



CLOCA staff using a backpack electrofisher to conduct fisheries sampling - page18.

2011 Year In Review



Table of Contents

Welcome Message from the Chair	1	Well Upgrade & Decommissioning Program	24
Who Are We	2	Taunton Road Slope Erosion Protection Demonstration Project	25
2011 Board Of Directors	2	Purple Woods Maple Syrup Festival	26
CTC Source Water Protection	3	Durham Children's Groundwater Festival	26
Groundwater Resources	3	In Your Watershed Education Program	27
Planning & Regulations	4	Enniskillen Education Centre Pollinator Garden	27
Watershed Planning	5	Teachers Learn About Monarch Butterflies	27
Highway 407 East	6	Ontario Society of Outdoor Educators Annual Conference	28
Conservation Authorities Moraine Coalition & Oak ridges Moraine Watershed Assessment	7	Winter Feels Good! Snowshoe Program	28
Durham Regional Coastal Wetland Monitoring Program	7	Rekindle The Spark	28
Surface Water Monitoring	8	Envirothon	28
Provincial Groundwater Monitoring Network	9	Tuesday's On The Trail	28
Flood Forecasting & Warning System	9	Watershed Wilderness Nature Hikes	29
Floodplain Mapping Update	10	Family Snowshoe Day	29
Biennial Lake Ontario Shoreline Surveys	10	Wetland Conservation Golf Event Royal Ashburn Golf Club	30
Conservation Areas & Land Holdings	11	Farm Connections	30
Land Acquisition	12	CLOCA Staff Day Watershed Tour	30
Conservation Areas	13 to 15	Deloitte Impact Day	31
Purple Woods CA Heritage Hall	15	Earth Day	31
Lynde Shores Conservation Area Management Plan	16	Watershed Awards 2011	32
Conservation Area Work Days	17	Solar Application at CLOCA Office	33
Aquatic Monitoring Program	17 & 18	Workplace Violence and Harassment (Bill 168)	33
Wildlife & Targeted Species Monitoring Programs	19	Accessibility For Ontarians With Disabilities Act (AODA)	33
Road Ecology-Identifying & Improving Wildlife Passage Opportunities	19	Enterprise GIS	33
Terrestrial Monitoring Program	19	MS SharePoint Intranet	33
McLaughlin Bay Restoration Project Phase 1	20	CADIMS	34
Invasive Species In Our Watersheds	20 & 21	Conservation Authorities Collaborative Information Sessions (CACIS)	34
Turtles For Tomorrow	22	Job Creation Partnership Program	34
Provincial Watershed Report Card	23	2011 Budget Summary	35
Private Land Tree & Shrub Program	24	2012 Staff Contact List	36 & 37

Welcome Message from the Chair

It has been a pleasure to serve as Chair of Central Lake Ontario Conservation (CLOCA) and I would like to share the many highlights and accomplishments of 2011.

2011 Milestones

- Completed phase 1 of the Purple Woods Heritage Hall construction.
- Completed the CLOSPA Assessment Report Amendments and Updates and Draft Source Water Protection Plan Policies.
- Completed CLOCA's ultimate Natural Heritage System Methodology.
- Completed Lynde and Oshawa Creek Phase 2 Watershed Management Alternatives and Options and Oshawa Creek Watershed Management Plan Existing Conditions.
- Completed a Flood Relief Study for the Harmony and Farewell Creeks.
- Completed Phase 1 of the McLaughlin Bay Restoration Project.
- Hosted a successful Giant Hogweed Management and Abatement Workshop for licensed practitioners from across the province.
- Designed and implemented the Taunton Road Erosion Protection Project.
- Acquired 211 acres (85 hectares) of land at Long Sault, Crow's Pass and Enniskillen Conservation Areas, bringing our total landholdings to 5,627.96 acres (2,277.57 hectares).
- We successfully engaged a variety of pollinators, monarch butterflies, Durham Region teachers and CLOCA staff and volunteers in creating a pollinator garden and hosting a two day Monarch Teachers Network workshop at the Enniskillen Education Centre.
- Completed the Herber Down Conservation Area Management Plan.



- Initiated MS SharePoint, CADIMS and GIS Enterprise systems for project and information management for CLOCA staff.
- Implemented policy to support the Workplace Violence and Workplace Harassment and Accessibility for Ontarians with Disabilities Acts with support from our Job Creation Partnership Program.
- Completed the Micro Renewable Electricity Project at CLOCA Headquarters.

In closing, I would like to thank the Board of Directors and staff for their support and hard work over the past year.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Pat Perkins', written in a cursive style.

Pat Perkins
Chair, Central Lake Ontario Conservation



Working In Partnership



About Us

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 2,317 hectares (5,725 acres) of environmentally sensitive land.

2011 Board of Directors

Chair: Mayor P. Perkins, Town of Whitby

Vice-Chair: Councillor B. Chapman, City of Oshawa

Town of Ajax:

Councillor S. Collier

Municipality of Clarington:

Councillor R. Hooper, Councillor M. Novak, Councillor C. Traill

City of Oshawa:

Councillor B. Chapman, Councillor A. England, Councillor J. Neal, Councillor T-D Marimpietri

City of Pickering:

Councillor P. Rodrigues

Townships of Scugog & Uxbridge:

Councillor L. Corrigan

Town of Whitby:

Councillor L. Coe, Councillor J. Drumm, Councillor D. Mitchell, Mayor P. Perkins



Back Row: (left to right): Coun. D. Mitchell, Coun. S. Collier, Coun. L. Coe, Coun. J. Neal, Coun. R. Hooper, Coun. P. Rodrigues, Coun. T-D Marimpietri, R. Powell (CAO)

Front Row: (left to right): Coun. J. Drumm, Coun. L. Corrigan, Coun. B. Chapman (Vice-Chair), Mayor P. Perkins (Chair), Coun. M. Novak, Coun. A. England, Coun. C. Traill

CTC Source Water Protection

CLOSPA Assessment Report Amendments and Updates

In 2002 Justice O'Connor recommended a number of changes to Ontario's Drinking Water System in response to the tainted water tragedy that occurred in Walkerton in 2000. In 2006, the Clean Water Act was promulgated and with the Director's Rules, it outlined the requirements for the completion of Source Protection Assessment Reports and Plans for the 19 Source Protection Areas in the province. Source Protection Areas (SPAs) coincide with 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 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 that need 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 and Updated AR for the Central Lake Ontario Source Protection Authority (CLOSPA) were submitted to the Province in August 2010 and July 2011 respectively. The CLOSPA UAR was approved by the Province in November, 2011. There are 7 significant threats identified in the CLOSPA AR, all associated with the Lake Ontario intakes. The identification of these threats is based on event based modeling that was completed in a collaborative study that stretches from Niagara in the west to Quinte Region in the east. Work on the SPP was initiated in 2010. The deadline for submission to the Province of a draft SPP is October 2012. Extensive peer review and public consultation are requirements for both the AR and SPP.

CLOSPA Draft Source Water Protection Policies

A major component of the preparation of the Source Water Protection Plan is the formulation of policies to ensure that activities and land uses that pose a significant threat to drinking water either

cease to be or never become significant threats. The policies will address groundwater quality and quantity threats as well as Lake Ontario drinking water threats. CLOCA participated in the formulation of policy options and approaches for consideration by the SPC. The SPC approved draft policies for the purpose of consulting with identified implementing bodies, which occurred in late 2011. Based on feedback received, the draft policies may be revised and updated in early 2012 for the purpose of public consultation. Submission of the SWPP to the Ministry of the Environment will occur in October 2012.

Groundwater Resources

CLOCA groundwater staff continue to 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 in support of development and re-zoning applications. In 2011, groundwater staff commented on 6 development or EA related hydrogeological studies. Though water quality and drinking water components are considered in a review, the maintenance of recharge and baseflow are key concerns as these components are important to the sustainability of our watershed ecosystems.

Most recently staff has provided input on geotechnical components of development reports (slope stability assessments). Groundwater staff supports the development of watershed plans providing reporting or review input to complete various sections related to geology, hydrostratigraphy, recharge and discharge, baseflow and water budgets. Staff continues to track and coordinate comments on the Provincial Permit To Take Water program (PTTW). In 2011 staff submitted comments to the province on 9 PTTW applications. Groundwater staff also provide support to the operation of the Provincial Groundwater Monitoring Network (PGMN) and Low Water Response programs (LWR) as well as to groundwater related stewardship programs. CLOCA groundwater staff are active members of the York Peel Durham Toronto - Conservation Authorities Moraine Coalition (YPDT-CAMC) technical working group.

Planning & 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 behalf of the Province of Ontario on natural hazards, including areas susceptible to flooding, erosion and unstable slopes, under Section 3.1 of the Provincial Policy Statement (2005).
- Providing advisory comments on municipally initiated Official Plan and Zoning By-law applications.
- Providing advisory comments on planning applications and technical reports initiated by private landowners and developers:
- Official Plan and Zoning By-law Amendments
- Draft Plans of Subdivisions/Condominiums
- Consents
- Minor Variances
- Site Plan
- Provide information to clients on natural heritage features and systems:
- Wetlands
- Shorelines of lakes, rivers and streams
- Ravines, valley, river and stream corridors
- Significant natural areas
- Groundwater
- Fish habitat protection

Regulations

CLOCA also administers Ontario Regulation 42/06 under the Conservation Authorities Act, requiring technical reviews and permits for development proposals involving activities adjacent to watercourse, wetlands, shorelines and hazard lands, as well as any activity that causes interference with a watercourse or wetland. 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. Staff are also involved in public education and seeking compliance with the regulation.

Statistics 2011

Our watershed municipalities circulated municipal policy documents and development applications for 215 planning applications as follows:

- 18 Official Plan Amendments
- 29 Zoning By-law Amendments
- 52 Site Plan Applications
- 38 Plans of Subdivision/Condominiums
- 47 Land Divisions
- 31 Minor Variances
- 30 Special Studies (EA's, Master Drainage/ Environmental Servicing Plans, Secondary Plans, Good Forestry Practices applications)

In 2011, staff continued to participate in comprehensive official plan reviews for the Town of Ajax, Municipality of Clarington, and Town of Whitby.

Under the authority of Ontario Regulation 42/06, staff issued 246 permits for activity/development within our Regulated Area. 6 Notices of Violation were issued for work done without the necessary approvals. 4 of the 6 violations have been resolved without the need for convictions before the courts. The 2 outstanding violations are still being pursued with the objective of resolution in 2012. Staff also commented on 66 legal inquiries and provided 51 letters of advice for fisheries matters under our agreement with the Department of Fisheries and Oceans.

Proposed Amendments to O.Reg.42/06

Following direction from the Province, CLOCA prepared the amendments to O. Reg. 42/06 to simplify, streamline and clarify the permitting process.

O. Reg. 42/06 - Regulation of Development, Interference with Wetlands and Alteration to Shorelines and Watercourses requires that activities within regulated areas must first obtain

permission from CLOCA prior to being undertaken.

The amendments to the regulation:

- Enable CLOCA to delegate powers under the regulation including the power to make positive permit decisions to staff;
- Allow for extending the maximum period of validity of a permit from 24 months to 60 months under certain criteria and conditions; and
- Add clarity to the intent of the regulation.

It is anticipated that Ministry approval of the amended Regulation will occur in 2012.

Large Scale Fill Operations within the CA Regulation Area

In October 2011, CLOCA adopted a revised large fill policy. The original policy approved by the Board in April 2010 was one of the first large fill policies put in place by a conservation authority and provided a sound framework for reviewing large fill applications.

