Volunteers Give the Chickadee Trail at Lynde Shores CA a Makeover - page10.

2010 Year In Review

Central Lake Ontario Conservation

Table of Contents

Welcome Message from the Chair	1
Who Are We	2
2010 Board Of Directors	2
Source Water Protection	3
Hydrogeological Support Services	4
Planning & Regulations	4
Review of Conservation Authority Partership Memorandum	5
Watershed Planning	6
Durham Regional Coastal Wetland Monitoring Program	7
Water Monitoring	7
Flood Forecasting and Warning System	8
Floodplain Mapping Update	9
Land Aquisition	10
Chickadee Trail Makeover	10
Conservation Areas & Land Holdings	11
Conservation Area Management Plans	12
Conservation Area Work Days	13
Conservation Area Workshop & Innovation Award	14
Monitoring Programs	15
Wildlife Monitoring Program	16
Terrestrial Monitoring Program	17
Invasive Species in our Watersheds	18
Giant Hogweed	18
Invasive Species Outreach Partnership	19
CLOCA Species at Risk Records Review & Inventory	20
Provincial Watershed Report Card Template	21
Turtle Nesting Protection Project	21
Clean Water Land Stewardship Program	22
Caring For the Moraine Landowner Contact Program	23
In Our Watershed & Outreach Education Programs	24
Watershed Wilderness Nature Hikes	25
Farm Connections	25
Oak Ridges Moraine Education Program	26
IJC Working Group Tour of CLOCA's Coastal Wetlands	27
Royal Ashburn Golf Tournament	27
Earth Day Plantings & TD Friends of the Environment	28
GIS Enterprise	29
Workflow and Accpac Integration Application	30
2010 Budget Sumary	31
Current Staff General Contact List	32 & 33

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

Welcome Message from the Chair

It is with great pleasure that I present the 2010 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.

2010 Milestones

- Updated Existing Conditions Report for Oshawa Creek and completed the Phase II Watershed Management Plan Alternatives for Oshawa and Lynde Creeks.
- Completed floodplain mapping for Black, Harmony, Farewell and Robinson Creeks.
- Completed the Central Lake Ontario Source Water Protection Assessment Report.
- Initiated a jurisdiction wide Large Fill Protocol.
- Acquired 17 hectares (42 acres) of land at Enniskillen and Stephen's Gulch Conservation Areas, bringing our total landholdings to 2,253 hectares (5,567 acres).
- Conducted a mock Emergency Flood Watch interactive exercise session for CLOCA flood watch staff.
- Completed an Invasive Species Management Strategy for CLOCA Conservation Areas.
- Completed Redside Dace Habitat Assessment Research Project in the Lynde Creek.
- Hosted a wetland conservation information session for residents of Black Creek Watershed living adjacent to Provincially Significant Wetlands.
- Completed improvements to the Lynde Shores Conservation Area Chickadee Trail.
- Initiated the Micro Renewable Electricity Project at the CLOCA Headquarters.
- In 2010, CLOCA engaged more than 20,000 Durham Region residents and students in our outreach and education programs. Of that number, over 4,000 of those were grade four students participating in the 13th annual Durham Children's Groundwater Festival.

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.

In closing, I would like to thank the members and staff for their support in making my term as Chair and member of the CLOCA Board over the last 4 years, a rewarding and pleasurable experience.

Sincerely,

Rick Johnson
Chair, Central Lake Ontario Conservation

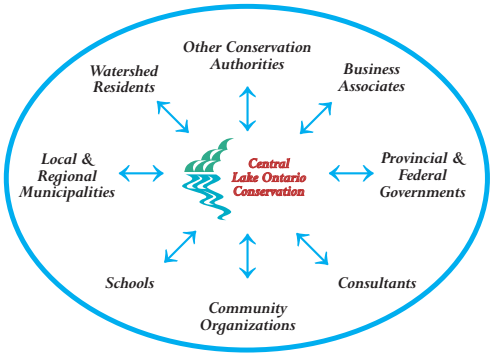
DURHAM REGION

Working In Partnership

Member of Conservation ONTARIO Natural Champions

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 2,253 hectares (5,567 acres) of environmentally sensitive land.

2010 Board of Directors

Chair: Councillor R. Johnson, City of Pickering

Vice-Chair: Councillor G. Emm, Town of Whitby

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 (Chair), Coun. G. Emm (Vice Chair), Coun. M. Novak, Coun. A. Foster

Absent: Coun. B. Nicholson, Coun. S. Crawford

Source Water Protection

CLOSPA Assessment Report

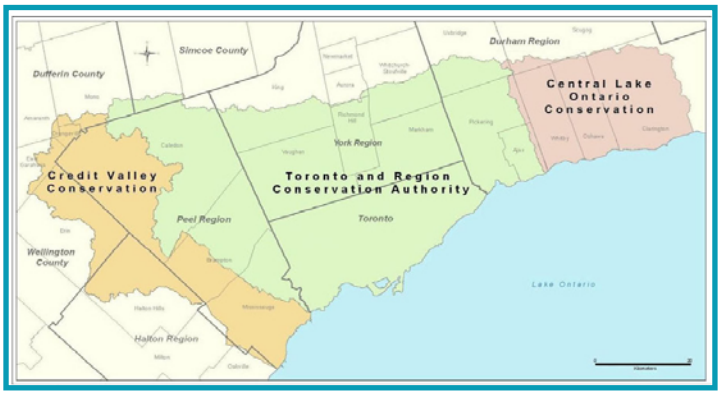
The Clean Water Act (2006) outlining the requirements for the completion of Source Protection Plans (Director's Rules) was one instrument that responded to the tainted water tragedy in Walkerton in 2000. In 2002 Justice O'Connor recommended a number of changes to Ontario's Drinking Water System. One of the most comprehensive initiatives was that of the Source Water Protection program; the premise being that protecting our sources of drinking water before they are overused or polluted is the best, most cost effective way to ensure safe drinking water now and for generations to come. The Province (Ministry of the Environment) has organized the Source Protection Areas (SPAs) using conservation authority boundaries recognizing the watershed-based approach to the protection of water resources. The CTC Region includes the Credit Valley, Toronto and Region and Central Lake Ontario Conservation Authorities with Toronto and Region as the lead Authority. The Source Water Protection Committee (SPC), a 21 person committee, is responsible for the development of an Assessment Report (AR) and a Source Protection Plan (SPP) for each SPA to be completed within legislated deadlines. The AR is a technical document that provides the scientific information used to develop the SPP. It gives an overview of each watershed, provides a water budget, identifies vulnerable areas near municipal wells and intakes, identifies areas that could have low, moderate, or significant threats and identifies the types and number of significant threats to drinking water supplies. The AR for the Central Lake Ontario Source Protection Authority (CLOSPA) was submitted to the Province in August 2010, with an approval to submit an updated AR by June 2011. This will allow for the additional work associated with the Lake Ontario intakes and groundwater vulnerability that could not be completed for the legislated deadline. There were no significant threats identified in the CLOSPA AR though it is anticipated that the updated AR may reflect some such threats. Work on the SPP was initiated in 2010 with a deadline of August 2012 for completion. Extensive peer review and public consultation is a requirement for both the AR and SPP.

CTC Source Water Protection Plan Policies

Following the submission of the Assessment Report, the next major task is the preparation of the Source Water Protection Plan. The objectives of the SWPP are:

- Protect existing and future drinking water sources.
- Ensure that activities identified as significant drinking water threats either never become a threat or, if the activity is already taking place, the activity ceases to be a significant threat.
- If the SPC chooses to include a risk reduction policy to deal with a condition (e.g. contamination) from past activities that is a significant drinking water threat, then the plan must include an objective to ensure the identified condition ceases to be a significant threat.
- If the source protection area contains water flowing into a Great Lake or the St. Lawrence River, and the Minister has requested a report with recommendations for achieving a Great Lakes target established by the Minister, the plan must include an objective to achieve the target in question.

A major component of the preparation of the SWPP is the formulation of policies to ensure that activities/land uses that pose a significant threat, either cease to be or never become significant threats. CLOCA has been participating in the formulation of policy options and approaches for consideration by the SPC. SWPP are to be completed by 2011 followed by consultation in early 2012 with the submission of the SWPP in August 2012.



CTC Source Water Protection Region

Hydrogeological Support Services

CLOCA groundwater staff actively provide reporting and review services to several core CLOCA programs. Development Plan Review services, increasingly have a hydrogeological component where staff are required to review and comment on consultant findings. The maintenance of recharge and baseflow are key concerns as these components are important to the sustainability of our watershed ecosystems. Most recently staff have provided input to projects such as the Highway 407 Extension and the Courtice Trunk Sanitary Sewer providing data and analyses in the finalization of preferred 'low impact' routes. Groundwater staff also support the development of watershed plans providing reporting input to complete various sections related to geology, hydrostratigraphy, recharge and discharge, baseflow and water budgets. Staff also track and coordinate comments on the Provincial Permit to Take Water program (PTTW), provide support to the operation of the Provincial Groundwater Monitoring Network (PGMN) and Low Water Response programs (LWR) as well as to some groundwater related stewardship programs. CLOCA groundwater staff are also active members of the York Peel Durham Toronto (YPDT-CAMC) technical working group.

Planning and Regulations

Comprehensive planning services are provided to residents, the development industry and our municipal and government partners to ensure the formulation of policy documents and proposed development is undertaken with the environment and safety at the forefront. Planning services include providing comments on Planning Act applications aimed at reducing the risk to life and property from natural hazards, the protection, conservation and enhancement of natural heritage/hydrologic features and systems and floodplain and stormwater management.

CLOCA also administers Ontario Regulation 42/06 under the Conservation Authorities Act requiring technical reviews and permits for development proposals and projects involving activities adjacent to watercourses, wetlands, shorelines and hazardous lands, as well as any activities that cause interference with a watercourse, wetland or shoreline. Permissions are granted provided the development will not have an adverse affect on the control of flooding, erosion, dynamic beaches or the pollution or conservation of land.

Statistics 2010

Under the Planning Act, our watershed municipalities circulated municipal policy documents and development applications for 319 planning applications including supporting technical studies such as environmental impact studies and stormwater management plans as follows:

- 30 Official Plan Amendments
- 42 Zoning By-law Amendments
- 80 Site Plan Applications
- 60 Plans of Subdivision/Condominium
- 52 Land Division
- 25 Variances
- 30 Special Studies (which includes Class EA's, municipal and private studies)

In 2010, staff provided comments on the Town of Ajax, Municipality of Clarington, Town of Whitby, Township of Scugog, Township of Uxbridge and City of Pickering Official Plan reviews. CLOCA also continued to participate in Durham Region's Growth Plan conformity amendment, including providing comments to the Province on Amendment #128 to the Regional Official Plan.

Good planning decisions protect the watershed residents from flooding and other natural hazards.

