camera on the lower Don River, real-time water temperature sensors at McFall's Dam (Bolton), and a water quality conductivity sensor at the mouth of Lake Ontario.

TRCA expertise was also extended to other jurisdictions. In 2010, we assisted the Credit Valley Conservation Authority establish real-time gauging networks in its area (Fletcher's Creek and Cooksville Creek). We also reached out to the academic community and continued to provide technical assistance to Guelph University and York University with respect to their meteorological programs.

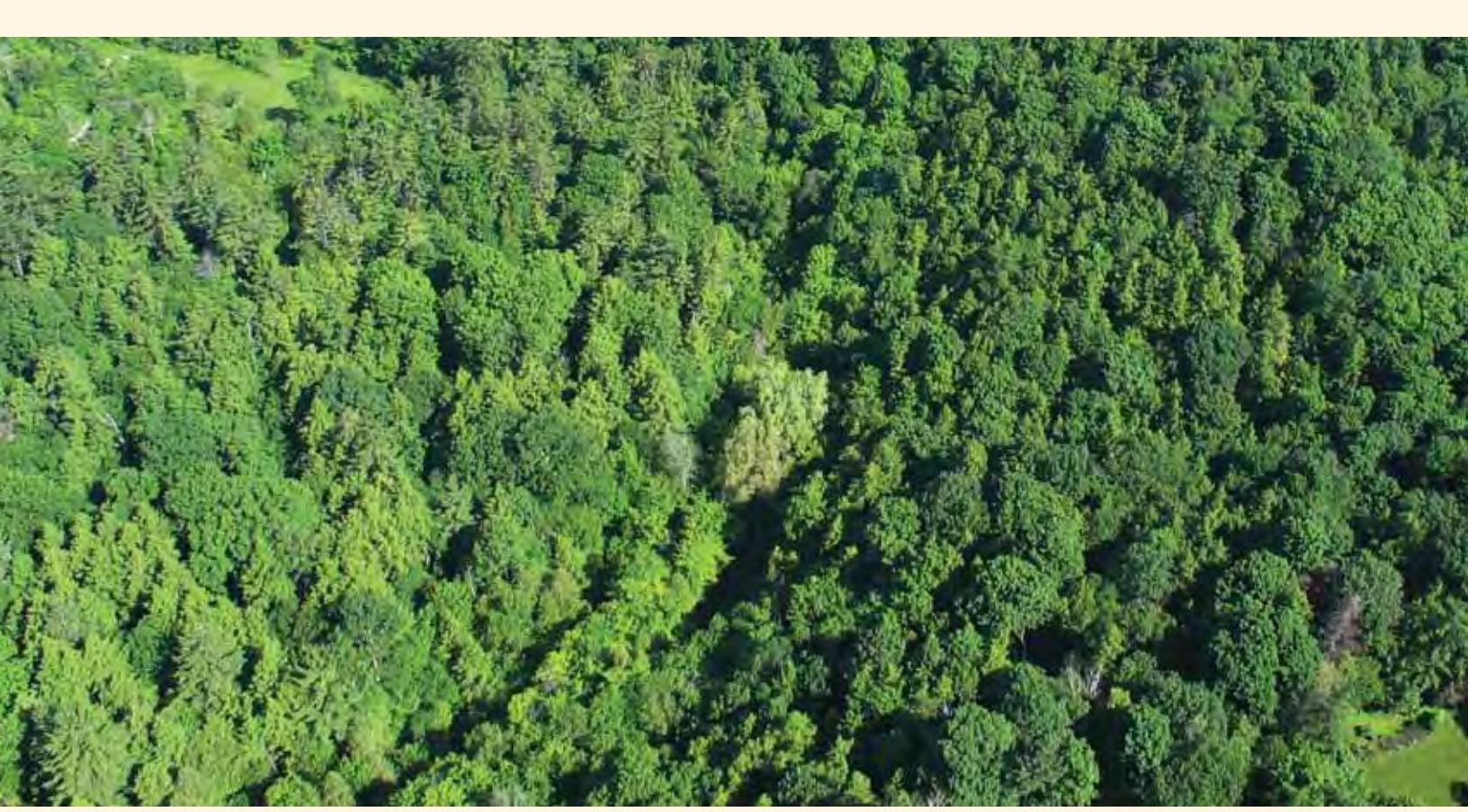
Climate Change Vulnerability Assessment

It is now accepted that climate change may profoundly affect the climate and weather of the Greater Toronto Area. Expected changes include an increase in extreme weather events, such as thunderstorms and tornadoes. We also expect changes to the day-to-day and seasonal patterns of temperature and precipitation — like frost, drought and heat waves — that affect people, the natural environment and the infrastructure on which we rely. TRCA flood control infrastructure and, in particular, its flood control dams may be particularly vulnerable to climate change. Increases in extreme weather could severely test the ability of the dams by requiring them to control more frequent and larger floods, while seasonal changes outside of design ranges could stress structural, mechanical and electronic systems. Such risks must be managed as these dams provide critical protection to people and property along the rivers downstream.

Beginning in 2009 and completed in 2010, TRCA conducted a climate change vulnerability assessment on the G. Ross Lord and Claireville flood control dams using the Public Infrastructure Engineering Vulnerability Committee (PIEVC) protocol. The PIEVC protocol was developed by Engineers Canada as part of the federal government's climate change response program to assess the vulnerability of public infrastructure across the country; the TRCA assessment was the first application of the PIEVC approach to flood control dams. The assessment, which was supported by experts at Engineers Canada, Environment Canada and other agencies, generally found that the G. Ross Lord and Claireville dams were resilient to the climate change impacts that are currently expected for the GTA. However, this resilience is, in large part, due to the quality of the TRCA inspection and maintenance programs. This conclusion highlights the need to maintain and increase funding in the inspection and maintenance area as the dams age through the last half of their design lives. Other recommendations included the need to revisit the assessment as climate science evolves, which could cause future climate predictions for the GTA to change significantly.

TRCA study has been acclaimed by Engineers Canada and others, not only for the quality of its results and recommendations, but also for the useful information it provides to the owners of similar infrastructure across the country who want to prepare for climate change.

TRCA's Floodline Mapping Program currently maintains 457 mapsheets, adding 25 new mapsheets in 2010.



REGIONAL BIODIVERSITY

Conservation Lands

Conservation Land Care – Peel and York Regions

Sustaining The Living City® requires a commitment to the environmental principles of respect, protect and regenerate. This commitment is critical to ensuring the future health of our communities and to maintaining TRCA as one of the premier providers of publicly accessible greenspace in the Greater Toronto Area (GTA). Proper planning, care and management of our greenlands support The Living City® vision and its objectives. TRCA is creating and implementing a comprehensive and integrated land care program that establishes the best possible care. In doing so, TRCA will reduce the risk from hazard trees, deter encroachments and discourage vandalism, dumping, poaching and trespassing. Best land and asset management practices will be utilized to provide a safe environment for the public while, at the same time, enhancing the visitor experience and protecting the environment.

The program is comprised of land management and master plans to guide future land use practices, baseline inventory and annual audits of conservation lands in Peel and York regions, and a database to house the data collected in the field.

Areas of Focus in 2010	
Claireville Conservation Area Management Plan Update	The conceptual inter-regional trail alignment has been confirmed. The final draft has received endorsement from the City of Brampton and the Humber Watershed Alliance. One public meeting was held. The City of Brampton provided financial contribution for inter-regional trail construction
Oak Ridges Corridor Park East Management Plan	The management zones, recommendations and trail plan were finalized, and the draft plan was completed. Three public advisory committee meetings and two general public meetings were held.
Bolton Resource Management Tract Plan	One Advisory Committee meeting was held (including confirmation of the management zones), plus one Trail Subcommittee meeting and one public meeting. The vision statement, goals, management principles, and management zones were confirmed. Development of the trail plan, including scoping of options for a cycling trail and re-routes that result from the development of the Bolton Arterial Road, continued in 2010. A trail user survey was initiated.
High Efficiency Trail Assessment Process	Fifty kilometres of trails were assessed to identify areas of concerns for persons with disabilities. This information will help TRCA identify locations for trail enhancements that will allow the trail to meet the Built Environment Standard of the <i>Accessibility for Ontarians with Disabilities Act, 2005</i> . It will also be posted on signs to provide detailed trail characteristics for the trail users.
TRCA Standards and Guidelines for Trails in Natural Areas	One meeting with partner trail groups and one Technical Advisory Committee meeting were held. Trail design guidelines were drafted, refinements for trail classification system were proposed, and accessible design requirements were reviewed.
Land Asset Inventory and Audit Program in Peel and York	A total of 15 properties and 25 kilometres of property fencing were inventoried. Approximately 110 kilometres of trails were mapped. Visitor/user surveys were conducted at two properties. The Conservation Lands and TRCA Work Order databases were finalized and began operation.
Education and Enforcement	Public stewardship information documents were prepared and circulated in all regions. A Natural Neighbours Public Information Session was held for the Heart Lake community, and 25 members of the public attended.

Palgrave Forest and Wildlife Area Trail Plan

TRCA is preparing a Trail Plan for the Palgrave Forest and Wildlife Area, a popular recreation destination on the Oak Ridges Moraine; the Trail Plan Advisory Committee has worked with TRCA to develop a preferred trail plan for the property. During 2010, two Palgrave Trail Stewards Committee meetings, two trail building events and one community stewardship event were held. Some 260 metres of re routed new trail was created, while 50 metres of unsustainable trail was closed. Other activities undertaken in 2010 included:

- installing one secondary trail head kiosk at Duffy's Lane;
- installing 27 numbered way finding post markers;
- enhancing trails with way finding signs;
- designing a parking lot at Finnerty Sideroad;
- constructing or repairing 28 metres of boardwalk;
- resurfacing 170 metres of trail with aggregate;
- planting 50 bare-root shrubs along decommissioned trails; and
- clearing over five kilometres of trail with a "bushhog" mower.



CLAIREVILLE CONSERVATION AREA:

Welcome back to the largest natural greenspace in Brampton

On May 25, 2010, TRCA officially reopened Claireville Conservation Area, a 838-hectare property on the boundaries of Brampton, Toronto, Vaughan and Mississauga. The conservation area, the largest natural greenspace in Brampton, was closed to vehicles and active recreational programming in the mid-1990s. In the past year, improvements have been made to make visitors feel welcome, to stop by and walk in for a visit, and to enjoy its natural and cultural heritage features.

Left to right: Vicky Dhillon Councillor, John Willets Friends of Claireville, Grubax Malhi Former MP, Gerri Lynn O'Connor Chair TRCA



"We're pleased to once again encourage the public to visit this beautiful area. As the surrounding communities continue to grow, having publicly accessible greenspace like this for people to enjoy is important not only as a place for recreational use, but to help people connect to their environment," said Gerri Lynn O'Connor, TRCA Chair. "What you'll find at Claireville Conservation Area is the closest thing to a near urban wilderness experience in the GTA. We hope everyone comes out to visit, enjoy and help to look after this local treasure."

Joining Gerri Lynn O'Connor at the grand reopening was John Sprovieri (Brampton City and Peel Regional Councillor), John Willets (President, Friends of Claireville) as well as staff from TRCA, Peel Region, the City of Brampton and local residents. Called a "secret retreat" in a Toronto Star feature story, Claireville Conservation Area boasts outstanding opportunities for canoeing, bird watching,

fishing, leashed dog walking, hiking and horseback riding. Visitors will encounter dozens of plant and animal species — including deer, waterfowl and a wide variety of song birds — while hiking through a variety of natural landscapes from wetlands to meadows to forests. Visitors can also visit the Wiley Concrete Bowstring Bridge (c. 1924) that is listed as a heritage structure under the Ontario Heritage Act.

Recent improvements include over 150 hectares of habitat restoration and enhancement, annual community plantings and clean-ups, improved signage and parking, the McVean new farmers project and the designation of the rare double English wheat barn off McVean Drive as a heritage resource by the City of Brampton. Soon to be completed will be a multi-use trail that will extend north from the City of Toronto to Brampton, and ultimately to the Town of Caledon.

East Duffins Creek Headwaters and Altona Forest Community Outreach

TRCA manages environmental lands by generating local support, increasing outreach, and developing and implementing projects with the input of the surrounding community. During 2010, three newsletters were published and distributed to over 1,000 people around the East Duffins Creek Headwaters, and five Public Stewardship meetings and two public events were held for local residents. To support the Altona Forest Community Outreach program, one newsletter was distributed to over 2,000 people around Altona Forest. In addition, four Public Stewardship meetings and one public event was held in 2010.

Acquisitions 2010

In 2010, TRCA acquired 155 hectares (383 acres) of ecologically significant land through acquisitions and easements. The 2010 purchases bring the total lands secured by TRCA to 16,774 hectares (41,449 acres) in the watersheds of the Toronto Region, making us one of the largest landowners in the GTA. Significant acquisitions in 2010 include the following.

- The 2.4-hectare (5.9 acres) Heathercrest Park was purchased from the Toronto District School Board with the support and assistance of a local community group. The property is located in the City of Toronto and contains a renaturalizing drainage feature that drains to the Mimico Creek valley. It also contains a one-hectare wood lot containing a large number of mature native trees, notably shagbark hickory, which is of regional conservation concern. The City of Toronto, through its Source Water Protection Reserve Fund, provided the funding for this purchase.
- The 10.5-hectare (25.9 acres) former Hingston property was purchased. The property falls within the Natural Core Area of the Oak Ridges Moraine Conservation Plan, within the Uxbridge Kames Area of Natural and Scientific Interest. It is also part of the Uxbridge Forest Environmentally Significant Area, in the Duffin's Creek watershed, Township of Uxbridge. The Region of Durham and the Ontario Heritage Trust provided a portion of the funding for this purchase.
- The 27.5-hectare (67.9 acres) former Runnymede property located in Rouge Park, in the City of Toronto, was purchased. This significant property is adjacent to TRCA lands and is one of the last remaining large privately owned parcels in the Rouge Park south of Steeles Avenue. The City of Toronto, through its Source Water Protection Reserve Fund, provided the funding for this purchase.
- A 2.4-hectare (6 acres) property was purchased in the Humber River watershed, in the Town of Caledon. This purchase was the rear portion of privately owned property and is located in the Speerville Wetland Complex, Lake Simcoe Sub-Lobe Drumlins Area of Natural and Scientific Interest and the Sleswick Complex Environmentally Significant Area. The Region of Peel provided a portion of the funding for this purchase.
- The 0.14-hectare (0.34 acre) former Love property located at 447 Albion Road, along the Humber River in the City of Toronto, was purchased. The property abuts TRCA lands on three sides and is one of the few remaining privately owned properties located in the flood plain in this area. The City of Toronto, through its Source Water Protection Reserve Fund, provided the funding for this purchase.

New Partner in Land Acquisition

The Nature Conservancy of Canada (NCC) has been conserving ecologically significant lands since 1962, while TRCA has been in the same business since its formation in 1957. However, our two agencies had not partnered on the purchase of a property until the acquisition of the Humber Source Woods in 2010. This ecologically significant 22-hectare (54 acres) property purchased from the Love/McEvenue family falls within

Cooperative efforts are rewarded. In 2010, the Altona Forest Stewardship Committee and TRCA received the Durham Region Environmental Award for their enhanced environmental management and stewardship of greenspace in the region.

the Natural Core Area of the Oak Ridges Moraine Plan and is partially located within the Happy Valley Forest Area of Natural and Scientific Interest, in the Humber River watershed, Township of King. TRCA was able to bring City of Toronto's Source Water Protection Reserve funding to the transaction and NCC brought money from the Government of Canada's Natural Areas Conservation fund, the provincial government, the Regional Municipality of York and private funding.

Natural Heritage

Urban Forest

The urban forest is vital natural infrastructure that provides multiple benefits and services to the communities in TRCA's jurisdiction. By protecting and enhancing the urban forest, TRCA and its partners are simultaneously improving local air quality, reducing stormwater runoff, mitigating the effects of local and global climate change, and increasing urban biodiversity.

