



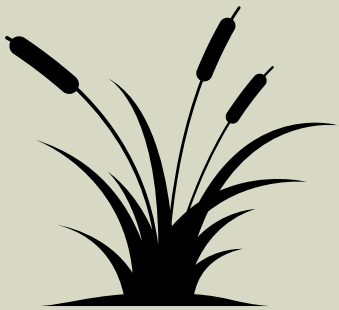
2023 NVCA Annual Report



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HERE'S A GLANCE OF JUST SOME OF WHAT WE ACCOMPLISHED in 2023



12,363

Children
Attending
Programs

5,300

Hectares of
Land
Protected

10

Hectares of
Land Acquired

6,050

Volunteer
hours
Contributed

1,469

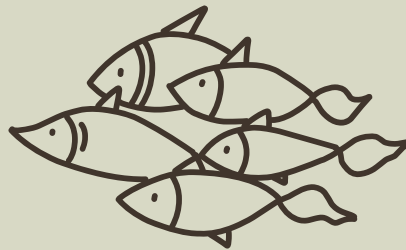
Volunteers

58

Schools
Hosted

62

External
Bookings



\$497,128

Stewardship
Grants

130

Ecological
Restoration
Projects

9

Kilometres
of Rivers &
Streams
Restored

\$220,607

Forestry Grants

78,000

Trees Planted

35

Forestry Projects



6

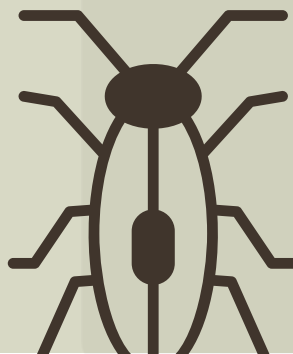
Flood
Messages
Issued

196

Monitoring
projects

90

Wells
sampled



839

Conservation
Authorities
Act Approvals

12

Subdivisions
(includes
condominiums)

103

Violations

850

General
Inquiries

2,527

Planning and
Permitting
Inquiries

4

Freedom of
Information
Requests



Message from the CAO

Broken heat records, droughts, irregular weather patterns, smoke from Canadian forest fires transported across oceans – these are all examples of how climate change has affected many areas of the globe in 2023, including the Nottawasaga Watershed. Similar to many regions of the world, our watershed is also facing many local challenges due to climate change.

Every day, the NVCA team works with our municipalities, funders and other partners to prepare the watershed for the impacts of climate change. Through restoration work, they inspire residents to share rivers, wetlands, forests and grasslands with the plants and animals that also call our watershed home. They remind us that although climate change is upon us, there are still many opportunities to mitigate and adapt to this global issue with local solutions.

In 2023, NVCA navigated the changes to the *Conservation Authorities Act* and the requirements under the *More Homes Built Faster Act*. We worked with municipalities to develop memorandums of understanding and cost apportionment agreements with our member municipalities. Through this process, we enhanced our relationships with our municipal partners by better understanding their needs in a changing climate and growing watershed.

In the coming year, we look forward to working with our municipalities to manage a watershed that supports human, economic and ecological health. We will continue to work hard to ensure our watershed is resilient to the effects of climate change, urban growth and other stressors and provides for safe, healthy and prosperous people and communities.

A handwritten signature in black ink, consisting of a stylized 'D' followed by a horizontal line that tapers off to the right.

Doug Hevenor

Environmental Education

NVCA's Environmental Education team continues to be a trusted partner with many organizations, including the Simcoe County District School Board (SCDSB), the Rotary Club of Barrie and RTOERO (formally known as the Retired Teachers of Ontario). In 2023, the team worked with over 12,363 youth to help them connect with our natural world and become the future stewards of our watershed.



Expanding education offerings

In 2023, the Environmental Education team launched several new programs.

Thanks to funding from the RTOERO, residents from three senior homes visited the Tiffin Conservation Area to participate in programming such as flower hikes and tree identification.

The team created and launched the Amazing Race Wilderness Survival Program, which can be adapted to suit school groups, corporate bookings, birthday parties and secondary school students in the Specialist High Skills Major programs. The program can be modified to include many activities, such as mapping, wilderness challenges, team building, leadership skills and Indigenous games.

They also introduced new climate change programming to give youth hope and empower them to be change makers. Participants learned about the cause and effects of climate change, the carbon cycle and how youth across the world are fighting for a healthier environment.



Reducing eco-anxiety... with beavers

NVCA's Environmental Education program partnered with the SCDSB to deliver Grade 4 Habitat's and Communities curriculum at the Tiffin Centre for Conservation and within the schoolyard.

In 2023, NVCA delivered programming to 19 schools, connecting with each school on three separate occasions. The lessons and activities are engaging so that students learn the required material in a way that invites respect and care for Ontario's habitats, as well as the impressive adaptations of all plants and animals.

Each year, the Environmental Education team focuses on one animal found in the Nottawasaga Watershed. As eco-anxiety is becoming more and more prevalent amongst youth, the team decided to pick the beaver for its ability to positively impact the carbon cycle and the environment in general.



Education for families

After a few challenging years with the COVID-19 pandemic and running camp with reduced numbers and social distancing, Camp Tiffin finally returned to pre-COVID programming!

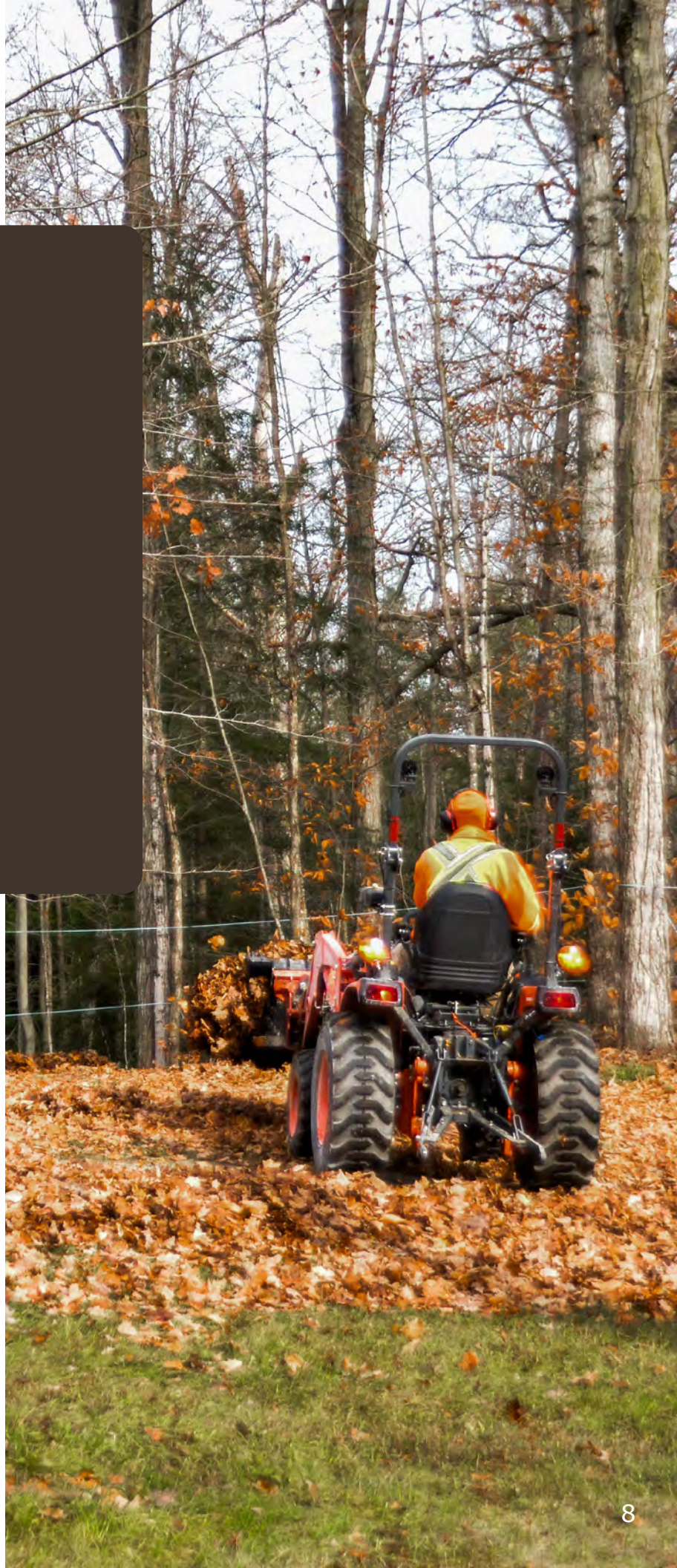
Campers had a great time canoeing, pond dipping, shelter building, orienteering, making crafts, making friends, having fun in nature and so much more. They welcomed guest speakers throughout the summer, including a local historian, astronomers, a local children's author and a paleontology student who used to attend Camp Tiffin!