CLOCA also worked closely with many of our municipal partners in the development of secondary plans to ensure the protection of natural heritage and hazard features.

Staff also participated in four Ontario Municipal Board Hearings throughout 2010.

Under the authority of Ontario Regulation 42/06, staff issued 240 permits for activity/development within our Regulated area. 12 Notices of Violation were issued for work done without the necessary approvals. Of the 12 violations, 10 were resolved without the need for convictions before the courts. The outstanding violations are still being pursued with the objective of resolution in 2011.

Staff also commented on 58 legal and real estate inquiries and provided approximately 60 letters of advice for fisheries matters under our agreement with the Department of Fisheries and Oceans.

Staff also participated in a number of broader policy initiatives such as providing comments on the Provincial Review of the 2005 Provincial Policy Statement, various draft legislation affecting conservation authority program areas and the review and implementation of the Ministry of Natural Resources Policies and Procedures for CA's Plan Review and Permitting Activities.

Large Fill Protocol

In response to an increasing number of permit applications for large fill sites and the need to ensure a comprehensive review procedure, staff developed a large fill protocol for Central Lake Ontario Conservation (CLOCA) Board consideration. The protocol established a review procedure to ensure the placement of fill does not negatively affect flood control, erosion, dynamic beaches, pollution or the conservation of land. Clear and consistent information requirements coordinated with our municipal partners was also established. For example, the protocol requires all large fill applications to include pre and post elevation surveys, confirmation of soil quality, and ongoing inspection by CLOCA enforcement staff. The protocol was approved by the Board in April, 2010.

Review of Conservation Authority Partnership Memorandum

In 1996, the Region of Durham entered into a Partnership Memorandum with the five area conservation authorities. The Memorandum provides that when reviewing planning applications, the CA's will provide the Region with natural hazard, natural heritage and stormwater management comments. Due to a number of recent provincial planning initiatives, the Region and the CA's have undertaken a review of the Memorandum to determine if updates are required. It is anticipated that an updated Memorandum will be recommended to the CLOCA Board in 2011.

The map illustrates the areas of the watershed that fall under Ontario Regulation 42/06 Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses that is administered by Central Lake Ontario Conservation.

Watershed Planning

Development of Watershed Management Alternatives and Options

The second phase in the preparation of a watershed management plan is the development of watershed management alternatives and options. This phase facilitates evaluation of the watershed's response to predicted future growth, and to determine which management strategy best achieves the desired watershed goals, objectives and targets. Three scientific models were developed by staff to help in the above evaluation, including a natural heritage system model, an imperviousness analysis model and a water budget model. Predicted future land cover changes and high volume recharge areas were mapped and used in these evaluations. In all, six different watershed management scenarios were developed for the four major watersheds which drain the Oak Ridges Moraine. The natural heritage system model identifies watershed response when natural heritage features are identified and protected. Changes in watershed imperviousness was identified and calculated, and the water budget work enables an evaluation of the impact of future land cover changes on the ecological and hydrological needs of these watersheds. The models and evaluations conducted, satisfy legislative requirements of the Oak Ridges Moraine Conservation Plan and will guide the identification of a preferred management strategy for those watersheds.

Draft Management Alternatives for Lynde Creek and Oshawa Creek Watersheds

With the development of watershed management options and alternatives completed, staff released the findings of this work for the Lynde Creek and Oshawa Creek watersheds. Public Information Centres (PIC's) presenting the Phase 2 results for Lynde Creek watershed and Oshawa Creek watershed were held on December 2nd and December 9th, 2010 respectively. Staff gave a presentation at each of these PIC's followed by a question and answer period. Large visual displays were produced and displayed, showing watershed baseline conditions, future land cover scenarios and watershed management alternatives. Copies of this material and the presentation have been posted on the website. Attendance at these sessions was good, with representation from watershed stakeholders, municipalities, the development industry and the general public. Much interest was expressed in the work completed to date. Staff also held municipal consultation sessions with staff from the Town of Whitby, City of Oshawa, Municipality of Clarington and Region of Durham.

The Lynde Creek Watershed drains approximately 130km^2 of land into Lake Ontario.

Oshawa Creek Existing Conditions Watershed Update

In 2002, a watershed plan for Oshawa Creek was completed. This Plan identified watershed conditions and management strategies based on the best available information at the time of reporting. The completion of this watershed plan predates passage of the Oak Ridges Moraine Act and its specific watershed planning requirements. An update to the Oshawa Creek Watershed Plan was necessary to address this legislative requirement, and to account for a number of changes within the watershed including: substantial changes in land use policies including the Oak Ridges Moraine Conservation Plan, Greenbelt Plan, Provincial Policy Statement, the Growth Plan, Regional Official Plan Amendment #128 and Conservation Authority Generic Regulations; ongoing growth and land use changes, such as Highway 407 and rapid urbanization; and to reflect advances in science, updated methodologies, field work, and resource management plans such as the Central Lake Ontario Fisheries Management Plan. In 2010, a draft addendum report updating the existing conditions within the Oshawa Creek, was completed and presented to the public for comment. A PIC was held and the addendum report posted on the CLOCA website.

Durham Region Coastal Wetland Monitoring Program

The Durham Region Coastal Wetland Monitoring Project (DRCWMP) is a multi-agency, multi-year initiative, where the biological and geophysical conditions of 18 coastal wetlands within Durham Region are monitored annually. The ninth year of data collection for the DRCWMP was completed in 2010. Data collection included monthly and annual water quality, water levels, amphibians, birds, fish, submerged aquatic vegetation, macroinvertebrates and the Ecological Land Classification of Gold Point Marsh and its surrounding habitat. Continuing in 2010, CLOCA also conducted fish community monitoring in 5 coastal wetlands in the Bay of Quinte, supporting the Bay of Quinte Remedial Action Plan.

In 2010, as an outreach tool, CLOCA released the first e-newsletter for the DRCWMP. This new communications initiative will provide yearly updates to our partners, stakeholders, interested parties, volunteers and government agencies. Each year, one of the 18 coastal wetlands will be featured in the e-newsletter. The e-newsletter has been posted on CLOCA's website.

In addition, the DRCWMP: 6-Year Technical Report (2010) was completed by Environment Canada and CLOCA. This document describes the data collected and analyzed from 2002 to 2007. The document can be downloaded in PDF format on the CLOCA website. Data from the 2010 field season is currently being analyzed and a monitoring report outlining the results will be completed in early 2011.

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 sampling 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 resources. This knowledge allows us to make informed decisions about it's management and protection. The data is catalogued and analyzed to develop effective watershed wide management programs such as Flood Forecasting and Warning System, Low Water Response and Source Water Protection programs.

In 2010 we began with a winter rain event and warm temperatures in mid January, which melted the snow pack and moved the ice cover downstream causing ice jams. Spring 2010 was highlighted by very little snowmelt, rainfall and warm temperatures. These conditions caused baseflows in Lynde Creek to reach record lows, requiring additional flow measurements in May to adjust rating curves.

The summer began with June's rainfall at 195% and July's at130% of historic averages. The combined rainfall was significant to recharge aquifers and raise baseflow levels. During this time, the Durham Region Water Response Team met to discuss current conditions, however, no Low Water messages were issued.

Provincial Groundwater Monitoring Network

Central Lake Ontario Conservation (CLOCA) in partnership with the Ministry of Environment (MOE) Provincial Water Quality Monitoring Network (PWQMN), operate monitoring stations at nine sites across our watershed. Each site records groundwater levels in various aquifers and water quality samples are taken annually.

These stations indicate the health of our groundwater systems and trends in time.

"When the well is dry, we know the worth of water." Benjamin Franklin (Poor Richard's Almanac, 1746)

Keeping an electronic eye on the Watershed. CLOCA has 11 electronic stream gauges throughout the watershed to monitor water flows during a flooding situation. This stream gauge hut is located beside Taunton Road at HWY. 57 in Clarington. Notice the solar panel high above.

Flood Forecasting and Warning System

Throughout the year, CLOCA monitored and reported water conditions through High Water Safety Bulletins and Flood Advisories. In total 5 notices were issued in 2010. 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.

On February 5th 2010, as part of our yearly training requirements, CLOCA staff participated in a mock exercise to practice and evaluate their roles as outlined in our Flood Operation Plan. The exercise was designed to test the system and give staff hands-on experience. To enhance the flood event training simulation, organizing committee members played the roles of watershed residents, media and municipal partners and made staged calls to various CLOCA staff.

The Scenario: A remnant hurricane moved into the CLOCA watershed and dumped 60mm of rain overnight over a 12 hour period, causing creeks to crest bank full levels and flood low lying areas. Ground conditions are now saturated. The weather office is forecasting additional rainfall of 40mm.

Staff In Action

~ The River Watch crews were sent out to monitor their staff gauge sites. At specific sites they were to follow instructions and answer questions, take photos, document water levels and make appropriate phone calls.

~ Communication staff conducted mock media interviews and handled various inquiries.

~ The Flood Duty Officer processed the information received regarding potential flooding areas from field crews, updated weather forecasts, monitored gauge equipment and passed information to staff.

The exercise utilized new floodplain mapping for Lynde, Bowmanville and Soper creeks and mapping products from our Flood Vulnerable Database – Stage 5 Vulnerable Structure mapping for Lynde and Oshawa Creeks.

See Us On The Web

Information Is Just A "CLICK" Away.
Central Lake Ontario Conservation works hard to keep the web site fresh and up to date. The web site contains various information just a click away:
~ Flood and water level status
~ Homeower information
~ Invasive species information
~ Library section
~ News items,
~ Conservation area brochures and more.
In 2010 an average of 95 visits/day were registered at www.cloca.com.

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

www.cloca.com

CLOCA will continue to work with Durham Region and Municipal staff in promoting our Flood Forecasting and Warning program along with our Flood Vulnerable Structure mapping and database products. In 2010, we developed the first generation of Flood Damage Centre mapping which identifies the five critical stages of flooding and locates impassable road crossings under those stages.

Floodplain Mapping Update

Floodplain mapping is an important tool within CLOCA's mandate for flood forecasting and warning, water monitoring, plan and development review. State of the art technology is used to update and replace 30 year old analog floodplain mapping with new more accurate digital information. CLOCA has produced various 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 2010, new floodplain mapping was completed for the full Black, Harmony and Farewell Creek watershed and the Robinson Creek watershed. Staff are currently preparing 2010 base data that will allow for the creation of floodplain modeling and mapping for the Oshawa and Westside Creeks.

In addition to floodplain mapping, the Conservation Authority Regulation mapping was updated in May of 2010. The update ensures the mapping contains current and best available information maintaining and improving the accuracy of the regulated area.

Sample of Black, Harmony and Farewell Creeks floodplain mapping.

