



Heber Down Conservation Area

# 2007 Year In Review

A Watershed Moment



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## Welcome Message from the Chair

It is with great pleasure that I present the 2007 Year In Review Report of the Central Lake Ontario Conservation Authority (CLOCA). Completing my first year as Chair of the Conservation Authority has been a great experience and I would like to express my appreciation to the staff and Board of Directors for their hard work and support in 2007.

As you read through the document, you will see the many accomplishments and ongoing projects of this organization over the past year. I would like to highlight a few of the accomplishments in 2007 as we continue to maintain our standards of business excellence.

Within the Natural Heritage Department several major projects were advanced. Authority staff completed the Central Lake Ontario Fisheries Management Plan for our 4 primary watersheds in partnership with the Ontario Ministry of Natural Resources, Department of Fisheries and Oceans and our community stakeholders. In December, staff released the Existing Conditions Report for the Lynde Creek Watershed as the first phase in the preparation of a Watershed Management Plan for Lynde Creek. The natural heritage inventory for the Heber Down Conservation Area in Whitby was also completed and Authority staff hosted the first Check Your Watershed Day event for the Oshawa Creek Watershed in July, engaging 50 community volunteers and collecting data from 118 stream crossings.

To protect watershed residents from flooding and flood damage, new floodplain mapping was completed on the full Lynde Creek watershed, Tooley Creek watershed in the Municipality of Clarington and a portion of the Oshawa Creek located in the Town of Whitby. The new maps allow CLOCA to replace 30 year old mapping with new, more accurate digital information.

Stewardship on the land was also an important focus in 2007, with the 253 acres of environmentally sensitive land brought under the protection of Central Lake Ontario Conservation. Along with this land acquisition, over 21,000 trees were planted on private lands throughout the watershed, 1 kilometre of stream and 1 hectare of wetland were enhanced with the support of our partner, the Oak Ridges Moraine Foundation's Caring for the Moraine Program.

With regards to protecting groundwater resources, Authority staff completed 11 well decommissioning projects and two well upgrades through the Authority's Clean Water Land Stewardship Program and 7 well decommissioning projects through the Provincial Drinking Water Source Protection Program. The CTC Source Protection Planning Committee was also established under the Provincial Clean Water Act consisting of 21 members. More information on the CTC is available at [www.ctcswp.ca](http://www.ctcswp.ca).

Improvements continued to be made in our Conservation Areas, with the re-opening of the Stephen's Gulch Conservation Area. Visitors to Stephen's Gulch can now enjoy improved parking facilities, a new information kiosk and a re-designed 3 kilometer loop trail appropriate for hiking, mountain biking and cross-country skiing. The Authority also adopted an Integrated Pest Management Plan for use within its Conservation Areas. This approach to pest management is designed to control pest species, to appropriate levels with minimal environmental impact.

Finally, in 2007 we hosted the 10th anniversary of the Durham Children's Groundwater Festival. Started in 1998, as part of CLOCA's 40th anniversary theme of 'Water Quality' we have engaged more than 42,000 grade four students and 4,200 secondary students in the program, helping them to learn about the importance of water in their everyday lives.

It is important to note that the projects within this report would not be possible without the support of our community partners: Region of Durham, member municipalities, community stakeholders and watershed residents. Thank you for your support and we look forward to working with all of you in 2008.

Sincerely,

Gerry Emm  
Chair, Central Lake Ontario Conservation



## Who Are We

The Central Lake Ontario Conservation Authority was established in 1958 by the Government of Ontario at the request of the municipalities located within the watersheds of the following creek systems: Bennett, Black, Bowmanville, Corbett, Darlington, Farewell, Goodman, Harmony, Lynde, Oshawa, Pringle, Robinson, Soper, Tooley and Westside.



*Working in partnership with the community for healthy watersheds.*

### Our Mission

"To work towards the awareness, understanding, wise use and enhancement of our watershed resources for the benefit of the natural environment in partnership with the Region of Durham including: Cities of Oshawa and Pickering, Towns of Ajax and Whitby, Municipality of Clarington, Townships of Scugog and Uxbridge and our watershed communities."



Central Lake Ontario Conservation protects through public ownership, over 2023 hectares (5,000 acres) of environmentally sensitive land.

### History of Conservation Authorities

The Conservation Authorities Act, which was passed in 1946, laid the groundwork for the implementation of watershed management in Ontario. The concept of Conservation Authorities was based on three fundamental principles: cost sharing between municipal and provincial governments; local initiative (Authorities would be formed only when municipalities petitioned the province); and watershed-wide planning.

Although conservation may seem like a vital part of life today, the need was not always recognized. By 1954, 20 conservation authorities had been formed. Then came the fury of Hurricane Hazel.

Hurricane Hazel devastated southern Ontario overnight on October 15, 1954, killing 81 people and causing \$20 million dollars in damage. Today, watershed management programs undertaken by Conservation Authorities have virtually eliminated catastrophic flooding in Ontario.

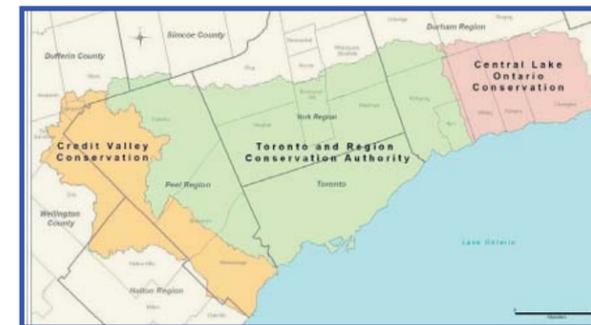
The province's 36 Conservation Authorities are regarded as world leaders in conservation, environmental protection, and flood control. Together Authorities own more than 165,000 hectares (408,000 acres) of land, including areas in the Oak Ridges Moraine, Carolinian forest, wetlands and important fish and wildlife habitat.



*What we do on the land is mirrored in the water.*

## Drinking Water Source Protection

Drinking Water Source Protection activities initiated at the end of 2004, are funded entirely by the province with 16 million dollars from the province to support implementation of the guideline recommendations. The Ontario Legislature passed the Clean Water Act that governs source protection planning activities on December 5th, 2006. The focus to date has been on establishing the groupings of conservation authorities into Source Protection Regions, building capacity within the conservation authorities (source protection authorities: SPA's) and the initiation of technical work required to prepare components of individual SPA Assessment reports. In 2005, the proposed CTC Source Protection Region comprised of the Credit Valley, Toronto and Region and Central Lake Ontario Conservation Authorities, was accepted by the province and the technical studies ensued. CLOCA recently completed two technical SPA components of the Assessment report for CLOCA's jurisdiction. The Drinking Water Source Protection (DWSP) work in 2007-08 for the CTC Source Protection Regions, will focus on the formation and support of a Source Protection Planning Committee the responsible body outlined in the recently passed draft legislation for the production of the Assessment reports and the Source Protection Plans. As well, we will work towards developing enhanced communications and consultation with stakeholders, on Tier 1, 2 and/or 3 water budgeting activities, ground and surface water vulnerability modules, threats



CTC Source Protection Region is comprised of the Credit Valley, Toronto and Region and Central Lake Ontario Conservation Authorities.

assessment and data collection and integration. Peer review activities are associated with all technical modules prepared or administered by SPA's. The conservation authorities are working very closely with Durham Region staff to ensure that the workplan complements other regional initiatives and that collective technical standards are established and incorporated into the final product.

### 'Other Systems' Source Water Protection Pilot

CLOCA has been awarded a contract to prepare a DRAFT provincial guidance document under the Drinking Water Source Protection Program to prioritize and designate private systems (ground and surface water sources) under the Clean Water Act. The pilot project will examine various risk criteria that should be considered in the designation of a private system and outline a process for municipal councils across the province (the decision-maker on this issue) to use in determining whether designation as a private system, is appropriate or not. The work is being administered by CLOCA with Jagger Hims Ltd. providing technical services. It is anticipated that the work will be completed by March 2008 for submission to the MOE, and will be implemented subsequent to review, revision and approval by the province.



Steps to protecting drinking water.



## CAMC/ YPDT Groundwater Management Program

The Conservation Authorities Moraine Coalition (CAMC)/ York -Peel- Durham-Toronto (YPDT) Groundwater Management Program continues to move forward on a number of initiatives. The program provides scientific input for water resources planning for partner agencies with technical support and a variety of resources and tools like databases and groundwater flow models for decision making in the Oak Ridges Moraine. 2007 saw a number of tasks being undertaken resulting in these accomplishments:



- Expansion of geological database to include the entire area of the Trent Conservation Coalition Source Protection Region.
- Revision of the groundwater flow modeling for across Durham Region: Extension of the groundwater model westward, and eastward, to encompass the full CAMC study area: Reporting and documentation work was also advanced with the completion of several key documents: the "Application of the Numerical Groundwater Flow Model," a draft Geological Interpretation document and three reports to the Ontario Geological Survey.
- The CAMC-YPDT core team also continues to provide technical expertise to the Province and Source Water Protection teams in the area.

## Wellhead Protection Area - Well Decommissioning & Upgrade Program

As previous records and investigations presented in the Walkerton Inquiry confirm, it has become common knowledge that poorly maintained and improperly abandoned wells serve as direct conduits allowing migration of contaminated surface water to the underground aquifers. Potentially contaminated aquifers, in turn, place residents who are dependent on water wells for drinking supply, at risk.

In 2004, CLOCA, as part of its stewardship program, launched a private water well decommissioning and upgrade program. During the same period, the Region of Durham completed groundwater studies for its seven municipal drinking water systems, Blackstock, Greenbank, Cannington, Sunderland, Orono, Uxville and Uxbridge, all outside of the CLOCA jurisdiction. These are now referred to as well head protection Areas or WHPA's and have been delineated for each municipal well, using

time of travel calculations. The Region of Durham, acknowledging CLOCA's success with well decommissioning and upgrades across their jurisdiction, suggested that CLOCA extend its stewardship program to Durham Region's municipal WHPA's. In 2005, CLOCA started administering the WHPA Well Decommissioning and Upgrade program with support from Durham's other conservation authorities, Lake Simcoe, Kawartha, Ganaraska and Toronto and Region Conservation Authorities.