In partnership with the regional municipalities of Peel and York, the area municipalities of Mississauga, Brampton, Caledon, Vaughan, Markham, Richmond Hill, Pickering and Ajax, and Credit Valley Conservation, TRCA is conducting urban forest studies across our jurisdiction. The City of Toronto has led its own concurrent urban forest study in consultation with TRCA and the aforementioned study partners. The studies have measured the distribution, structure and function of the urban forest, and have provided baselines for future research and monitoring. TRCA is developing Technical Study Reports and Regional Strategies, in addition to facilitating stakeholder workshops and coordinating public consultation. Ultimately, these studies will support the development of Urban Forest Management Plans that will assist the study partners in fulfilling multiple social, environmental and economic objectives through urban forest management. Through TRCA's coordinating efforts, all study partners and municipalities have used the same methods and tools of analysis, which will allow for comparisons between municipalities, regional target setting, and potentially a regional urban forest strategy for the Greater Toronto Area. This standardized and collaborative approach to strategic urban forest management will represent the largest of its kind in the world, and will continue to allow the study partners to pool resources and funding, share knowledge and expertise, and build a common understanding of the value of the urban forest.

Preliminary results indicate that the distribution of the urban forest ranges widely across TRCA's jurisdiction and is strongly influenced by land use patterns. Canopy cover and leaf area density statistics are presented in the accompanying table. Across all study areas the largest proportion of existing tree cover is located in the residential land use category. The greatest opportunity to increase tree cover (i.e., the available plantable space) is most commonly found in the residential land use category, which suggests that homeowners and tenants are the most important stewards of the urban forest.

Urban forest cover for municipalities, 2010			
Study Area	Canopy Cover ¹	Total Leaf Area (km ²)	Leaf Area Density ²
Mississauga	19%	254	0.9
Brampton	15%	179	0.7
Toronto	20%	1,015	1.6
Pickering	26%	88	1.9
Ajax	18%	98	1.5
Vaughan	20%	337	1.2
Markham	19%	213	1.0

1. Canopy cover is the percentage of a study area that is covered by tree canopies.

2. Leaf area density is the total upper leaf surface area of all trees in a given area, divided by total land area of the study area in question. As leaf area density increases, so do the benefits to the community (e.g., air pollution removal).

The proportion of large, mature trees is low across all study areas. As urban trees increase in size, their environmental, social and economic benefits increase as well. In Brampton, a tree that is 65 cm in diameter stores approximately 10 times more carbon and removes 75 times more air pollution than a tree that is only 11 cm in diameter.

The results confirm that urban trees have a measurable impact on air quality in our jurisdiction. For example, annual sulphur dioxide (SO_2) removal by trees in Mississauga is equal to the amount of SO_2 emitted annually by 19,100 automobiles. In Brampton, trees remove nearly 60 tonnes of particulate matter less than 10 microns in size (PM_{10}) each year, which is equal to annual PM_{10} emissions from 170,700 automobiles. Of the five air pollutants measured, trees are found to have the largest impact on ground-level ozone (O_3); ozone is the primary component of photochemical smog and is known to irritate and damage human respiratory systems, reduce lung function and increase susceptibility to respiratory infections.

Trees also provide energy savings to residents by shading homes in the summer and blocking cold winter winds. In the urbanized study areas of Peel Region, trees provide approximately \$2.4 million annually in energy savings for residential heating and cooling; in the City of Toronto, urban trees provide \$9.7 million annually in savings.

Redside Dace Research

Redside dace is a minnow species that was listed as endangered in 2009 under the provincial *Endangered Species Act, 2007*. Planning and managing for the continued presence and recovery of this species is a complex and important issue for TRCA. TRCA, in partnership with the University of Toronto and Ministry of Natural Resources, have initiated redside dace research and stewardship projects with a focus on the Rouge River. In 2010, TRCA received full funding from the provincial Species at Risk Stewardship Fund to study how stormwater flows are affecting redside dace in the Upper West Rouge River, a catchment that was undergoing active land use change. Although this work was not undertaken in 2010, MNR is very supportive of the study concept and will look for opportunities to advance it in 2011.

Climate Change Risk Assessment

In 2010, TRCA with assistance from Beacon Environmental produced a report titled *Climate Change: Implications for Natural Systems and Biodiversity*, in which a risk assessment framework was developed that looks at the vulnerability of various natural system indicators to an increase in temperature and precipitation. The framework is to be a living document or tool that is refined through use and feedback from, initially, the suite of stakeholders that have contributed to this project, including municipal planners, federal and provincial agencies, and academics. The report and risk assessment framework have received much interest and will be applied by TRCA, in collaboration with partner municipalities and universities, to investigate the potential impacts of climate change on the ecosystems of TRCA watersheds, beginning with studies of urban forests and coldwater fisheries in 2011 and 2012.

Road Ecology

Roads are one of the single greatest threats to the health of terrestrial natural systems and biodiversity within southern Ontario. Roads impact natural systems in many ways, including: the creation of barriers to wildlife movement, the removal and fragmentation of habitat, vehicle/wildlife collisions and pollution. Aside from impacting the terrestrial ecosystem, roads have a significant impact on water resources, stream morphology and aquatic systems. These impacts result in lost ecological function, diversity and resiliency — ultimately leading to a reduced capacity to provide vital services, such as clean air and clean water.

There are numerous initiatives that can be taken to reduce the ecological impacts of roads. The strategic location of new roads, eco-passages, fencing, traffic calming/diverting measures and



Redside dace



signage are examples of effective mitigation methods. Awareness and education are also key to reducing impacts and protecting wildlife. TRCA moved forward on numerous initiatives in 2010 to help address this important issue.

TRCA sits on the Board of Directors of the Ontario Road Ecology Group (OREG), an organization championed by Toronto Zoo and comprised of scientists, educators and transportation planners. The goal of OREG is to raise awareness about the ecological threats roads pose and to research and apply solutions. OREG was very active in 2010, completing a road ecology resource manual entitled *A Guide to Road Ecology in Ontario*.

TRCA initiated a study in Peel Region, funded by the regional municipality, to improve our understanding of road impacts and identify solutions to reduce the threats. There are two components of this project. The first is to identify strategic locations within Peel Region where mitigation solutions would have the greatest positive benefit to wildlife connectivity. The second is to evaluate different mitigation measures that can be applied. Work in 2010 consisted of establishing a partnership between TRCA, Peel Region, OREG and neighbouring conservation authorities, and scoping work to be undertaken in 2011 and beyond.

TRCA initiated mitigation projects at locations across the TRCA jurisdiction, including the following.

- In a joint project with OREG and the City of Brampton, municipal staff installed turtle crossing signs along the section of Heart Lake Road adjacent to the Heart Lake Conservation Area main entrance. Local volunteers were recruited to patrol and monitor this roadkill hotspot.
- Another roadkill hotspot was identified at the base of Leslie Street Spit in Tommy Thompson Park where more than 100 snakes — mostly Dekay's Brownsnakes — have been found dead on a 400-metre stretch of road at the park entrance. Temporary signage was installed and more permanent mitigation measures will be investigated in 2011.
- In the north of the TRCA jurisdiction, roadkill mitigation was implemented at a known road-crossing for the endangered Jefferson salamander. A 300-metre drift-fence was installed along the north side of the road and the section of road was monitored closely for several nights in the spring of 2010; any salamanders found were transferred to the far side of the road in the vicinity of their breeding pond. More permanent mitigation measures will be applied when funding becomes available.

Habitat Restoration

Valley and Shoreline Erosion Monitoring & Maintenance

One of the founding mandates of conservation authorities is the protection of life and property from the hazards of erosion. To this end, TRCA has amassed a wealth of experience in the protection and restoration of lands threatened by riverine and shoreline erosion. Recognizing this expertise, TRCA annually assists many different stakeholders with complex sites that require a long term solution to erosion and/or instability in a manner which preserves the ecological integrity of our valleys and shorelines. These partnerships promote erosion protection, while ensuring that the work is done in an environmentally sensitive manner.

Where feasible, Restoration Services is replacing traditional erosion protection with more sustainable, ecologically appropriate methods. Traditional measures typically involve the use of hard armouring that lack habitat value, look unnatural and often transpose erosion problems downstream. Bioengineering involves using natural materials to stabilize areas vulnerable to erosion and/or instability.

For example, the original erosion control armourstone on German Mills Creek near Leslie Street and Steeles Avenue in the City of Toronto had failed and slumped into the watercourse. This

material was removed and replaced with a sloped treatment of natural river stone mixed with hearty, native willows from TRCA's own nursery. Within months, vigorous new growth had almost completely obscured the river stone material, resulting in a very natural appearance that also provides shade and cover for fish and small foraging animals near the water's edge.

In recent years, TRCA has fostered partnerships with many municipal partners to work on collaborative erosion prevention and restoration projects throughout TRCA's jurisdiction. These partnerships promote finding common ground through the alignment of priorities and the pooling of funding to address restoration in a holistic manner so that multiple objectives can be achieved under a single project.

Watercourse Inventories

In 2010, Restoration Services staff inventoried more than 20 kilometres of watercourse (along Mimico Creek) adding thousands of structures to its database and providing valuable insight into the condition of the watershed from a stability perspective. This dataset is unique in that it is not limited by structure type (e.g., listing fish barriers only) or by ownership (e.g., TRCA structures only). This dataset encompasses all structures that affect (or that may be affected by) a given waterbody. This unique perspective on data collection helps identify complementary priorities, reduces disturbances to the natural environment through reduced construction, and makes the most efficient use of available funding through the pooling of resources.

Aquatic Habitat Toronto

Aquatic Habitat Toronto (AHT) is a unique multi-partner committee, consisting of members from all three levels of government, which is working collaboratively to enact the *Toronto Waterfront Aquatic Habitat Rehabilitation Strategy*. In 2010, AHT focused on scientific research to inform and validate the restoration prescriptions outlined in the Strategy. Through a partnership with Fisheries and Oceans Canada, Carleton University, Environment Canada, TRCA and with input from the City of Toronto, Ontario Ministry of Natural Resources and Waterfront Toronto, AHT was able to implement a multi-year acoustic fish tagging project. This project is the first of its kind in Lake Ontario and the data collected will be critical to future fish habitat remediation and construction projects throughout the Great Lakes basin.

In 2010, researchers tagged 51 fish in Toronto Harbour and deployed 24 receivers that received over 500,000 fish detections in the first two months of deployment. Habitat usage by fish and fish movement is being monitored throughout the year and is already yielding valuable insights. For example, researchers have discovered that warm water fish require habitat sufficiently isolated from the cooling effect of the lake to allow them to grow large enough to survive their first winter; this kind of overwinter data is unique as overwinter habitat usage is rarely collected or studied. The data collected will inform future restoration decisions.

In 2010, AHT also spearheaded the theoretical outline for the development of a habitat bank, the only project of its kind in Lake Ontario. (A habitat bank is a method of compensation for loss of habitat in one area to increase protection or restoration in another). Working with all the members of our partnership and with significant input from the University of Toronto, the habitat bank being created in the Toronto waterfront has the potential to shape the future of fisheries authorizations in the Toronto area. It will reduce a lot of the uncertainty and risk around habitat compensation and will ensure that habitat creation and restoration projects are all working towards a common strategy.

Chinguacousy Pond Naturalization Project, Brampton

TRCA, in consultation with the City of Brampton, undertook design and construction activities to naturalize the shoreline of the Chinguacousy ponds and provide water access/fishing nodes for the general public. Prior to the construction work, much of the shoreline of both ponds was in a state of severe decline, with a lack of riparian or nearshore aquatic habitat and supporting



plant material. In addition, large populations of migratory waterfowl were adding substantial amounts of nitrous and organic matter to the slow-flowing ponds, while their overgrazing degraded the bank stability.

The project restored the shoreline to a more natural state, while increasing shoreline stability and the viability of the adjacent slope. Native terrestrial and submergent/emergent wetland plants were re-established in and around the newly contoured banks, and a turtle nesting habitat was created on the island in the south pond. In addition, sediment controls were undertaken and the water control structure retrofitted. The naturalized shoreline was integrated with public access nodes and lookouts at predetermined intervals along the banks, which will, in the future, accommodate a floating dock. The project has benefited the fish community, as well as improving both the recreational value and water quality of the ponds.

Controlling Giant Hogweed

In July 2010, the spread of giant hogweed — an invasive and non-native plant — into the TRCA jurisdiction received extensive local and national attention. The plant is significant in terms of both the danger it poses to public health and to the local ecology. Originally native to eastern Europe and western Asia, the giant hogweed is a very large plant that prefers moist areas and will outcompete native species for light and space. If the plant's toxic sap touches bare skin, it causes sensitivity to sunlight that can result in a painful burn within 15 minutes of exposure; depending on the individual, the effect can last for months or years. TRCA immediately addressed public safety and environmental concerns by:

- developing a fact sheet posted on the TRCA website;
- controlling and tracking the plant, in partnership with municipalities and the provincial Invasive Species Awareness Program;
- preparing best practices for TRCA staff to ensure their health and safety;
- participating in working groups; and
- handling over 20 media inquiries, with staff interviews featured on several national news programs.

Staff will continue to participate in giant hogweed control and public education activities in 2011, including hosting a workshop for our partner municipalities.

Greenwood Stream Restoration

An old pedestrian bridge across Duffins Creek in Greenwood Conservation Area was failing, causing severe erosion of both the upstream and downstream banks. In addition, excessive foot traffic had damaged riparian vegetation, limiting valuable fish habitat and contributing to bank instability. Bridge removal and restoration of the stream was necessary to improve water quality, minimize erosion, and improve fish and wildlife habitat, while addressing public safety concerns.

Restoration work included: replacing the pedestrian bridge, removing old gabion abutments, installing new abutments away from the stream bank edge, restoring the stream bank, bioengineering, re-establishing in-water structural habitat and vegetation, and building a proper trail system. Fish habitat enhancements included root wads, log cribbing, riparian vegetation and instream structural habitat. A total of 130 metres of stream was restored and 0.8 hectares (2 acres) of riparian area re-vegetated. The installation of signage and planting events have also increased public awareness of the importance of riparian and river systems.

TRCA worked closely with the Town of Ajax to improve Greenwood Conservation Area. This work was completed as part of the Atlantic Salmon Program, in partnership between TRCA and the Ontario Federation of Anglers and Hunters, to restore this section of stream bank to a natural condition.



Greenwood stream bank bridge volunteers planting

International Association for Great Lakes Research

The International Association for Great Lakes Research (IAGLR) is a scientific organization made up of researchers studying the Great Lakes, other large lakes of the world and their watersheds. TRCA had a strong presence at the IAGLR conference held at the University of Toronto in May 2010. TRCA led an enthusiastic troop of conference attendees on a tour of Tommy Thompson Park (TTP), complete with electrofishing, habitat restoration demonstrations and colonial waterbird interpretation. They also led an eager bunch of conference birders on a hike through TTP with observations of warbling vireos, northern parulas, yellow warblers, yellow-rumped warblers and an eastern meadowlark, to name a few. The hike culminated with bird banding demonstrations (and even better looks at Wilson's warblers) at the TTP Bird Research Station.

TRCA presented papers on: Canada goose management in the GTA, cormorant management at TTP, the rehabilitation of Duffins Creek Corner Marsh, habitat restoration and adaptive management at TTP, and integrated management and restoration on the Toronto waterfront. TRCA also presented posters on: restoration opportunities planning, the TTP Bird Research Station, environmental monitoring supporting Aquatic Habitat Toronto, and wildlife deformities and reproductive problems in colonial waterbirds in the Toronto Area of Concern.

Waterfront Monitoring



For more than 20 years, TRCA has been monitoring the fish and benthic invertebrate communities, water and sediment quality and the aquatic vegetation of the Toronto waterfront. The data collected is invaluable both in the implementation of waterfront projects and in the understanding of the Toronto waterfront aquatic ecosystem.

Our waterfront monitoring is undertaken in partnership with the City of Toronto, Fisheries and Oceans Canada and the Ontario Ministry of Natural Resources. By sharing resources and expertise, we are able to achieve a holistic monitoring program. The information collected also is used by our provincial and federal partners in the overall management of Lake Ontario. Programs undertaken in 2010 include the following.

- **Lake Bottom Trawling**, undertaken jointly with Fisheries and Oceans Canada, has helped gather additional knowledge of the Toronto waterfront fish community.
- **Near Shore Community Index Netting**, undertaken with the Ontario Ministry of Natural Resources, samples an offshore fish community that TRCA has not previously collected. The

In 2010, a total of 252,113 native trees, shrubs and aquatic/herbaceous plants were planted within TRCA's watersheds. An additional 1,973 plants were supplied to other Greater Toronto Area conservation authorities and partnering NGOs for planting within their respective watersheds.

data collected is analyzed by MNR and compared with other regions to understand how the Toronto nearshore fish community compares to other areas in Lake Ontario.

- **Family Fishing Weekends**, held in conjunction with the City of Toronto and the Ontario Ministry of Natural Resources, educate the public on the types of fish and recreational fishing opportunities that can be found along the Toronto waterfront.

