WINTER 2021

LANDSCRIPT

GEORGIAN BAY LAND TRUST

gblt.org

PROTECTING the **WILDERNESS** of our **UNIQUE ARCHIPELAGO**

Rose Island
286 acres protected

Winter wildlife

Georgian Bay's disappearing lighthouses

Inland wetlands & water levels

CELEBRATING 30 YEARS

photo: Rose Island by Doug Cochrane

Rose Island Nature Reserve: Wilderness right in the backyard

Central wetland, Rose Island

The Georgian Bay Land Trust is very excited about a major new land acquisition, the **Rose Island Nature Reserve** located in southern Carling Township.

Rose Island is a large 400 acre island forming the southern shore of the western entrance to the Big Sound. It is proximate to other significant tracts: the massive Wasauksing First Nation is directly across a narrow channel at Rose Island's southeast shore, and Killbear Provincial Park is across the entrance to the Sound just to the north. The closest GBLT-protected properties are the conjoined Sandy Island and Ingersoll Island Reserves in open Georgian Bay nearby to the south.

The new GBLT property is the island's large 286-acre central lot, ringed by approximately 100 waterfront cottage properties, most of which share their rear lot lines with the new Rose Island Nature Reserve.

Rose Island, similar to its GBLT neighbours Sandy and Ingersoll Islands, is characterized by *glaciolacustrine* (sediment deposited by glaciers) sand-rich soil, which has contributed to its diverse vegetation including big stands of older growth deciduous and mixed deciduous-coniferous forest. The property features large specimens of American Beech, Red Oak, Red Maple, Eastern Hemlock and Yellow Birch. Rose Island's extensive stands of American Beech suggest that there has been past "management" of the island's woodlots, and although it is unlikely that the entire island escaped logging around the turn of the twentieth century, it does appear that sections were spared. Maybe the most interesting landscape features of the new property are its extensive and healthy wetlands; the Reserve boasts two large interior swamps, a Great Lakes coastal marsh at its east end and a "Lily Mixed Shallow Aquatic Type" wetland in its western bay. There are four different forest community types in the property's upland sections.

During two separate inventory visits, we identified six different species at risk (SAR) on the Rose Island Nature Reserve: three turtle species: Blanding's, Musk, and Midland Painted; two avian species: Eastern Wood-pewee and Wood Thrush, and one insect: Monarch Butterfly. A local Rose Islander naturalist added four more to the Rose Island SAR tally: Common Snapping turtle, Eastern Massasauga, Eastern Foxsnake, and Bald Eagle. We have no doubt that there are even more, particularly SAR birds. This property is hopping with wildlife.

The Rose Island Nature Reserve's physical location fills a gap in an important coastal migration corridor. Rose Island connects Wasauksing First Nation (Parry Island) in the south with Killbear Provincial Park to the north. Animals and birds tend to move along the "littoral" or nearshore zone; the interface of water and land provides species-rich habitat. Rose Island is identified as high priority for protection by both the Nature Conservancy of Canada and the Canadian Wildlife Service due to the significance of its forests, wetlands, reptile population, and overall biodiversity.

Ecologist Siobhan Galway with a Midland Painted Turtle. Photo: Blazing Star Environmental

Transition from wetland to mixed forest. Photo: Blazing Star Environmental

The purchase of this property would not have been possible without many generous contributions. The federal Ministry of the Environment and Climate Change provided $150K in matching funds through their Natural Heritage Conservation Program. We would also like to thank and acknowledge the generosity of the beneficiaries of the Estate of Rodney and Marian Watt: Valerie Zawilski, Rosalie Graham, Stephen Zawilski, and Catherine Svendsen. Major and very generous contributions towards the property's purchase were also provided by the MapleCross Fund, the McLean Foundation, and the Echo Foundation. Finally, we received numerous kind gifts from community members that ultimately allowed us to close the sale. Thank you all!

The new Rose Island property is not without stewardship challenges. Like any place where there are American Beech in Ontario, there is also Beech Bark Disease (BBD). BBD is an insect-fungus complex caused by the combination of a Beech scale insect (*Cryptococcus fagisuga*) introduced from Europe, teamed with a *nectria* fungus, believed to be native to North America. Beech scales burrow through to feed on a tree's sap and thereby provide openings for the fungus to enter through to the tree's bark, cambium and sapwood layer. The fungus kills the tree mainly by destroying the bark and cambium over a period of years, and also by weakening and making the tree vulnerable to other stressors. BBD tends to attack the oldest and biggest specimens in a stand, and younger trees are less at risk; some trees are actually immune. Moving dead and BBD-infected wood around is known to spread the disease and infect healthy trees.

The Georgian Bay Land Trust plans to showcase the Rose Island Nature Reserve as a designated public access property that will be open to low-impact, daytime visits. We want to encourage school field trips, educational events and ecological research projects, and to have the Reserve serve as a natural classroom. Rose Island Nature Reserve will provide opportunities for people to enjoy and learn about nature, and will also protect an important connection for the region's wildlife.

We would like also to connect with Rose Islanders and the larger West Carling community in order to ensure the ongoing stewardship, care, and enjoyment of this beautiful property. If you are interested in learning more, or joining us as a Property Steward, please contact Brooks Greer at brooks.greer@gblt.org.

Rose Island wetland types

The new Rose Island Nature Reserve boasts close to 70 acres of productive (and very lively) wetlands. Those in the island's interior are particularly large and diverse: two large *Red Maple-Conifer Organic Mixed Swamps* comprising almost 60 acres. Swamps support water-tolerant tree species and typically undergo predictable and regular seasonal water level changes. Dominant tree species here are Red Maple, Balsam Fir, Eastern White Cedar, Black Ash, American Elm and Yellow Birch, with Common Winterberry and Dwarf Red Raspberry as groundcover. In the case of Rose Island, the swamps provide undisturbed habitat for documented at risk turtles, as well as feeding and nesting grounds for many bird species.

