



Central Lake Ontario Conservation

Year in Review **2017**



Central
Lake Ontario
Conservation

Message from CLOCA's Chair and CAO

In 2017, CLOCA in partnership with our stakeholders, community organizations, government agencies, and municipalities made significant strides in improving our watershed health and safety. We continue to be leaders in advancing watershed science and knowledge with programs like our new Integrated Monitoring Program, an important framework to ensure we are the trusted source of local environmental knowledge. The information produced by this program supports products like the Invasive Species Management Plan and the Flood Risk Assessment Plan, both completed in 2017.

We continue to strive for excellence for Conservation Area visitors, conducting one on one surveys, hosting hands-on meet and greet events and developing and implementing new public use infrastructure projects. With funding from The Canada 150 Community Infrastructure Program, we completed a new entrance for Heber Down Conservation Area, complete with improved parking, accessible trails, washroom and a picnic shelter to enhance the experience for our guests.

Through community engagement efforts, we continue to bring awareness to how we can live in harmony with nature and empower people to be watershed champions. Our first ever public evening at the Durham Children's Watershed Festival is just one example of where we provide individuals with the tools to change every day actions to further protect our water resources. Heading into our 60th year in 2018, the accomplishments of 2017 presented in this Year In Review, provide a solid foundation for advancing watershed health through engagement, science and conservation. Thank you to all those who contributed to our many successes.



Chris Darling
Chief Administrative Officer



Don Mitchell
Chair, Central Lake Ontario Conservation

2017 Board of Directors:

Town of Ajax

Councillor Shaun Collier

Municipality of Clarington

Mayor Adrian Foster

Councillor Ron Hooper

Councillor Joe Neal

City of Oshawa

Councillor John Aker

Councillor Bob Chapman

(Vice Chair)

Councillor John Neal

Councillor Nester Pidwerbecki

City of Pickering

Councillor David Pickles

Township of Scugog

Mayor Tom Rowett

Township of Uxbridge

Mayor Gerri Lynn O'Connor

Town of Whitby

Councillor Joe Drumm

Councillor Derrick Glead

Mayor Don Mitchell (Chair)

Councillor Elizabeth Roy

Working in Partnership



Conservation
ONTARIO
Natural Champions

Leaders in Integrated Watershed Management

Instream Barrier Action Plan

CLOCA staff completed the Instream Barrier Action Plan to document, assess and evaluate barriers within CLOCA's streams, which obstruct or limit fish movement. A barrier may be a culvert, weir, dam or a water control structure. Fish impacted by these barriers include migrating Rainbow Trout and Pacific Salmon and resident non jumping fish and minnows. The plan identified 69 known barriers in our watershed and prioritized 10 for restoration. Efforts to monitor barriers and update the plan to reflect changes in barrier status will be ongoing. The plan will further inform CLOCA's plan and permit review program, advance opportunities for future restoration, and is an effective tool in the evaluation of municipal transportation and capital works projects.

Ecological Goods and Services Action Plan

We prepared an Ecological Services Report to quantify the environmental, social and economic services provided by CLOCA's ecosystem. The methodology was adopted from a similar study, the 2005 Geenbelt Report, prepared by the David Suzuki Foundation. The CLOCA report estimated that forests, wetlands, successional habitats and creeks in our watersheds contribute almost 130 million dollars annually to the local economy, largely in avoided costs. The purpose of this valuation process is to encourage watershed constituents to protect natural heritage features, overall ecosystem function and provide support for restoration and stewardship actions to benefit watershed health. In 2018 communication products will be created to message constituents on the key outcomes of this report.

Record High Water Levels for Lake Ontario

CLOCA maintains a flood forecasting and warning system for the purpose of providing the Region of Durham, local municipalities, emergency services and the public with advanced notice, information, and advice to prepare and respond to potential flooding and flood emergencies. Record high water levels for Lake Ontario combined with wind and rain events

caused flooding of shoreline communities on multiple occasions. CLOCA staff worked with our municipal partners during these events and also issued 6 Flood Safety, 4 Flood Watch, 2 Flood Warning and 1 Flood Outlook messages.