During the 2010 waterfront monitoring program, we caught several American eels, a species that is being considered for listing under Canada's *Species at Risk Act*. An Atlantic salmon was also caught at Port Union, indicating the extensive restoration initiative undertaken there has produced a functional habitat capable of attracting and supporting rare and important fish species.

Restoration and Environmental Monitoring Projects by Watershed 2010							
Watershed	Wetland creation & enhancement (ha)	Wetland buffer plantings (ha)	Riparian plantings (ha)	Tree and shrub plantings (ha)	Stream/shoreline restored (m)	Aquatic plants (units)	Meadow enhancement (ha)
Etobicoke-Mimico	2	0	0.6	0	5	1,080	0
Humber	6	2.8	12.59	5.3	1,560	20,168	1
Don	0	0	0	1.6	0	1,000	0
Rouge	3.75	0.23	0.1	1.2	90	0	12
Duffins-Carruthers	1.6	0	3.3	2.6	390	1,200	0
Waterfront	3	2.76	1	0	1,000	15,790	0.1
Total	16.35	5.79	17.59	10.7	3,045	39,238	13.1

In addition, numerous Best Management Practices (BMP) techniques were implemented throughout TRCA's jurisdiction, including: livestock exclusion fencing (equaling 2,680 meters of protected stream bank), installing a sustainable culvert crossing, and removal of tile drainage; creating wildlife habitat structures; restoring in-water fish habitat; invasive species removal; bioengineering; planting site preparation for TRCA partner organizations; and wildlife, terrestrial and aquatic monitoring.

Authority Tree and Shrub Planting, 2010					
	Private Land	Authority Land	Municipal Land	Federal/ Provincial Lands	Total Planted ¹
Reforestation	38,615	27,500	5,360	24,300	95,775
Conservation Services	39,617	69,751	43,187	5,756	158,311
Total	78,232	97,251	48,547	30,056	254,086

1. Includes all projects utilizing TRCA Nursery plants

TRCA Planting by Watershed, 2010					
Watershed	Shrubs	Trees	Bioengineering/Aquatics	Reforestation Seedlings	Total Planted
Etobicoke-Mimico	11,603	1,540	18,634	0	31,777
Humber	38,898	13,451	23,589	71,815	147,753
Don/HIGHLAND	9,656	855	11,662	0	22,173
Rouge	6,612	1,269	0	23,585	31,466
Duffins	3,735	652	1,510	375	6,272
Petticoat-Frenchman's	0	0	216	0	216
Waterfront	3,724	760	7,972	0	12,456
Total	74,228	18,527	63,583	95,775	252,113



Students taking part in Yellow Fish Program

SUSTAINABLE COMMUNITIES

Programs of The Living City®

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

- The Mayors' Megawatt Challenge continued to engage municipalities in and around the GTA to take action on improving energy efficiency in their facilities. The program includes more than 160 municipal buildings representing more than a million square metres of floor space. In addition, the Town Hall Challenge was launched across Canada, asking municipalities to benchmark their city and town halls. Top performing city and town halls will be recognized in 2011.
- Greening Health Care engaged more than 40 hospitals in 2010, helping them to identify targets for energy savings and actions to achieve those targets. The first annual Sustainability Forum was held to bring hospitals together with product and service suppliers that can help them achieve savings in their heating and steam systems.
- Greening Retail completed its third research project in partnership with Ryerson University. The project looked at the feasibility of developing green retail guidelines for the sector. Feedback from experts in the retail sector indicated that voluntary guidelines geared specifically to the retail sector would be very useful.
- Working in partnership with the University of Toronto, TRCA staff created an online version of our *Getting to Carbon Neutral: A Guide for Canadian Municipalities* report. The resulting Carbon Neutral City Planner is an online strategic planning tool that is now available for municipalities across Canada. The tool utilizes data from Statistics Canada and estimation guidelines developed through joint research to create an inexpensive tool for municipalities to utilize in developing and evaluating carbon reduction strategies.

The Living City® Campus at Kortright



HSBC Bank Canada supports Power Trip Trail

2010 was an excellent year at The Living City® Campus at Kortright for forging new partnerships and launching innovative demonstrations, exhibits and programs. In 2010, the campus offered the collaborative Sustainable Energy Initiative with York University and Centennial College, provided renewable energy training for Seneca College's distance learning program, and partnered in providing solar hot water workshops with the Canadian Solar Industries Association. The Living City® Campus at Kortright also provided private company training for Canadian Solar Solutions Inc., Green Edge Products, Sentinel Solar Corp. and the Canadian Union of Skilled Workers.

We continued our successful partnership with HSBC Bank Canada. In the second year of a three-year HSBC \$100,000 program, we installed a new bicycle powered interactive display on the Power Trip Trail. Two bicycles were installed to power a deep well water pump that is normally powered by solar energy. Now students can challenge the sun to see who can pump water faster.

The Royal Bank of Canada (RBC) Blue Water Program has also provided \$100,000 over two years to help install new clean water equipment at the campus. This year we replaced the old water softener, developed a new water education program and installed a water bottle refilling station in an attempt to reduce the sales of bottled water. Replacing the water softener eliminates the salt water brine (created during backwashing) that had been contaminating the groundwater into which it was discharged. The effectiveness of the new technology will be tested over the next two years. Part of the RBC sponsorship will also help bring 50 new classes of students to participate in the new water education program.

This program was developed to meet the expectations of the Grade eight Curriculum, specifically that "Water is crucial to life on Earth" and "Water is an important resource that needs to be managed sustainably." Program development and student field trip funding was generously supported by the RBC Blue Water Project. Students from priority communities in the Toronto region receive funded visits and TRCA works closely with the area school boards to ensure that the student and school needs are met. During this program the students learn about water sources, embedded water, water habitats, water testing and the importance of water conservation. All sponsored students go home with a refillable water bottle.

Throughout the day, the importance of healthy, sustainable wetlands is emphasized, along with actions that students can do to maintain these precious and essential ecosystems. Students are also made aware of the scarcity of water in many countries and the lengths many people must go to obtain fresh water. With that in mind, students are encouraged to think about their everyday water usage and how they can conserve water in their daily lives.

Urban Agriculture — The Living City® Campus at Kortright signed a contract with Match Box Gardens to fully implement an urban farm demonstration program on the northeast part of the campus. Match Box Gardens is transplanting its success from the McVean Incubator Farm to Kortright. The plan calls for the first crops to be planted in 2011.

Power Trip Trail Enhancements — In 2010, Kortright added a new solar water heating demonstration and installed two two-kilowatt trackers at the photovoltaic (PV) test site as part of our capital improvements from Peel. Visitors to the Solar Thermal Demonstration area on the Power Trip Trail can now see three uses for solar water and air heating; other types of solar water heating systems are on display at the Archetype Sustainable House. The PV trackers will allow TRCA Sustainable Technologies Evaluation Program (STEP) staff to provide better performance data for people selling, installing and purchasing solar systems in Ontario as part of the province's Feed-In-Tariff (FIT) program.

Professional PV Training — The FIT program in Ontario provides incentive rates for installing photovoltaic and other renewable sources of electricity. Ontario is now the number one region in North America for the installation of PV systems, providing both jobs for Ontario workers and clean, green energy for consumers. In 2010, the campus offered seven one-week PV training programs for installers and educators. The courses provide green skills training, improve the campus' reputation for providing high quality information and training in renewable energy sources, assist colleges and solar providers offering training programs, and increase revenues for 2010.



Sustainable Technologies Evaluation Program (STEP)

STEP helps to accelerate the adoption of sustainable technologies by demonstrating and evaluating their effectiveness, developing best practice recommendations and guidelines, and working with program partners to disseminate information and implement the technologies. Independent third parties rigorously monitor the data and results generated by STEP projects to verify the benefits and limitations of the evaluated technologies. Each year, STEP hosts or co-hosts workshops and other events that highlight study results, the lessons learned and best practice recommendations. The website (www.sustainabletechnologies.ca) also is used to disseminate information. In 2010, over 20 STEP projects focused on the following general theme areas: low impact development, erosion and sediment control, green building, and renewable energy.

Rainwater Harvesting

In 2010, TRCA completed a three-year evaluation of three industrial, commercial and institutional (IC&I) sector rainwater harvesting (RWH) systems in Toronto, and issued a final report. The report, which was widely circulated, demonstrated the effectiveness of RWH in different contexts with best practice recommendations, and contributed to the development of Ontario RWH guidelines.

We also partnered with the University of Guelph to develop a design and costing tool for RWH, promote new RWH guidelines developed through the university, and provide two professional training courses on the design and installation of RWH systems. The design and costing tool will facilitate the implementation of RWH systems and the study results are being disseminated at workshops and through the website.



Solar City Partnership

STEP joined forces with Toronto Atmospheric Fund (TAF), the City of Toronto and others to evaluate large urban solar installations and develop best practices on technical, financial and policy issues that impact the success of solar energy projects. We are currently developing case study reports on up to 20 installed systems in the GTA, including solar domestic hot water systems, indoor and outdoor solar pools, solar air heating systems and photovoltaic installations. Support for this phase of the partnership comes largely from the Federation of Canadian Municipalities (FCM). Activities undertaken in 2010 include:

- completing a final case study on one large photovoltaic system and interim case studies on several other systems;
- developing a Best Practices Guide for solar installations that synthesizes learning outcomes from case studies and provides recommendations for solar managers;
- initiating development of a network of weather stations with solar irradiance data from TRCA and partner owned sites across the GTA;
- completing the first season of monitoring on the effect of snowfall on PV performance at The Living City® Campus at Kortright's new PV field test site; and
- presenting findings at several events and launching a website for the growing partnership (www.solarcitypartnership.ca).

Natural Channel Design

Natural Channel Design (NCD) is an approach to watercourse restoration and realignment which attempts to reconstruct channels to emulate the natural physical form of the river or stream that would be appropriate for that location. The practice of NCD has enjoyed increasing popularity over the past 15 years in Ontario and elsewhere. Unfortunately, there are no established standards for the application of NCD, and the design methods used vary widely from one practitioner and jurisdiction to the next.

To help improve and advance the practice of NCD, TRCA has initiated a program to catalogue, monitor and evaluate natural channel realignment projects within the Greater Toronto Area. Now five years in, STEP has summarized the results, including best practice recommendations for future projects, in a comprehensive findings report. We have now begun to share lessons learned with practitioners and agencies currently involved in or considering NCD projects. This including co-hosting the 4th International Conference on Natural Channel Systems in Mississauga, Ontario, on September 27-28, 2010.

Sustainable Neighbourhood Retrofit Action Plan (SNAP) Pilot Projects

The Sustainable Neighbourhood Retrofit Action Plan (SNAP) projects are bringing private and public sector stakeholders together to accelerate improvements in environmental health and the overall quality of life in their neighbourhoods. The SNAPS develop an environmental improvement plan for existing urban neighbourhoods and kick start its implementation. The projects are innovative in that they combine several behavioural change strategies and attempt to address other significant barriers to implementation, such as technical challenges, cost and multiple landownership.

SNAP projects achieve their objectives by using: (1) an integrated, science-based approach to urban retrofits that addresses a broad range of objectives (e.g., water efficiency, biodiversity, energy conservation); and (2) innovative stakeholder engagement and social marketing to increase the rate of private landowner uptake and secure local partnerships for implementation.

By addressing a broad range of objectives, these projects are able to identify retrofit options that can achieve multiple co-benefits and increase the likelihood of tapping into local drivers and community champions. Three SNAP pilot projects were well underway in 2010.

County Court SNAP, Brampton

This SNAP focuses on the retrofit of an existing stormwater management pond in conjunction with lot level measures throughout a 30-year-old neighbourhood of various land uses. The Region of Peel and City of Brampton are core partners, with a growing list of locally engaged stakeholders. For example, Brampton Golf Club and Peel Village Golf Club participated in the assessment of current conditions, a review of options and the development of the emerging SNAP plan. The SNAP will consider rain harvesting from the residential subdivision as a source of irrigation water supply for the golf courses, eco-landscaping options for homeowners, and ways to improve community connections. TRCA's Stewardship and Outreach Education staff led numerous educational workshops and events in the neighbourhood; these have been effective in creating a group of neighbourhood champions and providing opportunities for them to interact. These champions will be instrumental in engaging other residents in the project.

Private sector technology retailers and industry associations came together to partner with the County Court SNAP project on a Green Home Makeover demonstration project. This project will demonstrate eco-friendly renovation technologies for a typical County Court neighbourhood home that is selected to be the makeover recipient. The Federation of Canadian Municipalities awarded the County Court SNAP project with an \$86,000 grant, which was leveraged using Peel Region capital funds.

Black Creek SNAP, Toronto

This SNAP focuses on water management options that can contribute to the City of Toronto's efforts to reduce basement flooding in the Black Creek — Jane/Finch area, as well as the Humber Watershed Plan's objectives for improved health in Black Creek. The project builds on TRCA's partnership with the Jane/Finch Community and Family Centre and their Green Change Program, by employing local Green Change Agents to administer homeowner surveys, which provides environmental skills training and employment, while representing a cost effective way of data collection for the study.

In 2010, numerous local community organizations were engaged through a community leaders' workshop, and input from stakeholder groups, such as the Jane Finch Mall, was received during one-on-one meetings. This input contributed to the assessment of current conditions and development of a short list of retrofit options for the neighbourhood. Given the significant interest in local food security, a focus of the lot level stormwater management is on rain harvesting designs to support fruit and vegetable gardens.

A partnership with the University of Waterloo has contributed Landsat thermal imagery of the neighbourhood, which illustrates the cooling effects of the vegetated Black Creek valley and parks when compared to the hotter paved parking lots and roads. A further partnership with Optech Inc., a local manufacturer of lidar (light detection and ranging) remote sensing technology, has led to development of solar potential mapping, which will assist in identifying strategic locations for shading through planting and potential sites for renewable energy systems.

The Metcalf Foundation awarded the Black Creek SNAP a two-year \$140,000 grant to support social marketing research, community engagement and demonstration projects.

Lake Wilcox SNAP, Richmond Hill

This SNAP focuses on measures to reduce phosphorus loadings to Lake Wilcox and to ensure protection of local natural heritage resources. York Region and the Town of Richmond Hill



Councillor Bob Callahan (Right) at County Court planting



Black Creek SNAP

are core partners, along with a number of local community groups, including Oak Ridges Friends of the Environment, Oak Ridges Trail Association and York Region Environmental Alliance. Key activities in 2010 involved working with community groups and the consulting team to characterize current conditions and develop a short list of options. Local group leaders and volunteers helped to administer a door-to-door survey designed to assess baseline conditions and practices. This information guided the strategic selection of options and strategies for their promotion. Options in this SNAP focus on a suite of eco-landscaping designs, which will improve stormwater management, enhance the urban forest and assist in energy conservation. Options have been tailored to address two distinctive areas of this community: the older established cottage properties having no stormwater management and the newer residential properties having limited landscaping. The Federation of Canadian Municipalities awarded this SNAP project a \$100,000 grant, which was leveraged using York Region capital funds.

Planning and Development



2010 has been an exciting year for the Planning and Development Division as we worked with our municipal partners to transition from the updating of official plans into new community based planning. This involves developments ranging from downtown intensification and brownfield redevelopment projects to new greenfield communities set within a rural backdrop. These communities are diverse and include:

- the rolling landscapes of the new Mayfield community in Caledon;
- the heritage communities of Woodbridge and Whitchurch-Stouffville;
- the modern neighbourhood development in Cornell adjacent to the Rouge Valley system and beyond;
- the vast new town of Seaton set within the beautiful watersheds of the West Duffins Creek; and
- dense urban communities that are envisioned at Langstaff and Yonge in Richmond Hill and southern Markham, as well as Markham Centre, Vaughan Metropolitan Centre and downtown Brampton.

Infrastructure planning and construction has also formed a foundation for servicing the development needs of new communities in Toronto and throughout our 905 municipalities.

In all instances, TRCA helped municipalities balance new forms of community building with important initiatives to protect and enhance natural systems, protect viable agricultural communities, incorporate green technologies into building and site plan standards, and safeguard vulnerable areas from natural hazards. All assessments are conducted with a view to fostering renewed economic stability and improved quality of life within an urbanizing city region.

As an approval agency that partners in managing these community changes, TRCA staff endeavour to find common ground in all negotiations with our agency partners, clients and community members. We work to ensure that land use and infrastructure planning, regulation and implementation meet The Living City® objectives for healthy rivers, shorelines and ecological systems, and protect against natural hazards. We integrate policy planning, site design, water resources engineering, hydrogeology, geotechnical and ecological principles in order to provide sound advice to our municipal partners and clients utilizing a model of communication and understanding that is unique in a growing region. The integration of science, planning and ecological site design into our review responsibilities forms the foundation of our advisory and approval efforts and builds a more resilient natural landscape for the communities of tomorrow.

