



GRCA Annual Report 2023

Ganaraska Region Conservation Authority



A Year In Review

It is our pleasure to present the *Ganaraska Region Conservation Authority (GRCA) 2023 Annual Report*. This year brought many successes and continued support to the GRCA.

GRCA staff were busy throughout the year with many projects, delivering excellent programs and services. The GRCA strives to meet its goal of being one of the best environmental teams in Ontario's Conservation Authorities; enhancing and conserving across the Ganaraska Region Watershed by serving, educating, informing and engaging.

Conservation Authorities across Ontario continued to work with the Ministry of Natural Resources and Forestry (MNRF) in moving forward the changes and requirements of the *Conservation Authorities Act*.

The *GRCA Programs and Services Inventory* was completed in November 2023, in consultation with the watershed municipalities. *Memorandums of Understanding (MOU)* were also completed for most of the participating municipalities by the end of December, with a couple to be signed in early 2024 — MOUs available in the Governance section of the GRCA website: grca.on.ca.

Mark Lovshin was pleased to have the opportunity to serve as Chair of the GRCA Board for 2023. The Chair would like to thank Vice-Chair Vicki Mink, the Board of Directors and staff for their continued support.

The Board began 2023 seeking new challenges and we want to acknowledge their enthusiasm, dedication and support. We look forward to continuing to work together as we head into 2024.

Please take the time to review the *2023 Annual Report*, we welcome your feedback.

Yours in Conservation,

Mark Lovshin

Chair, Board of Directors

Linda Laliberte, CPA, CGA

CAO/Secretary-Treasurer



Climate Change

During the past year, the GRCA continued to promote climate change mitigation and adaptation measures in several ways.

The GRCA has been working with the Regional Municipality of Durham in the implementation of the *Durham Community Climate Adaption Plan (DCCAP)*. This included ongoing efforts to update old floodplain mapping and associated computer models to effectively identify lands susceptible to flooding.

The resulting models will also be used in future climate change analyses and to make advancements in the *GRCA Flood Forecasting and Warning Program*. Efforts included ongoing engagement with landowners through *Durham*

TREES — a collaborative partnership aimed to increase tree cover in the Regional Municipality of Durham.

Staff worked with other partners, through ongoing dialogue and discussions, to implement actions in day-to-day business operations, as recommended in the approved GRCA Climate Change Strategy.



Natural Hazards

Wilmot & Graham Creek Floodplain Mapping Updates

In 2023, the GRCA finalized work to update the floodplain mapping for the Wilmot and Graham Creek watersheds in the Municipality of Clarington. A *Public Information Centre (PIC)* was held in March to view the preliminary mapping. The final reports and maps were completed in the following months.

This project was in partnership with the GRCA, Municipality of Clarington and the Regional Municipality of Durham, through matching funding from Public Safety Canada and the National Disaster Mitigation Program (NDMP).

The previous mapping was 46 years old, requiring updating to provide the latest data to assist with emergency preparedness planning, including flood prevention and mitigation. These efforts align with Priority 1 of Ontario's Flooding Strategy: 'Understand Flood Risks'.

Region of Durham Floodplain Mapping Update

The GRCA partnered with the Regional Municipality of Durham in 2023 to submit a funding application to *Natural Resources Canada's Flood Hazard Identification and Mapping Program (FHIMP)* to update additional floodplain mapping within the region.

The application was successful and work commenced on recreating the hydrologic and hydraulic models to support updated mapping for Lovekin, Bouchette Point and Port Granby Creeks, as well as the northwest portion of the Ganaraska River watershed.

In most areas, the previous mapping was 46 years old and required updating to provide the latest data to assist with emergency preparedness planning, including flood prevention and mitigation.

Floodplain Mapping Update Implementation Plan

In addition, the GRCA developed a *Floodplain Mapping Update Implementation Plan* to produce a road map to guide future updates to floodplain mapping projects.

The document includes a summary of floodplain mapping

projects currently underway, an overview of the federal, provincial and conservation authority guidelines for floodplain mapping, a project prioritization matrix, a framework for future projects and next steps, as well as a proposed project schedule for 2024-2028.