CLOCA Watershed Flood-Risk Assessment Results

With National Disaster Mitigation Program funding, CLOCA staff conducted a watershed flood risk assessment for the jurisdiction. The assessment identified 92 areas where watercourses could potentially overflow and pose flood-risks to surrounding public and property. Of these, 3 were identified as the highest priority in further flood mitigation and management plans. As part of the process, consultations with stakeholders, partners and the general public were hosted to present the methodologies, draft reports, the findings and recommendations. CLOCA staff were invited to present the Watershed Flood Risk Assessment at the Ontario Provincial Emergency Management Conference in Toronto. Staff will continue to apply this information to future flood mitigation plans, update and monitor floodplain mapping and investigate and seek funding for flood management and reduction projects in the future.





Leaders in Integrated Watershed Management

CLOCA Invasive Species Management Strategy (2017-2027)

Since 2010, CLOCA has delivered invasive species management programs to educate, prevent, manage, and create awareness about this issue. In response to invasive species science, technology and policy changes, CLOCA staff prepared the Updated: Invasive Species Management Strategy (2017-2027). The intent is to continue efforts to date and “better protect the native biodiversity of CLOCA watersheds from the threat of invasive species.” The Strategy lays the ground work for continuing efforts in detection, prevention and management of present and future invaders in collaboration with our partners. In 2017, we continued to adopt appropriate Best Management Practices, worked with all levels of government and enhanced existing monitoring programs to address invasive species. We hosted two workshops, a hands-on display for Giant Hogweed and continued ongoing management projects with our partners. Two of those projects are now part of the North American Phragmites Adaptive Management Framework to assist us and other practitioners with monitoring management techniques for this species across the Great Lakes basin.

Riparian Restoration Action Plan

CLOCA's Watershed Plans recommend a healthy watershed have an adequate riparian corridor along 75% of its stream length. This corridor is defined as a linear section of natural vegetation extending a minimum of 30m perpendicular from the stream along both of its shorelines. To determine riparian corridors and prioritize restoration efforts in our watersheds, CLOCA's Watershed Plans recommended a Riparian Restoration Action Plan be prepared. This Plan was completed in 2017, to inform and contribute to a number of CLOCA's programs including plan and permit review, stewardship, natural heritage evaluations and natural heritage restoration planning. Achieving the watershed recommendation of 75% adequate riparian corridors will take considerable

effort requiring the support of decision makers, landowners and watershed stakeholders.

Planning & Regulation

Our planning staff supported the Town of Whitby in advancing the new Brooklin Secondary Plan to adoption, undertook a detailed review of the draft Columbus Subwatershed Study in Oshawa and supported the Municipality of Clarington in the commencement of new Subwatershed Planning for the Darlington and Tooley watersheds. We also provided environmental planning advice on over 98 pre-application consultation meetings with landowners, developers and municipal planning department staff. As well, we issued over 270 permits for various development activities, under Ontario Regulation 42/06. We reviewed over 326 different technical submissions from municipalities, consultants and landowners and entered over 8,000 documents into our electronic records management system for efficient retrieval and archiving.

CLOCA continues to play an important role in the development of Provincial legislation and guiding documents which focus on natural heritage, wetlands, CA product and service delivery, agriculture land use and large scale commercial fill operations. Across multiple departments we provided formal comments reflecting CLOCA interests in the preparation of the following 5 Provincial documents.

- * Wetland Conservation Strategy for Ontario
- * Conservation Authorities Act
- * Regional Natural Heritage System for the Growth Plan for the Greater Golden Horseshoe
- * Agriculture System Mapping and Proposed Implementation Procedures
- * Excess Soil Management Policy Framework

Leaders in Integrated Watershed Management

CONSERVATION AREAS AND LAND HOLDINGS

Heber Down Conservation Area

A successful funding application to The Canada 150 Community Infrastructure Program, allowed us to start work on the planned new Cochrane Street entrance, including an accessible trail loop, washrooms, additional parking, and formal picnic areas. A media event was held on March 27th with MP Celina Caesar-Chavannes to launch the project. As part of the Canada 150 celebrations, CLOCA staff completed a 1 hectare maple leaf cut out in the proposed picnic area garnering great social media responses to a drone video on YouTube. Upgrades to existing trails in the southern portion of the Conservation Area were improved through a lease agreement with the Town of Whitby, creating a multiuse trail linkage with Cullen Park to the south.



