



2008 Year In Review

Celebrating our Past, Present & Future



Celebrating 50 Years of Protecting Local Watersheds

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Welcome Message from the Chair

It is with great pleasure that I present the 2008 Year In Review Report of the Central Lake Ontario Conservation Authority (CLOCA). As you read through the document, you will see the many accomplishments and ongoing projects of this organization over the past year.

2008 marked the 50th Anniversary of Central Lake Ontario Conservation, involving a number of events, including a one day watershed tour and, an invitational golf day.



It has been a great pleasure for me to serve as Chair of CLOCA in 2008. As we look forward to 2009, it seems appropriate today to reflect on some of the highlights from the past year and the accomplishments of our organization in partnership with local and regional municipalities, agencies and community stakeholders.

2008 Milestones

~ Renovations of the former conference centre were completed and now provide office space for engineering and operations staff as well as improved garage and storage facilities.

~ The land acquisition program added 78 hectares (193 acres) to Lynde Shores, 50 hectares (123 acres) to Long Sault, 21.5 hectares (53 acres) to Enniskillen and a 27 hectares (67 acres) donation by the Cane family in the Soper Creek headwaters.

~ The CLOCA watershed rainfall gauging systems were invaluable in recording major rainfall storm events of the past summer.

~ New flood plain mapping was completed for the Darlington Creek watershed in Clarington.

~ The Lynde Creek Watershed Existing Conditions Report was completed and distributed.

~ As part of the Provincial Groundwater Monitoring Network, a new sampling well was

constructed at Purple Woods to a depth of 151.8 metres (500 feet).

~ The Purple Woods Maple Syrup Festival attracted 13,000 visitors.

~ 4,000 Grade 4 students attended the 11th annual Durham Children's Groundwater Festival at Camp Samac in Oshawa.

~ The Oak Ridges Trail was connected to the Crow's Pass property in Scugog Township, bringing a total of 45 kilometres of trails on CLOCA lands.

~ A team of CLOCA staff, family and friends participated in The Moraine For Life Adventure Relay held in June. The team completed the 160 km marathon in just under 12 hours and the event raised more than \$10,000 for the Oak Ridges Trail Association.

I want to thank the members and staff for their hard work and support in what was a most successful year.

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 2009.

Sincerely,

Gerry Emm
Chair, Central Lake Ontario Conservation



Celebrating 50 Years Of Protecting Local Watersheds

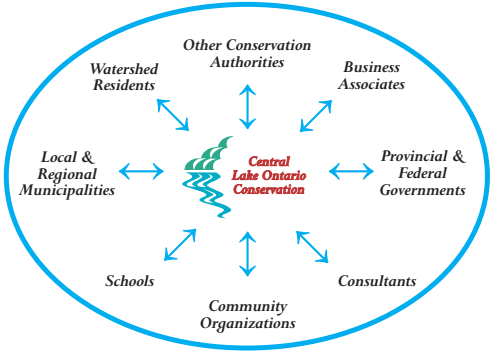


Working In Partnership



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 2,198 hectares (5,431 acres) of environmentally sensitive land.

2008 Board of Directors

Chair: Councillor Gerry Emm, Town of Whitby
Vice-Chair: Councillor Brian Nicholson, City of Oshawa

Town of Ajax:

Councillor S. Crawford

Municipality of Clarington:

Councillor A. Foster, Councillor R. Hooper, Councillor M. Novak

City of Oshawa:

Councillor A. Cullen, Mayor J. Gray, Councillor J. Neal, Councillor B. Nicholson,

City of Pickering:

Councillor R. Johnson

Townships of Scugog & Uxbridge:

Mayor M. Pearce

Town of Whitby:

Councillor J. Drumm, Councillor G. Emm, Councillor D. Mitchell, Mayor P. Perkins



Back Row (left to right): R. Powell (CAO), Coun. R. Hooper, Coun. J. Neal, Coun. A. Cullen, Mayor P. Perkins, Mayor J. Gray, Coun. D. Mitchell

Front Row (left to right): Coun. J. Drumm, Mayor M. Pearce, Coun. R. Johnson, Coun. G. Emm (Chair), Coun. M. Novak, Coun. A. Foster

Absent: Coun. B. Nicholson (Vice Chair), Coun. S. Crawford

Source Water Protection Initiative: Process & Technical Products

The Clean Water Act was introduced by the Ontario Government in 2006, and in July 2007 the Act, along with the first five associated regulations, came into effect. The intent of this legislation is to ensure communities are able to protect their municipal drinking water supplies now and in the future from overuse and contamination. These goals are to be pursued through the development of: technical assessment reports describing vulnerable areas and risks to drinking water; and source protection plans with recommendations regarding land use planning policies and risk reduction strategies in identified areas of concern.

There are 3 stages in the Source Protection initiative, namely the Assessment Phase which evaluates the vulnerability and risk associated with drinking water sources (quality and quantity), the Source Protection Plan (SPP) Phase which identifies measures to reduce the highest risks (present and future) and the Implementation and Monitoring Phase where municipalities implement the SPP by utilizing planning and other developed tools to address the risks.

CLOCA is part of the CTC (Credit Valley, Toronto and Region, and Central Lake Ontario) Source Protection Region which is headed up by the Toronto and Region Conservation Authority. The Authorities in the CTC have been busy since 2005 working on several modules (technical assessment chapters) of the Assessment Report. In 2008 CLOCA completed its Tier1 Water Budget Analysis and report. The report has been peer reviewed and approved by a team of external technical experts as well as provincial officials. The



CTC Source Water Protection Region

Authority is currently working on the Groundwater Vulnerability, threats inventory and risk analysis components expected to be completed in 2009. Modules associated with the Lake Ontario intakes have also been completed by the Lake Ontario Collaborative group on behalf of CLOCA. The Watershed Characterization Conceptual Water Budget components were completed between 2006 and 2007.

The Source Protection technical work results, products and tools are continuously fed back into other authority programs that serve to raise the bar on environmental management and conservation.



Other Systems Source Water Protection Pilot

CLOCA was awarded a contract to prepare a provincial guidance document under the Drinking Water Source Protection Program to prioritize and designate private systems under the Clean Water Act. The pilot examined various risk criteria that should be considered in the designation of a system and outlined a process to determine whether designation is appropriate or not. The study examined technical issues as well as looked at the legislative instruments that currently exist to address any potential risk that may be associated with the system. The study addressed both groundwater and surface water systems using examples within the CLOCA/Durham Region area.

This pilot project was completed in April 2008 and submitted to the Province for internal review/revision as a basis for guidance to municipalities and Source Water Protection Committees in the designation of “Other” systems (non-municipal) under the CWA. Steering Committee members included representatives from Durham Region (Works, Health & Planning) as well as provincial representatives. The work was conducted by Jagger Himms Ltd. under the direction of CLOCA. A provincial guidance document based on this pilot is expected to be distributed by the Province in early 2009.

CAMC/ YPDT Groundwater Management Program

The Oak Ridges Moraine (ORM) is a 160 km long ridge of sand, silt and gravel deposits that is oriented approximately east-west, and lies north of Lake Ontario. In order to understand and characterize the hydrogeology of the ORM, the York-Peel-Durham-Toronto (YPDT) coalition and the Conservation Authorities Moraine Coalition (CAMC) was initiated using a multi-agency, collaborative approach to conduct regional and local-scale groundwater studies. The YPDT-CAMC Groundwater Management Program builds, maintains and provides to partnered agencies, the regional geological and hydrogeological context for ongoing groundwater studies and management initiatives within the partnership area.



The focus in 2008 was on ongoing maintenance of key program functions: database, geological layers and a numerical model. Some key work plan items included: i) the development of a more formal process to update the geological layers in the geological and the numerical model; ii) finalization on an agreement for external data sharing; iii) finalization of the model peer review; and exploration of a process to expand the use of the model. This work supports the requirements of both the Oak Ridges Moraine Conservation Plan (ORMCP) and Source Protection Planning (SPP) initiatives.

Wellhead Protection Area - Well Decommissioning & Upgrade Program

The Durham Region Wellhead Protection program is a Region of Durham initiative administered by CLOCA since 2004. The program's main objective is to prevent unattended inactive wells or poorly maintained operational wells from introducing contaminants to deeper aquifers. In this program, CLOCA staff provide technical and financial

Watershed Planning

In May 2008, the existing conditions report for the Lynde Creek watershed was completed and distributed to agencies and the public. Work began on the second phase of the watershed plan being the development of alternative management options. A considerable amount of time was spent on creating and mapping the existing and future natural heritage system for the Lynde Creek watershed. Finalization of this mapping is scheduled for early 2009.



Question Mark Butterfly

With respect to the Oshawa Creek Watershed Plan, work began on conducting a detailed review of the existing Watershed Plan. Since this Plan was prepared prior to the Provincial Oak Ridges Moraine Conservation Plan (ORMCP), it does not currently satisfy all the legislative requirements contained within the ORMCP with respect to watershed planning. Since adoption of the Oshawa Creek Watershed Plan, there have been other legislative planning changes (Greenbelt, Growth Plan, and revised Provincial Policy Statement) that need to be reflected in the updated Oshawa Creek Watershed Plan.

The City of Oshawa was consulted and is supportive of CLOCA's approach for the review and update to the Oshawa Creek Watershed Plan.

During the 2008 field season, the Authority's natural heritage monitoring program, including aquatic monitoring, focused on gathering data within the Black/Harmony/Farewell and Bowmanville/Soper Creek Watersheds to support future work on these watershed plans.

assistance to property owners who decommission or upgrade wells within the captures zones of operating municipal wells in Durham Region Well Head Protection Areas. To date, this program has resulted in the decommissioning of 9 wells and upgrading of 2 wells.

Planning & Regulations Summary

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.



Central Lake Ontario Conservation's jurisdiction covers over 627 sq. km (242 sq. miles)

Statistics for 2008

Ontario Regulation 42/06:

- ~ Issued 201 permits
- ~ Issued 9 Notices of Violation

During 2008 Plan Review staff provided comments on:

- ~ 48 land division applications
- ~ 23 official plan amendments
- ~ 60 site plan applications
- ~ 8 plans of subdivision
- ~ 40 rezoning applications
- ~ 13 minor variances
- ~ 5 special studies (which includes Class EA's/ municipal and private studies)

Special Plan Review Projects

In 2008, the province circulated for comment draft technical guidelines for the Greenbelt and the development of performance indicators for monitoring the effectiveness of the policies of the Provincial Policy Statement. CLOCA reviewed these documents and provided input to a coordinated Conservation Authorities Moraine Coalition and Conservation Ontario response to the Province. CLOCA also reviewed and commented on various phases of the Region of Durham Growth Plan conformity exercise known as Growing Durham.