In 2007, CLOCA was able to complete processing six well decommissioning projects in the Blackstock Community WHPA and one well upgrade in the Uxbridge WHPA. The application of a more intensive personal level approach coupled with a community level information campaign to promote the program, resulted in a 30% increase in uptake compared to the recorded results of the program in 2005 and 2006, combined.



Upgrading a well pit to protect groundwater resources from surface water contamination.

## Technical Guidelines for Stormwater Management Submissions

Developing new communities in urban areas requires that development applications are supported by stormwater management plans that incorporate drainage system details for the following components:

- ~ minor (storm sewer) flow,
- ~ major overland drainage conveyance,
- ~ control of peak discharge to protect against surcharging infrastructure, or causing flooding,
- ~ stormwater quality treatment,
- ~ control against stream erosion,
- ~ protection/maintenance of groundwater conditions,
- ~ stream erosion restoration or alteration,
- ~ floodplain/natural hazard assessment and management,
- ~ sediment control during construction.

Submissions received by Central Lake Ontario Conservation engineering staff vary in terms of content, complexity and overall quality of information.

Historically, not all submissions were complete and many required additional supporting information for the reviewers, resulting in a longer review process and delay of the overall development review process. In 2007, we developed the *Stormwater Management Submission Guidelines* to help improve the quality of the submissions and subsequently improve efficiencies in our review process. Our expectations for all stormwater management submissions are now clearly outlined in the Guideline, which includes a description of our policies, guidance on approved methods and techniques, a summary of key hydrologic parameters, and a summary of submission requirements. The Guideline also provides a checklist for proponents to ensure all the supporting documents are submitted with their application, helping us to expedite the review

process. Staff are also finding the checklist helpful in identifying missing information, and can request the missing information from the proponent prior to completing the application review process. The document also provides stormwater management criteria for specific watersheds.

The Guidelines have been circulated to local development consultants, municipalities and neighbouring Conservation Authorities. It is anticipated that these Guidelines will improve the efficiency of the review process in 2008, and result in shorter review periods and faster approvals.

## Planning and Regulations

The Planning and Regulations Department provides environmental review of development proposals submitted by municipalities, developers and the general public.

Ontario Regulation 42/06: Development, Interference with Wetlands and Alteration to Shorelines and Watercourses, administered by the Authority, ensures residents are protected and the integrity of the watershed floodplains are maintained. By directing development away from flood and erosion prone areas, we reduce the risk to life and property which result from flooding and erosion.

### Statistics for 2007:

- 231 new planning files were created (a total of 459 pieces of correspondence).
- 140 written requests for information regarding properties within the watershed.
- 244 occurrences under the Ontario Regulation 42/06: Development, Interference with Wetlands and Alteration to Shorelines and Watercourses that include both permits and violations.



## Water Monitoring

The Central Lake Ontario Conservation Authority's (CLOCA) Water Monitoring Network is a collection of stream gauges, rain gauges, air and water temperature probes, groundwater monitoring wells, snow measurement sites and surface water and groundwater quality sites.

This Water Monitoring Network and the valuable information it is designed to collect, helps us better understand and predict the impacts of land use activities on water quantity and quality. This knowledge allows us to make informed decisions about the management and protection of our water resources. The data is catalogued and analyzed to help us develop effective watershed wide management programs and policies like our state of the art Flood Forecasting and Warning system, Low Water Response program and the Source Water Protection program.

2007 was a year of extremes in our weather and the response to these extremes by both surface water and groundwater resources were significant throughout our watersheds. We began the year with little to no snow pack, resulting in very little spring runoff. The warm and dry weather and lack of precipitation starting in early May resulted in low base flow in many of our creeks. As a result, CLOCA entered into a Level 1 Low Water Level Condition in July and eventually into a Level 2 in October. Through our media contacts, particularly Rogers Day Time, we were able to provide the tools for residents and businesses in our watershed to take the necessary steps to put in place water conservation measures. We targeted a reduction in surface water use by 10% and 20% for groundwater use. As of the end of 2007, the low water conditions continued across Durham and other Regions in Ontario.

Mother Nature reminded us, however, that it *does* snow in Southern Ontario and provided us with a December snow pack of 13 to 23 centimetres (5.1 to 9 inches), then quickly took most of that away with a final rain event, which resulted in our only High Water Safety Bulletin of 2007.

The end of the year saw the construction and setup of CLOCA's new weather station at the Oshawa Airport. This single piece of equipment will allow us to measure total precipitation (rain

and snow). We have also purchased several pieces of new equipment that will, in the new year, replace old outdated equipment and allow for improvements to provide real-time communication to our water monitoring team.



New weather station at the Oshawa Airport.

## Provincial Groundwater Monitoring Network

As part of the Provincial Groundwater Monitoring Network, CLOCA maintains 17 groundwater monitoring wells. These wells maintain a continuous log of static water levels. As well, water quality analyses are performed on samples taken from these wells twice annually. This data is used for a wide variety of applications, including watershed characterization reports for source water protection, Oak Ridges Moraine conservation plans and watershed planning. The data is input into the York, Peel, Durham and Toronto shared database as well as the provincial online database.

CLOCA has now gathered more than 5 years worth of continuous data to establish aquifer trends.



Groundwater monitoring well at Enniskillen C.A.

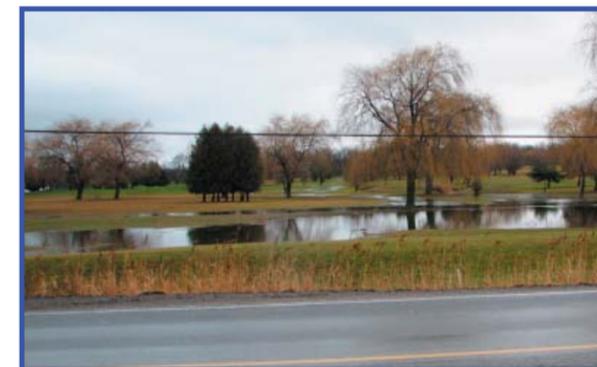
## Floodplain Mapping

Floodplain mapping is a key tool for CLOCA's mandate for flood forecasting and warning and water monitoring. New technology is allowing CLOCA to update and replace 30 year old floodplain mapping with new more accurate digital information.

CLOCA staff have been producing the components hydrology models and digital elevation models to allow for efficient completion of floodplain mapping for watersheds where the existing mapping is significantly out of date. Newly developed digital elevation models replace the need for expensive base mapping, and digital processes for computing and mapping flood limits, reduces the staff time required to develop new flood line information.

CLOCA staff will complete much of the work within our staff complement and will contract consultants to complete large floodplain mapping components as required.

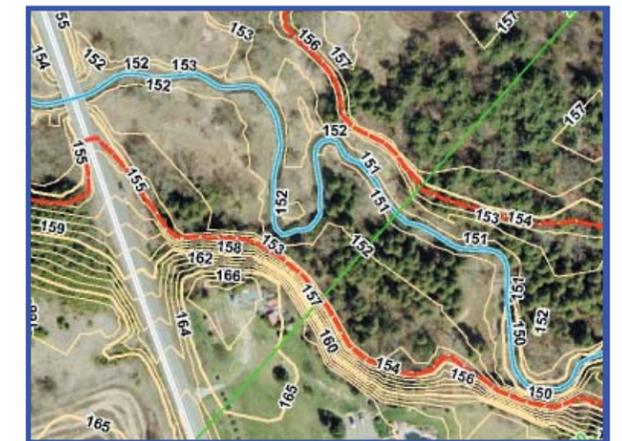
In 2007, CLOCA staff completed new floodplain mapping for the full Tooley Creek watershed, and the portion of the Oshawa Creek within the Town of Whitby. Base mapping and hydrology models were also provided to an engineering consultant to allow for the completion of new floodplain mapping for the full Lynde Creek watershed.



Would you like your house here? Knowing the floodplain limits, prevents property damage by protecting residents from building in a floodplain area.

## Creating New Floodplain Maps

In 2008, we will work with various consultants to initiate floodplain mapping for the complete Bowmanville/Soper Creek watersheds and complete floodplain mapping and develop digital elevation and hydrology modelling for the Black/Harmony/Farewell Creek watersheds. Other small watershed floodplain mapping projects will continue to be undertaken by staff.



Sample of floodplain mapping.

## [www.cloca.com](http://www.cloca.com)

Whether you are planning an outing to a conservation area, working on a school project or concerned about flood conditions [www.cloca.com](http://www.cloca.com) is just a click away. In 2007, over 60,000 visits were registered at the Authority's web site with the Conservation Areas section being the most popular.

**Don't forget to add the CLOCA web site to your favourites list!**



A section of CLOCA's home page at [www.cloca.com](http://www.cloca.com).

# Lynde Creek Watershed Management Plan

The Existing Conditions Report for the Lynde Creek Watershed was released in 2007. This is the first phase in the preparation of a Watershed Management Plan for Lynde Creek. The Lynde Creek and its tributaries drain an area of approximately 130 km<sup>2</sup> (50.2 mi<sup>2</sup>) and flow through five municipalities including: the Town of Whitby, Town of Ajax, City of Pickering, Townships of Scugog and Uxbridge.

