A message from our Board Chair

The coming year for Quinte Conservation can be described as one of great challenges that will, without question, be met with determination, professionalism, and fortitude of a team of unparalleled professionals, aided, assisted, and encouraged by a new board of directors with the singular focus of making our agency among the best at meeting the expectations and aspirations of our member municipalities in protecting our natural environment and environs.

Coming, as we are, out of the tumult of the COVID-19 pandemic and all the pressures we saw that place on some of our lands and facilities, as well as the curveball hurled our way in the form of Bill 23 and the implications it has for our function and core mandates as a conservation authority, we can take encouragement knowing that we have in our staff complement some of the finest, most dedicated and knowledgeable professionals in the field of natural science and environmental stewardship.

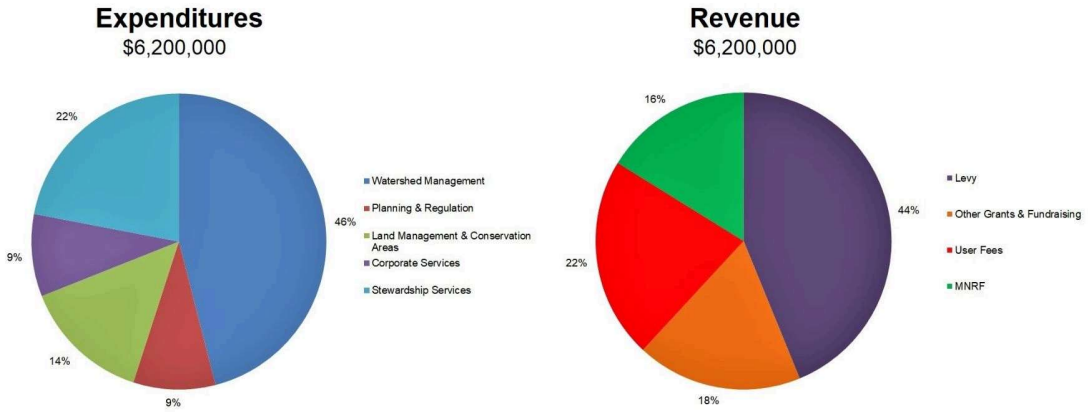
Join me and fellow board members, then, in urging on, encouraging, and emboldening our cohort of amazing staff and supporters in marking the coming year of 2023 into 2024 as one of resilience, innovation, and pride in our jewels of the natural world in our care.

We have been heartened by the glowing Watershed Report Card that appeared in the early weeks of this spring and we know, as well, that our municipal partners are behind us and staff wholeheartedly in preserving, enhancing, and improving on the achievements we have made in protecting our watersheds and natural lands and important features.

As Chair of the Quinte Conservation Board of Directors, I would ask this one thing of you in going forward in 2023 — get outside, take in the beauty and bounty we are privileged to have in our stewardship in Quinte Conservation's areas and lands and marvel at all we are blessed to have at our doorsteps.

Chris Malette, City of Belleville

Financial Summary



Permits & Planning

2022 started off well for Quinte Conservation's Permit and Planning Department as staff gradually returned to the office, and in-person meetings and site visits started again following the lift of COVID-19 restrictions. Moving out of the pandemic, staff continued to protect people and properties in the watershed by ensuring responsible development through planning comments and development permits.

Under the jurisdiction of the Conservation Authorities Act, Ontario Regulation 319/09-Development, Interference with Wetlands and Alterations to Shorelines and Watercourses and Section 3.1 of the Provincial Policy Statement (2020), QC staff review both planning and regulatory applications for development.

Planning

Our staff provide comments on Planning Act applications that have been circulated to us by our member municipalities. While our primary focus is on directing development to areas that are not considered natural hazards, staff also comment on natural heritage and water quality concerns. This past year, our planning staff reviewed 383 files including plans for subdivisions and condominiums, site plan control applications, official plan and zoning by-law amendments, severances, and minor variances. We also reviewed over 50 technical reports including Environmental Impact Studies, slope stability and unstable bedrock analysis, and stormwater management plans.

Our mandated permitting role requires that proposed development adheres to Ontario Regulation 319/09. This regulation prevents or restricts development and site alterations near wetlands, shorelines, and waterways in order to protect landowners from flooding, erosion, and other hazards. Permits are required for development in and around these areas

and our regulatory staff are guided in their decision making by following the policies in the Quinte Conservation Watershed Policy Manual (2019).

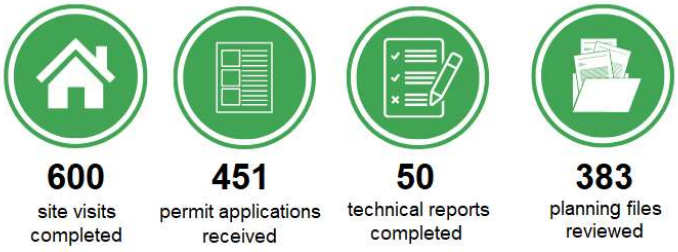
Permit Applications

An important part of our permitting role is ensuring compliance with the Regulation. Over 150 complaints were made regarding development on individual properties within the watershed, which resulted in over 60 violation files being opened. QC staff promote voluntary compliance for all violation files and will work with landowners to gain compliance. Charges can be laid for serious offences or compliance resistant landowners.

Ensuring the data we use to make our decisions regarding natural hazards is current and relevant, periodic updates are required through large technical studies. To that end, The Bay of Quinte and Lake Ontario Shoreline Management Plan (SMP) was completed in April 2022 and approved by our Board of Directors in May. The SMP was a major undertaking and resulted in updated mapping and technical information for natural hazards around those shoreline areas. Erosion and dynamic beach hazards were scientifically established, and flood hazard mapping was updated from previous studies dating as far back as 1987. The SMP is integral for the comments and permits issued by staff on various applications.

The autumn of 2022 brought some unanticipated changes to our role, as the provincial government proposed new legislation: More Homes Built Faster Act - Bill 23, which received royal assent in November 2022. The Bill made amendments to over 12 pieces of legislation including the Planning Act and enforced rules and regulations around what Conservation Authorities can comment on with regards to applications circulated to them by their member municipalities. As of January 1, 2023, Conservation Authorities are limited to commenting on items that pertain to natural hazards, which means that all natural heritage, ecological, hydrological, and water quality issues are legally no longer issues that we can provide comment on. We have been proactive in reaching out to municipal staff to address their concerns regarding this significant gap in expertise that they will now have to address. Unfortunately, this may potentially lead to increased costs to taxpayers and developers as municipalities try to fill this unexpected gap.