Heber Down Conservation Area celebrates Canada 150.

Storoschuck Property Restoration

The 2010 Enniskillen Conservation Area Stewardship Plan recommends conserving and enhancing the natural heritage features, functions and linkages that contribute significantly to the Bowmanville Soper Creek watershed's natural heritage system. One of the action items was to develop and implement

a restoration plan for the abandoned aggregate pit located on the Storoschuk Tract. CLOCA staff completed a restoration plan for the property for implementation in 2018 to restore site topography, reconnect the valley wall and plant native vegetation improving habitat connectivity and slope stability while reducing risk and erosion hazards.

Lynde Shores Conservation Area

We continued our commitment to education and communication efforts with visitors to the Lynde Shores Conservation Area focusing on wildlife feeding and future parking infrastructure changes. A series of half day hands-on meet and greet interpretive displays were hosted in July and August. CLOCA staff delivered these events engaging more than 500 visitors. Through our conversations, visitors made suggestions about feeding or not feeding wildlife, trail maintenance, signage, enhancing visitor experience. Their observations and suggestions were very helpful in developing a signage campaign to address wildlife feeding, reducing human risk and helping to protect local wildlife.



Waiting for the chickadees.

Advanced Watershed Science and Knowledge

Durham Community Climate Adaptation Plan 2016

CLOCA staff assisted with preparing the Durham Community Climate Adaptation Plan 2016 by participating on several technical committees. The plan identifies conservation authorities as having various degrees of implementation responsibility in 9 of the 18 program areas. The majority of these program areas relate to our core business and interest, align with our strategic plan and will require us to adopt a climate change lens in measuring corporate deliverables. Several working groups were established in 2017 of which CLOCA staff participated. We will continue to play a role in plan implementation, to ensure Durham Region is resilient to the changing climate, and that the Region's infrastructure, services and citizens are prepared for increasingly warmer, wetter and wilder weather.

Low Impact Development (LID) Workshop

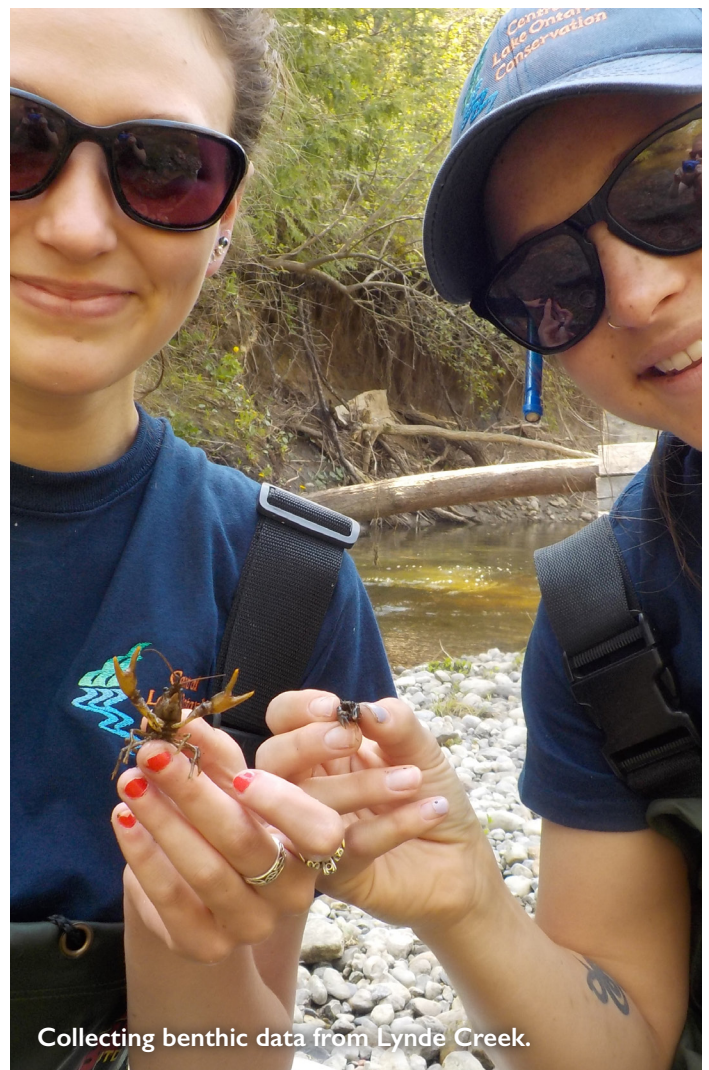
We hosted a full day training workshop on the Design of LID Infiltration Practices for municipalities, consultants, developers and landowners looking to enhance their knowledge of this emerging technology into new and existing development. Purple Woods CA Heritage Hall provided an inspiring setting for participants, as the industry moves toward sustainable development models that reduce storm water runoff, and improve surface water retention and infiltration at the source.