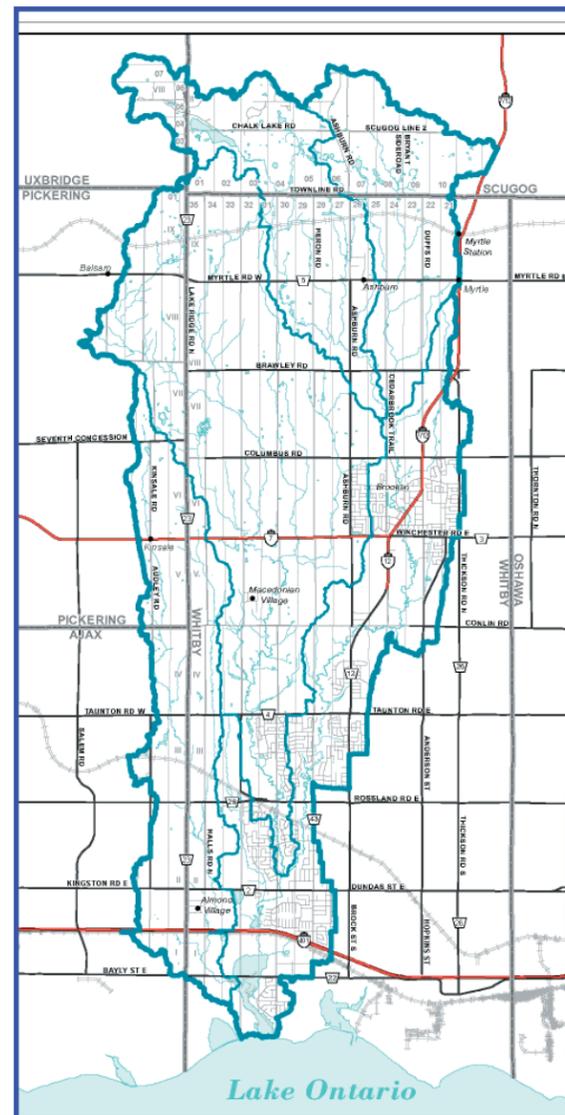
The Existing Conditions Report provides information on the following:

- Physical Geography
- Fisheries and Aquatic Habitat
- Terrestrial Natural Habitat
- Wetlands
- Surface Water Quality
- Water Quantity
- Fluvial Geomorphology
- Water Budget
- Water Temperature
- Air Quality
- Climate
- Hydrogeology
- Human Heritage
- Green Space
- Land Use and Policy
- Impervious Surfaces
- Stormwater Management

With this information, the state of the watershed can be determined and a plan for the maintenance and enhancement of the watershed's natural resources can be prepared. To help with this assessment, the Lynde Creek watershed was divided into 5 subwatersheds the Lynde Main; Heber Down; Kinsale; Ashburn; and Myrtle Station.

To help gather public input for this project, a short questionnaire was sent to all stakeholders and placed on the Authority's web site. Also, a public open house was held in December.

Work on the Lynde Creek Watershed Plan will continue in 2008 with finalization of the Existing Conditions Report and the identification of alternative management options and recommendations.



Lynde Creek Watershed



Members of the public attend the December open house held at the Whitby Council Chambers.

# New Information Management Systems

2007 has been a challenging yet productive year for the development of CLOCA's various project and program database requirements. This work is extremely involved, requiring staff to research, design and implement database solutions to address the wealth of information collected from all departments within the organization. Many of our database solutions are integrated with the needs of our many working and funding partners, requiring collaborative efforts, database sharing agreements and ongoing adaptations to new information and technology. In 2007, we focused on the Provincial Source Protection initiatives, providing data management, design, development and ongoing maintenance support for the three Source Protection Authorities in our Source Water Protection Region. All data collected through this initiative is catalogued and compiled

for submission to the Province, in an effort to meet the Provincial Source Water Protection requirements of the Clean Water Act.

In addition to this work, we enhanced the existing Microsoft Access databases with a new server to improve our management and backup capabilities, as well as the development and implementation of a more user friendly web based program for staff to input edit, query, report, apply metadata and control access to sensitive information contained in CLOCA databases.

In 2008, we will continue to address the challenges and opportunities of managing and accessing information and will focus on developing models and integrating our on-line mapping capabilities.

# Geomatics & Information Technology

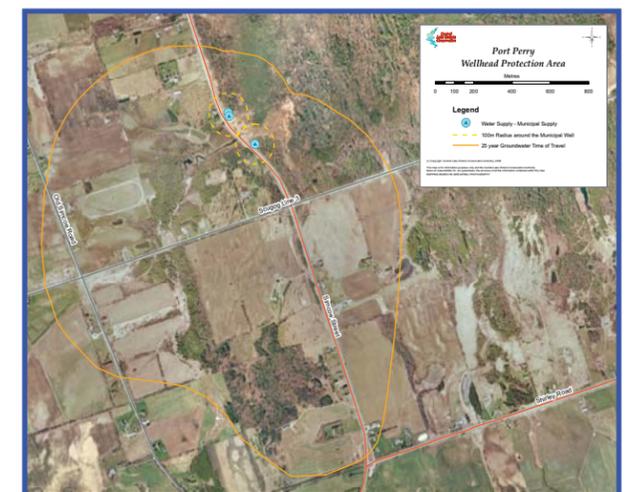
The Geomatics & Information Technology staff have been involved in numerous Authority projects throughout the year. Projects ranged from the Natural Heritage Landscape Analysis Model to assess vegetation cover on a watershed scale, updating our Floodplain Mapping, identifying the Generic Regulation Limits as a requirement of the Clean Water Act and updated mapping of the Lynde Creek Watershed in support of the Lynde Creek Existing Conditions Report and public open house.

undergoing review with a series of assessments and critical analysis, to ensure it meets our needs.

Given our role in watershed management, CLOCA has to operate in the event of an emergency. A critical component of our day to day operations is our Information Technology Infrastructure. We took measures to ensure that critical staff would not be interrupted in the event of a power outage, by installing backup power supplies on critical employees' workstations and network infrastructure.

Easy access to our most current information allows the Authority to maintain and seamlessly update its spatial information. Recently the Lynde Creek Watershed and Subwatershed boundaries were updated using the ArcHydro Toolset and First Base Solutions 2005 Digital Elevation Modeling (DEM) mapping project, giving us more accurate representation of a 3-dimensional landscape.

The centralizing of CLOCA's spatial information and projects has moved forward in 2007, with the addition of a new server. Deployment of the Spatial Data Viewer Application will enable all staff to have access to the latest mapping information when developing projects and making decisions. The system is currently



Map of wellhead protection area using ARCGIS software.

## Watershed Awards

The Authority's biennial Watershed Awards ceremony was hosted in early December and was a great success. The evening consisted of a community environmental fair, award ceremony and a presentation that gave the audience a birds eye view of our watershed. The Watershed Awards were developed by the Authority to give recognition and show appreciation for outstanding environmental contributions made by the community for the stewardship and enhancement of the Authority's watersheds.

This year 12 awards were presented along with 8 Special Recognition Awards.

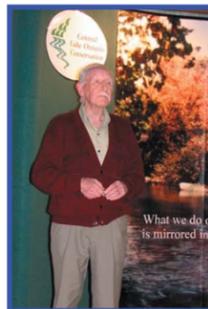
### Watershed Award Recipients

- ~ Sandra & Luke Andrews
- ~ Port Darlington Community Association
- ~ Mountain Equipment Co-op
- ~ Fisheries Community Advisory Council
- ~ Lions Club of Courtice
- ~ Regional Municipality of Durham
- ~ Tomar Farm - Mitch Morawetz
- ~ Durham Region Field Naturalists
- ~ Libby Racansky
- ~ Sharon & Rick Rosnak
- ~ Shell Canada
- ~ TransCanada

### Special Recognition Award Recipients

- ~ Environment Canada - Canadian Wildlife Service
- ~ Oak Ridges Moraine Foundation
- ~ Dan MacDonald
- ~ Oshawa Parkwood Rotary Club
- ~ Works Department, Region of Durham
- ~ The Ontario Trillium Foundation
- ~ TD Friends of the Environment
- ~ Ontario Power Generation

Guest speaker: Mr. Lou Wise (above) talked about his 22 years of taking aerial watershed photography.



## Black Creek Millennium Trail Project

The Courtice Lions Millennium Trail Project, initiated in 1999, is an ongoing stewardship project focusing on the habitat features and trail system located between Courtice and Trulls Roads in the Black Creek watershed. Currently, this project is a collaborative partnership lead by the Courtice Lions Club, in partnership with the Municipality of Clarington, Courtice Secondary School, Durham Land Stewardship Council, Friends of Second Marsh, Ontario Power Generation and Central Lake Ontario Conservation Authority. The project was designed to improve public access through a variety of hands-on stewardship activities directed at local youth, to further protect and enhance the natural features of this section of Black Creek and its surrounding meadows, woodlots and cedar valley. This area is owned and managed by the Municipality of Clarington.

A successful proposal was submitted and completed in 2007 to the Ontario Trillium Foundation for funding to engage the community in a variety of stewardship projects at this site. The project deliverables included wood chip, limestone and boardwalk trail construction, meadow, forest and creek restoration, planting 89 native trees, a community cleanup in support of the Great Canadian Shoreline Cleanup, the removal of 2 significant log jams and 1 rock dam to enhance fish habitat, the installation of interpretive and project signage, eight 2 ton seating stones and 4 artistically painted garbage cans to reduce litter. The project was implemented by the community and students of the Courtice Secondary School.

In 2008, the Courtice Lions will prepare and submit an additional proposal to the same foundation to cover the costs of implementing community meadow and creek restoration projects and installing a pedestrian bridge over Black Creek to connect southern neighbourhoods to the trails and adjacent recreational and educational facilities.

THE ONTARIO  
TRILLIUM  
FOUNDATION



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## Conservation Areas

### On the Trails

Just enough snow, and steady cold weather from mid-January through March 2007 created good skiing conditions on the trails of Long Sault Conservation Area. Visitors also found opportunities to ski and snowshoe at Enniskillen and Heber Down Conservation Areas.