Planning and Regulations staff will continue to adapt to the new provincial changes and remain open and transparent to our watershed residents regarding our processes and rules. We anticipate more changes from the province throughout 2023, including the possibility of a new regulation, and are ready to face any new challenges with an open mind and firm belief in our role in protecting the people and properties of Ontarians.



Water Levels

The spring freshet of 2022 on the Moira River, was notably low, and representative of springtime levels in all watersheds in the Quinte region. The spring freshet for the Moira is considered the snow melt induced river peak and occurs each year between mid-March and early May. This is an annual event which swells the rivers and tributaries, providing a much needed recharge to lakes and groundwater.

Spring 2022 Peak Flows

Location	Date	Peak Flow (cms)	Bankfull (2 yr, cms)	Highest Recorded (cms)
Moira River at Foxboro	March 27, 2022	173	210	364
Salmon River at Shannonville	March 26, 2022	53	77	141
Napanee River at Camden East	March 27, 2022	48	69	78

This year the freshet started with typical timing, at about March 17th. It was preceded by some incremental snow melt starting in mid-January, which by mid March, had melted out a notable portion of an already small total seasonal snow accumulation. In the spring, the final snow melt occurred quickly, with snow over most of the watershed being depleted well before the peak on March 26-27. The far north regions of the watershed retained an average snowpack, which continued to melt out. This was monitored by staff carefully to ensure that any sudden melt and release would be detected early. However, a series of thaw and freeze cycles, coupled with limited rainfall, resulted in a long, drawn-out event.

It should be noted that the low springtime peak flow of the Moira River at Foxboro of 173 cms, is one of the lower peaks on record, but higher than the peak of the previous year of 113 cms. The lower-than-normal flows were a result of reduced winter precipitation. This is true across all of Quinte Conservation's watersheds; the Moira provides a typical and clear example. These low flows and dry conditions set up for near low water conditions later in the year.

Low Water Conditions in 2022

While many Quinte Region residents living along the shoreline of Lake Ontario and the Bay of Quinte experienced average water levels in the summer of 2022, the remainder of the Quinte Region was in the midst of an extended dry period. Although drier than normal, the conditions did not rise to the necessary thresholds to declare a low water condition.

At the end of a lower-than-normal spring freshet in March, the Quinte region was tracking slightly below seasonal accumulated rains, and stream flows were below normal. A sustained decline of precipitation in May, June, and July resulted in dry conditions, with a noticeable decline in stream flows.

These dry conditions received some relief with large rain events in August, September, and October, but the recovery was slow. A full recovery of stream flows and groundwater did not occur until December, just ahead of the ground freezing.

Over the past decade, the Quinte Region has experienced its fair share of extreme weather events, ranging from wind and ice storms to flooding and drought. One of the worst droughts to impact the Region occurred in 2016. During this time, municipal and residential wells, which provide water supply to approximately 50% of the people living in the Quinte Conservation watershed, experienced historically low levels.

• Municipalities where residents rely 100% on private wells had difficulty identifying alternative sources of water for their residents.

• Farmers struggled to find alternative supplies to sustain crops and livestock.

• Fire management water sources became compromised.

• Low levels in rivers, inland lakes, and streams resulted in damaged fish habitat.

Local residents, Emergency Management Response Teams, and various municipal departments turned to Quinte Conservation for expert advice to help deal with the drought and minimize the environmental impacts.

Floodplain Mapping & Shoreline Management Plan

The impacts of a changing climate are being felt around the world. As stewards of the local watershed, Quinte Conservation continues to help watershed residents adapt to the changing environment through watershed-based reporting and resources. In 2022, floodplain mapping projects took place to review and update three local areas.

Floodplains are areas around lakes and rivers which can become inundated with water during periods of high flow, spring melts, or severe storm events. As the climate changes, the areas of the floodplains may also.

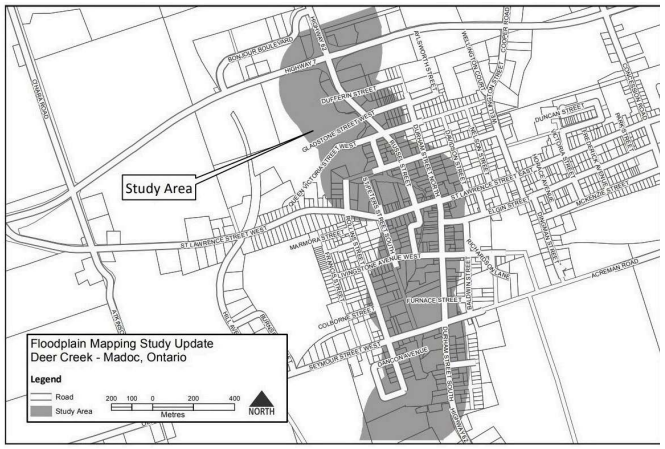
Quinte Conservation uses floodplain mapping to help protect the public from building in areas of natural hazards as well as to help those that currently live in these areas. Much of this mapping is outdated, having been completed throughout the 1970s and 1980s, and requires review to ensure that hazardous areas are mapped according to climate conditions, as well as considering current standards to improve accuracy.

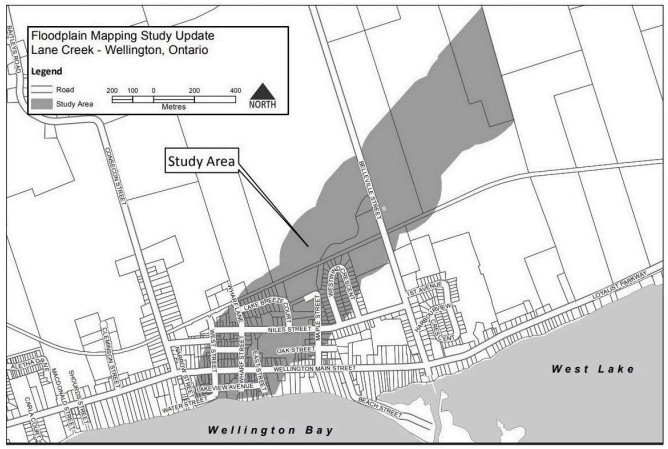
Through funding support from local municipalities and the Federal National Disaster Mitigation Program, updated floodplain mapping was completed for Deer Creek in the Village of Madoc, Lane Creek in the Village of Wellington, and Lake Ontario and Bay of Quinte (Cities of Quinte West and Belleville, Towns of Deseronto and Nappanee, Tyendinaga Mohawk Territory, and all of Prince Edward County).

Quinte Conservation staff coordinated the completion of these projects through professional consultants competent in their field of expertise, public consultation, and presentations to municipal staff and councils. All projects were successful both in terms of stakeholder engagement and the final technical results.

