



GRAND Actions

The Grand River watershed newsletter



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This 14-year-old snow fence near Elora shows how trees cause drifting on land and not across the road.



Living fences for safer driving

By Janet Baine
GRCA Communication Specialist

Did you know that among their many benefits, trees make winter driving safer?

It's true. As the snow builds up and the winds blow, trees planted in a row beside a roadway form a living snow fence that works 24/7 to minimize drifting. There are already some living snow fences along roadways in the Grand River watershed and more are on the way.

Planting trees and shrubs is not only cheaper and more environmentally friendly than putting up a wooden snow fence, but it is also more convenient in the long run. Living snow fences don't have to be put up and taken down each fall and spring by road crews.

The GRCA has been working with Wellington County on a living snow fence program. County roads department staff identify priority areas where snow tends to drift. They then tell landowners about the idea. A GRCA forestry specialist visits the property, meets the landowner

and develops a planting plan. Thanks to this program, the trees are provided by Wellington Green Legacy and planting costs are covered through the Rural Water Quality Program, so the landowner doesn't pay anything.

"The good thing about living snow fences is they benefit everyone. The farmer gets the benefit of a windbreak and it makes driving safer for everyone in the community," says Nathan Munn, the supervisor of forestry operations at the GRCA.



Nathan Munn

The math

The cost of a wooden snow fence is about \$1 a foot each year, or \$3,300 per kilometre per year. In contrast, living snow fences come with a one-time cost of \$5,000 per kilometre for planting. The Wellington County Rural Water Quality program will pay farmers about \$3,750 per kilometre during the first three years for taking land out of production. The farmer signs an agreement to maintain the trees for 15 years.

"A living snow fence pays for itself in less than three years," Munn says. "The cost of installing an artificial snow fence is \$9,900 per kilometre. This is already more than the \$8,750 per kilometre that it costs for a living snow fence. for three years."

Two years ago a living snow fence was planted





This is a living snow fence during the first winter. Snow fences were put up temporarily to protect the trees. Even when they are very small, the snow is deeper near the trees. This is on Jones Baseline Road in Eramosa Township.

along a school bus route on Jones Baseline Road in Guelph to make it safer for students, Munn says. A half dozen other snow fences have already been established in Wellington County over the past three years.

Haldimand and Dufferin counties are also interested in working with the GRCA to develop this kind of program. There, the trees would likely be provided through Trees for the Grand.

Woolwich Township and the Region of Waterloo launched a pilot project to plant a living snow fence on the west side of Arthur Street between Elmira and St. Jacobs. In this case, they purchased the land for the fence.

Tricky to design

Living snow fences are tricky to design. As the wind passes over the snow fence, velocity drops and the snow is deposited on the leeward side of the fence.

If the trees are too close to the road, then the snow will drift onto it, so the trees need to be planted quite far from the road — 30 to 60 metres.

This makes a snow fence quite different from planting trees in a row along the property line, because the trees are much further from the road. Plantings are done so that farm equipment can be moved around the trees.

Exactly where the trees are planted will depend on the species, how densely they grow and their height at maturity.

Tree program has new name

The GRCA's successful tree planting program has a new name and a new logo.

Now called Trees for the Grand, it offers all the same services as before. It will continue to partner with local tree planting programs such as Trees for Mapleton, Trees for Woolwich, Trees for Guelph and Wellington Green Legacy. These local programs, which have been developed by people within local communities, will not



change.

"Trees for the Grand offers technical and financial assistance to landowners who wish to plant trees. We'll work with local partners, just as we always have," says Tracey Ryan, manager of environmental education and restoration with the GRCA. "It's the same great program with a new name. It covers the entire watershed."

Since the GRCA started to work with private landowners to plant trees in 1954, the tree planting program has grown, especially thanks to many partners. Some years it has planted nearly a million trees. After nearly 60 years, it was time for a name with a bit more pizzazz, Ryan says.