Preschoolers attending the Tiffin Nature Program connected with nature through hikes, songs, games, photography, general exploration, learning socialization skills, and discovering interests with open-ended play.

With funding and support from the Rotary Club of Barrie and Nature Barrie, NVCA welcomed 25 children and 20 adults from Ukraine to participate in habitat hikes, Indigenous crafts, disc golf and singing Ukrainian folk songs.

Lands & Operations

Since 1960, NVCA has secured approximately 5,300 hectares of mostly environmentally sensitive lands within the Nottawasaga Watershed. Initially, the purpose was to limit soil erosion in rivers and streams, and to protect lives and properties against flood hazards. These historic actions are now proving to have long-term, wide-ranging benefits.





Protecting and improving conservation land

Lands owned by NVCA are important in many ways, including flood and erosion protection, providing clean water, habitat for wildlife and recreational opportunities. Most of these lands are not open for visitors as they contain significant natural heritage features, natural hazards and other sensitive features, such as provincially significant wetlands.

NVCA's Lands staff are designated as Provincial Offences Officers under Section 29 of the *Conservation Authorities Act*. They regularly monitor NVCA's lands to ensure there is no improper, illegal use or encroachment.

In 2023, the Lands team used mapping tools to identify issues or concerns with the properties, and followed up with ground-truthing to their findings.

Creating better visitor experiences

NVCA has 11 conservation areas in the Nottawasaga Watershed for visitors to hike, picnic, canoe, bird watch, play disc golf and much more!

Maintaining and enhancing visitor experience and safety is a priority for NVCA's Lands team. To help with the cost of maintenance, NVCA generates funds from parking fees, festival admission fees, and rents out venues for weddings and other special events.

Thanks to Canadian Healthy Communities Initiative, the popular Nottawasaga Bluffs Conservation Area has a new dry washroom. To improve safety, visitors are no longer required to park on the road, and can now safely park in the 40-spot parking lot!

In late 2023, NVCA took over the management of the Edenvale Conservation Area from the Township of Springwater. Found on the banks of the Nottawasaga River in the hamlet of Edenvale, this scenic conservation area offers visitors a convenient place to rest, picnic, launch their small boat, canoe or fish.



Bringing communities together

NVCA hosts two festivals each year – Spring Tonic Maple Syrup Festival in the spring, and Festival at Fort Willow in the fall.

The 2023 Spring Tonic Maple Syrup Festival was a success thanks to the ongoing partnership with the Rotary Club of Barrie. Activities included a pancake breakfast with fresh maple syrup, as well as activities including wagon rides, firefighters, paramedics, outdoor skill demonstrations by the cadets, dog agility demonstrations by Red Barn and much more!



In the fall, the Historic Fort Willow Conservation Area came to life, as 850 students from eight different schools and more than 640 members of the public experienced what life was like in the early 1800s. Visitors made candles, learned about the items that were traded between Indigenous peoples and Europeans, experienced first-hand how sailors worked on ships, made ropes, learned about blacksmithing, saw how food was made by settlers and learned about military drills of the time.

In 2023, many organizations supported NVCA's land conservation efforts. Thank you to North of 89 Outdoors who hosted two trail runs with proceeds going towards NVCA's lands maintenance. The Friends of Utopia received funding through the Rural Economic Development Fund to support the restoration efforts of the Utopia Gristmill, with ongoing fundraising taking place.

Learning about the history of the watershed

Led by licensed archeologist, Trevor Carter, the archeology class at St. Joseph's Catholic High School completed an archeological study at the Historic Fort Willow Conservation Area. The students found printed ceramic that belonged to the families of settlers who moved into the Fort's buildings after the military abandoned them. These artifacts are the first definite evidence of these settlers.

NVCA's staff regularly looks for opportunities to learn and grow. Through connections with SCDSB, the Environmental Education team learned that Indigenous peoples boiled sap in clay pots to produce maple syrup. With an updated understanding of Indigenous methods, the team is able to provide a more comprehensive description of historic maple syrup production during their programming and tours.

Harold Parker Memorial Trail

Harold Parker was a former Township of Springwater Councillor, past-Chair of NVCA, involved with the Friends of Minesing Wetlands, and a life-long resident of the community of Minesing.

He has been a community leader and mentor to those following in his footsteps. He spent decades restoring his property adjacent to Minesing Wetlands Conservation Area. Over the years, he has planted thousands of trees, installed dozens of bird nesting boxes, supported stream condition improvement projects such as stream bank stabilization and the construction of wing deflectors.

To recognize Harold Parker's dedication to NVCA and Minesing Wetlands, the Meadow Mouse Trail (located by the canoe corral off George Johnston Road) has been renamed the Harold Parker Memorial Trail. Harold's family and friends joined NVCA to recognize this honour.



Forestry

NVCA's Forestry department works with funders, municipalities and landowners to plant forests on private land across the Nottawasaga Watershed. Planting trees helps provide wildlife habitat, shade rivers and streams, and produces oxygen, among many other benefits. Well managed forests also contribute to the economy by providing lumber for construction and wood fiber for products such as paper.

In 2023, winter came later in the year, giving the Forestry department more time to complete site visits for potential property owners who would like to plant forests in 2024. In 2023, NVCA planted 78,000 trees on 19 properties.

Depending on the location of the project, NVCA may be able to cover 25% – 88% of tree plantings for private landowners. Tree planting is supported by grants from Forests Ontario.



