Lot's of TLC for turtles

By Mary-Anne Cain
GRCA Environmental Education Specialist

Laurel Creek Nature Centre in Waterloo is providing lots of TLC to give turtles their best chance of survival.

Seven of the eight species of native turtles in Ontario are at risk of disappearing. Threats to their survival include habitat loss and degradation, nest predators, road mortality and illegal collecting for the pet trade.

A species that is threatened or at-risk may become extinct if actions to reduce threats aren’t taken.

Thanks to a grant from TD Friends of the Environment and funding from companies that participated in work days, volunteers and GRCA staff are giving turtles a better start in life. The approach includes turtle education, creating better nesting sites and nest protectors. Projects such as this are only possible through the Grand River Conservation Foundation.

Helping people understand the habitat and nesting needs of local turtles is the aim of an education program at the nature centre. The staff have been educating students, teachers and parents about the ways to help turtles. This is done through Species at Risk programs that incorporate games and a visit from the GRCA’s teaching turtle, Snappy, who lives at Laurel Creek Nature Centre.

In addition to school programs, more than 80 visitors to Elora Gorge and Laurel Creek conservation areas attended two turtle education programs this summer. Education is also an important first step when volunteers come for a work day.

Staff at the nature centre and program participants regularly monitor and record turtle sightings and turtle nests. This will help achieve positive results for turtle survival and increase
knowledge about the number and distribution of turtles on this GRCA property.

If you would like to help with turtle monitoring in your area, please report the turtles you see online at www.inaturalist.org. Search under the “projects” tab for “Grand River Conservation Authority” to report the time, place and species.

Creating nesting sites

With the help of volunteers from corporate groups, such as Canon and Wells Fargo, as well as community groups such as Blue Dot Waterloo Region, Toronto Zoo Adopt-a-pond and the Waterloo Region Nature teen group, two nesting sites were constructed near Laurel Creek Nature Centre to provide turtles with better nesting locations. Turtle nest success is enhanced by having good nesting sites. Gravelly sand is considered the best nesting material for turtles. For turtle hatching success, the site can’t be too wet or too dry and must allow air circulation. Constructing more than one nesting area is important, because it provides micro-climate variation and reduces predator density in nesting sites.

Native plants around nest sites

Over 280 native wildflower and grass plugs were also planted to enhance the surrounding habitats. Native plants provide barrier-free travel for female egg-laying turtles and they protect hatchlings when they emerge in the fall.

Helping turtles doesn’t end with the nesting grounds. Once the eggs are laid, they need to be protected for better hatching success. Unlike birds, adult turtles don’t tend their nests after the eggs are laid, nor do they care for their young once they hatch. This means nests are easily found and destroyed by predators such as raccoons, skunks and foxes looking for a meal.

Last spring, 15 nest protectors were made to help protect turtle nests from predators at Laurel Creek Nature Centre and some conservation areas. Thanks to Melissa Whiteford’s class at Our Lady of Grace School and Serge Vlemmix’s class from St. John School (both schools are in Kitchener), each nest cover also has a unique handmade sign. These explain that the nest protectors should be left in place to protect the eggs from predators.

Volunteer work days

This was truly a community effort, with corporate employees and community group members building nest protectors and creating the turtle nesting sites at special corporate volunteer work days.

“It was very satisfying to see the evolution of working on the turtle nest protectors and now helping to create areas for the turtles to lay their eggs,” says Christine Pauhl, a corporate volunteer. “It was also really great that we finished the whole project. It was hard work and super awesome to see Snappy the teaching turtle on the nest afterwards.”

Eighty-one volunteers spent a total of 175 hours on this project. They learned a great deal about turtles and species-at-risk, because public education is an important part of this project. Corporate groups often match their participation in these events with donations.

“The best part of this was seeing how much people enjoyed team building, while they made an important contribution to local ecology,” said Volunteer Program Coordinator Bronwen Buck.

For more information on volunteering with the GRCA, please visit www.grandriver.ca/volunteer.

43 reptiles and amphibians in our watershed

Some naturalists who enjoy birding also turn their eyes to the ground in search of herpetofauna, sometimes affectionately known as “herps.”