### Lynde Shores Conservation Area

Groves of black locust trees were removed from Lynde Shores Conservation Area during the winter as prescribed in the Lynde Shores Conservation Area Management Plan (CLOCA 1999). Black locust



Black locust tree removal at Lynde Shores Conservation

is an invasive tree that out-competes, more desirable native plants. They spread quickly through distribution of large seed pods and root suckers. The wood was cut into firewood and stockpiled for the sugar bush

operation at Purple Woods Conservation Area. Brush piles of branches have been left for wildlife habitat. Although the tree stumps were treated to prevent re-growth or suckering, staff will return in 2008 to remove additional suckers. These sites will ultimately be planted with appropriate native trees.

Staff have also tended to sections of the meadow habitat adjacent to the marshes. The mowing of two areas within the meadow will slow down the growth of woody plants and maintain nesting areas for waterfowl and grassland bird species. Mowing is conducted annually as part of a 5-year mowing cycle to maintain optimum meadow habitat.

### Purple Woods Conservation Area

The Durham Region Amateur Radio Club completed installation of their repeating tower and associated radio services at Purple Woods Conservation Area in 2007. The radio club plays an important communication role in Durham's Emergency Response Plan. The equipment installation also provides us with emergency back-up power and communication for our Flood Forecasting and Warning program, and is planned to host a shared climate station in the future.



Sugar Shack Gets New Wall. Volunteers from the Joint Apprenticeship and Training Program (sponsored by the Carpenter's Local Union 27) completed repairs to the evaporator building at Purple Woods Conservation Area.

### Enniskillen Conservation Area

The Enniskillen community continued to take an active interest in the environment by volunteering to plant 3,000 tree seedlings on the Rowsell Tract of the Enniskillen Conservation Area on Saturday May 5<sup>th</sup>. The planting filled the south field of the Rowsell Tract, to assist us in reforesting this property, but also provide more value to the tree planting demonstration site. Since fall 2006, approximately 8,000 native trees have been planted using a variety of planting techniques. The planting plots are being monitored to determine the success and concerns surrounding the various planting techniques and species survival. The demonstration site will be available for anyone to visit, and the lessons learned from this site will be passed on to private landowners who participate in our Private Land Tree and Shrub Planting Program.

### Bowmanville /Westside Marshes Conservation Area

Local residents volunteered on a sunny Saturday morning in April to celebrate Earth Day at Bowmanville/ Westside Marshes C.A. Volunteers planted 2,000 native seedlings along the wildlife corridor, put the finishing touches on the newly constructed turtle nesting rehabilitation area, and unveiled the Turtle Crossing awareness signs on West Beach Road, installed by Municipality of Clarington. The day was complete, with a free barbeque lunch sponsored by St. Mary's Cement and lots of giveaways and activities for participants to take home.



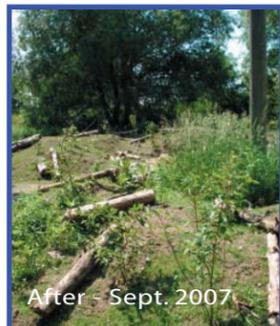
Planting trees on Earth Day.

The work is a continuation of efforts to implement recommendations from the Bowmanville/ Westside Marshes C.A. Management Plan (2006). In particular, the turtle nesting rehabilitation area completes the decommissioning of the old parking area east of West Beach Road between Bowmanville Creek and Bowmanville Marsh.



Before - April 2007

Holding the turtle crossing road sign, CLOCA Director/ Clarington Councillor Ron Hooper (left) and Clarington Councillor Willy Woo take time for a picture with the volunteers that created the turtle nesting habitat.



After - Sept. 2007

### Heber Down Conservation Area

Once again the annual Kids Fishing Day was held at Heber Down Conservation Area on May 26 at the Devil's Den trail and pond with over 1200 participants.

We continued to undertake improvements to trails and a pedestrian bridge at Heber Down, thanks to a generous donation of limestone screenings, gravel, and boulders from Brock Aggregates, our neighbour and partner. The 2007 work plan identified stream erosion along a portion of the Devil's Den trail, that was also undermining the concrete abutment for the Devil's Den Pond pedestrian bridge. A portion of this trail was rerouted away from the Lynde Creek to eliminate erosion risk in the future, and the old trail was removed and restored with native riparian vegetation. The erosion at the bridge was corrected by redirecting the flow of the creek, and by protecting the abutment with layers of boulders and stone. The creek work was designed and implemented by staff with approval from the Department of Fisheries and Oceans, and used the principles of fluvial geomorphology to influence the flow pattern of the stream, while maintaining



the natural channel, stream processes and fish habitat. A small grant from the Ontario Ministry of Natural Resources has also been applied to this work.

Above, Authority staff work on the pedestrian bridge at Heber Down C.A.

To the right, staff put the finishing touches on a new section of the Devil's Den Trail.



### Stephen's Gulch Conservation Area

During the summer of 2007, we announced the re-opening of a public trail system within the Stephen's Gulch Conservation



Area which consists of 130 hectares (320 acres) of deciduous forest and coniferous forest/ swamp that help maintain both water quantity, through seeps and springs, and water temperature along this section of the Soper Creek valley system. Stephen's Gulch Conservation Area also includes a portion of the provincially significant Soper Valley Area of Natural and Scientific Interest (ANSI).

The Area has been closed to the public for more than 15 years, because of limited resources for management and the needed improvements to infrastructure. Thanks to our community partners who helped us with various trail improvements. Stephen's Gulch has officially been re-opened, with 3 kilometres of marked trails and bridges over a variety of terrain. The property is situated within a 5 minute drive from Bowmanville, and provides a great escape for the people in this immediate community. This property offers a unique variety of settings from wet hemlock forest and groundwater springs to dry sandy ridges with butternut trees, all within a short loop trail walk.

### Hampton Conservation Area

Volunteers from the Hampton Citizen's Association completed wood decking and railings for the pedestrian bridge linking the Hampton Pond to the Elliott Park playgrounds. Boulders have been placed at the trail approach to the bridge to prevent motorized vehicles from crossing over the structure.

### Oshawa Valleylands

On May 12th, CLOCA, in partnership with the CAW Local 222 Environment Committee and the CAW Durham Regional Environmental Council, delivered a volunteer community planting event within the Oshawa Valley Lands. As part of this event and project, 2,500 native trees and shrubs were planted with the assistance of CAW volunteers and their families and friends.

### Integrated Pest Management Plan (IPM)

In 2007, we developed an Integrated Pest Management Plan in an effort to improve our current sustainable land management practices. Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage in the most economical means, and with the least possible hazard to people, property, and the environment.

The IPM approach can be applied to both rural and urban settings, such as the home, garden, and workplace. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides.

The intent of the Plan is to control pests to acceptable levels, rather than trying to eliminate the pest. A good example is poison ivy – a native plant that causes rashes and blisters on a significant percentage of people when in contact with skin. Most of our Conservation Areas have poison ivy, but instead of trying to eradicate the plant from the property, we control the possible interaction with people by mowing the edges of the trails, and occasionally applying a broad leaf herbicide along the trail edges when necessary. We also post notices on our information kiosks to help trail users identify poison ivy, and to caution them to stay on the trails. This provides an acceptable condition for the public, but does not affect the native plant through the remainder of the Conservation Areas. IPM is not a single pest control method but, rather, a series of pest management evaluations, decisions and controls.

Central Lake Ontario Conservation's IPM has been developed by reviewing our current practices, and also reviewing plans of our partner municipalities. Notices were posted at Conservation Areas to promote our IPM program and encourage homeowners to get more information and try applying IPM at home.

# New Property Acquisitions

## Heber Down Conservation Area

A favourite destination for many Whitby residents, Heber Down Conservation Area is a significant natural heritage feature with surrounding properties that have also been identified by CLOCA as targets for long-term acquisition. A key parcel of land 25 hectares (67 acres) was acquired by the Conservation Authority in 2007, which will further protect the significant features of the area. The Heber Down Conservation Area is located within the Provincial Greenbelt designated area, and is part of the larger Heber Down/ Anderson Street Woods forested area. This area has a number of designations that include being an Environmentally Sensitive Area (ESA) and an Area of Natural Scientific Interest (ANSI) due to the significant area of continuous forest cover between two branches of the Lynde Creek, local ground water recharge functions and a high water table. Along the steep valley walls, diverse forest associations serve an important erosion control function. Given the diversity of the forested and adjacent natural communities, the area supports uncommon vegetation species and provides excellent habitat for a variety of wildlife species. In addition, the Heber Down Wetland Complex, together with the Whitby - Oshawa Iroquois Beach Wetland Complex located directly to the east, ensure that significant wetland features are well represented in the general area.

Made possible with funding support from the Town of Whitby, and the Region of Durham, this newly acquired parcel fills in a large gap within the existing boundary of Heber Down Conservation Area. Natural heritage focused management within this tract of land, will ensure that strong wildlife habitat and corridor functions are maintained through the Conservation Area, and that provincially significant wetland cells and the groundwater features that maintain them, will not be adversely disturbed through inappropriate landuse changes in the future.