The Grand River Forest Plan has the overall goal of 30 per cent tree cover throughout the watershed, as this is what is recommended by Environment Canada. Actual tree cover varies significantly from one community to another. Three GRCA forestry specialists work with private landowners to make recommendations on

Advantages of living fences:

- Reduce car accidents
- Reduce road maintenance
- Reduce use of road salt
- Reduce road closures
- Increase crop yields
- Should perform for the lifetime of the trees
- Trees bring many environmental benefits, including providing wildlife habitat, biodiversity, aesthetic appeal and also carbon sequestration

Disadvantages of living fences:

- Trees must be set back far from the road (about 30 to 60 metres)
- Often takes up productive farmland
- May interfere with or change cropping practices

Improving wastewater operations in Caledonia

By Janet Baine
GRCA Communications Specialist

Emily Jarvis needs to keep a close watch on the weather and ensure that the bugs at the Caledonia wastewater treatment plant are happy.

For three years she has operated the plant that serves the community of 10,000. Being a licensed wastewater treatment plant operator is not the kind of green job that people normally think of, but it is an important way of looking after the Grand River. There are 30 wastewater treatment plants within the watershed that put treated effluent into the river system.

“In wastewater treatment plants, you can find many ways to improve performance just by changing things such as the waste volumes or the return rates,” says Jarvis.

Before she started her job in January 2009, Haldimand County had already started a process called wastewater treatment optimization. The goal is to ensure the

wastewater plant releases high quality effluent into the waterways and complies with provincial regulations. An important side benefit of optimization is often reduced costs.

Haldimand enlisted the help of Veolia Water Canada which operates Haldimand's wastewater plants. Haldimand officials learned more about their facilities by working with plant operators in reviewing and discussing operational data. Through increased awareness, changes were identified and prioritized to make the facilities more effective.

Haldimand's 2007 capital budget showed \$10.5 million was needed for upgrades at the Caledonia wastewater plant — a big bill for a small community. However thanks to optimization, the capital costs have been reduced to \$1.3 million. Implementing these changes is ongoing.

Through optimization, the county decided to increase the level of staffing at the Caledonia plant. Jarvis was hired as a



tree planting and the GRCA is always planting on our own land.

In addition, there are many sources of funding to help landowners with the cost of planting trees. The GRCA staff work with many programs to bring information and funding to landowners. The municipally funded Rural Water Quality Program and Trees Ontario are two programs delivered by GRCA staff.

To contact Trees for the Grand call 1-866-900-4722 or e-mail trees@grandriver.ca or visit www.grandriver.ca/trees.

Local planting programs

Local tree planting programs have grown deep roots in their communities.

Trees for Guelph was started in 1990 by a group of volunteers. It is a non-profit charitable organization with many partners and one staff member — Moritz Sanio — who works at the GRCA office.

Trees for Mapleton began in 2002 as Trees for Peel, then expanded to cover all of Mapleton Township in 2007. Since 1991 landowners have planted more than 550,000 trees on a total of 350 acres. That includes 97 kilometres of field windbreaks, 15 kilometres of farmstead shelterbelts and 20 kilometres of streamside buffers. Four living snow fences were planted along local roads.

Wellington Green Legacy started in 2004 and has planted more than 150,000 trees per year or over a million trees. This program has received international recognition and is billed as the largest municipal tree planting program in the world.

Trees for Woolwich was established in 2011 to promote tree-planting in the township. In its first season more than 2,100 trees were planted. The program has a goal of planting 23,000 trees by 2016.



Emily Jarvis (right) operates the Caledonia wastewater facility and Stephanie Nolet (left) is the backup operator.

Photo by Tim Howarth

dedicated operator who would learn everything about the facility. There is also a half-time backup operator.

“Emily was a relatively new operator. She was open to learning and she had to learn a lot about the process. Emily took on the challenge and did very well,” explains Jim Matthews, supervisor of water and wastewater compliance for Haldimand County.