Managed Forest Tax Incentive Program

Ontario's Managed Forest Tax Incentive Program (MFTIP) encourages good forest management by giving a property tax reduction to eligible landowners who prepare and follow an approved managed forest plan. To qualify, property owners must hire a Managed Forest Plan Approver.

NVCA's forester, Rick Grillmayer, is a Managed Forest Plan Approver and helps complete plans for property owners who plant forests with NVCA. In 2023, Rick completed or renewed 17 MFTIP plans.

Seed sourcing

Similar to many other watersheds in Ontario, the forests in the Nottawasaga Watershed are facing new threats from diseases and invasive species. In 2023, oak wilt was detected in the Nottawasaga Watershed, while hemlock woolly adelgid was detected in other parts of Ontario.

Oak wilt is a fungus that restricts the flow of water and nutrients through oak trees. Hemlock woolly adelgid is a small insect that attacks and kills hemlock trees.

As more invasive species and diseases threaten forests in the Nottawasaga Watershed, it is vital to keep our forests healthy by planting suitable trees that are resilient to these threats.

In 2023, NVCA's forester worked with nurseries to collect bur oak seeds to ensure there is an ample supply of seeds for future forest plantings.



Stewardship

Thanks to \$170,000 of municipal levy, \$550,000 of partner funding and 1,469 volunteers who contributed 6,050 volunteer hours, NVCA restored 14 km of rivers and streams, 13 hectares of grasslands, 9.7 hectares of wetlands, planted close to 15,000 trees and completed many other projects in 2023!

The completed projects improve water quality in the Nottawasaga River and watershed, and enhance habitat for both species at risk and recreational sport fish.





Restoring grasslands

In 2023, NVCA's Stewardship team continued to restore native grasslands in the Nottawasaga Watershed. Although these grasslands are restored primarily for pollinators and birds, they provide many other benefits.

Native grasslands thrive in poor sandy soils, and hit their growth peak in mid-summer. This complements the hay and pasture production of common cool-season Eurasian hayfields, which typically enter dormancy in the summer. For farmers, fields of native warm-season grasslands can provide drought resilient hay. They are also a great option for mid to late summer pasture rotation.

Additionally, the deep roots in native grasses can loosen compacted soils, creating a landscape that can absorb more water, decreasing flood risk. Grassland soils help fight climate change by reducing the amount of greenhouse gases in the atmosphere. The carbon sequestration capability of a 40-hectare native grassland is the equivalent of taking 49 cars off the road in a year!



Real rivers have curves

Restoring Willow Creek in the Township of Springwater has been a priority for NVCA and the Nature Conservancy of Canada. The creek flows from agricultural areas into Minesing Wetlands. In its natural form, the creek is narrow and meandering and may split into many different channels.

Historically, some parts of the creek were dredged, over-widened and straightened. These actions also impact stream-side vegetation, making the creek banks much more prone to erosion. The combination of these problems created a habitat that did not support a high biodiversity of fish and benthic macroinvertebrates, both of which form the base of the food chain in the creek.

To put the 'Wiggle back in the Willow', NVCA staff and volunteers spent the last 10 years anchoring Christmas trees along the creek bank to trap sediment and recreate the meanders that naturally existed in Willow Creek many years ago. Native plants are planted on top of the deflectors and along the banks to provide stability and fish and wildlife habitat.



Brook trout monitoring

The headwaters of the Nottawasaga River in the Town of Mono are home to brook trout and other cold-water fish species. Brook trout face many threats including land use change, deforestation and climate change. In order to get a better understanding of the distribution and population structure of brook trout, NVCA's Stewardship team partnered with the volunteers from the Headwater Streams Committee to investigate several tributaries of the Nottawasaga River.



Restoring the Nottawasaga River

In 2023, NVCA's Stewardship team and Nottawasaga Futures — South Simcoe Streams Network completed its 5th year of the Nottawasaga River Restoration Project (NRRP). Together, they restored 0.4 km of eroding stream bank and trout habitat along two properties in the Township of Adjala-Tosorontio in 2023. The restoration work was completed on Sheldon Creek, the largest water course that flows into the upper Nottawasaga River, and an important trout and salmon spawning habitat.

Since 2018, 2.4 km of stream was restored under the NRRP, making the program one of the largest trout habitat restoration initiatives in southern Ontario! The stewardship team is working to engage new funding partners to further expand the scope of this program in 2024!



A healthier Pine River

In 2023, NVCA's Stewardship team and volunteers stabilized eroding banks and enhanced woody bank habitat along 150 m of the Pine River in the Township of Mulmur. This was the second year of work completed under the new Pine River Enhancement Program.

The Stewardship team completed the Pine River work using NVCA's four-step river bank restoration technique.

Step 1

Volunteers secure cut Christmas trees in "shingle-fashion" to the bottom of the eroding bank. This step stabilizes the bottom of the eroding slope, captures sediment and creates habitat for small fish.



Step 2

An excavator reduces the height of the eroding bank and installs logs and tree roots on top of the Christmas trees to stabilize the middle part of the bank and create habitat for larger fish.



Step 3

The excavator moves live sod, shrubs and trees from nearby areas to stabilize the work site and create an 'instant' streamside habitat. The areas where the sod was removed are reseeded.



Step 4

Volunteers plant trees and shrubs along the river to create long-term stream-side habitat and provide shade, which helps to reduce in-stream water temperatures.





Mad about the Mad River

In 2022, NVCA's Stewardship team and the Friends of the Mad River completed fish community sampling and summer stream temperature monitoring on the Mad River. The goal was to identify sections of the river that had poor trout populations and warm water conditions. These sections of the river were identified as critical areas for habitat restoration and bank stabilization. The most important section identified for restoration was the 1 km long "Carruthers Park Corridor" located on the Mad River west of the community of Avening on Airport Road.

In 2023, the team worked with the Friends of the Mad River and the Township of Clearview to complete Year 1 of the new Mad River Enhancement Program. A 40 m long habitat improvement and stabilization project was completed in Carruthers Park at an eroding bank adjacent to the pavilion. The project was completed through constructing a granite boulder wall and incorporating top soil and live vegetation.

NVCA and the Friends of the Mad River are actively raising funds to prepare for a much larger restoration project planned for the Mad River in the Carruthers Park Corridor in 2024!

Society for Ecological Restoration

On May 30, 2023, ecologists from around the province attended a site tour of river restoration work completed in the Township of Adjala-Tosorontio. NVCA's Stewardship team shared technical perspectives on river restoration techniques and strategies, and received great feedback from renowned scientists in Ontario.

Workshops at Cabela's

On April 15 and June 17, 2023, NVCA's Stewardship team partnered with Cabela's staff to host fly fishing workshops at the store in Barrie. Over 60 participants attended these events to learn about the Nottawasaga River Restoration Program and to pick up new fly fishing skills. The Bass Pro Shops and Cabela's Outdoor Fund provided \$25,000 of support to NVCA in 2023 for restoring trout and salmon habitat in Sheldon Creek and the Mad River.