## Enniskillen Conservation Area

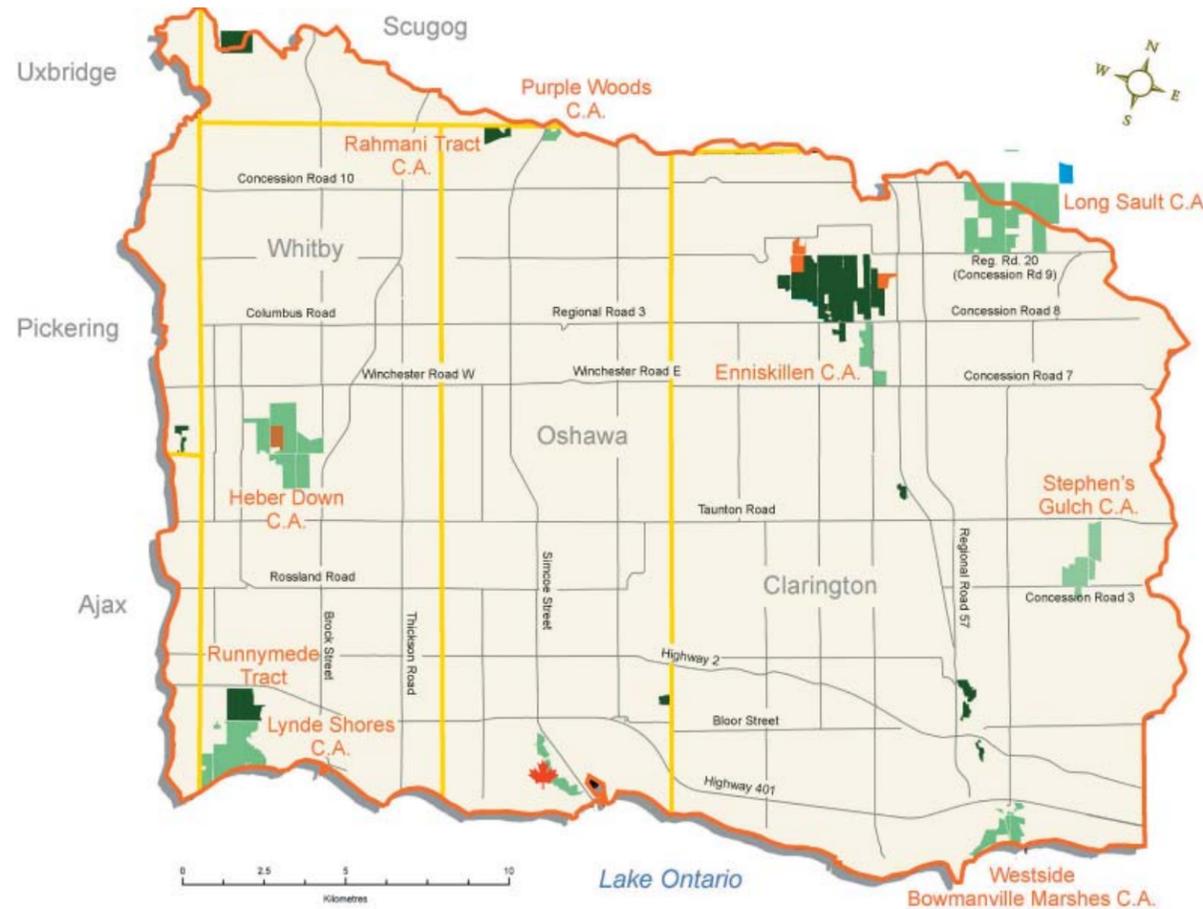
The momentum of the Enniskillen Valley Land Acquisition Project has continued into 2007 with the addition of two new parcels of land 18 hectares (44 acres) and 35 hectares (87 acres) in size. The Enniskillen Conservation Area is now a 558 hectare (1,380 acre) public greenspace legacy project, created in partnership with the landowners who call this area home. This important Environmentally Sensitive Area (ESA), is part of the Oak Ridges Moraine Conservation Plan Natural Linkage and Countryside Area. The Area provides significant groundwater resources, open meadows, mature forests and wetland features in the steeply sloped headwaters of Clarington's Bowmanville Creek. It is a major migratory corridor for wildlife, a thriving cold water fishery interwoven with a vibrant rural community. These acquisitions in 2007 were made possible with financial support from the Oak

### Thank You!

The 2007 land acquisitions were made possible with support from:

- Regional Municipality of Durham
- Oak Ridges Moraine Foundation
- Nature Conservancy of Canada (The Ontario Greenlands Program)
- Central Lake Ontario Conservation Fund
- Town of Whitby Ontario Heritage Trust

Ridges Moraine Foundation, Ontario Heritage Trust, Region of Durham, and the Central Lake Ontario Conservation Fund. The fee simple purchase method meets the landowner needs and ensures long term protection, enhancement of public greenspace for future generations. The tremendous support from long time landowners in this area has meant that significant lands within this valley system will be protected in perpetuity. Staff began collecting data on the properties at the end of 2007. This inventory work will continue into 2008 and will be used to satisfy funding criteria required by the Ontario Heritage Trust, but more importantly, form the basis of a comprehensive management plan for all newly acquired properties in the valley. These planning efforts will help to further protect and enhance the cultural and natural heritage of this landscape, continue land and water stewardship efforts, and provide education and recreation opportunities that respect and celebrate the unique and largely unchanged valleylands. Together, these initiatives will result in an important legacy for future generations.



- Heber Down 2007 Land Acquisition
- Long Sault 2007 Land Acquisition
- Enniskillen Valley 2007 Land Acquisition
- Conservation Areas (Public Access)
- Conservation Areas (Limited Public Access)
- Central Lake Ontario Conservation Watershed Boundary
- Municipality Border
- Central Lake Ontario Conservation Administrative Office

## Long Sault Conservation Area

The Long Sault area, just minutes from Enniskillen, was also historically identified by CLOCA for long-term conservation through land acquisition. In implementing the Long Sault Conservation Area Management Plan completed in 2004, acquisition of adjacent parcels continues to be an important tool for protecting the environmentally significant features present in this conservation area. Designated as Natural Core and Linkage Areas through the Oak Ridges Moraine Conservation Plan, this area's large expanse of forest is regionally significant and provides core wildlife habitat where species of concern are known to occur. The area's groundwater significance is also demonstrated by the springs and seeps that feed the headwaters of the Bowmanville and Soper Creeks. In 2007, CLOCA acquired an additional 22 hectares (55 acres) of land bordering Long Sault C.A. bringing the total public greenspace in the Long Sault area to 457 hectares (1,130 acres). This total is expected to increase again in 2008 as discussions carried out in 2007 with other surrounding landowners have been very positive. Funding partners for this acquisition included Nature Conservancy of Canada, Oak Ridges Moraine Foundation, The Ontario Greenlands Program and Region of Durham.



### Snowshoeing anyone?

CLOCA's Conservation Areas host over 35 kilometres of trails for passive recreational opportunities.

Large picnic facilities are also available for family and corporate outings.

## Purple Woods Maple Syrup Festival and Demonstration

The 2007 Maple Syrup Festival at the Purple Woods Conservation Area was another success, celebrating 32 years of community outreach with over 10,000 visitors in attendance. The festival was held from March 10 -18 and the weekends of March 24<sup>th</sup>,25<sup>th</sup>, March 31<sup>st</sup> and April 1<sup>st</sup>. A long time family tradition for Durham Region residents, visitors were able to see how syrup has been made over the past 400 years and compare that with the modern methods of today. Additional activities included wagon rides, demonstrations,



Demonstrating the pioneer method of making maple syrup.

shopping at our sugar shack store and tasting some real maple syrup on pancakes cooked up by a variety of community groups. Corporate sponsorship continues to be a significant part of our programs, helping offset the costs of special activities and promotion of the event itself. The festival also provides an excellent opportunity for secondary students to volunteer as interpretative hosts at

the historical displays, helping them achieve their community service requirements for graduation.



Installing the pipeline system to collect maple sap.

## Farm Connections

Approximately 1,000 Elementary students from urban communities across Durham participated in the annual Farm Connections Program, learning about the importance of farming, with 13 hands-on learning stations showcasing local farmers, their products, and how they get food to our tables safely and with respect for the environment. An open house was offered to the Durham community on the evening of April 4<sup>th</sup>, giving parents and families a chance to find out why farming is so important and how they can better support local farmers.

CLOCA developed and coordinated a stewardship activity using a watershed model to compare land management activities on farms and around our homes and how they can be modified to protect our water and land resources. Concepts like contaminants, source water protection, erosion, no-till farming, buffer strips, and riparian habitat were demonstrated.

Students learned how their own behaviour can impact the environment, and like the farmer, volunteered to make changes in their day to day activities to reduce their eco-footprint. We worked in partnership with our 5 Durham Conservation Authorities to deliver this program.



Students connected with local dairy cattle and saw a milking demonstration using old and new technology. The sounds and the smells in the Brooklin Arena created a great ambience and the farm community, as usual, made this a worthwhile program for everyone.



## Durham Children's Groundwater Festival

The Durham Children's Groundwater Festival was as always, a real highlight in 2007, marking a significant milestone by celebrating its 10th anniversary. The Festival was held during the week of Sept 24<sup>th</sup> to 28<sup>th</sup> at Camp Samac in Oshawa, with over 5,000 grade 4 students participating. Through the hands-on interactive learning centres, the students discovered the importance of water in their lives every day, carrying important water conservation and



protection messages back to their home and community.

Since 1998 more than 42,000 Grade 4 students have participated in the event and 4,000 secondary school students

have hosted the activity centres. Each year our Committee conducts a significant sponsorship campaign to offset the costs for each attending student. In 2007, we were able to subsidize 60 percent of the student costs, including bussing, thanks to the generous support of community businesses, organizations, agencies, foundations and Durham Region.