Official Plans and Secondary Plans

Policy refinement efforts were conducted with Richmond Hill, Ajax and Vaughan to update their official plans and to provide technical comments on intensification and development expansions as they relate to watershed management.

As community concepts unfold in our jurisdiction, municipalities and TRCA have built new working relationships with landowners and the consulting industry to establish an integrated design and technical process around Master Environmental Servicing Plans (MESPs). These studies form the basis of servicing and set the environmental framework for moving secondary plans into the detailed draft plans of subdivisions and construction. More than 17 MESP studies have been ongoing or initiated in 2010, facilitating major development across Peel, York and Durham regions. Science based input and policy negotiations are intended to:

- ensure protection of unacceptable flooding and erosion adjacent to river systems;
- establish ecological mitigation and compensation where necessary;
- delineate property acquisition and trail corridors for public access and enjoyment;
- build new restoration projects through funding and partnerships; and
- apply new sustainable technologies and monitoring into site plans.

MESP Highlights, 2010

Richmond Hill — Casa Gormley, Dunlop Observatory Lands (Corsica)

Vaughan — Block 61 West, Block 40/47

Brampton — Countryside Village(Springdale North)

Durham — Duffin Heights, Seaton New Town (equivalent of 15 block plan communities)

Markham — Upper Unionville, Cornell

Caledon — Mayfield West Phase I and II

Public Infrastructure to Support Growth

Bold proposals for new transit and transportation systems, as well as servicing infrastructure, have played an essential part in building the framework for new communities across the TRCA jurisdiction. Provision of expedited review and integrated working sessions with our municipal engineering partners on large environmental assessments was required in 2010 on projects such as the Bolton Arterial, Mississauga Transit Bus Transitway, the Toronto-York Spadina Subway Extension and Transit City, Viva projects, South East Collector, Highway 407 Individual EA, 407 Transitway, and Rossland Road.

As these environmental assessments move into detailed design and construction, TRCA is preparing new standards for Environmental Management Plans (EMPs) that set strategies for environmental compliance and emergency operations during construction. Training workshops have been organized by TRCA with partner EA project management groups to advance environmental approval streamlining and understanding of legislative and approval requirements. Advancements in conducting emergency work approvals also have been established through projects, such as Highland Creek Restoration, Coxwell Bypass Environmental Assessment and several others.

Many of our environmental assessments have incorporated ecological protection, as well as major mitigation and restoration opportunities. These restoration projects and funds often include trail corridor construction and associated public amenity space. An outstanding project of common ground can be seen with the South East Collector Environmental Assessment with its associated proposals for Rouge Park enhancements and development for a new park entrance at Bob Hunter Memorial Park near the Boxgrove neighbourhood. Provincial stimulus funds kick started the year with many important fast-tracked community projects.

Policy Advocacy and Ontario Municipal Board Hearings

During 2010, we have actively urged senior levels of government, municipalities and developers to promote sustainable communities and implement a culture of conservation through policy, planning and detailed design decisions. Highlights of these advocacy efforts are described below.

Provincial Policy Statement (PPS) Five-Year Review

TRCA provided a comprehensive submission endorsed by the Authority to the Ministry of Municipal Affairs and Housing (MMAH) in response to the *Environmental Bill of Rights (EBR)*

posting of the five-year review of the Provincial Policy Statement 2005. TRCA requested amendments or new policies be implemented that relate to an urban agenda and address issues associated with major redevelopment and intensification. These PPS amendments would:

- promote a systems approach for the management of natural heritage and water resources that incorporates protection for locally significant features and functions;
- embed the values and principles of green infrastructure for the management of water resources to achieve multiple benefits and resiliency for watersheds within the urban context; and
- provide strong direction to conduct integrated and comprehensive risk-based approach to managing natural hazards for intensification in Flood Vulnerable Areas.

Comprehensive Special Policy Area (SPA) Updates

TRCA continues to build capacity on an ongoing basis with municipal comprehensive Special Policy Area (SPA) updates (Vaughan, Toronto, Richmond Hill, Brampton). A key highlight in 2010 is the SPA policy work completed at the Lower Don and Portlands to support major urban redevelopment and river restoration/flood remediation works. TRCA staff worked with the City of Toronto, Waterfront Toronto, and the ministries of Municipal Affairs and Housing and Natural Resources to prepare new models for:

- OPA 388 — to establish an appropriate flood plain policy approach through a two zone concept to implement the draft Don Mouth Naturalization and Port Lands Flood Protection Project Environmental Assessment.
- OPA 389 — that will set the framework to update the SPA to reflect the imminent completion of the Lower Don River West Remedial Flood Protection Project and the removal of the lands from the flood plain.

Several critical negotiations and Ontario Municipal Board (OMB) hearings have been conducted throughout the year that advanced TRCA's policies and The Living City® vision for our jurisdiction. A few outstanding wins for sustainable development obtained during 2010 by Planning and Development staff are highlighted below.

Sheppard Avenue East at Boydwood Lane —TRCA were parties to an OMB hearing for proposed subdivision and rezoning applications for lands on the Rouge River Valley located at Sheppard Avenue East and Boydwood Lane. The hearing focused on setback requirements from the development to the unstable slope of the valley. The resulting OMB decision required the applicant to dedicate their non-developable lands within the valley and tableland buffer to TRCA. The lands to be dedicated to TRCA have an area of approximately 1.5 hectares and will ultimately be incorporated into Rouge Park for long term environmental management and protection.

North East Stouffville — TRCA reached a negotiated settlement before the OMB with the developer of a 25.32 hectare residential/commercial subdivision in northeast Stouffville within the headwaters of the Reesor Creek. Reesor Creek is a high quality cold water fishery within the Duffins Creek watershed. The settlement avoided a costly OMB hearing, secured a 500 metre stretch of the Reesor Creek into TRCA ownership and obtained commitments for improved fish habitat and restoration of valleylands.

Mattamy Development at Little Rouge Creek — TRCA worked with the Town of Whitchurch-Stouffville and Mattamy Development Corporation to secure an expanded greenlands system surrounding the Little Rouge Creek in southwest Stouffville. The agreement reached reduced the proposed development on the Oak Ridges Moraine and ensured that valleylands, woodlands and wetlands would be conveyed into TRCA ownership with tablelands to be transferred to the Town of Whitchurch-Stouffville for a neighbourhood park and trail system.

Duffin Heights — TRCA played a major role in an update to the Duffin Heights Environmental Servicing Plan (ESP), which ultimately led to the adoption of City of Pickering Official Plan Amendment 18 for the Duffin Heights neighbourhood for lands in the vicinity of Brock Road south of Taunton Road. The ESP was updated to reflect the latest municipal, provincial and conservation authority policies, and resulted in all of the key vegetation units, plant and animal species of conservation concern and important wildlife habitats being conserved and enhanced. A total of 41 hectares of the natural heritage system previously designated for development were redesignated for environmental protection in the Official Plan. In addition, the latest water quality, quantity and erosion control requirements will be met in the design of the new, more compact communities as they develop over time, and a significant terrestrial and aquatic habitat restoration fund for public lands within the protected area has also been established by the developers of Duffin Heights.

Customer Service - Permitting and Planning

The following summary indicates the number and type of applications for which planning and development review staff provided their professional expertise in 2010 in order to assist municipalities and the building industry in meeting their development and environmental requirements. Staff is constantly striving to improve our service delivery capabilities under heavy volume demands for planning approvals, construction permitting and compliance coordination on site. 2010 witnessed the highest number of construction permits issued from TRCA to date in one year — a record milestone. Ongoing liaison is conducted with municipalities, the Building Industry and Land Development Association (BILD) and the province to improve procedures under the plan review function and to assist others understand changing policy and science, and their implications for community design and development approvals.

Planning and Development Activities	2009	2010
New Planning Applications	538	772
New Permits Applications	1,019	1,062
Permits Issued	849	1,026
Minor Works Issued	—	278
Environmental Assessments	125	115
Environmental Management Plans (EMPS)	—	1
Routine Infrastructure Issued	—	110
Solicitor Inquiries	520	835
Concept Development Inquiries	130	159
Violations Issued	91	112
Active Permits Requiring Inspection	1,810	2,080
Active OMB/Mining & Lands Commissioner hearings	11	12
Master Environmental Servicing Plans (MESPs)	8	14

Oak Ridges Moraine, Greenbelt and Source Protection

2010 is the 10 year anniversary of the Conservation Authorities Moraine Coalition (CAMC)— an association of the nine conservation authorities, including TRCA, with watersheds on the Oak Ridges Moraine (ORM). CAMC members now own and manage for public benefit over 14,000 hectares of environmentally significant lands on the moraine, with 2,100 hectares being secured since 2002 when the ORM Conservation Plan was enacted by the province. The CAMC also has partnered since 2001 with the regional municipalities of York, Peel and Durham and the City of Toronto to undertake a major groundwater research study of the ORM and related aquifers. This data has been used by the municipalities to find sustainable sources of water for their rural communities, to protect aquifers during infrastructure development, and to inform the Source Protection



Planning process currently underway. CAMC also is supporting and participating in a collaborative effort by several ENGO groups to nominate the ORM and Greenbelt as a UNESCO Biosphere Region, to recognize environmental achievements in protecting the ORM and to advance economic and social sustainability components on the moraine.

Stewardship

Community stewardship programs include hands-on demonstrations, private landowner workshops, healthy homes and garden sessions, nature walks, planting and clean-up activities. The programs create the connection between how small community efforts positively impact the environment on a collective scale.

Stream of Dreams

In partnership with Credit Valley Conservation, TRCA's Stewardship and Outreach Education team piloted the Stream of Dreams program at Palgrave Public School in late 2010. Over three days, staff worked with students, teachers and volunteers in the school to enhance their understanding of the impact that human actions have on stormwater and our local watersheds. Each of the participants then tried to translate what they had learned by painting an image on a plywood fish cutout. At the end of the program, more than 600 painted fish were hung in a beautiful arrangement on the school's fence as a reminder to the school and community at large that our actions directly affect our local watershed and the fish in our streams.

Environmental Expo in Pickering

On November 20, 2010, more than 100 people visited the West Shore Community Centre to sign up for volunteer opportunities in the Pickering area. Representatives from 13 local environment organizations were on hand to promote their volunteer opportunities and recruit new members to help them with their work. In addition to recruiting volunteers, the Expo also provided a networking opportunity for the organizations.

The Expo was organized by Environmental Stewardship Pickering (ESP) as part of ESP's ongoing commitment to educate residents and community groups and provide them with the tools they need to become leaders in environmental stewardship activities. ESP evolved and grew from the success of the former Frenchman's Bay Watershed Rehabilitation Project. ESP is a partnership of TRCA, the City of Pickering, Ontario Power Generation, Pickering East Shore Community Association, Ajax Pickering Board of Trade and Durham Sustain Ability.

Other Stewardship Highlights

- Piloting our first Energy Conservation at Home workshop in Peel Region.
- Rebranding stewardship including displays, t-shirts and marketing materials.
- Applying for and receiving \$238,600 from the Ontario Trillium Foundation to engage the residents of the Valleybrook corridor in Brampton.
- Applying for and receiving \$587,415 from the Ministry of the Environment to deliver the Ontario Drinking Water Stewardship Program.

Environmental Education

Like 2009, 2010 was a challenging year for a number of our education centres. In 2010, total school attendance and teacher professional development activities reached 161,000 students — an increase of 3,000 students over 2009. School attendance also showed growth at the Kortright Centre for Conservation and the three field centres. While this growth is reassuring, there is still more to be done.

In March of 2010, TRCA conducted an online survey of 631 Ontario teachers to better

understand the trends, changes and barriers to participation in field trips. In response to this survey, 81 per cent of teachers identified cost/funding and 73 per cent identified transportation as barriers to participation in field trips. With continued economic uncertainty and very little public funding for field trips, even the most basic field trips are now beyond the financial reach of many students in communities in the Toronto region. By having a better understanding of the types of barriers that teachers face in planning a field trip, it allows us to improve funding opportunities for high priority communities, as well as create programs that support field trip planning and increase teacher and school engagement.

With a continued shortage of public funding for student field trips, a particular highlight of 2010 was an increase in private funding. With the addition of the expanded Weston Family Environmental Weeks and the new McCutcheon Environmental Weeks, many more students from high priority communities were able to participate in programming at TRCA field centres. Expanded private funding for day trips also assisted students from priority communities to be able to experience environmental education programming. Funders such as RBC, Imperial Oil Foundation, TD Friends of the Environment Foundation and the Toronto Field Naturalists provided funding to cover student admission costs or bus subsidies to cover transportation costs.

Improved school engagement in 2010 is anticipated to grow participation in TRCA programming. The creation of the *Education Through Exploration Program Guide*, the first comprehensive guide to TRCA school programming, has been well received by teachers, principals and administrators alike. The Guide serves as our calling card to help increase awareness and to engage teachers and school administrators in our education programs. In addition, TRCA staff members are paying direct visits to schools in the Toronto region to ensure that they are aware of our programs and to assist in educating school board staff on the role that conservation authorities play in their communities.

Integrated Learning

2010 saw the further implementation of our integrated learning strategy, whereby trips to our field centres are supported by pre and post-visits by Watershed on Wheels and TRCA teachers. This approach has been fully implemented for visits taking place at Albion Hills Field Centre to create a multiple, connected learning experience that focuses on community action. This is a unique approach and allows TRCA to leverage our learning programs to affect positive change in the student community through integrated learning.

The Living City® Campus at Kortright implemented a variety of new high school programs to attract more secondary students:

- Specialist High Skills Major, a new program that provides specific knowledge and skills related to solar energy;
- Leadership, a program designed to develop leadership, communication and cooperation skills among high school students;
- GPS, a hands-on program that introduces students to global positioning systems;
- Climate Change, developed in 2009, specifically uses the Archetype House; and
- RBC Blue Water Program.

Black Creek Pioneer Village Extended Education Operating Season

By extending the educational programming season for school groups, we are able to provide additional learning experiences about our shared heritage. For example, in the Many Hands program students have the opportunity to learn about history and culture through active participation. They get to work on a wood stove in an authentic heritage log house, churn and prepare butter, card wool and use a spinning wheel. They get water

MONARCH TEACHER NETWORK:

Educators restoring the environment one butterfly at a time

If you want make a difference, educating people about the natural world and equipping them with the tools to act on what they have learned is a good place to start. For the first time, TRCA has partnered with the Monarch Teacher Network (MTN) to offer the workshop "Teaching and Learning with Monarch Butterflies." This workshop provides educators with the information and materials needed to produce an integrated learning experience and get students involved in a North American initiative to protect monarch butterflies. The MTN is a network of more than 2,500 trained educators from fifteen states, five provinces and five countries that brings the butterfly story to people of all ages. It also makes the connection to wider issues ranging from biodiversity to habitat loss to social equality.



The monarch butterfly population is in decline due to habitat destruction on its wintering grounds and concern for the monarch butterflies' future wellbeing and survival is growing. Their story is one that crosses borders as butterflies from the United States and Canada migrate south to Mexico, travelling 3,200 km every fall; through this unique program more people are learning how they can help increase the monarchs' odds of survival.

"TRCA is pleased to have the opportunity to work with the Educational Resource and Information Center (EIRC) in reintroducing the Monarch Teacher Network to Ontario," said Nancy McGee, supervisor of education program services at TRCA. "Thanks to these educational workshops, teachers from across Canada will be able to share the wonder and intrigue of the monarch butterfly with their students, deepening their understanding of not only this amazing creature, but also how human and insect lives are intertwined."

With generous support from The W. Garfield Weston Foundation, TRCA and the MTN are bringing these workshops to Canadian educators. Participants learn about the life cycle and migration of the monarch butterfly, the conservation efforts taking place, and the modern challenges that indigenous species face. The MTN workshop is an engaging, interdisciplinary experience that provides educators with information appropriate for all grade levels and many subject areas, including science, language arts, social studies, math, Spanish and technology.

