



GRAND Actions

The Grand River watershed newsletter



February 2018 • Volume 23, Number 1

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Cover photo

Fencing along a river in Dufferin prevents animal waste from entering the water and helps everyone downstream.



Clean water from Dufferin to you

By Janet Baine
GRCA Communications Specialist

Think of your neighbours and keep their water clean. This is the basis of the Rural Water Quality Program (RWQP) that now has firm funding in Dufferin County, at the headwaters of the Grand River.

“We really have to thank Dufferin County and all the other municipalities across the watershed that contribute to this program,” says Louise Heyming, Supervisor of Conservation Outreach at the GRCA. “Water quality at our headwaters, in Dufferin, is especially important. It benefits everyone downstream, all the way to Lake Erie.”

In December, Dufferin County Council committed annual funding to the program, starting with \$20,000 this year. The money ends

up directly in the hands of people who complete projects to improve water quality.

Dufferin’s commitment was a watershed moment for the GRCA, you might say. The RWQP was started in the Grand River watershed 20 years ago by the Regional Municipality of Waterloo. Two years later, Wellington County joined.

Now about 90 per cent of the watershed, which is the size of Prince Edward Island, is covered by the program. In addition to Waterloo, Wellington and Dufferin, Brant, Brantford, Oxford and Haldimand also provide stable municipal funding to this watershed program. Similar programs have spread to many other parts of the province.

Dufferin County is at the headwaters of five different watersheds, including the Grand River



watershed. Everyone downstream in these watersheds benefits from the program at the headwaters.

Until now, project funding in Dufferin County has been limited and came from a variety of sources (Dufferin provided a one-time grant in 2012). Dufferin farmers in the Grand River watershed have still been able to take advantage of the program and have received \$400,000 in grant to complete 174 projects since 2002. The grants they receive cover 50 to 100 per cent of the cost of water quality projects, depending on the type of project. Stable funding allows local farmers to plan ahead, because some projects have many steps and can take years to complete.

Most of the land in the Grand River watershed is in private hands, and about 70 per cent of the land is agricultural. GRCA staff promote the program and work closely with agricultural groups and landowners to help plan and work out the details of each project.

“While many city residents have taken the message about water conservation to heart and local municipalities are leaders in Canada for reducing water use, they are also leaders in their approach to investing in rural water quality,” Louise says. “Sharing the cost of clean water by helping landowners to complete projects is a unique approach. We work with those folks every day, so we see how grateful and committed they are.”

How cities benefit

Rural landowners clean up the water that passes through their land. Through this program they plant trees, create natural areas and wetlands, which help the rain filter into the ground. They manage their land to reduce soil erosion, hold crop nutrients in the field and keep manure runoff out of rivers and streams. All of this takes lots of time, money and commitment.

Just like buying an efficient washing machine, these projects have extra costs, so financial assistance really helps.

“This program is important to people living in cities like Kitchener, Brantford and Guelph. This is because it improves the water those communities are receiving. This water is used for everything from drinking to recreation,” Louise says. “It’s one reason an angler from Waterloo can enjoy fishing local rivers. In fact, fish, wildlife, plants and



Photo by Anne Loeffler

Brant County farmer Steve Sickle intends to leave his farmland in better condition than he found it and he knows that the cover crops he is using are making a big improvement.

people all benefit. If you stop and think about it, this program recognizes how connected we all are.”

Farmers share their stories

A new web application called *Stories From the Field* was recently launched by the GRCA to help bring even more farmers to the Rural Water Quality Program.

Thousands of farmers in the Grand River watershed work to improve and protect water quality on their land for all those who live downstream.

“Their work is inspiring. And more, it is

changing the landscape for the better,” says Sue Brocklebank, GRCA Conservation Specialist.

The idea behind the web application is that like everyone else, farmers want to hear about practices from someone else before they make a change.

So, local landowners share stories about the projects they have completed through the RWQP. The application is online at www.grandriver.ca/ruralwater.

“We want to share some of the amazing work that landowners are voluntarily doing in our watershed,” says Sue. “It gives people the credit they deserve. We know their stories will inspire others who are thinking about similar projects.”