Land Acquisition

Enniskillen Conservation Area Annis–Keunig Tract

Enniskillen Conservation Area was further expanded in 2010 with the addition of 4.8 hectares (12 acres) known as the Annis-Keunig Tract. This acquisition continues the momentum seen over the last several years within the large Enniskillen Valley, bringing the current total of Enniskillen Conservation Area to around 623 hectares (1540 acres). This property provides direct access to Old Scugog Road and directly abuts the Hamlet of Enniskillen. Given its location, and expansive southerly views, trail connections with direct access from the Hamlet of Enniskillen, may be possible in the future.

Stephen's Gulch Conservation Area Crooked Creek Stonehenge

Stephen's Gulch Conservation Area grew by just under 12 hectares (30 acres) in 2010 with the addition of the Crooked Creek Stonehenge Tract. This parcel of mature forest makes up part of the provincial Soper Valley Area of Natural and Scientific Interest, and includes tributaries of the Soper Creek. This new acquisition brings the total size of Stephen's Gulch Conservation Area to just over 143 hectares (353 acres).

Purple Woods Conservation Area

It has been recognized for some time that the increasingly popular Purple Woods CA Maple Syrup Festival has outgrown it's current facilities, and a development plan is underway for a new Heritage Hall to house the Festival and other community events. The Hall will include a large eating area, washrooms, kitchen, and store, and will address Festival issues including overcrowding, accessibility, food preparation, and customer comfort. Ron Awde, Architect, prepared the architectural plans for the building, a timber post and beam structure with a heritage barn appearance. DG Biddle Associates and Durham Energy Specialists have prepared the engineering servicing and grading plans. The project will be "shovel ready" for 2011 construction, pending CLOCA Board approval and securement of additional funding.

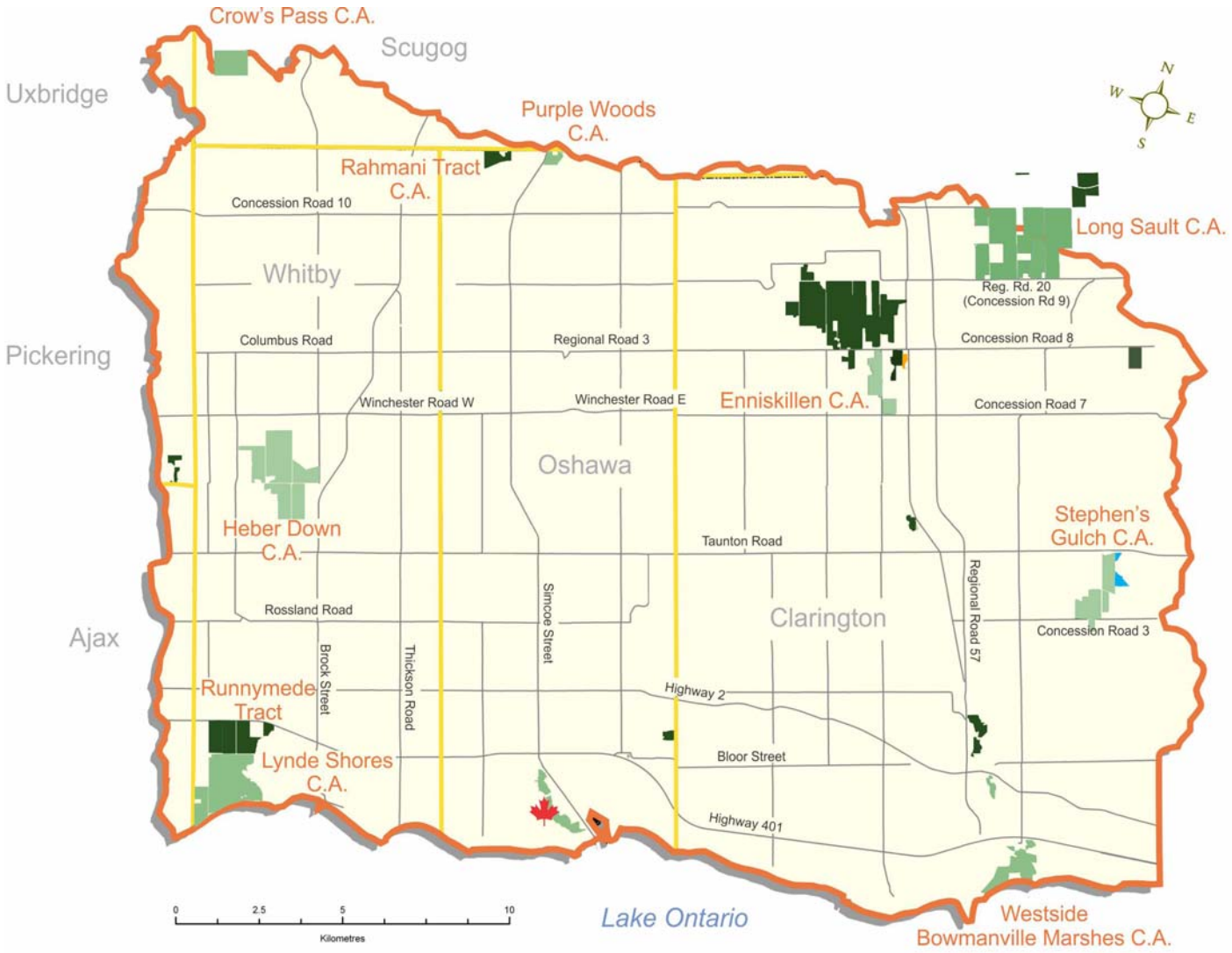
Chickadee Trail Makeover

In 2010 we implemented a small scale community environmental restoration project for the Chickadee Trail with funding from the EJLB Foundation. The intent of this undertaking was to provide interpretive information about protecting natural woodland habitats, reduce access to sensitive areas and involve the community in restoring biodiversity.

This restored woodlot environment now provides a year round outdoor environmental experience for visitors of the Lynde Shores Conservation Area. We estimate visitors to this Conservation Area to be about 50,000 people per year. The project incorporated enhancement of 400 metres of existing trail, closure of several unsanctioned trails, the installation of four main bird feeder stations, the removal of hundreds of unsanctioned bird houses and feeders, a trailhead sign, a self guided interpretive walk and a birds in the bush information kit for trail users. In addition to these objectives, as outlined in our original proposal, we have engaged more than 100 community members of all ages in the implementation of this project and its ongoing maintenance and stewardship. We estimate the value of their in-kind time to be $3,000. Our partners included Deloitte staff, CLOCA Conservation Area Work Day volunteers, high school students majoring in a horticulture and landscape program and grade 6 students from Lynde Shores Public School.

Volunteers work hard building a cedar rail fence along the Chickadee Trail.

Conservation Areas & Land Holdings



Central Lake Ontario Conservation

- Stephen's Gulch C.A. 2010 Land Acquisition
- Enniskillen C.A. 2010 Land Acquisition
- Municipality Border
- Conservation Areas (Public Access)
- Conservation Areas (Limited Public Access)
- Central Lake Ontario Conservation Watershed Boundary
- Central Lake Ontario Conservation Administrative Office

Enniskillen Conservation Area Trailhead Upgrades

CLOCA staff and volunteers have been busy at Enniskillen Conservation Area gradually turning a newly developed main entrance and trailhead concept plan into reality. The concept plan was developed to improve parking access and vehicle flow, provide improved trail access when trail upgrades are completed, and improve trail opportunities and access to interpretive features for educational programming.

Trail building workshop participants from Sustainable Trails and Hiking Buddies.

To help get the ball rolling in the right direction, a previously closed parking lot was reopened and upgraded along with adjacent washroom facilities. In the fall of 2010, a challenging section of a proposed trail loop around the main entrance wetland was completed. This trail creation project could not have been accomplished without the generous donation of time, expertise, and specialized equipment provided by Bill and Richard Goulding of Sustainable Trails. Sustainable Trails is a locally operated, specialty trail building company that works to provide the best possible user experience by employing tried and true techniques that result in sustainable and safe trails. To help complete the newly created section of trail, Sustainable Trails led a trail building workshop at Enniskillen Conservation Area for a GTA based hiking club called Hiking Buddies. The workshop covered sustainable trail design and construction techniques and then finished with hands-on trail work. Without the effort from both Sustainable Trails and Hiking Buddies, this trail creation project would not have been possible.

Conservation Area Management Plans

Heber Down Conservation Area Management Plan

Heber Down CA last had a full management planning exercise completed in 1977. As one can imagine, significant change has occurred to both the physical landscape within and around the conservation area, and to the science and culture surrounding conservation land management. Recognizing the obvious need for a new management plan that would reflect current and future opportunities and constraints, activities associated with the development of an up to date management plan for Heber Down CA were initiated in 2007. Since that time, significant work has been carried out including:

- A review of the public use and infrastructure.
- Completion of a detailed natural heritage inventory and evaluation.
- The development of a public use concept plan that recognizes the area's natural heritage. sensitivities and recognizes future changes in the surrounding landscape.
- The establishment of natural heritage restoration objectives and targets.
- The initiation of priority infrastructure upgrades according to the above results.

The management plan represents a single guiding document for the future management of Heber Down CA for the next decade and beyond. The document includes clear goals and objectives, an historical review of the property, a review of natural heritage features, public use and associated infrastructure, future planning initiatives, and a series of management strategies and recommendations that will work to protect and enhance Heber Down CA.

Public consultation was an important component in the development of the Heber Down CA Management Plan. At the beginning of the process, a public use survey was widely distributed. Feedback from this survey helped

to inform the development of the public use concept plan. In addition, general comments provided to CLOCA over the years by users, were considered during the development of management strategies and recommendations. On July 21, the public, stakeholders, agencies and other interested parties were invited to a Public Information Centre (PIC) at Cullen Central Park to review and comment on the draft Heber Down CA Management Plan. The PIC and six week review/ comment period were widely promoted using various media.

The final Heber Down CA Management Plan received approval from CLOCA's Board in January 2011. Implementation of the recommendations outlined in the plan, will be carried out as opportunities present themselves.

Other Conservation Area Management Planning Activities

Staff conducted a number of natural heritage and public use inventories in several other CLOCA properties through the 2010 field season. This work will provide baseline data for future management planning activities. Data collection within these properties included:

- vegetation community inventories within Audley Road Woods, Hampton Conservation Area, and newly acquired properties within both Long Sault and Lynde Shores Conservation Areas.
- completed breeding bird surveys within Long Sault, Crow's Pass, Audley Road Woods, Heber Down and Lynde Shores Conservation Areas.
- public use and associated infrastructure inventories within Hampton, Purple Woods and Lynde Shores Conservation Areas.

Conservation Area Work Days

Volunteers continue to play an important role by helping CLOCA implement recommendations outlined in its Conservation Area Management Plans. In 2010 we hosted two Conservation Area Work Days – one in June and one in October.

Staff conducting natural heritage inventory in the Conservation Area.