Natural Channels Award

On June 23, 2023, Fred Dobbs, Manager of Stewardship Services at NVCA, received an Award of Recognition at the Natural Channels Systems Conference, a national event held every four years at the University of Guelph. He was awarded for the scope and success of the NRRP, as well as the profile this program received through tours and presentations delivered in the first half of 2023.

In his 37-year career, Fred has worked with many conservation partners and funders to restore stream and floodplain habitats in the Nottawasaga Watershed. His personal commitment to the field almost matches the passion he brings to his work. Fred is always willing to share his knowledge with newcomers, and always with an infectious enthusiasm!





Drains Done Differently tour

On September 21, NVCA partnered with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Town of Innisfil and R.J. Burnside & Associates Limited (R.J. Burnside's) to host a tour of the South Innisfil Creek Drain, 'Drains Done Differently' project. The South Innisfil Creek Drain (SICD) is a 10 km long municipal drain that services 900 properties in the Towns of Innisfil and Bradford West Gwillimbury.

As the drain required maintenance, the Town of Innisfil, working with R.J. Burnside's, took advantage of an opportunity to design and implement extensive ecological enhancements and improvements into the drain cleanout project. These enhancements included the construction of floodplains to provide extra capacity in the drain and use of natural woody materials to stabilize the banks to create habitats for fish and birds.

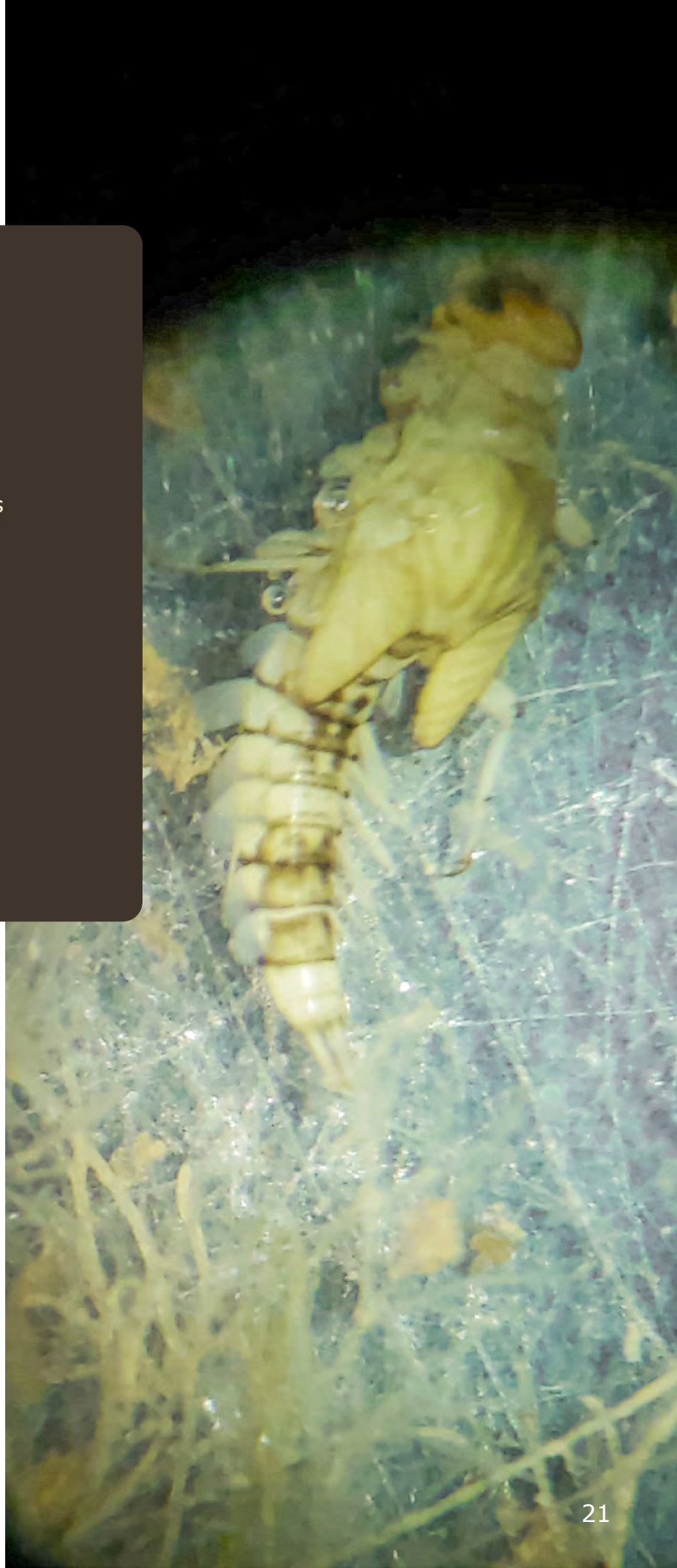
Thank you to our partners and volunteers!

NVCA's restoration projects are funded by Environment and Climate Change Canada, Fisheries and Oceans Canada, Ontario Ministry of the Environment, Conservation and Parks (MECP), OMAFRA, TD Tree Days, Forests Ontario, H. John McDonald Foundation, Takla Foundation, Bass Pro Shops and Cabela's Outdoor Fund, Mansfield Ski Club and World Wildlife Fund.

These projects are made possible with support from Nottawasaga Futures – South Simcoe Streams Network, Rumball Excavation, Friends of the Mad River, Mono Headwater Streams Committee, Bruce Trail Conservancy, Nottawasaga Steelheaders, Nature Conservancy of Canada, Trout Unlimited Canada, Ontario Streams, Society for Ecological Restoration – Ontario Chapter, University of Guelph, Somerville Nurseries Inc, GEO Morphix Inc., Walker Aggregates, Pestrin Group Ltd, R.J. Burnside & Associates Limited and the Canadian Conservation Corps.

Watershed Science

NVCA's Watershed Science team monitors the rivers, streams, groundwater, wetlands and forests in the Nottawasaga Watershed to identify stressors that are impacting the local environment. This information can help shape land use planning and policy decisions, and measure the effectiveness of environmental restoration projects or the impacts of new development.





Long-term monitoring projects

Long-term watershed monitoring can identify trends and fill in knowledge gaps. NVCA's Watershed Science team is engaged in several long-term monitoring projects for both public and private organizations.

NVCA is a partner with the Provincial Water Quality Monitoring Network and the Provincial Groundwater Monitoring Network — programs managed by the Province of Ontario. Partners collect water quality samples from rivers, streams and groundwater wells, while the province conducts the laboratory analysis. Results are used locally and provincially to determine the health of these natural resources.

For 20 years, NVCA has partnered with Hockley Valley Resort to monitor the water quality in the upper Nottawasaga River, allowing the resort to maintain clean streams and watercourses throughout the property. This information has also revealed some interesting trends about the water quality in the upper Nottawasaga River, for example decreased stream health, increased algae growth and increased erosion.

Watershed Health Checks

In 2023, the Watershed Science team released NVCA's 2023 Subwatershed Health Checks. These are a set of nine reports that offer information on the health of forests, wetlands, streams and groundwater on a subwatershed level from 2017 to 2021. They also identify stewardship priorities, future challenges and opportunities to improve environmental health.