The workshop includes instruction by the MTN and TRCA experts. Participants also receive a Teacher's Guide (with over 200 pages of activities, lesson plans and resources), a Teacher's Activity CD and DVD, slide show presentations, butterfly garden seeds, rearing and holding cages, information sheets and much more. Over the summer of 2010, workshops were held in Toronto and Ottawa (Ontario), Wolfville (Nova Scotia) and Winnipeg (Manitoba).

from a hand pump and deliver it to the house using a yoke and buckets. Children also engage in weaving, wood working and the use of a cross cut saw. Children develop a real connection to the past and sustainable living by observing the outcome of their work. In the Pioneer Life program, a tour of the historic village is added to the experience, giving teachers and students the first full day option when booking a school trip. Opening up the village in the winter enabled 1,500 more student visitors to experience Black Creek Pioneer Village.

Our Greener Side Celebration

Many Canadians are acting upon their concern for the environment by investigating ways to reduce their environmental footprint. Our Greener Side Celebration enables change—ready individuals to learn about local and convenient choices that support an eco-friendly lifestyle. Presented in collaboration with the Regional Municipality of York, the program brings local businesses, government and non-government agencies together in an effort to build a conservation culture in York Region and beyond.

Peel EcoSchools

The focus of the Peel EcoSchools Program in 2010 was building capacity at the school level, deepening eco-literacy within school communities, and strengthening the network of EcoSchools within the Region of Peel. In June 2010, 49 schools from the Peel District School Board and four schools from the Dufferin-Peel Catholic District School Board joined the over 1,200 certified Ontario EcoSchools across the province.

These schools initiated comprehensive waste minimization strategies, launched campaigns to reduce single use water bottles, and broke ground on multi-year school ground greening projects. The achievements of these schools were celebrated at Peel EcoFest, a free community festival that is supported by over 12 organizations and agencies throughout the region. Building on this past success, 93 schools in the Peel District School Board and 53 schools in the Dufferin-Peel Catholic District School Board have registered to certify as Ontario EcoSchools in 2011.

Rekindle the Sparks Conference

TRCA hosted the first Rekindle the Sparks conference at the Albion Hills Field Centre on November 24-26, 2010. This was the 17th annual edition of a conference that brings together Watershed Interpreters from different Ontario conservation authorities to share watershed interpretation strategies, issues and trends. This year's theme was the International Year of Forests and attracted 43 attendees from 11 different conservation areas.

Aquatic Plants Program

Each winter, participating classes in TRCA's Aquatics Plants Program receive kits to grow native aquatic plants in the classroom. In the spring, schools travel to a local wetland to transplant their aquatic plants and participate in a half-day experience, learning about the important roles wetlands play in improving water quality. Participants rotate through four unique educational stations to also learn about stormwater pollution and local wildlife. In 2010, the Aquatic Plants Program maintained its relationship with Credit Valley Conservation, City of Mississauga and City of Toronto. Our partners selected appropriate planting sites outside of the TRCA jurisdiction to allow for greater reach of ecological wetland restoration.



Aquatic Plants Program

Pollinator Plants Program

In 2010, Aquatic Plants Program and Watershed on Wheels staff developed and created a number of games and activities that relate to the topic of pollination and pollinators. The new Pollinator Plants Program was tested in pilot programs at the Peel Children's Water Festival at Heart Lake and at Belfountain Public School in Caledon. In addition to a planting station, we ran a bug hunt station where students used a Pollinator BINGO card to find insects and pollinators on school grounds. Students tried the seed ball station where they had a chance to make their own seed balls and plant them at their school (tossing it as far as they could). The final bee dance station helped students learn how bees communicate with one another.

Weston Family Environmental Leaders of Tomorrow

With the generous support of the W. Garfield Weston Foundation, an additional 20 schools have been provided funded trips to TRCA Field Centres for the 2010/2011 school year. This is an expansion of the current funding provided by the W. Garfield Weston Foundation for 20 classes to visit Lake St. George Field Centre annually. The schools participating in this program come from high priority communities in Toronto and without the support of the W. Garfield Weston Foundation many of these students would never experience a field trip such as this.



	Participants in Education Programs, 2010 ^{1,2,3}										
	TDSB	TCDSB	DDSB	DCDSB	YRDSB	YCDSB	PDSB	DPCDSB	Private	Other ⁴	Total
Field Centres											
Lake St. George	184	1,646	—	—	1,174	121	77	—	30	405	3,637
Claremont	225	215	1,517	156	—	—	—	—	217	493	2,823
Albion Hills	187	96	—	—	—	—	579	406	224	698	2,190
Total	596	1,957	1,517	156	1,174	121	656	406	471	1,596	8,650
Black Creek Pioneer Village											
General School	8,104	3,784	428	35	4,165	2,137	5,506	2,111	3,182	5,964	45,416
Dixon Hill	694	—	—	—	—	180	—	100	350	967	2,291
Total	8,798	3,784	428	35	4,165	2,317	5,506	2,211	3,532	6,931	47,707
Kortright Centre											
Student Participants	9,846	6,605	—	—	7,370	3,611	3,816	2,088	7,381	5,866	56,583
Total	9,846	6,605	—	—	7,370	3,611	3,816	2,088	7,381	5,866	56,583
Outreach Education											
Watershed on Wheels	4,719	1,948	84	—	327	639	7,163	2,858	435	3,100	21,273
Yellow Fish Road	588	55	405	33	203	89	364	50	74	163	2,024
Aquatic Plants Program	1,869	120	—	—	100	63	295	185	125	—	2,757
MESP Adult EESP ⁵	—	—	—	—	—	—	—	—	—	216	216
MESP Adult ESL LINC ⁶	—	—	—	—	—	—	—	—	—	625	625
Family Nature Events	—	—	—	—	—	—	—	—	—	635	635
Citizenship Ceremony ⁷	—	—	—	—	—	—	—	—	—	120	120
Total	7,176	2,123	489	33	630	791	7,822	3,093	634	3,479	26,270
York Children's Water Festival											
Student Participants	—	—	—	—	3,577	1,309	—	—	172	—	5,058
High School Volunteers	—	—	—	—	284	128	—	—	—	—	412
Total	—	—	—	—	3,861	1,437	—	—	172	—	5,470
Peel Children's Water Festival											
Student Participants	—	—	—	—	—	—	2,216	1,498	567	9	4,290
High School Volunteers	—	—	—	—	—	—	230	460	—	—	690
Total	—	—	—	—	—	—	2,446	1,958	567	9	4,980
Albion Hills Ski Program											
Student Participants	435	1,071	—	100	—	62	437	—	90	778	2,973
Total	435	1,071	—	100	—	62	437	—	90	778	2,973
Bruce's Mill Sugarbush Maple Syrup Festival											
Student Participants	1,105	426	—	—	100	372	—	—	651	3,793	6,447
Total	1,105	426	—	—	100	372	—	—	651	3,793	6,447
Special Workshops, Conferences And Presentations											
Teacher PD Sessions	—	—	—	—	—	—	—	—	—	133	133
Practicuums/Placements	—	—	—	—	—	—	—	—	—	9	9
Presentation Attendees	—	—	—	—	—	—	—	—	—	308	308
Booth Attendees	—	—	—	—	—	—	—	—	—	540	540
EcoSchools Sessions	—	—	—	—	—	—	60	56	—	—	116
Special Sessions ⁸	39	150	40	72	—	—	—	—	—	—	301
Total	39	150	40	72	—	—	60	56	—	990	1,407
TOTAL PARTICIPANTS	27,995	16,116	2,474	396	17,300	8,711	20,743	9,812	13,498	44,132	161,177

Notes: 1. Participants include students and teachers/leaders, school groups and other groups, but not public programming.

2. Black Creek Pioneer Village and Kortright Centre numbers are participants per half-day program, with the exception of Dickson Hill school program.

3. Field centre numbers are participants per visit. To do a quick comparison to day program participants multiply # of participants by 3 programs by 2.5 days; 2006 = 9,498 participants X 2.5 days X 3 programs/day = 71,235 approx.; 2005 = 71,880 approx.; 2004 = 74,260 approx.

4. Other includes groups not categorized at time of booking with customer service.

5. MESP – Multicultural Environmental Stewardship Program; EESP – Environmental Experience Subsidy Program

6. ESL – English as a Second Language (Environmental Outreach Program); LINC – Language Instruction for Newcomers to Canada

7. Held at Kortright Centre

8. Weston ELT, Peel Enviro Weeks, In-Class Sessions



Parks and Conservation Areas

Bathurst Glen Golf Course

In addition to regular garbage collection, Bathurst Glen Golf Course (BGGC) staff spent a day removing garbage and unauthorized structures from Bond Lake. Staff removed three docks, more than 20 car tires, and two truck loads of other debris. Other community groups have taken it upon themselves to conduct clean-ups of the lake area with assistance from BGGC. These informal clean ups have helped to keep Bond Lake clean and safe for users of the Oak Ridges Corridor trail.

Golf Camps — BGGC's partnership with Henry Brunton Golf, an industry leader in junior golf coaching and player development, has continued to be a success. The junior camps are of particular interest as they not only provide children ages four and up with basic skills and knowledge of the game — which builds confidence and competence — but also cover general health and wellness issues. In addition, the kids get a chance to learn about the unique ecosystems provided by golf courses, why they are important and how they can help preserve these areas. The partnership generates revenues for BGGC; we receive 35 per cent of all their programs offered on site.

Kids play Free! — After 4 p.m., with every paid adult, one child (14 years and under) plays for free. This program offers an active alternative for family entertainment.

Media coverage — BGGC was able to showcase its efforts in both Audubon Certification and integrated pest management to a diverse audience. BGGC was featured on the Rogers Cable TV show "A Greener York" for its achievements in environmental golf course management, as well as in a live interview on CBC Radio 1, with topics including water conservation and chemical use reduction at Bathurst Glen.

BATHURST GLEN GOLF COURSE: TRCA 'tees up' to protect natural resources

In 2010, the Bathurst Glen Golf Course was designated a "Certified Audubon Cooperative Sanctuary" through the Audubon Cooperative Sanctuary Program for Golf Courses. Bathurst Glen Golf Course is the 46th course in Ontario and the 765th in the world to receive this honour. The par-63 family friendly affordable golf course is located beside one of the last remaining natural corridor links between the eastern and western parts of the Oak Ridge Moraine in the Town of Richmond Hill. TRCA operates the 4,400-yard golf course and maintains the park lands on behalf of the Province of Ontario.

TRCA has been working towards this international designation since 2006. We have undertaken a detailed site assessment, developed an environmental plan to protect natural resources, and implemented



conservation practices, as well as developed an action plan to guide future environmental and stewardship efforts.

"Bathurst Glen Golf Course has shown a strong commitment to its environmental program. They are to be commended for their efforts to provide a sanctuary for wildlife on the golf course property," said Jim Sluiter,

staff ecologist for the Audubon Cooperative Sanctuary Programs. "To reach certification, a course must demonstrate that they are maintaining a high degree of environmental quality in a number of areas." These categories include: environmental planning, wildlife and habitat management, outreach and education, chemical use reduction and safety, water conservation, and water quality management.



Black Creek Pioneer Village, 1963



Black Creek Pioneer Village Brew Master Workshop, 2010

Black Creek Pioneer Village

In 2010, Black Creek Pioneer Village (BCPV) celebrated 50 years of living history, welcoming 134,708 visitors, including 45,416 school group visitors, through our facility. Over the last half century, more than 11 million visitors have shared and enjoyed this incredible cultural heritage resource. We have used this milestone to highlight how the museum has evolved, and continues to evolve, as a relevant, engaging educational and entertaining cultural facility.

Black Creek Visitors Centre underwent cosmetic and transformative changes to reflect a more customer centric focus and capital improvements to increase accessibility. Our site-wide focus on customer service excellence included interactive additions to our public programs, new events and an emphasis on family friendly activities. A number of other important undertakings are described below.

BCPV North Master Plan — Planning work for the draft master plan was completed with funding from City of Vaughan. The Master Plan will address stormwater management issues and identify long term sustainable future directions for this culturally significant property.

Increasing Access — BCPV continues to provide free access to Ontarians for specific events and in response to economic need. BCPV worked in partnership with City of Toronto for Doors Open Toronto, with the City of Vaughan for Vaughan Doors Open, in partnership with Toronto Public Library through the Museum and Arts Pass program, in partnership with the Institute of Canadian Citizenship through the Cultural Access Pass program, and with various social services providers within the immediate community.

Education — BCPV utilizes the entire site as learning laboratory for school groups, ESL students and others to connect the past to today and tomorrow. New education programs and an extended spring season were introduced, with excellent results in building stronger attendance in both spring and summer. Over 45,000 visitors took part in guided programs in 2010. Course development included five new programs: Pioneer Life, School Days, New Language – New Land, Society & Change, and Victorian Summer Fun. Research and development for expanded winter programming opportunities was initiated.

Interpretation — Visitors had more to experience with the added emphasis on kid friendly activities, including an expanded Kid's Trail, additions in the Hands on History Centre, the transformation of Bolton Shop into the photographer's studio, daily tours, and special participatory baseball games and a ball (dance). A new series of adult and family workshops was introduced, enabling visitors to bake, brew beer, and learn basic tinsmithing and other historic trades and skills in the historic core.

BCPV participated in the first International Barn Day, an electronic field trip involving 12 significant North American and European barns to increase awareness about the

architectural importance and cultural value of a disappearing built form. Our participation contributed to the research on Pennsylvania barns and gained recognition for TRCA's stewardship of a barn of substantial architectural significance.

Exhibits to augment visitor experience included a 50-year retrospective photo exhibit, a major exhibit of toys from the BCPV collection, and smaller temporary exhibits from our collections and from members and collectors in our community.



Alice In Wonderland activities at Black Creek Pioneer Village

Events — Special events brought out new audiences. New events in 2010 included Alice in Wonderland, Brews Fest with funding from Celebrate Ontario! and Lunch with Santa. Integrating events with Village historical interpretation and programming created even more exceptional visitor experiences. BCPV offered 13 special events through the 2010 season.

Black Creek Historic Brewery — Now in its second season, the Black Creek Historic Brewery, through a collaborative partnership with Pioneer Breweries Ltd., continues to attract a growing audience, while delivering daily public tours that highlight the social history of brewing. In 2010, our brew master introduced eight specialty beers throughout the season, including a fresh or wet hop pale ale from hops grown on our site, taking us one step closer to our goal of brewing a one-mile beer. Other special brews included Raspberry Porter, Dandelion Stout, Lemon Balm Ale, Winter Warmer, Pumpkin Ale, Maple Brown Ale and Honey Brown Ale. Tastings and brewing workshops attracted an adult audience, as did our busy weekend Brews Fest, which showcased six local craft brewers in addition to Black Creek. The season ended on a high note with the launch of Black Creek Porter in LCBO stores; sales out performed LCBO's expectations and the beer has received a permanent seasonal listing. We have plans in place for the launch of the India Pale Ale in Spring 2011. Finally, Black Creek Historic Brewery was named one of the Top 10 breweries in the GTA by www.blogto.com.

BCPV Food Services — Three co-op students were hired from the Toronto District School Board's Hospitality Co-op Program, which gives new Canadians practical work experience in the food services industry. Two of the three students have secured employment in the food services industry. We also were able to source produce that was grown at the Black Creek Urban Farm for use in Black Creek food services. Using locally grown produce in meal production provides an opportunity to promote local, sustainable agriculture.

Heirloom Breeds and Seeds — The livestock program continues to maintain rare and listed breeds and to educate the public on the importance of genetic biodiversity. BCPV successfully incubated 12 Rouen ducks, increased its flock of border Leicester sheep with 11 lambs, and acquired one six-year-old Clydesdale after losing the Percheron after many years of service. BCPV also hosted two Berkshire pigs and a Hereford cow and calf in partnership with local farmers.

Black Creek Gardens — 2010 was a transition year for the Black Creek gardens. The hop garden was a new feature, in addition to the 11 specialty and demonstration gardens. A small organic vegetable garden was planted at Black Creek Pioneer Village for use in the food service area; customers enjoyed the fresh seasonal vegetables we were able to grow in-house and we plan to expand the project in 2011. Finally, a slope stabilization project was undertaken in partnership with the Black Creek Project and Shoreham Public School, including new plantings, construction of a stone wall and the removal of invasive species.

Collections — A small number of important acquisitions were accepted in 2010. Most notable were a collection of six oil paintings by Theresa Jane Russell, period photography equipment for the Photographers Studio, and a magic lantern projector with mechanical and glass slides. The magic lantern and slides are in sufficiently good working condition that they have been incorporated into period entertainment, expanding visitors' understanding of how the past has influenced the present.