Conservation Area Work Days move from one Conservation Area to the next in order to draw volunteers from across the jurisdiction. Even though the work can be challenging, it is not uncommon to see the same faces turn up at each event. If one were to put a dollar value on the work that has been completed by volunteers during these work days over the years, it would be in the tens of thousands of dollars. In 2010, work days were held at Long Sault and Lynde Shores Conservation Areas.

Long Sault Conservation Area Work Day

Over 20 eager volunteers turned up in the rain to help CLOCA staff decommission a portion of the White-tail Deer Trail. A portion of this trail was known to be impacting a sensitive cedar forest and an area of high groundwater spring activity. The creation of a new trail segment through less sensitive lands meant decommission work could be completed without compromising the well used trail loop. Volunteers got down and dirty, restoring the trail by working up the compact trail surface, planting 100 cedar trees, and reintroducing woody debris to the forest floor in and around the old trail.

Lynde Shores Conservation Area Work Day

A large group of volunteers helped to continue work on the Chickadee Trail. The Chickadee Trail received a much needed makeover earlier in the year (see Chickadee Trail Makeover page 10), and further assistance was needed to complete the trail work. Activities included constructing cedar rail fence and invasive species plant removal.

Conservation Area Workshop and Innovation Award

Over the past four years, CLOCA has been part of an organizing committee to develop an annual provincial Conservation Areas Workshop as a training opportunity for all Conservation Area staff. The emphasis is to provide low cost training with practical, applicable, and where possible, hands-on experience. Between October 27 and 29, CLOCA Conservation Area staff attended the fourth annual Conservation Areas Workshop.

The workshop provided a chance to see Conservation Area related products and services from 15 exhibitors. These exhibitors helped subsidize the event. The workshop continues to grow, as Conservation Authority staff recognize the value of the event both with formal training, and meeting and talking to their counterparts in other Authorities. This year 34 of 36 Authorities participated.

New this year was the Conservation Area Innovation Award. Innovative ideas were submitted from Conservation Authorities via a Power Point presentation and poster. Posters from 13 submissions were on display Wednesday evening, and the 130 workshop participants voted on their favourite project. CLOCA's submission of the Stephen's Gulch Conservation Area Transport Trailer Flatbed Bridge was this year's winner of the Innovation Award. As the winner, we received a plaque, a trophy to display for the year, and free registration for one staff for the 2011 workshop.

Poster Submission for the Stephen's Gulch Conservation Area Transport Trailer Flatbed Bridge.

Monitoring Programs

Aquatic Monitoring Program

During the aquatic field season of 2010, Central Lake Ontario Conservation (CLOCA) staff generally focused monitoring efforts on small watersheds within the jurisdiction. These included Warbler, Pringle, Corbett, Gold Point, Robinson, Tooley, Osbourne, Darlington, Westside and Bennett Creeks. Baseline fisheries data was first collected by CLOCA in 2003 within most of these watersheds. In 2010, monitoring included collecting information on water temperature, benthos (aquatic bugs) and fisheries in the 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 50 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 creeks, but continued monitoring will allow us to track future changes occurring as a result of changes in land use and pollution.

Portable water tempurature logger

Staff collected benthos from 12 creek locations mainly within the small watersheds. Benthos play an important role in monitoring water quality within our watersheds. Depending on the species and quantity found, we can determine whether or not the watershed is stressed from pollution, changes in water temperature or landuse. This method of assessing water quality allows staff to survey larger areas and isolate creek sections that may need additional, more detailed and costly sampling.

Summer staff collecting benthos using a kicknet. Stonefly (top) and a scud (bottom) under microscope.

Fish spawning surveys are a beneficial component when describing the health of a watershed. This survey involves observing indicators of spawning, in a specific tributary. These indicators include: the presence of adult fish in a likely spawning area (e.g., Rainbow Trout, Chinook Salmon), the occurrence of active spawning (e.g., fish present on spawning depressions or redds) and signs that spawning has taken place (i.e., spawning depressions or redds). Sampling methods for capturing fish are sometimes not suitable for obtaining all data needed about a particular fishery. Spawning surveys provide useful information for identifying critical spawning habitat which compliments our core fish community surveys. Many limiting factors may prevent a species of fish from reproducing successfully. These include poor water quality, migration barriers, water temperature, water levels and illegal construction work.

Photo shows a redd that has been created by spawning rainbow trout. Notice the lack of algae.

Three White Suckers migrating up the creek to spawn.

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.

Electrofishing equipment is used to gather fisheries samples. Above a backpack unit is used in a creek and below a special boat is used in larger bodies of water.

Each season in-stream barriers are assessed and documented in various watersheds which support well-informed management decisions. Instream barriers can restrict or impede fish from accessing upstream habitats. This is a management concern due to the annual runs of salmonids that migrate from Lake Ontario to spawn in our creeks.

For more information regarding CLOCA's Aquatic Monitoring Program, please refer to the 2010 Aquatic Monitoring Program report available on the CLOCA website.

Plans are underway to incorporate a proper fish ladder into the Veyance Dam in Bowmanville to allow fish passage during migration.

Wildlife Monitoring Program

This year, CLOCA's wildlife monitoring program included bird monitoring in the Crow's Pass, Audley Road Woods, Lynde Shores and Heber Down Conservation Areas. Annual routes in the Heber Down and Long Sault Conservation Areas, which are part of Environment Canada's Forest Bird Monitoring Program, were surveyed this year as well. Numerous species of interest were observed, including a Pileated Woodpecker at Long Sault, a Hooded Warbler at Crow's Pass (Special Concern in Ontario), and Bobolinks at Lynde Shores (Threatened in Ontario).

Salamander monitoring continued at the Heber Down and Lynde Shores Conservation Areas with no signs of salamander presence once again. Four salamander species were found in the Crow's Pass Conservation Area, this year however, making it the richest salamander resource identified in any of CLOCA's Conservation Areas to date.

Owl surveys also took place in the Bowmanville-Soper watershed this year. The surveys were conducted in March 2010 and targeted nesting Eastern Screech-owl, Boreal Owl and Barred Owl. No owl calls were heard in response to the recorded playback at any of the sites visited.

The Lynde Creek watershed was the focus of CLOCAs watershed bird monitoring program in 2010. Although much of the watershed is urbanized, which generally appeals to the most tolerant bird species, there are some very high quality valley lands and habitat areas north of the main urban centre that provide good habitat for some of the more sensitive bird species.

Spotted Salamander

Terrestrial Monitoring Program

In 2010 Central Lake Ontario Conservation (CLOCA) staff began a long-term terrestrial monitoring program designed to monitor the ecological integrity of the Lynde Creek watershed. The Terrestrial Watershed Monitoring program focuses on three systems forests, wetlands and non-forested communities, including meadows and thickets. Four forest plots, two wetland plots and two non-forested plots were established and installed within the Lynde Creek watershed.

Overall the findings show averages of non-native species within the systems being 18% (forest), 33% (wetlands) and 49% (non-forested). A total of 21 non native species were observed, three of which are considered highly invasive.

2010 saw the continuation and refinement of three special monitoring projects:

Crow's Pass CA Trail Monitoring
Locations experiencing an alteration in vegetation cover or change in land use are areas where the highly invasive Dog Strangling Vine (DSV) (Vincetoxicum nigrum) has often been found to establish. In 2007, CLOCA initiated a program to monitor if trail creation would facilitate the spread of DSV. In 2010, DSV was discovered in an area where none existed previously, and the monitoring program was discontinued.

Visit www.cloca.com for information on all types of invasive species including Dog Strangling Vine.

Tree Survival Assessments
CLOCA conducts community stewardship tree plantings through partnerships with a variety of organizations. As a condition of these programs, tree survival assessments are conducted. In 2010 two planting sites were assessed: Shisko Property at Lynde Shores CA (planted 2009) and the Sanderson Tract at Enniskillen CA (planted 2010). The survival rates of the two sites were 91 % and 75% respectively. This information is valuable in sharing with our funders and developing and improving our planting techniques.

Heber Down CA Groundwater Monitoring
Surficial groundwater levels and ground vegetation are being monitored at Heber Down Conservation Area Provincially Significant Wetland complex to assess long-term changes. Piezometers (an instrument for measuring water pressure under ground) were installed in close proximity to wetland vegetation monitoring plots in 2009. In 2010 water levels and vegetation plots were assessed, however one season of data is not enough to discern any results.

Invasive Species in our Watersheds

The spread of invasive species has become a major concern for ecologists, naturalists and land and water managers across the province of Ontario. It is now estimated the spread of invasive species is second only to habitat loss, as the major cause of declining biodiversity (Wilcove, et al., 1998). The Central Lake Ontario Conservation Authority (CLOCA) continues to work to educate the public and manage invasive species on their lands to help protect Ontario's biodiversity. In 2010 we developed and received Board approval of the CLOCA Invasive Species Management Plan, hosted a regional Giant Hogweed Workshop, and implemented an outreach partnership with the Ontario Federation of Anglers and Hunters further complimented by a number of other smaller scale initiatives.

Invasive Species Management Strategy

The Invasive Species Working Group developed a management strategy to further guide CLOCA in their efforts on invasive species awareness and management. CLOCA's strategy uses the provincial document Sustaining Biodiversity: a Strategic Plan for Managing Invasive Plants in Southern Ontario (2000) as the foundation.

There are eight underlying strategies relevant to achieving our major goals and objectives; Prevention; Communication; Best Management Practices; Prioritization; Implementation; Collaboration; Policy; and Research & Monitoring. The working group has assigned measurable actions under each of the eight strategies. To date we have implemented the following actions from the Invasive Species Management Strategy:

- A native plant demonstration garden at CLOCA's main office to provide an example of alternative plants.
- Giant Hogweed mapping, factsheet, website resource, workshop and working group. See details on the workshop to follow.
- Monitored and assessed black locust (*Robinia pseudoacacia*) removal at Lynde Shores.
- Initiated common buckthorn (Rhamnus cathartica) removal at Lynde Shores CA and committed to ongoing removal, monitoring and assessment.
- Posted invasive species signage at Conservation Areas, Provincial Parks and municipal boat launches in our jurisdiction.
- Secured funding from the Ontario Federation of Anglers and Hunters in 2007 and 2010 to develop outreach and education materials and programs. See details below.
- Developed an Invasive Species Workshop for a CLOCA staff "*lunch and learn*" and the Ontario Power Generation Environmental Convergence.
- Joined the Ontario Invasive Plant Council (OIPC) and we are active members of the communications, giant hogweed and horticultural outreach committees.

Giant Hogweed

On Thursday August 19th a Giant Hogweed Workshop was hosted jointly between CLOCA and Durham Region. More than 50 participants attended from local municipalities, the Region, and Durham's five regional Conservation Authorities.