More than 300 native birds have been observed in the watershed, but there are only 43 native reptiles and amphibians, so it’s easier to complete a herp list than a bird list. The word herpetofauna comes from the Greek word herpetos, which means crawling.

Species such as the American toad are common and widespread in our watershed.
The GRCA’s checklist of reptiles and amphibians that are known to occur or occurred historically within our watershed is posted online at [www.grandriver.ca/SpeciesChecklists](http://www.grandriver.ca/SpeciesChecklists).

The list includes 23 reptiles and 20 amphibians. Two of the amphibians, seven native turtles and nearly half of the snakes are Species at Risk in Ontario. These species and their habitat are legally protected in the province.

The GRCA list includes common species such as the American toad and eastern garter snake. The Jefferson salamander and Blanding’s turtle are among those species that are considered to be at risk in Ontario and Canada.

There are many reasons why people should care about these animals, says Tony Zammit, the GRCA’s Watershed Ecologist.

Frogs, salamanders, turtles and some snakes depend on wetlands and watercourses at some point during their life cycle. But within the Grand River watershed, up to 75 per cent of the original wetlands have been lost, and many others have been altered or degraded by land use activities. Even changes to the upland area next to a wetland can have a negative impact on amphibians and reptiles.

The presence or absence of these creatures can tell us something about the health of the local environment. Amphibians and some reptiles are good indicators of water quality. The queen snake, for example, is a rare snake that spends a lot of time in water and prefers high quality creeks and streams, such as Whitemans Creek. This is because the diet of these snakes is primarily made up of crayfish.

Reports from citizens can provide valuable scientific information that governments, organizations such as the GRCA, and environmental consultants depend on as they work to ensure these species don’t disappear from our watershed. If you would like to help with monitoring, sightings can be reported online at [www.inaturalist.org](http://www.inaturalist.org). Under the “projects” tab, search for Grand River Conservation Authority.

The Ministry of Natural Resources and Forestry (MNRF) plays the lead role in the protection of Species At Risk and other wildlife in the province, and has legal jurisdiction under the Endangered Species Act and the Fish and Wildlife Conservation Act.

The GRCA implements projects to protect and restore habitat for amphibians and reptiles on GRCA land where this is possible.

Ontario Nature’s Ontario Reptile and Amphibian Atlas is one way people can learn more about our amphibians and reptiles, including how to identify them, their habitat requirements, and distribution in the watershed and province. The Atlas was created thanks to a volunteer reporting program initiated by the province in 1988. For more information about the atlas, check [www.ontarionature.org/reptile-Amphibian-atlas](http://www.ontarionature.org/reptile-Amphibian-atlas).

**Road ecology**

The emerging science of road ecology focuses on understanding how roadways impact the surrounding natural environment, especially the animals that need to cross roads.

Ecologists that specialize in this area study the number of road mortalities, the species that are killed, where this takes place and the time of year. This research and monitoring can help inform engineers and ecologists who design and build roads. The Species at Risk branch of the Ministry of Natural Resources and Forestry (MNRF) has developed best practices on structures that will help mitigate the negative impact roads have on wildlife.

**Integrating solutions**

Most people have heard of fish ladders to help fish over dams and most have seen deer crossing signs designed to warn motorists and protect deer from being harmed by vehicles. There are also different ways to help reptiles and amphibians, which often cross roads as they migrate for breeding or to spend the winter in a different type of habitat.

One solution is to integrate wildlife exclusion fencing into road design. Each solution is adjusted to the road and the products themselves are also evolving based
on science. The impacts of winter road maintenance, such as snow plowing, also influence the long-term effectiveness of exclusion fencing, so some products are better suited than others.

Reptile and amphibian exclusion fencing was installed along Highway 24 in Brant County by the Ministry of Transportation when significant highway improvements were made. This was required through the Endangered Species Act, because researchers had found Blanding’s turtles in the area. This fencing stops the turtles from crossing over the highway. It does this by directing them to a culvert designed and built to carry them under the highway. This way, they can safely cross under the road and get where they want to go. It takes the turtles longer to cross when exclusion fencing is in place, but it is safer.

Another reptile exclusion fence has been constructed in the Upper Blair Creek area of Kitchener in order to stop turtles from leaving natural areas and wandering into new subdivisions. This came about after an Environmental Assessment and consultation with MNRF staff, and was required of the developer.