Facilities Improvements — Capital renewal included updating the Visitors Centre to be a more visitor centric, accessible, and welcoming place. Projects included renewal of the central mall with attractive signage, information screens, murals, and electronic doors,

refreshing the Victoria Room, creation of a Bride's Room, preparations for upgrading the Victoria Green, and design and permits for the new street entrance sign to be installed in Spring 2011. Historic core capital projects included mechanical system upgrades for the brewery and James Agnew House, a new sawmill roof, church slope stabilization, and various interior repairs, including new bird enclosures at the chicken house.

Strengthen Base of Support — Membership program development included the launch of two newsletters and the creation of a Just for Members program, a series of behind-the-scenes events for members. Member visitation increased seven per cent in 2010.

Sustainable Practices — BCPV successfully composted 13,500 litres (3,000 gallons) — representing 100 per cent — of the mash produced at the Brewery into the Black Creek gardens. BCPV Food Services began composting food waste and biodegradable dinnerware with Planet Earth Composting; as a result, we were able to divert 22,770 kilograms of compost from landfill. A three-section compost bin was constructed in order to mitigate issues with grass clipping from our intense mowing schedule; we plan to start incorporating food waste into the program in 2011. BCPV continued its efforts to reduce hydro consumption by installing new ballasts in 150 Visitor Centre fluorescent fixtures and transitioning to energy efficient bulbs. Finally, a consultant study has been done to identify requirements to achieve LEED® (Leadership in Energy and Environmental Design) certification for existing buildings and the BCPV Visitors Centre.

Black Creek Programs	Participation
Visitors on Brewery Tours	1,233
Visitors (free) with Toronto Museum & Arts Pass	11,914
Visitors (free) at Doors Open Toronto	7,732
Cultural Access Passes processed at BCPV	1,260
New Canadians (free) with Cultural Access Pass	1,420
Volunteers at BCPV	550
2010 Volunteer Hours at BCPV	11,010
Special workshops, tastings & presentations attendance	195

Albion Hills Conservation Area

Albion Hills Conservation Area and Campground is a multi-purpose recreation facility that supports many popular recreational activities, such as hiking, trail running, mountain biking, camping and cross country skiing. It is also one of Ontario's top mountain biking and hiking destinations, providing recreational activities to over 100,000 visitors annually. With an array of outdoor programs, the Conservation Area helps people lead healthier lives by offering healthy lifestyle choices.

The Lakeview Splash water play facility opened at Albion Hills in 2010. It features a 440 square metre wading pool (4 ft. deep) and a 125 square metre interactive splash pad. Kids of all ages can enjoy clean and safe water fun. Sustainability features include a closed loop water recycling system with state-of-the-art filtration and sanitation system. The water recycling system uses water from the aquatic playground elements by collecting it in drains located on the floor of the playground. It is then pumped back into the pump house where it is filtered through sand filters, sanitized by a UV system, and pumped by a 15 hp circulation pump back through the system to be used again. Treated water passes through sensors which ensure water going to the spray features is clean. If the makeup of water passing through the sensors is not within the allowable limits, the system shuts down, thus ensuring the quality of water being used.

Albion Hills Trails Enhancement Project

TRCA received funding through the Recreation Infrastructure in Canada (RInC) program to improve the trail system at Albion Hills Conservation Area. The Albion Hills Conservation Area Trail Enhancement Project was initiated in 2009 and continued in 2010 with the



Lakeview Splash opening

**HETAP training**

implementation of a number of planned projects. The High Efficiency Trail Assessment Process (HETAP) was used to assess 27 kilometres of double track trail and 13 kilometres of single track trail to determine their surface, any obstacles present, slope and other factors which affect their accessibility for persons with disabilities. Trail improvements included the following:

- capping, clearing hazards and installing way finding signs along 1,100 metres of trail;
- rerouting 500 metres of trail to address poor trail conditions, such as moisture and erosion;
- closing 300 metres of trail for environmental restoration, or because of poor trail condition, or because the trails were deemed excess or redundant;
- installing 80 primary post markers, 130 secondary post markers, 40 trail closure signs, 320 directional signs and 30 single track trail name plates;
- repairing bridges near the Cedar Grove picnic site and near the start of the black trail;
- installing five culverts to improve water flow along the trails; and
- planting 75 dogwood shrubs along regraded trails.

Albion Hills Community Farm — In 2010, the Albion Hills Community Farm, entered into a lease agreement with TRCA for 31 hectares (76.5 acres) at Albion Hills Conservation Area. This innovative project, located on the site of the former dairy farm, will include food production (i.e. vegetable and fruit crops, grains, lentils and much more), education and community gardens. The farm will work with the two adjacent outdoor education centres (TRCA and Toronto District School Board) as well as with partners from the agri-food sector, including the Palgrave Community Kitchen, Caledon Countryside Alliance, Eat Local Caledon and many others.

**Glen Haffy aeration system**

Glen Haffy Conservation Area

Glen Haffy is home to a fish hatchery. The installation of a new aeration and windmill system aerates the pond without using any electricity. The project ties in with energy efficient initiatives to reduce the use of energy.

Boyd Conservation Area

Boyd Conservation Area and its facilities are enjoying increased recognition and popularity by the local community. In 2010, Boyd hosted the Vaughan Community in Bloom BBQ, the Terry Fox Run and the Walk to End Cancer. The successful partnership between TRCA and the City of Vaughan has laid the foundation for future collaboration and initiatives.

Indian Line Campground

On October 31, 2010, Volunteer Peel hosted a volunteer day for up to 180 teenage volunteers at Indian Line Campground. Participants staffed five booths, took part in environmental stewardship activities and enjoyed a BBQ lunch. Activities centered around tree planting, as well as litter clean-up and bird box building/installation.

Bruce's Mill Conservation Area

The annual York Children's Water Festival held in May is a major component of York Region's Water for Tomorrow program and is managed in partnership by York Region and TRCA. What started in 1999 as a three-day, 1,000-student event has grown into a five-day, 5,000-student spectacular for Grade 4 York Region students. York Region's high school students volunteer to guide our younger guests, present topics and lead activities. Through approximately 50 interactive curriculum-linked activities, students learn about water conservation, changing environmental attitudes, water and technology, water protection, water science and water stewardship — all in a hands-on, enjoyable way.

Heart Lake Conservation Area Master Plan Implementation

TRCA continued to implement the Heart Lake Conservation Area Master Plan (2006), and three meetings of the Heart Lake Project Team (formerly Community Action Group)

were held. The trail system was improved with the installation of 680 metres of new trails and the closure of 120 metres of inappropriate trails. The Sandalwood Parkway access point was formalized in cooperation with the City of Brampton. The Gitigaan Mashkiki (Medicine Wheel Garden) was planted and was officially opened on Family Day during the Peel Children's Water Festival in May 2010. This project was completed in advance of the original 2010 target start date with the eager contributions of the Heart Lake Community Action Group and Peel Aboriginal Network. With funding provided by Recreation Infrastructure in Canada (RInC), TRCA initiated the construction of a swimming pool at Heart Lake Conservation Area to complement the existing water play facility. Other activities undertaken in 2010 included:

- improving existing trails with bridges (35 metres) and other surfacing treatments (200 metres);
- planting over 400 shrubs to deter further trampling and provide slope stabilization;
- constructing and planting a green roof kiosk;
- installing 39 numbered way finding post markers;
- installing interpretive signage at the Medicine Wheel Garden site;
- constructing a new entrance to the Conservation Area from Heart Lake Road and a new gatehouse;
- distributing one issue of *Waves*, the Heart Lake Project Team newsletter;
- organizing a spring planting and invasive species removal event; and
- initiating an amphibian monitoring program.

Cultural Heritage - Archaeological Resource Management Services

Boyd Archaeological Field School

The Archaeology section at TRCA performs an important role in informing the public about the importance of cultural heritage in the Province of Ontario. Public archaeology events, in-class programs, presentations and artifact displays, all provide avenues for educating the general public. But for 34 years the Boyd Archaeological Field School has been the most intensive and far reaching education program conducted. With more than 1,100 graduates from across Canada, the United States, Europe and Asia, the Boyd Archaeological Field School is Canada's longest running archaeological field course specifically structured for high school students.

The field school offers a two-pronged approach that balances experience in the technical methods of archeological excavation with a comprehensive understanding of 10,000 years of cultural history, beginning with the First Peoples in North America and ending with European settlement in Ontario. The course content, as well as the various learning strategies employed throughout the course, keep the students engaged and energized. Part of what makes this course exceptional is the slate of guest lecturers, acclaimed experts in their field, who feel passionate about sharing their knowledge with the students.

Though the primary focus of the Boyd Archaeological Field School is archaeology and the history of Ontario, contemporary Aboriginal issues are also taught with the result that students inevitably take away an appreciation for the individuals who peopled Ontario in the past, and the cultural traditions that continue through to the present. This knowledge will undoubtedly enhance cultural values and encourage appreciation and advocacy for cultural heritage, ultimately serving to broaden and develop understandings of our collective history and build a sustainable future for all.

Royal Rouge Trail

An archaeological excavation was completed in the backyards of five neighbouring houses in Scarborough during the summer of 2010. TRCA archaeologists identified three sites during an archeological assessment completed on private residential properties backing onto the Rouge River Valley in advance of extensive stabilization measures. These



Heart Lake Medicine Wheel Garden opening



A total of 40 new archaeological sites were registered in 2010. This included 36 Aboriginal sites and four historic Euro-Canadian sites.

Full time staff increased from four to eight in 2010. In addition, three part-time and eight seasonal staff members worked on archaeological projects, while 19 volunteers contributed more than 500 hours of field and lab work, or helped run public events.

sites turned out to be large Aboriginal campsites and the recovery of a large number of stone tools indicates that this area was used repeatedly between 5,000 and 2,800 years ago. One exciting discovery was the excavation of three stone choppers that indicates people were camping at this spot for extended periods of time and likely processing a variety of game, fish and nuts that were abundant within the river ecosystem.

One of the benefits of this particular excavation was the opportunity to share knowledge of the distant past with the homeowners, their kids and the neighbourhood. Homeowners were invited to observe the process and even get their hands dirty if they wanted to. During this project, a First Nations monitor was employed who was not only a valuable team member, but also provided guidance to both the archaeologists and the homeowners. She provided helpful advice when one homeowner expressed concern that disruption of the site may cause spiritual unrest and was able to speak to their concerns and alleviate any fears. Another homeowner arranged for two of their elementary school kids to bring their classes to the site. Over 40 students not only observed the excavation first hand, but also experienced the thrill of screening the soil and finding artifacts that had lain hidden in their classmate's back yard. They were shocked to learn that these artifacts were older than the pyramids in Egypt.

Public Archaeology



The Graham House site, a 19th century homestead of a blacksmith and his family in North Pickering, is the current location of the Boyd Archaeological Field School. In 2010, 55 participants — including members of the Pickering Historical Society, the Peterborough and Toronto chapters of the Ontario Archaeological Society, and Graham family descendants — had an opportunity to assist with the excavation of the site. Participants were guided through basic artifact analysis, and had an opportunity to see some of the artifacts that have been recovered by students of the Field School during the past three seasons. There were also guided interpretive heritage hikes of the 19th century mill sites and related landscape features nearby on the property. Feedback was very positive and many people wanted to know when we would offer another such opportunity.

Archaeological Projects, 2010			
Consulting Projects (External Projects)	21	Stage 1 & 2 Exploratory fieldwork	49
Consulting Projects (Internal Projects)	38	Stage 3 & 4 Site excavations	13
Public Archaeology	3		
Total Projects	62		62

Education Events in 2010

- Aurora Heritage Fair
- Boyd Archaeological Field School
- Peel Children's Water Festival
- Planning Department staff day dig
- Silverstream School Group @ Graham House Site
- TRCA's Education Professional Development Day seminar

Public dig days are great because ...
they enable people from all walks of life
to experience the thrill of discovering
items that were left behind by our
forebears and better appreciate the
nuances of the lives they led.



BUSINESS EXCELLENCE

Information and Technology Services

Information Technology

In 2010, Information Technology (IT) exceeded an overall 99.9 per cent network up-time for the entire TRCA Wide Area Network (WAN), including the Head Office Data Centre and seven remote office locations, supporting over 500 staff users and 31 file and application servers. Other highlights of 2010 include the following.

- Over 80 new personal computers were purchased and deployed in support of the TRCA PC replacement program.
- The new Virtual Server Project was implemented, and the TRCA main file server at the Head Office Data Centre migrated to the VMWare platform. This provides TRCA with a powerful, energy efficient and flexible IT architecture. This virtual architecture enables IT to respond to changing application requirements and serves as a critical IT backbone for the Head Office Data Centre.
- As part of the new Virtual Server project, IT implemented a new Storage Area Network (SAN), increasing the storage capacity at the Data Centre to over nine terabytes.
- Issued a request for quotations (RFQ) and purchased 60 new point-of-sale (POS) systems for Parks and Culture .
- IT worked with Parks and Culture to improve Internet bandwidth at various remote offices and conservation areas to facilitate the new POS and on-line booking system.
- IT contracted the development of number of new Lotus Notes applications and enhancements to improve workflow, efficiencies and reduce paper use including, payment requisitions in Accounting, expense forms for Payroll and permit violations processing for Enforcement.

Records Management/Office Services

TRCA continued implementation of the LaserFiche Electronic Document Management System. LaserFiche now holds over 110,000 corporate files, reducing paper and increasing information accessibility. In 2010, 1,068 new records series were created in LaserFiche and a total of 75 GB of records were stored into the system. Additional highlights of 2010 include the following:

- 27 freedom of information (FOI) requests completed;
- 2,597 central files created;
- 8,085 files sent to off-site storage;
- 5,715 files destroyed as per retention policy; and
- 1,514 files requested and retrieved from off-site storage.

Records staff spent considerable time reviewing over 1,000 records found in the archives database and applied records series and retention protocols. If past retention period, they were destroyed; if still active, they were stored in Corporate Records .

Geomatics

Projects undertaken in 2010 included the following.

- Responded to 770 individual GIS requests for mapping and related GIS analyses.
- Completed negotiations with an online reseller for a non-exclusive agreement to sell TRCA digital Flood Line mapping over the Internet.
- Undertook ongoing development and enhancement of TRCA corporate scientific SQL relational database, integrating additional monitoring and lab result data, improving query and analysis tools and managing the ongoing development of browser based, thin client applications.
- Continued development of ArcServer Internet Mapping platform, including testing and implementation of Adobe Flex Application Programming Interface API. Implemented a successful pilot of the Flex application with the Planning and Development division.
- Completed the Aquifer Vulnerability analysis and identified the Highly Vulnerable Aquifers for Credit Valley, Toronto and Region, and Central Lake Ontario source protection areas.
- Worked with our member municipalities to obtain landowner addresses for vulnerable area parcels in order to contact landowners about stewardship funding available under the *Clean Water Act, 2006*.
- Identified areas where municipal drinking water may be threatened by over application of road salt on impervious surfaces.
- Worked with our regional partners' consultants to build a consolidated drinking water threat enumeration database for the Toronto and Region Source Protection Area.
- Updated the Natural Cover Layer for the entire 2,500 square kilometre TRCA jurisdiction, including QA/QC, and subsequently updated TRCA's Landscape Analysis Model utilizing the updated inputs. Also updated the Riparian Habitat and Interior Forest data.
- Undertook Etobicoke and Mimico Regeneration Strategy mapping and analysis.
- As part of the Historic Airphoto Collection Review, organized and documented the photo library back to 1940s.

- Managed Conservation Land Tax Incentive Program submissions.
- Mapped zones and trails for the East Duffins Management Plan and the Oak Ridges Corridor Park Management Plan.
- Worked with Restoration Services staff in the development of a TRCA Structures Database application and integrated this with GIS locations.

Corporate Social Responsibility

TRCA's Corporate Social Responsibility (CSR) Program tracks our organization's environmental, social and economic progress in a transparent manner and helps us to improve our operational sustainability. That sustainability is based on the way we conduct our day-to-day business and meet the needs of our stakeholders — the way we operate our vehicles and equipment, our energy consumption, the products we buy, how we manage our lands, and what we do with our waste.

In 2010, TRCA continued upgrading the waste management system in public use areas in order to achieve more effective recycling and increase our diversion rates from landfill. Our conservation areas and Bathurst Glen Golf Course continued their progress toward Audubon Cooperative Sanctuary designation, a much coveted third-party international program recognizing sustainably operating parks and public spaces. Realizing that sustainable operations requires constant and vigilant employee outreach, TRCA launched CarbonCats, a wide-ranging employee sustainability engagement program offering staff tips and tools for acting sustainability at home and at work. We also held a series of events, contests and other staff morale buildings initiatives to reinforce the CarbonCats' theme.