Highway 407 Environmental Assessment and Preliminary Design

Throughout 2008, CLOCA staff met on a monthly basis with the Ontario Ministry of Transportation and their consultant team to review and comment on the Environmental Assessment and preliminary design submissions for the proposed Highway 407 and East and West Links. CLOCA has provided extensive baseline information to the consultants, we have commented on natural heritage field reports, provided input at special meetings related to the east link and the Courtice wetlands, and have reviewed and provided comments pertaining to natural heritage and hazard issues for more than 30 stream crossing reports and preliminary designs. This project will require significant staff time and attention throughout 2009, as the environmental assessment nears completion, and the preliminary design for the highway develops.



Bioengineering - A live crib wall is used to prevent streambank erosion on a local creek.

Wetland Mapping

This summer, Conservation staff conducted on-site wetland assessments to confirm CLOCA’s regulatory wetland mapping for Ontario Regulation 42/06: Development, Interference with Wetlands and Alteration to Shorelines and Watercourses. The Lynde Creek and Pringle Creek watersheds were the focus of this project. Aerial photographs are an excellent tool to identify watershed features, however, some wetland features due to their small size need to be checked.

Using the Ecological Land Classification protocol, 126 ha (312 acres) of land were examined through on-site surveys. Taking the time to conduct these visits ensures all features are confirmed and documented. In the Lynde Creek and Pringle Creek watersheds, an additional 14 hectares (35 acres) of small wetlands were identified and will now be protected through Regulation 42/06.

Did you know?

Wetlands are important for healthy watersheds. They store water and release it slowly; prevent flooding; filter out any contaminants in the water and provide habitat for fish, animals and birds.

The chart below shows the community types assessed this past summer, categorized by wetland and terrestrial systems.

Community Type	Quantity	Total Hectares (acres)
Wetlands		
Marsh	18	11.48 (28.37)
Shallow Aquatic	2	0.35 (0.86)
Forested Swamp	25	32.28 (79.76)
Thicket Swamp	7	5.13 (12.68)
Wetland Total	52	49.24 (121.67)
Terrestrial		
Cultural Sites (Woodland, Meadows, Thickets)	24	17.67 (43.66)
Forest	36	59.10 (146.04)
Terrestrial Total	60	76.77 (189.70)
Final Total	112	126.01 (311.37)

Durham Region Coastal Wetland Monitoring Program

Drafting of a technical report and a fact booklet summarizing the findings from the last 5 years of monitoring was completed and sent to Canada Wildlife Services for final review before publishing in 2009. In 2007, the Ministry of Natural Resources identified 3 new provincially significant coastal wetlands (one in Whitby and 2 in Oshawa). These 3 wetlands were assessed and added to the annual monitoring program, increasing the number of coastal wetlands monitored to 18. Also, in 2008, CLOCA conducted aquatic monitoring of 5 coastal wetlands in the Bay of Quinte supporting the Bay of Quinte Remedial Action Plan work. It is anticipated that this program will continue in 2009 and 2010 with aquatic monitoring conducted at

5 different coastal wetlands each year in the Bay of Quinte. In cooperation with CLOCA’s partners, improvements were made to the boat launch facility at the Wilmot Creek Wetland, enabling long term access for the electro fishing boat and equipment. Also in 2008, with financial support from Environment Canada, an equipment trailer was purchased, to permanently store and carry monitoring equipment to these wetlands. The result has been significant efficiencies in staff effort allowing more time and effort in actually collecting data.



GrayTree Frog

Water Monitoring

CLOCA’s 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 collected from it, 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, Water Response and Source Water Protection programs.

2008 was a year of extremes, at the opposite end of the spectrum from 2007. We began the year with a much larger than normal snow pack, resulting in high spring runoff. The wet and cool weather continued all summer. Several rainfall records were broken resulting in extensive road and property damage throughout our jurisdiction. Through our media contacts, particularly Rogers Day Time, we were able to issue High Water Safety Bulletins to residents to remind them that our creek systems can be dangerous during flooding. Our rainfall gauging systems captured and recorded the amount of precipitation falling, allowing us to monitor the response of our creek systems. We were able to access this information remotely and in real time, promptly providing the collected information to local Municipalities to assist with assessing the statistics and characterization of these extreme storm events.



Precipitation water monitoring station.

Floodplain Mapping

Floodplain mapping is a key tool within CLOCA’s mandate for flood forecasting and warning, water monitoring, plan and development review. New technology is allowing CLOCA to update and replace 30 year old analog floodplain mapping with new more accurate digital information. CLOCA has been producing the components, including hydrology models, digital elevation models and associated digital data sets to allow for efficient completion of floodplain mapping. Newly developed digital elevation models reduce the staff time required to develop new flood line information. The resulting flood lines can then be presented on the aerial photos in an aesthetic and user friendly way. CLOCA staff complete much of the work internally and contract consultants to complete the floodplain mapping for larger watersheds.

In 2008, CLOCA staff completed new floodplain mapping for the full Darlington Creek watershed, within the Municipality of Clarington. Base mapping and hydrology models were also provided to an engineering consultant to allow for the completion of new floodplain mapping for the full Bowmanville and Soper Creeks watershed. This project is anticipated to be complete early in 2009. In 2009, we will work with various consultants to initiate floodplain mapping for the complete Black/Harmony/Farewell Creek watersheds. Other small watershed floodplain mapping projects will continue to be undertaken by staff.



Sample of floodplain mapping.



The first step in floodplain mapping is to survey all existing creek road crossings.

Provincial Groundwater Monitoring Network

In Partnership with the Ministry of Environment (MOE), CLOCA continues to operate and maintain 16 Provincial Groundwater Monitoring Network (PGMN) wells under a program that started in 2002. This program is aimed at collecting, analyzing and generating reports on high quality ambient groundwater level and chemistry conditions to support Provincial, Municipal and watershed-based projects for groundwater resources management and protection. The program uses advanced industry technologies to accurately measure and store water level data on an hourly frequency. Most of the PGMN monitoring stations are equipped with telemetry systems that enable remote retrieval of data from the station to Ministry of Environment using communication network systems such as mobile phones. The telemetry system is currently being upgraded from analog to digital, in order to keep pace with available communication technology. This telemetry upgrading activity was operational in 2008 and will be tested and fully operational in 2009.

The collected, analyzed and processed data from this program is being used to support source water protection planning, low water level response, water allocation, land use planning, nutrient management and future planning activities related to climate change.

In May 2008, we constructed a monitoring well at Purple Woods Conservation Area in north Oshawa. This new well is a continuously cored borehole drilled to bedrock to the depth of 151.80 meters (500 feet).

The core samples recovered during drilling showed various undisturbed soil and rock units and the relative depths of occurrence with a very high level of accuracy. This well is to be one of Ontario's "Golden Spike" wells which means it will provide high quality geological and hydrogeological information for comparison across the province. The core was sent to the Geologic Survey of Canada for additional analysis and will remain in their core library for Ontario. The Purple Woods Monitoring Well will soon become part of the CLOCA's PGMN program.



Monitoring wells such as the one at Purple Woods C.A. will help us understand how groundwater flows.



Drilling complete, the wellhead will be fitted with scientific equipment and added to the Provincial Groundwater Monitoring Network.

While creating new wells for monitoring, we also embarked on a well decommissioning project of an artesian well (free flowing) adjacent to the Hampton Conservation Area. Due to the uncontrollable leakage in this packer installed well, it was difficult to retrieve data. After six years in operation, failed attempts to repair it and continued deterioration, the operation of this well was no longer cost effective. In December the well was properly decommissioned in accordance with Ontario Regulation 903 and removed from the PGMN program.

Flood Forecasting and Warning System

Heavy Rainfall Events and CLOCA's Water Monitoring System

If 2007 is on the record as one of the driest years, then 2008 will be remembered as the wettest. After a real Canadian winter and spring, we shifted into a summer filled with heavy rainfall events and set new monthly rainfall records.

The heavy rains began in June, with CLOCA gauging stations measuring almost double the typical June rainfall amounts. The wet ground conditions resulted in increased amounts of runoff during subsequent July and August events.



Watford Street, Brooklin - July 23/09

July is normally a dry month with about 70mm of precipitation accumulation. In 2008, our gauges recorded over 400% of the July monthly average, with about 300mm of total rainfall in the month. During the rest of the year we continued to exceed historical averages for precipitation, making 2008 the wettest year on record for the CLOCA watershed.

Throughout the year, CLOCA monitored and reported water conditions through High Water Safety Bulletins and Flood Advisories. In total 12 notices were issued in 2008, and staff completed flood watch duties as per CLOCA's Flood Contingency Plan, and conducted both remote monitoring from telemetry gauging stations as well as field observations and recordings. CLOCA's water monitoring system has been a valuable asset not only during the heavy rain events, but as a historical record to assist with post event analysis of damages, and as a data source for on-going federal climate studies and updates.

Several individual heavy rainfall events were included in the wet weather patterns. The heavy rainfall events were localized, and did not provide uniform rainfall over all of CLOCA's watershed, but did affect small streams, driveway and road culverts, and overland flow routes. Roads flooded, driveways washed out, and sewer systems surcharged causing basement flooding of numerous homes.

On August 20th, CLOCA hosted a de-briefing meeting with our municipal engineering and operations partners, to share information regarding the heavy rain events, incidents, and responses. Through a presentation by CLOCA staff, detailed information (rainfall hyetographs, daily and monthly precipitation totals and percentages, return periods, radar accumulation maps, photos of affected areas) was provided and later posted on a website. CLOCA staff continued to work with municipal partners, as the aftermath of the flood damages were addressed.



Taunton Road & Mary Street, Oshawa - July 23/08

Did You Know?

In the case of severe heavy rain events, such as this past summer, the roads are designed to act as a backup when the storm sewers reach capacity. The road allowance contains the overflow from the storm sewers to minimize property damage.

Black, Harmony & Farewell Aquatic Resource Management Plan

This past year marked the completion of another document to help protect our local watersheds. The Black, Harmony and Farewell Creeks Aquatic Resource Management Plan (ARMP) is the fourth of its kind developed within CLOCA's jurisdiction. The Bowmanville/Soper Creek, Oshawa Creek and Lynde Creek ARMP's (CLOCA 2000, 2001, 2006 respectively) were completed previous to the development of the Black, Harmony and Farewell ARMP. In addition to the focus on the management of fish communities, the ARMP recognizes the contribution of the watershed to aquatic health and the importance of habitat use by aquatic invertebrates like dragonfly nymphs and water striders.

CLOCA's ARMP's are closely linked to the recently developed Central Lake Ontario Fisheries Management Plan (CLOFMP) which sets out goals and objectives for a multi-agency approach to managing the fisheries resource within CLOCA's jurisdiction. The ARMP's differ in that they set out the Authority's plan to monitor, manage and enhance the aquatic health of our watersheds including, identifying monitoring plans and implementation initiatives.