An approach for implementing climate change considerations into floodplain mapping projects was also presented. The report incorporates recommendations to leverage municipal budget resources to facilitate securing funds from federal floodplain mapping programs, which are expected to be available between 2024 and 2028.

Conservation Areas

The GRCA maintains nine conservation areas for passive, public recreational use. These areas are regularly used by residents and visitors alike, offering a natural space for hiking, appreciation of nature and fishing.

As protected spaces, the Conservation Areas contain some form of natural hazard, generally associated with flooding, as well as many natural features and functions, such as wetlands and forests.

Sylvan Glen Conservation Area was closed from July 2023 until the end of the year. This closure will continue into 2024, as part of the *Sylvan Glen Road Bridge Replacement*, headed by the Municipality of Port Hope. A new footbridge was also constructed in the Ganaraska Millennium Conservation Area, including improved trail surfaces around the bridge.

Forest Management

Two timber harvest tenders were awarded in 2023, with logging operations expected to be completed by the end of February 2024.

GAN01-23 was awarded to Robinson Forest Products (FP) for the harvest of 116 hectares of Red Pine sawlogs and pulpwood. GAN02-23 was awarded to Penguin Poles (subcontracted to Robinson FP) for the harvest of 55 hectares of Red Pine sawlogs and utility poles.

In addition to the regularly scheduled operations, the remainder of last season's derecho windstorm salvage operations were completed along Boundary Rd. in the West

Forest, which was also completed by Robinson FP, who were awarded the GANSALV02-22 contracts last year. This area was postponed to prioritize the salvage of more heavily-damaged areas and to facilitate regularly scheduled operations in 2022.

The derecho windstorm of 2022 significantly impacted future scheduled operations, which includes those scheduled for harvest in 2024. As such, only one tender has been marked for harvest, consisting of approximately 120 hectares of Red Pine plantations in the West Forest. Scheduled operations are expected to return to more normal levels in 2025.

Forest Health

Preparation of a *Forest Health Monitoring Program* began in the summer of 2023 to

address increasing concerns around forest health, meeting one of the main objectives of the *Ganaraska Forest Management Plan*.

The program aims to establish regular monitoring of forest health features and threats, including high conservation and habitat values, species at risk, invasive species and other pests, such as Hemlock Woolly Adelgid (HWA), Beech Leaf Disease (BLD) and Oak Wilt, the latter of which caused a significant stir this summer after being found in southern Ontario for the first time.

A draft of the monitoring program will strive to be completed in 2024, which will provide internal guidance for GRCA staff until the program can be integrated into the next Forest Management Plan cycle, scheduled for 2027.

In line with the program, formal monitoring surveys continued in 2023. Approximately 70 km of forest roads were surveyed for BLD, resulting in eight new detections reported to the Ministry of Natural Resources and Forestry (MNRF). Several visual surveys for Oak Wilt were also completed with no positive detections recorded.

15 stands of trees, representing 139 hectares containing understory / overstory Hemlock trees, were surveyed for HWA with no positive detections. An additional eDNA trap was established near the Ganaraska Forest Centre, also with no positive detections. This was done in support of a national monitoring program coordinated by the Invasive Species Centre, in partnership with the Canadian Food Inspection Agency (CFIA) and MNRF.

2023 saw a second consecutive year of marginal Spongy Moth

populations in the Forest. However, scattered mortality associated with the 2020 and 2021 outbreaks became more apparent this year, including in a mature Hemlock stand within the Central Forest. Another eDNA trap was set-up to support research monitoring post-outbreak Spongy Moth populations.

Invasive species continue to be a significant challenge to forest management objectives. Ongoing monitoring through forest inventory surveys continues, with the goal of establishing baseline infestation data for the Ganaraska Forest.

Forest Recreation

In March and April 2023, GRCA staff and

contractors were able to complete storm recovery efforts, allowing the reopening of the majority of trails on lands owned by the GRCA for May 1st, 2023.

The GRCA launched a *Ganaraska Forest Trail Maintenance Volunteer Program* during 2023. Potential volunteers were invited to attend staff hosted training sessions and provided safety and technical information to complete basic trail clearing tasks.

In total, 17 people were approved to work on GRCA trail maintenance independently. All volunteer efforts were directed and monitored by staff through mandatory reporting procedures and data recording software. The GRCA continues to adapt the volunteer program to meet the needs of the Ganaraska Forest.