Both the eastern and western embayments of Rose Island feature "pocket" wetlands; in the eastern bay is a *Great Lakes Acidic Meadow Marsh* and in the western a *Lily Mixed Shallow Aquatic Type*. These two are of course *coastal* wetlands and so have developed and adapted to millenia of the constant water level changes in Georgian Bay. During the recent extreme high water, emergent vegetation in all of Georgian Bay's coastal wetlands has been less abundant; as the water level drops again, the denser growth will return.

Working together to protect species at risk: an update

In the fall of 2019, eastern Georgian Bay was chosen by the federal government as a Community Nominated Priority Place (CNPP) for the protection of species at risk. Along with this designation came funding for a 4-year, collaborative project to improve conservation outcomes for our area's most vulnerable species. The Georgian Bay Land Trust, along with the Georgian Bay Biosphere, Magnetawan First Nation, Shawanaga First Nation, and other community partners, has been working hard over the past year to put the first stage of this project into motion. Here is some of what we've been up to:

Conservation Mapping

Our Executive Director Bill Lougheed has been leading work to comprehensively map eastern Georgian Bay's habitats and create a system for understanding how individual places connect with the larger ecosystem, and what their conservation importance is. When they are complete, these maps will allow users to look at any individual piece of land, understand its ecological role, and see how it ranks in terms of conservation priority. The maps will be available to municipalities and other stakeholders involved in land use planning in the Georgian Bay area, with the intent that they can help guide decision-making for years to come.

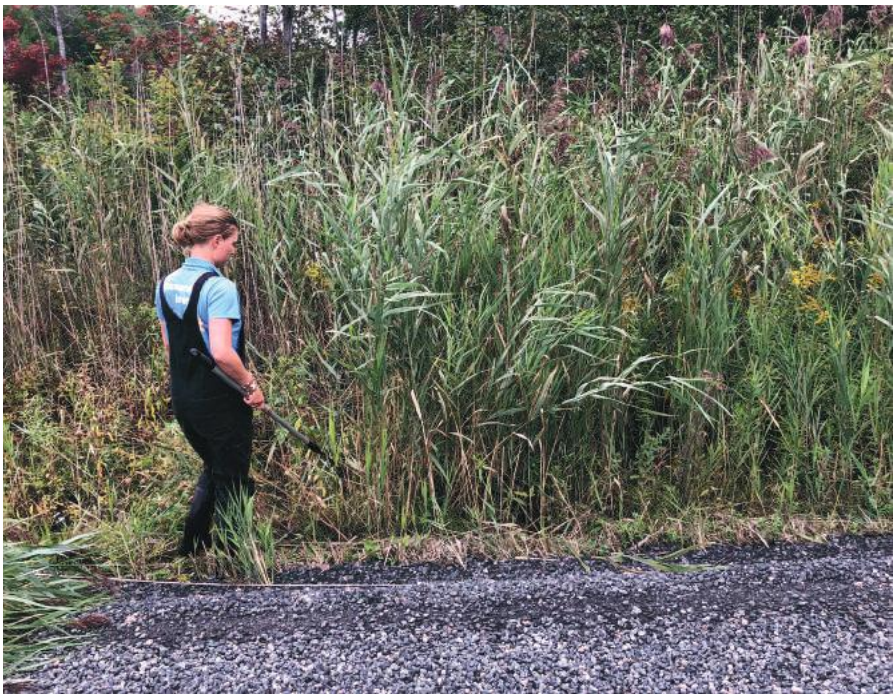
What is involved in this mapping? We have been looking at things like wetland complexes—recognizing that wetlands should not be understood as individual units, but rather (often) as part of larger, hydrologically-connected wetland systems, where connectivity is an integral part of the overall function. By mapping these systems we can then map recommended buffer zones around them, which if protected would allow the entire wetland complex to function as a whole.

Similarly, another focus has been on island connectivity. On Georgian Bay, we know that many of our islands are very small. And yet, they often support a large variety of life. Why is this? Just like wetlands, when small islands are grouped together, they can function as a larger island complex, which may contain many kilometres of rich shoreline habitat, and enough land for species to thrive. By mapping islands not just in terms of their own size and attributes, but in terms of their connectivity with their neighbours, and the overall disturbance within the island group, we can better understand which places are most likely to be rich in life and critical for conservation.

Data on at-risk species also informs these maps, which will identify areas where species face the highest threats from things like road expansion. By fine-tuning our mapping of specific habitat types and their interactions on a landscape (for example, knowing where a rock barren borders a wetland and a mixed forest) we can better predict which species will live in each area, and thus better protect target species.

This mapping work has been conducted both through GIS, with the expert help of our colleagues at Kawartha Conservation, and through on-the-ground surveys throughout this past year. We will be continuing our work on the ground in the coming seasons, and releasing the completed maps in the next year or two.

Juvenile Snapping Turtle incubated by the Georgian Bay Biosphere and released into a wetland near Skerryvore Road



Assessing and cutting roadside Phragmites

Installing the new Motus tower at Blackstone Lake. Photo by Andy Metelka

Motus Wildlife Tracking System

The CNPP project has allowed the Georgian Bay Land Trust to significantly expand our network of Motus wildlife tracking stations around Georgian Bay. Four new stations: at the Thomson Reserve (Nares Inlet), Little McCoy (Pointe au Baril), Ingersoll Island (Sans Souci), and Blackstone Lake expand the network northward and build on the five existing stations in Go Home Bay, Honey Harbour, Port Severn, and Torrance.