LID workshop at Heritage Hall.

CLOCA's Integrated Monitoring Program

2017 was the first year for delivering the CLOCA Integrated Monitoring Program as part of our commitment to continued advancement in watershed science and knowledge. This new framework will contribute to all of CLOCA's programs, watershed stakeholders, and partner municipalities, environmental stewardship groups, development industry, and academic organizations, provincial and federal agencies. The program collects data on coastal wetlands, tree health, vegetation, bird communities, streams, fish communities and invasive species. The results of the 2017 monitoring will be shared with the public in 2018.



Collecting benthic data from Lynde Creek.

Collaborate and Partner

Bowmanville Fishway

The Bowmanville Fishway working group consisting of the Municipality of Clarington, Valleys 2000, Bowmanville Creek Conservation Group, Bowmanville Creek Anglers and CLOCA continued their good work in 2017 toward securing funding to purchase and operate an automated state of the art fish counter. The project is focused on better understanding migratory and spawning activity of Lake Ontario fish and invasive species which threaten a healthy Lake Ontario fish community. Project accomplishments included development of a website, presentations to council and community groups and fundraising through the sale of a fish calendar.

Recovery Monitoring in Lynde Creek

In 2014, a manure spill in the upper portion of Lynde Creek had significant negative impacts on fish and other aquatic life. As a result, CLOCA and the Ministry of Natural Resources and Forestry (MNRF) have partnered to monitor the extent of the initial impact, how the system is recovering, and identifying priority locations for restoration. The monitoring completed to date has indicated that although the damage was initially severe, much of the biodiversity has returned. The main exception to this are some of the sensitive species, such as Redside Dace, which have not been recorded since the spill. CLOCA and MNRF are planning to continue monitoring Lynde Creek for an additional two years to determine if it is able to recover to its previous condition. This information continues to improve our knowledge on the impacts of spills and the resiliency and long-term sustainability of our local fish communities.

Oshawa Second Marsh

Working with our partners, the City of Oshawa, Ducks Unlimited Canada (D.U.C.), the Friends of Second Marsh, water levels in the Oshawa Second Marsh were monitored throughout the spring, summer and fall in an effort to ensure that water levels were optimal for the newly germinated wetland vegetation. The remarkably high Lake Ontario water levels in

addition to the unusual amounts of precipitation experienced throughout 2017, created challenges for this partnership in managing marsh water levels. Efforts to ensure the high creek levels would not overtop the berm included the installation of straw bales, sediment/erosion fencing and the addition of gravel in low spots along the berm. The collaborative work and effort of the partners facilitates sustainable management to ensure a healthy marsh ecosystem into the future.



Collecting fish community data in Lake Ontario.



Electrofishing in the Bowmanville Creek.