During summer 2023, a contractor was hired to complete necessary work, including the construction of a new *Snowshoe Trailhead* at the Ganaraska Forest Centre, a *Trail Bypass* at the *8 km Snowshoe Trail and A Loop junction*, as well as a small reroute along the *Orange Trail* to compliment 2022 trail reroutes.

The GRCA continues to address problematic areas and operational hazards, along with initiating a signage pilot project through 2024.

Ganaraska Forest Centre

The demand for *Outdoor Education Programs* at the Ganaraska Forest Centre (GFC) returned to pre-pandemic levels in 2023.

Most GFC visits were from elementary and secondary students within our watershed school boards. The GFC's modern and innovative overnight facilities hosted students from nine different school boards in 2023, as well as numerous private schools, home schools and post-secondary institutions.

In 2024, it is anticipated the GFC will eclipse the 6,500 participant days recorded in 2023. The GRCA is excited to welcome a third instructor to the outdoor education team,

further casting our environmental messaging net.

Breaks in the 2023 school calendar were once again filled by the fully-subscribed Nature Nuts March Break and Summer Camp Programs. The GFC also offered in-class Spring Water Awareness Programs (SWAP) to 500 junior-aged students through the support of Ontario Power Generation (OPG). Work on accessibility improvements to our pond docks continued through the support of the 100+ Women Who Care Northumberland and the Vanhaverbeke Foundation. A new, multi-year initiative to provide community-based, education programs for youth-at-risk began in 2023, with the support of the Alva Foundation.

The outdoor education team participated in several exciting initiatives of the Peterborough Victoria Northumberland and Clarington Catholic District School Board (PVNCCDSB). The GRCA served as one of four community partners in an innovative, virtual co-op credit for students completing their Specialist High Skills Major (SHSM) Program. The GFC hosted a day of curriculum-based, experiential learning programs for 60 students identified as Environmental Leaders in their schools, with support from Ontario Parks, Ontario Turtle Conservation Centre and Trent Aboriginal Cultural Knowledge and Science (TRACKS). The GFC also provided programs with a western science perspective, for a multi-day First Nation, Métis and Indigenous Peoples Celebration at Samuel Wilmot Nature Area.

Authentic learning programs are revealing new opportunities for the GFC and we thank all of our partners for their support in delivering these programs in 2023.

2023 GFC Event Statistics

- **14 Full-Facility Weddings**
- **24 Not-For-Profit Groups**

- **6 Corporate Bookings**

Clean Water-Healthy Land Stewardship

Throughout 2023, the GRCA offered stewardship programs to assist watershed residents with their environmental restoration goals within the Municipalities of Clarington and Port Hope, Township of Hamilton and Town of Cobourg, through the *Clean Water-Healthy Land Financial Assistance Program*.

A total of 15 environmental projects were funded for a total allocation of approximately \$26,750. The total monetary value

of these projects was approximately \$64,800.

The GRCA continued its partnership with Sustainable Cobourg and the Association for Canadian Education Resources (ACER), planting 900 trees and shrubs at various locations along Midtown Creek and the Ganaraska River.

A further 25,000 trees and shrubs were planted locally via various programs. Trees and shrubs are sold through the [GRCA Tree & Shrub Seedling Program](#) or [provided by Trees for Rural Roads](#), in partnership with the Township of Hamilton, as well as the Municipalities of Clarington and Port Hope. Reforestation services are offered for larger properties through Forests Ontario and the *Highway of Heroes Tree Campaign*.

Environmental Advisory Planning & Regulations

The GRCA provided input on 61 municipally circulated Minor Variances, Severance, Zoning and Official Plan Amendments. Natural Hazard comments, consistent with the *Provincial Policy Statement 2020*, were provided to our partner municipalities for their consideration as well.

Staff reviewed and provided input on five new subdivisions and 14 ongoing subdivisions. In addition, nine new site plan applications for Major Development Proposals (i.e. commercial, industrial) were reviewed, along with 15 ongoing Site Plans. The GRCA received and provided responses on a total of 193 formal Inquiries / Authorizations and / or Pre-Consultation requests. The GRCA also issued 105 permits under the *GRCA Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (O. Reg. 168/06)*.