Jarvis provides the monitoring, maintenance and a deeper level of understanding of how the plant operates. She works closely with Tim Howarth, a technologist with Environmental Services in Haldimand County, to find out how to tweak the plant operations. She has also worked with Haldimand’s engineering staff who are looking into capital changes.

Operating a wastewater plant during a storm is especially challenging. This is when there is an increased danger of some effluent getting into the waterway before it has completed the treatment process. It is during storms that Jarvis needs to be on alert and stay calm because storms can cause unpredictable changes to processes and equipment.

In good weather and bad, she is part of the team that is finding ways to improve performance of the wastewater facilities in Haldimand County. The challenge is figuring out exactly which changes will have the best result.

Optimization identified changes that would resolve a biological issue at the Caledonia plant. Microorganisms work to break down waste materials and decrease the amount of ammonia that is in the effluent.

These organisms, often called bugs by those in the field, need the right conditions to be effective at breaking down material in the wastewater.

A change in chemicals was made to “keep the bugs happy in their environment” Jarvis says. This means the level of ammonia in the effluent decreased and the plant now has no trouble meeting the stringent certificate of approval from the Ministry of Environment under which it operates.

“There were no non-compliance issues before, but sometimes it was close,” when it came to release of ammonia, Matthews explains.

Upgrading or rebuilding wastewater treatment plants is extremely costly. Through optimization, Haldimand County now knows the Caledonia plant, which was rebuilt 21 years ago, has the capacity to accommodate the growth of the community into the future.

Optimization was undertaken not only at the Caledonia wastewater plant, but at all of Haldimand’s wastewater treatment plants and lagoons. As a result, \$20 million of planned capital expenditures that had been targeted at additional capacity has been redirected or removed from the budget.

Haldimand and the City of Guelph were leaders in optimization in the Grand River watershed. The GRCA initiated a program to bring it to all areas throughout the watershed. Workshops have been held for operators and more are planned.

In the meantime, Jarvis will leave the Caledonia plant in the capable hands of operators Stephanie Nolet and Al Campbell as she is set to go on a maternity leave.

75 years of DU Canada

By Joanne Barbazza
Ducks Unlimited Canada

Since our earliest days, Ducks Unlimited Canada (DUC) has been fueled by bold ideas and an unwavering commitment to conservation.

Our story is about people, partnerships and a shared passion for natural areas and wildlife. Thanks to the support of organizations like the Grand River Conservation Authority, DUC is celebrating 75 years of conservation excellence.

In 1938, as wetlands across the Canadian prairies were drying up, a small group of sportsmen came together. Their vision was to return critical habitat to the landscape and create a conservation movement that would ensure a sustainable future for us all. Seventy-five years later, this vision has the support of 28,600 people who have undertaken over 2,600 conservation projects in Ontario alone. This goal fits in very closely with the work of other conservation organizations, including the GRCA.

Essential habitat for wildlife

For the past 12 years, the GRCA has provided space for a DUC staff member Jeff Krete at their Cambridge headquarters.

“Our collaborative approach to conservation has been the key to our success,” says Krete. “We all share the resources, which means we also share the responsibility to take care of them. It’s both inspiring and rewarding to partner with local agencies because we see firsthand the benefits that conservation efforts give communities.”

In addition to providing essential habitat for waterfowl and other wildlife, wetlands deliver a host of ecological benefits that are crucial to the health of lakes and rivers. In turn, human health and wellbeing is affected by the quality of our environment. As one of nature’s most valuable resources, wetlands connect our environment, our economy and our future.

“Every piece of wetland or associated



Photo by Emily Jarvis

Exterior of Caledonia’s main wastewater plant.



1. Wetlands provide important habitat for wildlife, such as this hooded merganser duck. 2. A Marsh wren. 3. A wetland restoration and enhancement project in the Wilmot Creek sub-watershed to improve water quality and provide habitat.

habitat conserved by DUC is the result of partnerships,” says Krete. “These partnerships are the foundation of DUC’s conservation leadership and they represent a strong future for wetland conservation, not only here in Ontario, but across Canada and beyond.”