Communicate, Educate, Inspire

In Our Watershed Education Program

In partnership with our four local school boards, we are now in our 29th year of offering curriculum based outdoor environmental programs to elementary grades. The *In Your Watershed* (IYW), consists of 16 year round and seasonal programs to more than 6,100 students in the 2016/17 school year. We continue to partner in a number of community programs like Farm Connections, where kids get to be a farmer for the day, with more than 1,200 grade 3 students attending the 3 day program and 900 family members at the evening public open house. We also host the YMCA Environmental Camp and Ontario Power Generation's Tuesdays on the Trail at the Enniskillen Education Centre, engaging 1,300 participants in the summer of 2017.

Partnership with Ducks Unlimited Canada

Our first ever Duck Day was hosted in partnership with Ducks Unlimited Canada and the Ontario Trillium Fund where more than 100 participants learned how to be better stewards at local wetlands. Participants got an up close and personal look at turtles and other critters brought to us by Speaking of Wildlife and the Ontario Turtle Conservation Centre. Each family received a free wetland exploration kit complete with identification sheets, a net, buckets and magnifying glass to explore wetlands on their own and create a passion for their protection by the next generation.



Duck Day at Enniskillen Pond.

Purple Woods Maple Syrup Festival

For 42 years CLOCA and their many community partners have contributed to the successful delivery of the annual Maple Syrup Festival at the Purple Woods Conservation Area. With over 8,300 visitors in attendance, 1,200 trees tapped producing 1,030 litres of maple syrup and new sponsorships in the community, the Festival continues to be a major regional attraction for Durham residents. A highlight for this year was the publication of a children's book called "In The Purple Woods", a reflection of a family tradition by local artist Garth Armstrong and his writer wife Sandra. Improvements to existing facilities and operations continued this year along with a new washroom facility by the Sugar Shack. Our education program was at capacity again this year, engaging 2,000 primary students in Sugar Bush Tours during the months of March and April.



Enjoying the Purple Woods Maple Syrup Festival.

Communicate, Educate, Inspire

Durham Children's Watershed Festival

In 2017 we celebrated the Festival's 20th anniversary and Canada's 150th anniversary, with a "Next Generation" focus. A name change replaced the word "groundwater" with "watershed" to better connect participants to all water resources and their importance to human health and ecosystem function. The Festival was held at Camp Samac with 3,846 grade four students and 774 teachers and adult volunteers attending. Contributions from sponsors cover 75 per cent of operating costs, which makes attendance fees affordable. A total of 10 sponsors were on board this year and recognized through a VIP lunch during the Festival. A first ever free public evening was held with participants given an opportunity to participate in the regular day time activities plus some very special offerings including the edible aquifer from Oak Ridges Moraine Land Trust; wild animals from Soper Creek Wildlife Rescue; the AR Sandbox; a Chief Topleaf presentation; CLOCA staff guided tours to view the salmon migration; and a snow plow from the Municipality of Durham Fleet Division that demonstrated the "Low Salt Diet – Protect the Watershed" activity.



Durham Children's Watershed Festival celebrates 20 years.

Citizen Science

Citizen scientists continue to generate data and information for a number of watershed species including nesting birds, turtles, spawning fish, migrating raptors and fish. This year 12 students from Durham and Fleming College contributed 1,020 hours of in field work as part of their mandatory work placement programs. The students deliver our annual fish spawning surveys, which involves collecting data for migrating fish species at 280 sites across our jurisdiction. In the spring, students collected additional turbidity readings through sediment sampling in the Pringle Creek Watershed. The purpose of this work was to determine if water quality improvements had been made in response to CLOCA recommendations to construction practices associated with the 407 upstream. In 2016, there were 2 sediment spills and turbidity readings were made which identified severe impacts to water quality. The data collected by the students this spring indicated, turbidity readings have been restored and that improvements to site management activities, which were requested by CLOCA staff, were key to this outcome.