The next steps to protecting our local aquatic resources, will be to develop an ARMP for the small watersheds and lands that drain directly to Lake Ontario within CLOCA's jurisdiction. This work will also be incorporated into the CLOFMP.

Aquatic Invasive Species In CLOCA Watersheds

CLOCA staff, in partnership with Fisheries and Oceans Canada, continued monitoring CLOCA watersheds for the spread of aquatic invasive species in 2008. This project began in 2007 targeting the Oshawa, Bowmanville and Soper Creek watersheds for the invasive round goby. 2008 monitoring revisited the electrofishing sites sampled in 2007.

The results of the 2008 aquatic invasive species monitoring show that round goby have not increased their range upstream into CLOCA's watersheds since 2007. That being said, there were significant differences between the 2007 and 2008 monitoring seasons which may have influenced catch, most notably stream flow. These and other results from this work were presented at the 2008 Annual General Meeting for the American Fisheries Society in Ottawa, and the 2008 A.D. Latonnell Conservation Symposium in Alliston. This project has sparked considerable interest and there may be opportunities to continue this work in 2009.

How to identify a round goby:



- ~ Fused pelvic fin resembling a suction cup. This fin is found on the fish's belly, just underneath its head. In contrast, all native fish species in Ontario have paired pelvic fins.
- ~ Average total length ranges from 7 to 15 centimetres.
- ~ Black dot on its first dorsal fin.
- ~ Frog like eyes.

Did You Know?

If a round goby is caught outside of its known range, members of the public are reminded to preserve the fish in alcohol or freeze it and call the Invading Species Hotline at 1-800-563-7711 to report it.

Aquatic Monitoring Program

During the aquatic field season of 2008, Central Lake Ontario Conservation staff generally focused monitoring efforts on the Black, Harmony and Farewell Creek watershed. Baseline fisheries data was first collected by CLOCA in 2002 in this watershed. In 2008, 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. Some additional monitoring was conducted in the Bowmanville Creek watershed as part of the Enniskillen Conservation Area Stewardship Plan.

Temperature is an important factor with respect to habitat suitability for fish and other aquatic organisms. Approximately 74 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 conditions in our streams, but continued monitoring will allow us to track changes occurring in the future as a result of land use changes or poor land management practices.



Data Logger

Staff collected benthic invertebrates or aquatic bugs, from 15 stream locations primarily within the Black, Harmony and Farewell Creek watershed. "Aquatic bugs" play an important role in monitoring water quality within our watersheds. Depending on the species and quantity of bugs 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. This method of assessing water quality allows us to survey larger areas and isolate impaired stream sections that may need additional, more detailed sampling and lab analysis.

Spawning surveys help to assess the activities of the local fish community. They are extremely beneficial to understanding and describing the health of a creek within a specific watershed. A spawning survey involves observing indicators of spawning. These indicators include: the presence

of adult fish in a likely spawning area (e.g., rainbow trout), the occurrence of active spawning (e.g., fish present on redds, another name for a nest) and signs that spawning has taken place (i.e., spawning depressions or redds).



The light coloured area is a spawning redd created by a rainbow trout. Notice the lack of algae.

Sampling methods for capturing fish are sometimes not suitable for obtaining all the data needed about a specific fishery. Many limiting factors may prevent a species of fish from reproducing successfully. These include poor water quality, migration barriers, temperature, water levels, and in stream works conducted without proper permits. Spawning surveys provide useful information for identifying critical spawning habitat and is used to further compliment our standard fish community surveys.

In 2008, spawning surveys were conducted in April and May within Black, Harmony and Farewell Creek as well as Pringle, Robinson, Tooley, Darlington and Westside Creeks.

In order to help determine aquatic ecosystem health and monitor it over time, CLOCA conducts fisheries assessments in various watersheds each season. Ongoing annual aquatic monitoring is recommended in the Central Lake Ontario Fisheries Management Plan (CLOFMP). Information collected during these programs supports the goals and objectives of the Plan and allows for an adaptive management approach. Fisheries stream sampling took place during July and August at 36 locations generally within the Black, Harmony and Farewell watershed.

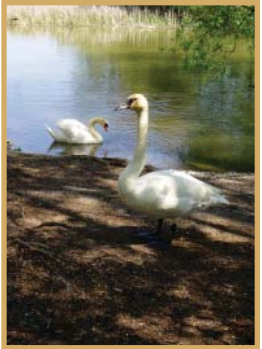


CLOCA staff using a backpack electrofisher to conduct fisheries sampling.

Wildlife Management

Canada Geese & Mute Swans

This year CLOCA continued its Canada Goose and Mute Swan egg-oiling efforts in Cranberry Marsh and also extended the program to include Westside Marsh. In Cranberry Marsh, a total of 13 nests (46 eggs) were identified and oiled. Nine of these nests were Canada Goose nests (37 eggs) and the remaining 4 were Mute Swan nests (9 eggs). At Westside Marsh, a total of 11 nests (48 eggs) were found within the wetland, all of which were Canada Goose nests. Oiling eggs prevents the eggs from hatching and help control the population of these plentiful nuisance bird species.



Trumpeter (front) & Mute Swan at Lynde Shores C.A.

Double-crested Cormorants

In 2008 there was increased public concern over the number of Double-crested Cormorants within the Lynde Shores Conservation Area. Where cormorants nest in large numbers, such as Tommy Thompson Park in Toronto, they are considered a nuisance because they kill trees by removing branches for nests and defoliate vegetation with their guano (droppings). At Lynde Shores, this has not been a problem to date, as the birds are only temporary or staging, not nesting.



Double-crested Cormorant at Lynde Shores C.A.

In late summer these birds typically congregate in Great Lakes shoreline areas such as Lynde Shores for up to a month. The trees here provide for night time roosting and fish stocks for daytime feeding. Here they prepare to migrate south for the winter months. During this time they are most noticeable because of their numbers.

Although Double-crested Cormorants are not considered a threat to the health of the Lynde

Shores Conservation Area at this time, there is always the potential for this to change. CLOCA staff continue to monitor the conditions along the shoreline and communicate with the Canadian Wildlife Service to track cormorant staging areas and nesting sites. In Ontario, the Ministry of Natural Resources is responsible for managing Double-crested Cormorants.

Beavers

Beavers are a natural and welcome part of the environment. From time to time beaver activity conflicts with the management of both public and private property and can create safety issues. Nuisance beavers are regulated through the Ministry of Natural Resources. Listed below are a few helpful resources that cover beaver biology and options available for nuisance situations. CLOCA staff do not deal directly with the management of beavers, but are available to discuss problems that may occur within our jurisdiction and offer some solutions.



Beaver at Bowmanville/ Westside Marshes C.A.

Online Resources

People and Wildlife - Reducing and Managing Conflict - http://www.mnr.gov.on.ca/en/Business/FW/2ColumnSubPage/STEL02_168419.html

Extension Notes – Options For Controlling Beaver On Private Land - http://www.lronline.com/Extension_Notes_English/wildlife/bvr.html

DFO Operational Statement - Beaver Dam Removal - <http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territoires-territoires/on/os-eo03-eng.htm>

Ontario Fur Managers Federation - <http://www.furmanagers.com>

Road Mortality Monitoring

In 2008, CLOCA continued to monitor wildlife mortality along Victoria Street at the Lynde Shores Conservation Area. This year’s results contrasted sharply with the data collected in 2007.

	2007	2008
Amphibians	830	280
Birds	37	67
Insects	147	61
Mammals	41	68
Reptiles	15	37
Snakes	5	22
Turtles	10	15
Totals	1070	513
Monitoring Days	48	58

Between 2007 and 2008 there was a marked decline in amphibian and insect mortalities, however, there was a 3-fold increase in reptile deaths. These differences may be accounted for by weather, as 2007 was very dry and hot and 2008 was notably wet. In a hot, dry summer, amphibians may be motivated to move to

wetter habitats or to areas with more food. If such movements require them to cross Victoria Street, then higher amphibian mortality would be expected. Insects, which are most active when it is sunny, may have been more abundant along the roadside in 2007 and therefore more likely to be hit by passing cars. Finally, reptiles are cold blooded and bask in the sun to increase their body temperature. Snakes in particular find asphalt road surfaces ideal for this purpose. If higher temperatures in 2007 reduced their need to bask on the warm road, or lower temperatures in 2008 increased their basking frequency, this could account for the increase in reptile mortalities in 2008.



A deceased Great Blue Heron at Lynde Shores C.A.

Wildlife Monitoring Program

This year, bird monitoring efforts continued within the CLOCA conservation areas as well as throughout the Black-Harmony-Farewell watershed.

Much of this monitoring was conducted by core staff, however volunteers and summer students were integral partners in the program. One area which received increased effort in 2008 was the newly acquired Enniskillen Valley lands. Bird monitoring in the valley revealed healthy populations of grassland/successional species such as Bobolink, Clay-coloured Sparrow and Savannah Sparrow, as well as area-sensitive forest



Camouflage is a Wood Frog’s main protection.

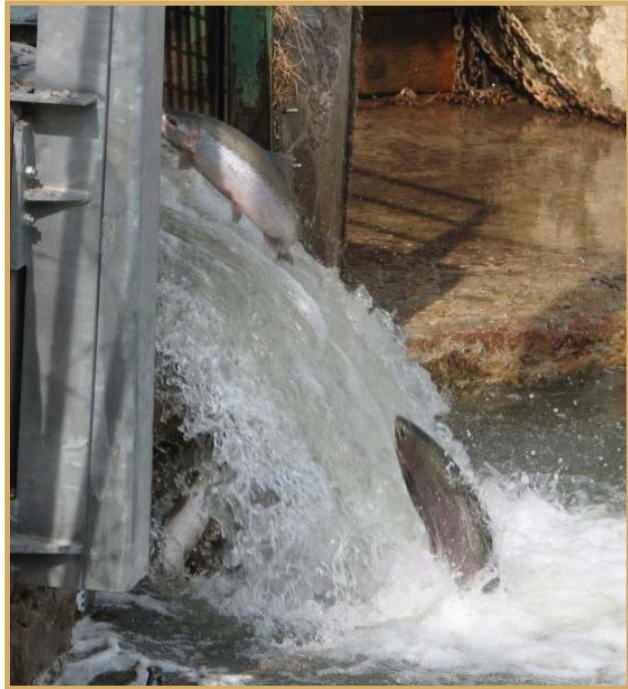
birds such as Black-throated Green Warbler and Veery.