Deer Creek & Lane Creek

The final product for the Deer and Lane Creek projects included updated hydrologic models, reports, and mapping showing the 1:100 year floodplain. Based on the final approved floodplain maps and potential impacts on land use in the floodplain, both projects were advanced to a second stage with review of potential options that may help mitigate the physical extent of the floodplain. The anticipated completion for the second stage is in 2023.





Lake Ontario and Bay of Quinte

The Lake Ontario and Bay of Quinte project was a larger undertaking that resulted in the preparation of a Shoreline Management Plan for approximately 600 kilometres of shoreline within the jurisdiction of the project partners. Updated floodplain mapping was just one of the components for this project, which included a review of wave conditions during storm events, mapping of erosion rates, dynamic beaches, and recommendations for future protection of shorelines.

This Shoreline Management Plan was a first for Quinte Conservation and is a guiding document for helping to protect residents that live along the shoreline and preserve the natural shorelines that enhance the beauty and health of the Quinte Region.

The updated hazard mapping and recommendation from these projects are implemented by Quinte Conservation through review of land use planning and development applications. For more information on these projects, please visit the Reports and Studies page under the Watershed Management tab at Quinte Conservation.ca.

Water Control Structures

13 Island Dam Rehabilitation

Thirteen Island Lake Dam, located in the Municipality of South Frontenac, is a unique structure lying within a roadway consisting of culverts with adjustable panels. The original structure was constructed in 1975 to maintain optimal summer water levels on Thirteen Island Lake.

In recent years the deterioration (corrosion) of the culverts was very apparent with the development of consistent sinkholes. In response to these concerns, in 2021 Quinte Conservation completed an options analysis and a subsequent replacement design.

In spring 2022, the project was awarded to H.R. Doornekamp Construction Ltd. Throughout the summer, the materials were received, and the final plans were made, with the construction successfully taking place from September to November of 2022. Since then, the dam has been successfully operating at it’s normal winter operating level.

The dam now consists of three concrete box culverts with integral stop logs. The new dam was designed to allow flows and maintain water levels that were similar to the previous design so as not to affect the local environment or any residents.

Completed construction, undertaking fall drawdown. Taken from the upstream left bank.

McLeod Central Embankment Seepage

McLeod Dam was constructed in 1979 and underwent major upgrades in 2007. The 1979 construction included, in part, a sheet pile from the west of the gate building to the spillway's eastern retaining wall. In fall of 2021, there was evidence that water was seeping through or around the sheet pile and getting trapped between the lower central embankment retaining walls, which did not have any drainage holes. This pressure became evident when the southern end cap on the central embankment shifted 1.25" and allowed water to seep out. At that time, the piezometers were reviewed and it was found that the water level within the central embankment had indeed increased.

Quinte Conservation engaged Jewell Engineering who suggested a 2-pronged approach; the first was to install a grout curtain upstream of the existing sheet pile to minimize or eliminate any seepage. The second was to install a drainage system within the embankment to remove any water that may accumulate.

In spring 2022, the project was awarded to H.R. Doornekamp Construction Ltd to complete both the grout curtain and the drainage system. The work was completed in July 2022. The piezometers within the central embankment have shown that the work has lowered the water level and alleviated water pressure on the end cap wall.

The beginning of placement of the pea stone and drainage tile. Picture taken looking downstream.

3rd Depot Lake Dam Assessment

The 3rd Depot Dam is one of the largest dams in Quinte Conservation's inventory and one of the few dams to hold a High Hazard Classification. Seepage around the outlet control structure has been an ongoing issue since the 1990s, with several reappearing sinkholes around the control building. In 2020, GHD performed a seepage study that confirmed the location of the seepage but also indicated that the 49 year old sheet pile in the middle of the dam may have corroded to as little as 2mm thick, which has a high likelihood of being punctured by the embankment rocks.

The completed work in 2022 included exposing the sheet pile at three locations to confirm if the calculated metal loss was close to the actual metal loss. This information will be used to determine what, if any, future work is required and the urgency of that work.

Whitney Dam Safety Upgrades

In 2021, Quinte Conservation completed a Dam Safety Review (DSR) and Public Safety Risk Assessment (PSRA). The PRSA identified the need for updated safety signage, an upstream buoy warning of an upcoming dam, and safety rails to prevent pedestrians from accessing the crest of the spillway. This work was successfully completed in 2022.

Picture taken looking north across spillway.

Watershed Monitoring

Quinte Conservation is involved in several monitoring programs that collect scientific data to understand the changes affecting our natural areas and watercourses. The information collected is used to assess the ecological health of our watershed, track trends, and alert us to potential issues. Data gathered from these programs is vital to monitoring watershed conditions.

The following programs are also critical to producing our Watershed Report Card, which is a summary on the state of our forest and wetland conditions and our surface water and groundwater resources. Conservation Authorities across Ontario develop these report cards to ensure consistent reporting across the province and to provide watershed residents with information on how to protect, enhance, and improve the precious resources that surround us.

Benthos

The Ontario Benthos Biomonitoring Network (OBBN), designed and managed by the Ministry of Environment, Conservation and Parks (MECP), is a provincial network used to monitor the quality of the watersheds. Benthic-invertebrate (bottom dwelling aquatic invertebrates) can be seen with the naked eye and are without backbones. As bottom dwellers, they are sensitive to environmental impacts and their community structures are significant for determining the ecological health of aquatic ecosystems. This year, Quinte Conservation staff sampled 39 sites throughout various streams of our watershed. The data gathered supports the identification of stream conditions. By

tracking these sites long-term, we can later determine the conditions of various watersheds and sub-watersheds, as well as detect changes in the water quality.

Surface Water

In collaboration with the MECP, the Provincial Water Quality Monitoring Network (PWQMN) collects monthly water quality information from rivers and streams at strategic locations throughout Ontario. Quinte Conservation has been participating in this program for more than 50 years and continues to monitor water quality in the Moira, Napanee, and Prince Edward Region Watersheds. Surface water quality samples are collected from 26 monitoring sites between April and October. Water samples are sent to the MECP where they are analyzed for various general chemistry parameters such as, but not limited to, metals, biochemical oxygen demand, mercury, suspended solids, dissolved and total nutrients, and turbidity. The objective of the program is to report the short, medium, and long-term monitoring of water quality in Ontario streams. Using this data, staff can also identify temporal and spatial trends in stream water quality and inform MECP on environmental compliance, investigations, assessments, policy, and program decision making.