Since 2010, CLOCA and many other conservation authorities and municipalities gained experience and learned lessons in reviewing applications and addressing on-going issues. Authority staff attended several meetings with municipalities, conservation authorities, provincial ministries and contractors in an effort to discuss and establish a coordinated approach to large fill applications and operations. The revised policy includes revisions to ensure matters, such as appropriate locations for fill sites, impacts to drainage patterns, fill quality and municipal coordination are addressed through the review of applications and ongoing monitoring in a consistent and coordinated approach.

CLOCA continues to work with Conservation Ontario in the development of model conservation authority policies for large fill sites.



Partnership Memorandum with the Region of Durham

In May 2011, CLOCA endorsed an updated Partnership Memorandum between the Region of Durham and the five member Conservation Authorities (CAs) having jurisdiction within Durham Region. The original Memorandum provided that the CAs will perform a technical advisory role to the Region. The Region will circulate planning applications to the CAs for their review and comment as it relates to natural hazard, natural heritage and stormwater management issues. Additionally, CAs are to advise of any approvals required under the federal Fisheries Act.

The Memorandum was last reviewed in 2004 and no changes were recommended at that time. However, since 2004 there have been a number of planning initiatives that warranted another review of the Agreement.

The updated Memorandum was also endorsed by the other CAs in Durham Region and was subsequently approved by Regional Council in July 2011.

Watershed Planning

CLOCA'S Watershed Planning Program

In 2011, CLOCA's watershed planning program continued to advance with completion of Phase 1 & 2 work for 3 watersheds, and release of the draft Watershed Plan for Lynde Creek on December 15th, 2011. An important component of the watershed planning program is stakeholder consultation and in 2011, 3 Public Information Centres were held along with 7 sessions with targeted stakeholders.

Phase 1 work includes documentation of hydrology, hydrogeology, aquatic, terrestrial, wildlife, ground and surface water quality and quantity, existing land cover, landform, impervious cover, water budget, green space and wetlands, essentially providing a point in time characterization of watershed conditions. Establishing baseline watershed characteristics is necessary for anticipating and predicting watershed responses to future changing conditions including growth and climate change.

Watershed Management

This information is also used to monitor changes in watershed health and in the evaluation of implemented watershed plan recommendations. Phase 1 work was completed in 2011 for the Black/Harmony/Farewell Creeks, Oshawa Creek and Bowmanville/Soper Creeks watersheds.

Phase 2 work includes setting the watershed targets depicting the desired conditions for the watershed, undertaking modelling to assess how the watershed will respond to future changes, and lastly development and evaluation of 8 alternative management options to determine which option will achieve watershed targets. The completion of this work for the Lynde Creek, Oshawa Creek and Black/Harmony/Farewell Creek watersheds in 2011 satisfies legislative requirements to assess the impact of future growth and change in the watershed. In addition to water budget modeling, characterization of the future growth impacts on the water budget and evaluation of the impact of future watershed changes on imperviousness was assessed for each of the four watersheds.



The draft Lynde Creek Watershed Plan (Phase 3) was completed and released for public consultation on December 15th. In recognizing the unique urban, rural and natural environment

conditions which currently exist in the watershed and consideration of future growth and watershed changes, the Plan provides recommendations and actions which ensure available and sustainable watershed resources for future generations. This Plan is a definitive tool to guide decisions made by CLOCA, local and regional municipalities, planning authorities, agencies and other stakeholders to manage watershed resources. Upon completion of consultation, this Watershed Plan will be finalized.

Robinson Creek and Tooley Creek Watershed Management Plan

The Authority participated in the development of the Robinson/Tooley Creek Watershed Plan which was led by Municipality of Clarington. CLOCA provided data, technical review and support, and advice to ensure consistency in the development

of this watershed plan with the Authority's watershed planning framework. Staff also participated in the public consultation process, attending Public Information Centres and some stakeholder meetings. This watershed plan was completed in 2011 and it provides recommendations that will work toward achieving a healthy watershed while also guiding development in a manner consistent with protecting and restoring watershed health. CLOCA has had an integral role in the preparation of this Watershed Plan and the Authority will continue to play a key part in the implementation of the Robinson Creek and Tooley Creek Watershed Management Plan.

Highway 407 East

The Ministry of Transportation of Ontario (MTO) continues to advance the Highway 407 East project, with anticipated construction commencing in 2013 and finishing in 2020. This project will entail construction of a divided highway that will bisect CLOCA's watershed with a 30 kilometer length in an east-west orientation. The project also includes two highway linkages between the future hwy 407 and hwy 401.

CLOCA staff from natural heritage, planning and engineering departments have invested considerable time over the past years with the review and comments associated with the Highway 407 East Environmental Assessment, and more recently the preliminary design for the Phase 1 highway works. CLOCA is a member of the Highway 407 East Advisory Committee, and also hosts monthly Environmental Agency meetings that include MTO and their environmental and engineering consultants, Conservation Authorities, Environment Canada, Department of Fisheries and Oceans, and Ministry of Natural Resources.

The proposed Highway construction works will require about 60 stream crossings and the removal of significant wetland and forest habitats. The Highway will have an impact on natural corridors both in an east-west and north-south directions. Our natural heritage staff continue to work with the MTO consultant team to address impacts to terrestrial and aquatic systems. Although MTO and the consultant teams have been receptive to comments and concerns from CLOCA, the project will have impacts on our natural systems that are too great to avoid, mitigate, or compensate. That being said, CLOCA and our neighbouring

Conservation Authorities are committed to ensuring the project is completed in the most environmentally sensitive manner as practical.

The Conservation Authorities need to remain involved through the design and construction stages of the project to ensure the recommendations and directions provided in the Environmental Assessment are implemented.

The construction of the highway and the multiple stream crossings will have an impact on the quality of water in our streams, and we need to ensure the stormwater measures implemented will mitigate impacts to the greatest extent possible, and that post construction surface water quality monitoring be completed to ensure the works provided perform as expected.

Conservation Authorities Moraine Coalition & Oak Ridges Moraine Watershed Assessment

CLOCA continued to participate in the Conservation Authorities Moraine Coalition (CAMC) in 2011. The CAMC and the nine Oak Ridges Moraine Conservation Authorities partnered with the Oak Ridges Moraine Foundation in the preparation of the report entitled "Assessing the Health of the Oak Ridges Moraine in a Watershed Context". This report is one in a series of 8 reports entitled "Measuring the Success of the Moraine" which was released by the Oak Ridges Moraine Foundation in 2011. The Watershed Health report CLOCA contributed to assesses the ecological health, hydrologic health, and describes the extent of monitoring commitment (recurring and sporadic) being conducted on the ORM. The cumulative result of this information provides an excellent comparative assessment of the environmental health of watersheds across the Moraine. CLOCA and the other Conservation Authorities provided advice regarding measurable environmental indicators and offered a suite of data and relational mapping. It is clear that while there is an abundance of data regarding environmental conditions on the Moraine there are significant gaps in this information, including standardization of the data. The report recommends that the Oak Ridges Moraine

Foundation and the Conservation Authorities, with support from the Province, continue to build on the monitoring work undertaken to date in an effort to attain a standardized ORM Watershed Assessment model.

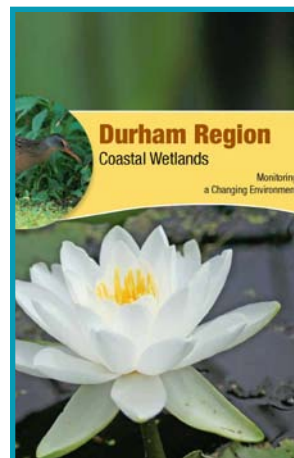
Durham Region Coastal Wetland Monitoring Program

The Durham Region Coastal Wetland Monitoring Project (DRCWMP) is a multi-agency, multi-year initiative which monitors annually the biological and geophysical conditions of 18 coastal wetlands within Durham Region. As of 2011, 10 years of data have been collected for the DRCWMP.

Activities in 2011 included the monitoring of the bird, amphibian, fish, macroinvertebrate and submerged aquatic vegetation communities, as well as water quality and water levels. Additional monitoring included the Ecological land Classification of Whitby Harbour Marsh and its surrounding habitat, and visual surveys for turtles. Highlights in 2011 include the observation of two species at risk – Least Bittern and Blanding's Turtle. Continuing in 2011, CLOCA also conducted fish community monitoring in 5 coastal wetlands in the Bay of Quinte, supporting the Bay of Quinte Remedial Action Plan.



The Great Blue Heron is one of the birds being monitored.



In 2011, a fact book entitled Durham Region Coastal Wetlands: Monitoring a Changing Environment was published. This publication provides a description of the condition of each wetland's physical attributes and biological communities; and examines trends in these data. Encouraging trends include

Watershed Management

the improvement of water quality and submerged aquatic vegetation communities at several marshes where restoration work has been completed.

Hard copies of the report are available upon request from CLOCA. A pdf version of the document is available online in the Library at www.cloca.com

Surface Water Monitoring

The Central Lake Ontario Conservation Authority's (CLOCA) Water Monitoring Network is a collection of stream gauges, rain gauges, air and water temperature probes, groundwater monitoring wells, snow measurement sites and surface water and groundwater quality sites. This Water Monitoring Network and the valuable information collected from it, helps us better understand and predict the impacts of land use activities on water quantity. This knowledge allows us to make informed decisions about the management and protection of our water resources. The data is catalogued and analyzed to help develop effective watershed wide management programs and policies like our state of the art Flood Forecasting and Warning System, Low Water Response and Source Water Protection programs.

Each year we review the location of monitoring equipment and its effectiveness in recording the required data. We had originally installed a piece of equipment that would measure total precipitation at our Oshawa Airport monitoring site. After a few years of monitoring, we realize that this site was not suitable for proper snowfall monitoring and we started the process to relocate



The Howden Road rain gauge site in Oshawa.

the station to the City of Oshawa Works Yards on Howden Road and upgrade it to a full monitoring site. The new equipment will now monitor rainfall, total precipitation and air temperature. Due to wet fall weather and a high water table, the full installation was postponed until early spring 2012.

With Durham Region wanting to remove the chalet at Long Sault due to building maintenance issues, we had to remove a rain gauge and data logger from the building on October 21st.



Rain gauge and datalogger at Cane Crest.

A new home for the rain gauge was found not far away, at the Cane Crest property which provides a suitable location for the tipping bucket and logger. The equipment was installed the same day.

As an attempt to better monitor total precipitation (rainfall & snowfall), we are testing a heated tipping bucket rain gauge on Lynde Creek at the Kinsale stream gauge station.

The spring of 2011 was highlighted with above average rainfall throughout our watershed. Conditions started to change with June's rainfall averaging 66% of historic averages and July's rainfall averaging 35% of historic averages. These conditions caused baseflows in Lynde, Oshawa and Bowmanville creeks to reach average or slightly lower conditions requiring additional flow measurements. However, with late summer rainfall in August averaging 146% of historic averages and September rainfall averaging 100% of historic averages, baseflow within our creeks responded back to normal levels. No Low Water messages were issued in 2011.

Central Lake Ontario Conservation (CLOCA) in partnership with the Ministry of the Environment's Provincial Water Quality Monitoring Network (PWQMN) continues to conduct surface water quality sampling at nine sites, 7 months of the year, across our watershed.

Provincial Groundwater Monitoring Network

The Provincial Groundwater Monitoring Network (PGMN) is a network of about 470 water wells across the province used to collect water level and water quality information. This program is a multi-agency effort between the province, municipalities and conservations authorities. PGMN is designed to collect ambient groundwater level and groundwater quality data from key aquifers in Ontario. The data collected provide baseline information for the various provincial and municipal programs including, but not limited to, source water protection (SWP), water taking assessment (PTTW), low water response, nutrient management, watershed management, development reviews and addressing conflicts related to groundwater interference. Data were also used to calibrate the hydrological model developed for the SWP Tier 1 water budget study.