Motus stations track the movements of birds and migratory insects (such as dragonflies and butterflies) by picking up signals from tiny radio transmitters attached to the animals. This information is used by scientists around the world to study migration patterns, habitat use, animal behaviour, and ecology. Currently, there are 990 Motus towers worldwide, tracking 232 species, which have contributed to 342 (and counting) scientific studies. The particular advantage of the Motus system is that it allows scientists to gather data on animals without ever having to recapture them. Researchers capture the animal once, record information about its species, size, sex, etc, attach a radio-transmitter, and then release the animal back to the wild. The scientist can then track the behaviour of that animal by watching its movements among the worldwide network of Motus towers, with data recorded any time the animal passes within 15km of a tower.

Data from the Motus network is contributing to a whole host of studies, including many that are seeking to better understand the worrying decline in our world's migratory bird species. Over the coming years, we will see how birds move through and use Georgian Bay's habitats, and contribute to a continent-wide effort to identify key migratory routes and stopover sites in need of protection.

Phragmites

The invasive reed Phragmites is a well-known threat around Georgian Bay, and lots of great work has been done to map and curtail the spread throughout the Bay's waterways. Until this year, however, we were missing a similar assessment and strategy for the region's road networks—one of the main sources of Phragmites dispersion. This past fall, the Georgian Bay Land Trust team drove nearly the entirety of our region's public roads, and created a map showing each location where Phragmites is present. This map will be used to plan targeted Phragmites removal over the next few years, and as a baseline for continued monitoring of this plant's spread throughout the region.

Work of Partner Groups

Our project partners have been working on a number of impactful initiatives this year, including species at risk mapping and road mortality studies. In August, we were delighted to attend a turtle hatchling release organized by the Georgian Bay Biosphere. Over the spring and summer, the Georgian Bay Biosphere and Shawanaga First Nation worked together to identify turtle nest sites alongside roads under construction, and to remove the eggs to protect them from damage. The Biosphere team then incubated the eggs (over 1000!) at their office, before releasing the hatchlings into wetlands near their nest sites. It was amazing to see these baby turtles swim into their new homes and to know that they were given a fantastic head start in life.

Georgian Bay QUERY:

Answered by Dr. Mike Waddington and Dr. Chantel Markle

What effect do changing water levels have on Georgian Bay's inland wetlands?

Large bogs contain deep reserves of water-saturated peat moss

Many Georgian Bayers have observed changes in our coastal wetlands as lake levels rise and fall. But what about the inland bogs, fens, swamps, and marshes? These rich habitats are essential places in the life cycle of many Georgian Bay species, and a critically important component of our overall environment, helping to store carbon, purify water, provide refuge during fires, and much more. We spoke to Dr. Mike Waddington and Dr. Chantel Markle of McMaster University to find out what their research can tell us about water levels in these important places.

Q: What water level changes do Georgian Bay's inland wetlands experience? Are these connected to lake levels, or separate?

Georgian Bay's inland wetlands experience dramatic water level changes, but these are not related to the multi-year cycle of lake levels. Rather, inland wetlands tend to experience significant change within each year, caused by both natural cycles and human-made disturbances.

Each type of wetland has a different "hydroperiod"— the pattern of water levels that exists throughout a year. Some tend to be more stable and others have more variability. For example, "ephemeral" wetlands are small and shallow, and regularly dry out towards the end of summer, while deeper, mossy peatlands are more likely to retain stable moisture levels year-round.

In addition to their natural cycles, we are now seeing more variability in water levels because of climate change and other human activity. Inland wetlands respond quickly to changes in weather. As midwinter thaws become more frequent, we are observing increased winter flooding in wetlands, with implications for the species that overwinter there. On the other side of the spectrum, more intense summer droughts are causing wetland water tables to drop—up to 60-70 cm in the big fens and bogs. These drying events are expected every so often, but when they occur with more frequency, there are long-term effects on plant growth. We are now seeing Jack Pine and other dry habitat species growing in peatlands, which is a bit of a concern because as they become dominant, these species will work to dry the wetlands further.

Q: What effects do these changes have on the animals that depend on wetlands?

Our research includes a focus on reptiles that overwinter in wetlands, particularly Massasauga Rattlesnakes. Massasaugas burrow into hummocks (raised mounds of sedges and moss) in peatlands, to find hibernation sites that are below the frostline but above the water table. We've found that as midwinter thaws increase, Massasauga hibernation sites are more likely to flood, resulting in snake mortality. The winter of 2014-2015—a very cold winter—was observed to have had high Massasauga mortality in the Georgian Bay region, and at the time it was thought that cold temperatures may have been a cause. Our research has shown that the deaths were more likely caused by the rapid melting of a very large snowpack causing flooding in hibernation sites. This "weather whiplash" is causing greater short-term variability and water level extremes in wetlands, and we are likely to see more effects on reptiles.

Reptiles that depend on wetlands during the spring and summer are also affected. Blanding's Turtles, for example, use small wetlands as stepping stones as they move between larger wetlands during the nesting season. When these shallow wetlands dry early, it affects overall landscape connectivity and can negatively impact nesting success.

Q: What are the long-term environmental impacts of changing water levels?

Water levels have a big impact on the overall resiliency of wetlands, which in turn affects the health and connectivity of the entire ecosystem. Recently we've been studying the Parry Sound 33 forest fire of 2018. During the blaze, wetlands were essential refugia for many animals—places where they could hunker down and escape the flames. Soil and plant life survived in a number of wetlands while much of the surrounding landscape was scorched. Water levels were a key determinant in which wetlands were able to withstand the flames and provide refuge, with deeper wetlands surviving relatively intact while shallower systems lost up to 90% of their soil. If these deep wetlands were to experience additional drying, we could expect that they would be less able to withstand fires and support the larger ecosystem.