A few dozen stories are featured, putting a face and location to each project.

Beef producer Steve Sickle, one of the landowners featured, uses cover crops very successfully to solve the problem of soil loss on his Brant County farm.

“For my kids, I want to leave this farm better than I found it,” he says, acknowledging changes made at the farm level have a direct and positive impact on the health of the watershed.

Featuring all different types of projects in different parts of the watershed, *Stories from the Field* helps producers connect and learn from each other.

RWQP across the watershed

- More than 6,000 projects completed through the Rural Water Quality Program since 1998, many to keep nutrients like phosphorus out of waterways
- \$17.6 million provided in grants
- More than \$51 million invested in projects
- 2 million trees were planted on private property
- 154 km of fencing along tributaries are keeping 14,000 livestock out of the waterways

More detailed fact sheets and videos are available for some of the stories.

Learn more

Farmers and rural landowners who are interested in the Rural Water Quality Program and would like find out more can call 519-621-2761 and ask for a conservation specialist, or email ruralwater@grandriver.ca.

GRCA shifts focus to thinning our forests

By Janet Baine
GRCA Communications Specialist

Step into a plantation forest and you will see the story of the past and the hope for the future growing before your eyes.

These forests in the Grand River watershed remind us of the time when settlers tamed the land by removing most of the trees, leaving only five per cent in some areas. But forest removal caused such devastation across the watershed that tree planting has been a top priority for decades. Large-scale tree planting during the last century established forests quickly to solve environmental problems, such as severe flooding, extreme low flows and loss of biodiversity.

About 50 square kilometres of GRCA-owned land has been replanted with trees since the 1940s. For this reason, when you visit a local forest on GRCA land, the chances are high that it will be a plantation forest. These forests have their own tranquil beauty — the symmetry of row upon row of pine trees reaching for the sky. Plantation forests make up about 43 per cent of the forests owned by the GRCA.

Next 10 years

Over the next 10 years, the GRCA will continue to plant trees, as it always has. But more attention will now go into the plantation forests. This is because marginal farmlands that were slated for tree planting a decade ago have been planted over the last 10 years. Nearly 500 hectares, or five square kilometres, of GRCA land was planted with nearly 775,000 trees during that time. This is quite an accomplishment in and of itself.

A second reason is that many of the forest plantations are ready for thinning.

“We will still be doing the full range of forest activities we’ve always done, including tree planting,” says GRCA Forester Ron Wu-Winter. “But for the next 10 years we have a lot of forests to thin, because they are at the stage where they need thinning. This is a big opportunity to contribute to the quality and

WHAT'S HAPPENING

resilience of forests across the watershed.”

He speaks with enthusiasm, because the Master’s thesis he completed at the University of Toronto focused on this — converting forest plantations into more natural forests. He looks forward to playing a big role in forest revitalization in the watershed on a large scale. The GRCA owns seven per cent of watershed forests — in some areas, it’s as high as 14 to 21 per cent. Most of the GRCA’s plantation forests are in the middle of their developmental phase.

Any forester knows what the general public may not — that you can’t usually walk away from a tree planting project once the trees are in the ground.

Instead, you need to keep coming back, because a planted forest needs to be managed. It is made up of a few species of trees all planted at the same time. It doesn’t have much biodiversity, but it’s a quick way to start a forest. Usually after about 25 to 35 years, the forest is ready for its first thinning.

Management of forests on GRCA land is directed by a management plan. Last December, a 10-year update to the GRCA Forest Management Plan was approved by the GRCA board. It outlines the shift in direction.

Signs a forest needs thinning

There are a few signs that a plantation forest is ready for its first thinning, Ron says. One is that the forest is dark and there are very few plants growing on the forest floor because little sunlight reaches through the tree tops. Also, when looking up, only the top third to one-half of the trees have branches.

“Trees are competing with each other for growing space and sunlight, to the detriment of the forest. The other side is that there’s little room for biodiversity in these forests — there are few plants, bushes and small trees in the understory,” he explains.



Photos by Ron Wu-Winter

A plantation forest after thinning may look sparse for a time. But the gaps provide space for a variety of plants and animals and are a significant opportunity to bring health to the forest.