Central Lake Ontario Conservation Authority (CLOCA) initiated its PGMN program in 2002 with 16 wells and is currently collecting hourly water level data from 14 PGMN monitoring wells after two wells were decommissioned for technical reasons. Water samples are collected twice a year (spring and fall) and sent to the York-Durham Environmental Laboratory and the Ministry of Environment Laboratory for physical-chemical analysis. Laboratory tests are performed in accordance with the protocol set by the Canadian Association for Environmental Analytical Laboratories (CAEAL).

The program is currently undergoing significant improvements. The telemetry systems on seven wells were upgraded to digital; replacing the older analog system that service providers are phasing-out. Solar panels were also installed in each of this monitoring station to address the issue of power drain which translates to data losses. Moreover, a new protocol on data collection and processing was prepared to assure the quality of data available for various stakeholders to use.

In December 2011, MOE approved the inclusion of a "Golden Spike" or high quality borehole to the monitoring network. This well located in Purple Woods Conservation Area in North Oshawa will be instrumented with level logger in 2012.

Flood Forecasting & Warning System

Throughout the year, CLOCA monitored and reported water conditions through High Water Safety Bulletins, Flood Advisories and Shoreline Hazard Warning. In total 9 notices were issued in 2011 and staff completed flood watch duties as per CLOCA's Flood Contingency Plan and conducted both remote monitoring from telemetry gauging stations as well as field observations and recordings.

Throughout 2011, staff from the Engineering and GIS departments worked on completing the background material for the flood damage centre map sheets and the flood vulnerable structure database. Flood Damage Centres (FDC) were established throughout our watershed defined by at least one structure within the Regulatory Floodplain. Within each FDC, the flood line associated with each of the 5 stages of flooding was generated and mapped. The map sheets were developed to show the FDC's, flood lines and the stage at which road structures would be impassable (colour coded). The FDC mapping is now complete and will be released to municipal partners and emergency responders in 2012.

GIS staff have been working on web products to make our mapping and database information available to our municipal partners and the public. Three products will be offered:

1. Flood Forecasting & Warning Web Application

- View current rain totals and water levels
- Flood vulnerable structures & queries

2. CUAHSI (Consortium of Universities for the Advancement of Hydrological Science Inc.) Data Management Module

- View monitoring data
- Graph data
- Export data

3. Geoserver

- View and download digital products and layers

These products will be available early in 2012 for municipal, consultant and public use and updated as new floodplain mapping is completed within our watershed.

Floodplain Mapping Update

Floodplain mapping has come a long way over the past 30 years. Maps are now overlain onto current aerial photos, contain detailed notes and symbology, utilize sophisticated digital elevation models and associated digital data sets and are linked to hydraulic models. The maps are an important component of CLOCA's flood forecasting system and are essential for development review. Last year, staff prepared base data for Oshawa and Westside Creeks, which laid the groundwork for the creation of the floodplain maps. This year a hydrologic and a hydraulic model were created for each watershed using that base data. The modelling is currently being finalized, reviewed and tweaked in cooperation with our municipal partners. Map creation will commence once the models are completed and approved.

Biennial Lake Ontario Shoreline Surveys

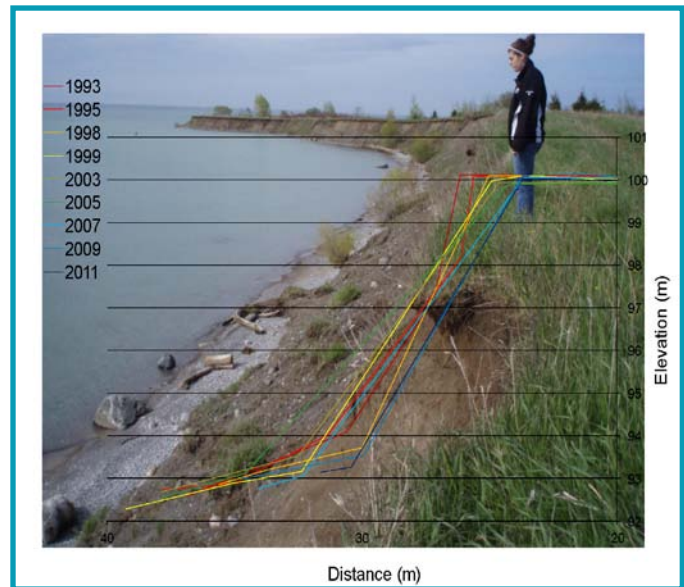
The Lake Ontario Shoreline Monitoring Program is a continuation of the original Canada/Ontario Great Lakes Erosion Monitoring Program that was carried out from 1973-1981 by Fisheries and Oceans Canada. Following the termination of this program in 1982 the Ministry of Natural Resources, in partnership with the Conservation Authorities, continued to monitor the sites located within their jurisdiction.

Every other year, surveys are completed at 8 bluff features along the Lake Ontario shoreline within CLOCA's watershed. These surveys provide insight on the erosion processes that continually impact these shoreline features.

The survey data is plotted against previous years, and biennial erosion rates are calculated. The extensive period of record is important to provide significance to the data, and to provide long term trends. On average, the shoreline surveys show that our bluffs erode at an average rate of about .15 metres per year. Obviously, not all years are equal, and shorelines can be static for some period

of time, or move significantly after one single storm event.

Through our Regulation 42/06, CLOCA regulates any development within the erosion hazard of Lake Ontario. The shoreline surveys provide data to help in the determination of the hazard limit, and are useful when explaining the hazard of shoreline erosion to watershed residents.



The erosion rate displayed from the Monitoring Program.

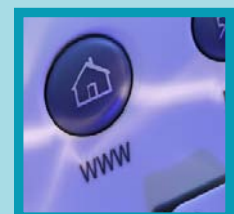
See Us On The Web

Information Is Just A "CLICK" Away.

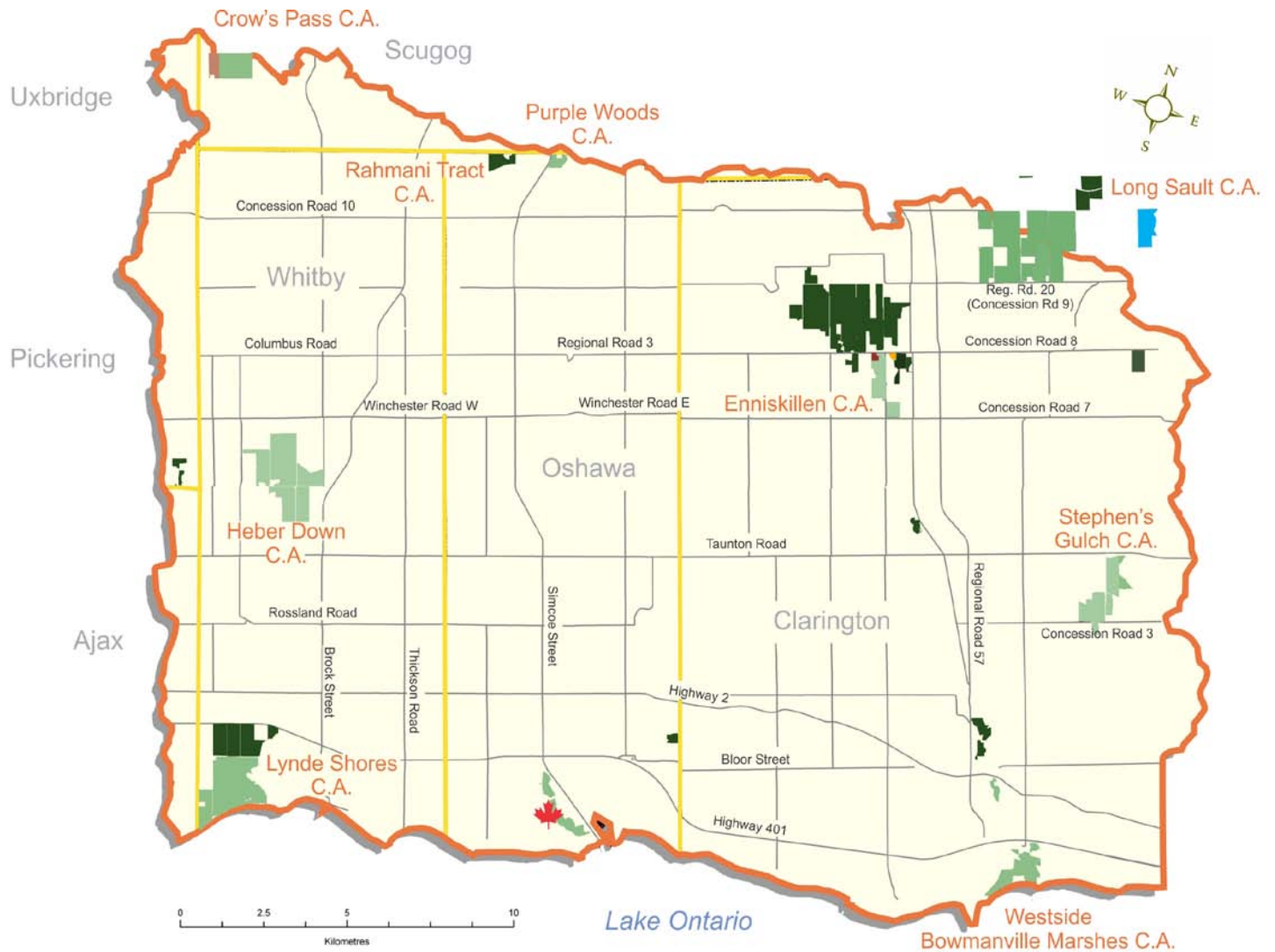
Central Lake Ontario Conservation is committed to keeping the web site fresh and up to date. The following information is just a click away:

- ~ Flood and water level status
- ~ Homeowner information
- ~ Invasive species information
- ~ Library section
- ~ News items,
- ~ Conservation area brochures and more.

In 2011 a total of 121,317 visits were registered at the CLOCA website.



Conservation Areas & Land Holdings



- | | | | |
|---|---|---|---|
|  | <u>Crow's Pass C.A.</u>
Morehen Tract |  | Conservation Areas
(Public Access) |
|  | <u>Long Sault C.A.</u>
Darlington Forest Tract |  | Conservation Areas
(Limited Public Access) |
|  | <u>Enniskillen C.A.</u>
Christie Tract |  | Central Lake Ontario Conservation
Watershed Boundary |
|  | Goheen Tract | | |
|  | Municipality Border | | |

Land Acquisition

Long Sault Conservation Area Darlington Forest Tract

The Darlington Forest Tract is a 57.5 ha (142 acres) property located within the heart of the Oak Ridges Moraine, and just a couple of kilometers east of Long Sault Conservation Area. The Darlington Forest Tract was historically a Ministry of Natural Resources Agreement Forest, and contains a healthy mix of mid-aged Sugar Maple / Red Oak forest and Red Pine plantation. Portions of the Oak Ridges Trail pass through this property. Formerly owned by the Municipality of Clarington, the Darlington Forest Tract was acquired from the Municipality in exchange for portions of the Bowmanville Creek valley that were owned by CLOCA within the Bowmanville Urban Area.



Soil samples being taken by staff from Darlington Forest.