Planning staff continue to participate on the Conservation Authority Section 28 Committee, seeking ways to improve service delivery standards. The GRCA met with the Greater Golden Horseshoe Planners, Northumberland Area Planners and the Conservation Authority Coastal Working Group to share ideas and ensure staff remain up-to-date.

Geographic Information Systems (GIS)

The GRCA GIS department supported many *Watershed Services* projects throughout the year, including *Flood Forecasting and Warning, Fisheries and Ecology*, as well as *Stewardship, Forestry and Recreation*.

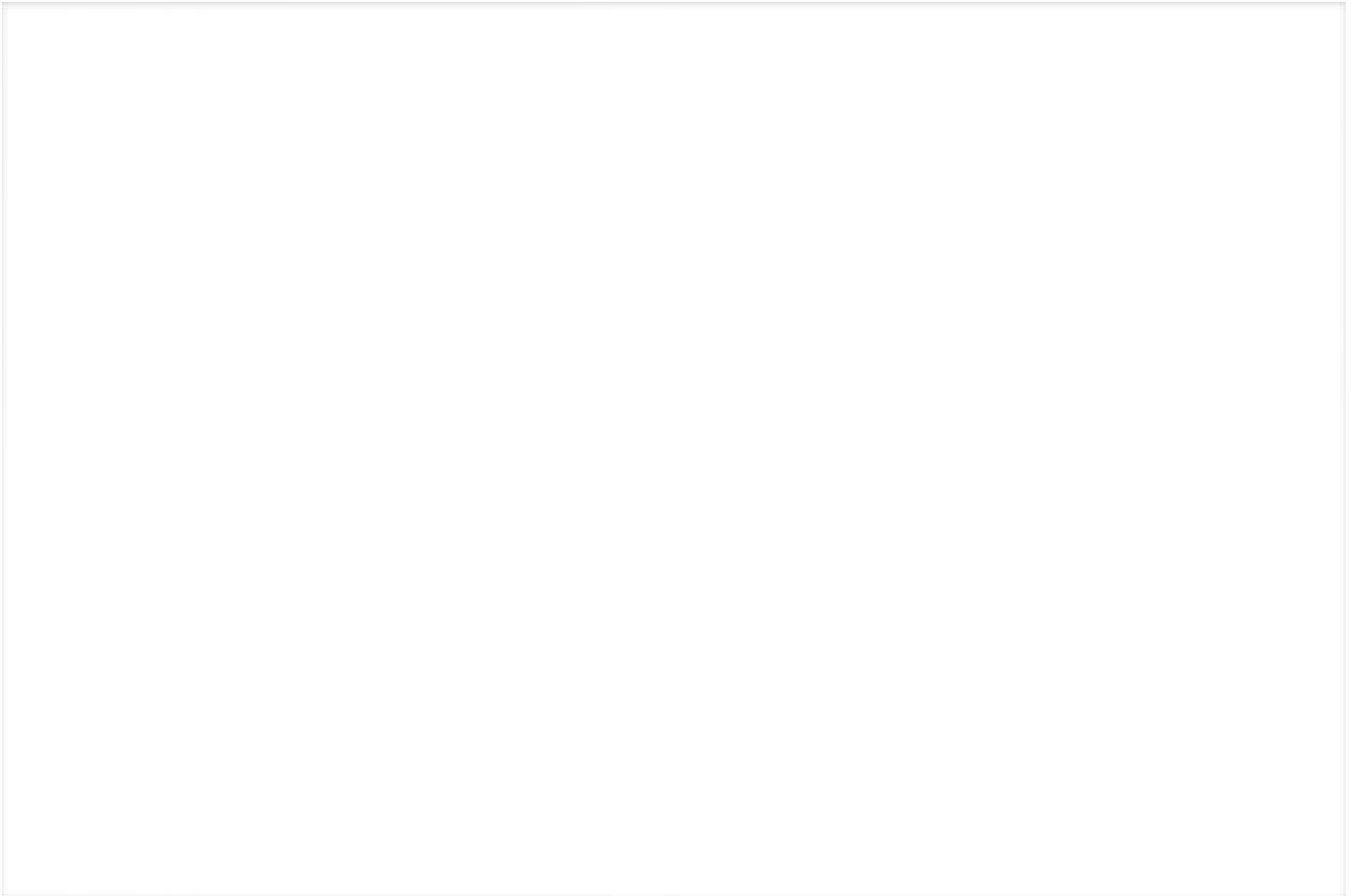
GIS staff upgraded the public, [mobile trails mapping system](#) with full-integration into the *Forest Operations System*, allowing for real-time trail updates.