In the Grand River watershed, DUC has worked on over 40 projects over the past 10 years. Projects range in size from small waterfowl pairing ponds to large wetlands at Luther Marsh Wildlife Management Area and the Taquanyah Nature Centre. This includes restoring degraded wetlands; enhancing wildlife habitat; water quality and quantity improvements; wetland buffers, fencing and solar watering for livestock.

“DUC has led wetland restoration in the province and within this watershed,” says senior GRCA ecologist Tony Zammit. “It is very important work, because we’ve lost up

to 75 per cent of the wetlands, so there is lots more work to be done. They have helped with wetland projects on GRCA land, whether they provide the engineering drawings, funding or consultation.”

While this journey has been 75 years in the making, what we can do for wetlands, wildlife and the overall health of our environment has only just begun. We are proud that the GRCA is part of this journey. The stories we write together will form the next chapter of our collective conservation success. Join the Ducks Unlimited Canada 75th celebration at www.ducks.ca.

DUC provides technical and partial funding assistance to landowners who undertake wetland conservation and restoration projects. For information, Jeff Krete – conservation programs specialist, Ducks Unlimited Canada can be reached at 519-621-2763 ext. 2297.

Award for wetlands

By Janet Baine
GRCA Communications Specialist

Ken Rosin is a landowner who is giving a lot of his land back to ducks, wild turkey and deer.

He does this by putting wetlands on his property, which is in Amaranth Township at the headwaters of both the Grand River and the Nottawasaga River.

“Ken lives and breathes stewardship and conservation. He promotes it in everything he does,” said Dave McLachlin, a biologist with Ducks Unlimited. Rosin received a 2012 Grand River Watershed Award for his conservation efforts.

His property is unique in that a drop of rain that falls on one part will eventually end up in the Grand River and then Lake Erie, while a rain drop that falls on another part of his property will end up in the Nottawasaga and eventually Georgian Bay. He rents some of his land to a farmer who grows crops such as canola, but the farmer keeps a big buffer around the wetlands.

Rosin has been planting trees as well, hoping for a beautiful diverse forest in the future. Working with the Nottawasaga Conservation Authority, Rosin planted more than 8,000 trees on five hectares (12 acres) in 2009 and 2012.

Rosin has enjoyed the outdoors since he was a child in the southern United States. Hunting was a way of life when he grew up. He initially became interested in conservation due to his concern over the disappearing habitat for waterfowl, but now he is more likely to be sporting binoculars or a camera than his hunting gear. He is very active as a volunteer and contributor to Ducks Unlimited.

Rosin has added seven wetlands on the land. Five of these are on his property, and two others are next door on land that he used to own which now belongs to long-time friends. The new wetlands vary in size; small ones are “pairing ponds” or small places where waterfowl may pair up in the spring, while larger ones provide habitat for hens to raise their ducklings. This year ducks



Photo by Janet Baine

Protect turtles

By Lindsay Campbell
GRCA Restoration Specialist

Peter Follett wasn't always an advocate for turtles, but that has changed.

Two years ago he became distressed by the number of turtles he found dead as a result of crossing the road near the Damascus reservoir near the headwaters of the Conestogo River. He started cleaning up the turtle remains. He felt that some vehicles didn't even seem to try to avoid the turtles and he spoke about the problem with a few neighbours.

In 2012 he arranged to have a "turtle crossing" road sign installed with permission of the municipality and the GRCA. He also knew of active nesting grounds around his property and on GRCA land near the Damascus reservoir. He saw that these nests were constantly being raided by predators and he contacted the terrestrial resources group at the GRCA — the staff members who restore natural areas.

"Two things have to come together, gravel habitat and people that have the inclination to help. The cages that protect the nests are easy to build. It's also a good learning activity for kids," Follett says.