Enniskillen Conservation Area - Christie Tract & Goheen Tract

Two additional parcels were acquired within the Enniskillen valley in 2011. The Christie Tract 4 ha, (10 acres), and the Goheen Tract 3.6 ha (9 acres) are both contiguous with landholdings in the southern half of the Enniskillen Conservation Area. Acquisition of the Christie Tract ensures public ownership of both sides of the main Bowmanville Creek tributary south of Regional Road #3, and provides long-term protection to the sensitive Cedar Swamp habitat found on the property. Acquisition of the Goheen Tract helps to protect a smaller tributary of the Bowmanville Creek, and lands that buffer more sensitive wetland habitats that lie directly to the east on lands already part of the Enniskillen Conservation Area. The Goheen Tract was secured as a result of the donation of these lands by Mr. Allan Goheen.



Christie Tract



Goheen Tract

Crow's Pass Conservation Area Morehen Tract

The newly acquired Morehen Tract, a 20.2 ha (50 acre) parcel that lies along the western boundary of Crow's Pass Conservation Area, significantly expands the size of this sensitive CLOCA landholding. The property contains a fine example of a mature Sugar Maple / Red Oak forest that extends across several parcels along this portion of the undulating Oak Ridges Moraine. The Oak Ridges Trail passes along the northern boundary of the Morehen Tract, just before it travels down into the heart of the Crow's Pass Conservation Area.



Morehen Tract

Conservation Areas

Conservation Area Developments

Regular snowfall throughout our Conservation Areas as we entered 2011 was prominent and provided our users with ample opportunity to get out and hike in the snow, bird watch, cross country ski or snow shoe. Along with the regular snowfall came the requirements for keeping our Conservation Areas clear and safe for public use. Conservation Areas that were cleared for public use during the winter months included the Lynde Shores Conservation Area, Heber Down Conservation Area, Enniskillen Conservation Area and Long Sault Conservation Area.



Long Sault Conservation is a favourite cross-country ski destination with over 18km of trails to be explored.

Small Drinking Water Systems Regulation

In the fall of 2010, Authority Staff had risk assessments performed on the drinking water systems at the Enniskillen Conservation Area and the Purple Woods Conservation Area, courtesy of the Durham Region Health Department. Directives were issued by Durham Region to provide improved filtration and water treatment equipment at both locations. Drinking water (for public consumption) is no longer provided at the Heber Down Conservation Area.

The necessary filtration and water treatment upgrades were completed between January and March 2011. Enniskillen Conservation Area and the Purple Woods Conservation Area now have state of the art water treatment equipment creating a safe environment for our users. Although the upgrades and new equipment was quite costly, the overall reduction of water sampling, lab analysis fees and staff time will be helpful.

Purple Woods-2011 Maple Syrup Production

Cool night time temperatures and warm daytime temperatures (ie. 4 – 8 degree celsius) made for ideal maple syrup production in 2011. For Authority Operations staff members Todd Backus, Jason Maas, Harry Hirschfeld, Ben DeWaal, Mike Hrynyk and Grant Shepley, full time hours in the sugar bush at Purple Woods commenced in February. Lines were repaired, new lines were run, buildings were opened and cleaned, sap collection equipment was repaired / cleaned and trees were tapped.

The goal of production staff is always to produce as much high quality syrup as is reasonably possible. In 2011 the weather cooperated. Authority staff finally reached the 1000 litre plateau by collecting over 40,000 litres of sap and boiling it down by wood fired evaporator to yield a final production total of 1,003 litres of syrup.

Stephen's Gulch Conservation Area Volunteer Bridge Project

On April 30, 2011, CLOCA coordinated a volunteer bridge building event at Stephen's Gulch Conservation Area. The new bridge crossing was constructed with the assistance of the Royal Bank of Canada and their employees. This project was completed with cedar lumber harvested from the Enniskillen Conservation Area.



The Royal Bank of Canada volunteers hard at work on the new bridge project.

New cedar lumber from Enniskillen.

Watershed Spaces

Conservation Area Tree Planting

With the arrival of spring, CLOCA partnered with a number of different groups to undertake tree planting projects within its conservation areas. Challenging spring weather conditions that included snow, sleet and pouring rain, were endured and 100 volunteers from the 1st Whitby Scouts, 1st Enniskillen Scouts, and the Faith Project planted approximately 2,000 trees at Lynde Shores and Enniskillen Conservation Areas.

Lynde Shores Conservation Area Recognition

In 2011 Whitby's Lynde Shores topped the national list of cleanest shorelines. Results from the Great Canadian Shoreline Cleanup declared Lynde Shores as 2nd in the country in the "least littered" category, declaring it one of the cleanest shorelines in the country. The site was evaluated as one of 1,200 sites across the country. CLOCA is proud of this declaration and wish to thank local residents for their efforts, as well as the efforts of staff in keeping the area free and clean of litter.

Enniskillen Conservation Area

Enniskillen Conservation Area falls under the hidden gem category. CLOCA areas staff worked closely with Outreach & Education staff on sprucing up the Enniskillen Education Centre. Inside the building, water treatment and fixture upgrades have been completed, as well as necessary safety upgrades to the chimney and venting for the wood stove.



The Enniskillen Education Centre after the upgrades done by CLOCA.

Areas staff continued to work on a new trail around the Enniskillen pond to enhance the environmental education experience. The trail is also being used as a demonstration site to test the performance of granite screenings.



Enniskillen pond, just outside the Education Centre.

While granite screenings are aesthetically pleasing they do not break down as quickly in the natural environment as the standard limestone screening trail surface. Kiosk relocation and additional boardwalk were also completed in the summer of 2011 in an effort to provide improvements to the overall trails experience at the Enniskillen Conservation Area.



The new granite screenings.



A relocated information kiosk on the repaired Enniskillen trails.

Heber Down Conservation Area

CLOCA Outreach / Communications / Education staff coordinated several outreach efforts that had a direct impact on connecting people with our Conservation Areas and most importantly with nature. Heber Down CA was the beneficiary of some hard work by CLOCA staff and Deloitte staff as part of the September 23, 2011 Deloitte Impact team building event.

Deloitte volunteers assisted with:

- Cleanup of the area in the former campground
- Construction of a new viewing platform at Devil's Den pond
- Construction of a new cedar safety railing around the pond
- Removal of old boardwalk, railings and posts along existing and decommissioned trails



The completed viewing platform at Devil's Den pond.



The new cedar safety railing installed by CLOCA staff around the pond.

Conservation Areas Workshop-October 24 to 26, 2011

Land Management and Operations staff were instrumental in organizing the 5th Annual Conservation Areas Workshop held October 24 - 26, 2011 at the YMCA Geneva Park in Orillia. The workshop yielded its greatest participation yet, going from 115 participants in 2010 to 155 participants in 2011.

CLOCA Lands & Operations staff benefitted from attendance at the following sessions:

- Green Infrastructure Initiatives
- Environmental Asset Management Inventories
- Fleet Management Initiatives
- Best Management Practices Maintaining Conservation Areas in the Winter
- Local Conservation Area field visits
- Training

Purple Woods CA Heritage Hall

The Purple Woods Conservation Area Maple Syrup Festival attracts over 1,000 visitors a day and has been challenged in recent years to accommodate increased attendance. Its inadequate parking, crowding, long line-ups and an outdoor eating area were just some of the challenges faced by our visitors.

Construction of the Heritage Hall and site improvements commenced in 2011 to provide:

- Adequate on site parking to eliminate traffic issues. The parking area will also include state of the art stormwater and groundwater recharge management.
- A large building (approximately 4,000 square feet) with kitchen facility, washrooms, a retail store, and eating area. The building reflects the rural cultural heritage of Ontario. Constructed using recycled wooden posts and beams Heritage Hall is located next to the sugar maple woodlot, with a beautiful view overlooking Lake Ontario. The building and parking lot expansion will address accessibility issues for all visitors.

Watershed Spaces

- Provision for extended use, beyond the festival, will be incorporated into the facility for community programs, private events and meetings.

CLOCA engaged the services of Ronald Awde Architect, DG Biddle Associates and Durham Energy Specialists Ltd. for the plans and approvals; and Aged Wood Construction and Gay Company Ltd. for building and site construction services. By the end of 2011, the project was on schedule to be completed for the 2012 Maple Syrup Festival.



Putting beams in place.



Announcing the start of the building project. (photo left to right) CLOCA Chair Mayor Pat Perkins, CLOCA Director Councillor Don Mitchell, Mayor John Henry (Oshawa), CLOCA Vice-Chair Councillor. Bob Chapman, CLOCA Director Councillor Larry Corrigan, Chair Roger Anderson (Regional Municipality of Durham).



Mild winter months aid in the completion of Heritage Hall.

Lynde Shores Conservation Area Management Plan

In 1999, CLOCA completed "The Web of Life: A Plan For Two Dynamic Coastal Wetlands". This document was a comprehensive management plan for Lynde Shores Conservation Area that laid the groundwork and direction for the long-term management of the property and surrounding lands. A number of more detailed complementary strategies were also developed soon after, and provided more specific guidance on some of the recommendations contained within the original management plan. Over a decade later, considerable progress has been made with respect to the recommendations established through the conservation area planning process, including the installation of a control structure and subsequent restoration of Cranberry Marsh; significant upgrades to public use infrastructure, the undertaking of new research and monitoring programs; the acquisition of over 500 additional acres of contiguous conservation land; and various active restoration projects over 100's of acres of previously disturbed land.

Recognizing the scope of the accomplishments that have taken place within and surrounding Lynde Shores Conservation Area for 12 years, and acknowledging the changes coming to the area over the next several years (including the Victoria Street Widening, Hwy. 401/407 interchange, increasing demand for recreational opportunities as a result of expanding populations within and around the Town of Whitby. A review and update to the Lynde Shores Conservation Area Management Plan was initiated in 2011. It is anticipated that an updated plan will be finalized by the end of 2012.



Remember to bring unsalted sunflower seeds to feed the chickadees at Lynde Shores Conservation Area.

Conservation Area Work Days

Once again, 100's of volunteer hours were logged in the Conservation Areas during various events and work day opportunities in 2011. While these work days provide volunteers with an alternative way to give back to their local communities, their helping hands allow CLOCA to undertake projects that would otherwise fall lower on the priority list due to staffing or funding constraints. This year's scheduled Conservation Area Work Days were held at Enniskillen and Heber Down Conservation Areas.

Enniskillen Conservation Area Work Day

Volunteers prepared and installed the pollinator garden surrounding the Enniskillen Education Centre. See pg. 27 for more details on this project.

Heber Down Conservation Area Work Day

Following recommendations contained in the newly finalized Heber Down Conservation Area Management Plan, volunteers helped remove the remaining boardwalk from a recently decommissioned trail. People power prevailed, removing pressure-treated boardwalk and footings in an effort to restore and naturalize a sensitive cedar swamp within the Heber Down Provincially Significant Wetland Complex. The new trail development completed in 2009 and 2010 helped facilitate this necessary trail decommissioning project.



Volunteers decommissioning the boardwalk.

Aquatic Monitoring Program

During the aquatic field season of 2011, Central Lake Ontario Conservation staff generally focused monitoring efforts on the Bowmanville and Soper Creek watershed. Aquatic Monitoring included collecting information on water temperature, benthos (aquatic bugs) and fish communities.

Temperature is an important factor with respect to habitat suitability for fish and other aquatic organisms. Approximately 79 portable water temperature data loggers were installed in various locations in May and remained in the creeks until winter. Temperature data is useful for understanding current conditions in our streams, but continued monitoring allows us to track changes occurring as a result of alterations in land use and climate change.

Staff collected benthos from 22 stream locations throughout CLOCA's jurisdiction. "Aquatic bugs" play an important role in monitoring water quality within our watersheds. Depending on the species and quantity of benthos found, we can determine whether or not the watershed is experiencing any impacts from stresses such as pollution, changes in water temperature and land use. This method of assessing water quality allows staff to survey larger areas and isolate stream sections that may need additional, more detailed and costly chemical sampling and analysis.