Groundwater

The Provincial Groundwater Monitoring Network (PGMN) is a partnership program in collaboration with the MECP. The network comprises almost 490 monitoring wells located throughout the watersheds of Ontario's 36 conservation authorities and within ten municipalities (which are not covered by a conservation authority). The groundwater data generated from this program assists in:

• Tracking the state of ambient groundwater quality and quantity (levels) and identifies trends over time and correlations with key factors that influence groundwater conditions.

• Supporting Conservation Authorities and the Province in decision making related to water management, environmental approvals, compliance and policy, standard development, and public health policy/outreach; and

• Providing a baseline monitoring network from which special studies and modelling can be undertaken for environmental or human health issues of interest or concern.

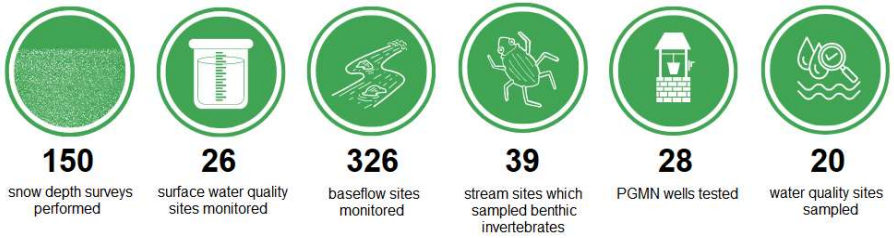
Quinte Conservation tests samples from 28 wells for pesticides, metals, volatile organics, and general chemistry to ensure safe drinking water supplies while adding to our knowledge of groundwater studies. The network also provides an early warning system for changes in water levels caused by climate conditions or human activities, and information on regional trends in groundwater quality. The groundwater level readings are taken hourly and are stored in a datalogger for either manual or remote-automated download. In 2022, water level data collection and ongoing maintenance was performed at 27 PGMN sites, and water quality sampling was conducted at 20 of these sites.

Baseflow

Furthermore, as part of our watershed monitoring program, we complete baseflow monitoring in 30 sub-watersheds at approximately 326 sites. Initially, data was collected to help establish baseline conditions and to improve our understanding of the watershed conditions in respect of the water budget. The need arose from our development of estimates of groundwater recharge. However, this data may also be used in assessing areas of our watershed for fisheries and in interpreting water quality data.

Snow Sampling

Snow depth information is routinely collected from 15 sites throughout the winter months to aid in precipitation estimations and flood forecasting. Over the course of the year’s snowy periods, staff performed 150 snow depth surveys throughout the watershed.



Long Term Monitoring & Coastal Wetlands

Long-Term Monitoring Program (Bay of Quinte Blue-green Algae Watch)

Quinte Conservation has been working with the Bay of Quinte Remedial Action Plan (BQRAP), the Federal Government, Provincial Government, local agencies, and municipalities in collecting water quality data from the Bay of Quinte to learn about when, where, and why blue-green algae (cyanobacteria) blooms occur. The program has helped collect scientific information to support the development of the Bay of Quinte Phosphorus Management Plan, which has developed long-term water quality targets for the Bay of Quinte.

What is blue-green algae?

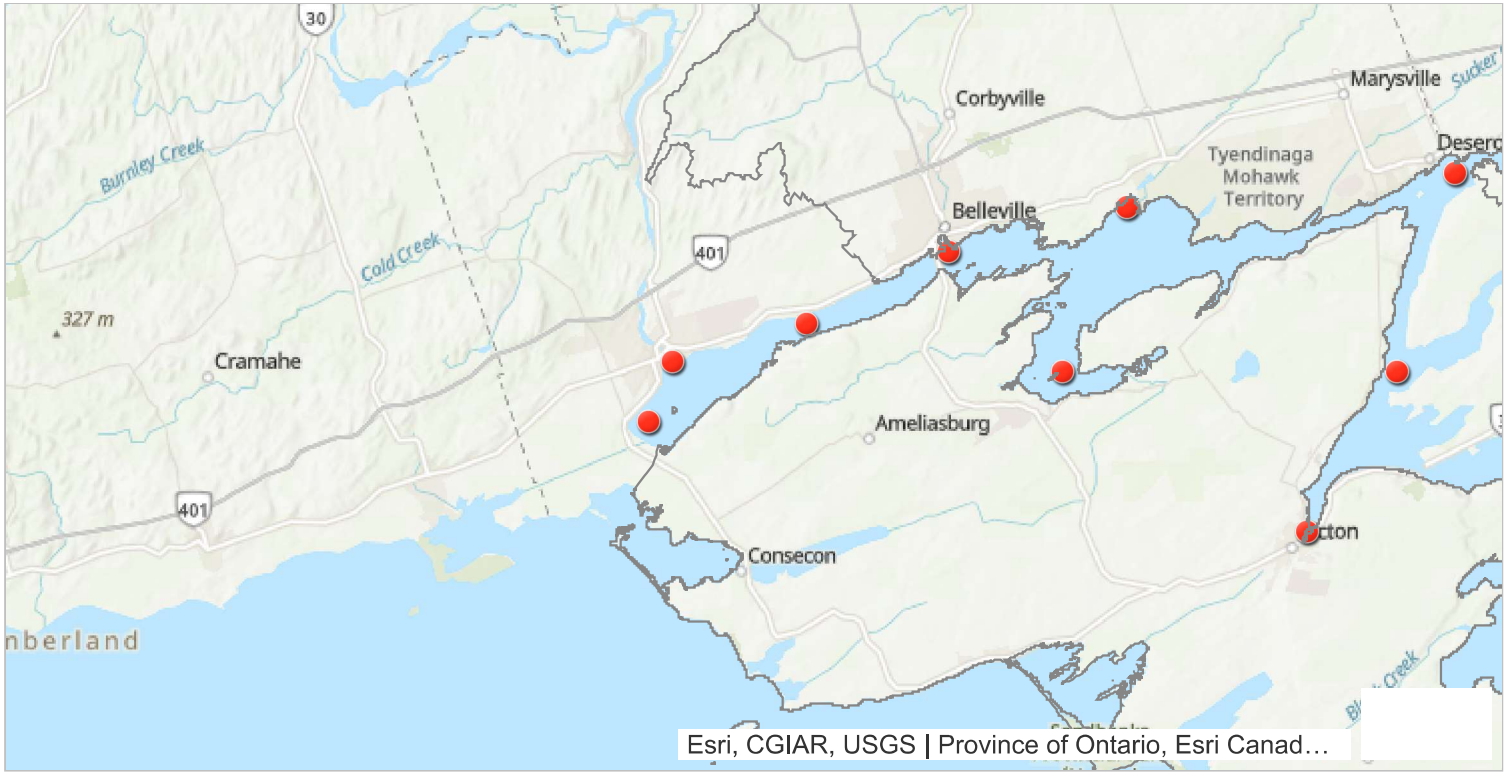
Blue-green algae are also called cyanobacteria. They have some characteristics of algae and some bacteria as they are considered photosynthesizing bacteria. Blue-green algae blooms typically look like pea soup or spilled paint with a bluish or greenish colour. In the right conditions, blue-green algae populations can rapidly grow into blooms.