Within the jurisdiction, a number of species at risk were identified in 2008 including Least Bittern, Blanding’s Turtle, Monarch Butterfly, King Rail, Red-headed Woodpecker, Chimney Swift, Eastern Ribbon Snake, and Snapping Turtle, the most recent addition to Canada’s species at risk list.

Salamander Monitoring also continued in 2008 at the Lynde Shores and Heber Down Conservation Areas. To date, no salamanders have been observed at any of the monitoring plots, however a Wood Frog was observed using a plot at Heber Down in the fall.

Veyance Dam Improved Fish Passage

In 2008, CLOCA staff partnered with multiple stakeholders including Fisheries and Oceans Canada, the Ontario Ministry of Natural Resources, the Municipality of Clarington, Veyance Technologies and Valleys 2000 to investigate options to improve fish passage at the Veyance Dam (Bowmanville Fishway).



The existing fishway facilitates the migration of jumping fish species like salmon and trout over the dam; however, larger fish are often unable to pass through given the relatively small footprint of the step pools. In addition, many fish attempt to jump at the dam and either get injured or become stranded on the sill and die.

The current fishway incorporates a control structure to restrict the upstream migration of invasive sea lamprey and round goby. A similar control structure will be incorporated into the new design to protect upstream fish communities from these non-native species.

Bowmanville Creek is one of CLOCA’s most productive watersheds and a popular destination for avid anglers. The creek receives strong spawning runs of Chinook salmon, rainbow trout, Coho salmon and lake-run brown trout. An improved fishway will enhance the fishery and support fisheries management objectives as per the recently developed Central Lake Ontario Fisheries Management Plan. It is anticipated that a new fishway design will be finalized early in 2009.

← Chinook salmon making the trek up stream to spawn.

Home Improvements

Conservation Centre Gets New Look

The Central Lake Ontario Conservation Authority owns and operates 2,198 hectares (5,431 acres) of conservation land within the Region of Durham, and operates from the administration centre located within the Oshawa Creek Valley. The administration centre provides office space for approximately 40 full time staff and a conference centre building with a garage and meeting room area above the garage.

Originally built in the 1800’s, this “Conference Centre” building has experienced a variety of uses: it has been used for operations associated with Cedar Dale Scythe Works Co. (manufacturer of farm implements); it was used as a carriage house and stable for the previous Robson Lang tannery

operation; the building experienced a fire in the mid 1980’s and was renovated into a booking facility / garage for Authority operations, officially becoming known as the “Conference Centre”; it has recently been renovated in order to provide additional office space for permanent staff. The Authority restored the cultural heritage and historical pulse of the building by reverting to the original board and batten, gable roof design and by maintaining the “stable,” which is still a focal point within the main floor footprint.

Continue on page 15.

Brawley Estates Creek Restoration

In the fall of 2008, CLOCA staff and volunteers completed a stream restoration project in the headwaters of Lynde Creek, in close proximity to Brawley Road. This project focused on a small tributary with extensive erosion due to changes in flow resulting from upstream development. In addition to erosion issues, there was a perched culvert in the stream which acted as a barrier to fish migration.

Altogether, over 100 meters of stream was restored with the help of local volunteers. Improvements included: installation of rock weirs and grading of stream banks to control erosion and downcutting of the creek, providing instream habitat features like pools and riffles; removal of the perched culvert and replacement with a span bridge; riparian planting using native shrubs and trees to stabilize the stream banks, provide shade to the creek and additional habitat structure. With these improvements, it is expected that fish will begin to colonize this once uninhabitable reach. Additional benefits will also likely occur in the main branch of Lynde Creek downstream, a sensitive brook trout stream with endangered redds.

This project was made possible by funding from fisheries compensation and the Community Fish and Wildlife Involvement Program.



Before and after pictures of the stream restoration project.



Conservation Center Gets New Look - Continued

In September, 2008, Authority Engineering & Field Operations staff officially moved into the renovated conference centre building. The building now provides offices upstairs, with storage areas and garage bays on the main floor. The office space includes a small meeting room,

kitchenette, washrooms, a smart board and 7 individual offices. A vehicle compound has been constructed on the west side to store CLOCA vehicles when not in use and a solar powered light provides additional evening security.



Land Acquisition

Lynde Shores Conservation Area

Acquisition within the Lynde Shores area has been proposed by CLOCA since the completion of a Conservation Planning Study in 1973 due to its waterfront location and significant natural heritage features relative to the rest of the jurisdiction. The Lynde Shores Conservation Area Land Acquisition Project, was more recently reinforced through the conservation area management planning exercise completed for Lynde Shores Conservation Area in 1999. CLOCA has long intended to secure, for conservation purposes, the two coastal marshes (Lynde Creek Marsh and Cranberry Marsh) along with a significant surrounding buffer area in order to help protect the long-term biodiversity of this significant area because of the following;

- its substantial contribution to the natural heritage systems along the shores of Lake Ontario,
- to the natural heritage systems within the CLOCA jurisdiction, and finally
- to the more local natural heritage system within the Lynde Creek watershed.



Nesting boxes at Cranberry West Tract - Lynde Shores C.A.

Continued on page 18.

Enniskillen Conservation Area

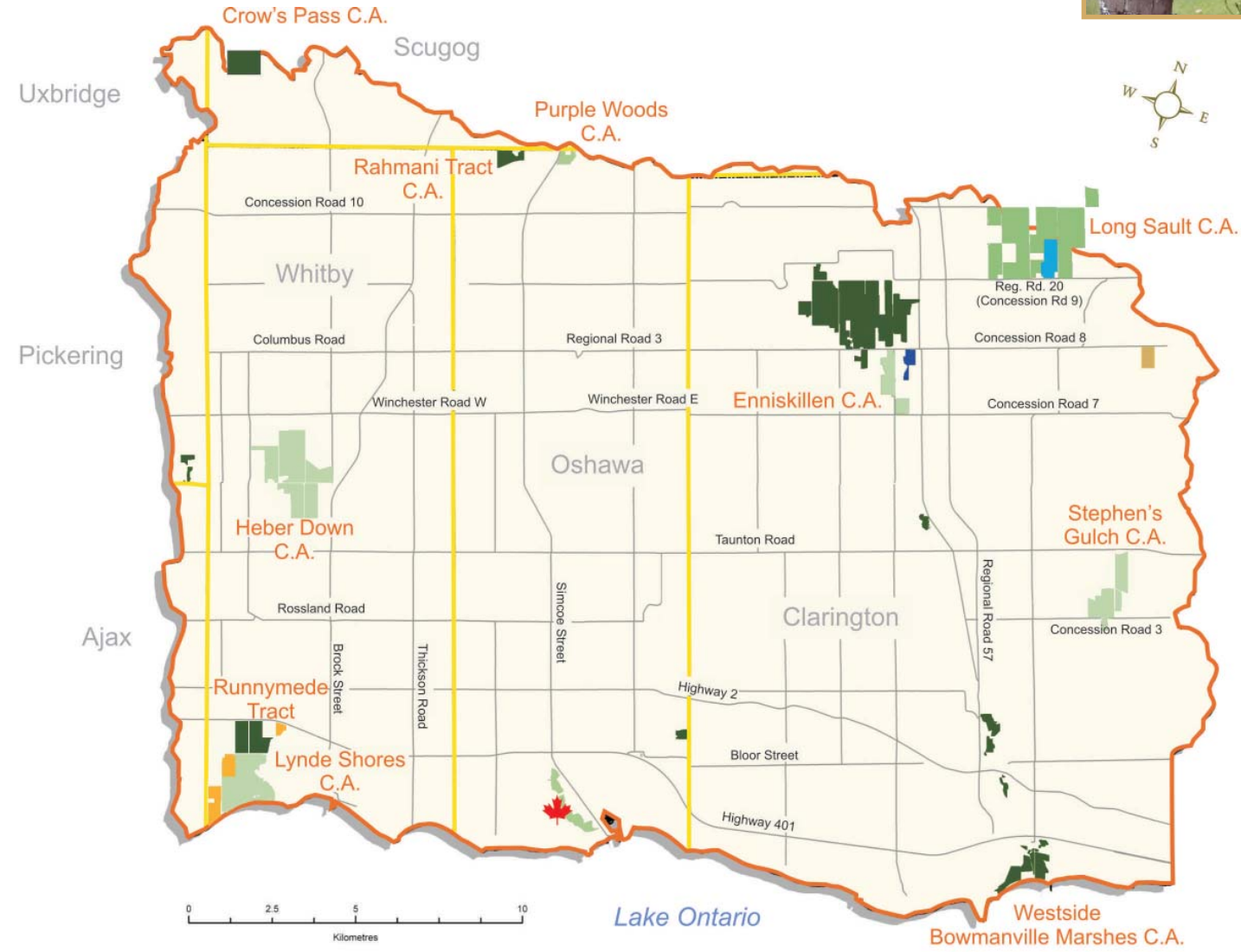
Acquisition efforts continued this past year around Enniskillen Conservation Area. The addition of the Goheen Tract -21.6 hectares (53.3 acres) secures lands adjacent to the Village of Enniskillen south of Regional Road 3, and provides long-term protection to marsh, swamp, meadow and a headwater tributary of the Bowmanville Creek.

This acquisition continues the momentum of the Enniskillen Valley Land Acquisition Project, a project that now protects over 580 hectares (1,433 acres) of Environmentally Sensitive Area (ESA), Oak Ridges Moraine, significant groundwater resources, open meadows, mature forests and wetland features in the steeply sloped headwaters of Clarington’s Bowmanville Creek.

Continued on page 18.

Thank You!

- The 2008 land acquisitions were made possible with support from:
- Regional Municipality of Durham
 - Oak Ridges Moraine Foundation
 - Ducks Unlimited Canada
 - Nature Conservancy of Canada (The Ontario Greenlands Program)
 - Town of Whitby
 - Central Lake Ontario Conservation Fund



Long Sault 2008 Land Acquisition

Enniskillen Valley 2008 Land Acquisition

Conservation Areas (Public Access)

Conservation Areas (Limited Public Access)

Cane Tract 2008 Land Donation

Lynde Shores 2008 Land Acquisition

Central Lake Ontario Conservation Watershed Boundary

Municipality Border

 Central Lake Ontario Conservation Administrative Office

Cane Tract

CLOCA celebrates the generous land donation of Canecrest to the Authority’s land holdings by William Cane and his family in memory of his late wife, Doris Cane. The property is 26.9 hectares (66.5 acres) in size, and includes White Spruce plantation and agricultural lands leased to a local farmer for cash cropping purposes. In addition, a branch of the Soper Creek encompassed by a mixed forest is found on the property. An estimated 2.6 hectares (6.4 acres) is dedicated to on-site infrastructure which includes a workshop, equipment sheds and manicured open space. The lands are situated within an upper branch of the Soper Creek Watershed (Soper Branch D). The Soper Creek is a locally significant cold water creek and within this branch of the Soper, brown trout, rainbow trout, Chinook and Coho salmon have been found. The property is wonderfully positioned within the Oak Ridges Moraine between two of the largest Natural Core Areas (Long Sault and Ganaraska Core Areas) in the eastern portion of the Moraine. Natural Linkage Areas provide opportunities to restore and enhance corridors between core areas. These corridors provide opportunity for safe passage of species between core areas hence improving biodiversity. *Thank you to the Cane family for your generosity.*

Long Sault Conservation Area

The Long Sault area, just minutes from Enniskillen, has also seen increases in public open space as a result of CLOCA acquisition efforts. 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.