Staff collecting benthos (aquatic bugs) from a local creek.

Natural Heritage In Our Watershed

Spawning surveys involve observing indicators of fish spawning and are beneficial when describing watershed health. Indicators of spawning 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. presence of redds).



A redd, or nest, has been created by spawning Rainbow Trout.



Brown Trout



Two Rainbow Trout swimming upstream.



A close up view of an adult Rainbow Trout, one of the fish species studied through spawning surveys.

Sampling methods for capturing fish are sometimes not suitable for obtaining all data needed about a fishery and spawning surveys provide useful information for identifying critical spawning habitat. Many limiting factors may prevent a species of fish from reproducing young successfully. These include poor water quality, migration barriers, temperature, water levels and illegal construction work.

Fisheries stream sampling took place largely during July and August at 58 locations generally within the Bowmanville and Soper Creek watershed. A total of 6 Long-term monitoring sites



CLOCA staff using a backpack electrofisher to conduct fisheries sampling.

were conducted within 6 different watersheds. Trout are known to require good water quality; Brook Trout, also known as speckled trout (a cold-water species) in particular occur in clear, cool, well-oxygenated waters (Scott and Crossman, 1973). Brook Trout are commonly used as indicators of a healthy, aquatic ecosystem.



Brook Trout

For more information regarding CLOCA's Aquatic Monitoring Program, please refer to the 2011 Aquatic Monitoring Program report available online at www.cloca.com.

Wildlife & Targeted Species Monitoring Programs

This year, CLOCA's wildlife monitoring program included bird monitoring in CLOCA's Small watersheds, which occur along the Lake Ontario shoreline. A relatively high diversity of birds were identified in the small watersheds, most likely because the shoreline contains unique habitats like coastal wetlands and bluffs. Forest Bird Monitoring sites within the Heber Down and Long Sault Conservation Areas, which are surveyed annually, were also completed. Numerous species of interest were observed, including Hooded Warbler at Long Sault (Special Concern in Ontario) and Barred Owl.

No salamander monitoring took place in 2011, but roadside amphibian surveys were introduced to the watershed monitoring program, providing staff with valuable insight into the frog and toad distribution across the small watersheds.

Owl surveys also took place in the small watersheds, with no positive responses heard.

Incidental observations in 2011 included two Blanding's turtle (Threatened in Ontario) sightings in previously unidentified habitats. Both observations were made on roads and one turtle was dead.

The 2011 Wildlife Monitoring Report, an in-depth discussion of the wildlife information, may be viewed online in the Library at www.cloca.com.



A Warbling Vireo in its nest.

Road Ecology-Identifying & Improving Wildlife Passage Opportunities

As part of CLOCA's watershed planning process, an inventory of culverts and bridges within the Natural Heritage System (NHS) was undertaken to assess the barrier effect of roads on wildlife movement. Over 70 sites in the Lynde Creek watershed were visited, and data was collected for each relating to culvert size, evidence of wildlife use, traffic, and presence of roadkill. Overall, the majority of roads in the watershed presented either complete barriers to movement or increased the risk of vehicle-related mortality to wildlife moving through the NHS. The results of this survey will be presented in the Lynde Creek watershed action plan: Wildlife Corridors Protection and Enhancement.



One of the culverts of the Lynde Creek Watershed.

Terrestrial Monitoring Program

In 2011 Central Lake Ontario Conservation staff began monitoring within the Pringle Creek Watershed, and revisited plots within the Bowmanville/Soper Creek Watershed. The Terrestrial Watershed Monitoring program focuses on Forests, Wetlands and Non-forested communities, including meadows and thickets. Five plots were installed within the Pringle Creek watershed: two forest, two wetland and one non-forested plot. Overall the average percent of non-native species within the systems were 26%, 20% and 67%, respectively.

Natural Heritage In Our Watershed

CLOCA staff conducted special monitoring projects in 2011 to provide data and insight for the future management of two programs.

1) During the confirmation of rare species noted in the Headgate Group of Companies EIS, a field of rare and uncommon plants was observed. To help protect these plant species, CLOCA permitted the transplant of these sensitive species to a site at Heber Down Conservation Area as part of the permit conditions. In 2011 monitoring took place to observe the success of the transplant. Over 200 plants of four species were transplanted and 35 plants were recorded during spring and fall observations; of the 35 plants transplanted, 3 of the four species were recorded. The species transplanted have varying flowering times, and



The Slender-leaved Gerardia- *Agalinis tenuifolia*.

some are biennial's, producing flowers only once every two years. Monitoring will occur again in 2012 to attempt to capture species that may have been missed in 2011.

2) Surficial groundwater levels and ground vegetation are being monitored at Heber Down Conservation Area at the Heber Down Provincially Significant Wetland complex to assess long-term changes. In 2011 water levels and vegetation plots were assessed, however it is too early to discern any results.

McLaughlin Bay Restoration Project

In 2011, CLOCA received funding from Environment Canada's Environmental Damages Fund to complete the first year of a three-year project to develop a restoration strategy for the McLaughlin Bay Marsh Provincially Significant

Coastal Wetland. This year's accomplishments have included:

- Establishing a steering committee involving 13 partner agencies,
- Collecting wildlife, vegetation and sediment data for the wetland,
- Collecting and analyzing water quality samples over multiple seasons,
- Purchasing and installing a temperature logger in the marsh,
- Completing drainage mapping and watershed boundary modeling, and
- Producing wetland bathymetry and sediment mapping (by CWS).

Additional funds were provided by Ontario Parks, a partner agency, to hire a consultant to complete a historical report for the wetland to assist with making restoration decisions.

The project is due to be completed in March 2013.



McLaughlin Bay Marsh

Invasive Species In Our Watersheds

In November of 2010, the CLOCA Board of Directors endorsed CLOCA's Invasive Species Management Strategy. In 2011 the CLOCA Invasive Species working group developed an implementation plan to allow for easy implementation and application for funding programs, of the management strategy, over a five year time-frame. The plan will be reviewed and updated on an on-going basis; however the working-binder format makes it easy for staff to tackle pre-defined projects as part of their work-plans. Some of the working groups accomplishments for 2011 include:

- Development of a suite of Best Management Practices
- Development of management plans for five Invasive Species Pilot Projects on CA lands
- Mapping of Invasive Species for the management plans
- Development of a Frog-bit removal protocol
- Invasive Species presentation for Durham Continuing Education and Garlic Mustard removal at Pump House Marsh
- Outreach initiatives at CLOCA's CA's and local events
- Installation of boot-scrubbers at 6 of CLOCA's CA kiosks
- Creation of Invasive Species signage for CLOCA's CA kiosks
- Giant Hogweed Management and Abatement Workshop
- Giant Hogweed Working Group initiatives, including a Front-line Municipal Staff Communication Package
- Contributing to the development of Provincial BMP's
- Contributing to Ontario Invasive Plant Council (OIPC) working committee
- Attending and presenting at the OIPC Annual General Meeting

Giant Hogweed Management and Abatement workshop

CLOCA staff continue to lead the way in addressing Giant Hogweed's many challenges. In the spring of 2011 CLOCA partnered with the Ontario Invasive Plant Council (OIPC) and Landscape Ontario (LO) to establish a list of organizations equipped and trained to manage Giant Hogweed and to host a workshop to inform land managers on abatement measures.

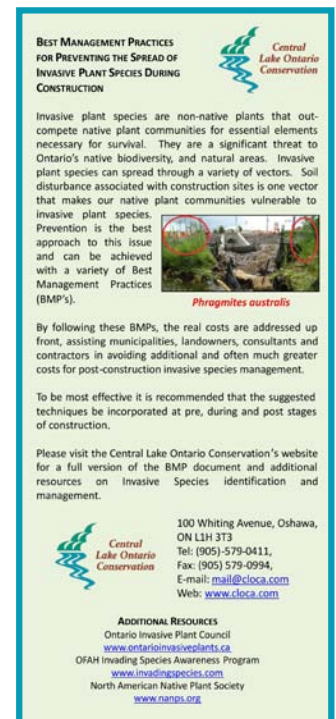
On March 30th 2011, 45 participants from landscaping organizations all over southern Ontario came out to learn about Giant Hogweed management at a half-day workshop. CLOCA enlisted a suite of expert speakers from the City of Brampton, Ministry of the Environment

(MOE) and Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA); topics ranged from Health and Safety, Pesticide legislation to current studies on management techniques. Overall the workshop was very well received, and the list of Giant Hogweed Managers is available to the public and can be found on the OIPC website. (Hyperlink to: <http://www.ontarioinvasiveplants.ca/files/GHManagementwebsitelist3.pdf>) or www.ontarioinvasiveplants.ca

Best Management Practices and Preventing the Spread of Invasive Plant Species

In CLOCA's ongoing efforts to address the introduction and spread of Invasive Species CLOCA's Invasive Species working group developed a suite of Best Management Practices (BMP). Two guidelines were developed for field staff working in terrestrial and aquatic environments; to compliment these BMP's handheld brushes were made available in all field-use vehicles to clean off equipment and footwear.

A BMP for Preventing the Spread of Invasive Plant Species During Construction was also developed in partnership with the Planning and Regulations staff to inform municipal staff, landowners, consultants and contractors of the real costs of invasive species management and how they can address these issues by implementing easy and practical steps prior to, during and after the construction phase. A full version of the BMP is available online, or at the CLOCA main office, as is a short pamphlet highlighting the effective steps to take.



Thanks to TD Friends of the Environment Foundation for their generous support and funding, CLOCA staff were able to compliment their field staff BMP's by installing boot-scrubbing stations at 6 of CLOCA's CA kiosks. In addition to



Natural Heritage In Our Watershed

the stations, signs were developed with this funding to inform CA visitors of invasive species, the threat they pose to biodiversity, our economy and recreation. The boot-scrubber stations and signage provided a great communication piece to educate visitors on preventing the spread of invasive species.



Boot-scrubber signage.

Turtles for Tomorrow

Ontario's native turtle populations are in decline and 8 of Ontario's 9 native species are considered Species at Risk. The loss of wetland habitat across the province has reduced suitable nesting habitat for turtles. Female turtles typically leave their resident wetland in pursuit of a suitable nesting location to lay their eggs. For the primary species of our project, Midland Painted (*Chrysemys picta*) and Snapping Turtle (*Chelydra serpentina*), this usually involves crossing roads and trails to lay



Photo courtesy of Ian McIver

A snapping turtle nesting by the side of a road.

their eggs along the sandy gravelly shoulders adjacent to these vehicle and pedestrian pathways. They lay up to 40 eggs in a small hole dug with their hind legs, and leave the nest, again crossing roads and trails to get back to their home wetland. The nests are often predated by small mammals like raccoons and skunks. They find the nests from the scent of the female and eat the eggs. If the nest is fortunate not to be disturbed and the eggs reach maturity, they will hatch at about 16 weeks. The young have the option of remaining in the nest until the following spring or leaving and heading to their parent's home wetland, again, crossing paths and roads which often result in significant mortality. It is likely the combination of wetland loss, urbanization and increased road densities in Southern Ontario that is responsible for the mature and immature live turtle mortality. The population of skunks and raccoons is also a significant contributor to nesting failure.

In 2011, CLOCA was fortunate to receive funding from the Shell Environmental Fund for the Turtles for Tomorrow Project. The intent of this project was to engage community volunteers in a hands-on program to collect and report data on native turtle nesting activity. This in turn would help us better manage for this species as well as create a better understanding around the protection of



A stack of turtle nesting protection structures.

wetlands in developing watersheds. In addition to collecting data, volunteers also engaged in nest protection activities to further assist CLOCA staff in protecting existing and identifying new nesting locations in our jurisdiction. The nesting protection structures are simple wire and wood boxes placed over the nests immediately after they are created and removed to allow the young to leave the nest.