The GRCA works to implement cost effective ways of utilizing *Remote Sensing GIS Data* to maximize efficiency in daily

workflows, while improving collective understanding of the watershed. *Artificial Intelligence* continued to expand at the GRCA, increasing data processing capabilities, as well as enabling automated extraction of environmental data from aerial/satellite imagery.

Working with the Canadian Space Agency (CSA), the GRCA is helping further advance Earth Observation Technologies, including Canada's RADARSAT Constellation Mission.

The GRCA continues to work closely with all levels of government — municipal, provincial, federal — and other partners in developing effective, technical solutions to pressing water resource issues, namely Flood Disaster Mitigation and Climate Change.



Drinking Water Source Protection (DWSP)

Residents in the *Ganaraska Region Source Protection Area (GRSPA)* receive their drinking water from six municipal, residential drinking water systems, including three drawing from Lake Ontario.

These systems serve more than 40,000 people in Newcastle, Port Hope and Cobourg, as well as more than 2,700 people in Camborne, Creighton Heights and Orono.

Changes to the *Technical Rules* in 2017 and 2021, under *Section 36 of the Clean Water Act*, resulted in some amendments and updates to the *Ganaraska Region Source Water Protection Assessment Report and Source Protection Plan*.

Staff updated documents and held several public meetings, including outreach to a prescribed list of stakeholders, such as municipalities and First Nation communities.

Amendments were submitted to the Ministry of the Environment, Conservation and Parks (MECP), on December 22nd, 2023, for review. These amendments are the culmination of four years of consultation, research and decision making by the GRSPA and the Trent Coalition Source Water Protection Committee.

Watershed Monitoring

The GRCA continues to collect important data describing the current quality and quantity of our local water resources and identifying trends in watershed health. The GRCA maintains a consistent approach to monitoring water resources, as well as aquatic and terrestrial ecosystems. Summer students assisted in monitoring stream levels, precipitation and water quality during the busiest monitoring season.

In 2023, the GRCA presented its watershed monitoring data in the form of a *Watershed Report Card*. This evaluation of the health of our watersheds takes into account *Groundwater and Surface Water Quality*, as well as *Forest Health Conditions* and is compiled every five years.

Groundwater Quality continues to be high in most monitoring wells, with some locations picking up elevated levels of chloride due to their proximity to road salting activities.

Surface Water Quality is mostly unchanged in the past five years, with most watersheds in the **Fair (C)** to **Good (B)** range. *Forest Conditions* also remained relatively unchanged, with a range of grades from **Poor (D)** in the Gages Creek watershed to **Excellent (A)** in the Ganaraska River watershed. Please visit the GRCA website for more information on [Watershed Report Cards](#).

Flood Forecasting & Warning

In 2023, the GRCA issued five *Watershed Conditions Statements* for spring storms and snow melt events causing high runoff. January / February runoff caused ice sheets to break up and move downstream but ice in the lower Ganaraska River was not thick enough to cause major problems, breaking up and flowing out to Lake Ontario with above freezing air temperatures.

After spring rains subsided, the watersheds dried with the arrival of summer weather. Occasional thunderstorms broke up dry periods through June, July and part of August. A drier weather pattern caused the GRCA watershed to enter a *Level 1 Low Water Condition*, on November 8th, 2023, due to the persistent lack of rain, which continued through December.

Lake Ontario began 3 cm below normal, rising steadily with winter / spring runoff — a 50 cm difference between the summer peak and winter low levels is common.

The 2023 peak level was 75.4 m above sea level on May 13th, which is 36 cm above average for Lake Ontario. A Shoreline Conditions Statement was issued on May 5th to warn of potential shoreline flooding and erosion. By the end of 2023, water levels had returned to levels at the start of the year — 3 cm below normal.