The health checks cover the entire Nottawasaga Watershed and all subwatersheds in NVCA's jurisdiction. Subwatersheds are geographic areas that are smaller basins within a larger watershed – think smaller bowls within one big bowl. In the Nottawasaga Watershed, water from each subwatershed contributes to streams and rivers that eventually flow into Georgian Bay.

To produce the health checks, NVCA's Watershed Science team analyzed the most up to date data sources available, most of which was exclusively collected by NVCA's Watershed Science team. These sources include aerial photos, maps, provincial groundwater and stream health data, and the types of insects and fish that live in rivers in the watershed.

NOTTAWASAGA WATERSHED Health Check 2023

Adjala-Tosorontio | Amaranth | Barrie | Blue Mountains |
Bradford West Gwillimbury | CFB Borden | Clearview | Collingwood | Essa |
Grey Highlands | Innisfil | Melancthon | Mono | Mulmur | New Tecumseth |
Oro-Medonte | Shelburne | Springwater | Wasaga Beach





A new direction for watershed monitoring

A well-designed watershed monitoring program helps ensure the highest-quality data are collected and analyzed in an accurate, timely and cost-effective manner.

In 2023, the Watershed Science team reviewed its approach to watershed monitoring and developed the Watershed Monitoring Strategy to ensure efficiencies while better aligning with NVCA's Strategic Plan and to meet the requirements of our partners.

To meet these goals and objectives, the Watershed Science program will refocus under the disciplines of climate, groundwater, natural heritage, and surface water. The program will also produce more and varied communication materials to get more of its data out to the public.

The Watershed Science team has completed the surface water discipline of the strategy and will be completing the remaining sections in 2024.

The strategy is centered around the following goals

1

Evaluating status and trends in the health of the watershed's natural resources – forests, wetlands, groundwater, surface water, and climate

2

Maintain accurate data to inform daily operations and strategic planning

3

Remain nimble enough to adapt to emerging issues without sacrificing long-term baseline data

Assisting with stormwater management

Managing stormwater is a priority for many municipalities in the Nottawasaga Watershed. In 2022, NVCA established the Stormwater Management Technical Working Group. It is a knowledge sharing group where municipal staff share best management practices for stormwater management facilities.

As a result of the *More Homes Built Faster Act*, NVCA is now only responsible for reviewing the water quantity aspects of stormwater management plans. The working group has been especially important for municipalities as they are now responsible for reviewing the water quality components of stormwater management plans.

Maintaining stormwater ponds

While municipalities in the Nottawasaga Watershed are responsible for maintaining stormwater management ponds, NVCA's Watershed Science team can assist municipalities in monitoring their ponds in a more detailed and cost-effective way.

In 2023, NVCA used new technology to measure the amount of sediment accumulated in a stormwater management pond in the Town of New Tecumseth. Compared to traditional methods of stormwater management pond monitoring, the new technology produced a much more detailed analysis of sediment build up in the ponds.



Source Water Protection

Source water is untreated water from lakes, streams, and aquifers that is used to supply municipal drinking water systems.

Protecting source water simply means to protect this water from overuse or contamination due to pathogens or chemicals. This will ensure that there is enough safe water for all designated uses – for now and in the future.

NVCA, along with the Lake Simcoe Region Conservation Authority and Severn Sound Environmental Association make up the South Georgian Bay Lake Simcoe Source Protection Region. This region spans over 10,000 km², from the Oak Ridges Moraine in the south to the Canadian Shield in the north. It contains 52 municipalities, three First Nations communities, 291 municipal supply wells, and 16 municipal surface water intakes.





Municipal well review

As municipalities grow, the need for safe drinking water also increases. NVCA's Source Water Protection team works with municipalities, consultants and MECP to develop source water protection plans to ensure drinking water from new municipal wells is safe for residents.

In 2023, the Source Water Protection team reviewed new wells in Colgan in the Township of Adjala-Tosorontio, Craighurst in the Township of Oro-Medonte, Palgrave in the Region of Peel, and the Town of Shelburne. Reviews have started in Midhurst Heights in the Township of Springwater and are expected to be completed in 2024.

Risk management plans

NVCA's Risk Management Officials and Inspectors provide source water risk management services under the *Clean Water Act* to municipalities through partnership agreements. The officials negotiate plans with landowners to manage risks that may impact source water. These risks can include waste management, snow storage, and chemical storage.

All risk management plans in the province were scheduled to be completed in 2020, however, due to the COVID-19 pandemic, MECP extended the deadline to July 2024.

In 2023, in collaboration with landowners, NVCA's Risk Management Officials established 13 Risk Management Plans, and will complete the remaining five in 2024.

Engineering

According to the Insurance Bureau of Canada, 2023 summer storms in Ontario alone caused over \$340 million in insured damage. Across Canada, this number exceeded \$3 billion. As we experience more frequent and more intense storms, there will be even more impact on our lives and the places where we live and work. The Insurance Bureau of Canada also states that the country's greatest climate threat is flooding.

In recent years, NVCA's Engineering team observed that changing weather patterns may impact the way that flooding occurs in the Nottawasaga Watershed. As the timing, frequency and magnitude of snowmelt and rainfall events change, so must NVCA's understanding of flooding hazards within the watershed.

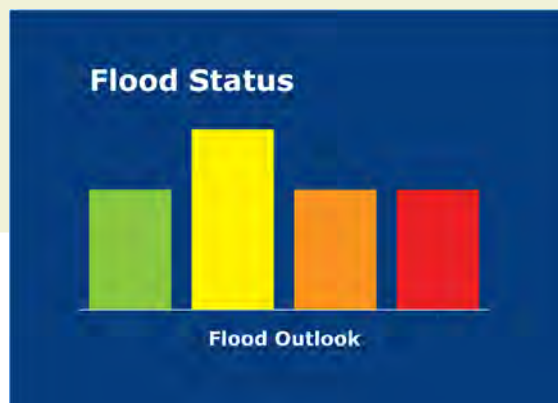
Flood forecasting and warning

There are many organizations across Ontario that work together to manage flooding and its impacts. NVCA's Flood Forecasting and Warning team monitors weather forecasts, forecasted and actual rainfall, snowpack and potential snowmelt, and lake and stream water levels across the watershed to inform daily assessments on the potential for flooding. If the potential is high, a flood message will be sent to partners such as municipalities, schools, first responders, and residents to take the appropriate action.

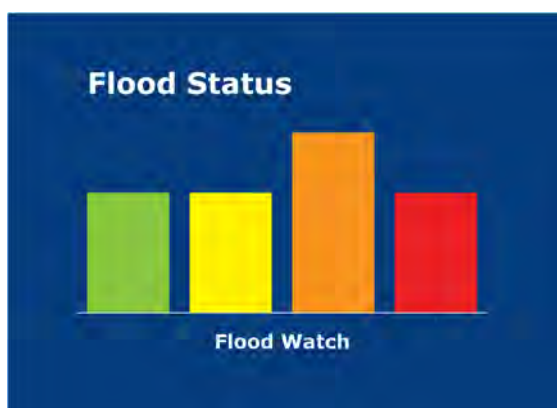
In 2023, NVCA issued five water safety messages and one flood outlook message.