In addition to the partnership with the Shell Environmental Fund we received financial and in-kind support from and Ontario Ministry of Natural Resources Community Fisheries and Wildlife Involvement Program (CFWIP) and TURTLE S.H.E.L.L (Safety, Habitat, Education, Long Life) respectively.



Learning about turtles and nature at the CLOCA Earth Day Event at Pumphouse Marsh.



Basking logs being set up by CLOCA staff and summer students at Pumphouse Marsh.

Provincial Watershed Report Card

Conservation Authority Watershed Report Cards focus on environmental measures in the resource categories of surface water quality, forest conditions and groundwater quality.

In 2001, The 2011 Guide to Developing Conservation Authority Watershed Report Cards was developed under the leadership of staff from Conservation Ontario and the 36 Conservation Authorities. It was a revision of Conservation Ontario's original 2003 pilot project entitled Watershed Reporting: Improving Public Access to Information.

In 2007, using these above guidelines, CLOCA produced their first report card, a document entitled Protecting our Watershed, a Watershed Checkup to communicate the health of our natural resources. It was designed to measure the impacts our living and lifestyles have had on our watersheds and showcase the



The 2007 Watershed Report Card is available in the Library at www.cloca.com.

steps we have taken to make improvements and work with our communities. It was a baseline, using data collected through our various monitoring programs from 2001 to 2006. We reported on the state of our forest, wetland and riparian cover as well as water quality in our creeks and groundwater. While our report card was well received, it like many others, revealed inconsistencies in the way we collected, analyzed and reported technical data, thus preventing a broader Provincial application of this important information. It was determined that a more standardized set of indicators and evaluations needed to be established and employed by all CA's in order to ensure improved consistency and use of information. As a result, throughout 2009 and 2010 CA staff worked collaboratively to review and update the 2003 recommendations. CLOCA staff were very involved in developing technical and communication aspects of this new template. We intend to use this template in 2012 to produce a standardized report card using data collected from 2007 to 2011. Conservation Authority experience in providing Watershed Report Cards to municipalities and other watershed partners has

Natural Heritage In Our Watershed

proven to be a very successful means of delivering vast amounts of technical information in an understandable format. The standardized format of the new guidelines is particularly beneficial to municipalities that cross more than one watershed boundaries as well as providing a provincial comparison. A copy of the recommendations, protocol and template is available at www.conservationontario.ca.

Watershed Stewardship

Private Land Tree & Shrub Program

The 2011 program, in its 6th consecutive year, faced the challenge of lower than anticipated sales. In total, we engaged 23 landowners with sales of just 3,100 trees, with approximately 25% of the landowners repeat customers. Our sales were down more than 50% from 2010. We attribute this “pause” to several factors including: Many of our repeat customers are now “planted out” and we endured an early and very long winter in 2011, which may not have necessarily had folks thinking about planting trees come order time in February. On a positive note, we introduced an online order form and payment system through Paypal in addition to the mail-in forms, which was very successful. Similar to 2010, we were able to keep our advertising costs down 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 29th pick up. A special incentive for “early bird” orders placed prior to March 11th, was a general admission family pass the annual Purple Woods Maple Syrup Festival. On tree pick-up day, at Enniskillen Conservation Area, landowners were provided with instruction on tree handling and planting as well as an array of publications on best management practices for rural properties.



Well Upgrade & Decommissioning Program

Groundwater, although virtually invisible, is an abundant resource comprising about 30 percent of the earth's available freshwater. In Ontario, groundwater is an important resource mainly because it is an immediate source of clean drinking water for residents in suburban and rural communities lacking access to municipal water supply systems. Moreover, groundwater, for the most part, is a steady source of water that sustains the flow in perennial streams even during periods of prolonged dry seasons. It is therefore imperative to maintain the quantity of good quality groundwater available for both human consumption and ecological requirements.

Conversely, contaminated groundwater aquifers are often costly to remediate due to the amount of time and effort involved. And there is no faster way for potential contaminants such as fertilizers, pesticides, de-icing salts and chemical spills to reach and spread across deep groundwater aquifers than through abandoned water wells or poorly-constructed and poorly-maintained active wells. Contaminated groundwater can impact nearby water wells tapping the same or connected aquifers and pose health hazards to humans. It can also be released as seepage and springs on surface water bodies and cause adverse effects on the aquatic environment. For these reasons, CLOCA, in partnership with the Regional Municipality of Durham, continues to assist residents in the proper decommissioning of unused and abandoned wells on their property as well as upgrade improperly constructed active private wells to meet provincial standards (O. Reg



One of the seven inactive wells being decommissioned.

903). Under the program, CLOCA hydrogeologists provide technical assistance, evaluate applications and process the program's financial grant to qualified private well owners.

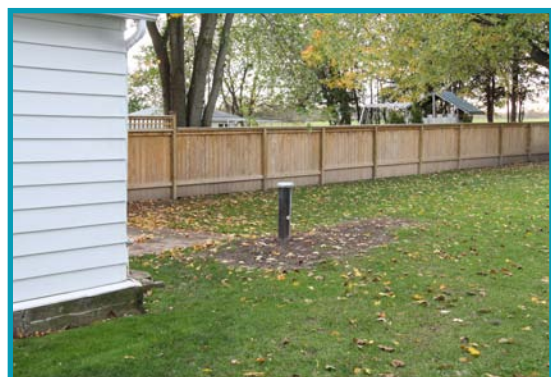
In 2011, the Well Decommissioning and Upgrade program successfully assisted CLOCA residents in the decommissioning of seven inactive wells and upgrade of two active water wells. Since 2004, the program has extended assistance in decommissioning a total of 48 unused wells and upgrading 25 active water wells.



A well prior to receiving an upgrade.



A well after the upgrade.



Another well following a decommission by CLOCA staff.

Taunton Road Slope Erosion Protection Demonstration Project

Following several heavy rain events in late summer, CLOCA staff observed a slope failure near one of our stream gauging stations. The site is adjacent to Taunton Road on the eastern tributary of Soper Creek. The failure was a significant section of steep valley wall that slid into the creek, partially obstructing the stream. CLOCA staff worked cooperatively with the Region of Durham to devise a plan to restore the site.

The Canadian supplier for a slope protection product known as EnviroLok was contacted. The Envirolok system consists of a series of filled polypropylene bags placed in battered courses along the desired slope face. The bags protect the slope and support plant growth, ultimately resulting in a fully vegetated slope. This product had been promoted at past Conservation Area Workshops, and the Canadian supplier had offered to provide free material and expertise for a demonstration project.

CLOCA completed a site survey, prepared a restoration design plan and quickly scheduled the work. With direction from EnviroLok, the Region constructed



The new Envirolok system installed by CLOCA staff on Taunton Road.

a jig to allow for the filling of the EnviroLok bags (approximately 200) and delivered them to the site. CLOCA manually prepared the site and installed the EnviroLok system. To provide additional protection against ice, an ice protection shield was included with the system and the Region delivered boulders that were placed along the toe of the structure. To complete the project, the EnviroLok bags were covered with a seeded soil matrix consisting of PermaMatrix Soil Amendment, native seed and a tacifier (adhesive), the upper slope was regraded, seeded with a native seed mix, and covered with an erosion control blanket.

Having completed the installation ourselves provides our staff with a better appreciation for the product and potential applications. A considerable cost saving was achieved by partnering with the Region and Envirolok Canada.

Purple Woods Maple Syrup Festival

The 2011 Maple Syrup Festival at the Purple Woods Conservation Area was another success, celebrating 36 years of community outreach with an estimated 15,000 visitors in attendance. The festival was held from Saturday March 12th through to Sunday March 20th and the weekends of March 26th/27th, and April 1st/2nd.

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

This year we were pleased to continue enhancing our Pioneer Schoolhouse, First Nations & Early Settlers features, as well as making general on site improvements for public enjoyment. Additional activities 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.

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, we continued to work with Ontario Power Generation, Ontario Works – Environmental Assistance Program, Oshawa Skeet and Gun Club, Caledon Propane, Tim Horton's, CKDO 1350, 94.9 The Rock FM and KX96.



CLOCA Director Councillor Ron Hooper and CLOCA Chair Mayor Pat Perkins serve up some delicious pancakes to festival visitors.

The 6th annual Community Food Drive collected over 80 kilograms of food to donate to the Salvation Army and Feed the Need in Durham.

The festival also provides an excellent volunteer opportunity especially for secondary students helping them achieve their community service requirements for graduation.

Durham Children's Groundwater Festival

The 14th annual Durham Children's Groundwater Festival held at Camp Samac in Oshawa, September 26th through to the 30th saw more than 4,000 grade 4 students over the five days. Through the hands-on interactive learning centres, 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 56,000 Grade 4 students have participated in the event and 6,000 secondary school students have hosted the activity centres. Our secondary school volunteer program provides trained youth coordinators at the learning centres. Many of them participated as grade 4 students in the past and their return as activity leaders inspires them to mentor and share their knowledge in a fun and exciting atmosphere.

This year saw the completion of an Activity Centres Instructional Video and digital manual for the high school students to use as part of their training. This resource will also be used to help train new Festival Coordinators, volunteers and others across the province.

This year marked the second successful "Litter less" Festival with a Boomerang Lunch being an overwhelming success. With the over 5,000 participants during the five day festival we collected a modest grocery bag of waste, most of which was accidentally left behind in the lunch tents.

The festival organizing committee is looking forward to the 15th year milestone in 2012, continuing to enhance and provide the experience and tools for students, teachers and volunteers to become water stewards in their homes, school and community.

In Your Watershed Education Program

Staff continue to prepare and upgrade our programs to fit into the new Provincial curriculum. "In Your Watershed" offers 13 programs to elementary schools and 2 programs to secondary schools within the CLOCA jurisdiction. These are all experiential hands-on, see and do activities, to reach a variety of student learning styles using all the senses. We engaged just over 5,500 students during the 2010/2011 school year. Our fall bookings increased substantially possibly with the new Teacher's Education Package. The package was designed in a grade by grade format to make the teacher's task of program selection easier. Education staff continued to work with Ducks Unlimited Canada to deliver their Project Webfoot wetland program; approximately 400 students took part in this program. Project Webfoot is funded through the annual Wetland Conservation Golf Event hosted by the Royal Ashburn Golf Club in partnership with CLOCA. See page 30 for more details.

One full time and one on-call instructor coordinate the bookings, develop and deliver the programs.



Teachers are able to select the program and the location for delivery - Enniskillen, Lynde Shores or Heber Down Conservation

Areas. The Enniskillen Conservation Area continues to be the most popular choice, this in part because of its modern facilities and indoor classroom space for inclement weather.

"Watershed In My Backyard", is offered at the teacher's school, eliminating bussing costs and gives students an opportunity to explore the watershed in which they live. Learning outcomes focus on aquatic and terrestrial systems as well as introducing students to wildlife through the use of our fur and skull collection. Staff deliver the program to incorporate single and multiple grades as well as special needs classes.

Enniskillen Education Centre Pollinator Garden

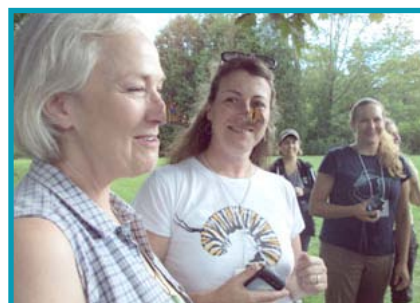
To help expand our hands-on learning outcomes, a native pollinator demonstration garden was created at the Enniskillen Education Centre. The garden was planted in June and was funded by a grant from TD Friends of the Environment Foundation. Courtice Secondary School students, under the supervision of Bruce Balsdon lifted and re-laid the existing interlock around the building and built planter boxes; Storm Stonescaping provided a custom butterfly walkway through the pollinator garden and community volunteers helped to prepare the beds and plant the native plants.