Giant Hogweed flower head

Presentations were provided by the Ontario Invasive Plant Council, Ontario Federation of Anglers and Hunters, Leuschner's Lawn and Garden Maintenance (a private sector vegetation management company), Durham Region and CLOCA. All participants received an information resource package and a follow up workshop CD complete with the presentations, factsheets and media coverage.

The intent of the workshop was to create a working group to address management, monitoring and communication strategies and to establish a consistent and coordinated effort to address this plant in Durham Region. All Durham Region municipalities participated and parks, operations, road, bylaw, health and communication departments were represented. We had excellent media coverage, attendance and good discussions during our round table session. We now have a representational working group to create a giant hogweed Strategy for Durham Region. At this workshop we were also able to highlight that Giant Hogweed is one of hundreds of invasive plants across our landscape that we collectively need to manage and provide outreach to our respective communities to prevent the spread and reduce the risks associated with introducing future invasive species.

GTA CA Watershed Monitoring Forum

Central Lake Ontario Conservation (CLOCA), along with Toronto and Region Conservation, Credit Valley Conservation and Halton Conservation, participated in a Watershed Monitoring Forum. This forum highlighted the variety of monitoring programs carried out by Conservation Authorities and provided the latest monitoring results. The forum was attended by staff from regional and local levels of government as well as staff representing a number of provincial and federal government agencies. The value of long term annual monitoring, its applicability and importance in providing essential information and data, and its contribution to the successful implementation and completion of many municipal programs and projects, was emphasized. CLOCA staff presented at 8 of the sessions, providing information on our terrestrial, aquatic, wildlife, surface water, groundwater monitoring programs, the Durham Region Coastal Wetland Monitoring Program and the integration of monitoring disciplines and products. This was an excellent opportunity to showcase the Authority's annual monitoring programs and the value and relevance of these programs to many Authority and municipal business applications.

Invasive Species Outreach Partnership

Central Lake Ontario Conservation (CLOCA) was part of the Ontario Federation of Anglers and Hunters (OFAH) summer student employment program in 2010, called the invasive species "Hit Squad". This program employs university and college students across the province (24 students in total for 2010) allowing them to interact with the community to raise awareness about invasive species.

As part of CLOCA's Invasive Species Management Strategy, we were able to deliver a number of community outreach efforts in our watershed over a very short 7 week period during July and August. We targeted 3 primary audiences with this outreach program including CLOCA's conservation area visitors, local tourist and recreational organizations and local nurseries and garden centres. We made contact with local media providing awareness about the threat of invasive species and promoted the partnership between CLOCA and the OFAH Invading Species Awareness Program.

Summer staff Dan Beare talks to some kids about invasive species.

Municipal Opportunities for the Identification & Protection of significant Valley Lands

In 2010, staff provided advice regarding significant valley land identification and protection. A suite of relevant provincial legislation, regional, and local municipal official plans were reviewed and conservation authorities were consulted. The Provincial Policy Statement (PPS) recognizes that natural hazards associated with valley lands shall be protected through CLOCA's implementation of the Authority's Regulation and in the fulfillment of the natural hazard policies of the PPS. The natural heritage policies of the PPS recognize the ecological and socio-cultural significance of valley lands, and require a comprehensive study to be undertaken by municipalities to identify and evaluate these qualities.

Municipalities in Durham Region identify significant valley lands as important natural heritage features within their Official Plans. However, the comprehensive study required to implement the significant valley land policies of the PPS have not been undertaken. CLOCA has information that would be useful in the identification and evaluation of valley lands including hazard mapping (floodplain and erosion hazards including top of slope), natural heritage system mapping including ecological land classification, identification of corridors, linkages, core areas, and interior forest. Municipalities can utilize this information in the preparation of a comprehensive study.

Whether or not significant valley lands are identified in accordance with the natural heritage policies of the PPS, the natural hazards associated with valley lands are identified and protected through CLOCA's implementation of Ontario Regulation 42/06, Regulation of Development, interference with Wetlands and Alterations to Shorelines and Watercourses, and review of Planning Act applications in accordance with the Technical Guide – River and Stream Systems.

Canada Goose Management

This year CLOCA received funding from the Canadian Wildlife Service (Environment Canada) to do some research into urban Canada Goose populations. The project began with an inventory of stormwater management ponds in Whitby, Oshawa and Clarington to determine if Canada Geese were using them as nesting sites. Detailed habitat assessments at selected stormwater ponds followed the inventory. This information, along with Canada Goose data collected through the Durham Region Coastal Wetland Monitoring Project and from municipal egg-oiling programs, will be compiled into a database in 2012 for further analysis. A special Canada Goose management workshop, hosted by Toronto Region Conservation, will occur in February 2011, engaging all municipalities affected by Canada Goose issues.

Canada Geese on a pond in Brooklin.

CLOCA Species at Risk Records Review and Inventory

In Ontario, Species at Risk (SAR) are valued components of our ecosystem and as such are protected by law. Information about SAR in Ontario, is managed by the Natural Heritage Information Centre (NHIC), which relies on the public to submit their SAR observations via their website. The protection of SAR and their habitats in Ontario is administered by the Ministry of Natural Resources (MNR) district offices. In our jurisdiction it is the Aurora District MNR that oversees management of SAR.

Accurate information is a vital tool to managing SAR in Ontario, and in 2010, CLOCA applied to the Species at Risk Stewardship Program to undertake an information management program for its jurisdiction. This one year project, called the "CLOCA Species at Risk Records Review and Inventory", consisted of three stages:

- Review existing NHIC data for the jurisdiction and update the records by assessing the habitats as they exist today.
- Extract all SAR records for the jurisdiction from the CLOCA species database and submit them to the Aurora District MNR to ensure data consistency.
- Develop a draft screening map to assist municipal planners and landowners in the management of local SAR resources.

The compilation and verification of these data sets will greatly assist Aurora District MNR Staff in evaluating and permitting development applications involving SAR in the CLOCA jurisdiction in a consistent and timely manner. It will also be a valuable tool for CLOCA when implementing stewardship projects with private landowners as well as managing its many Conservation Areas.

Turtle Nesting Protection Project

In 2010, CLOCA staff participated in a Turtle Conservation Workshop hosted by The Toronto Zoo, in an effort to identify opportunities for improving turtle populations across the province. Staff were provided with insight into monitoring techniques, social marketing and protection strategies employed by turtle conservation practitioners in both Canada and the U.S. This lead to a partnership with the students at Courtice Highschool and a continued working relationship with residents of the Port Darlington Community. We were able to construct 13 turtle nesting structures with the students as part of their shop class and provide them to residents for placement on active turtle nests in and along the roads and properties that surround the Bowmanville Westside Marshes CA. We were also able to prepare a successful proposal to Shell Environmental Fund to support more outreach and education for turtle volunteer conservation efforts in 2011.

A turtle nesting protection structure is installed over a snapping turtle nest to protect the eggs from predators.

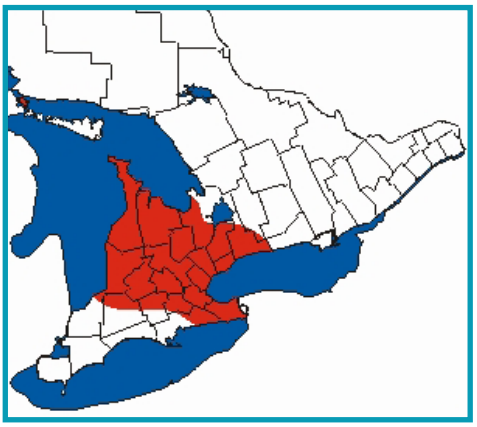
Provincial Watershed Report Card Template

Conservation Authority staff from across the province have been working collaboratively on a standard provincial report card. A review of 28 CA watershed report cards in 2009 by Conservation Ontario, revealed significant inconsistencies in data collection, analysis, reporting, formats and messaging which limited the broader application of this information. From this undertaking, it was determined that a more standardized set of indicators and subsequent evaluation needed to be established. These in turn could be employed by all CA's to provide Ontario residents and agencies with a broader picture of the whole, garnering partnerships and more investment to improve and expand monitoring and analysis activities within CA's. CLOCA staff were part of a larger working group providing significant input into the development of a standard publication template and selection of standard indicators and protocols associated with monitoring activities. With these tools in hand, CA's across the province will work on their individual report cards, analysing data collected for groundwater (nitrate + Nitrite and chloride), forest cover (including interior forest and riparian cover) and surface water quality (total phosphorous, E.coli and Benthic) from 2007 to 2011 and launching a coordinated publication using the standard template and branding as a product for 2012.

Redside Dace Research Project

In 2010, with financial support from the Ministry of Natural Resources Species at Risk Stewardship Fund, CLOCA undertook a project which assessed historic and current conditions within the Lynde Creek

watershed to locate remaining optimal habitat for Redside Dace, an endangered minnow species. This project, entitled "Survey of Lynde Creek Redside Dace Habitat and Stewardship Opportunities" utilized Arc GIS and CLOCA GIS layers to survey Lynde Creek tributaries north of Taunton Road. This analysis included identifying meanders in the stream, shoreline vegetation and stream order and resulted in 167 prospective sites being identified which were then prioritized. Landowner surveys were also conducted which provided valuable background information on stream characteristics, helping focus the search for those stream reaches having the best Redside Dace habitat opportunities. These were examined and four locations have been recommended for restoration and stewardship opportunities.



A map showing the distribution of Redside Dace habitat in Southern Ontario.

Clean Water Land Stewardship Program

Private Land Tree & Shrub Program

The program had another successful year in 2010, selling 8,000 native trees and shrubs to 38 local landowners with 30% of those landowners being repeat customers from 2009. Our numbers were up nearly 1,500 trees from our 2009 program. The program encourages rural private land tree planting within the jurisdiction by providing affordable, native tree and shrub seedlings grown and sourced locally. We were able to keep advertising costs to a minimum in 2010, by reaching our prospective landowners through flyers posted at local gathering places within the watershed and on our website. Tree orders were collected through the months of February and March, for an April 30th pick up, with a special incentive for "early bird" orders. For those orders placed prior to March 12th, a general admission family pass was granted to the annual Purple Woods Maple Syrup Festival. On tree pick-up day, landowners were provided with instruction on tree handling and planting as well as an array of publications on best management practices for rural properties.

Before well upgrade

After well upgrade

Well Upgrade and Decommissioning Program

The unfortunate Walkerton tragedy of 2000 brought awareness to the residents of Ontario that, among other considerations, inactive and poorly maintained water wells can pose a risk to the environment. Contaminated groundwater from neglected water wells can move with ease in underground aquifer systems, affecting human health from active well taking and potentially discharging into streams, harming aquatic ecosystems.