Wetlands are essential to much of our animal life. Georgian Bay's biodiversity and environmental significance derives in large part from its intricate mosaic of small wetlands, forests, and rock barrens, which create an ideal habitat for reptiles and many other creatures. If water level patterns shift in a way that significantly alters the ecology of these wetlands, it will change the fundamental ecology of our region, with implications throughout the plant, animal, and human world.

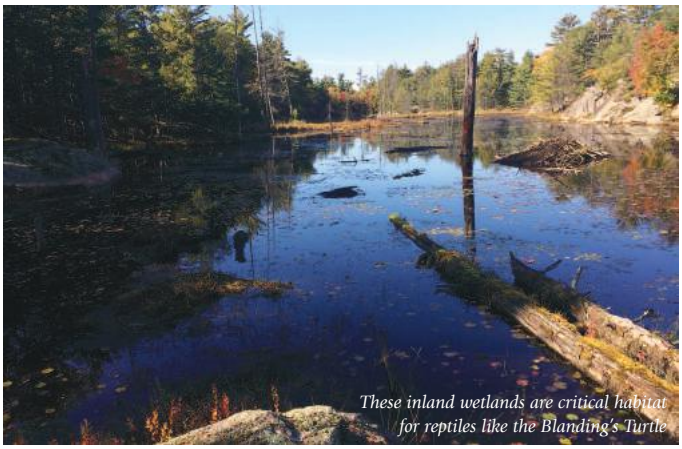
Finally, we should remember the importance of wetlands in regards to climate change. There is more carbon stored in the world's peatlands than in any other ecosystem—even more than rainforests. If these wetlands undergo long-term changes, we could reduce one of the most effective carbon storage mechanisms that our planet has.

Q: What can increase the resiliency of wetlands to these changes?

Wetlands are generally very resilient when faced with a single disturbance, but they have trouble with multiple impacts. When the effects of things like draining, climate change, fire, development, etc. are layered on top of each other, wetlands can quickly go through a regime shift to a different type of ecosystem. Unfortunately, we know that wetlands will continue to experience climate change impacts, which means that we need to be very careful about the additional disturbances that we allow.

The more wetlands we can conserve and protect, the better. When development does happen, we need to consider how we can mitigate negative impacts. For example, often when a road is built through a wetland, a single culvert is put in, despite the fact that water would ordinarily flow through a broad swath of the wetland. This bottleneck ends up causing flooding on one side and drying on the other, with serious

Massasauga by Kenny Ruelland



These inland wetlands are critical habitat for reptiles like the Blanding's Turtle

implications for plant and animal life. (From a rattlesnake perspective, even a 10-15 cm change has huge implications for the habitat.) When we consider water levels and incorporate better drainage into road designs, we can significantly reduce negative long-term impacts on the wetland.

There are other ways for humans to adaptively manage wetland systems that are going through an impact, and our research includes a focus on restoring degraded systems and rebuilding bogs. If we keep aware of which wetlands are undergoing degradation, there may be ways to step in. However, too much human intervention is not always a good thing, and we should be cautious about how much we rely on it to create healthy ecosystems.

We also believe that the more people understand and connect with wetlands, the better off these places will be. We encourage individuals to participate in the citizen science portion of our research, called iWetland. You can visit ecohydrology.mcmaster.ca/iwetland to learn more and submit your wetland observations, which will feed directly into our efforts to understand and support these essential places.

Dr. Mike Waddington holds a Canada Research Chair in Ecohydrology at McMaster University. His research examines the hydrological and ecological processes of wetlands and the effects of wildfire, drought, and resource extraction. Dr. Chantel Markle is a postdoctoral research fellow in McMaster University's Ecohydrology Lab, where she studies the effects of land use and land cover changes on the resilience and vulnerability of species at risk and their habitats.

What do Georgian Bay's animals do in winter?

Winter is a time when many creatures leave Georgian Bay—from cottagers returning to the city to birds flying south. But there is a group of hardy animals that stick it out through the freezing temperatures and food scarcity. Here are nine incredible animals that survive the harsh winter in Georgian Bay.

Beaver

Photo: Dugg Simpson

Beavers spend the winter in their lodges, but unlike many other species, they are not hibernating. These industrious animals remain active all winter, snacking on the food supply that they've stored in the form of shrubs and tree branches at the bottom of their home pond. Beavers are able to withstand trips through the cold water thanks to their thick coat of fur, and an oily substance that their bodies secrete and which they brush through their outer coat. The inside of their lodge remains warm (up to 20-30˚C!) and dry all winter, completely sealed off from the world above, and well-insulated by a thick wall of frozen branches, mud, snow, and ice. On cold days, it is sometimes possible to see steam rising from the toasty interior of an occupied lodge.

Gray Tree Frog

Photo: Mark Beckemeyer

Georgian Bay's frogs have different winter survival strategies, with many behaving similarly to turtles and overwintering at the bottom of a lake where the water doesn't freeze. Gray Tree Frogs, along with Spring Peepers and Wood Frogs, behave differently. These land-based frogs hibernate beneath leaf litter or tree bark, where they cannot escape below-freezing temperatures. For most animals, freezing means death, because when water in cells turns to ice it breaks the cell. These frogs get around this by sending massive amounts of glucose to vital cells, where it can act as a syrupy antifreeze. Meanwhile, most of the water in the body travels to the bloodstream, where it can safely freeze solid. Because of these adaptations, Gray Tree Frogs can survive having up to 65% of their body frozen. Their heart stops beating and they don't breathe all winter, and yet when spring comes they defrost and hop away as good as new!