The new butterfly custom stone walkway.

Teachers Learn About Monarch Butterflies

The Enniskillen Education Centre was selected to host a Monarch Butterfly Teachers Workshop in August in partnership with the Monarch Teacher Network Canada. Through a generous donation from the Weston Foundation and in kind support from Toronto and Region Conservation, we were one of four workshops across Ontario. The 2 day event offered Durham teachers the opportunity to learn first hand about the life cycle of the monarch butterfly. By the end of the workshop, teachers were given all the equipment and information they needed to teach their students about the incredible life journey of this butterfly. Staff were able to raise and release over 50 butterflies and will incorporate their learning into programs for 2012.



The teachers interacting with the monarchs before their release.

Ontario Society of Outdoor Educators Annual Conference

In April staff attended a three day workshop held at Seneca College, King Campus. This 3 day workshop offered staff the opportunity to network with teachers and gain insight into how to improve curriculum connections. Staff attended workshops on eco-orienteeing, bio-diversity, wetlands, watershed presentation ideas and integrated learning through environmental inquiry. The keynote speakers were Charles Hopkins the UNESCO Chair and John Stager Ontario Chief Drinking Water Inspector. CLOCA education instructor, Cathy Grant was re-elected 1st Vice President with the Ontario Society for Environmental Education and will participate in the development of resources, newsletters and the 2012 conference.

Winter Feels Good! Snowshoe Program

The snow shoeing program was expanded in 2010 with a second donation of 25 pairs of adult snowshoes from Mountain Equipment Co-op. We now offer snowshoeing to students from K-12. To assist with rising bus costs, staff will go to the school and offer 1 or 2 hour programs. The 1 hour program allows us to see several classes over the course of a day; however it is dependent on good snow cover in our more urban areas of the watershed. This program was extremely fully booked in 2011 with such terrific snow cover.



A class gets their snowshoes on for a winter adventure.

Rekindle The Spark

CLOCA staff are active members of the organizing committee for this annual Conservation Authority collaborative workshop initiative that began in 1997. In 2011, the workshop was hosted by Ganaraska Region Conservation at the Ganaraska Forest Centre. This workshop provided staff with an opportunity to network with other CA educators, discuss curriculum connections and share program ideas. Staff have been able to use this experience to expand and enhance the In Your Watershed programs delivery and marketing.

Envirothon

Once again the Regional Envirothon competition was held at the Enniskillen Conservation Area, with a training day held at Ontario Power Generation Darlington. CLOCA staff participate on the organizing committee with the following partners: Ontario Power Generation, St. Mary's Cement, Ontario Forestry Association and Ministry of Natural Resources. We had 10 teams of 5 students participating in the event this year, with Pickering High School taking the top spot.

CLOCA staff member Kathy Luttrell gives students a lesson on tree identification at the Envirothon training day.



Tuesday's On The Trail

Every summer CLOCA education staff assist Ontario Power Generation with the delivery of their summer outdoor environmental education program. This year, we delivered the Boots and Bugs event on Tuesday July 12 to more than 100 participants. We provided activities that allowed parents and kids alike to explore wet and dry environments at the Darlington site. CLOCA received some excellent coverage by local media for this event.

Watershed Wilderness Nature Hikes

These free programs are offered to the general public to engage them in hands-on family experiences at our Conservation Areas. Our goal with this program is to take advantage of



Planting the pollinator garden.

seasonal changes in our watershed and provide our participants with the skills and comfort to explore natural environments on their own. Fun was had by all. Events included a volunteer appreciation snowshoe evening, family snowshoe day, pollinator garden planting and a Mother's Day wildflower hike and tea.



The tea is ready at the 4th annual Mother's Day Wildflower Hike and Tea.

Family Snowshoe Day

Our second annual Family Day Snowshoe at Enniskillen Education Centre was a great success with more than 300 people in attendance. The snow conditions were superb and the unexpected positive response overwhelming, as staff initiated a first ever waiting list for eager families. Some hot apple cider, fresh baked cookies, a warm fire and a variety of hands-on activities for kids of all ages gave our visiting friends and families a pleasant experience as they waited or recovered from their snowshoe. We anticipate continuing this activity in 2012 and look to opportunities at Purple Woods Conservation Area for a regular weekend snowshoe program during the winter months at Heritage Hall.



Families enjoy a craft and some hot chocolate after snowshoeing.



Enjoying family time while snowshoeing at Enniskillen Conservation Area.

Watershed Wilderness Nature Hike attendance numbers.

DATE	ACTIVITY	LOCATION	ATTENDANCE
Friday, February 4	Volunteer Appreciation Evening Snowshoe	Enniskillen	40
Monday, February 21	Family Snowshoe Day	Enniskillen	300
Sunday, May 8	Mother's Day Wildflower Hike and Tea	Lynde Shores	40
Saturday, June 12	Pollinator Garden Planting	Enniskillen	30

Wetland Conservation Golf Event- Royal Ashburn Golf Club

Once again, CLOCA partnered with the Royal Ashburn Golf Club, Ducks Unlimited Canada, and the Ontario Federation of Anglers and Hunters to deliver the Annual Wetland Conservation Golf Event. Described by participating golfers as “one of the best golf tournaments of the year”, the 2011 event generated close to \$50,000, bringing the total funds raised after three years close to \$150,000. Proceeds raised through this event go towards supporting wetland related stewardship projects and wetland education programs, including Ducks Unlimited Canada’s “Project Webfoot” program. Funds raised over the last three years through the event sponsorship option alone, will have resulted in well over 100 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 is now a designated delivery agent for the “Project Webfoot” program.

Plans are already being made for the 4th Annual Wetland Conservation Golf Event, which is scheduled to be held on August 21st, 2012.



Farm Connections

On April 5, 6 and 7, CLOCA staff participated in the 5th annual Farm Connections in partnership with the Region of Durham and agricultural stakeholders in our watershed. More than 1,200 grade three students from across Durham participated in the event. Students discovered the importance of farming through hands-on learning stations showcasing local farmers, their products, and how they get food to our tables safely and with respect for the environment. CLOCA staff and volunteers hosted the Soil & Water Learning Centre that gave the message of good land stewardship and what the students can also do to protect the

watershed. The evening public open house was also a great success with more than 750 people attending.



Soil & Water Activity Centre at Farm Connections.

CLOCA Staff Day Watershed Tour

Seeing an influx in new staff at CLOCA, a group of employee's came together to organize a staff day and highlight some of CLOCA's newest land-holdings as well as recently completed and on-going projects. The day took staff on a tour of the perimeter of CLOCA's jurisdiction. The tour started with a surprise truckload of pumpkins from Russ Powell's (CAO, CLOCA) farm, and a short introduction to CLOCA's newly installed solar panels. At Lynde Shores CA staff got to see the restoration that recently took place on the Chickadee Trail, and participated in fence building and Common Buckthorn (*Rhamnus cathartica*) removal; some staff even got the opportunity to offer the locals a pre-lunch snack.



CLOCA staff taking the time to feed some of the chickadee's on the trails.

CLOCA Staff removing Buckthorn from the trails.



Staff then made the long journey up to Purple Woods Conservation Area to get up close and personal with the new Heritage Hall.



Purple Woods Conservation Area Heritage Hall under construction.

Lunch was held at Enniskillen CA where staff walked the newest trail and learned about the future extension of Hwy 407 and what that means for CLOCA's watersheds. The bus then took staff to Long Sault CA to observe some uncommon tall-grass prairie species, and see the work being done to hinder the invasive Russian Olive (*Elaeagnus angustifolia*). The last stop was to the Bowmanville shoreline, where our hydro-geologists showed us varying layers of shale on the Bowmanville bluffs, and explained to CLOCA staff the geology of our watersheds. While it was a long and full day, it gave staff a glimpse of the complexities of our watershed and showcased some CLOCA watershed projects.

Watershed Heroes

Deloitte Impact Day

Every year for the past 4 years these folks – about 50 of them - volunteer for a day as part of their corporate Deloitte Impact Day, giving back in a variety of ways to their communities. As one of the few environmental volunteer activities offered in Durham Region, and with a never ending "honey-do list" the Deloitte volunteers have come to our Conservation Areas and built and signed trails, installed fences, removed trails and decommissioned old boardwalk, planted native trees, improved habitat for local wildlife and built viewing platforms. If you have been to the Chickadee Trail at Lynde Shores Conservation Area or pond at Heber Down Conservation Area lately, you have likely seen some of their excellent handiwork. In total they have contributed more than 1,000 hours of volunteer service to our projects and we thank them for their continued support.

Earth Day

As is our tradition, we host an annual Community Earth Day at one of our Conservation Areas. For the first time ever, we hosted the event at a location that was not part of our landholdings, but near and dear to our hearts nonetheless. We hosted about 60 volunteers, including Mayor John Henry and Oshawa Councillor and CLOCA Vice Chair Bob Chapman, at Pumphouse Marsh in



Volunteers plant native trees and shrubs along the trail at Pumphouse Marsh.

Oshawa. This wetland is part of CLOCA's Durham Coastal Wetland Monitoring Program and the focus of a couple of habitat improvement and citizen scientist monitoring projects. Our volunteers helped us build 30 turtle nesting protection structures, plant 300 native trees and shrubs, cleanup the trails and shorelines of garbage and relocate a large viburnum shrub from our preferred boat launch location. Thanks to funding from the Ontario Ministry of Natural Resources Community Fisheries and Wildlife Program (CFWIP) and Shell Environmental Fund for providing the resources to purchase materials.



Oshawa Mayor John Henry (Left), CLOCA Vice-Chair Councillor Bob Chapman (Right), build a turtle nesting protection structure during Earth Day at Pumphouse Marsh.

Watershed Awards 2011

The 11th Biannual Watershed Awards were presented to 13 recipients at Central Lake Ontario Conservation's board meeting in Oshawa on November 15, 2011. The Watershed Awards were developed to give recognition and show appreciation for outstanding environmental contributions made by the community for the stewardship and enhancement of our watersheds.

The following is a list of the **Watershed Award recipients**:

- John Storm
- Deloitte
- EJLB Foundation



Deloitte staff are presented with their Watershed Award. In the picture (left to right): Sharon Woolley (Deloitte), CLOCA Chair Pat Perkins, Dawn Schope (Deloitte) and CLOCA Director Councillor Lorne Coe.

Project: Durham Children's Groundwater Festival

- Cargill Foundation
- Children's Water Education Council
- Ontario Power Generation
- RBC Foundation
- Works Department, Regional Municipality of Durham
- TD Friends of the Environment Foundation
- TransCanada

Special Recognition

The Special Recognition Watershed Award recognizes continuing leadership and contribution towards the health of CLOCA's watersheds. Recipients may be from any of the other categories and may not be presented every year.

2011 Special Recognition Award Recipients

- Public Works, Town of Whitby

Project: Durham Children's Groundwater Festival

- Municipality of Clarington
- Scouts Canada - Camp Samac



Scouts Canada, Camp Samac is presented with a Special Recognition Watershed Award. In the picture (left to right): CLOCA Director Councillor John Neal, CLOCA Chair Mayor Pat Perkins, Ryan Worden (Camp Samac), CLOCA Vice-Chair Councillor Bob Chapman.