Since 2004, Central Lake Ontario Conservation (CLOCA), in partnership with the Regional Municipality of Durham and the Ontario Groundwater Association (OGWA), has been administering the Well Decommissioning and Upgrade Program to protect groundwater resources in our watersheds. CLOCA hydrogeologists provide technical assistance and the program offers financial assistance to private landowners who decommission or upgrade their wells to meet the provincial regulation (O.Reg. 903). In 2010, the program upgraded one well and decommissioned eight wells. Since 2004 the program has been able to

support the decommissioning of 41 inactive wells and upgrade 23 active private wells across our jurisdiction.

Caring For the Moraine Landowner Contact Program

The Oak Ridges Moraine Foundation (ORMF) works with partners to protect and restore the environmental integrity of the Oak Ridges Moraine. Land securement, stewardship, research, education and support of the Oak Ridges Trail is undertaken in cooperation with Conservation Authorities, first Nations, community groups, environmental not-for profit organizations, municipalities, universities and colleges.

Central Lake Ontario Conservation (CLOCA) has been part of this initiative, including its development and from 2006 to 2009, conducted targeted landowner contact in priority areas of our headwaters. We provided property visits, workshops and implemented on the ground stewardship projects. In that time we contacted 690 landowners and implemented 18 projects, leveraging the 100,000 dollars received from the ORMF with an additional 100,000. Funding from the province was not available to the Foundation to continue the program beyond 2009, and the partners along with the ORMF implemented a smaller scale version of the project and made recommendations for rebuilding the program.

We received funding to implement 2 very well attended workshops – one on mushrooms and the other on winter birds on the Moraine. We also implemented two projects on private lands, which included reforestation and livestock fencing. With the Foundation maintaining open doors now until 2012, we are confident that we now have an opportunity to develop the next generation of the Caring for the Moraine Project in 2011.

Durham Eco-house

Located in Whitby, Durham Eco-House is a non-profit organization whose mandate is to offer business support to green building businesses in Durham Region. This demonstration house and property will offer space to suppliers and contractors to showcase products and hands-on learning for students, consumers and the green building sector.

The overarching goal of the project is to align members of our community with innovative, leading edge green building and landscape technologies. Some of the technology proposed for Durham Eco-House includes, radiant heated floors, energy efficient roofing, insulation upgrades, a closed loop geothermal generator, high efficiency water heater, solar power and upgrades to all windows and doors.

To complement the building infrastructure, Durham Eco House approached Central Lake Ontario Conservation to assist with the creation of a property site plan, incorporating sustainable landscape design features for water conservation, stormwater management, organic gardening and habitat enhancement. A conceptual site plan has been developed to demonstrate a variety of lot level improvements to the landscape industry, consultants, developers and homeowners in Durham Region. Ultimately the site design will demonstrate techniques for reducing our environmental footprint in pursuit of healthier watersheds. The concept plan is in its early stages of development and incorporates pervious paving materials, a rainwater harvesting system and a water efficiency garden. Efforts to move the project forward through a community collaborative partnership and fundraising will be initiated by Durham Eco-House in 2011.

Enjoying the Winter Birds on the Moraine Workshop.

In Our Watershed and Outreach Education Programs

Durham Children's Groundwater Festival

The 13th annual Durham Children's Groundwater Festival was held at Camp Samac in Oshawa, September 27 through to October 1, seeing more than 4,000 Grade 4 students over the five days. Through the hands-on interactive learning centre's, they discovered the importance of water in their everyday lives, carrying important water conservation and protection messages back to their home and community.

Since 1998 approximately 52,000 grade 4 students have participated in the event and 5,600 secondary school students have hosted the activity centres. Our secondary school volunteer program provides trained youth coordinators at each of the 40 learning centres. Many of them participated as grade 4 students in the past and their return as activity leaders inspires them to mentor and share their knowledge in a fun and exciting atmosphere.

Kids say "Hi" to Drip & Drop.

Enhancements to the Festival this year included the refurbishing of the "Go With the Flow" activity centre where students learn the value of aerators on kitchen taps. A milestone in 2010 was that the Durham Festival, one of 26 across the province, was the first to incorporate a litterless lunch. Lunches are packed with recyclable containers and any waste, organic or inorganic is taken home by the student. This year, there was less than ½ of a grocery bag of waste collected at the lunch area, compared to 20 full size garbage bags collected each day in previous years. CWEC (Children's Water Education Council) commended and applauded this accomplishment, and has opened the door for other Festivals to do the same.

Purple Woods Maple Syrup Festival

The 35th annual Maple Syrup Festival at the Purple Woods Conservation Area was successful in achieving its targeted visitorship of more than 14,000 people from Saturday March 13 through to Sunday March 21 and the weekends of March 27/28, and April 3/4. Our annual festival has more than doubled its attendance in the past five years, making it an important event for regional and local tourism. This long time tradition provides, visitors with an opportunity to experience how maple syrup has been made over the past 400 years.

In an attempt to accommodate our growing number of visitors, the pancake tent and the sugar shack store were relocated at the top of the property adjacent to the parking lot. In addition to these modifications, we launched Aunt Penny's Cabin and expanded our First Nations and Early Settlers Features to take advantage of the space normally occupied by the pancake tent. Additional activities as always included wagon rides, demonstrations, nature crafts, shopping at our sugar shack store and tasting some real maple syrup on pancakes cooked up by a variety of community groups.

Visitors learn about pioneer life at Aunt Penny's Cabin at the 2010 Purple Woods CA Maple Syrup Festival.

Corporate sponsorship continues to be a significant part of our program, helping offset the costs of special activities and promotion of the event itself. We continued to partner with local businesses, environmental and community groups to operate the Festival. On our list of growing partnerships for 2010 were, Ontario Power Generation, Ontario Works – Environmental Assistance Program, Oshawa Skeet and Gun Club, Caledon Propane, Tim Horton's, Rogers Cable, CKDO 1350, 94.9 The Rock FM and KX96. The 6th annual Community Food Drive collected over 720 kilograms of food to donate to the Salvation Army and Feed the Need in Durham.

The Festival also provides an excellent volunteer opportunity for secondary students as interpretative hosts at the historical displays, parking lot attendance and support for our CLOCA pancake days. This opportunity helps them achieve their community service requirements for secondary school graduation.

In Our Watershed

Staff continued to deliver our series of curriculum based outdoor environmental education programs. Including our very popular snowshoe program. The tours of the sugar bush at Purple Woods were filled to capacity. Students are taken on a 1 hour tour of the sugar bush to learn about the history of maple syrup and how we make it today. We have now partnered with Ducks Unlimited to deliver their Project Webfoot program. Schools are sponsored through a golf tournament at the Royal Ashburn Golf Course, highlighted on page 27.

Taking a snowshoeing break!

Watershed Wilderness Nature Hikes

A series of nature hikes were delivered throughout the various conservation areas. We started 2010 off with an Owl Prowl at Enniskillen CA. Debbie Dejong from SOAR came out and spoke to participants about owls, bringing with her a live Barn Owl named Stella. We then went out for a hike in search of owls. Although no owls were seen or heard, the experience was well received by all.

In February we hosted our first Family Snowshoe Day at Enniskillen CA. The conditions were not ideal, but 100 people came out to try the snowshoes, donated by Mountain Equipment Co-op.

In May we hosted our Annual Mother's Day Wildflower Hike and Tea at Long Sault CA with 25 participants.

A night hike was held at Heber Down CA on the new Springbanks Trail. Approximately 30 people with flashlights joined us to learn about the nocturnal habits of our local wildlife.

In November, local naturalist Elizabeth Kellogg joined us at Enniskillen to talk about our native birds and how to attract and feed them over the long winter months. After the presentation our participants made suet feeders to take home.

Envirothon

Once again the Regional Envirothon competition was held at Enniskillen CA with the training day held at Ontario Power Generation Darlington. Education and Outreach staff continue to participate on the organizing committee for this event. Our partners included: Ontario Power Generation, St. Mary's Cement, Durham Land Stewardship Council, Ontario Forestry Association and Ministry of Natural Resources. We had 13 teams of 5 students participating in the event. The winning team was from Pickering High School and they advanced to the provincial competition where they placed 7th overall.

Farm Connections

On April 6, 7 and 8 CLOCA staff participated in the 4th annual Farm Connections in partnership with the Region of Durham and agricultural stakeholders in our watershed. Together we delivered 13 hands-on activities to 1,100 grade 3 students at the Brooklin Fairgrounds, Whitby.

Watershed Lessons

The activities complete with live farm animals and their owners, highlights the role farmers play in our communities to bring us fresh food while protecting water and soil resources through their stewardship activities. A public night was held on the Wednesday with over 750 people attending, the largest turnout in the four years of the program. This public night provides an opportunity for students to bring back their parents and siblings to see the various activities including live milking, baby chicks and pioneer activity demonstrations.

CLOCA's Soil and Water activity centre.

Oak Ridges Moraine Education Program

Staff have completed training to deliver a program developed by the Oak Ridges Moraine (ORM) Foundation for an in class curriculum based program for high school students. This program teaches students the value and importance of the moraine. The ORM Foundation provided CLOCA staff with a large map and a 3 D model of the moraine. Staff have customized aspects of the presentation to highlight Moraine features in CLOCA's watershed. To date we have delivered 3 programs and anticipate more bookings in spring 2011.

Communications staff provided input into the development of 3 Workshop in a Box series designed to engage the general public and landowners in learning more about the Oak Ridges Moraine. The three workshops will focus on helping participants identify 25 terrestrial species, 25 aquatic species and 25 native trees. It is expected that CLOCA will book and deliver one of each of these workshops in 2011. The Box contains resources for participants and props, presentations and other tools to make delivery and promotion of the workshop easy for Oak Ridges Moraine partners.

Wetlands In Your Backyard

The Black/Harmony/Farewell Provincially Significant Wetland (BHF PSW) supports one of the largest wetland complexes on the Iroquois Plain in the Greater Toronto Area (OMNR, 1999) and almost 90% of these wetlands are held in private land ownership. These wetlands play an integral role in the health and livelihood of the watershed and the wildlife that rely on it. To keep these wetlands in their natural state, CLOCA initiated a short-term stewardship project focusing on educating landowners in the BHF watershed on issues surrounding wetlands, providing interactive information packets, workshops and potential stewardship opportunities.

All BHF private landowners having wetlands on their property received a postcard in the mail prompting them to "Hop on Over" to a website dedicated to the BHF PSW, highlighting all the special features and creatures of the wetlands.

Any interested landowners received an information packet with brochures and activity books on wetland wildlife, habitat, and stewardship opportunities. These information packets were geared to both kids and parents and encouraged them to explore the natural areas in their own backyard. To conclude the project, CLOCA staff organized an open house with a variety of local environmental organizations including Envirosponsible, Southern Exposure Systems, Community Stream Stewards, The Buzzman, Environmental Factor, Ontario Road Ecology Group, Durham Region Field Naturalists and Sciensational Sssnakes!! Attendees could learn more about the natural areas around them and what they can do to protect them. Visitors also got the chance to get up close and personal with many live reptiles and amphibians often found in wetland areas!