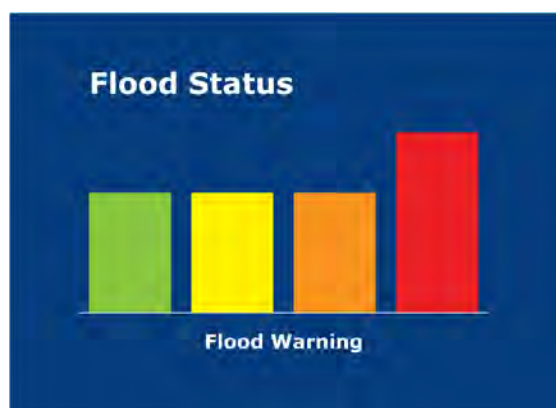
Water Safety statements are issued when there are high river and stream flows, unsafe banks, melting ice or other factors that could be dangerous for recreational users such as anglers, canoeists, hikers, children, pets etc. Flooding is not expected when this message is issued.



Flood Outlook messages are issued as an early notice of the potential for flooding based on weather forecasts calling for heavy rain, snow melt, high wind or other conditions that could lead to high runoff, cause ice jams, lakeshore flooding or erosion.



Flood Watch messages are issued when flooding is possible in specific watercourses or municipalities. Municipalities, emergency services and individual landowners in flood-prone areas should prepare.



Flood Warnings are issued when flooding is imminent or already occurring in specific watercourses or municipalities. Municipalities and individuals should take action to deal with flood conditions. This may include road closures and evacuations.



Informing responsible development decisions

As natural and rural areas in the Nottawasaga Watershed become urban development, they are replaced with hard surfaces such as parking lots and pavements.

Natural areas and farmland help decrease flooding as they absorb and slowly release water, rainwater and snowmelt. Most hard surfaces, such as concrete and asphalt, lead to an increase in runoff as rainfall and/or snowmelt travels rapidly over hard surfaces into streams and rivers. Some of these watercourses may not have the capacity to handle large quantities of water, causing areas to flood.

NVCA's Engineering team uses a combination of tools, including flood hazard maps and flood modelling, to determine whether a proposed development will likely experience flooding. With the threat of climate change and a changing landscape, NVCA staff are conducting targeted updates to flood hazard maps throughout the watershed to reflect these changes in order to keep lives and properties safe. With the ongoing threat of climate change, these maps will need to be updated to accurately reflect the potential spatial extent and severity of the hazard. Staff also encourage municipalities and developers to incorporate low impact development in their plans.

Updating flood hazard maps for the community of Creemore

The community of Creemore in the Township of Clearview has had a history of flooding since the early 1900s. As settlers cleared forests, built homes and established farms near the Mad River, the community has suffered from many devastating floods.

Fast forward to today, as the community of Creemore continues to develop, it is important to have a thorough understanding of the natural hazards posed by the Mad River.

In 2023, the Township of Clearview and NVCA initiated a study to develop a better understanding of flood hazards that may impact the community. The study will produce up to date, high quality flood mapping that can help NVCA and the Township of Clearview make future decisions on land use and permitting.

The project is funded in part by the Government of Canada (Natural Resources Canada) and the Province of Ontario (Ministry of Natural Resources and Forestry) as part of the Flood Hazard Identification and Mapping Program. The Township of Clearview provided the remaining funding for the project, which will be completed in 2024.



Flooding in Creemore on April 21, 1975

Maintaining the Pretty River Dike

NVCA continued to work with the Town of Collingwood to maintain the Pretty River Dike. This work helps reduce the risk of flooding in the urban areas of Collingwood. While considering the ecological functions of the corridor, vegetation growing along the sides of the dike must be removed from time to time to ensure the floodway can meet its full conveyance capacity.

In 2023, vegetation removal was completed on the western side of the Dike, between Hume Street and Pretty River Parkway.

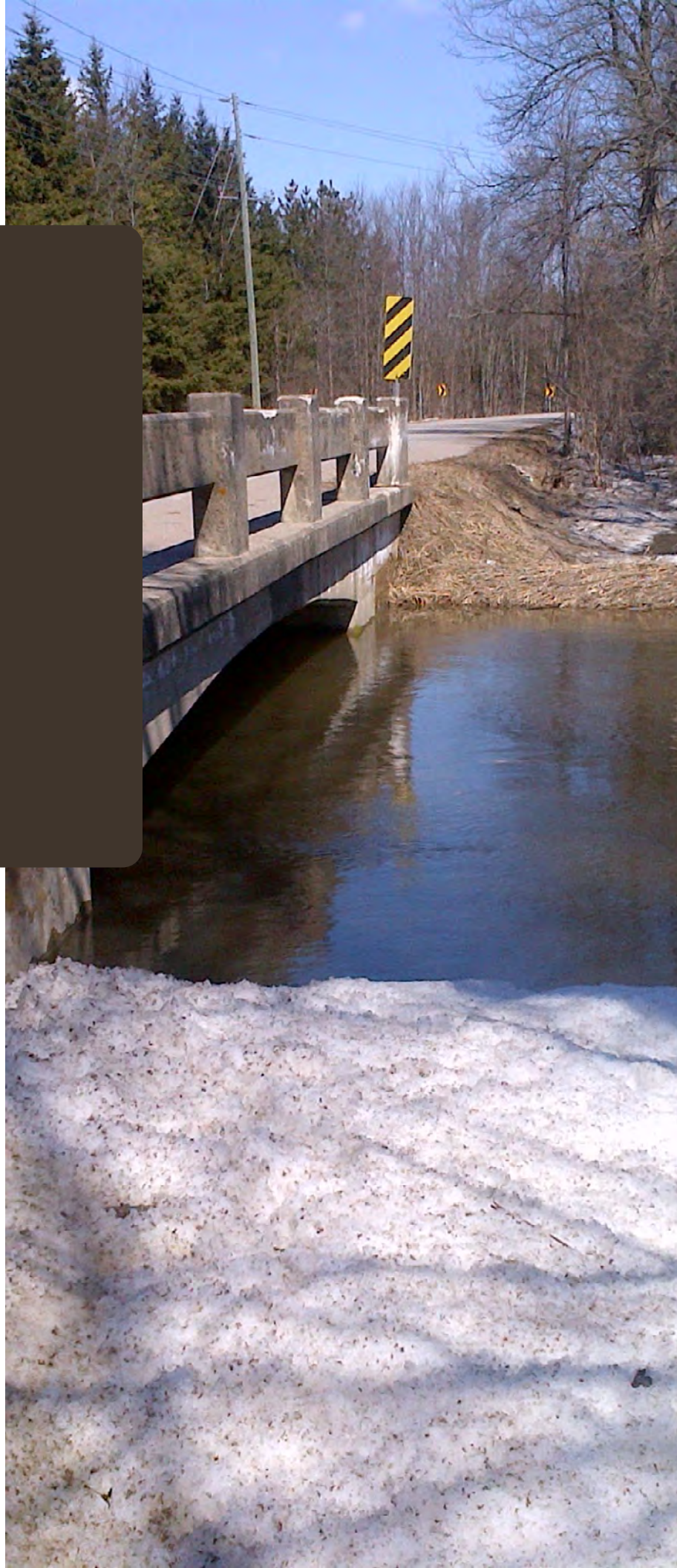
Ongoing safety reviews and inspections for flood structures

NVCA owns and manages six flood structures in the Nottawasaga Watershed. It is important to keep them structurally sound and ensure that they are meeting flood management and other capacities, where applicable.