Ontario Power Generation receives their Watershed Award. Picture (left to right): CLOCA Director Councillor Ron Hooper, CLOCA Chair Mayor Pat Perkins, Jennifer Knox (OPG), CLOCA Director Councillor Mary Novak.

Solar Application at CLOCA Office

CLOCA's venture into solar electricity generation under the Province's Micro Feed – In Tariff Program is performing at or near capacity. The solar panels installed at the office facility went online on April 21, 2011. It is anticipated that a full year of generation will produce approximately 12,000 kWh of electricity being fed back into the grid. That is equivalent to 7,350 kg of CO2 saved or driving your car (20 mps) a distance of 10,500 km.

Workplace Violence and Harassment (Bill 168)

CLOCA is fully compliant with the development of policies and procedures under Bill 168, an amendment to the Occupational Health & Safety Act. Workplace Anti-Violence and Workplace Anti-Harassment policies have been adopted; risks in the workplace have been identified and controls have been put in place to mitigate risks; staff have been trained and reporting measures and procedures are in place.

Accessibility for Ontarians with Disabilities Act (AODA)

CLOCA is committed to increasing accessibility for persons with disabilities who visit, work or conduct business at any of CLOCA's facilities. CLOCA has adopted a plan to proactively identify and remove barriers to insure that persons with disabilities receive service in a respectful way. CLOCA's Accessible Customer Service Plan is posted on the CLOCA website (www.cloca.com) which includes our Accessible Customer Service Policy.

Enterprise GIS

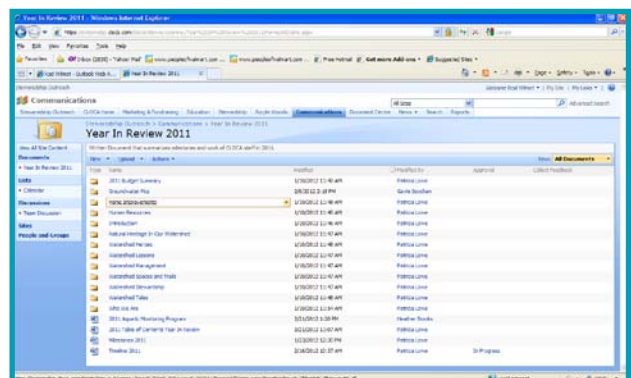
The Authority ventured down the road of implementing an Enterprise GIS back in 2008. This multi-year program, benefiting all business areas of the Authority providing the capacity to distribute GIS functions and data while taking advantage of integrating functions and data offered by other technologies. The Enterprise GIS supports the full

lifecycle of spatial content from its initial creation to its eventual use.

In 2011, the capacity building of Enterprise GIS was completed (installation, configuration and implementation) and the Authority moved into creating business process driven applications. One example is the ability for staff to quickly view spatial operational information related to addresses stored inside the authority's document information management system. This empowers staff to make informed decisions without having to submit a request to GIS. The efficiencies gained here provide the much needed time for GIS staff to maintain the data and increases the accuracy and confidence level in the information being accessed.

MS SharePoint Intranet

The GIS/IS Department has dedicated significant resources to deploying the MS Office SharePoint Server in 2011. MS SharePoint is a document management, communication and collaboration software package. It allows staff to share documents, calendars, tasks, and announcements for large scale projects and programs. It provides communication tools through the use of alerts, discussion boards and blogs. Staff have the power to post information to departmental, team sites and project sites. In addition, the ability to retrieve information will be improved via full text searching of Authority documents, similar to Google. As staff has become more familiar with the MS SharePoint environment, they have started to move their projects into it taking advantage of the MS SharePoint features. MS SharePoint allows staff to use approval workflows, document security and secure external access all by way of their browser.



SharePoint being used to create the Year In Review document.

CADIMS

The summer of 2011 saw the Authority deploy its document information management system(CADIMS) to staff. The application was built upon the Microsoft SharePoint Server technology and enables staff to take advantage of its Microsoft Office integration. CADIMS allows users to manage their documents, assign tasks and monitor workflows. The GIS/IS staff are always looking to incorporate the feedback of its users to ensure adoption of the program throughout the organization. The GIS/IS staff have incorporated web mapping services and applications into the CADIMS workflow to provide quick and easy access to the location information. The coming year will see the migration of the CADIMS system to MS SharePoint 2010 which will lead to enhanced performance including searching and reporting. Once complete the GIS/IS team will work with other Authorities to deploy the system in their organization.

Conservation Authorities Collaborative Information Sessions (CACIS)

The Conservation Authority Collaborative Information Sessions is an annual event which brings CA GIS and IS staff together from across the province to present and discuss topics. This past May, LSRCA and CLOCA developed and coordinated the event. The event had the highest participation to date with attendees from 32 Conservation Authority's. This year was the first time sponsors/exhibitors were formally invited to the event and a total of 9 attended. CLOCA provided two presentations one titled Road Map to Enterprise GIS and the other, Tips and Tricks with ArcGIS 10. The event was a great success and helped to raise the profile of CLOCA initiatives amongst our partners and in the GIS community.



Job Creation Partnership Program

The Authority was approved for an Ontario Job Creation Partnership (JCP) Grant to hire five individuals for 42 weeks. The duration of the program was 10 months and positions have provided much needed support to GIS for flood forecasting and warning and related programs, web mapping development, data accessibility, database development, accounting applications, improved business processes and human resources responsibilities under the Bill 168 and Accessibility for Ontario with Disabilities Act (AODA).

In 2011 through the JCP program members began work on the Flood Vulnerability Common Operating Picture (COP) project. It was designed to meet the needs and requirements of all CLOCA departments with input from professional engineers, planners and scientists. The tools and functions of COP were created by the GIS department with input from users and viewers of the final product. While CLOCA had existing infrastructure in terms of flood information gathering, COP combined several resources and tools into a single viewer to streamline data dissemination. Instead of relaying information between staff members within CLOCA and with municipal partners, COP allows end-users to quickly view the data from their personal desktop computer and make immediate decisions. By creating secured logins, members of local governments can view, download and process data gathered by CLOCA for their own unique needs and decision making. COP is created in a web environment so users can access near real-time information from their desktop computers, mobile devices and anywhere there is Internet access. The combination of a Silverlight Web-Mapping application, a web-based software server and an intricate hydrology database model allows for COP to become a critical component of CLOCA's business structure, leveraging the Enterprise GIS infrastructure.



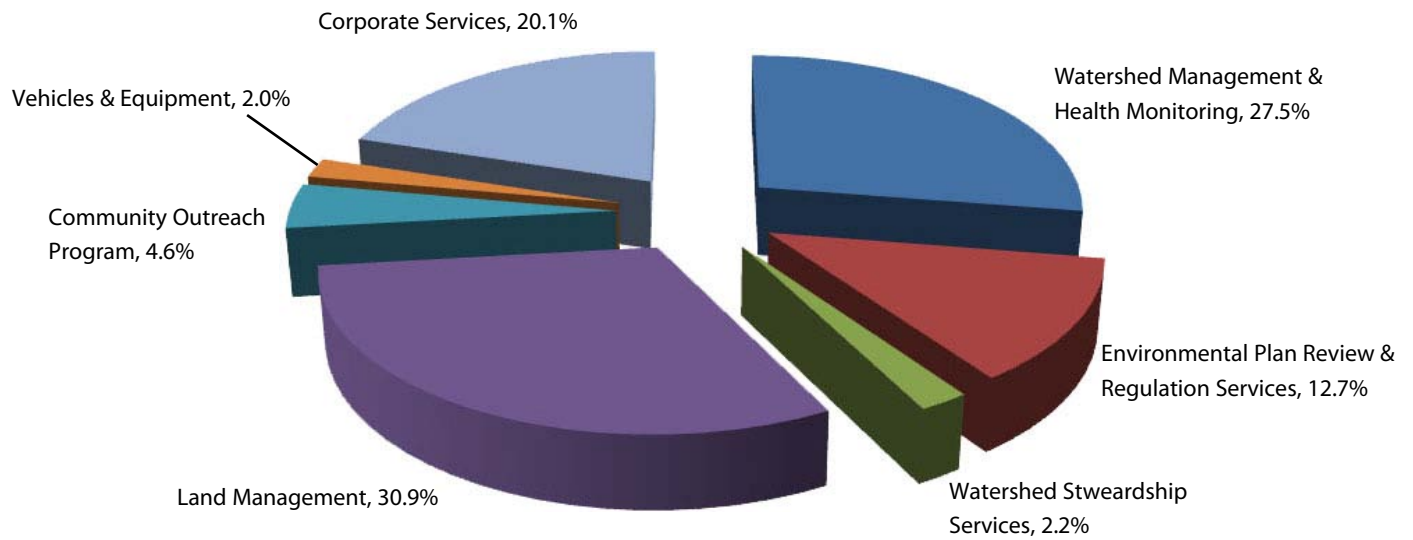
The COP project in action using the silverlight application.

2011 Budget Summary

Financial

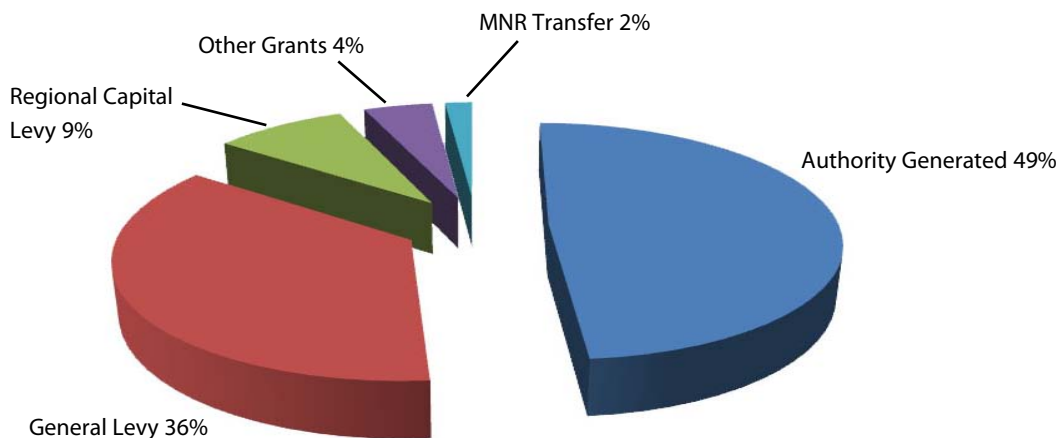
Expenditures

Total Expenditures: \$6,988,190



Revenue

Total Revenue: \$6,988,190

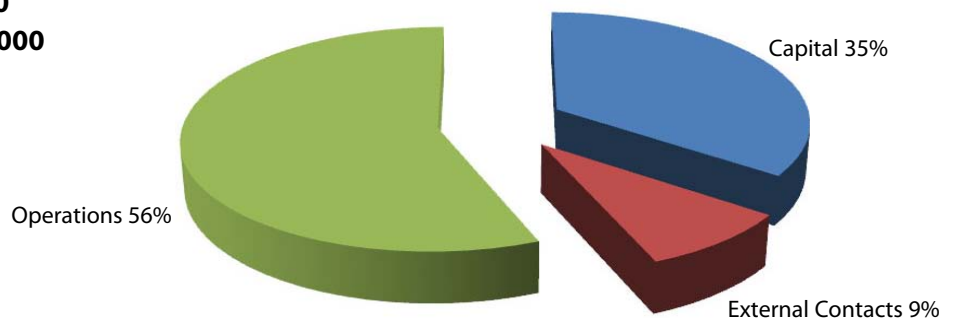


Capital & Operations

Total Capital: \$2,437,500

Total Operations: \$3,929,690

Total External Contracts: \$621,000



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