Why monitor blue-green algae?

• One of the main environmental issues with the Bay has always been the amount of nutrients entering it, particularly phosphorus. Phosphorus is a naturally occurring element, essential to all life; however, too much of it plays havoc with nature.

• In aquatic ecosystems like the Bay of Quinte, the ability of phosphorus to promote rapid growth causes problems. It takes only 1 _lb. of phosphorus to grow 500 lbs of algae. This nutrient-enrichment process is known as eutrophication.

• The initial program was in response to a bay-wide blue-green algae bloom in 2009. Since the initial 2009 study, Quinte Conservation has been working with the Bay of Quinte Remedial Action Plan (BQRAP) to understand the water chemistry and to try and predict when and where harmful algal blooms are likely to occur.



What are we doing?

• The Long-Term Monitoring Program is designed to monitor water _quality every two weeks from May to October at nine sampling sites _around the Bay, from the Murray Canal to Picton Harbour (*pictured in _map*).

• Quinte Conservation, along with the BQRAP, and partner agencies _has reduced the amount of phosphorus entering the Bay from _multiple sources, both rural and urban, such as sewage treatment _plants, stormwater run-off, and agricultural land practices.

• Despite the reductions in phosphorus inputs, the current phosphorus _levels are still a major concern. The data collected through the Long-_Term Monitoring program is essential for the implementation of the _Bay of Quinte Phosphorus Management Plan for the long-term _monitoring targets associated eutrophication, phosphorus _concentration and loadings.

The Bay of Quinte Long-Term Monitoring Program supported the goals of the BQRAP, contributed to the process of delisting of the Bay of Quinte as a Great Lakes Area of Concern and will continue monitoring the long-term water quality targets developed for the Bay of Quinte.

Key highlights from 2022:

• In 2022, the Long-Term Bay of Quinte Phosphorus Management Plan targets for the Upper Bay of Quinte were not met, except for microcystins. The short-term targets for BUI #8 were met in 2022.

• The reduction of total phytoplankton biomass has been met.

Coastal Wetlands

Under the Great Lakes Water Quality Agreement, the governments of Canada and the United States of America have committed to restore and maintain the physical and biological integrity of the waters of the Great Lakes.

Coastal Wetlands provide many benefits to our natural ecosystems by maintaining healthy and diverse fish and wildlife populations through important habitat. They act as filters to remove pollutants and help to improve water quality which reduces the need for additional costly water treatment. Wetlands are also like giant sponges and play an important role in helping to reduce the impacts of flooding and mitigate property damage and in times of drought, help maintain water levels by releasing water back into the ecosystem. There are also many ecosystem services that offer large financial benefits and recreational opportunities to residents, tourists, and businesses.

In the Bay of Quinte region, the area combined for the fifteen coastal wetlands covers approximately 4367 ha.

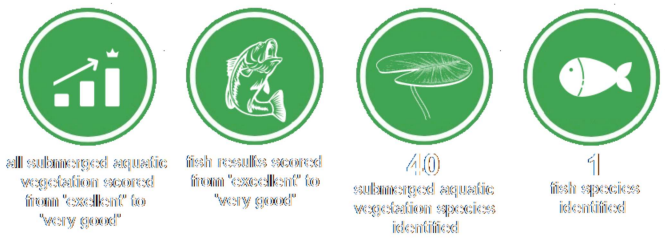
Why monitor coastal wetlands?

Coastal wetlands can tell us a lot about the health and the function of the Bay of Quinte's water quality, invasive species, and effects from climate change? The absence of monitoring programs puts the Bay of Quinte at risk and damage going unnoticed until it's too late or too expensive to correct any issues.

2022 was the fourteenth year for Quinte Conservation's Bay of Quinte Coastal Wetland Monitoring Program and is scheduled to continue for the upcoming season.

Did you know?

The Bay of Quinte's wetlands score higher in Index Biotic Integrity (IBI) than other coastal wetlands within the Great Lakes! The valuable information collected from monitoring programs is used for land use management and reference sites for other areas. Through stewardship and restoration activities with the Bay of Quinte Remedial Action Plan (BQRAP), the quality of our coastal wetlands has improved and are considered to be more productive and diverse than others in Lake Ontario.



Did you know?

• Coastal wetlands with high quality of submerged aquatic vegetation communities support more native species, more sensitive species, and provide increased coverage compared to sites with poorer water _quality. These communities are also known to support a higher quality of marsh bird and fish communities in Lake Ontario wetlands.

• The Bay of Quinte coastal wetlands are known for their diverse and productive fish habitats. The Bay of Quinte has developed into a diverse world class sports fishery, well known for its Walleye and Largemouth Bass.

• Many important sport fishes, such as Yellow Perch, Bowfin, and Northern Pike use coastal wetland habitats for spawning.

Water Soldier

Water soldier was detected in the Bay of Quinte in the fall of 2021. Extensive monitoring for this invasive aquatic plant was done in 2022 to determine the extent of the population, which lead to the discovery of large colonies in the western half of the Bay of Quinte.

The detection of water soldier in the Bay of Quinte is significant because it is one of the only two locations where this plant is present, the other being the Trent River. Since the initial discovery of Water Soldier in the Trent River, an inter-agency Technical Working Group has been established to help coordinate research, monitoring, control, and prevention strategies. Quinte Conservation joined the Technical Working Group once it was detected in the Bay of Quinte.

What is Water Solider?

Water soldier is an alien, invasive, perennial aquatic plant that is native to Europe and northwest Asia.

Impacts on Great Lakes Ecosystems:

- Forms thick mats of floating and submerged vegetation
- Aggressively outcompetes native species
- Has the potential to alter surrounding water chemistry
- Can interfere with infrastructure
- Threatens the diversity of aquatic ecosystems
- Significantly impedes recreational activities such as boating, fishing, _and swimming

For more on information on water soldier visit invadingspecies.com.

If you find water soldier or another invasive species in the wild, please contact the toll-free Invading Species Hotline at 1-800-563-7711, visit EDDMapS, or search for the 'Invasive Species in Ontario' project on iNaturalist.org.