In 2023, NVCA completed an emergency inspection of the New Lowell Dam and updated the recommendations from the 2019 Dam Safety Review. The Engineering team is developing a workplan to implement the recommendations to ensure the dam is functioning as designed.

Development Planning & Permits

NVCA's Regulations and Planning Services team works closely with municipalities, developers and consultants to find a balance between development, protecting lives and property from natural hazards and preserving watershed health.





Review of the development planning and permits program

In 2023, NVCA contracted Watson & Associates Economists Ltd. to review planning and regulation program rates and assess the full cost of providing plan review and permitting services, applicant affordability, competitiveness, and industry best practices. Watson & Associates also considered recent legislative changes such as the *More Homes Built Faster Act* which altered the role of conservation authorities in the plan review and permitting process.

The analysts assessed the cost of adding additional staff in order to provide a desired level of customer service. Their recommendations included hiring more staff, and increasing some *Planning Act* application and permit review fees to recover the full costs of plan review and improve cost recovery levels for permitting.

Based on the recommendations of the Watson Report, NVCA staff have developed and presented an updated fee structure to the Board of Directors. The draft fees have been circulated to the development community, member municipalities, the agriculture community, aggregate industry and members of the public for comment. Based on the feedback received, the new fees will be phased in over a two-year period once the province lifts the freeze to conservation authority planning and development fees.

Enhancing customer service

From 2018 – 2021, permit applications have increased by 75%. This puts significant pressure on the NVCA Regulations and Planning team to meet shorter timelines required by the province. In 2023, the team met the timelines set out by the Province of Ontario by 97%, and Conservation Ontario timelines by 92%.

Following these timelines helps NVCA meet the service levels expected by residents, municipalities and other partners. It also aligns with the province's housing objectives to ensure development is not impacted by natural hazards and climate change.

In 2023, NVCA restructured the Planning and Regulations team to make it more cross functional and resilient through diversifying staff experiences and building capacity. The former regulations positions have now transitioned to planner positions, and current planning staff have provisions which include regulation duties. All staff under the newly structured Development Planning and Permits team will be reviewing permit applications in addition to planning applications.

To ensure customer service levels are met, the Board of Directors directed staff to add two additional planning positions to provide enhanced customer service in the 2024 budget.

NVCA has also started to develop an e-permitting platform to make the permitting process more accessible and seamless for applicants. Applicants will have more control over the information they provide to NVCA. This will also allow staff to focus on reviewing permit applications rather than manual intensive administrative work. The new platform also is expected to allow payments to be made online rather than calling in. These initiatives are anticipated to be available to the public in 2024.



Better service depends on collaboration

Municipalities use official plans as policy documents to guide development within their municipalities. Official plans are regularly updated to ensure that they reflect the municipality's long-term strategic objectives, as well as changes to the provincial policies and directives. The official plan updates are also an opportunity to ensure it continues to address local priorities and changing community needs.

During the official plan review process, NVCA provides input related to natural hazards and ensure policies meet provincial direction, provide clarity, and inform land use decisions.

NVCA continued to work with municipalities across the watershed to make the permit review process more efficient, remove service gaps and complement each other's processes.

Corporate Services

NVCA's Corporate Services team include Human Resources, Finance, Governance, Communications and Information Management. These teams provide critical support to other departments within NVCA.



Promoting NVCA

To help residents and partners across the watershed take advantage of all the services that NVCA offers, the Communications team works with all departments to promote programs through various communication channels.

In 2023, the team updated NVCA's website to include better aesthetics, better browsing experience and to improve the accessibility of the site.

They also worked with the Conservation Lands team to complete a Tiffin Conservation Area and Nottawasaga Bluffs Conservation Area emblem contest. Watershed residents voted for their favourite emblem. These emblems were printed on a variety of apparel that is available for sale to help raise funds for the maintenance of NVCA's conservation areas.

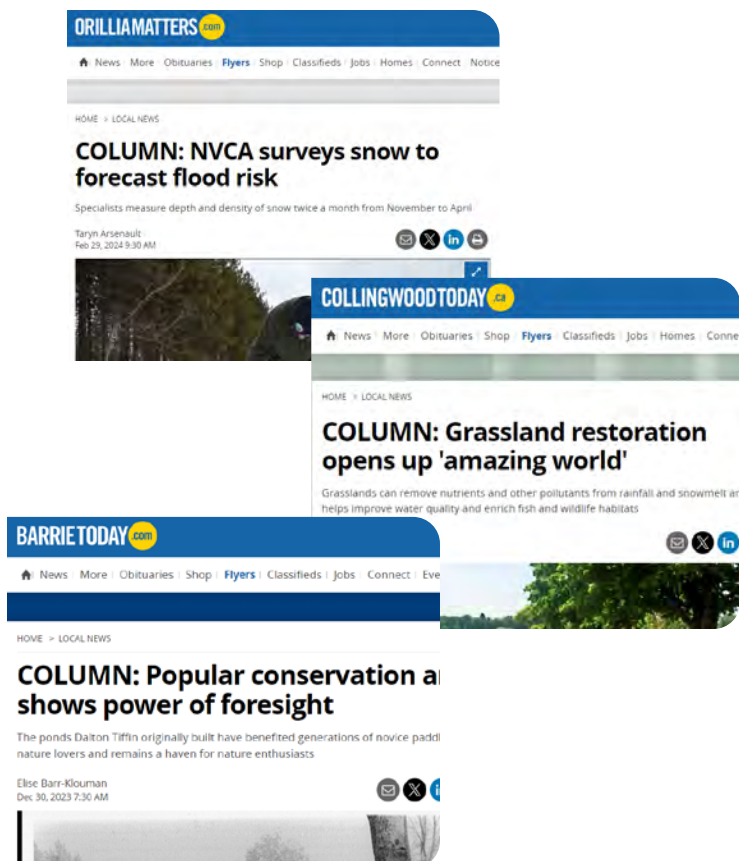


Stories about integrated watershed management

Integrated Watershed Management is the process of managing human activities and natural resources on a watershed basis while considering social, economic and environmental factors to manage watershed resources sustainably.

Each department at NVCA contributes to the integrated watershed management process. They do this through working with funders, municipalities, partners, residents and volunteers from across the watershed to develop and implement strategies that achieve a sustainable and resilient system.

In 2023, NVCA partnered with Village Media to publish a series of columns to inspire people who live, work and play in the Nottawasaga Watershed to appreciate and participate in preserving and enhancing the watershed.