Photo by Janet Baine

The sun shines on the forest floor behind GRCA Forester Ron Wu-Winter as he and Forestry Specialist Meghan Clay check the work at Shade's Mills Park where rows of trees were removed. Forest thinning is the focus in GRCA forests over the next 10 years.

Lots of close examination must be done and measurements taken before a plan for thinning is developed. Once the plan is ready to carry out, paint will mark trees to be removed, based on the health, location and species of the tree. The healthiest trees will remain. Usually a contractor removes the trees, sometimes taking the wood away to be used as lumber. The branches and leaves are left to nourish the new plants, shrubs and trees that will begin to grow in the understory.

Likewise, the funds that come through the sale of wood goes back into the GRCA's

Benefits of forest thinning

- Brings more diversity of plants and animals to the forest floor
- Helps to protect the forest against insect outbreaks and disease
- Enhances the diversity of the forest
- Encourages regeneration of native hardwood species, or provides space for new plantings
- Creates growing space for the remaining trees
- Allows sunlight to penetrate into the forest
- Provides a local source of lumber, which also sequesters carbon dioxide

budget and will be used to increase forest health.

At Shade's Mills last fall, full rows of trees in a stand were removed, along with scattered individual trees in the remaining rows. This way, the mechanical tree harvester can move down one row, leaving the rest of the rows intact. This brings sunlight to the forest and makes room for the other trees to grow.

In another decade or two when thinning is needed again, the harvester can go down the same row and reach two rows over to remove trees, without damaging the forest in those areas.

Thinning is an essential step in forest recovery. It has been going on in the Grand River watershed for a long time and has always been the plan.

No greed in tree thinning

"When people see trees cut down, they sometimes assume it is due to greed or for economic gain. In our plantations, it is an essential step to restoring the forests. Restoration starts with planting trees. It continues with cutting down some of the trees 25 or 35 years later. Thinning is an important step in restoring a mature, diverse forest," Ron says.

Once trees have been removed, new trees, shrubs and plants will start to establish. When needed, the GRCA will plant native species to increase the diversity of trees, so young hardwoods such as maples, oaks or hickories start to grow. Plantings will only be done if there is no native seed source nearby, or if invasives, such as buckthorn, are likely to move in.

MILESTONE

New Conservation Authorities Act

On December 12, 2017, Bill 139 received Royal Assent in the Ontario Legislature. The Bill, called the *Building Better Communities and Conserving Watersheds Act*, includes a new Conservation Authorities Act (CA Act).

The passage of Bill 139 modernizes the CA Act, which dates back to 1946. The Province's review of the CA Act began in 2015, and received input from a wide range of sectors including environment, industry, agriculture, municipalities and provincial Conservation Authorities including the GRCA, through Conservation Ontario. The updating of this legislation provides the foundation for Conservation Authorities across the province to strengthen their watershed management role.

"We are pleased to see that this new legislation recognizes watershed management as a key component in dealing with issues like climate change and population growth, issues long identified as critical in our strategic plan," says Joe Farwell, GRCA Chief Administrative Officer. "There will be new regulations developed and enacted as a result of the new legislation. The new CA Act will help set direction for the GRCA for many years into the future, and we look forward to working with Conservation Ontario, the Province and our municipal partners on these important initiatives."

The changes to the new Conservation Authorities Act are intended to achieve:

- Clarity in the roles and responsibilities associated with the conservation, restoration, development and management of Ontario's natural resources.

- Accountability for the fulfillment of these roles and responsibilities and ensuring that decisions are made in accordance with modern expectations for participation and transparency in decision-making. Conservation Authorities will have one year to adopt new By-laws that meet specific requirements for governance Best Management Practices.
- Sustainability in funding for the programs and services put in place to ensure Ontario's natural resources are managed in a responsible manner.
- A modernized policy framework that enables the province to be responsive to the resource management challenges of today and tomorrow.

Through monitoring and watershed management programs, the GRCA, along with the other 35 Conservation Authorities in Ontario, sees the growing impacts of climate change in Ontario's watersheds on a daily basis. This includes more extreme weather, which can cause more frequent flooding and reduced water levels in streams and rivers, as well as stressed biodiversity. As watershed management agencies, Conservation Authorities work with agricultural, environmental and municipal partners, and play a central role in the

restoration, conservation and management of important water and land resources.