Some municipalities have also implemented solutions such as reducing speed limits, posting turtle crossing signs, temporary road closures, as well as public education. For example, in recent years, the spring migration of Jefferson salamanders has sparked a temporary closure of Stauffer Drive in Kitchener. In this case, the closure was required by the MNRF, which oversees the endangered species legislation. Jefferson salamanders are one of many species that are protected under Ontario’s Endangered Species Act, because their population is in decline.

A researcher measuring a salamander. Monitoring is an important step in finding solutions.

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2018 Award recipients from across the watershed

The Grand River Watershed Awards took place in October and seven awards were given out to recipients from across the watershed.

The GRCA’s top award in 2018 was a posthumous Honour Roll award that went to John Parish, a fluvial geomorphologist who understood the complex interactions between water, land and nature. He lived in Erin.

John Parish Honour Roll

Sometimes referred to as a river doctor, he assessed rivers and found ways to restore those that had been damaged, so they could flow naturally. He proudly founded Parish Geomorphic Ltd. in 1997, and he was instrumental in developing policies and implementation guidelines for managing watersheds in southern Ontario.

He had passion and a strong work ethic and was involved in many studies and projects for the GRCA. His work related to environmental flow has provided insights that the GRCA considers when making reservoir and flow management decisions. His legacy also includes mentoring a new generation of geomorphologists.

In addition to the Honour Roll award, six Watershed Awards were given out — two to organizations and four to individuals. John’s wife and children received this award on his behalf.

Jack Benham

Jack Benham is a resident of Damascus at the northern end of the Grand River watershed. He is a passionate volunteer with the Arthur Trails Group, which has created two trails in Wellington North — the West Luther Trailway and the River Trail along the Conestogo River.

Jack has top-notch woodworking skills, enjoys people and loves nature. Inspired by his enthusiasm, a dedicated team has worked with him to create, maintain and fund the

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local trails.

**Dr. Derek Coleman**

The City of Cambridge is very fortunate to have benefitted for many years from the assistance of Dr. Derek Coleman. He shared his ecological expertise as a long-time member and chair of the Cambridge Environmental Advisory Committee and he helped to launch Cambridge Stewardship. Derek has also provided financial support through the Ages Foundation Fund which is administered by the Cambridge and North Dumfries Community Foundation (CNDCF). Through this he has funded planting events, stewardship initiatives and many other projects.

**Grand River Fisheries Management Plan Implementation Committee**

The award that went to the Grand River Fisheries Management Plan (GRFMP) Implementation Committee recognizes the many partners on the committee that have been working together to improve local fisheries.

For 20 years, the GRFMP Implementation Committee has worked towards managing the river to realize the potential of the waters and fisheries in their communities throughout the Grand River watershed. This collaborative process has created a unique fisheries management plan and committee, where agencies and community groups are dedicated towards the plan’s implementation. For more information about this organization, see the story on page 7.

**Jeff Grant**

Jeff Grant was the youngest award recipient and he is from St. Agatha. He is a dynamic Grade 10 student who loves butterflies, especially monarchs.

He knows that monarchs are in decline. While there are several contributing factors, one reason is the disappearance of their host plant, milkweed, the only plant the monarch caterpillars eats and where adults lay their eggs.

He plants milkweed and raises hundreds of caterpillars of several species on his family’s farm.

After seeing a thousand milkweed plants destroyed in his township, he began to volunteer at Laurel Creek Nature Centre, where he educates people of all ages about monarchs and their habitat. He also appeared on The Weather Network to talk about butterflies.

**Philip Holst**

Phillip Holst lives on the outskirts of Woodstock and has been working with landowners to steward wetland projects on private land for 10 years. He is vice-chair of Stewardship Oxford and a national director for Ducks Unlimited Canada. As a volunteer, he works behind the scenes with agencies, companies and politicians. He takes an active role in each project that he works on, taking the time to meet with landowners and walk them through the process.

**Ontario Stone, Sand and Gravel Association**

The Ontario Stone, Sand and Gravel Association (OSSGA) works in partnership with government and the public to promote a safe and responsible aggregate industry, with a focus on environmental stewardship and sustainability.