Getting up-close with nature!

IJC Working Group Tour of CLOCA's Coastal Wetlands

The policy which regulates water levels for Lake Ontario has been in place since 1958 and over the last number of years the International Joint Commission (IJC) has been reviewing this policy. On August 24, 2010, the Lake Ontario-St. Lawrence River (LOSLR) Working Group met in Toronto. This group supports the IJC's review of the water level regulation plan and has been working with the IJC, New York, Quebec and the Canadian and United States Federal Governments.

As a precursor to this meeting, and in support of the option to regulate Lake Ontario water levels for environmental needs, CLOCA led a tour of 3 coastal wetlands Cranberry, Oshawa Second and McLaughlin Bay Marshes. These wetlands were chosen as they offered examples of wetlands in which water levels are managed directly through the use of control structures (Cranberry and Oshawa Second Marsh) versus wetlands where water levels are not manipulated by control structures and are reflective of existing environmental conditions (McLaughlin Bay).

A total of 19 people representing various organizations from Canada and the U.S. attended this tour. Positive feedback indicated the tour provided good on-the-ground examples of the effects of water level regulation and how control structures can aid in creating historical water level fluctuations, but are costly to install and operate.

Enjoying the day exploring Durham's coastal wetlands.

Royal Ashburn Golf Tournament

In 2008, CLOCA (through its Clean Water Land Stewardship Program), partnered with the Royal Ashburn Golf Club, Ducks Unlimited Canada, and the Ontario Federation of Anglers and Hunters to construct a 3-cell wetland on the edge of the Royal Ashburn Golf Club in the Lynde Creek watershed. Recognizing the value of this wetland stewardship project, and the need for other similar wetland projects in the area, these four organizations continued their partnership and commitment to wetland stewardship and education with the development of the Annual Wetland Conservation Golf Event.

To date, after only two years, this event has raised over $100,000, with the proceeds supporting wetland related stewardship projects and education programs. The Wetland Conservation Golf Event uses several different avenues for fundraising each year including event sponsorship opportunities, golf tournament entrance fees, conservation passport sales (provides entry into prize table draws, hole in one contests, and other on-course activities), and silent and live auctions.

In a unique partnership with Ducks Unlimited Canada's "Project Webfoot" program, event sponsors have the opportunity to choose a local classroom to be the recipient of a wetland conservation field trip. The funds raised over the last two years through the event sponsorship option alone, will result in over 80 grade 3-4 classes experiencing a free curriculum-based guided field trip to a local wetland. To help in the local delivery of this program, CLOCA has recently been designated by Ducks Unlimited Canada as a delivery agent for the "Project Webfoot" program.

This lasting partnership is an excellent example of the value of private land stewardship programs like CLOCA's Clean Water Land Stewardship Program. Completed stewardship projects, like the wetland creation at Royal Ashburn Golf Club, obviously contribute significantly to long-term watershed health. But, more often than not, the unanticipated benefits of a completed project have just as many lasting results, including empowering landowners with the knowledge to undertake other habitat projects on their properties, encouraging them to become champions for stewardship within their own community, and generating additional

projects in an area where a successful project has already been completed.

Plans are in the works for year 3 of the Annual Wetland Conservation Golf Event, scheduled for August 23rd, 2011.

Deloitte Touche Impact Day

On Friday September 24, we were once again working on the trails with staff from Deloitte as part of their annual Impact Day where they give back to the community in a hands-on volunteer activity. With funding from the EJLB Foundation, we were able to secure the materials needed to upgrade the Chickadee Trail at the Lynde Shores Conservation Area. More than 50 volunteers helped to install 80 metres of split rail fencing to reduce off trail activities; remove 50 bird feeders, bird boxes and 8 of our old and tired feeding stations; install 4 new feeder stations and feeders; remove 75 invasive European Buckthorn shrubs using a variety of extracting and girdling equipment; relocate woody debris for trail edging and install 10 brand new trail markers and signage. The makeover was a great success and that makes three years in a row that Deloitte has contributed to our trail improvement efforts in CA's located in the Lynde Creek watershed.

Deloitte volunteers gather for a group picture before getting to work.

Trafalgar Castle School

On October 22, about 30 students and their teachers from Trafalgar Castle School in Whitby, volunteered their services to help carry out projects within Heber Down CA. These eager young women spent their day planting trees and doing garbage clean-up in hard to reach places. The Community Outreach program run by the school, provides Trafalgar Castle students with the opportunity to give back to the local community. In addition to their volunteer labour, the School presented CLOCA with a donation that will go towards future projects within the Conservation Area.

Earth Day Plantings and TD Friends of the Environment

We hosted yet another successful community Earth Day planting event at the Sanderson Tract part of our Enniskillen landholdings, planting 2,200 native trees and shrubs with 100 community volunteers and scouts from Enniskillen. We planted a 2 hectare parcel of land to help us increase interior forest habitat and forest cover in the Bowmanville Soper watershed. Since 2003, we have planted 75,000 native trees within our public conservation areas with more than 700 volunteers participating. This event engaged high school students, families and employees from local businesses, all furthering a stewardship ethic in our community. We had a special visit from SOAR's very own Luna, a rehabilitated barn owl (actually listed as an endangered species in Ontario) who was able to provide volunteers with an up close and personal experience and an opportunity to ask her trainer questions about her habits, behavior and the needs of her family members in the wild. A special thanks to TD Friends of the Environment for covering the costs of our plants and barbeque lunch for volunteers. It made for a great day. We can now estimate

that it costs us about $3,000 to plant a hectare of forest with volunteers, including the coordination, preparation, plant materials and food. However, what we realize after 7 years of delivering this annual event, is the experience for our volunteers is priceless.

2010 Volunteer Service Awards Program

Central Lake Ontario Conservation (CLOCA) has an excellent track record of engaging volunteers to assist with the implementation of a variety of projects and programs to achieve our goals and objectives for healthy watersheds. We offer a range of volunteer experiences to families, high school students, retired professionals and people looking to create a healthier planet. Volunteer opportunities include conservation area management, photography, creek cleanups, trail construction and repair, tree planting and habitat creation, monitoring wildlife and water quality, community outreach at public events like Purple Woods Maple Syrup Festival and assistance with education programs like the Durham Children's Groundwater Festival.

In January 2010, Chair Rick Johnson endorsed Central Lake Ontario Conservation's submission of an Ontario Volunteer Service Awards Nomination Form. The Ontario Volunteer Service Awards program recognizes the importance volunteers play in the quality of Ontario life, further contributing to diverse, vibrant communities that are safe, caring and socially, culturally, and economically strong places to live. We saw this nomination process as an opportunity to ensure that some of our volunteers received some additional recognition. We nominated four of our long time volunteers and each of our nominations was successful. They each received an award from the Ministry of Citizenship and Immigration at the annual 2010 Volunteer Service Awards. They were Mr. Douglas Lockrey, (15 years) Mr. Dan MacDonald (10 years) Mr. Vern Mason (10 years) and Mr. John Visser (5 years).

These volunteers are integral to the success of our many programs here at Central Lake Ontario Conservation and have been honored by us in the past through our watershed awards program. Congratulations gentlemen, and thanks for making our job so easy!

2010 Volunteer Recognition Event

More than 60 of our dedicated volunteers, their families, friends and colleagues braved the darkness of a February evening and came out to the Enniskillen Conservation Area. Not only did they have to walk around in the dark, but they had to strap on snowshoes to take advantage of some newly fallen snow. The event was our way of thanking our many volunteers for taking and active interest in our programs and projects over the past year, while making us look good to our human and "wilder" friends around our watersheds.

Home Improvements

GIS Enterprise

Authority is using the free software package Greening IT through Software Choices

In an effort to reduce costs, the Authority has implemented green software choices in its deployment of Enterprise Technology. One example is the Authority's use of server virtualization technology. Server virtualization technology enables the Authority to run multiple operating systems on a single server, reducing hardware and energy costs. Currently, the Authority is using the free software package VMware ESXi in the production and development environments, using three servers instead of six. In the development environment, VMware replicates the production environment of multiple servers onto a single workstation or server. Server virtualization is the process of carving up the resources of the physical servers before an operating system is installed, and assigning those resources to individual virtual machines. The GIS/IS department is undertaking the task of utilizing the Windows Server 2008 technology to position more rigorous power saving settings to workstations and laptops. These power saving measures can be centrally managed and set up throughout the Authority.

MS Dynamics Volunteer / Sponsorship Application / Stewardship Application Update

One of the most valuable resources available to the Authority is that of the volunteer. The Authority has recognized a need to have a central location to track and manage volunteer contributions and contact information. The GIS/IS department has been working on providing CLOCA staff with a customized application based on the Microsoft Dynamics Customer Relationship Management software platform. The application will provide staff with the following features:

- Volunteer Tracking (Contact Information, Interests, Skills and Availability)
- Event Tracking (ability to track volunteers and their hours per respective event)
- Integration with Microsoft Outlook or Web
- Browser Interface
- Can be used offsite at an event and changes synchronized with the database upon return to the office
- Functionality to use database driven templates for bulk mailings and communications
- Ability to create custom reports in a user friendly environment and the ability to search on any stored information within the application

The CLOCA Earth Day 2010 stewardship event was an excellent opportunity to test pilot the volunteer application and its functionality. Staff had the ability to send out personalized template letters and enter volunteer information from the event into the database which currently houses 170 registered volunteers.

Conservation Authority Information Management System (CADIMS)

Over the past year, CLOCA has been working with a consultant to ensure no information is lost in the transition from an antiquated Information Management System to a new system with many enhancements (CADIMS). CADIMS will provide a full life-cycle document management system using MS SharePoint software, customized to reflect CLOCA's unique business functions. CADIMS will also provide a mechanism for staff to share information internally and externally while, ensuring the security and integrity of the information.