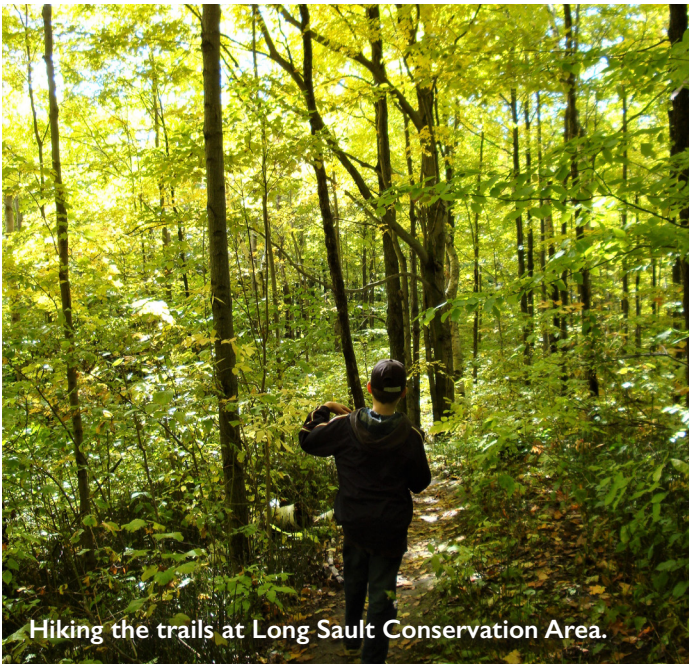
Well Decommissioning Program

CLOCA re-introduced the Well Decommissioning Program in 2017 providing technical and financial assistance to landowners in our jurisdiction. Wells provide a direct link from land surfaces to the water bearing subsurface zones that represent the source water for other wells and local creeks in the watershed. An abandoned well can allow surface runoff to flow directly to local and regional aquifers, potentially carrying organic waste, fertilizers, chemical residues including pesticides and petroleum products to groundwater. In 2017, four landowner visits and technical advice were provided and 1 well was/were decommissioned. Information about the service, application and brochure have been distributed to municipalities and residents through public events and on our website.

Communicate, Educate, Inspire

Community Engagement Summary

With our partners, we hosted 18 programs and events, provided 21 corporate and community presentations, attended 6 community events, delivered 5 curriculum based education programs to 12,067 students, produced 5 corporate communication products, engaged 1,501 volunteers and we hosted 2,299 people in our summer camp programs in partnership with the YMCA GTA and OPG Darlington.



Hiking the trails at Long Sault Conservation Area.

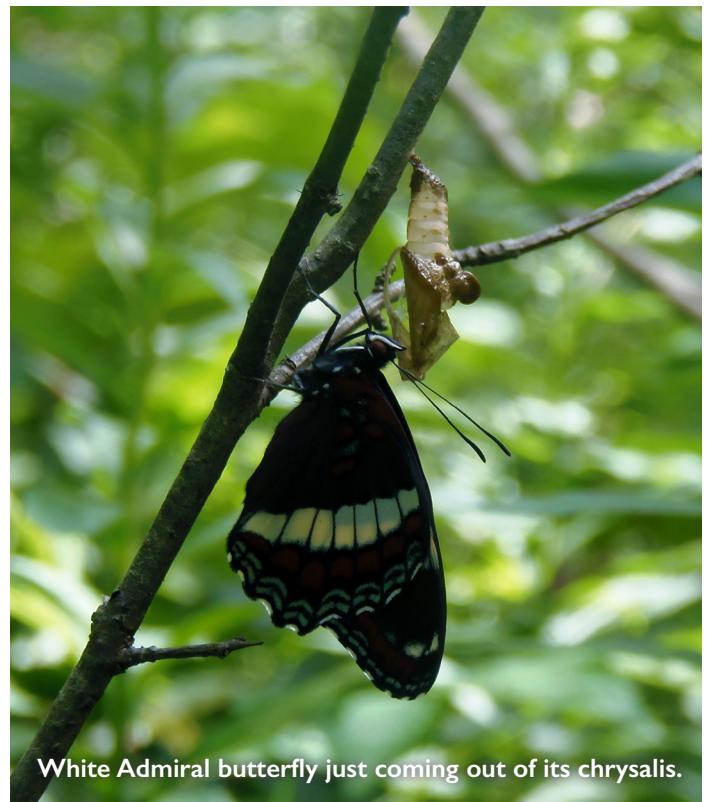


A cluster of Pinwheel Marasmius on the forest floor.