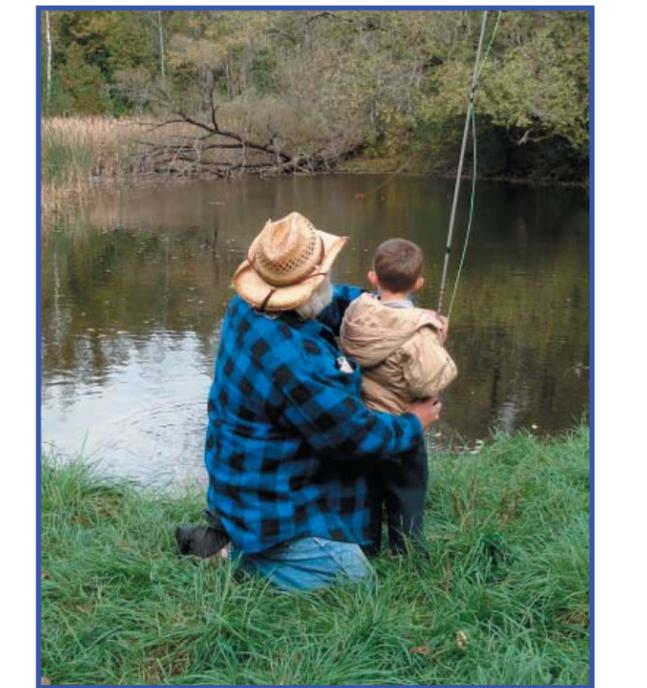
This year's festival brought with it a very special event. In honour of the 10<sup>th</sup> anniversary the Ontario Trillium Foundation supplied funding to host a public day, which staff developed into Greenfest. This mini festival, held at the Enniskillen Conservation Area, was enjoyed by 500 visitors of all ages. Features at Greenfest included a sample of the groundwater activity centres, Chief Topleaf, displays and products to promote sustainable living and of course our Festival mascots, Drip and Drop.



Two additional highlights this year were interactive workshops held at the Groundwater Festival by our partners Ducks Unlimited Canada and the School Board Environmental Representative Association. Ducks Unlimited Canada held their annual National Education Team, Canada wide, workshop. The School Board Environmental Representative Association from the Greater Toronto Area and surrounding regions held their biannual meeting. Both groups were provided with a tour of the festival as part of their agenda to learn about the successes and challenges of delivering this event.



The Wetland Wonderland Activity is very popular at the Groundwater Festival.



A young angler learns the art of fly fishing at Greenfest from volunteer Mr. Dan MacDonald.

## In Our Watershed

Over 5,000 students participated in our 11 watershed education programs at local schools and conservation areas. While we typically target grades 3 to 8, changes to the secondary school curriculum has resulted in an increase in bookings in 2007. A newly designed "In Our Watershed" guide and web page will make promotion, program information, curriculum links and booking easier for teachers in 2008.

We have also launched a new reminder postcard series, to reduce the need to resend our complete brochure. These cards remind teachers of upcoming seasonal programs and connect them to our web page for more information, program bookings and new resources. The education page allows teachers to download information, request specific programs and dates directly from the web site.

Staff are upgrading their skills to ensure they maintain relevant programs and maintain dialogue with other outdoor environmental educators across the province. The Ontario Society for Environmental Education workshop at Camp Kawartha was a three day event for teachers from all over Ontario. Sessions provided very hands-on learning experiences for CLOCA education staff to improve existing programs and develop new ones. A collective annual Conservation Authority workshop hosted by the Grand River Conservation Authority explored the challenges and opportunities of teaching students about Source Water Protection.



An educators workshop regarding source water protection.

CLOCA education staff have been trained to understand the provincial EcoSchools Program. This program was designed for schools to incorporate environmental education and awareness. It focuses on energy conservation, waste minimization, school yard greening and environmental literacy. Staff will utilize some of the guidelines for this program to encourage schools to continue their participation or to become participants in the Eco Schools program. The first step will be to implement a litter free facility at the Enniskillen Education Center.

Thanks to a grant from TD Friends of the Environment, staff were able to purchase a variety of hands-on props, including animal furs and replica animal skulls to enhance existing programs. Funding was also received from the Toronto Mountain Equipment Co-op to purchase 40 sets of children's snowshoes for a winter program offered to teachers at our conservation areas in 2008.

### Creek and Waterways Awareness Program

This free program was created in 2005 for students in grades 4-6. Over 1800 students participated in 2007. Students are taught about the dangers of winter ice, flooding, erosion, hypothermia, frostbite and experience first hand, just how cold the water really is in winter. A new promotional postcard was developed in 2007 to increase uptake for the 2008 program.



Be aware of creeks and streams in the winter!

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James Kamstra, from the Durham Region Field Naturalists leads an amphibian walk at Crow's Pass Conservation Area.

site.

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## Clean Water Land Stewardship Program

Now in its fourth year, the Clean Water Land Stewardship Program (CWLSP) continues to provide technical and financial support programs to assist private landowner's within the Authority's watersheds



CLOCA staff meeting with local landowners.

in implementing a variety of environmental projects. Funded projects completed in 2007 included reforestation, habitat enhancement, stream fencing, cattle crossings, alternate watering systems, stream restoration, wetland enhancement, well upgrading and well decommissioning. In addition to completed projects, a number of other projects and partnership initiatives are in development for implementation in 2008 .

### Private Land Tree and Shrub Program

The Authority's sale of native tree and shrub seedlings continues to be popular with over 12,000 seedlings sold and distributed in 2007. Bulk ordering of the seedlings enables Central Lake Ontario Conservation to sell trees to watershed residents at lower costs. The 12 species of native trees and shrubs sold and planted through this year's program, will help to improve biodiversity on the landscape and reduce the amount of non-native nursery stock planted in the jurisdiction.



Planting tree seedlings.

#### Did You Know?

Conservation Authorities own and manage more than 165,000 hectares (408,000 acres) of land including significant blocks of forest and natural Heritage areas.

**Environmental Farm Plan: Greencover Program**

The Authority continued to act as a delivery agent for the Greencover Canada program. Through this program, we are working with local agricultural business operators to carry out stewardship projects identified in their Environmental Farm Plans, assisting with the submission of funding applications, designing and implementing projects according to "Beneficial Management Practices" standards and providing top-up funding assistance where possible. Projects completed this year through this program included stream fencing, livestock creek crossings, alternative watering systems, and wildlife habitat creation.

*Stream Fencing Project*



Fencing a creek from livestock access and installing proper creek crossing points protects water quality, aquatic habitat, prevents soil erosion and maintains herd health.



Before and after pictures of a livestock creek crossing.

**Well Upgrade and Decommissioning Program**

Landowners continue to become more aware of the fact that improperly maintained and constructed water wells can lead to groundwater contamination. CLOCA continues to provide technical advice and financial support to landowners within the jurisdiction who are interested in upgrading their operating wells, or decommissioning unused wells. As a result of this program, 11 wells were properly decommissioned, and 2 wells were upgraded in 2007.



Bags of bentonite are used to decommission an unused well.

**Durham Stewardship Group**

Stewardship program staff from the Conservation Authorities of Durham Region (Central Lake Ontario, Toronto and Region, Lake Simcoe Region, Ganaraska Region and Kawartha Conservation), Durham Region Economic Development and Durham Land Stewardship Council, continue to share ideas and work towards greater consistency in programs across Durham. This information sharing has resulted in improved coordination of outreach and education events and more efficient delivery of programs. In 2007, the 5 Durham Region CA's updated a comprehensive stewardship brochure and Power Point presentation and collaborated on and received funding from the Ministry of Environment Drinking Water Stewardship Fund Outreach and Education Program to further protect Durham's groundwater-based municipal drinking water supply systems.



Like new again! A landowner restored a section of the Lynde Creek.

**Why We Monitor Watersheds**

**On The Land**

In 2007, CLOCA's terrestrial bird monitoring activities continued within our conservation areas and across the jurisdiction. Some highlights included a Dickcissel at the Oshawa Harbour Coastal Wetland, Bobolinks and Least Bitterns at the Lynde Shores Conservation Area, and a Barred Owl at the Heber Down Conservation Area. Bird monitoring will continue in 2008, focusing on the Black/Harmony/Farewell and Bowmanville/Soper watersheds.



Trumpler Swan

Salamander monitoring continued for the second year at the Heber Down and Lynde Shores Conservation Areas. To date, no salamanders have been observed. Staff will expand the program in 2008 to include the Crow's Pass Conservation Area, located in the headwaters of Lynde Creek on the Oak Ridges Moraine.

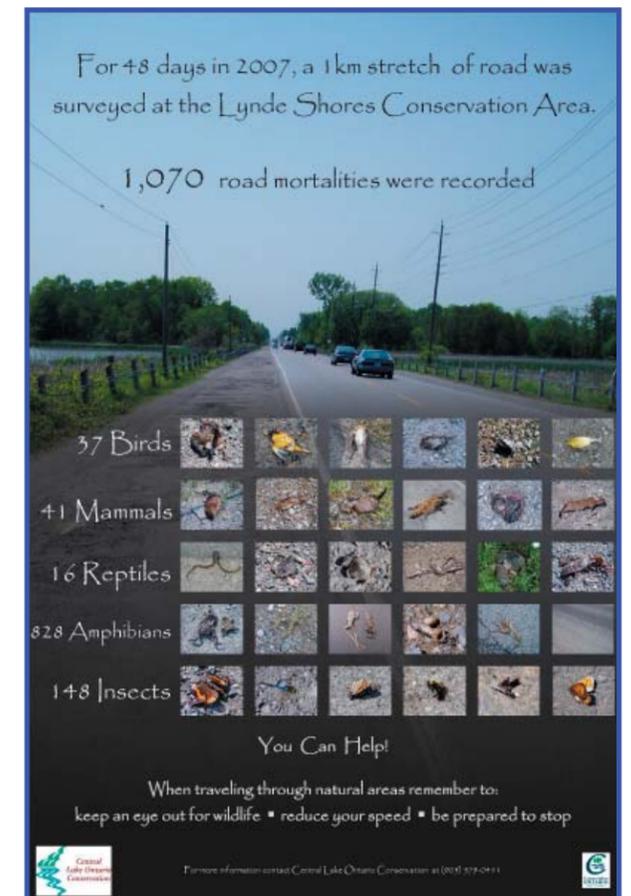
Amphibian monitoring also continued in 2007 at the Lynde Creek and Westside Marshes. This year, additional monitoring occurred at one of Central Lake Ontario Conservation's newest coastal wetland units: the Oshawa Creek Coastal Wetland Complex.