In addition, we undertook a number of other successful CSR activities in 2010, including:

- conducting our first carbon footprint calculation on the impact of TRCA operations;
- initiating development of the EcoCentres environmental certification program;
- continuing the EcoOffices certifications at four TRCA workplaces;
- upgrading the utility data management tracking system; and
- initiating LEED® EBOM (Existing Building: Operations & Maintenance) analysis at two TRCA facilities.



Volunteerism and Diversity

As an environmental employer whose core work is conservation, TRCA is a leading example of how barriers to employment can be overcome by embracing systemic change. TRCA's Mentoring to Placement (M2P) for Environmental Professionals Program, Professional Access and Integration Enhancement (PAIE) Program and Environmental Volunteer Network (EVN) continue to integrate successful bridge training and volunteerism opportunities both within our own organizational structure and through outreach to other stakeholders. More specifically, the outreach process engages employers directly to recruit, retain and train internationally trained professionals, to mentor participants, and to take advantage of the Diversity and Cultural Communications training provided to them to increase their cultural competency.

Since the inception of these programs TRCA has shown a tremendous increase in participation rates for supporting internationally trained professionals and newcomers.

MENTORING TO PLACEMENT, M2P: TRCA's EA staff nurture volunteer program

While TRCA's Mentoring to Placement (M2P) for Environmental Professionals Program has partnered with employers and trainers across the region, many mentoring opportunities are being created right here, in-house. For example, TRCA Environmental Assessment (EA) staff began working with volunteers through the M2P program in March 2010. Since that time, their volunteer program has expanded from having just one volunteer in per week to several volunteers in four days a week, plus an intern from Niagara College.



As part of the evolution of this program, the EA team has developed a framework for training and assigning tasks to M2P volunteers. The EA team has a structured volunteer training program, where EA staff make themselves available to provide support and direction. They are also responsible for interviewing, training and management of the volunteers. All this work has supported the effective training of five M2P and three Niagara College interns in total.

The volunteers perform daily tasks such as creating screening maps and drafting letters. Volunteers also shadow the planners during internal meetings and attend site visits. The EA team has had several volunteers who have successfully found employment in their fields either with TRCA or externally.

"Over the past two years the M2P volunteers have become an integral part of the EA team, and an invaluable support system to many of the planners within our department. It has been a pleasure to work directly with these internationally trained professionals, to learn about their experiences and to provide the

support and experience necessary to further their employment goals. To date four of our mentees have found work placement either with TRCA, or elsewhere within the environmental field. I would encourage other organizations to invest their time and efforts in this program," said Sharon Lingertat, senior planner at TRCA.

This successful program will be rolled out to the entire Planning and Development Division. In 2011 volunteers will provide support to planners dealing with applications under the Environmental Assessment Act and the Planning Act, as well as permit applications made under Ontario Regulation 166/06 (TRCA: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses) under the Conservation Authorities Act. It is the goal of the EA team to provide every M2P participant with the practical tools they will need to succeed in the workplace. The experience gained working with the Planning and Development division is as diverse as its participants and the skill sets that are developed are invaluable to volunteers.

Mentoring to Placement (M2P) for Environmental Professionals Program

Launched in June 2009, M2P is an Ontario bridge training program that provides access to training and employment opportunities to 40 internationally trained environmental professionals who have a background in biology, ecology, green building technology and/or planning. This program also connects environmental employers to mentor internationally trained professionals in their field. M2P promotes diversity and inclusiveness by helping newcomers to the Toronto region to find relevant and rewarding employment opportunities in their field. This program is generously funded by the Ministry of Citizenship and Immigration in the amount of \$829,950.

In 2010, the program matched 100 per cent of participants with a mentor in their fields (half of those mentors are dedicated TRCA staff), and assisted 70 per cent of program participants (28 of 40) in finding employment in their fields. In addition to mentoring and volunteer opportunities, M2P offered technical training and workshops that help participants learn about their field in a Canadian context, as well as field trips that offered hands-on experiences. Field trips include a High Park tour of the black oak savannah ecosystem and a tour of Evergreen Brick Works. M2P also provided numerous soft skills workshops to participants on relevant topics, such as job retention, networking and public speaking.

TRCA Planning and Development Volunteer Program – M2P connects both internal divisions and external organizations with professionals interested in volunteering. Various TRCA divisions have been involved in the M2P program, including Ecology, Planning and Development, Watershed Management, and Restoration Services.

Partnerships – M2P has built partnerships with a variety of organizations including ACCES Employment Services and Skills for Change. ACCES Employment provided job search preparation for participants, and Skills for Change assisted in the mentorship initiative. M2P has successfully collaborated with over 40 stakeholders involved in the program. Many of these organizations have provided work experience/employment, volunteer, internship and/or mentorship opportunities. Others have participated as advisory committee members and workshop/training instructors.

Professional Access and Integration Enhancement (PAIE) Program

PAIE is a unique, intensive, two year long Ontario bridge training program led by TRCA that helps to provide access to professional employment opportunities in the environmental sector for internationally trained, highly skilled engineers and geoscientists who are new to Canada. In 2010, the PAIE Program completed its fifth year of matching participants with employers, reducing the barriers to highly skilled employment opportunities and professional licensure, and helping to fill employment gaps in the environmental sector.

Funded by the Ontario government through the Ministry of Citizenship and Immigration, PAIE has proven to be an effective and successful undertaking that has harnessed widespread support throughout the organization. We would like to recognize and give special thanks to the staff of the Ecology Division, who regularly lent their time and expertise to support the efforts of PAIE staff and have launched the careers of numerous program participants. The dedication, commitment and unwavering support of the Ecology Division has been, and continues to be, at the heart of PAIE's success. 2010 was an eventful year for PAIE with the conclusion of the PAIE II Program, which culminated in a warm hearted celebration for graduates, partner organizations and host employers at Black Creek Pioneer Village in March. In addition, the third instalment of PAIE for Environmental Engineers and Geoscientists was launched in September.

To date, 100 per cent of M2P program participants have been matched with a mentor in their field, and 70 per cent have found employment in their field or a related field. In 2010, over 400 hours of individual coaching was provided to M2P participants to improve their job search, resume and cover letter writing, and interview skills.

The inclusion of sustainable communities and social equity within The Living City® mandate has positioned TRCA as a leader and innovator in the environmental field. It is our ability to grow, evolve and respond to the changing needs of the world around us that enables us to have a meaningful impact on people's lives, while making positive, measurable and lasting changes in our community.

Environmental Volunteer Network

Since 2002, the Environmental Volunteer Network (EVN) has been enhancing the environmental and conservation volunteer sector by providing member organizations and TRCA staff with the ability to post volunteer opportunities and access thousands of potential candidates registered in our network. The registration process is simple and there are no fees charged. EVN also offers the *Volunteer Management Toolkit* and the *Diversity Toolkit* at no charge to all member organizations that register.

Funded by the Ministry of Citizenship and Immigration, EVN provides volunteers, including new Canadians, with opportunities to gain skills, work experience and education in the environmental sector. Volunteering opportunities are available in the fields of conservation and environmental sustainability, community stewardship, education and outreach, monitoring, restoration, and natural heritage. It also provides non-profit environmental and municipal agencies within the TRCA jurisdiction with a diverse and inclusive pool of environmental volunteers. There is no cost for members to post volunteer opportunities within the EVN across the Toronto region.

EVN by the numbers:

- In 2010, 46 postings were generated seeking over 1,000 volunteers, while 2,700 volunteers registered in the EVN database.
- Over 5,000 volunteers gained a volunteer opportunity at TRCA between May 2009 and May 2010.
- Over 250 volunteers completed a minimum 30 hours of volunteer work and were rewarded with a TRCA volunteer pass — this represents 7,500 volunteer hours worked at TRCA.
- Over 120 volunteer management and diversity toolkits were distributed.

GRADUATE PRAISES PAIE FOR NEW CAREER

The Professional Access and Integration Enhancement (PAIE) Program provides access to professional employment opportunities in the environmental sector for internationally trained, highly-skilled engineers and geoscientists who are new to Canada. Speaking on behalf of her colleagues at the PAIE II graduation celebration in March 2010, PAIE participant Leany Moreno shared her personal experience as a new Canadian who had immigrated from the Philippines. Leany said that she had struggled to continue her career as a water and wastewater engineer in Canada, and only had managed to find employment as a breakfast server in a

Toronto hotel. Through her participation in the PAIE Program, Leany successfully completed a 12-month work placement as an Environmental Specialist in the Environmental Services Department at York Region. During her speech, she shared the joy and excitement she felt when she was first made aware of this opportunity the day before Christmas, calling her PAIE placement the "best Christmas gift she had ever received." Today, Leany is a licensed Professional Engineer and a permanent employee of York Region, where she is working as an Industrial Treatment Specialist in the Environmental Promotion and Protection Branch.



PAIE participant Leany Moreno and her family.

Marketing and Communications

Engagement with TRCA audiences and stakeholders is taking place increasingly via the internet. The TRCA web presence, which includes our main websites trca.on.ca, BlackCreek.ca and Kortright.org, as well as a number of event and specific initiative websites, have enjoyed strong growth in traffic throughout 2010. In total they brought in over 40 per cent more visitors in 2010 who viewed almost 75 per cent more web pages compared to 2009.

	2009	2010	% increase
Website visits	768,935	1,101,596	43%
Page views	2,822,770	4,129,498	46%

TRCA's online content base has also grown substantially. Our main TRCA website now includes well over 700 content pages. This tremendous growth creates challenges for ensuring the content is accessible and easy to navigate for both the general public and visitors using assistive technology (such as screen readers). With this in mind, we commissioned the Canadian National Institute for the Blind (www.cnib.ca) to audit our website and provide insight into improving accessibility. Through continued consultation and an increased awareness by all staff who are involved with our website content, we continue to improve and refine our website experience for people of all abilities.

In 2010, TRCA extended its social media efforts with several networking hubs on Twitter, Facebook, YouTube and LinkedIn. While these networks were still in their infancy, they form the early foundations for the creation of significant public engagement platforms in the coming years.

While new internet based platforms emerged, TRCA continued to expand its presence in traditional media. TRCA nearly doubled the number of news announcements sent to media outlets from 35 in 2009 to 67 in 2010. The number of mentions in print, online and broadcast media outlets continued to rise to more than 400 in 2010 as TRCA became increasingly recognized among reporters as a go-to source for environmental expertise in the Toronto region.

TRCA stories have appeared in every major media outlet including *The Globe and Mail*, *The Toronto Star*, *National Post*, *Toronto Sun*, Discovery Channel, CBC Radio and TV, Global TV, CTV, CP24 and City TV, as well as community papers across the Toronto region, and ethnic media such as Korean TV Global News, Fairchild TV and *Sing Tao Daily*. TRCA experts also appeared in national media with several interviews on CBC National and the Canadian Press about giant hogweed, Canada geese and the impact of the Gulf spill on migratory birds.

Recognition Awards

The Honour Roll Awards are granted to persons and/or corporate bodies who have made a significant contribution to the aims and objectives of TRCA. Each honouree receives a framed citation and has a tree planted in their name. On June 25, 2010, the following individuals were honoured during a ceremony held at Black Creek Pioneer Village.

Iain Craig — For 15 years of dedicated service to TRCA as a member of the Humber Watershed Alliance, including serving as Chair for two terms, and the Humber Watershed Task Force; for being a key participant in the development of the watershed management strategy, *Legacy: A Strategy for a Healthy Humber*, working on projects that protect, restore and celebrate the Humber, a Canadian Heritage River; for his long term commitment to community advocacy and the mobilization of people for the betterment of community health; and for his devotion and tireless efforts on behalf of the Friends of Boyd to provide knowledge and encourage public participation in nature based recreational use in the Humber River watershed.

Lois James — For being a powerful advocate for the preservation of greenspace in keeping with TRCA's vision for The Living City®; for her relentless energy and passion to the cause of conservation, dedicating countless hours over several decades to the protection of the Rouge



Left to right: Ian Craig, Christina Sharma, Lois James, John McCutcheon, Madeleine McDowell

River watershed; for her devotion and tireless efforts to the Rouge Park, Canada's premier urban wilderness park; for volunteering her time to various community organizations, including Save the Rouge Valley System; and for being an environmental role model for a new generation of green thumbs, continually promoting the protection of the natural beauty, biological diversity, sensitive ecosystems and cultural heritage features of the Rouge Park.

John McCutcheon — For his vision, passion and generosity towards TRCA and The Living City® objectives that will help to ensure the future health of the Oak Ridges Moraine, the Duffins Creek watershed and the community of Uxbridge; for his dedication and leadership, continually raising awareness and understanding of environmental protection, restoration and education; for thinking big and always taking a positive approach in his work that has significantly improved environmental policy, community planning and site plan projects; for being a champion in the environmental field at the provincial, regional and local levels that have benefitted both natural habitat protection and public use enjoyment; for directing an environmental foundation that has regularly supported our Conservation Foundation, making it possible to complete restoration and education projects; and for leaving a lasting legacy for conservation with his commitment towards a sustainable environment in Durham Region.

Madeleine McDowell — For her dedication and commitment to the work of TRCA as a member of the Humber Watershed Alliance and the Humber Watershed Task Force for the past 15 years; for being a key participant in the development of the watershed management strategy, *Legacy: A Strategy for a Healthy Humber*, which was instrumental in the designation of the Humber as a Canadian Heritage River; for her devotion and tireless efforts on behalf of the Humber Heritage Committee as an expert local historian to identify, conserve and promote the culture and heritage resources of the region; and for providing knowledge and encouraging public participation in nature based recreational use in the Humber River watershed.

Christina Sharma — For her tireless efforts and countless hours of volunteer work over the last decade teaching thousands of residential landowners, school children and teachers throughout the Toronto region about the importance of planting native species for wildlife conservation; for inspiring, encouraging and empowering local residents to transform their residential properties into high quality natural habitat for songbirds through her outreach and educational activities and making them aware of the relationship between personal lifestyle choices and environmental health; for creating and establishing Project Chirp! (Creating Habitat in Residential Areas and Parkland) as a songbird conservation education initiative; and for her devotion and passion for nature, in keeping with TRCA's vision for The Living City®.

Conservation Foundation



Left to right: Brian Denney CAO TRCA, David Love Executive Director Conservation Foundation and Camilla Dalglash W. Garfield Weston Foundation

In 2010, the Conservation Foundation enjoyed another successful year supported by our generous individual corporate and foundation donors. In total, the Foundation raised almost \$2 million to make the Toronto region a cleaner, greener, healthier place to live.

Events continue to be a focus for the Conservation Foundation and, in 2010, we added a successful event to our calendar: **Sunny Days for Conservation** at the beautiful Deer Creek Golf Club near Ajax. Our friends in Durham came out to enjoy a great evening of music featuring the award winning Canadian band Lighthouse.

The 17th annual **Paddle the Don** was again a great success. Toward the end of 2010, Manulife Financial signed on as a three-year sponsor, which will allow us to make the event bigger and better through the 20th anniversary in 2013.

Finally, our **Charles Sauriol Annual Environmental Dinner** held at a new facility in the International Centre drew another huge crowd. The highlights were a special presentation by Second City on biodiversity and the inauguration of The Living City® Awards.

The Conservation Foundation was thrilled when the W. Garfield Weston Foundation won the award for Regional Biodiversity for their Monarch Teacher Network program. The Weston Foundation remains a committed supporter of our work, especially in educating young people by "getting kids into nature."