Continued on page 18.



Land Acquisition - Continued from pages 16 & 17

Lynde Shores Conservation Area

More recently, significant effort and financial investment has gone into realizing this large conservation area land assembly project. In 1998, the Ontario government ear-marked \$20 million for land acquisition in three areas - Niagara Escarpment, the Rouge Valley and Lynde Marsh. Several properties within the Lynde Shores area have been acquired in the last ten years through this program. In the spring of this year the Ontario Realty Corporation transferred ownership of three tracts of land surrounding Lynde Shores Conservation Area (Cranberry West Tract - 40.3 hectares (99.6 acres), Shisko Tract - 3.0 hectares (7.4 acres), and Nordeagle Tract - 9.4 hectares (23.2 acres) to CLOCA. The Shisko B Tract - 23.8 hectares (58.8 acres) was also newly acquired by CLOCA in December 2008. These new acquisitions bring the size of Lynde Shores Conservation Area to 348.4 hectares (861 acres).

Enniskillen Conservation Area

Together, these lands represent a major migratory corridor for wildlife, and a thriving cold water fishery that is interwoven with a vibrant rural community.

Long Sault 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 December 2008, CLOCA acquired the Craig Tract - 50.4 hectares (124.5 acres). Acquisition of the Craig Tract will help to further unify the east and west sections of Long Sault Conservation Area. This acquisition brings the total public greenspace in the Long Sault area to 507 hectares (1,253 acres).

Conservation Areas

Enniskillen Ontario Heritage Trust Project

The Enniskillen Conservation Area (ECA) straddles the southern boundary of the Oak Ridges Moraine and encompasses much of the headwaters of the Bowmanville Creek, making it an ideal candidate for land assembly. Comprehensive land acquisition efforts, combined with staff involvement in the community and willing landowners, resulted in the ECA blossoming in size from 67.6 hectares (167 acres), approximately 5 years ago, to roughly 580 hectares (1,433 acres) acres by the end of 2008.



Natural heritage study area.

A funding agreement encompassing four tracts of land was struck by CLOCA with the Ontario Heritage Trust (OHT). In 2008, OHT required that the following works be completed as part of this agreement: CLOCA complete Phase I Environmental Site Assessments (ESA) for each of the tracts; CLOCA enter into Heritage Conservation Easement Agreements for each; CLOCA complete Baseline Documentation Reports (BDR's) for each; and that CLOCA complete a Stewardship Plan for the overall ECA.

The collection of natural heritage baseline data and property infrastructure data commenced in 2007 and intensified in 2008, as several teams of CLOCA staff embarked on various phases of field reconnaissance. Faced with the daunting task of field inventory work over approximately 580 hectares (1,433 acres), CLOCA staff are proud that the collecting of local residents' knowledge of the area and field work were completed and retained in house. Phase I ESA deliverables were submitted in the spring of 2008 and BDR deliverables for each tract were submitted in December 2008. It

is anticipated that the overall Stewardship Plan for the ECA will be submitted to OHT by March 2009. CLOCA staff members Jamie Davidson, Jackie Scott, Debbie Farmer, Jeff McNeice, Ian Kelsey, Kathy Luttrell and Dan Hope along with our summer students, completed the study. Central Lake Ontario Conservation would like to thank Barbara Heidenreich and Tony Buszynski of the Ontario Heritage Trust, for their patience and guidance regarding this undertaking.

Showcasing our Conservation Areas

The wet weather, heavy rain events and wind caused a number of maintenance issues related to erosion and tree damage along our trail systems. Our staff devoted a great deal of time to trail repairs, hazard tree removal, and vegetation control to ensure our public use systems were safe and enjoyable for our visitors. CLOCA's 50th Anniversary tour in September was an opportunity to show our Conservation Areas including Lynde Shores, Bowmanville/Westside Marshes, Hampton, the newly acquired Cane Property, Enniskillen Valley acquisition lands, and Purple Woods.

Despite the challenges of maintaining our Areas this year, several improvements were completed. Trail systems, the fundamental component of public use in our Areas, continue to be advanced. At Crow's Pass Conservation Area, the Township of Scugog improved the Middle March Road allowance to provide access to our small pull-off parking area. A looping trail system has now been marked through Crow's Pass with the assistance of volunteers, providing a complimentary system to the Oak Ridges Trail that passes through the property. Similarly, a trail system has been constructed through the recently acquired Wagner Property at Heber Down Conservation Area, linking the main parking lot to the Iroquois Shoreline trail. CLOCA manages over 45 kilometres of trail for hiking, biking, and skiing.



Volunteers install trail markers at Crow's Pass Conservation Area.

Bowmanville Westside Marshes Conservation Area

The majority of the recommendations from the Bowmanville/Westside Marshes Conservation Area Management Plan (CLOCA June 2006) have now been completed, and this Conservation Area offers trails and wildlife viewing of two Provincially Significant Coastal Wetlands within the Port Darlington community of Clarington. In 2008, the following projects were implemented:

- The installation of directional tourism signs were located at the Liberty Street and Baseline intersection through the Region of Durham traffic policy.
- A natural buffer of coniferous trees have been installed to provide better pedestrian linkages for residents of the Cove Road community to access the Conservation Area.
- Promotional opportunities through the CLOCA website and a Conservation Ontario Guidebook.
- A Conservation Areas Work Day was held in October to assist our staff with the removal of an old lookout platform from the riparian area along Bowmanville Creek.
- A picnic site was incorporated into an area adjacent to the parking lot, a limestone pad, picnic table and shade trees were installed.



A job well done! Volunteers braved the rain at a Conservation Area Work Day at Bowmanville Westside Marshes C.A. in October.

Clean Water Land Stewardship Program

Now in its fifth 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. 2008 funded projects include:

- ~ Establishment of a 500m agricultural windbreak
- ~ The installation of 1000m stream fencing, one bed-level stream crossing and a solar powered watering system to protect 4 hectares (9.8 acres) from livestock in the Lynde and Farewell Creek watersheds.
- ~ Creation of a 1.3 hectare (3.2 acre) wetland in the Lynde Creek Watershed
- ~ Completion of 18 well upgrade and decommission projects

A number of other projects and partnership initiatives are in development for implementation in 2009.

Private Land Tree & Shrub Program

The Authority's sale of native tree and shrub seedlings continues to be popular with over 11,000 seedlings sold and distributed to 53 landowners in 2008. 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.



Sorting tree seedlings.

Well Upgrade and Decommissioning Program

CLOCA continued to provide technical and financial support to landowners within its jurisdiction to decommission unused wells, and upgrade existing wells to today's standards. These well projects help to protect groundwater resources and drinking water from surface water contamination. In 2008, 12 well decommissioning projects, and 6 well upgrade projects were completed.

Caring For the Moraine Landowner Contact Program

CLOCA worked closely again in 2008 with the Oak Ridges Moraine Foundation to deliver on its commitment to the Caring for the Moraine Project. As part of this project, close to 200 landowners were contacted in the Long Sault target area on the Moraine. Landowners were provided information on the Oak Ridges Moraine, stewardship programs available to them, and the option to have staff come out to their property for a free site visit. Three projects were carried out on the Oak Ridges Moraine with funding assistance from the Caring for the Moraine Project. These projects included the Royal Ashburn Golf Course wetland creation project, one cattle fencing project downstream of Chalk Lake on the Lynde Creek, and the planting of a farm windbreak in the headwaters of Bowmanville Creek. In addition, a "Healthy Water, Healthy Land: Managing Your Property's Natural Spaces" workshop was held by CLOCA in November. This workshop was part of a series of information workshops held across the Oak Ridges Moraine by other partner organizations. CLOCA invited landowners from across its jurisdiction and beyond to find out more about our stewardship programs and to hear guest speakers present information on forest management, native plant gardening, stream restoration, wetland restoration, and well/septic management. Close to 30 landowners participated in this information workshop.



Working together, for a healthy watershed. CLOCA staff and a watershed resident discuss a stewardship project.

Royal Ashburn Golf Course Wetland Creation Project

In 2006 CLOCA, through the Clean Water Land Stewardship Program, initiated discussions with the Royal Ashburn Golf Club to create a functional wetland area adjacent to the golf course in an effort to increase wetland habitat and vegetation diversity within the area. Improving the size and quality of wetland habitat on the site was the primary project goal; however, there was also a desire to ensure the design of the wetland would improve water quality (improve coldwater habitat and reduce sediment loading) in the adjacent Lynde Creek. In 2007, CLOCA invited Ducks Unlimited Canada and Ontario Federation of Anglers and Hunter's Community Stream Steward Program, to partner on the project. Construction of the wetland and associated features began in December of 2008, with completion scheduled for early 2009.



Almost complete, the wetland complex at Royal Ashburn covers 1.6 hectares (4 acres).

Protection of a naturalized stream segment, conversion of an existing pond into wetland habitat, and enhancement of wetland/riparian areas will result in the following benefits to the Lynde Creek watershed:

- ~ Increased wetland habitat along the south slopes of the Oak Ridges Moraine
- ~ Increased wildlife habitat
- ~ Enhanced water quality (maintain cold water habitat, and reduce sediment and nutrient loading within a portion of the Lynde Creek)
- ~ Enhanced ability for restored wetland area to reduce flooding potential downstream by temporarily storing increased runoff
- ~ Excellent opportunity to interpret wetland related benefits to the public

Source Protection Education & Outreach Program

CLOCA was one of 5 Conservation Authorities in partnership with the Region of Durham and the Well Wise Resource Centre to implement an education and outreach program to Well Head Protection Area communities serviced by Durham Region groundwater supply systems. The funding for this initiative came from the Ontario Ministry of the Environment, Education and Outreach Stewardship Fund. The intent of this program was to raise awareness about the Clean Water Act through a series of forums for residents and businesses, a hands-on program for elementary students in Well Head Protection communities and residential and business door to door visits.

The program was intended to empower residents to take action on their own properties, with a focus on their well and septic systems. The 5 Conservation Authorities developed a collaborative presentation for the 6 community forums to promote our technical services and financial resources for assisting landowners with further protection of their drinking water supplies.