**Conservation Authority Discussion Group**

The South Central Ontario Conservation Authorities (SCOCA) natural heritage discussion group serves an important function for resource management and land use planners as it offers them the opportunity to discuss complex issues and standardize planning policies. The SCOCA group is comprised of 9 Conservation Authorities and meets four times per year. This year, discussion topics included provincial initiatives such as the Southern Ontario Land Resource Information System (SOLRIS) and MARXAN, a conservation planning computer program that supports scenario-based system design, as well as Authority projects such as natural heritage modeling, natural areas assessments, wildlife monitoring techniques and invasive species management.

**Roadkill Project**

This year CLOCA continued to monitor wildlife mortalities caused by attempts of wildlife to cross Victoria Street in the vicinity of the Lynde Shores Conservation Area. The study was initiated in 2006 in response to the proposed widening of Victoria Street from two lanes to four lanes, and began as a one day per week survey to assess the impacts of the road on wildlife at Lynde Shores. In 2007, monitoring efforts were increased to three times a week. Over a 5 month period, staff surveyed a 1 km stretch of road approximately 48 times and documented over a thousand animal fatalities. The detailed data collected during this monitoring period was influential in the incorporation of enhanced wildlife passage opportunities in the Region's road widening design and the development of a public awareness poster.



Roadkill poster

**Invasive Species - Research & Outreach**

In 2007 Central Lake Ontario Conservation partnered with the Ontario Federation of Anglers and Hunters to complete a research project and outreach program for aquatic and terrestrial invasive threats. The project resulted in the production of 20 invasive species fact sheets, which will be made available to the public in 2008. The top 10 aquatic species of concern included round goby, Eurasian milfoil, Purple loosestrife, Zebra Mussels, Spiny Waterflea, asian and common carp, European frogbit, Mute Swans and Viral Hemorrhagic Septicemia (VHS). The top 10 terrestrial species of concern included Dog-strangling vine, Garlic mustard, Common reed, Russian autumn olive, Himalayan balsam, Japanese knotweed, Japanese honeysuckle, Common buckthorn, Norway maple, Manitoba maple.



Himalyan Balsam

**Terrestrial Natural Heritage Analysis Model**

Within the Authority's watershed, land uses, and terrestrial features, are continually changing. The ability to determine existing conditions by conducting landscape-level analysis using the most recent land use and terrestrial information available, has great value. Authority staff have adopted a model, called the Landscape Analysis Model that scientifically places a value on terrestrial features and the greater the value, the better the quality of the terrestrial feature. Mapping of these values provides an excellent visual representation of the quality of CLOCA's terrestrial natural heritage.

Through the use of this model, Authority staff can assess and map the quality of the terrestrial environment at different scales, ranging from watershed to site level, providing valuable input into many of the Authority's programs and services. Mapping the quality of the terrestrial natural environment within the Authority's watershed is important in revealing the health and integrity of the Authority's

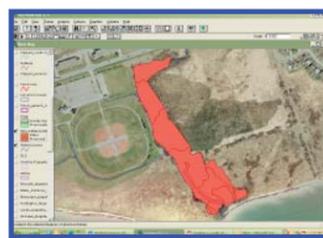
terrestrial natural environment. It is anticipated that programs such as Development Review, Stewardship, Conservation Area Management Planning, Land Acquisition, Watershed Reporting and Watershed Management Planning will be able to apply this tool directly to their projects. For other programs, such as wildlife monitoring, it may act as a guide for establishing long-term workplans.

**New Provincially Significant Wetland Evaluations**

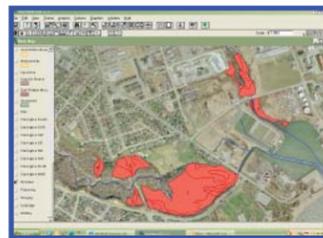
In 2007, CLOCA received updated information from the Ontario Ministry of Natural Resources (OMNR) for our evaluated wetlands. While many of the existing wetland boundaries remained unchanged, some wetlands, such as the Lynde Creek Coastal Wetland Complex and the Enfield Wetland Complex in Clarington, were expanded to include adjacent wetland units.

New wetland designations also occurred in 2007. In Oshawa, the Gold Point and Oshawa Creek Coastal Wetlands were identified as Provincially Significant, and in Clarington the Tooley Creek Coastal Marsh was identified as Locally Significant.

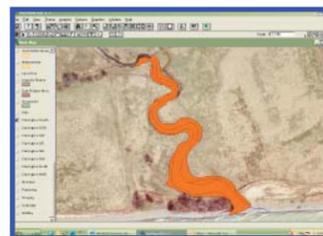
In total, CLOCA has 21 evaluated wetlands, 18 of which are Provincially Significant Wetlands. Information on any of these wetlands can be obtained at the Authority office or through the OMNR office in Aurora.



Gold Point PSW



Oshawa Harbour PSW



Tooley Creek LSW

**Why We Monitor Watersheds**

**In The Water**

**Check Your Watershed Day**

Central Lake Ontario Conservation hosted a Check Your Watershed Day event for the Oshawa Creek Watershed on Saturday July 21<sup>st</sup>. This is a unique event combining stewardship and field research, the purpose being to inventory stream flow in one watershed at one specific 'moment' in time. About 50 volunteers participated, getting their feet wet as they worked in small teams with a trained leader to locate streams and check water flow levels. In all, data was collected on 118 stream crossings in the Oshawa Creek watershed.

Small streams offer a great opportunity to measure water flow because they are small. If there is a drought or any adverse developments that affect water flow, it is apparent first in a small stream. Also, by measuring stream flow in mid July, a time when water flow is typically low (summer low flow), the water that is flowing can be directly attributed to groundwater sources such as the Oak Ridges Moraine.

This project provides an excellent community outreach and stewardship opportunity, acquainting residents with their waterways, recognizing the importance of these waterways and introducing the science of hydrology and data collection. The event also enhances CLOCA's low flow stream data, which is one of many indicators used to measure watershed health.



Volunteers participating in July's Check Your Watershed Day.

**Aquatic Monitoring Program**

In 2007, Central Lake Ontario Conservation staff generally focused monitoring efforts on the Oshawa Creek watershed updating baseline fisheries data previously collected in 2000. The 2007 monitoring included collecting information on water temperature, benthos (aquatic bugs) and fisheries in both creeks and marshes, the latter as part of the Durham Region Coastal Wetland Monitoring Project.

Temperature is an important factor with respect to habitat suitability for fish and other aquatic organisms. Approximately 54 portable water temperature data loggers were installed in various locations in May and remained in the creeks until late December. Temperature data is useful for understanding current stream conditions.

Staff collected aquatic bug samples (benthos) from 25 stream locations mainly within the Oshawa Creek watershed. "Aquatic bugs" play an important role in monitoring water quality within our watersheds. Depending on the species and quantity of benthos found, we can determine whether or not the watershed is experiencing any impacts from stresses such as pollution, changes in water temperature or changes in land use.

Fisheries stream sampling took place during July and August at 27 locations within the Oshawa Creek watershed. As was the case during 2000 sampling, coldwater species, such as brook (speckled) trout, brown trout, Chinook salmon and rainbow trout, were once again captured at many of the less developed sites north of Taunton Road. These species are typical of a coldwater "trout" stream and can indicate a healthy section of watershed.



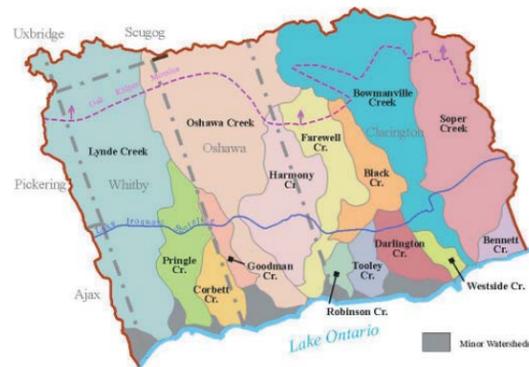
CLOCA staff using a backpack electrofisher to conduct fisheries sampling.

### Watershed Check-up Report

In 2007, CLOCA embarked on our first ever watershed check-up project to identify the past, present and future challenges faced by our watersheds. The check-up is based on a provincial framework, created by a collaborative effort between the 36 Conservation Authorities across Ontario and Conservation Ontario. This provincial initiative provides a consistent and coordinated approach to looking at watershed health across Ontario.

The check-up will be printed into a report for distribution to a wide audience within our watershed. It is being designed to summarize a significant amount of data and mapping resources, providing the reader with a snapshot of watershed health. The document provides an overview of CLOCA's multi-stakeholder initiatives, monitoring programs and projects for watershed management and stewardship. There is a section for all readers, whether they live, work or play in our 15 watersheds, to take action with suggestions and opportunities for re-investing, protecting, restoring and enhancing our "natural" capital, literally in their own backyards.

The document will be ready in early 2008, with the lion's share of the work completed in 2007 by a team of dedicated staff. The Central Lake Ontario Watershed Check-up report will be delivered on a 5 year cycle in the future, to continue identifying the challenges we face in the 21<sup>st</sup> Century. Our intent is to continue bringing our constituents, innovative solutions and new thinking along with the steps to improve the overall health of our watershed for the people and wildlife that live within it.



Watersheds under Central Lake Ontario Conservation's jurisdiction.

### Monitoring Aquatic Invasive Species in CLOCA Watersheds

In 2007, Central Lake Ontario Conservation embarked on a new research project to investigate the spread of aquatic invasive species in our watersheds. Invasive species have become a serious threat to our native flora and fauna in Canada, particularly in the Great Lakes basin. Since the mid-1990's many invasive species have been appearing in our local waterways, including zebra mussels, round goby and spiny waterflea.