Groundwater

The GRCA continued its important role in the *Provincial Groundwater Monitoring Network (PGMN)*, a joint program by the province and the GRCA to monitor water levels in 17 wells across GRCA watersheds.

Monitoring programs allow the GRCA to observe and evaluate changing groundwater conditions, whether documenting short-term changes due to drought or in response to a changing climate in the long-term.

The GRCA continued to collaborate with the Oak Ridges Moraine Coalition Groundwater Program (ORMGP) on

groundwater issues through the ongoing use of their interactive data search site. As a partner agency member, these resources are critical for assessing and understanding groundwater information and addressing local issues.

Over the past year, the GRCA further enhanced the GIS tools it uses to understand surface and groundwater connections within the watershed. These developments assist in efforts to quantify water availability in various aquifers, improving hydrologic models and the impact groundwater resources have in managing natural hazards. These tools will also help inform the sustainable management of groundwater resources at a regional and local level, particularly as it relates to climate change.

The GRCA achieved significant milestones in its ongoing commitment to environmental preservation and biodiversity in 2023. The *Cobourg Creek Sea Lamprey Monitoring Initiative* marked a momentous year, capturing a total of 2,586 fish, representing 29 different species.

Notably, the highest-ever Sea Lamprey population was captured, totaling 1,372. This surge is attributed to the lapse in monitoring activities across Lake Ontario during the pandemic, underscoring the critical importance of consistent surveillance in managing invasive species.

The GRCA's enduring partnerships with Ontario Power Generation (OPG) and Hydro One remained steadfast in 2023. Collaborative efforts extended to a comprehensive fisheries assessment, encompassing abundance, species richness, population density and biomass, focusing on the long-term population status of Brook Trout (*Salvelinus fontinalis*) and Rainbow Trout (*Oncorhynchus mykiss*).

The Cobourg Fish Lift continued with approximately 200 Rainbow Trout assisted in accessing upstream spawning areas in Cobourg Creek. The GRCA orchestrated permits for the springtime ritual, wherein Rainbow Trout were corralled, netted by volunteers and lifted above migration barriers to promote sustainable spawning.

As we reflect on 2023, these accomplishments underscore the importance of proactive environmental stewardship. The GRCA remains committed to preserving the delicate balance of aquatic ecosystems and fostering community involvement in safeguarding the invaluable natural resources of the GRCA watershed, as well as the broader Great Lakes region.



Terrestrial Ecology

Amidst the challenges posed by the ongoing climate crisis, the GRCA is committed to monitoring and safeguarding the region's biodiversity.

In collaboration with the *Durham Region Coastal Wetland Monitoring Program*, the GRCA recorded breeding calls of birds and frogs at monitoring stations, providing insights into the health of wetland and forest ecosystems.

Four long-term, breeding bird stations were established in the Ganaraska Forest to monitor avian populations. This initiative contributes valuable data for assessing ecosystem health and identifying potential threats to biodiversity.

In the fight against invasive, terrestrial species, a focus on the Municipality of Port Hope revealed Common Buckthorn, Dog-Strangling Vine and Vetch as the top three culprits.

Disturbingly, Phragmites populations in the area are on the rise, reinforcing the urgency of our monitoring and mitigation efforts.

Due to the severity of invasive threats, the GRCA secured funding from the Invasive Species Action Fund. Enabling staff to monitor and map Hemlock Woolly Adelgid (HWA) and Beech Leaf Disease (BLD) within the Ganaraska Forest. Eight new BLD-infested areas were discovered and reported to the MNRF.

Leveraging the Ganaraska Forest Management Plan, the GRCA proactively addresses invasive species impacts. Undertaking understory tending in the plantation near the Ganaraska Forest Centre, staff targeted invasive species, like European Buckthorn and Dog-Strangling Vine, to enhance conditions for healthy Beech and Hemlock tree growth.

In 2023, the GRCA also executed various smaller-scale invasive species removal projects, such as the second year treatment of Periwinkle at the Ganaraska Forest Centre Trailhead and ongoing efforts against Phragmites, Japanese Knotweed and Wild Parsnip. These endeavors signify the GRCA's commitment to managing invasive species and promoting resilient ecosystems.

The GRCA remains dedicated to the principles of conservation, sustained by community support and collaborative

partnerships. Together, we forge ahead to ensure the health and vitality of our region's precious natural resources.