CLOCA staff attended all 6 forums and were able to promote other stewardship programs to participants as well as our well decommissioning and upgrade program. In all more than 750 people attended the forums, with the majority of them indicating their primary interest was on well maintenance and septic care. Feedback from participants was very positive, and a survey helped us determine overall relevance of the material presented, areas of interest and how individuals heard about the forums. Overall the conservation authorities reported modest uptake on the financial assistance programs offered through the Ministry of the Environment's Early Actions.



One of 6 forums to discuss source water protection.

Durham Stewardship Group

Many CA's have broadened the scope of their stewardship programs over the past year, in response to new funding from MOE's Early Actions Program targeting Well Head Protection Areas as well as other provincial and federal funding programs. It was necessary to update and enhance the brochure developed in 2007. CLOCA took the lead on this initiative, with input from stewardship staff from all 5 CA's, to create a brochure with consistent language, an updated map showing actual boundaries and changes to the technical and financial resources offered by each Authority. An effort was made to promote stewardship to farmers in Durham Region through 3 shared advertisements in Voice of the Farmer.

Oak Ridges Moraine Accomplishments

Land Acquisition

An estimated 100 hectares (249 acres) of land was secured in the Oak Ridges Moraine in 2008, with the donation of the Cane property and purchase of the Goheen and Craig properties adjacent to Enniskillen and Long Sault Conservation Areas respectively.

Trails

Central Lake Ontario Conservation continues to work in partnership with the Oak Ridges Trail Association (ORTA) with a focus in 2008 on the Crow's Pass property and providing connections to a new section of the ORTA trails at this location. A number of trail markers and trail enhancements were implemented on our lands to enhance the hiking experience for visitors to Crow's Pass. These efforts are in keeping with our past efforts and achieving our goal to connect all trails within our Conservation Area properties established by ORTA.



Education and Outreach

In partnership with the Oak Ridges Moraine Foundation, Central Lake Ontario Conservation added a new activity to the 11th annual Durham Children's Groundwater Festival, entitled "Moving Through the Moraine". This hands-on program was designed to take a water drop, which was actually a grade 4 student, through the moraine and its watershed to Lake Ontario. A variety of props including suspended pool noodles and slides allowed students to experience concepts like recharge, discharge, sediment, contamination and watershed habitat features.

Purple Woods Annual Maple Syrup Festival

In 2008 a variety of natural and cultural heritage enhancements with a focus on the Oak Ridges Moraine were developed and implemented to engage visitors. The displays included a turn of the century one room school house with a 4 panel ecological time line and a variety of natural and cultural heritage artifacts, a series of 4 panels on wildlife, hands-on animal displays in the outdoor Oak Ridges Moraine Discovery Centre, and enhancements to outdoor interpretive stops which through costumed interpreters and artifact props, recalled the history of maple syrup production over the past 400 years.



Two young visitors play with a pioneer toy at the Purple Woods Maple Syrup Festival's Pioneer School House.

Chalk Lake

In 2008 a draft of the Chalk Lake Capacity Study was completed in an effort to produce a comprehensive document that would provide some insight into the trophic/nutrient status of the lake and potential impacts of incremental development around this unique Kettle Lake feature on the Oak Ridges Moraine. With funding from the Regional Municipality of Durham and sampling assistance from the Ministry of Environment and Energy's Lake Partner Programme, the study was initiated in 2001 to investigate nutrient levels (in this case total Phosphorus) in the lake, and assess how they relate to past, present and proposed land uses within the catchment area.

While ultimately the lake did not prove suited to the application of The Lakeshore Capacity Model, a tool for modeling development related changes in Total Phosphorus levels; the study has provided us with a better understanding of the nutrient status of the lake and the nutrient cycle on a seasonal and yearly basis. Within the document, the key findings include:

- the deepest section of the lake is 21 metres;
- overall the lake exhibits generally good water quality and clarity conditions;
- the lake is classified as oligotrophic (low nutrient enrichment);
- high total phosphorous concentrations at the bottom depths and spring time spikes at the surface suggest a reservoir of nutrients exists;



- the total nutrient levels in the lake have remained relatively constant from the late 70's to the present, based on historic sampling records;
- the lake is fed primarily by groundwater, which seeps into the lake below the surface and infiltrates back into the ground with limited ability to interact with the atmosphere, resulting in low Oxygen levels;
- the lake has significant oxygen deficiencies at depth, limiting its ability to support cold water fish species like trout and salmon; it does support a warm water fishery with bass and bullhead present, and;
- groundwater movement through the lake is the most likely reason for oxygen deficiency.

Currently, the Oak Ridges Moraine Conservation Plan has identified the Lake and its surrounding catchment as Natural Core Area. Core Area policies along with protective policies of the local municipalities mean that development opportunities are limited to existing lots of record with no opportunity for multiple lot creation proposals or new subdivisions. Understanding that new large-scale development or significant land use change is unlikely to occur within the catchment, the findings of the study appear to bode well for the continued health of the lake. With good agricultural nutrient management, proper maintenance of septic systems and care not to introduce other sources of phosphorus into the lake, residents should continue to enjoy this gem in their own back yards into the distant future.

Durham Children's Groundwater Festival

The 11th annual Durham Children's Groundwater Festival held at Camp Samac in Oshawa on September 22nd through to the 26th, saw over 4,100 grade 4 students getting wet and exploring the stuff known as H²O. Through the hands-on interactive learning centres, they 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 46,200 Grade 4 students have participated in the event and 4,400 secondary school students have hosted the activity centres. Our secondary school volunteer program provides trained youth coordinators at the learning centres. Many of them participated as grade 4 students in the past and their return as activity leaders inspires them to share their knowledge in a fun and exciting atmosphere.

This year's festival's activity enhancements included an activity on Climate Change – Weighing the Facts to compliment a second activity called Great Green Choices – Let's do lunch to raise the awareness of waste and the packaging used in their everyday lunch. Knowing

that 85% of school garbage is from lunch packaging and as part of our effort to support the Ontario Eco Schools both activities struck a real chord with students, teachers and parents. A third new activity, Moving thru the Moraine was provided in partnership with the Oak Ridges Moraine Foundation and once again, the Amazing Aquifer activity was hosted by our partner, the Wellwise Centre.

The festival organizing committee is looking forward to 2009, continuing to enhance and provide the experience and tools for students, teachers and volunteers to become water stewards in their homes, schools and communities.



Students take time to pose for a picture with Drip the Drop at the Groundwater Festival.

Farm Connections

For the 3rd consecutive year, CLOCA partnered with the Region of Durham and agricultural stakeholders in providing an interactive ½ day hands-on activity at the annual Farm Connections in Brooklin. Staff from CLOCA and other Durham Region CA's helped deliver more than 75 presentations to 1200 grade 5 students on the Beneficial Management Practices of farmers in conserving soil and water resources for healthy watersheds.



Watershed Management 101

Natural Heritage staff provided a presentation on Watershed Management to a grade 11 environmental science class at the local G.L. Roberts C.V.I. highlighting the monitoring programs conducted by CLOCA to manage and enhance our watersheds and natural heritage features. Staff demonstrated stream electrofishing equipment, conducted a short bird survey with students and showcased the Durham Coastal Wetland Monitoring Program and a local wetland currently being studied.

CLOCA staff demonstrate some of the equipment used in electro-fishing to G.L. Roberts students.

Purple Woods Maple Syrup Festival

The 2008 Maple Syrup Festival at Purple Woods Conservation Area was another success, celebrating 33 years of community outreach with just under 13,000 visitors in attendance. The festival was held from March 8th to the 16th and the weekends of March 22 and 29.

A long-time family tradition for Durham Region residents, visitors were able to see and experience the history of how maple syrup has been made over the past 400 years and compare that with the modern methods of today.

This year we added some great new experiences involving a trip back in time at our recreated one room pioneer school house and a trip along the Oak Ridges Moraine at our Oak Ridges Moraine Discovery Centre, were supported by a donation from the Oak Ridges Moraine Foundation. In addition to these activities, we were able to enhance our interpretive stops located on the trail, creating a log cabin and wigwam at our pioneer and first nations stops respectively. These stops, along with costumed interpreters, a warm fire and some great story telling added to the value our visitors received at the Maple Syrup Festival.

Getting Out There!!!

You know that saying, ... "we don't get out much," well we got out a lot in 2008, hosting a number of our own community outreach programs and attending those of our partners around Durham Region. While we recognize the value of offering our own events, it is just as important for us as a community environmental leader, to participate in the relevant outreach activities of our partners.

In 2008, we supported our many partners by attending 12 of their events, which included a fishing derby, regional farm fairs, workshops and festivals, reaching an audience of more than 2500 individuals. While most of these interactions are verbal, with static visual displays and props, we have developed a number of hands-on activities and props which demonstrate our environmental excellence on many levels.

The Orono and Brooklin Fairs were very good examples of this, where our operating rain barrel and clothesline display, tweaked the curiosity of

As always, wagon rides, our sugar shack demonstration, shopping at the sugar shop and enjoying pancakes and maple syrup served up by our community partners, were offered in an effort to offset our costs and give back to the community. Corporate sponsorship continues to be a significant part of offsetting our program costs. 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.



The redesigned pioneer display was a favourite stop for visitors to the Maple Syrup Festival.

many visitors and got them thinking about the value of our water and energy resources and how to better conserve them. We now have these ice breaker tools to enhance displays and outreach efforts in 2009.



CLOCA's display at the Brooklin Spring Fair attracted many visitors. The white display boards at the back are made out of 4 recycled bifold doors.

In Our Watershed

In Our Watershed delivered curriculum based environmental programs to 5,700 elementary students at our Conservation Areas and programs to 150 high school students including an in-class session on landuse and the Envirothon competition.

With a changing curriculum education staff are seeking training and networking with outdoor educators to help us realign all aspects of our existing and future In Your Watershed programs. As the Durham District School Board makes up approximately 85% of our bookings, we have been collaborating on initiatives like Ecoschools, Coop placement and an environmental major preparatory program for grades 11 and 12.

Throughout the year, we continue to offer programs with a seasonal focus to complement our core programs, which reached an additional 3,700 students. These programs included A River Run’s Through Us, Waterways Awareness, Winter Watershed Walks and the Purple Woods Maple Syrup Education Program.

We hosted 3 Watershed Wilderness Nature Hikes in 2008 to watershed residents with over 110 participants attending.

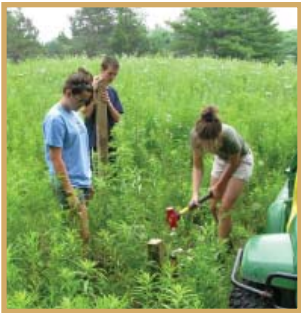
Season	Event	Location
February	World Wetlands Day Snowshoe	Lynde Shores C.A.
May	Mother’s Day Wildflower Hike & Tea	Heber Down C.A.
August	The Butterfly Ball	Heber Down C.A.