Workflow and Accpac Integration Application

Requisitions /Purchase Orders /Expenses/ Advance Cheques/Tangible Capital Assets

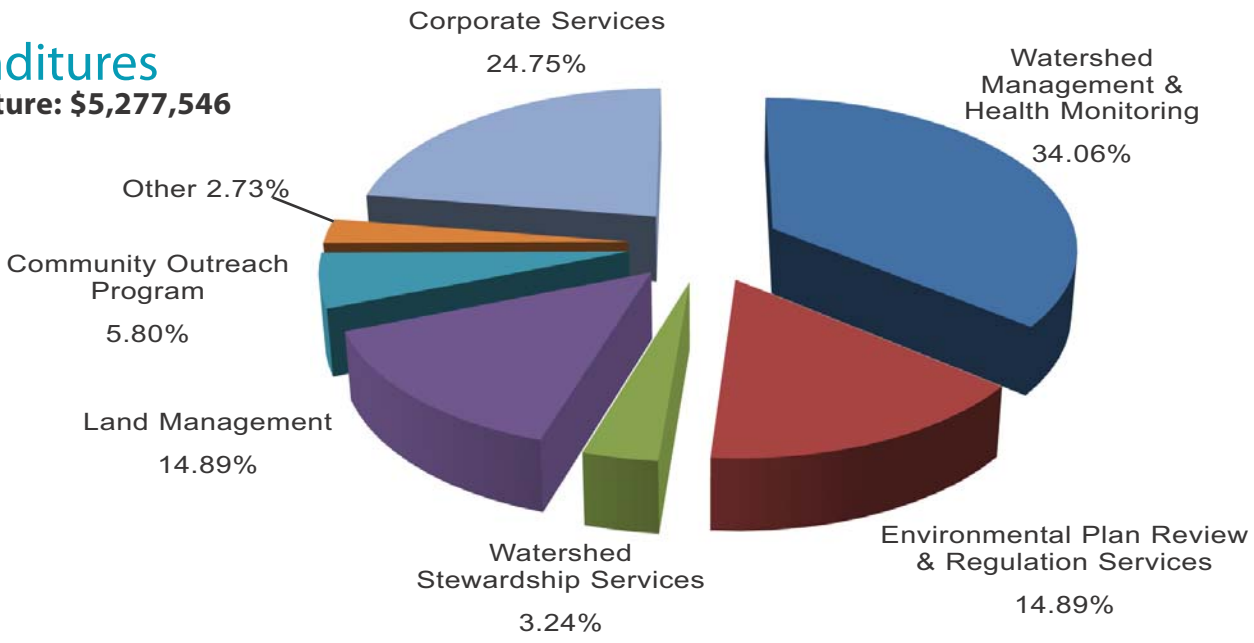
Working closely with accounting, GIS/IS is currently automating the approval process for requisitions, expenses, requests for cheques and asset management. The application is MS SharePoint based and will serve as CLOCA's one window for dealing with accounting matters. All existing Authority workflows for accounting, will be maintained electronically, from the inputting of receipts, to supervisor approval, to entering financial records into Accpac.

The intent of this application is to provide an interactive real time accounting system. This will enable accounting staff to locate the status of tasks within a workflow and reduce time loss and increase efficiencies by reducing data entry duplication and paper filing. Purchase orders will be generated automatically from the information entered in the requisition template and ready for approvals. The upgrade to Accpac 5.6 and the work done by GIS/IS, permits direct import of these workflows into Accpac. Accounting for tangible capital assets is new to the public sector and will now register with the Accpac Integration application, automatically incorporating this data into the workflow at the requisition and approval stage. Staff will then automatically receive an electronic form prompting them to populate the tangible capital assets database.

2010 Budget Summary

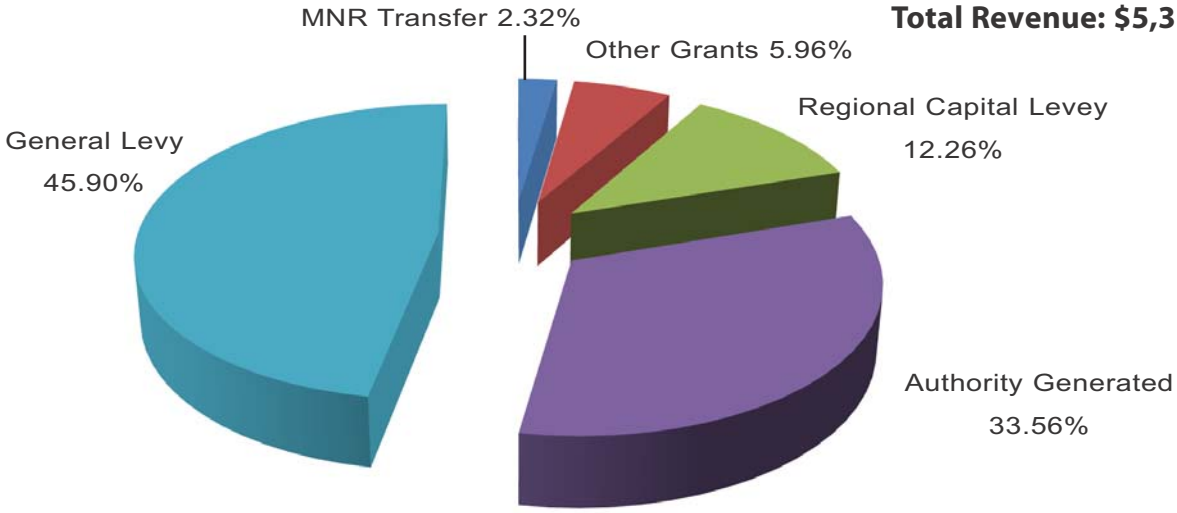
Expenditures

Total Expenditure: $5,277,546



Revenue

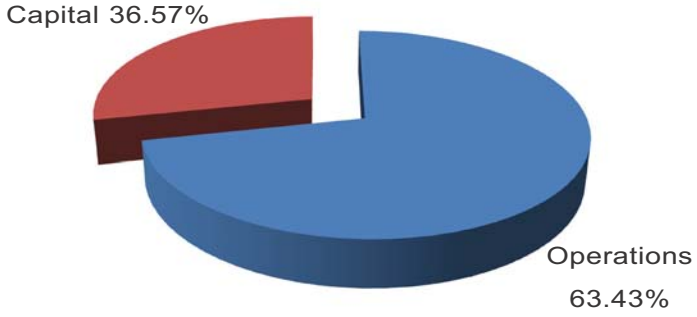
Total Revenue: $5,370,454



Capital & Operations

Total Capital: $1,930,086

Total Operations: $3,347,460



Current Staff General Contact List

Central Lake Ontario Conservation Authority **Administration Office** 100 Whiting Avenue Oshawa, ON L1H 3T3		**Phone:** Email: Website:	**905-579-0411** mail@cloca.com www.cloca.com	**Fax: 905-579-0994**	
Russ Powell, Chief Administrative Officer		Email:	rpowell@cloca.com	Ext.	112
Development Review & Regulation					
Chris Darling, Director		Email:	cdarling@cloca.com	Ext.	119
	Ted Aikins, Planner	Email:	taikins@cloca.com	Ext.	121
	John Hetherington, Planning & Regulations Officer	Email:	jhetherington@cloca.com	Ext.	137
	Stefanie Gauley, Planner/Enforcement Officer	Email	sgauley@cloca.com	Ext.	145
Corporate Services					
Dan White, Director		Email	dwhite@cloca.com	Ext.	113
Finance	Josie Calabrese, Financial Services Coordinator	Email:	jcalabrese@cloca.com	Ext.	115
	Paula Parks, Payroll Accounting Clerk	Email	pparks@cloca.com	Ext.	148
Administration	Brandi Boardman, Admin/Accounting Assistant	Email	bboardman@cloca.com	Ext.	117
	Margaret Stauffer, Administrative Assistant	Email	mstauffer@cloca.com	Ext.	111
	Kathy Tate, Administrative Assistant	Email	ktate@cloca.com	Ext.	116
Information Systems/Geomatics					
	Sylwia Kubrak, Cartographic Specialist/GIS Technician	Email	skubrak@cloca.com	Ext.	135
	Qin, Min, Database Specialist	Email:	mqin@cloca.com	Ext.	147
	Bryan Mistak, GIS Technician	Email:	bmistak@cloca.com	Ext.	123
	Annie Wen Barr, Junior Database Administrator/ Programmer	Email:	awenbarr@cloca.com	Ext.	256
	Rod Wilmot, GIS Coordinator/System Administrator	Email	rwilmot@cloca.com	Ext.	127
Watershed Planning & Natural Heritage					
Heather Brooks, Director		Email	hbrooks@cloca.com	Ext.	136
	Jamie Davidson, Conservation Areas Planner	Email:	jdavidson@cloca.com	Ext.	114
	Ian Kelsey, Aquatic Biologist	Email:	ikelsey@cloca.com	Ext.	143
	Kathy Luttrell, Terrestrial Resource Analyst	Email:	kluttrell@cloca.com	Ext.	124
	Dan Moore, Aquatic Resource Analyst	Email:	dmoore@cloca.com	Ext.	122
	Heather Pankhurst, Wetland Biologist	Email:	hpankhurst@cloca.com	Ext.	138
	Jackie Scott, Terrestrial & Wildlife Resource Analyst	Email:	jscott@cloca.com	Ext.	104
	Diana Shermet, Natural Heritage Resource Analyst	Email:	dshermet@cloca.com	Ext.	107
	Debbie Vandenakker, Watershed Planner	Email:	dvandenakker@cloca.com	Ext.	255

Engineering & Field Operations					
Perry Sisson, Director		Email:	psisson@cloca.com	Ext.	118
Conservation Areas	Dan Hope, Land Management & Operations Coordinator	Email:	dhope@cloca.com	Ext.	146
	Todd Backus, Resource Technician	Email:	tbackus@cloca.com		(905) 261-5047
	Ben DeWaal, Resource Technician	Email:	bdewaal@cloca.com		(905) 261-7654
	Harry Hirschfeld, Resource Technician	Email:	hhirschfeld@cloca.com		(905) 261-5046
	Jason Maas, Resource Technician	Email:	jmaas@cloca.com		(905) 261-7655
Engineering	Warren Coulter, Environmental Engineering Analyst	Email:	wcoulter@cloca.com	Ext.	133
	Amber Langmuir, Water Resources Engineer	Email:	alangmuir@cloca.com	Ext.	198
	Neil MacFarlane, Environmental Engineering Analyst	Email:	nmacfarlane@cloca.com	Ext.	134
Groundwater					
Gayle Soo Chan, Director		Email:	gsoochan@cloca.com	Ext.	139
Hydrogeological					
	Godofredo Carpio, Hydrogeologist	Email:	gcarpio@cloca.com	Ext.	125
	Gloria Suarez, Ground & Source Water Report Coordinator	Email:	gsuarez@cloca.com	Ext.	257
Watershed Stewardship, Community Outreach & Education					
Patricia Lowe, Director		Email:	plowe@cloca.com	Ext.	126
Communications	Gord Geissberger, Marketing and Communications Coordinator	Email:	gord@cloca.com	Ext.	142
Community Outreach & Education					
	Cathy Grant, Education Instructor	Email:	cgrant@cloca.com	Ext.	108
	Annette MacDonald, Community Outreach Coordinator	Email:	amacdonald@clcoa.com	Ext.	144
Watershed Stewardship	c/o Patricia Lowe	Email:	plowe@cloca.com	Ext	126

Notes:

Central Lake Ontario Conservation

100 Whiting Ave Oshawa, Ontario Canada L1H 3T3
Tel: (905) 579-0411 Fax: (905) 579-0994 Email: mail@cloca.com

www.cloca.com

Printed on sustainable forestry certified paper.