Black-capped Chickadee

Photo: Dave Smith

A favourite of winter birdwatchers, tiny chickadees have a number of techniques for surviving the freezing temperatures. Each day, a chickadee must put on weight that it will burn up overnight to keep itself warm. It seeks out fatty foods like seeds and suet, stocking up whenever there is a surplus, and using its senses to tell when to bulk up in advance of a storm. For insulation, chickadees fluff their feathers to trap air in their own version of a down jacket, and look for snug holes in trees where they can spend the night. Even this, however, is not always enough, so chickadees have an extra special ability. Similar to some hibernating animals, their bodies can go into regulated hypothermia, which reduces their function and energy demands in order to get through the night on limited food. Chickadees survive the winter by gathering in small flocks which work as a team to locate food and warn against predators.

River Otter

Photo: Christa R.

For River Otters, surviving the winter is all about flexibility. When food is scarce, these social animals sometimes split up to pursue individual hunting opportunities, and at other times they work together. They seek out areas where open, flowing water provides access to their aquatic hunting grounds, and can take advantage of a variety of human- or animal-made holes in the ice. Otters can hold their breath well underwater, and their two-layer coats keep out the cold and wet with an oily outer layer and thick, insulating under layer. They hunt a variety of prey, and are even known to dig up hibernating turtles and frogs from lake bottoms. River Otters are often observed joyfully gliding over the snow on their bellies, a skill that is useful in play but also for the frequent travel that winter often necessitates.

Snapping Turtle

Photo: Jen Goellnitz

Like all of Georgian Bay's turtles, Snapping Turtles spend the winter in a partial hibernation state called "brumation". Tucked into the mud at the bottom of lakes and ponds, their body temperature and heart rate drop dramatically (a typical heartbeat is once every ten minutes), and body function is so reduced that the turtle does not need to eat. Despite this, they are not fully asleep, and can still occasionally move around underwater if they choose. Amazingly, these turtles are able to survive the entire winter without surfacing to breathe air, satisfying their bodies' limited oxygen needs by absorbing oxygen from the water through the thin skin of their throats and butts.

Eastern Chipmunk

Photo: Tom Murray

A chipmunk spends the winter in its burrow, coming in and out of a state called torpor. Like a mini hibernation, torpor involves a significant reduction in heart rate and body temperature, which allows the chipmunk to sleep for a number of days without needing to eat. After a few days, or sometimes a week or more, the chipmunk must rouse from its torpor and eat some of the seeds that it has been storing in its burrow since the summer. Then it curls up into a ball, fluffs up its fur for insulation, and begins the process again.

Yellow-banded Bumble Bee

Photo: Christa R.

Yellow-banded Bumble Bees have a minimalist winter strategy: only the queen needs to survive. Each fall, the bees mate, and then everyone dies except the mated queens. These queens burrow into soil or rotting logs where they will spend the winter away from frost. In the spring they'll emerge, full of eggs that will grow into the next year's generation of bees. If it is still cold when the bees emerge in the spring, they can keep themselves alive by shivering, which generates enough body heat to carry on.

Barred Owl

Photo: Reed George

In some ways, winter is more of the same for Barred Owls. They remain on their home territories and continue to hunt small animals that remain here year-round. However, their techniques have to adapt to a snowy environment. Fortunately, Barred Owls possess exceptionally good hearing, and the shape of their ears allows them to pinpoint the precise location that a sound comes from. Because of this, they are able to hear and pounce on a mouse running under up to two feet of snow! They can use their talons to punch through icy crusts, and when the hunting is good, will store food in trees to eat later. However, these owls are also very vulnerable to seasonal variations and extreme weather events, which can affect the abundance of prey or the ability to access it. When food is scarce, it is not uncommon to see Barred Owls hanging around bird feeders to prey on either the birds or rodents that frequent them.

Massasauga

Photo: Brooks Greer

Unlike some other snakes that spend winters together, Massasaugas usually hibernate alone. They look for a cozy, well-insulated place that is below the frost line but won't fill with water. Rock crevices, tree root systems, and small mammal burrows will all do, but Georgian Bay's Massasaugas have a particular preference for wetlands, where they can burrow into clumps of sedges and moss. Once they've found a place that they like, Massasaugas will usually return to the same hibernation site each year, and can have difficulty finding a new place to spend the winter if that location is destroyed. Massasaugas spend 6-7 months in hibernation each year, emerging only once the ground warms sufficiently to bring their bodies back to a functional temperature.

Georgian Bay's historic lighthouses, in photographs

LandMark Speaker Series with Sean Tamblyn

When the Heritage Lighthouse Protection Act was passed in 2008, Georgian Bay was home to twenty historic lighthouses. In the years since, one (Snug Harbour) has been granted heritage status, one (Hope Island) has been torn down, and the other eighteen have remained in limbo, in various stages of use and decay. It is uncertain for how many more years they will last.

Sean Tamblyn is a professional photographer whose fascination with lighthouses led him to create the Georgian Bay Lighthouse Survey, a project to photographically document each lighthouse before it is too late. This past spring, he joined us for our first virtual LandMark speaker presentation to share photographs and stories from the project.

Over the course of several years, Sean has photographed the nine lighthouses of eastern Georgian Bay in all seasons and all conditions. In the spring and summer, he travels by kayak, camping on crown land and photographing wildlife alongside the lighthouses. Sean meticulously plans his photographs, often taking the time to line up celestial events like eclipses and sunsets with the towers down below. When fall comes, Sean gets to work setting up remote cameras, which will remain on the bay over the winter to capture extraordinary icy weather shots. Through his photographs, we are able to see not only the current state of the lighthouses but the extreme weather and isolation that the keepers of the past would have had to endure.