Conservation Lands Management

Tornado

In early August a tornado struck the Actinolite area, heavily damaging the forest in a fairly narrow strip. Salvage harvesting took place for what remained of the merchantable timber (mostly Red Pine). Price Conservation Area was heavily damaged and remains closed due to unsafe conditions.

Tornado damage at Price Conservation Area

Forest Harvesting

The following was harvested from our Malone, Hawkins Bay, Flynn Road, and Potter Settlement properties:

Red Pine	2,118 tonnes of sawlogs and 977 tonnes of poles
White Pine	1826 tonnes of sawlogs
White Spruce	952 tonnes of sawlogs

Conservation Area Upgrades

Throughout the year, a number of improvement projects were completed at our Conservation Areas thanks to paid parking revenue, donations, volunteer efforts, and funding grants.

Conservation Area	Improvements
Beaver Meadow	• Improved access road into area.
Depot Lakes	Campground Washroom Revitalization • New layout includes four gender neutral washrooms with individual access points. • One washroom was designed and constructed to the Ontario Building Code (OBC) Barrier Free requirements. These measures include ramps, automatic doors, distress buttons, touch free accessories and adequate sizing. • Another washroom includes a baby changing station in order to support the EarlyON Playgroup that frequents the area as well as other young families who are visiting. • All the washrooms received an anti-slip epoxy flooring to ensure safety and ease of sanitizing. • New lighting and ventilation systems were designed to meet or exceed the OBC requirements and are operated by an occupancy sensor to minimize high touch surfaces and improve energy efficiency.
H.R. Frink Centre	• Widening of trail and graveling trail on south side for future trail connection to north side. • Expanded parking lot on south side to accommodate more visitors. • New farm gates on north side to assist School Board staff with parking concerns during their scheduled outdoor education programs.
Little Bluff	• Hand railing installed to help visitors with ease of access to the barrier beach. • Installed electronic parking gate for upgrade and area maintenance revenue. • Improved access road into area.
Macaulay Mountain	• Replaced sign for birdhouse city.
Potter's Creek	• New parking lot and trails at the north end for opening of new conservation area in 2023. • New board walk on blue trail to connect to new trail system. • Updated picnic tables on Potter's South.
Vanderwater	• Replaced picnic tables at the rapids. • Installed electronic parking gate for upgrade and area maintenance.

Revitalized Depot Lakes Campground washroom and new handrail on trail to barrier beach at Little Bluff

Source Water Protection

The Clean Water Act was enacted in 2006 to protect both existing and future sources of drinking water from overuse and contamination. Known as the Quinte Source Protection Authority, Quinte Conservation provides technical and administrative support to the Quinte Source Protection Committee. The 21-member Committee has been monitoring the progress of the policy implementation phase, while working on improvements to the existing policies in an effort to enhance the effectiveness of the policies as well as to including newly developed areas.

2022 was the 8th year for implementation of the Quinte Region Source Protection Plan that came into effect on January 1, 2015. Implementing bodies are responsible for enacting the 63 policies set out in the plans. Quinte Conservation must report annually on the progress of implementation using a high-level reporting template developed by the Ministry of Environment, Conservation and Parks (MECP) for the assessment of implementation progress. In 2022, implementing bodies reported that one hundred percent of significant drinking water threat policies were either in progress or fully implemented.

The Quinte Source Protection Committee is in the process of completing a Section 36 Amendment to our Source Protection Plan and Assessment Report under the Clean Water Act. The Quinte Region Source Protection Plan has been in effect since January 1, 2015, and contains policies that help manage threats to drinking water near municipal wells and intakes. The changes to existing policies are required to improve policies and adapt to the new Ministry of Environment, Conservation and Parks technical rules. Part of this Amendment will include a public consultation phase, where landowners will be asked to provide feedback on the proposed changes.

The Best Practices Guidance program was published on the Ministry of the Environment, Conservation, and Parks' website in 2021. The goal of this voluntary guidance program is to protect human health and the environment by providing information and suggestions to rural Ontarians who are not protected by the government's multibarrier approach for source water protection. In 2022, to help promote this new guidance, staff attended several public events including cottage/landowner associations' annual general meetings, educational Discovery Day events, plowing matches, Loyalist College's Open-Air Market, and the Shannonville World's Fair. There were approximately 4,600 attendees, 2,000 conversations regarding the Best Practices Guidance, and the distribution of 175 well water testing kits. In addition to promoting the guidance at these events, staff are busy creating new communication materials. These include but are not limited to, infographics for new homeowners with wells and septic systems, well water testing booklets, and brochures.

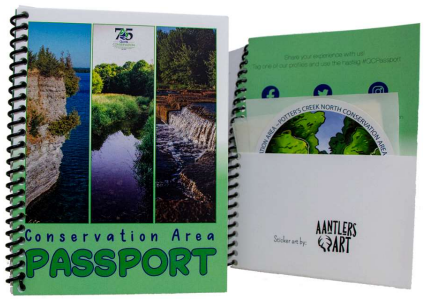
Communications

2022 was a celebratory year for Quinte Conservation as it marked our 75th Anniversary and the 50th Anniversary of the H.R. Frink Education Centre!

To honour these momentous occasions, the Communications Department, along with Outreach and Stewardship staff, hosted a variety of special events and initiatives, including a Frink 50th outdoor celebration and a large-scale fundraising event in October.

Smaller scale activities included multiple guided hikes, Forest Therapy events, conservation area pop-ups, and Discovery Days. Staff also increased public outreach and attended community events.

A limited-edition conservation area summer passport was launched, which features sticker artwork from a local artist. Each conservation area has its own section with some activity prompts, a place for field notes, and an area for the sicker.



To celebrate Adopt an Acre, a limited-edition owl plush toy was added to the line-up of QC forest friends. Otis the Owl, named by staff vote, wears a blue hooded sweatshirt (similar to QC field clothing) featuring the 75th logo. The campaign was successful, raising $10,000.

Many guests attended the Frink 50th at the end of October, including some notable individuals who have been supporters and educators with the Frink Centre for many years. Self-led outdoor activities lined the trails, a story walk describing the history of the centre led to a campfire soup, which also served as an area where guests could share their memories with each other.

The 75th Anniversary on October 1st was held in the evening at Vanderwater Conservation Area. Tickets included a swag bag, tree seedling (provided by title sponsor, Ellbrook Excavating Inc.), two drink and food items from a local caterer, access to the vendor market and other activities such as a silent auction, live music, live theatre from Tweed and Company, and Indigenous knowledge sharing. This was the first time in a long time that staff have put on a fundraiser of this scale. Overall, the event was successful, with most of the two hundred tickets selling. Proceeds from this event supported Quinte Conservation’s Youth Education Programs.