Photo by Bronwen Buck

Kevin and Noah are very dedicated to helping out at Pinehurst Lake.

TAKING ACTION

Geocachers volunteer at Pinehurst Lake

Kevin Sharpen and his son Noah are dedicated volunteers at Pinehurst Lake Park, a home-away-from-home for their family.

Every summer for over 15 years, the family trailer is parked at the small spring-fed lake north of Paris, Ontario for the season.

In fact, Kevin's family, back to his grandparents, camped at Pinehurst each summer, so he has many childhood memories of the popular park.

He has found many ways to give back and encourage others to engage in park stewardship as well.

"Most people who camp for many years at Pinehurst come to know the staff. Kevin is no exception," observes Pinehurst Lake Superintendent Brad Straus. "But what sets him apart is that he never takes Pinehurst for granted. He and his family have a passion for this place and really appreciate what it offers. Kevin is unique because he doesn't just think about why the park is special to him. He wants to share it with others. You can tell that his volunteer involvement is something that feels right to him."

Started gradually

He started gradually, by encouraging Pinehurst Lake staff to set up geocaches within the park. He and his son did the same, to make it a great place for geocaching.

Then, he initiated a new type of geocache for the park. Instead of using an app or GPS to find a hidden container, Kevin enlisted help from family and friends to hold Cache in Trash Out (CITO) events at the park each spring before it opened.

"For Noah and me, geocaching is our favourite thing to do. We partnered with the staff at Pinehurst Lake to do CITO, for the past three years," Kevin explains.

During that time, cleanup participants, including campers, the public and



January thaws resulted in ice jams along the Grand and Nith rivers. This is one of many challenges faced by Conservation Authorities as the climate changes.

geocachers, have collected so much trash that it is becoming more difficult to find. Even old, hidden garbage is disappearing from the park.

This year, on Sunday, April 29, the event is expanding to nearby Wrigley and Bannister Lakes, which are owned by the GRCA and managed by the staff at Pinehurst Lake.

Kevin and Noah have also hosted an introduction to geocaching activity at Discovery Day, an annual park event that welcomes around 2,000 people each year.

“Pinehurst Lake and surrounding trails are for everyone. Our goal is to create a sense of community among all visitors and Kevin shares this goal. Volunteer cleanups can make a big difference,” explains Brad.

“We know the park well, we’ve made friends here and we love the area. For us it’s giving back to the thing we love most,” Kevin says.

If you are part of a group and would like to hold a volunteer event at a GRCA property, or if you would like to learn about volunteer opportunities, check out the volunteer page to subscribe and get updates. at www.grandriver.ca/volunteer.

Sharing love of nature with kids results in award

Flora and Fauna are good friends who met while volunteering to share their love of nature with kids in Guelph.

Both Marilyn Swaby (the kids call her Flora) and Karen Bateman (nicknamed Fauna) are long-time volunteers with the Young Naturalist program, for six- to 10-year-olds, which takes place at the Guelph Lake Nature Centre.

They received a 2017 Watershed Award for their commitment to this program that is offered by Nature Guelph, in partnership with the GRCA.

Marilyn is a former teacher who is passionate about connecting children with the natural world through art. She has always enjoyed the outdoors, even though she didn’t have the opportunity to spend much time in the outdoors when she was growing up.

Karen is a retired veterinarian who has become a keen birder since signing up for a

couple of bird identification courses at the University of Guelph, and then joining Nature Guelph, a dozen years ago. She engages children’s curiosity about nature and enjoys helping them participate in two annual bird inventories — Feeder Watch and the Christmas Bird Count. Both are citizen science initiatives of Bird Studies Canada.

Marilyn is stationed by the window at the nature centre when the kids arrive on Saturday mornings. The window looks out onto an assortment of bird feeders and she helps the kids identify birds, letting them take the lead, rather than telling them what they are seeing.