Along the trail during the 2008 Mother’s Day Wildflower Hike & Tea.

Trail Connections

With more than 45 kilometres (27 miles) of trail throughout our conservation areas, we connect to the Oak Ridges Moraine Trail, Waterfront Trail and a number of local municipal trail systems within our Conservation Areas further enhancing accessible recreational opportunities to our watershed residents. In 2008, we continued to work in partnership with the Oak Ridges Trail Association (ORTA) focusing on the Crow’s Pass Conservation Area and providing connections to a new section of the ORTA trails at this location. Stewardship Rangers (made up 16-17 year olds interested in environmental work) helped CLOCA staff brush out the trails and install some marker posts. A community day was held in August and volunteers helped to install the remaining trail marker posts and signage.



Stewardship Rangers hard at work.

Oak Ridges Moraine Relay

The second annual Oak Ridges Moraine Relay was an opportunity for CLOCA staff to show their endurance and spirit, as they ran, biked and canoed 160 kilometres across the Moraine on Saturday June 10th. Our team, affectionately named the CLOCA’nuts, represented the Authority as 15 members including staff, their partners, and offspring, placed a very proud 14th place, finishing the race approximately 12 hours after it began. The goal for our team, like the other 25 teams, was to raise funds and public awareness, to ensure the Moraine continues to provide clean water, fabulous views, places to play and an uncompromised habitat for wildlife and humans for another 10,000 years. Overall the event raised 10,000 dollars for the Oak Ridges Moraine Trail Association and we will definitely be back for the journey for the cause in 2009.



CLOCA Staff Patricia and husband Mark prepare to shove off on their leg of the relay.

Deloitte Touche Impact Day

On Friday September 5, 2008, more than 30 employees from Deloitte & Touche LLP (Deloitte) participated in their corporate Impact Day at Lynde Shores Conservation Area where they assisted CLOCA staff in constructing split rail fences, planting native shrubs and removing European buckthorn, an invasive non-native understory shrub. Impact Day was created by Deloitte to reinforce the organization’s commitment to community involvement. Each year around the world, employees from their many member firms and offices, join forces to make a positive impact to the communities in which they do business. Professionals in more than 20 countries, from Australia to Zimbabwe, participate in a variety of volunteer social and environmental community projects.

Our Impact day at Lynde Shores focused on the Bird Feeder Trail, a site that staff, have recently assessed as a priority for some trail closures, user education, invasive species management and understory planting. The costs for materials and a lunch for the volunteers was covered by Deloitte. In total these 30 individuals contributed 90 hours of volunteer time, constructed 30 metres of split rail fencing, planted 100 native shrubs and removed an estimated 200 European Buckthorn plants, contributing to enhancing a third of the Bird Feeder Trail. Staff will develop a sign for the entrance to the trail in 2009 to identify the proposed and implemented trail improvements, opportunities for outreach education on local birds and restrictions to the installation of hand-made bird houses and food items. SNAP Oshawa/ Whitby captured the day’s activities on film and showcased the day in their October issue.



Hard at work. Staff of Deloitte & Touche help with improvements to Lynde Shores C.A. trails for the public to enjoy.

Earth Day 2008

CLOCA held its annual Earth Day event at one of the newly acquired properties within the Enniskillen valley in April. With the assistance of close to 40 local area volunteers, 60 school children and their parents, and 25 volunteers from the Enniskillen Scouts, CLOCA planted 3,500 trees and shrubs over 3 days on old pasture land adjacent to a headwater tributary of the Bowmanville Creek. This planting will help to shade the tributary to maintain cooler water temperatures, and increase the amount of forest habitat within the Enniskillen Valley. Thanks to a wet summer, fall survival assessments performed by CLOCA staff on these newly planted trees showed good health at this vulnerable stage of growth.



Eager to plant trees, volunteers get a quick lesson in tree planting.

Volunteer Appreciation & Environmental Expo

More than 60 volunteers and their families attended our annual Volunteer Appreciation and Environmental Expo on Wednesday November 12th held at Camp Samac. The stage was set with some great exhibits from Durham College, Durham Field Naturalists, Durham Sustainability, Ontario Power Generation, The Ninetyninth Monkey, Scouts Canada and The Well Wise Centre. A presentation to highlight the work of our many volunteers over the past two years, was appropriately entitled “Reach” and gave our guests a good overview of volunteer opportunities with the message, we don’t just plant trees. A visit from the Muskoka Wildlife Centre with a few of their friends in tow, delighted the audience, with Flower the skunk, Dr. Hoo, the great horned owl, Quillber the porcupine and Licorice the Black rat snake.



Samantha gets up close and personal with Licorice the Black Rat Snake.

Trafalgar Castle School

On October 17, 2008, 40 grade 9 students from Trafalgar Castle School in Whitby, volunteered their services to construct a new trail on the newly acquired Wagner Tract in the heart of the Heber Down Conservation Area. These ladies spent their day relocating trees and hauling wheelbarrows of wood chips along the new trail. This program was part of a new Community Outreach program run by the school, where students are asked to give back to the local community. After a well deserved rest the girls were taken on a hike to show them where the trail leads. They were introduced to the Lake Iroquois Shoreline, an important landscape feature within our watershed and the spotted wing fly gall larvae and their host plant, goldenrod. The School presented the Conservation Authority with a donation in thanks for such a great day.



Trafalgar Castle students take a break after a good days work is done.

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 is just a click away.

In 2008, over 90,000 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!

Media Coverage

In 2008, our communications staff, on behalf of all CLOCA departments, distributed 21 media releases to promote our programs and activities, in addition to 12 flood and high-water level warnings. In response to those issued, we received 30 media positions locally. Each year we recognize the uptake of any of our news items is all about timing and can be impacted by the frequency of other news worthy events over the course of any given week. Despite the federal election and some hot issues in our local municipalities, we saw a 20 percent increase in uptake from local newspapers, radio and cable television from coverage tracked in 2007.

Publications

This list is meant to provide us with a summary of CLOCA reports and documents completed in 2008.

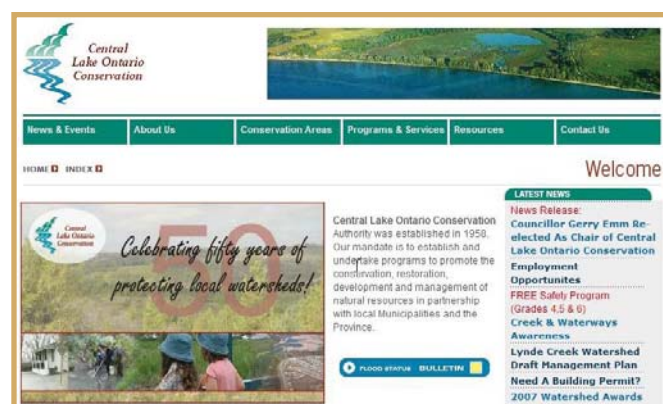
- Lynde Creek Watershed Existing Conditions Report (CLOCA)

- Other Systems Source Water Protection Pilot (Jagger Himms Ltd.)

- Wildlife Monitoring Program (CLOCA)

- Black Harmony Farwell Creek Aquatic Resource Management Plan (CLOCA)

- Central Lake Ontario Conservation, 50 Years of Protecting Local Watersheds, Celebrating our Past Present and Future, CLOCA



50th Anniversary Celebrations

Watershed Tour

The bus left Cullen Central Park with 35 guests and CLOCA staff for a 6 hour tour of the watershed, stopping at Cranberry Marsh, Bowmanville Westside and Hampton Pond Conservation Areas in the morning. Guests were treated to the wonderful world of raptor migration by volunteer and partner Doug Lockrey at Cranberry Marsh. A wonderful lunch complete with fine linen and local apple cider, was held at Canecrest, a land donation received by CLOCA from the Cane family in 2008.



The Canecrest property provided the perfect location for lunch. Mr. Cane (insert) addresses the guests regarding his land donation of Canecrest to CLOCA.

The bus then travelled to the Parish property, 35.1 hectares (86.8 acres) of land purchased in 2007 as part of the Enniskillen Land Acquisition Strategy where we

were treated to a hay wagon ride, thanks to local landowner Gord Sharp. The participants were able to see and hear our vision for a Conservation Area in this unique landscape. Finally a visit to Purple Woods Conservation Area, where samples of maple syrup were enjoyed with a stroll along the Oak Ridges Trail under the canopy of this wonderful sugar bush. The tour continued through the western part of our watershed, highlighting some unique wetland features,



1958



2008

partnerships and projects that left our guests and staff with a sense of our accomplishments as we successfully showcased 50 years of innovation in watershed management. The day was completed with a casual reception back at Cullen Central Park, where others who were not able to join us for the tour, enjoyed some great conversation and story telling over some Ontario produced spirits and a barbecue dinner. Thank you to the Town of Whitby for the use of the Cullen Central Park facilities.

A number of staff assisted with the delivery of the day's events, leading up to, during and after, with many hands in the background behind or in front of the tour, to stage the stops. The intent for the day's activities was to leave behind a small environmental footprint, which staff did very well. From stainless steel reusable water bottles, to food composting, we virtually produced no waste. Each guest received a reusable organic hemp shopping bag full of environmentally friendly products and resources. A CD was provided to guests with visual and written summaries of the site visits and landscape features highlighted throughout the day.



All enjoyed a wagon ride to the lookout point overlooking the recent land acquisitions in the Enniskillen Valley.

CLOCA Golf Day

On Thursday October 2, 2008 there were 104 committed golfers registered for the first ever CLOCA Golf Day in celebration of our 50th Anniversary. The event was held at the Pickering Golf Club, formerly Seaton Golf Club, in Pickering. Councillor Rick Johnson was the lead on this initiative, having the cost of the course fees waived for the day. Staff coordinated an invitation list to individuals and potential foursomes, which included consultants, contractors, media, provincial and federal government, developers, local and regional politicians and non-government organization representatives who work with CLOCA staff and their Board.

A best ball format was used to ensure that players of all skill levels could enjoy the day. A lunch was held at the clubhouse banquet facility for the 26 foursomes, staff and additional guests. After lunch we were able to recognize some of our finest golfers of the day with some earth friendly prizes.