Increasing Watershed Forest Cover

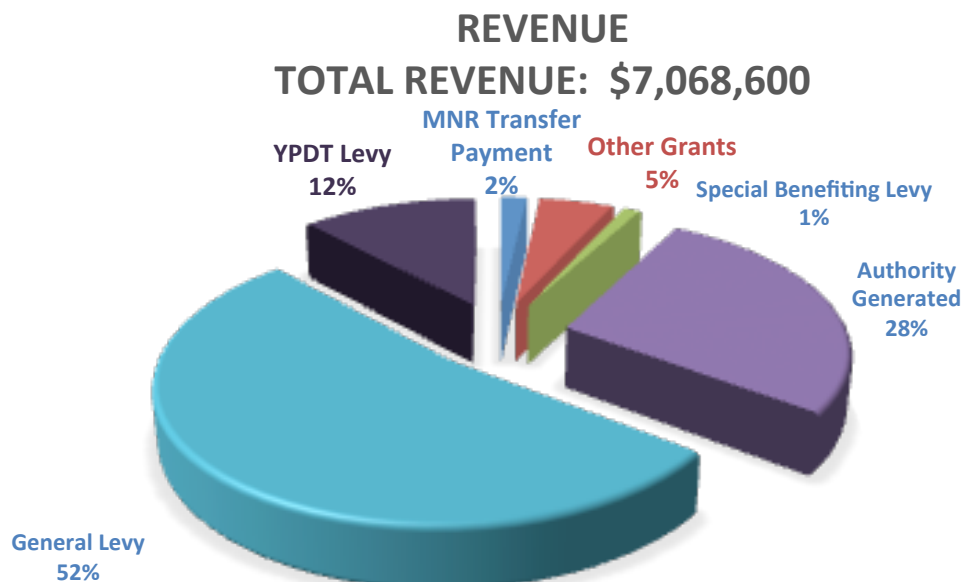
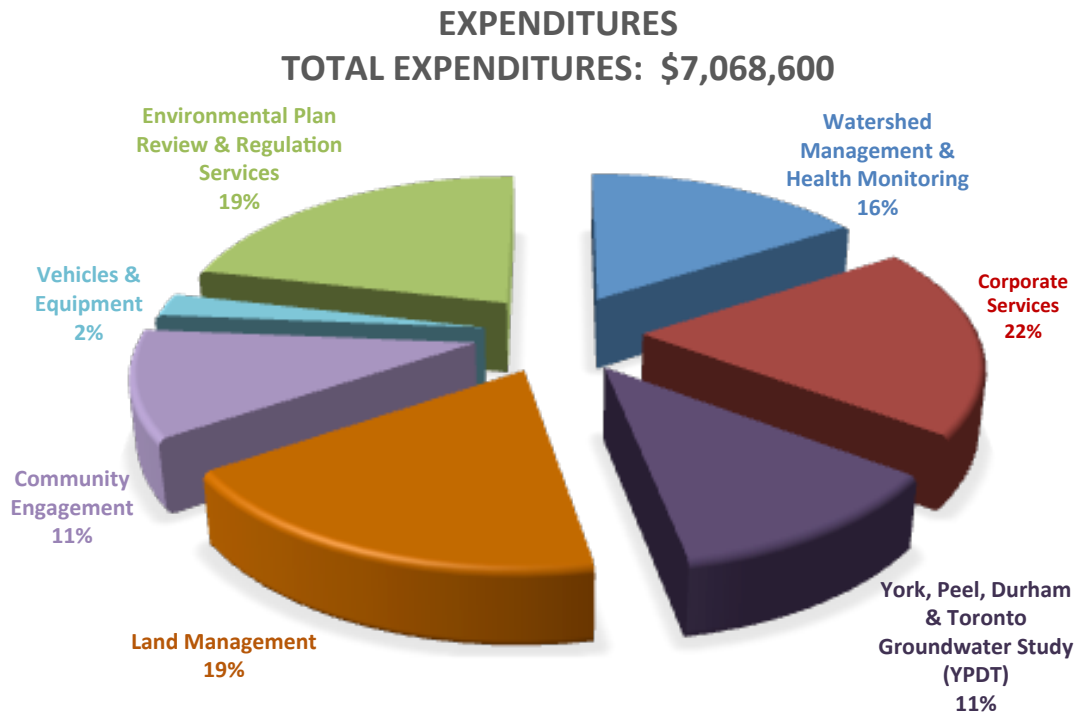
We continue to recreate missing forests and strengthen existing ones providing a well-connected natural heritage system to store carbon while contributing to overall biodiversity for a variety of wildlife. In the spring we planted 80,484 trees in headwater areas of the Bowmanville and Soper Creek Watersheds associated with 407 compensation, RBC Earth Day Event and planting with the 1st Enniskillen Scouts. In the fall, we planted 900 native trees and shrubs in partnership with TD Tree Days at Heber Down, Purple Woods and Enniskillen Conservation Areas for a total of 41.95 hectares of land reforested.