The condition of eastern Georgian Bay's lighthouses varies considerably. There are the decrepit and crumbling: Doubletop of the Western Islands, and Hope Island before it was torn down; the neglected but not yet lost: Jones Island and Gordon Rocks, and the Bustards; and the well-maintained coastguard stations: Gereaux and Brébeuf. There is the steel and concrete fortress of Red Rock, and the lovingly maintained Pointe au Baril lighthouse, which was saved from a fate of vandalism by the reinstatement of eastern Georgian Bay's only remaining lighthouse keeper, Emmaline Madigan. Unique from the rest is Snug Harbour, the only light to have been granted heritage status and thus guaranteed some protection into the future. Carling Township has taken over management of the light and has begun a restoration project, with plans to welcome the public to enjoy the property.

What will happen to the other lights, and why are more not destined for protection? The reality is that the government is no longer interested in putting resources into maintaining historic lighthouses when simpler steel towers can serve the same purpose. Receiving heritage status requires an independent organization or individual to step up and take responsibility for the restoration and ongoing maintenance of the light, as well as public access through things like docks and other facilities. For most of Georgian Bay's remote lights, this has so far been too much for any organization to take on.

For the present, the fate of these lighthouses hangs in limbo. We must enjoy their presence while we are able, and be grateful to people like Sean who will help us remember their history in the years to come.

To see Sean's photographs and hear about his experiences in his own words, visit www.gblt.org/landmark-archive where you can watch a recording of his June presentation. For more information, visit his website www.heartofstonephoto.com or find him on Instagram @heartofstonephoto.

Sunrise Fire by Sean Tamblyn

Eclipse over Gereaux by Sean Tamblyn

Outdoor Winter Activities

It's likely we'll all be spending a little more time outdoors this winter, perhaps enjoying some favourite winter sports or bundling up for a picnic. Here are a few nature-focused activities to add to your list.

Feed The Birds
You can enjoy watching our overwintering birds while also helping them during a time of food scarcity by putting out—and maintaining—bird feeding stations.

The winter bird species you attract will depend on your location, but the most common winter birds at our latitudes and their preferred foods are:

- Black-capped Chickadees, Northern Cardinals, Red and White Breasted Nuthatches, Dark-eyed Juncos, Blue Jays: black oilseed, sunflower seeds, millet and mixed seeds, hulled peanuts
- American Goldfinches, Purple Finches, House Finches, Pine Siskins, Common Redpolls: these species will mob a silo-type finch feeder filled with Nyjer or thistle seed. This type of feeder excludes larger birds and squirrels
- Various woodpeckers: these birds will be attracted to beef suet, peanut butter, black oilseed, and hulled peanuts
- Cedar Waxwings: sliced apples, raisins, or currants

As important as keeping feeders full is keeping them clean and dry. There are helpful recommendations about bird feeding stations and feed at the Canadian Wildlife Federation website: www.cwf-fcf.org. For more information on birds in your region, and to participate in the "Feederwatch" citizen science project, please visit www.birdscanada.org.

Evening Grosbeak Irruption Alert
Starting this past October, southern Ontario has been seeing the largest "irruption" (the movement of northern-wintering species to the south in years of low food availability) of the spectacular Evening Grosbeak in twenty years. Ranked as Special Concern at both federal and provincial levels, these beautiful birds are coming mainly from eastern boreal Quebec where there was a reported shortage of Spruce Budworm, their main summer food source, and presumably of seed and berry crops, their winter fare, as well. Bird enthusiasts can attract Evening Grosbeaks by putting out black oilseed or regular sunflower seed on a platform feeder. Please send us photos!

Winter Night Skies (…the stars are actually brighter!)
At our northern latitudes, stargazing in winter is actually considered to be "better" since cold air is drier, and consequently more clear or transparent. Additionally, our winter skies are simply darker overall from December through February, and the stars appear brighter because of the earth's position relative to the Milky Way.

Although constellations can be appreciated with the naked eye, a simple pair of binoculars will enhance your experience and allow you a much better look at individual stars. You will also

Evening Grosbeaks by David Larson

find that binoculars and clear winter air allow you to see the dark portion of the waxing or waning moon.

Constellations to be on the lookout for in the winter include Orion, Monoceros, and Gemini. Planets Jupiter and Saturn (because of their size) and Mars (because it's relatively close) are easy to pick off in a clear sky with the naked eye, and closer magnified inspection is really fascinating.

The Milky Way has an estimated and unimaginable 300 billion stars for us to enjoy. Bundle up, and get out and away from the city and other sources of light pollution to discover what you can see in the winter night sky.

A few helpful websites with tips, including the locations of the "heavenly bodies": www.astronomy.com, www.space.com, www.farmersalmanac.com.

Animal Tracking
Extra time outdoors is a great opportunity to observe winter animals and expand your ability to decipher the clues they leave on the landscape. With each trip outside, take time to notice the tracks, droppings, and other signs you encounter. Take pictures or write down questions when you find something you're not sure about. Pretty soon, you'll be able to interpret all sorts of animal activity, and the woods won't feel so lonely!

Some ideas for starting out:

- Go outside when there is a fresh, thin layer of snow on the ground—tracks are easier to identify by shape in thin snow than when plunged into deep drifts
- Familiarize yourself with different patterns of movement and behaviour—this will allow you to narrow down the type of animal before you ever look at an individual track. There are a number of useful resources for this online, including: https://cwf-fcf.org/en/news/articles/animal-tracks.html
- Consult a variety of field guides and online sources. There are so many things to learn, from scat ID, to feeding habits, to the details of track measurements. Find the sources that provide answers to your questions and build up your knowledge gradually.
- If you find something you're not sure about, don't be afraid to post a picture in a nature app like iNaturalist or another online community—you may be surprised at how many people are willing to help out and share their knowledge.