Indigenous knowledge sharing around campfire at the 75th Fundraiser

Another exciting opportunity that happened during the year of our celebrations was to be selected as a location for the Amazing Race Canada. Show producers contacted staff about using Birdhouse City at Macaulay Mountain Conservation Area in Picton for one of their challenges. Contestants had to complete a map of Birdhouse City by memory while running back and forth from the parking lot to the birdhouses. The Birdhouse City Volunteers have been working tirelessly over the last few years to rehabilitate the birdhouses and manage the area as a destination site for both locals and tourists and in doing so, have put it back on the map for productions like the Amazing Race Canada.

Education & Stewardship

Landowner Programs

Quinte Conservation's Outreach and Stewardship Team organizes and delivers a variety of programs and services to watershed residents and municipalities each year.

Stewardship Site Visits for Guidance & Connections to Programs

Quinte Conservation staff offer shoreline stewardship visits to waterfront property landowners within the watershed. During a site visit, staff share information pertaining to best practices for waterfront living including well and septic care, shoreline erosion concerns and protection methods, identification of invasive/problematic species with tips for control and removal, species at risk in the area/lake, and provide recommendations for long-term water and eco-system protection.

Staff can pre-qualify landowners for various grants/programs, such as large-scale tree planting and shoreline planting. Stewardship staff also promote partner landowner programs including, but not limited to, the Managed Forest Tax Incentive Program and BQRAP initiatives for septic stewardship, rain gardens, buffer plantings, and livestock fencing.

Healthy Yards & Agricultural Site Visits

We also offer stewardship advice to landowners around naturalization, best management practices for invasive species, tree planting, grasslands restoration, and creating pollinator habitat. Staff will connect interested individuals to existing

landowner programs offered through Quinte Conservation and by our partner groups.

Stewardship Site Visits for BQRAP Programming

The BQRAP offers a variety of subsidized programs to homeowners. For a project to be eligible, staff must attend a site visit to determine whether the project meets the qualification standards; then the homeowner may submit an application for approval. Once the project is completed, the homeowner can submit receipts for partial reimbursement.

20 site visits were conducted between June and October within the Quinte Watershed. These visits were for three specific programs including Rural Stewardship (riparian planting), Urban Stewardship (rain garden), and Septic Stewardship (septic/shoreline assessment).

14 of the site visits took place in the Prince Edward Region, 4 from Belleville, and 1 each from Deseronto and Napanee. 6 projects were completed, 3 projects did not qualify, and 11 projects were withdrawn, or an application was not submitted.

BQRAP Programs

Septic Savvy – Shoreline landowners were given an educational visit on best management practices for their septic system, as well as a brief assessment of their shoreline. If the landowner needs a septic pump-out or repairs, they are eligible to receive it through the Septic Stewardship program after they complete the site visit.

Rain Gardens – Residents in urban areas received a site visit to make sure their site is suitable for a rain garden. If they are eligible, they can submit their design and application to BQRAP for partial funding.

Shoreline Plantings – Shoreline property owners could receive funds to cover some of the cost of planting along their shorelines. In 2022, staff were able to use the “Natural Edge” app to design planting plans for landowners to submit with their application. A site visit was conducted to make sure the site is suitable, and pictures were taken to assist the landowner with developing a plan.

Shoreline Restoration Program

In 2022, we offered both a full-service shoreline planting program as well as shoreline planting starter kits to assist landowners in restoring their shorelines. The shoreline planting program was available at a subsidized rate and included a free site visit, customized planting plan, a minimum of 50 potted native plants (including 38 trees and shrubs, and 12 wildflowers), hemp fibre mats, mulch, tree guards, and guides on Plant Care, Habitat Creation, and Wildflower Gardens.

Why are shoreline plantings important?

Shoreline plantings reduce water runoff, stabilize banks to help prevent soil erosion, filter out excess nutrients in runoff, and establish/connect habitat for a wide array of wildlife. Customized planting plans consider site conditions such as light, moisture, and soil type, as well as landowner preferences like water access points, views, wildlife appeal, and aesthetics.

Restoration/Habitat Enhancement on Public Lands

Through partnerships with our watershed municipalities and local service and youth groups, plantings took place in four under-utilized areas of public lands including Clarence Bird Park in Belleville, Haig Park in Belleville, the Jasper Avenue Stormwater Pond in Picton, and around a newly created wildlife pond at North Potter's Creek Conservation Area (site opening in 2023). These restoration projects were made possible through support from volunteers, service groups, and project funders including Belleville Rotary (Rotary Love Trees), Tree Canada, and the TD Friends of the Environment Foundation.

Planting around Jasper Avenue Stormwater Pond in Picton

Prairie Restoration at Sidney Conservation Area

Staff enhanced a small section of Sidney Conservation Area with native grasses and wildflowers from tallgrass prairie habitats. These habitats were once extensive in southern Ontario, particularly because of Indigenous People's use of fire on the land. The Oak Hills region contains some of the easternmost tallgrass prairie remnants in the province, and this demonstration planting will educate visitors about this unique ecosystem that exists there. Together stewardship and communications staff produced a video about the project and an interpretive sign for visitors.

Prairie planting at Sidney CA.

Community Trees

Watershed municipalities and local service groups had the opportunity to purchase bare-root seedlings for free community distribution through the Community Trees program. Native species were acquired from a wholesale tree nursery and were distributed through community tree giveaway events. Tree seedlings were also sold to qualifying landowners in a minimum order of 100 trees. Seedlings were also used for planting on municipal and Authority lands. Total seedlings distributed were 11,800.

Waterfront Property Outreach & Restoration

Quinte Conservation and partner agency, Watersheds Canada, received funding support from the Department of Fisheries and Oceans' Habitat Stewardship Program for Aquatic Species at Risk. The program was carried out on East Lake, West Lake, and Wellers Bay in Prince Edward County. Lake front properties were assessed from the water using a standardized assessment protocol under the Love Your Lake Program.

Landowners received a personalized property report with recommended actions for improving shoreline and lake health.

The emphasis of this grant is to focus on education and actions that shoreline property owners can take on their lands to protect wildlife habitat, water quality, and species at risk. Data from the shoreline assessments was used to create personalized and confidential stewardship reports for each landowner.

In addition, Quinte Conservation staff completed one aquatic vegetation survey per lake to collect baseline data on the aquatic vegetation community, presence of invasive species, and to determine the need for education, control, and monitoring. Reports given to each Lake Association and can be viewed on the Reports and Studies page under the Watershed Management tab at QuinteConservation.ca.