The Clarington Rural Roads Tree Program has planted 4,500 trees along rural roads in the municipality since it began in 2012. This year more than 47 residents participated with the planting of an additional 688 trees. The program has many benefits aside from improving the aesthetics of the rural countryside, it increases tree canopy and provides wildlife habitat.



White Admiral butterfly just coming out of its chrysalis.

Operate Responsibly



2017 Budget

The approved 2017 budget reflects an allocation of resources to support CLOCAs planned programs and services. The budget allowed us to continue our efforts in support of our mission to advance watershed health through engagement, science and conservation.

Operate Responsibly

60th Anniversary AGM

The Central Lake Ontario Conservation Authority (CLOCA) celebrated its 60th Annual General Meeting on January 17th with a presentation on how to Face Climate Change by Dianne Saxe, Environmental Commissioner. Also in attendance were MPP Lorne Coe and MPP Jennifer French who presented certificates of congratulations to the Authority. CLOCA's key accomplishment over the past 60 years has been to consistently partner with community and stakeholders to enhance watershed health through engagement, science and conservation.



MPP Jennifer French and Dianne Saxe, Environmental Commissioner at the Shaping Watersheds Display.

Open Information and Data Policy

CLOCA is committed to accountability, transparency and barrier removal when it comes to sharing geospatial data through our new Open Data portal. This portal is an online hosted service of data collected, prepared, published and maintained by CLOCA staff, now available to a variety of users to freely explore, interact and download information specific to their needs. The benefits of providing this access to our stakeholders, which include industry, academia and community organizations, reduces staff time currently required to respond to multiple individual data requests. This improved flow of information and subsequent interpretation and application of data, will help our stakeholders shape their community and deliver innovation and economic benefits that contribute to healthy watersheds.

Strategic Plan

CLOCA's Strategic Plan, approved in January 2016 includes 45 strategic actions to help achieve our vision of a healthier watershed for today and tomorrow. Overall, significant progress has been made over the past two years and we are on track to implement our plan. While many actions are ongoing, the completed 2016 and 2017 actions provide a foundation from which to move our implementation forward. The highlights this year included purchasing state of the art GPS survey equipment, completing a CLOCA wide Flood Risk Assessment, developing and implementing the CLOCA Integrated Watershed Monitoring Program, completing an Ecological Goods and Services Action Plan and enhancing the CLOCA web based Information Portal.



Milkweeds for next year's monarch butterflies.

Central Lake Ontario Conservation
100 Whiting Avenue
Oshawa Ontario Canada L1H 3T3

Tel: (905) 579-0411
Fax: (905) 579-0994
mail@cloc.ca
www.cloc.ca



*Central
Lake Ontario
Conservation*

Printed on sustainable forestry certified paper