He once thought of snapping turtles as aggressive animal and competition for bass fishing. He has since changed his views of these magnificent creatures that are a reminder of prehistoric times. Follett now sees them as an important part of the ecosystem and our environment as well as their value in assisting him in cleaning up his fishing entrails.

Follett is a perfect volunteer for protecting the turtles. He had seen firsthand the challenges they face each year and is willing to put in a little time to give them an advantage. After all, a female snapping turtle has to be at least 15 before she can lay eggs. That means 15 years of surviving manmade and environment challenges. Once the eggs hatch, they must survive hungry predators looking for a nutritious meal.

In all, Follett installed five turtle nest protection cages in 2012. In addition, the

Ken Rosin checks an nesting area near a wetland that he put on his property near the headwaters of the Grand River and the Notawassaga River.

hatched on five of his six ponds. Frogs, toads and turtles now abound on the restored wetlands that were dry just a few short years ago, while deer tracks are often left near the ponds.

"At a time when wetlands are disappearing in the headwaters of the Grand River watershed, Ken has successfully restored hydrology to previously drained wetlands. He is installing water control structures to hold back water on his land," said Liz Yerex, who recently retired from the GRCA and worked with Rosin on these projects.

Rosin lives in a subdivision in the Orangeville area and drives down to visit the farm several times a week. He can stay all day, binoculars in hand, watching his wetlands to see how many waterfowl, wild turkeys and deer are visiting. When he tells stories about the wildlife on his property, his face lights up.

"I truly enjoy spending time with Ken at his property, watching his excitement as he sees a pair of blue-winged teal settle into his newly restored wetland or a tom strutting for a hen in the back of his alfalfa field," McLachlin said.

Rosin watched 171 ducks fly into one of his small wetlands one day and didn't take a shot at any of them. On another wetland during the spring, he saw five pairs of ducks that were all different species — mallard, blue-winged teal, buffleheads, black ducks and wood ducks — all on the same small

wetland.

"For what it's worth, as I've aged my priorities have changed a bit. Though I have watched a lot of ducks on the farm ponds, I still haven't shot one. Maybe they're too pretty now or maybe they just need a safe place to nest and rest," Rosin said.



This AgriDrain is used to maintain the water level controls structure at a created wetland.



Photo by Bill Scott

This newly hatched snapping turtle is from an area that was protected by GRCA staff in Cambridge.

staff of Luther Marsh Wildlife Management Area and the GRCA head office in Cambridge also protected numerous nests. These efforts were made possible in part thanks to donated materials from a caring watershed resident.

In Ontario there are eight native turtle species. Of these, only one — the midland painted turtle — is not at risk of population decline in Ontario. These turtles have an uphill battle as they face habitat loss, pollution, road mortality, persecution, and collection for the illegal pet trade.

Did you know?

Research by a student in South Carolina



Photo by Lindsay Campbell

Peter Follett at a turtle nesting site near Damascus. Turtles bury their eggs in gravel in May and June, and they will hatch sometime between August to October.

shows that “some motorists have the dark tendency to go out of their way to hit turtles as they cross the road” writes Colin Schultz in Smithsonian Online.

Nathan Weaver put rubber turtles on a road and then watched to see how many people accidentally hit them. “What he found was that some people actually go out of their way to smush the shelled creatures,” according to the Smithsonian.

What you can do:

Not everyone has the opportunity to protect turtle’s nests, but there are other activities than anyone can do to help out local turtle populations. These include:

- Be a diligent driver during turtle nesting season (May to June) and hatching season (August to October) in turtle crossing areas and around wetland habitats.
- If you come across a turtle on the road and it is safe for you to move the turtle, relocate it to the side of the road in the direction it was heading.
- Turtle sightings can be reported to the Ontario Turtle Tally which collects turtle sighting information and passes it along to organizations like the Natural Heritage Information Centre. The information is used to learn more about turtle distributions in Ontario.