Species Spotlight:

Canada Warbler

by Don Buchanan

Female Canada Warbler by Danielle Brigida

"Canada Birds"
We now have three bird species identified as "Canada". Every Ontarian knows the Canada goose. What a great recovery for the biggest race of this species. They have been so successful that this goose is leaving its mark on park lawns and golf courses all across the province, and now thousands of these big birds have given up on migration south and live with us year round.

And you may know that the Gray Jay, now officially recognized as the Canada Jay, is getting serious consideration as our National Bird. This very charming bird is sometimes known as Whiskey Jack, derived from the Cree name "wisakedjak", the trickster spirit of mischief and deception. The Canada Jay is a memorable camp visitor and would-be robber of unguarded food who lives all across our north.

Today, I want to introduce you to the third Canada bird, the Canada Warbler. Perhaps you've never heard of it. Perhaps you've never seen one. Believe me, you're missing a treat! This little bird, grey blue on top, white eye ring, yellow spectacles, yellow throat, breast and belly, features a beautiful black necklace. In spring the male is stunning.

Most of its northern range is in Canada, and it is estimated that 85 percent of its breeding takes place in our country. But it is with us for a very brief period, arriving toward the end of May and often moving south by August. It winters largely in northern South America, east of the Andes. In Canada, the bird is found in all provinces and territories except Nunavut and Newfoundland/Labrador. It prefers forest with a dense brushy understory, often near water.

This little song bird, like so many others, is in steep decline. Population estimates for the species is generally around 2.7 million. That may seem like a lot of birds, but that number is down by approximately 70 percent since the 1970s.

As a consequence, the Canada Warbler has been identified as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is listed in Schedule 1 of the Species at Risk Act (SARA). As you might expect, the causes for decline are complicated. Environmental factors such as pesticides, insect population decline, and climate change may be involved. We know that this warbler faces numerous threats during migration.

A Canada Warbler weighs 9 to 13 grams. Many of them fly from South America to Canada, more than 4,800 kilometres. And that's one way. Along that route they deal with tall buildings, reflective glass, wind turbines, predatory birds, and free ranging housecats, just to name a few of the perils they encounter.

Do you have a species you'd like to see spotlighted in an upcoming issue? Send us your suggestion at ***info@gblt.org****.*

Male Canada Warbler by John Sutton

The landscape in Canada has of course been altered. Some loss of warbler breeding habitat could be mitigated with changes in forestry and agricultural practices, and adjustments to wildlife management. However, it is certain that some of the habitat loss is permanent, a consequence of urban development and an increase in farmland.

In South America, the bird's wintering habitat has been greatly changed through deforestation and agriculture. Up to 95 percent of primary forest in the Canada Warbler's winter range has been converted to agriculture since the 1970s. Studies show us that Canada Warblers prefer primary forests. With most of this forest gone, we can reasonably assume that this change in habitat is a probable cause of the bird's decline.

So, what are we to do? We will likely never get the bird population back to historic levels, but we must do what we can to maintain what we've got and enhance the Canada Warbler's population where possible.

Now let's consider coffee. Many of us start our day with this beverage and consider it a necessity.

On a global scale, an estimated 2.5 billion cups of coffee are consumed daily. Most of this consumption takes place in industrialized developed countries; most coffee production takes place in developing countries, and to a large degree, South American countries.

Coffee originated in Ethiopia and later spread out across the globe. By the 1850s it was well established in Brazil. Brazil remains the major producer globally, followed by Vietnam and Colombia.

All coffee was traditionally shade grown because the plant couldn't handle direct sunlight. A canopy of shade trees was necessary. This setting—shade trees with the coffee plants—does not equal primary forest as bird habitat, but it is much better than sun-tolerant coffee.

Sun-tolerant coffee? As one might have predicted, this strain of coffee was developed to provide higher yields on large plantations without shade trees. Big plantations require forest clearing, lots of herbicides, and lots of non-organic fertilizer. They are definitely not environmentally friendly, nor do they provide habitat for Canada Warblers or any other songbirds.

Just a Few Fun Facts

- Canada Warblers sally out of cover to catch flying insects as would a Kingbird or Phoebe, and the bird was once called the "Canadian Flycatcher".
- Canada Warblers are curious and territorial. A pish or a squeaky noise may bring the bird out of cover. Don't overdo it!
- Canada Warbler males have been observed presenting food to their eggs. This habit may be referred to as "anticipatory feeding".
- Canada Warblers have been seen to catch an insect and then toss it against a hard object, thereby rendering the prey more easily ingested.

Now, there is growing pressure on coffee producers to produce "sustainable" or "bird friendly" coffee. Check out your supermarket. You'll find the labels of Rainforest Alliance, Fair Trade, Organic and others on your coffee packaging.

As we are becoming more aware of our impact on the environment, we are doing better with coffee production—especially premium shade grown coffee. It certainly costs more, but those extra dollars invested in sustainability will help sustain our Canada Warbler and other songbirds. And while we are improving the situation for birds, we will also be providing benefits for the communities, many of them Indigenous, that provide us with those lovely beans.