Vegetation Survey on Stoco Lake

Watershed monitoring and Stewardship Staff completed an aquatic vegetation survey on Stoco Lake that outlines the Best Management Practices for the invasive species identified and those that may pose a threat in the future. The Stoco Lake Aquatic Vegetation Report is now available on our website.

Youth & Community Outreach

Watershed Education

Throughout the year, a variety of curriculum-connected conservation-based education programs were delivered to watershed students in grades Kindergarten to 12. Programs were offered virtually, in-person at schools and outdoors at the H.R. Frink and Potter's Creek Conservation Areas. Learn more on our website's education programs page.

Interpretive Hike Series

Seven interpretive hikes took place in 2022, six of which were for the 75th Anniversary and one which was a collaboration with the Invading Species Awareness Program. The 75th Anniversary hike series covered several of our most popular conservation areas and provided participants with a guided tour and information about the natural and cultural history. The Invasive Species walking workshop gave visitors an opportunity to learn about different invasive species and how they can help control them.

Summer staff leading the Sheffield hike and speaking about the area's geology

Conservation Area Discovery Days

Discovery Days were offered at several conservation areas throughout the summer months and included H.R. Frink, Potter's Creek, Macaulay Mountain, and Massassauga Point Conservation Areas. Events included a variety of nature-based activities for families and provided important information about the Conservation Area and the plant and animal life it is home to.

Conservation Area Pop-Ups

Educational Pop-Ups were offered in select conservation areas throughout the summer of 2022 as way to engage with the public and share information about the ecological significance of the area, answer questions and concerns, and collect feedback from visitors. The pop-up table contained information and resources, as well as simple activities for kids.

Educational pop-up at Potter's Creek Conservation Area.

Supporting Lake Associations

Quinte Conservation continues to support local Lake Associations and watershed groups by providing lake specific resources, presentations, mapping, and assistance with priority goals like water testing and data analysis.

Funding supported the re-stocking of water sampling kits from Water Rangers to further engage in data collection for the different lake associations. For a listing of local volunteer-based lake and watershed community groups visit our website's volunteer page.

Invasive Species Lake Association Workshop

Partnering with West Lake Community Association (WLCA) and supported by the municipality of Prince Edward County and Isaiah Tubbs Resort, we provided a workshop for members of WLCA and other lake associations in Prince Edward County. Participants learned about the identification and impacts of various invasive species impacting our local area, and how to control them. To continue the process of assisting landowners in managing invasive species, stewardship staff prepared a document to help landowners understand the legal requirements for control projects.

Birdhouse City Adopt-A-Birdhouse Program

The Birdhouse City volunteers have made significant strides towards restoring birdhouses at the site. Sixty-one birdhouses have been fully restored and reinstalled and another eighteen are being restored over the winter for installation in spring of 2023. In 2022, 16 new posts were installed and five were replaced, and a new road sign was printed and installed. Follow Birdhouse City on Facebook to learn more about initiatives and opportunities.

Geographic Information Systems

GIS at Quinte Conservation provides a solid foundation for the distribution of authoritative geospatial data sets within the Authority. Its applications are relied on each day to assist the public services offered through Quinte Conservation programs.

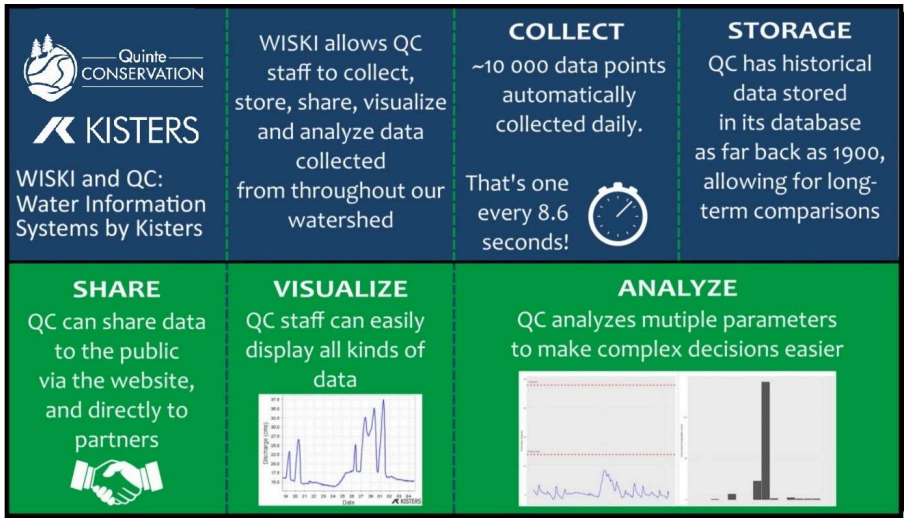
18 requests for geospatial data across a broad range of sectors were fulfilled in 2022, ranging from private consulting firms to educational institutions and provincial government ministries. Our Open Data Hub continues to serve the public by providing access to a various GIS datasets, mapping products and web-based mapping applications. Improved hazard mapping for the Bay of Quinte and Lake Ontario was received through the Shoreline Management Plan and information was distributed to project partners and integrated with our internal GIS applications.

Eastern Ontario LiDAR Acquisition Project Update

The multi-year Eastern Ontario LiDAR Acquisition (EOLAP) project was completed, and data was delivered to partners in early 2023. The Natural Resources Canada (NRCan) Flood Hazard Identification and Mapping Program (FHIMP) provided a significant funding contribution to the project, reducing costs up to 50%. Through the EOLAP, Quinte Conservation has acquired new and improved topographic data within the eastern portion of our watershed which will be used to support municipalities and residents in various ways, including floodplain modernization studies.

WISKI Database

Water Information System by Kisters (WISKI) is a centralized database that allows Quinte Conservation to store, share, visualize and analyze millions of data points collected every year.



WISKI is relied on each day by staff to monitor specific environmental variables in near real-time. The types of information that are collected range from ground water levels to snow depth measurements and everything in between. This data is used to make informed decisions for the safety of the public and ecological integrity of the watershed.

The Authority is also part of the Eastern WISKI Hub, which is a cooperative group of 10 Eastern Conservation Authorities (CAs) who share resources relating to WISKI and its use. The Hub was created to maintain a consistent, common process for collecting, compiling and utilization of monitoring data, including hydrometric, meteorological, groundwater and water quality data.

Over the past decade, the Authority has acted as the Server Host – the Eastern WISKI Hub organization responsible for the operation and maintenance of the WISKI application servers. Under the responsibilities of this role, the Authority is required to review purchase requests for compatibility with existing systems and to maintain and present financial

statements for the Hub. Approved operational budget targets were met this year while the 2023 operating budget was set with a 0% increase to CA base fees.

For more information:

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