“You see them develop and it is like seeing anything through a child’s eyes. You learn so much from them and become more enthusiastic about the world around you, just as they do,” she says.

It doesn’t take the children very long to start noticing the difference between male and female birds, and then to identify bird species.

“We learn so much from the kids, it restores your hope in the next generation,” Marilyn says. “The parents are very active outdoor enthusiasts, and the kids arrive bursting to tell us their own nature stories about the things they have seen and done related to nature.”

The Young Naturalists meet every two weeks, 10 a.m. to noon, at Guelph Lake Nature Centre between September and May. This program is planned and led by nature centre staff members Tamara Anderson and Ann Schletz.

Both Marilyn and Karen help with whatever is taking place each Saturday. It could be handling snakes, identifying how to track animals or learning about trees. They also go camping with the kids and their families each May long weekend, always to a different spot.

Many of the kids go on to join the Naturalists-in-Training, a similar program offered by Nature Guelph for 11- to 16-year-olds.



Photo by Tamara Anderson

Marilyn Swaby and Karen Bateman have been volunteering to share their love of nature with kids for many years at Guelph Lake through a Nature Guelph program.

Eight facts about snowpack

What it is, why it's important and how the GRCA tracks and uses snow data

By Janet Baine

GRCA Communications Specialist

No one else in the watershed looks at snow quite the way the Grand River Conservation Authority does.

We track it, because snow helps predict flooding during a mid-winter or spring thaw. It's also a vital part of managing the water supply for the upcoming summer. We see snow as water sitting on the surface, ready to enter the rivers and streams at any moment. Snow feeds our rivers — sometimes very slowly and other times far too quickly.

1. **All snow is not equal, as anyone who shovels knows.** Fluffy light snow that flies off your shovel like air might only be 10 per cent water or less. Juicy, back-breaking snow can be up to 30 per cent water. Snowpack that is 10 cm deep would be like 30 mm (over an inch) of rainfall when it melts.

2. **A team of people have “the snow job” at the GRCA.** Every two weeks in winter they put on their boots or snowshoes and trudge out into the snow with a long metal tube. This is jabbed straight into the

DID YOU KNOW?

snow. The weight of the snow is measured, as well as the depth. The water weight is the more important factor. GRCA staff check snow at 18 locations throughout the winter, from Corbetton in the north to Oneida in the south. Because this is a big watershed the size of Prince Edward Island, it is checked by many GRCA staff who work in different parts of the watershed.

3. **All of the resulting charts and graphs land at the Flood Centre where engineers can scrutinize the information.**

They use it to find the best way to manage the reservoirs and warn residents and flood coordinators of possible flooding. They compare it with weather forecasts and what has happened in the past. If necessary, they run this information through a computer model that predicts outcomes and plan how to operate the dams. They want to avoid flooding from a sudden increase in meltwater. But they also want to operate the dams in a way that ensures there is enough

water in the reservoirs to meet the need of all the communities along its 300-km shoreline even during a dry summer.

4. **When it comes to snowmelts, slow and steady wins the race** (and some GRCA staff sleep better at night, too). Because 2016 was very dry, GRCA engineers wanted lots of snow and melt events last winter, which is what happened. A warm spell or three during a cold winter means that the snowpack won't all head down the rivers on the same day in the spring. As the climate changes, we have more midwinter snowmelts, so this could help moderate flooding. But every year is different.

5. **Most people think of early spring as flood season, although very often serious floods happen in mid-winter.** We saw this in January. This is because warm days can melt the snowpack quickly. The water goes straight into the rivers, since the ground is still frozen and can't absorb it, especially when a layer of icy snow is on top. Any precipitation that falls during this time comes as rain, adding volume to the rivers.

6. **Spring doesn't arrive at the same time throughout the watershed.** In the south end of the watershed it might feel like spring in April, but an existing snowpack in the north can still lead to what seems like surprise flooding later in the spring, once the snow melts. It can seem like there is no cause for these floods.

7. **Flood prediction information has become very important everywhere.** We saw severe flooding last spring in many places in Ontario and around the world. Snow data compiled by the GRCA and other conservation authorities is put together by the Ministry of Natural Resources and Forestry for provincial flood programs.