Financial Summary

In 2023, the Ganaraska Region Conservation Authority (GRCA) budget totalled \$4,497,852.

The *Municipal General Levy* was increased by 2.5% and was adjusted in accordance with the current value assessment figures. The *General Levy* for 2023 was \$1,238,969, which represents approximately 33% of the total budgeted revenues.

This past year, the GRCA continued to partner with others on important initiatives, which were funded by those partners.

The Source Protection Planning Program continued as well, which remains fully funded by the province.

The revenues from the Forest Membership Program were not fully realized in 2023, as the Conservation Authority continued to honour membership extensions, as a result of the 2022 derecho windstorm.

The chart above shows the actual revenues for 2023. The Levy listed is a combined total of the General and Benefitting Levies. The Ganaraska Forest Timber Sales of \$269,575 and Memberships of \$235,797, as well as the revenues from Treetop Trekking of \$47,713.18, are included in the Ganaraska Forest Revenue.

Grants include the Provincial Section 39 funding of \$51,863 and Employment Program Grants of \$33,269. The User Fees & Sales consist of the revenues from the Stewardship Programs, Watershed Services and the Water Resources Fees.

The category of “Other” includes direct funded projects of the Conservation Authority. This \$91,813 is included for the Trent Conservation Coalition Source Water Protection initiative.

2023 GANARASKA REGION CONSERVATION AUTHORITY STAFF & BOARD

Corporate Services

- **Linda Laliberte**, CAO/Secretary-Treasurer
- **Kim Baldini**, Finance Clerk
- **Alyssa Butters**, GIS Technician
- **Michelle Giddings**, Bookkeeper
- **Jeff Harrigan**, GIS Technican
- **Ian Jeffrey**, GIS/Remote Sensing Specialist
- **Jeff Moxley**, GIS/IT Coordinator
- **Craig Smith**, Communications & Creative Design Specialist
- **Julie Verge**, Corporate Services Assistant

Planning & Regulations

- **Leslie Benson**, Watershed Engineer
- **Joanne May**, Administrative Assistant, Planning & Regulations
- **Ken Thajer**, Planning & Regulations Coordinator

Watershed Services

- **Lindsay Champagne**, Watershed Biologist
- **Ryan Good**, Water Resources Engineer
- **Cory Harris**, Watershed Services Coordinator
- **Jessica Mueller**, Watershed Hydrogeologist
- **Mike Smith**, Water Resource Technician
- **Cody Woodcock**, Watershed Biologist (*Until Feb.*)

Ganaraska Forest Centre

- **Mark Doherty**, Booking & Events Facilitator (*Until Nov.*)
- **Katie Roberts**, Outdoor Education Instructor
- **Aaron Staples**, Outdoor Education Instructor

Conservation Lands

- **George Elgear**, General Superintendent
- **Pam Lancaster**, Conservation Lands Coordinator
- **William Lemieux**, Conservation Lands Technician
- **Gus Saurer**, Forester
- **Jonathan Shaddock**, GFC Technician
- **Ed Van Osch**, Forest Recreation Technician

Board of Directors

- **Mark Lovshin**, Chair, Township of Hamilton
- **Vicki Mink**, Vice Chair, Municipality of Port Hope
- **Willie Woo**, Municipality of Clarington
- **Margaret Zwart**, Municipality of Clarington
- **Adam Pearson**, Municipality of Port Hope

- **Joan Stover**, Township of Alnwick/Haldimand
- **Lance Nachoff**, Township of Cavan Monaghan
- **Randy Barber**, Town of Cobourg
- **Miriam Mutton**, Town of Cobourg
- **Tracy Richardson**, City of Kawartha Lakes
- **Bruce Buttar**, Agricultural Sector Representative

2023 Summer Students

- **Cora Beatty**, Watershed Monitoring Technician
- **Kieran Caldwell**, Geomatics-Land Survey Tech.
- **Amber Hurst**, Landscape Technician
- **Nathen Larocque**, Geomatics-Land Survey Tech.
- **Rylee Pelow**, Teacher's Assistant
- **Jacob Robinson**, Environmental Technician
- **Josh Tinney**, Conservation Areas Technician
- **Paula Torti**, Forest Health Monitoring Assistant