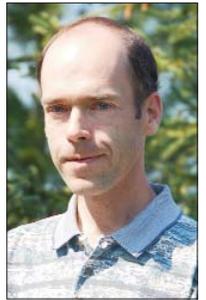
Sleuthing for lost wells

By Janet Baine
GRCA Communications Specialist

Tim Patterson has been looking for abandoned wells that homesteaders left behind.

He sometimes goes only on a hunch after seeing a dark spot in an old aerial photo. He also talks to people who know the properties and looks at old photos. He is looking for all the abandoned wells on property owned by the GRCA.

With lots of help from GRCA staff, Patterson has found 124 abandoned wells on GRCA land over the past few years. He even found one in Belwood Lake last summer, as it became visible due to low water levels. Once found, these are properly decommissioned so they are no longer a safety hazard to hikers or other outdoor enthusiasts.



Tim Patterson

Once sealed off, contaminants can no longer get into the groundwater system.

The GRCA owns 200 square kilometres of land spread throughout the watershed. It was acquired for parks, reservoirs and nature preserves. Much of it was once farmland with barns and homes that have been abandoned. In the past, the old wells were often left untouched or inadequately filled in or covered over because there was little awareness of the safety and environmental risk they posed. Other wells were related to park operations, monitoring and cottages.

The reason for this quest is that property owners are legally responsible to properly decommission old wells. They must locate the wells and have them decommissioned by a licensed well driller.

Patterson hasn’t fallen into any wells, but he has found some that would have been a danger for anyone who chanced upon them. Property owners need to be aware of the risk these old wells pose.

If you suspect you know where a well may be on GRCA property, please call Tim Patterson at 519-621-2763, ext. 2288.



Photo by Kevin Tupman

Shade's Mills can be seen in a drop of melting water during a January melt.

THE GRAND CALENDAR

Heritage Day Workshop, Friday, Feb. 15, 8:30 a.m. to 4:30 p.m., Dunnville Community Lifespan Centre

Crossroads of Conflict, Pathways to Peace: The Haldimand Experience. This workshop builds on the theme from 2012. It is the second Heritage Day Workshop to focus on the influence of the war on the Grand River watershed. The event is hosted by Haldimand County, the GRCA and the Heritage Working Group of The Grand Strategy. Visit the Heritage Day Workshop section for the 2013 program and register on www.grandriver.ca. Note that this workshop fills up prior to the event.

Deadline to order trees from the GRCA is March 1, 2013

While the deadline to have the GRCA plant trees on private property has passed, it is not too late to order trees to be planted by landowners themselves. Orders must be for 200 seedlings or 20 saplings or more. For more information or to arrange a visit to your property, check the Forestry section of www.grandriver.ca, e-mail trees@grandriver.ca or call 519-621-2763.

Campsite bookings for Grand River Parks opens March 4

Campsites can be booked for the 2013 season both online and through a phone line. The camping reservation website is www.grcacamping.ca opens March 4 to take reservations for the 2013 season.

March Break Day Camp at Guelph Lake and Laurel Creek March 11-15

Please visit www.grandriver.ca or call Guelph Lake Nature Centre at 519-836-7860 or Laurel Creek Nature Centre at 519-885-1368 for more information. Registration will soon be available online at www.grandriver.eventbrite.com

Conservation areas open for the summer season on Wednesday, May 1

Information about the parks is available on www.grandriver.ca/parks and vehicle season passes are \$122 and can be used at all conservation areas.

Note: Events at the GRCA's conservation areas and nature centres are posted on www.grandriver.ca/Calendar.

Funding for private wells

If you know of an abandoned well on your own property, you may be eligible for funding assistance to have it decommissioned.

Through the GRCA's Rural Water Quality Program, more than 200 wells on private land have been properly decommissioned so they are no longer a hazard. The entire cost may be covered through this program.

For further information, contact the Rural Water Quality Program at 519-621-2763 or e-mail ruralwater@grandriver.ca.

About Grand Actions:

This newsletter is produced bi-monthly 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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