Toronto and Region Conservation Authority Member Municipalities and Members 2010

<p>Town of Mono & Township of Adjala-Tosorontio</p> <p>G. Mason</p> <p>The Regional Municipality of York</p> <p>D. Barrow *</p> <p>B. Fisch</p> <p>J. Heath *</p> <p>L. Pabst</p> <p>G. Rosati</p>	<p>The Regional Municipality of Durham</p> <p>C. Jordan *</p> <p>B. Littley</p> <p>G. L. O'Connor (Chair)*</p> <p>The Regional Municipality Of Peel</p> <p>E. Adams</p> <p>G. Gibson</p> <p>M. Prentice *</p> <p>J. Sprovieri</p> <p>R. Whitehead *</p>	<p>City of Toronto</p> <p>P. Ainslie</p> <p>M. Augimeri *</p> <p>B. Bertie</p> <p>L. Bruce</p> <p>G. Cowbourne *</p> <p>G. De Baeremaeker *</p> <p>M. Del Grande</p> <p>P. Gough</p> <p>L. Griffin</p> <p>S. Hall *</p> <p>P. Milczyn</p> <p>R. Moeser *</p> <p>J. Parker</p> <p>A. Perruzza *</p>
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*Executive Committee Members

Executive Committee

Chief Administrative Officer/Secretary-Treasurer

B. Denney

<p>Director, Watershed Management A. Freeman</p>	<p>Director, Finance and Business Services J. Dillane</p>	<p>Director, Planning and Development C. Woodland</p>	<p>Director, Restoration Services N. Saccone</p>	<p>Director, Parks and Culture D. Edwards</p>	<p>Director, Ecology D. Martin-Downs</p>	<p>Director, Human Resources, Marketing and Communications C. MacEwen</p>
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Financial Overview

In 2010, TRCA budgeted \$100.3 million for conservation and environmental programs and projects, an increase of \$7.6 million over 2009 or 8.2 percent. In part, the increase in expenditures reflects the continuing broader public sector response to the 2009 Canadian economic situation that required careful, consistent spending. Actual expenditures in 2010 totaled \$88.2 million, an increase of \$13.6 million over 2009. Key projects that account for this increase include land acquisition, conservation area and waterfront development, and land care. A number of waterfront development projects such as those funded by Waterfront Toronto could not proceed as planned and were deferred, accounting for much of the difference between budgeted and actual expenditures of \$12.1 million.

TRCA's municipal partners continued their strong support of the work of TRCA, investing \$40.1 million or about 45 per cent of the 2010 actual funding, an increase of about 14 per cent over 2009, to help with financing of new and on going projects, such as those noted above.

Revenue generated from fees, sales, rentals and contract services is the second largest component of the 2010 revenue at 38.2 percent or \$34.4 million, representing a 20 percent increase over 2009. This increase can be attributed entirely to contracted services revenue, which has seen significant growth in recent years as municipalities and other groups increasingly employ TRCA to carry out environmental restoration projects.

The Conservation Foundation of Greater Toronto contributed funding in the amount of \$1.2 million, a decrease of about 10 percent from 2009. The Foundation continues to enjoy success with fund raising for projects, but as has been the case over the last several years, it is finding it increasingly difficult to meet unrestricted revenue targets.

The increase in other sources of funding relates to additional land sale proceeds that became available during the year.

A review of the TRCA's statement of financial position indicates that its tangible capital asset base, before amortization, grew to \$518.2 million during the year, highlighting the need for additional major maintenance and land care funding. Also of note is that reserves grew from \$1.8 million to \$3.2 million and the cumulative cash basis deficit position decreased from \$2.9 million to \$2.4 million. Additional financial information can be obtained from the 2010 audited financial statements, which are posted on TRCA web site.

Toronto and Region Conservation Authority Summarized Financial Statements

Auditor's Report

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To the Members of the Toronto and Region Conservation Authority

The accompanying summary financial statements, which comprise the summary statement of financial position as at December 31, 2010 and the summary statement of operations for the year then ended are derived from the audited financial statements of Toronto and Region Conservation Authority for the year ended December 31, 2010. We expressed an unmodified audit opinion on those financial statements in our report dated June 24, 2011. Those financial statements, and the summary financial statements do not reflect the effects of events that occurred subsequent to the date of our report on those financial statements.

The summary financial statements do not contain all the disclosures required by Canadian public sector accounting standards. Reading the summary financial statements, therefore, is not a substitute for reading the audited financial statements of Toronto and Region Conservation Authority.

Management's Responsibility for the Summary Financial Statements

Management is responsible for the preparation of a summary of the audited financial statements on the basis described in Note 1.

Auditor's Responsibility

Our responsibility is to express an opinion on the summary financial statements based on our procedures, which were conducted in accordance with Canadian Auditing Standards (CAS) 810, "Engagements to Report on Summary Financial Statements".

Opinion

In our opinion, the summary financial statements derived from the audited financial statements of Toronto and Region Conservation Authority for the year ended December 31, 2010 are a fair summary of those financial statements, in accordance with the basis described in Note 1.



Chartered Accountants
Licensed Public Accountants
Markham, Canada
June 24, 2011

Toronto and Region Conservation Authority Statement of Financial Position

December 31

	2010	2009
Financial Assets		
Cash and cash equivalents	\$ 9,680,564	\$ 4,219,064
Marketable securities	13,809,132	14,199,489
Receivables	12,440,449	12,450,884
	35,930,145	30,869,437
Liabilities		
Payables and accruals	11,880,535	9,881,713
Deferred revenue		
Municipal levies	9,483,983	7,381,179
Capital, special projects and other	14,533,481	15,390,256
Vacation pay and sick leave entitlements	1,880,611	1,935,736
	37,778,610	34,588,884
Net Debt	(1,848,465)	(3,719,447)
Non-Financial Assets		
Inventory	488,353	479,649
Prepays	245,711	209,714
Tangible capital assets	402,233,964	386,558,964
	402,968,028	387,248,327
Accumulated surplus	\$ 401,119,563	\$ 383,528,880

1. Criteria for presentation of summary financial statements

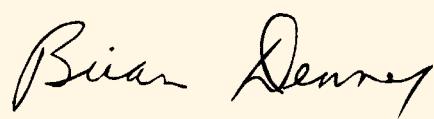
The information selected by management for presentation in the Summary Financial Statements has been identified as being the most pertinent and useful financial data for inclusion in the Toronto and Region Conservation Authority (TRCA) annual report.

Audited financial statements are available on TRCA's official website.

On behalf of Toronto and Region Conservation Authority



Chair



Secretary-Treasurer

Toronto and Region Conservation Authority Statement of Operations

Year Ended December 31

	2010 Budget (unaudited)	2010 Actual	2009 Actual
Revenue			
Municipal			
Levies - Operating	\$ 11,566,000	\$ 11,532,985	\$ 11,382,338
- Capital	28,261,000	19,023,309	19,097,021
Other	6,183,000	9,512,054	3,880,867
Government grants			
MNR transfer payments	846,000	845,753	845,753
Provincial - other	6,879,000	6,102,964	6,276,121
Federal	3,171,000	2,533,796	1,599,741
User fees, sales and admissions	14,532,400	13,834,661	13,725,756
Investment income	260,000	321,342	283,385
Proceeds from sale of properties	850,000	3,806,025	40,002
The Conservation Foundation of			
Greater Toronto	1,071,600	1,233,689	1,360,669
Donations and fundraising	983,000	478,058	758,441
Facility and property rentals	2,376,400	2,787,019	2,553,572
Canada Post Corporation agreement	665,000	8,868	9,486
Waterfront Toronto	13,461,000	6,796,768	5,221,064
Corporate and Community Groups	3,088,000	1,145,918	776,598
Contract services	5,133,000	9,134,950	4,300,480
Sales and property tax refunds	222,000	289,272	559,645
Compensation agreements	10,000	674,440	925,216
Sundry	71,300	16,779	132,217
	99,629,700	90,078,650	73,728,372
Less: cost of tangible sales of capital assets included above	—	(363,653)	(134,981)
	99,629,700	89,714,997	73,593,391
Expenditures			
Watershed management and health monitoring	14,126,000	12,273,577	12,197,995
Environmental advisory services	4,633,000	4,525,335	4,539,058
Watershed stewardship	19,939,000	18,902,434	16,163,407
Conservation land management, development and acquisition	34,091,300	28,141,902	18,223,117
Conservation and education programming	19,372,800	17,745,867	17,331,878
Corporate services	8,108,000	6,428,272	6,065,781
Vehicle and equipment, net of usage charged	—	145,580	41,713
	100,270,100	88,162,967	74,562,949
Less: expenditures on capital assets included above	—	(21,940,817)	(13,122,487)
Expenditures before amortization	100,270,100	66,222,150	61,440,462
Amortization	—	5,902,164	5,920,702
	100,270,100	72,124,314	67,361,164
Annual surplus (deficit) for the year	\$ (640,400)	\$ 17,590,683	\$ 6,232,227

The Year of Biodiversity

Winter

Toronto Port Authority invests \$1 million for the creation of protective islands and fish habitat wetlands at Tommy Thompson Park.

A rare ivory gull is observed at Cherry Beach. Classified as near threatened, few are seen south of the pack ice in the arctic.

A fisher is spotted in the Glen Major area. This is the first verified record of this mammal within TRCA's jurisdiction and shows the quality of the Glen Major Forest and the connection it provides to habitats in the north.

A mink is spotted in Marigold Creek, a good indication of the health of the area.



2

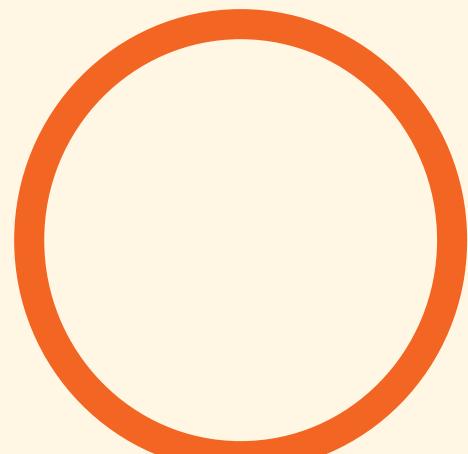


Photo: Gail Fraser



Spring

Some 6,800 Atlantic salmon fry, raised in classroom hatcheries by student volunteers, were released in Duffins Creek in Durham, as well as the Credit River and Cobourg Brook. Adult salmon are expected to return to Duffins Creek to spawn in larger numbers in 2011.

An adult Atlantic salmon is caught off the shore of Port Union Waterfront Park. This is a hatchery release that has lived in the river and lake for the past few years.

A pair of red-necked grebes is nesting on an artificial floating platform installed by Restoration Services staff at Colonel Sam Smith Park.

Two artificial nesting/roosting towers installed in the Rouge last year are showing evidence of chimney swift use.

A program to protect the trees at Tommy Thompson Park has resulted in more double-crested cormorants nesting on the ground. In 2009, the ground nesting colony experienced a 51 per cent increase and this year it expanded by an additional 59 per cent.

More than 200 Pratt & Whitney Canada employees participated in a 14th annual planting day in the Edward L. Scarlett greenbelt located in the Etobicoke Creek

valley. To date, Pratt & Whitney Canada volunteers have planted over 7,250 trees and shrubs to renaturalize the greenbelt.

Humber team completed six community outreach projects, with over 1,500 participants who helped plant approximately 6,000 trees and shrubs.

Tommy Thompson Park Bird Festival welcomes the public to take part in bird hikes and family nature walks, enjoy fun activities and interesting displays, and witness a live bird banding demonstration at the Park's Bird Research Station.

Funding is received from the Metcalfe Foundation, Imperial Oil and TD Friends of the Environment Foundation for TRCA's Winged Migration Program at Tommy Thompson Park.

Sobeys Earth Day Canada contributes \$20,000 to TRCA's Aquatic Plants Program.

Transmissions from 20 per cent of the wimbrills outfitted with transmitters in the U.S. are picked up as the shorebirds migrate past Toronto.

10



A whip-poor-will is caught at the Tommy Thompson Bird Research Station. This nocturnal species is listed as threatened in Ontario, and this is the first time station staff have encountered this species.



Summer

During the G20 Summit in Toronto, employees from Price Waterhouse Coopers and Direct Energy Canada plant trees and pull invasive species at Tommy Thompson Park.

Two more bird species at risk, the Acadian flycatcher and the Canada warbler, are spotted in one section in northern part of TRCA's jurisdiction.

Funded by the Weston Foundation, TRCA hosts two-day Monarch Teacher Network workshops at the Lake St. George Field Centre and Black Creek Pioneer Village and receives overwhelmingly positive response from participants.

With over 55 species of butterflies recorded at Tommy Thompson Park, the public is invited to the Butterfly Festival to learn about the amazing phenomenon of monarch migration and the importance of butterfly conservation.

Fall

The first channel catfish collected since the mid-1970s is caught.

A family group of river otters is spotted by Rouge Park staff in the Amos Ponds.

A least bittern responding to breeding calls is observed at the Duffins Creek Marsh, showing that the habitat improvements are producing results.

An American bittern is spotted at Brock North, showing that the wetlands are in active use.

During the waterfront monitoring program, several American eels are caught, a species that is being considered for listing under Canada's *Species at Risk Act*.

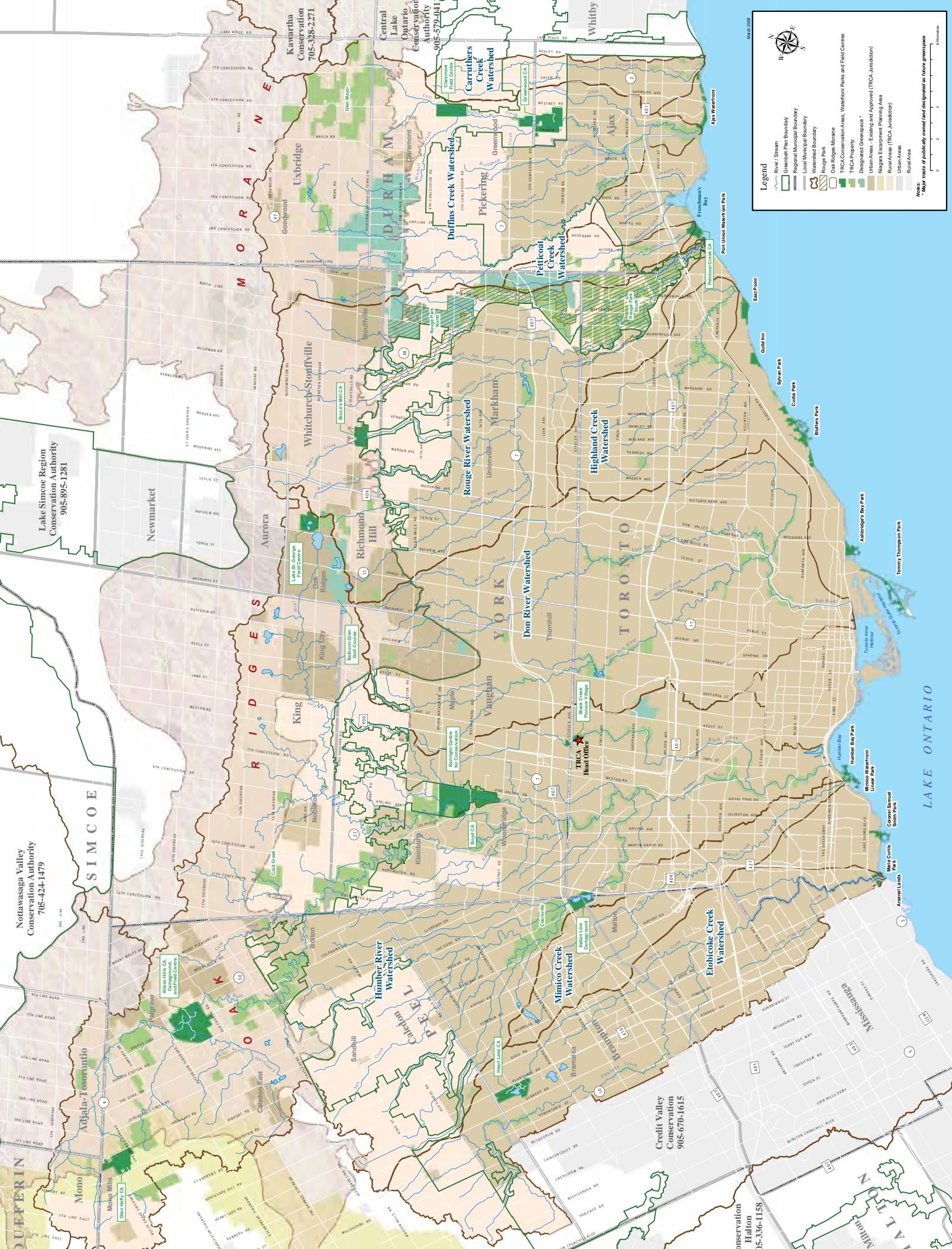
Targeted searches for species at risk are carried out in Rouge Park, with staff confirming at least ten listed species at risk may be found in the Park.

A new native species of aster (*Senecio pauperulus*) is identified in Rouge Park, marking the first time the wildflower has been seen in the TRCA jurisdiction.

The redside dace population in the Humber River appears to be relatively stable.

A common shiner/creek chub hybrid is found for the first time in TRCA jurisdiction in the Humber River.

Over 20 hectares of rare seepage fen vegetation communities were identified on the Brock North property. These fens support a number of sensitive plant species of concern, including nodding ladies' tresses, thin-leaved cotton-grass, and green and yellow sedges.



www.trca.on.ca



Member of Conservation Ontario