CLOCA has been working diligently to conserve our native flora and fauna. In recent years there has been a great concern that round goby would begin to invade our inland stream systems and have an impact on native stream fish species. To date very little is known about the likelihood of round goby invasions into inland watersheds from the Great Lakes. During the summer of 2007, CLOCA partnered with the Ontario Ministry of Natural Resources and the Ontario Federation of Anglers and Hunters to investigate the current distribution of round goby in some of CLOCA's watersheds.

Monitoring included sampling several sites within Bowmanville, Soper and Oshawa Creeks. Monitoring was conducted using electrofishing to determine the current spread of round goby. Preliminary results currently describe the spread of round goby to be further than previously predicted. This small research project has sparked much interest and there may be further opportunities to conduct additional round goby monitoring in 2008.



How to recognize a round goby:

- ~ Fused 'suction cup' pelvic fin - the fin on the fish's belly just underneath its head. No other native fish species in Ontario has this feature.
- ~ 7 to 15 cm Total length
- ~ Black dot on its first dorsal fin
- ~ Frog-like eyes

### Conservation Authorities Aquatics Group (CAAG)

Over the past few years the role Conservation Authorities play in conserving, monitoring and protecting our aquatic resources has steadily increased. CLOCA has been a leader in developing excellent cooperative partnerships with the Conservation Authorities, Ontario Ministry of Natural Resources (OMNR) and the Federal Department of Fisheries and Oceans (DFO).

Since 2006 CLOCA has maintained a seat as vice chair of the Conservation Authorities Aquatics Group (CAAG). This group was created to provide an avenue for Authority aquatics staff to share and discuss provincial aquatic resource information. CAAG has been a successful forum for CA staff to discuss important matters including aquatics

monitoring advancements, legislative changes, while providing resource sharing opportunities. CLOCA staff have and will continue to have a strong voice within this group.

In January of 2007, CLOCA staff provided a keynote presentation to the DFO/CA Partnership Workshop, outlining the importance of developing cooperative partnerships with agency staff to assist in better protecting our natural resources. This presentation outlined the exceptional relationship CLOCA has developed between OMNR Aurora District and the DFO Peterborough District. It is through this relationship that CLOCA has maintained a good working relationship with many clients and partners over the past few years.

### Central Lake Ontario Fisheries Management Plan

In June 2007, the Authority's Board of Directors endorsed the Central Lake Ontario Fisheries Management Plan, which encompasses the four watersheds: Oshawa, Lynde, Bowmanville/Soper and Black/Harmony/Farewell. The preparation of the Plan was a cooperative project between the CLOCA, the Department of Fisheries and Oceans (DFO) and the Ontario Ministry of Natural Resources (OMNR). Fisheries Management Plans examine the state of the aquatic ecosystem, identify resource issues and outline management recommendations within a particular watershed. The Plans also include management actions for improving the health of fish communities and fish habitat, as well as enhancing angling opportunities.

Public consultation was a fundamental component in the preparation of these Plans. Regular meetings of the stakeholder group were held providing information, insight and input. Public Open Houses were also held, offering opportunities for the public to participate and comment on the Plans. The Plans were also posted on the Environmental Bill of Rights Registry, providing additional opportunities to comment on the Plans.

Typically, Fisheries Management Plans are prepared on a watershed by watershed basis.

CLOCA embarked on this Fisheries Management Plan in a manner that is unique, preparing Plans for all 4 major watersheds within the Authority's jurisdiction concurrently. Working on all 4 watersheds at the same time means that the same technology and analyses are used in the preparation of the Plans. Benefits of using this approach are that the resources in one watershed can be assessed equally with another watershed. Also, using this method provides the Authority with a comparable "state of the aquatic resource" for the 4 major watersheds within CLOCA's jurisdiction, allowing for a more "user friendly" document. These completed Plans will further support plan review, stewardship, watershed planning and ongoing monitoring of the aquatic resources in the Authority's jurisdiction. The Authority has received compliments regarding the approach and the quality of the Plans from various stakeholder agencies including DFO and OMNR.

Implementation of the Plans' management recommendations, will be initiated in 2008 and will involve the development of a Fisheries Implementation Committee. This Committee will direct and organize various stewardship projects to work towards improving local fisheries and the overall health of our watersheds.

# Heber Down Conservation Area Natural Heritage & Public Use Inventory

Heber Down Conservation Area is a 312 hectare property located southwest of the village of Brooklin. This property includes provincially significant wetlands, significant forests, valleylands and a portion of the main branch of the Lynde Creek. In addition, Heber Down Conservation Area also contains a large recreational trail system and public activity areas that draw over 15,000 visitors to the property annually. Given the natural heritage significance of the area, and an expected increase in public use as a result of residential development within the surrounding communities, CLOCA staff began a detailed inventory of both the natural heritage

and public use features within the area, in the spring of 2007. As part of this work, vegetation, soils, wildlife, groundwater, fisheries, trail systems, public use infrastructure, and cultural features were inventoried. This information will be further analyzed and form the basis from which an interim public use plan for the Conservation Area will be developed. This interim plan will be prepared in 2008 and will outline actions required to protect the significant natural heritage features within the property, while continuing to provide complimentary recreational access and facilities to be enjoyed by the surrounding community.

# Durham Region Coastal Wetland Monitoring Project

Despite significant land-use pressures, Durham Region coastal wetlands are some of the best examples of Great Lakes shoreline wetlands remaining along the north shore of Lake Ontario. However, these wetlands have suffered from various impacts to varying degrees. Before attempting to restore any wetlands that are impaired, we need to identify the sources and levels of these impacts. The Durham Region Coastal Wetland Monitoring Project was designed to provide standardized methods of monitoring biological communities such as bird, fish and amphibian populations and physical features such as water quality and water levels.

Ontario Ministry of Natural Resources. Two of these wetlands, Whitby Harbour and Oshawa Creek, were formerly larger coastal wetlands that now retain a small remnant of this habitat.

Since 2002, staff, with help from volunteers and our partner Conservation Authorities, have collected data on all of these wetlands. The sixth season of field work was completed during 2007. This year's data is currently being analyzed and a detailed Technical Report and an updated Fact Booklet will be completed in 2008. The report will describe issues and the potential for restoration at each of the wetlands. For those wetlands that have received rehabilitation efforts, the success of this work will be assessed.

During the first five years of the study, 15 coastal wetlands in this Region were monitored; however, in 2007 three "new" wetlands were added to the project.

These three coastal wetlands (Oshawa Creek Coastal Wetland, Gold Point Coastal Wetland and Whitby Harbour Wetland) were recently evaluated as being Provincially Significant by the



Whitby Harbour 2005

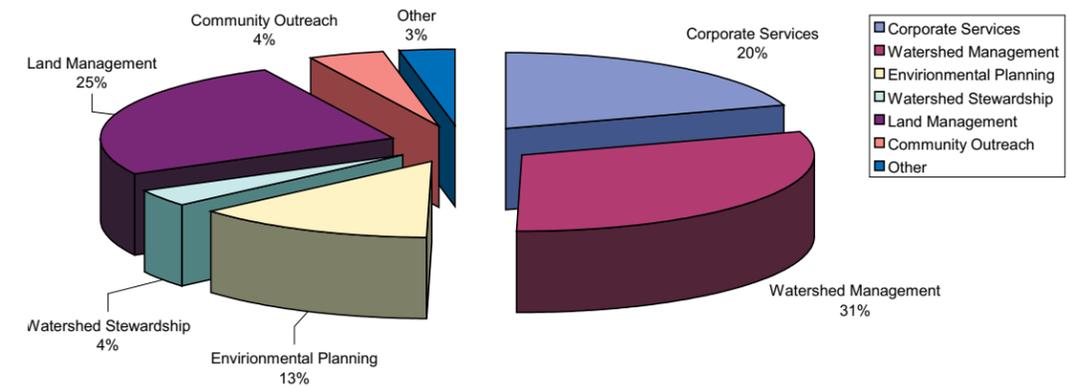


Whitby Harbour 1946

# 2007 Budget Summary

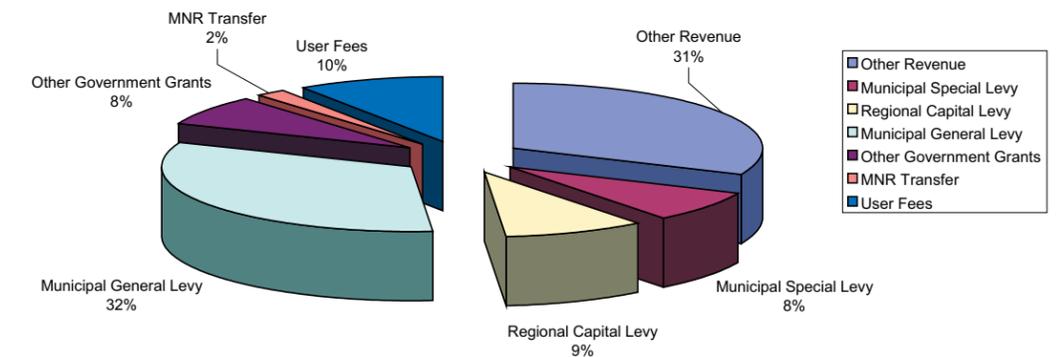
## Expenditures

Total Expenditures: \$6,628,775



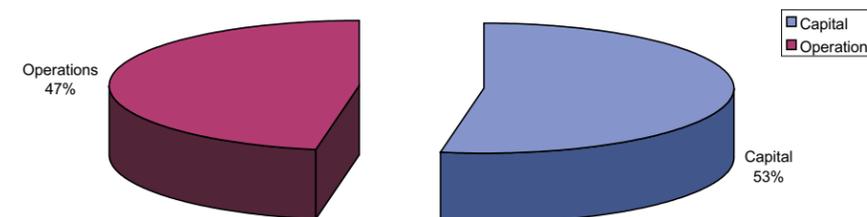
## Revenue

Total Revenue: \$6,628,775



## Capital & Operations

Total Capital: \$3,500,400  
Total Operations: \$3,128,375



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