In recent years, OSSGA has raised $280,000 for the Grand River Conservation Foundation. Members of the association have undertaken numerous environmental projects in the Grand River watershed. The first was a joint project with the GRCA that began in 1979 when gravel was extracted from Snyder’s Flats in order to create shoreline fish habitat. Members have worked hard to restore former quarries and partner with the community to help with creek restoration.

The GRCA has given out Honour Roll awards since 1976 and Watershed Awards since 1983. You can learn more on www.grandriver.ca/awards.

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Carl Brubacher uses a combination of management practices to protect his soil from extreme weather. Cover crops are one important management practice he uses.

**How one farmer builds healthy soil to confront climate extremes**

*By Anne Loeffler  
GRCA Conservation Specialist*

Farming isn’t simple. Successfully growing crops while also dealing with climate extremes, such as heavy rains, is a challenge.

Heavy rain can wash away soil, damage crops and impact water quality for downstream water users. To combat unexpected weather events, many farmers use a combination of management practices to protect their soil and their livelihood.

Carl Brubacher is a good example. He’s a cash crop and hog producer, who farms with his family near Arthur. He follows a rotation of corn/soybeans/winter wheat, and where possible includes cover crops to prevent soil erosion.

Keeping the soil on the land is extremely important to him. His tillage practices, crop rotation and cover crops all help build better soil structure. Healthy soils are less likely to wash away during severe rain storms, themselves with healthier soil and a reduction of fertilizer. His only piece of tillage equipment is a vertical tillage tool that helps create optimal growing conditions, not only for his crops, but also for soil life.

“You don’t see the good soil structure until you take a shovel and dig into it. It’s a hidden secret,” he says. A visit to his fields confirms that a multitude of earthworms are working at breaking crop residue into organic matter to feed the crops and hold the soil together. He points out that his soil has the consistency of cottage cheese. Even after heavy rain, it’s in small clumps, so it is less likely to wash away.

Improved soil structure means his fields are less prone to soil compaction during equipment operations, he says. He uses the Curse Buster vertical tillage tool to create fractures in the soil while minimizing soil disturbance on the surface. This leaves a lot of crop residue on the surface, providing worms with food.

**Improved soil resilience**

From a distance, no signs of soil life are visible on the surface, but a closer look shows that worms have created middens. These are small piles of worm castings and crop residue that protect worm tunnels and serve as a food reserve. The worms have even been drawing living corn leaves down into the soil as a food source. As a result, soil health and resilience has improved, making the soil less prone to erosion. Carl believes he’s losing far less soil and manure into the creek than a few years ago when he was doing more tillage.

Trees are also part of the cropping system. With the assistance of the GRCA’s tree planting program, he has planted close to nine kilometres of windbreaks and riparian buffers on his land to protect the crops and adjacent streams.

Carl has succeeded in putting together tillage practices, cover crops, crop rotation and trees into a system that works really well on his farms. The water is clearer downstream because of it.

For more information on best management practices, or to learn more about opportunities for financial assistance, contact the Conservation Services team at 519-621-2761 or visit www.grandriver.ca/rural water.
The fish don’t know this, but dozens of organizations and hundreds of volunteers have been working on their behalf for 20 years, thanks to the Grand River Fisheries Management Plan (GRFMP). The process of creating the plan was extensive and took time.

“Public meetings were held over two years, and these attracted more than 900 people and many written comments, so people were very invested in the process,” explains Crystal Allan, Supervisor of Natural Heritage at the GRCA and co-chair of the plan’s Implementation Committee. Al Murray, MNRF, also co-chairs the committee, which meets regularly.

Anglers came and revealed their best fishing spots and also their hopes for the future of local fisheries. Sometimes the agency biologists were surprised by what anglers said about fish locations. When they went to verify this information, the biologists found the anglers were correct. This was the beginning of a true collaboration.

The GRFMP was signed in September, 1998. It includes descriptions of the fish and fish habitat in each reach of the Grand River and its many tributaries. It’s the guiding document for managing fish habitat and is important in protecting the ecological health of the local waterways.

The plan identified 42 “best bets” that could be accomplished quickly, resulting in early successes. The actions suggested in the plan are carried out by the Fish Plan Implementation Committee, which is made up of about 30 people who represent a variety of organizations and agencies.