8. **You can check real-time snow estimates.** While the GRCA doesn't post the snow data compiled by our staff online, you can check estimates produced by the National Oceanic and Atmospheric Administration (NOAA) in the U.S., which uses satellite information. It is online among other weather information at www.grandriver.ca/RiverData.



Photo by Al Standing

Tim Patterson (left) measures snow depth near the head office in Cambridge, while Jason Cowan (right) takes a measurement in the north of the watershed.

Donation of a special sandbox to Apps' Mill

Donald and Jo-Anne Wilkin have donated a very special sandbox to Apps' Mill Nature Centre that teaches kids how weather and land impact water.

"The kids and adults love it because it's fun and combines sand with visual technology," explains Resource Interpreter Duane Brown. "It's a great way to learn about all of the wonderful things the GRCA does."

A computer projects an image onto the sand. The kids can move the sand with their hands to create mountains, valleys, streams and rivers. They can make it rain to see where the water flows. Donald Wilkin says they were pleased to make this project happen, after they heard an enthusiastic

description of the sandbox. The donation was made through the Donald and Jo-Anne Wilkin Donor Advised Fund at the Brant Community Foundation.

In fact, the couple have a long-time commitment to educating young people and have made donations to Apps' Mill in the past. Their sons grew up playing at Apps' Mill and Whitemans Creek, and now their grandsons also enjoy it.

The GRCA hopes to add more augmented reality sandboxes at other nature centres.

To make a donation please contact Grand River Conservation Foundation Executive Director Sara Wilbur at 519-621-2761, or visit www.grcf.ca.



Photo by Louise Heyming

Kids can have fun learning how water moves thanks to this high tech sandbox.

THE GRAND CALENDAR

Eco Conference , Brant Rod and Gun Club, February 24

The Brant Rod and Gun Club hosts its 6th Annual ECO Conference, 8:30 a.m. to 3:30 p.m. The theme is *Conservation has Many Faces*. It's free and includes lunch. The Brant Rod and Gun Club is at 54 Henderson Road, Brantford. Preregister and request a program by emailing brgcecoconference@gmail.com.

Order trees from the GRCA before March 1 for pick-up this spring

This is the last day that landowners with properties of 2.5 acres or more (excluding buildings) can order trees for planting this spring; some order restrictions apply. For more information, for a customized tree planting plan and to learn about grants for planting trees, check www.grandriver.ca/trees, email trees@grandriver.ca, or call 519-621-2763 and ask for a forestry specialist any time of the year.

Managing trees on your property, GRCA head office, March 3

Learn about tree management at this free workshop that includes exhibitors and many speakers, 9 a.m. to 2:30 p.m. Register online at www.grandriver.ca/eventbrite. Topics include hazard trees, diseases, forest management, tree ecology, pollinators and

backyard maple syrup production. At 2 p.m. there will be an optional outdoor opportunity to learn pruning tips and tree identification. Lunch is provided.

Sharing Experiences Workshop, Puslinch Community Centre, March 3

This day-long workshop is an opportunity to share information about local environmental groups and their activities. The keynote speaker is James Raffan, named one of Canada's greatest contemporary explorers by Canadian Geographic. Volunteers, representatives of clubs or conservation/stewardship groups and individuals interested in creating positive environmental change are invited; \$15 fee.

March break camps at Apps' Mill, Guelph Lake, Laurel Creek, Shade's Mills, March 12 to March 16

These camps at GRCA nature centres feature nature-themed activities for kids six to 12, including games, crafts and many seasonal outdoor activities. Easy registration is available on www.grandriver.ca/eventbrite, or check www.grandriver.ca/naturecentres for details.

Updates, details and more GRCA events are on the online calendar at www.grandriver.ca/events. You can also subscribe to receive events in your inbox.

About Grand Actions:

This newsletter is produced several times a year by the Grand River Conservation Authority.

More information:

Current and back issues as well as complete subscription information is available online at www.grandriver.ca/GrandActions.

Submission deadlines:

The 15th of February, April, June, August, October and December. Submissions may be edited for length or style. Photos and event information is also welcome. We do our best to publish items, but we are not able to guarantee publication.

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