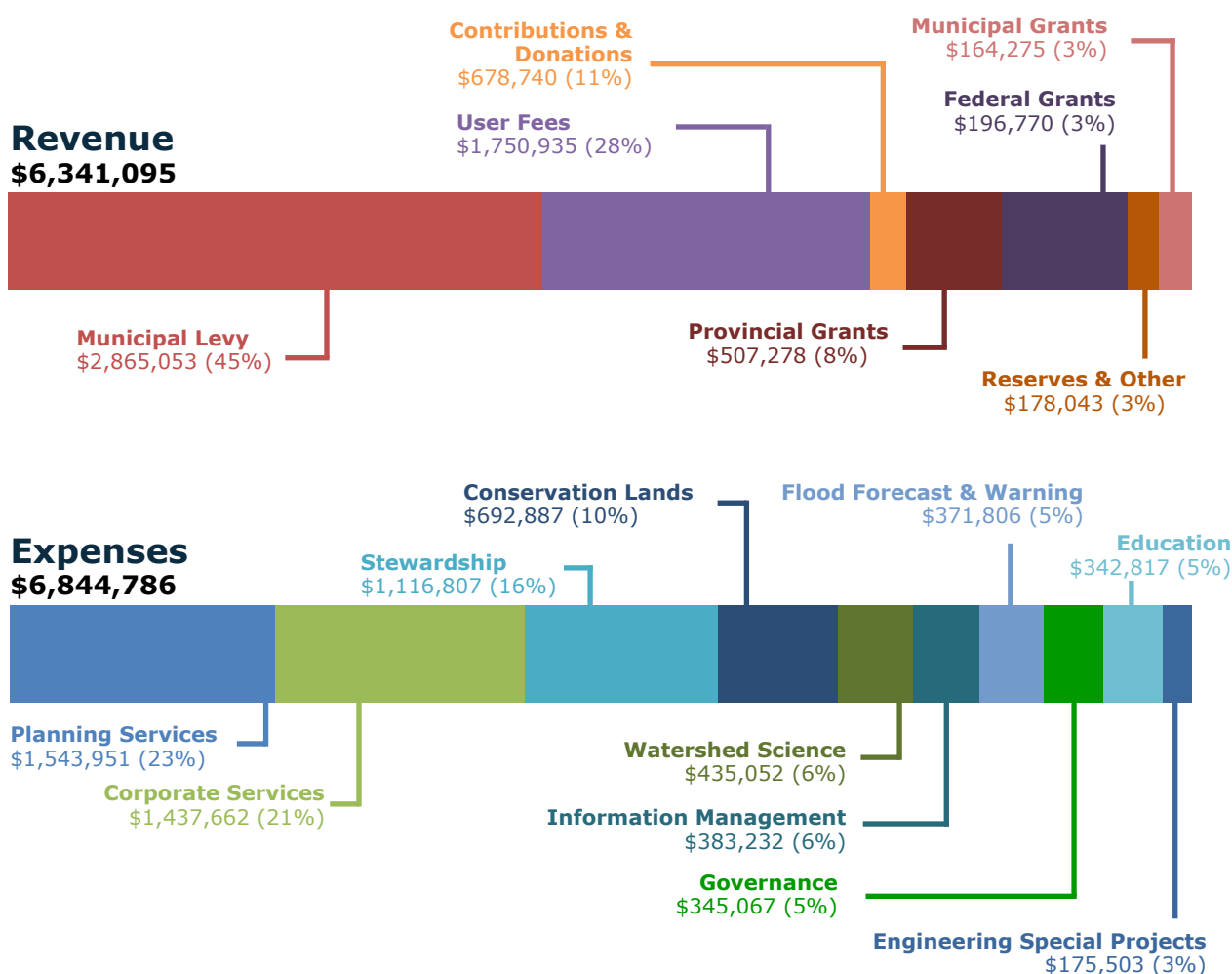
Information Management

The Information Management team continued to develop and build a data management platform for NVCA's Watershed Science Data. This allows for viewing, uploading, and querying capabilities, and is linked to our GIS system.

In 2023, the team initialized an Open Data platform to make this data available to NVCA's partners and the public through a new public facing mapping site. This helps to provide access to information and makes various programs available through NVCA more efficient.

Financial Report

NVCA's total 2023 operational budget was \$5,687,989. Revenue came from diverse sources, including member municipalities, provincial and federal governments, local non-governmental partners, and user fees for programs and services. NVCA ended the year with revenue at \$6,341,095 while operational expenses for the year came in at \$6,844,786. In 2023, NVCA purchased \$133,216 in capital assets (from an approved capital budget of \$310,380), funded through the capital asset levy. This financial information is condensed from year-end, unaudited, statements. The auditor's report for the year ending December 31, 2023, is posted on the NVCA website at nvca.on.ca once approved by the Board of Directors.



NVCA Staff as of December, 31 2023

CHIEF ADMINISTRATIVE OFFICER

Doug Hevenor

CORPORATE SERVICES

Sheryl Flannagan, Director

Kerry Jenkins, Administrative Assistant

Christine Knapp, General Accountant

Kimberly Winder, Receptionist/Administrative Assistant

Megan Muxlow, Accounting & Payroll Clerk

Communications

Maria Leung, Senior Communications Specialist

Information Management & Technology

Hendrik Amo, Manager

Robert Bettinelli, Information Management and Technology Specialist

Lyle Wood, GIS Analyst

Darcy Persad, GIS/Database Technician

WATERSHED MANAGEMENT SERVICES

Chris Hibberd, Director

Engineering & Flood Program

Dalia Al-Ali, Manager, Engineering Services

Taryn Arsenault, Flood Operations Field Specialist

Josee Courtemanche, Water Resource Engineer

Megan Durkin, Water Resource Engineer

Michael Saunders, Engineering Technologist

Charles Springall, Engineering Technologist

Sheri Steinginga, Flood Operations Field Specialist

Watershed Science

Ryan Post, Manager, Watershed Science

Ian Ockenden, Acting Watershed Science Supervisor

Sarah Thompson, Acting Source Water Coordinator

Jennifer France, Watershed Monitoring Technician

Erin McLeod, Watershed Monitoring Technician

Alyssa Deurwaarder, Watershed Science Ecologist

Planning and Permits

Ben Krul, Manager, Development Planning & Permits

Tyler Boswell, Planner

Meagan Kieferle, Senior Regulations Officer

Emma Perry, Planning Ecologist

Davin Metheral, Planner

Tyler Mulhall, Planner

Katelyn Wardlaw, Planner

Christine Wilcox, Development Review Assistant

CONSERVATION SERVICES

Kyra Howes, Director

Lands & Operations

Mike Bacon, Manager, Lands & Operations

Clint Collis, Lands & Operations Technician

Spencer Macdonald, Lands & Operations Technician

Elise Barr-Klouman, Event Facilitator

Reg Fraser, Custodian

Environmental Education

Naomi Saunders, Manager, Environmental Education

Stephanie Zsolnay, Environmental Education Senior Associate

Amanda McGibbon, Environmental Education Assistant

Environmental Education Associates:

- Jo-Ann White-McKenna
- Bob Cole
- Emma Maurice
- Kamryn Bishop,
- RJ Costello
- Kristin Pavey
- Jenny Taylor

Forestry

Rick Grillmayer, Manager

Stewardship

Fred Dobbs, Manager, Stewardship Services

Sarah Campbell, Aquatic Biologist

Shannon Stephens, Healthy Waters Program Coordinator

Laura Wensink, Restoration Biologist



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