“It’s an innovative plan that was not only the first of its kind, but also a model for the province,” Crystal says. It helped guide other conservation authorities in developing fish plans. It has received several awards, including local and regional awards that went to partner organizations for their commitment to improving local fisheries. This October, the implementation committee received a 2018 Watershed Award from the GRCA (please see page 5). In 2009, it received a National Recreational Fisheries Award from Fisheries and Oceans Canada.

Diverse projects

The projects are both simple and complex. Annual events, such as planting trees along rivers, stocking brown trout and river cleanups make incremental improvements each year. This work is often carried out by community organizations. Complex projects, such as naturalizing stretches of the streams and rivers, can involve several partners. Another type of project is improving the information that is available about fish so that the best decisions can be made to improve their habitat. For example, fish migration connections between Lake Erie and the southern Grand River are being studied using high-tech fish telemetry to track the fish.

“It’s incredible to see the continued commitment of this partnership. I look forward to the work this Implementation Committee will achieve in the next 20 years,” says Crystal.

Anglers provided a lot of input into the fish plan.

20th anniversary of the Grand River Fisheries Management Plan

By Janet Baine
GRCA Communications Specialist

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Highlights of completed projects

- Brown trout stocking in the tailwater sections of the Grand River downstream of Shand Dam and the Conestogo River downstream of Conestogo Dam
- Expanding the presence of walleye
- Removing old dams, such as the Lorne Dam in Brantford, Beatty Dam in Fergus and a Marden Creek dam in Guelph, because these prevented fish from reaching their natural habitat
- Improving river access to anglers through signed access points, with parking and boat launches
- Planting trees along creeks and rivers to provide shade and cool the water
- New fishing regulations to protect species in the Exceptional Waters section of the river between Paris and Brantford
- Naturalizing streams such as Mill Creek in the Guelph-Cambridge area and D’Aubigny Creek in Brantford

Anglers provided a lot of input into the fish plan.
GRCA making spring tree planting easy

Fall is the best time for rural landowners to start ordering trees from the GRCA for planting next spring. For some of those landowners, help is available to put them in the ground as well.

Landowners with at least two hectares (five acres) of property may be interested in having a GRCA forestry specialist visit their property to develop a custom planting plan, arrange for planting in the spring and help access funding programs to offset the cost of tree planting projects (if applicable).

A minimum order of 1,000 seedlings or 50 tall stock is required for GRCA staff to arrange planting. Site visits are free, but demand is high. Please email trees@grandriver.ca or call 519-621-2761 and ask to speak to a forestry specialist.

Landowners in the Grand River watershed who have at least one hectare (2.5 acres) of land are eligible to order trees that they can plant themselves. Online tree orders can be placed between October 1, 2018 and March 1, 2019. Orders can also be placed by mail. Early ordering is advised to ensure the best selection of trees.

All tree orders can be picked up at the GRCA head office in Cambridge next spring. The minimum order is 200 seedlings or 20 tall stock trees (this includes saplings, whips and potted trees).

All watershed residents are welcome to purchase trees at the GRCA’s annual tree sale that takes place in May. Details about this event will be posted online at www.grandriver.ca/events.

Private landowners own nearly 80 per cent of the land in the watershed and can make an immense contribution toward increasing tree cover through this initiative.

For more information, to order trees and to view the tree availability list, visit the forestry section of the GRCA website at www.grandriver.ca/Trees.

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.

Submissions: 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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Place orders by December 14, 2018.
Charitable receipts will be issued for donations.

“During this holiday season we are grateful to those who, with grand gestures, support our natural heritage and invest in a bright and sustainable future.”

- Max & Lynn Blouw

It's easy to give:
- Go to www.grcf.ca and click Donate Now
- Call 1-877-29-GRAND
- Email the GRCF at dhartley@grandriver.ca

Place orders by December 14, 2018. Charitable receipts will be issued for donations.

What do you give someone who has everything? A tree, of course! Or how about a metre of nature trail?

Choose to Give Grand this holiday season. A gift of $30 will plant and support one local tree, or will help develop one metre of trail.

Give the gift of trees or trails!

$30

Each donor receives a thank you letter, tax receipt and a beautiful holiday card for gift giving. If you prefer, we can send the card directly to the recipient so it arrives in time for the holidays.

www.GRCF.ca