Financial

Tangible Assets

All of CLOCA's tangible assets were documented as of the January 1, 2009 deadline recording the purchase of all tangible capital assets in our financial statements and amortizing the cost of the asset over its expected useful life. A tangible asset is something that has physical substance that is used on a continuing basis in the Authority's operations, and has a useful life extending

CLOCA Staff Day

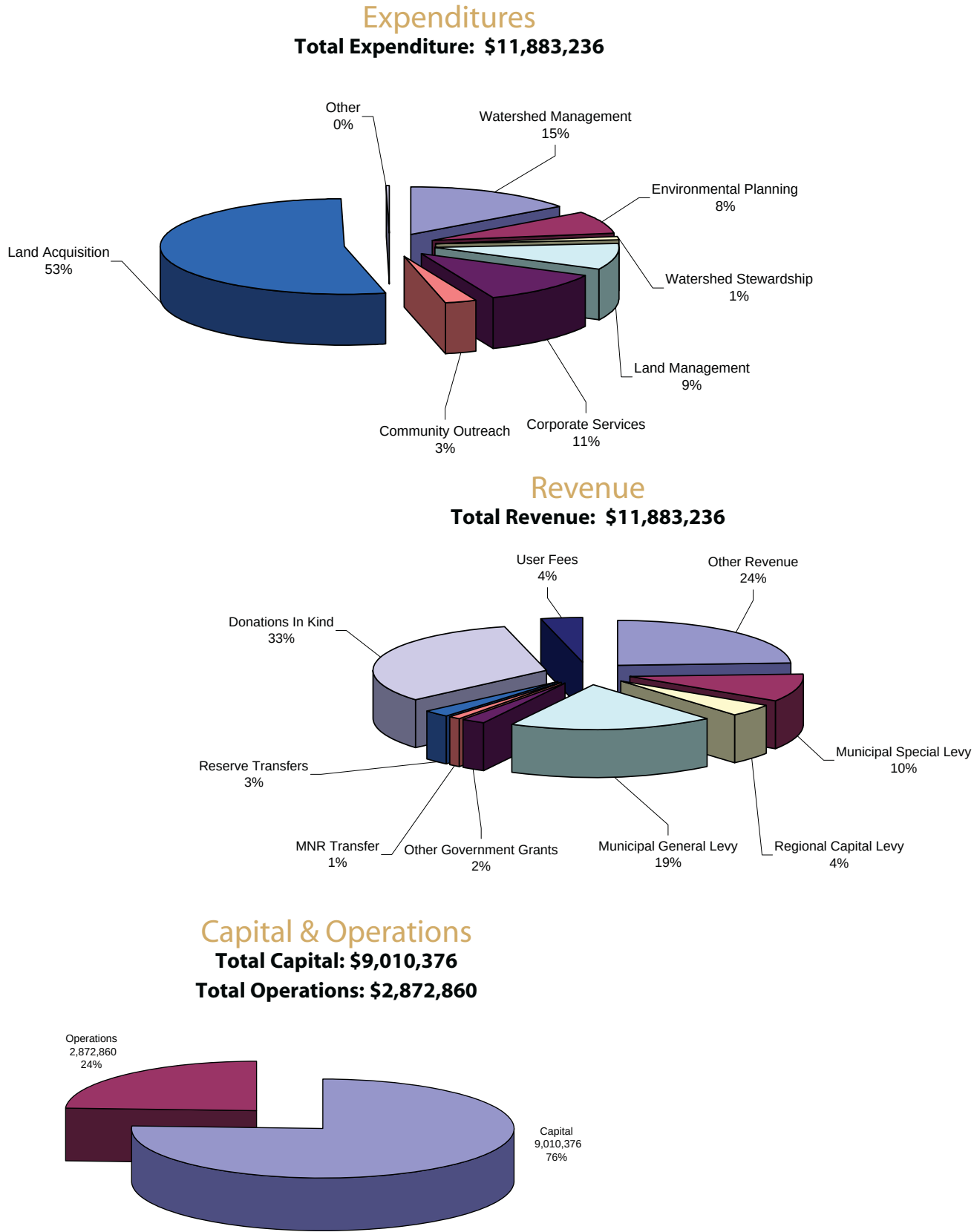
On Thursday October 24th, staff were treated to a full day watershed tour in an effort to showcase our Conservation Areas and a variety of projects primarily in the eastern portion of our jurisdiction. Our stops included Stephen's Gulch Conservation Area, Hampton Pond Conservation Area, the Enniskillen Valley and the Cane Property. Staff provided presentations at each stop and along the travel route, in an effort to build our knowledge of CLOCA's past, present and future watershed management initiatives. The conservation area visits provided us with an opportunity to experience natural heritage at its best, enjoying a variety of public use infrastructure projects including trails, bridges, signage and restoration projects. A light lunch was held for staff at Knox's Pumpkin Farm, where we travelled back in time under the large timber beams of the Rowsell Barn, a barn restored and relocated by the Knox family from one of our recently acquired Enniskillen properties.



CLOCA staff gather for a group shot on a bridge at Stephen's Gulch C.A. Rowsell barn (insert) restored at Knox's Pumpkin Farm.

beyond one year and is not held for re-sale in the ordinary course of operations. Things like land, land improvements, buildings, machinery, equipment, vehicles signage, trails and computers are examples of CLOCA Tangible Assets. An asset tracking database was developed and accounting software upgrades are planned to provide for tangible capital assets starting in 2009.

2008 Budget Summary



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Looking Back On 50 Years

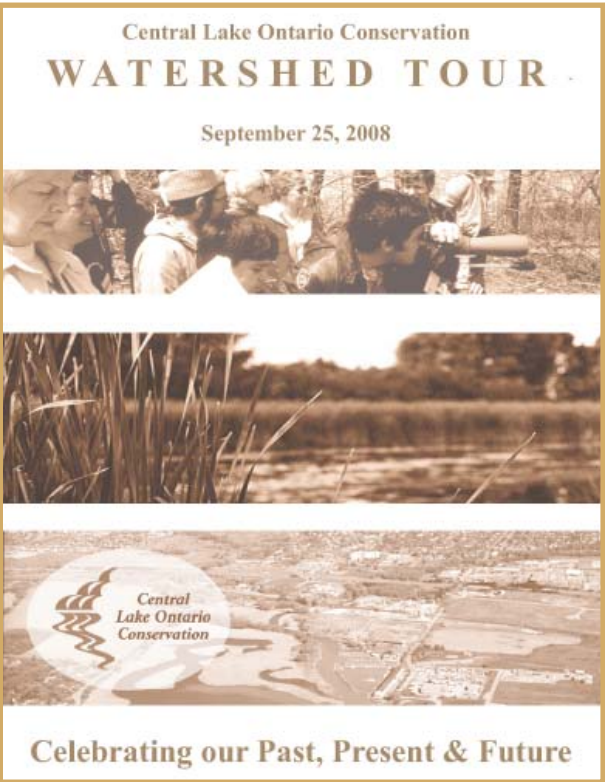
In honour of Central Lake Ontario Conservation’s 50th anniversary a special web page was created to celebrate the past, present and future. The site contains historical items, watershed tour features and more. Below are the documents available to view at www.cloca.com/50th:

Reflections - Looks at where we came from, how we got here and where we go next.

A Watershed Tour Guidebook - Experience our 50th Anniversary Watershed Tour that was held on September 25, 2008. See all the sites with background text from the various presenters.

Pictures from the September 25th Watershed Tour - Enjoy the various pictures taken during the Watershed Tour.

Birds Eye View of CLOCA’s Watershed - Jump in the pilot’s seat of a plane and see all of Central Lake Ontario Conservation’s watershed from the air!



Watershed Tour Guidebook



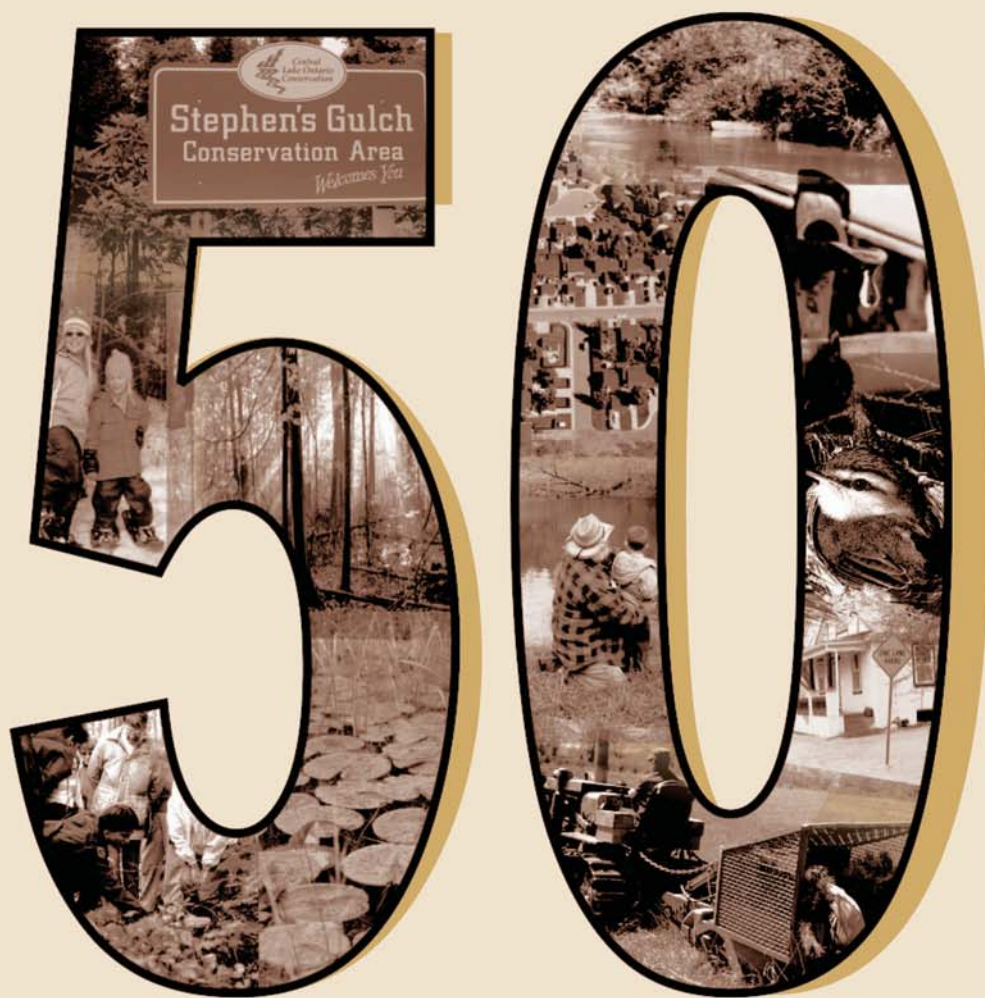
Reflections



Watershed Tour Pictures



Birds-Eye View of CLOCA’s Watershed



1958

Celebrating 50 Years of Protecting Local Watersheds



2008

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