This year, I was given a copy of Graeme Gibson's book "The Bedside Book of Birds". I love the book and I am choosing to close my notes with a quote from Graeme:

> *"Many birdwatchers... have stumbled onto a seductive truth:*
>
> *paying attention to birds, being mindful of them, is being mindful of life itself.*
>
> *We seldom think of this clearly but sometimes, unexpectedly, we are overtaken by a sense of wonder and gratitude.*
>
> *Surely it is this encounter with a force much larger than ourselves that moves us."*

Don and Maureen Buchanan live year round in Parry Sound. Both are accomplished birders and naturalists. Don, aside from being a frequent contributor to the LandScript, is the GBLT's former Lead Steward at Sandy Island and a past winner of the Grenville Volunteer Award.

Philanthropy Award: Paul McLean

by Bill Lougheed, Executive Director, Georgian Bay Land Trust

Paul McLean

We are delighted to present this year's Georgian Bay Land Trust philanthropy award to Mr. Paul McLean.

Paul McLean has been a major contributor to the Land Trust's conservation efforts on Georgian Bay for much of our 30 year history. His family's passion for wilderness conservation as well as the arts was inspired in large part by the Group of Seven, who painted Georgian Bay's shores from Go Home Bay (Varley, Stormy Weather) to north of Pic Island (A.J. Casson) in Lake Superior. Paul still regularly visits these wild places on his yearly adventures, often exploring through the locks at the Sault into Lake Superior. It is easy to understand why Paul has stepped forward in support of our organization's work.

Paul's, and the McLean Foundation's, contributions to Georgian Bay's protected areas have been enduring and significant. Great examples are the Land Trust's 425 acre Sandy Island and the 5,300 acre Tadenac Conservation Initiative, which would not have been possible without their support.

In his own words:
My first exposure to Georgian Bay was in my early teens for a trip on my father's boat. I was fortunate enough to join my parents on other voyages on Georgian Bay and the North Channel over many years.

My wife Martha and I have been boating with our family and friends for 26 years on our own boat. We spend a few weeks each year cruising Georgian Bay, the North Channel, and Lake Superior. Over the years, we have navigated all shores of the Bay, witnessing the contrast between the limestone Escarpment on the west shore and the Thirty Thousand Islands on the east shore. Some of our favourite harbours include Portage Bay at Nares Point, the Bustard Islands, and Beaverstone Bay. We carry a canoe and kayak onboard which allow us to explore small bays and inlets that are inaccessible to larger boats.

I have always found great pleasure in being out of doors in the natural environment and I particularly enjoy being on the water. Georgian Bay offers some of the most beautiful vistas and spectacular sunsets. Martha and I support the Georgian Bay Land Trust because we feel it is important to set aside and protect significant and sensitive natural habitats that are home to many varieties of birds and other forms of wildlife. This ensures that these spaces will remain in their natural state for the benefit of future generations.

From the Board and Staff and our volunteers and stewards THANK YOU, PAUL for the tremendous financial support.

The Georgian Bay Land Trust recognizes that this year has been extraordinary.

For those who were able to get to the Bay, many had a late start, while our American friends were greatly missed.

We do understand that there are many additional requests for support this year; however, our conservation work continues throughout it all, and your donation is vital.

Saving a balance of our natural spaces takes a community of people like you, people who value nature and outdoor spaces, and who understand that wild and biodiverse neighborhoods are critical to our quality of life and to those generations to come.

Conservation is a choice—we thank you for making it your choice.

Please give generously by donating now, using the enclosed envelope or at **gblt.org/donate**.

TributeGIFTS

Received from April 14th – December 7th 2020

In Honour

David Ashley
William R. Bartram
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Kerry & Brenda Benson
Mrs. Susan Bigland-Witton
Kathryn Brown
Cornett Family
Geordie Dalglish & Swith Bell
Janet Griffiths-Maxymiw
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Brenda Harris
Mr. Gary Harris
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Stephen Sutton
Charles Wilde
Walter & Stella Yusko

Georgian Bay Snapshot

Kayaking in Paradise
by Liz Janik

"A dreamy, serene feeling filled my heart on this paddle in the early morning stillness, surrounded by the perfect reflection of these islands in the Archipelago." – Liz Janik

See more of Liz's pictures on Instagram @Planet_Dove (#thenorthcabin)

First virtual Bayscapes a big success!

Thank you to everyone who joined us virtually for this year's reinvented Bayscapes. We weren't sure what to expect heading into this event, but our wonderful community stepped up in a big way, and proved that 2020 has not dampened anyone's enthusiasm for getting together to support conservation.

The online auction was immensely popular, with many enthusiastic bidders outdoing each other to take home some of the fabulous paintings, photographs, items, and experiences that were so generously donated by individuals and businesses around the bay. And everyone enjoyed the live virtual celebration thanks to the musical talents of Robinson Kirby, Molly Comfort, and Fried Up Fred & Co., with fantastic host Tom Clark.

Although we missed gathering in person, we still felt the warm glow of community, and we hope you did too! We were so happy to connect with supporters living far and wide who we missed on the bay this summer, and to celebrate the place we all love together.

Thank you from the bottom of our hearts to everyone who contributed and joined in the fun!

Bayscapes sponsors

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Georgian Bay Land Trust
120 Eglinton Ave. E., Suite 1000
Toronto, ON M4P 1E2
gblt.org | info@gblt.org | 416.440.1519

The Georgian Bay Land Trust acts to preserve the wilderness lands of eastern Georgian Bay and the North Channel through strategic conservation planning, land securement, stewardship, conservation research, and education.

We are a registered Canadian charity (#13195 8811 RR0001)

LandScript Editor
Laura Sunderland, landscript@gblt.org

Executive Director
Bill Lougheed, bill.lougheed@gblt.org

Land Protection Program Manager
Brooks Greer, brooks.greer@gblt.org

Senior Development Officer
Janet Brough, janet.brough@gblt.org

Communications Director & Office Administrator
Sarah Koetsier, sarah.koetsier@gblt.org