GEORGIAN BAY LAND TRUST
gblt.org

WINTER 2023

LANDSCRIPT

PROTECTING **GEORGIAN BAY'S** WILDERNESS LANDS

Winter Wildlife

Seeding spring

How lake ice is changing

Two new conservation properties

photo: Alyson Karson

Seeding spring:

How native plants disperse their seeds

By Laura Thomas, Hidden Habitat nursery, Muskoka

Common Milkweed - Photo by Laura Thomas

Before winter sets in and covers the ground in a thick blanket of snow, many of our native plants and trees spend a lot of energy creating seeds to be dispersed before the blanket gets pulled over them. Each species' method of seed dispersal can be just as unique as the plant itself, involving complex mechanisms that are in tune with the landscape and fauna around them. The preferred method of dispersal depends on the species, its environment, and its relationship to the other plants and animals in the landscape. Some prefer to catch a ride on a passing animal, while others might enjoy a short flight on a passing breeze.

The different types of wild seed dispersal include: gravity, animals, hitchhiking, ballistic seed dispersal (think seed bomb) and wind.

Gravity, as a form of seed dispersal, is perhaps the most common and obvious form. The seeds simply fall to the ground, like acorns and walnuts. Wildflowers that rely on gravity to help with seed dispersal include blue false indigo, black-eyed susan, and ox-eye sunflowers.

More often than not, plants require more than one dispersal method to disperse its seed. Wild Columbine and Evening Primrose both have small but dense seeds that easily fall to the earth once tipped out of the seed pod, using gravity. However, both plants share a unique feature where their seed pods face upwards so seeds do not drop directly to the ground. They need a strong, stiff wind or a passing disturbance from an animal to bend the stalks and cause the seeds to spill.

Another example is the much loved acorn, which uses gravity and animal dispersal. In one year a **squirrel** can cache up to 10,000 nuts! Fortunately, not all cached acorns get eaten allowing the spread of oak trees. And even some acorns that are foraged on can still germinate. Gray squirrels have been observed prying off the caps of red oak acorns, biting through the shells to get at the nutritious inner kernels, and then discarding them half eaten. Moments later, they would seize another red oak acorn and repeat the routine. The squirrels are suspected to be avoiding the more bitter tasting, tannin rich bottom part of the acorn.

Birds are another critical way that seeds are dispersed. Birds happily feast on many of our native berries like Elderberry, Wild Grape, and Cherries, and disperse the seed in their droppings. Seed eaters also assist with seed dispersal when they drop down on the stalks of sunflowers, cup plants, and rudbeckias. The movement on the stalks shakes the seeds out, allowing gravity to take over.

If you've ever been hiking and come away with seedy stowaways on your pant legs, you've participated in **hitchhiking** seed dispersal. Plants like Burdock, Tick Trefoil, and Devil's Beggarticks have developed adaptations like

Flat-topped Aster - Photo by Laura Thomas

hooks, barbs, and sticky coatings to allow themselves to grab a ride on passing mammals. When it comes to invasive species, this is one form of seed dispersal that we can prevent and why it's always a good idea to give your shoes (check treads too) and clothes a good once over for hitchhikers.

An impressive form of seed dispersal is **ballistic** seed dispersal. If you have ever poked the seed pods of Jewelweed you would have experienced first-hand this explosive form of seed dispersal. Common Jewelweed can fling its seed up to 2 metres away at roughly the speed of 9-14 km/hr.

For most species, in order for the explosion of seeds to occur, a form of dehiscence (the spontaneous opening of the seed pod) must occur. Common Milkweed uses this form of seed dispersal, paired with wind, to carry the seeds topped with white hairs. Wind is also used to spread the seeds of asters and goldenrods. The fluffy hairs or pappus of the seeds, upon ripening become fluffy and detach themselves from the pod, allowing the **wind** to carry them away. Small, dust-like seeds can also be carried easily by wind and water. Cardinal flowers create small, dust-like seeds that easily float and get swept down shorelines.

The seeds of our native plants can be just as beautiful and interesting to watch as the flowers. The wildlife interactions are just as rich and intrinsically linked to their habitats and the surrounding fauna. This year perhaps you can observe and appreciate how the plants around us mobilize and grow.

Highbush Cranberry - Photo by Laura Thomas

Common Evening Primrose - Photo by Laura Thomas

Property Spotlight:

Two new protected areas

The Kennedy Islands

1.7 acres, Bayfield Inlet

Four pretty islands in central Bayfield Inlet will remain forever natural thanks to the generosity of Ross and Ann Kennedy.

The Kennedy Islands are classic Georgian Bay rock and pine, beloved not only by humans, but birds, turtles, and snakes as well. They are surrounded by fifty other islands as part of a relatively undisturbed archipelago, providing ample opportunity for local migration.

The Bayfield community at large is home to a wide variety of wildlife including species at risk such as snapping turtle, least bittern, Massasauga rattlesnake, Eastern foxsnake, five-lined skink, hog-nosed snake, bald eagle, and whip-poor-will. The fish community is extensive including smallmouth bass, walleye, northern pike, longnose gar, rock bass, sunfish and perch. The area is also a popular feeding and colony site for Common and Caspian terns.

Protecting the Kennedy Islands will contribute to protecting this biodiversity in the face of increasing development pressures, and connect conservation "corridors" to north and south.

Thank you Ann and Ross for this gift to Georgian Bay!

Kerry & AJ Mueller Easement

65 acres, Otter Lake

Otter Lake—large, beautiful, and home to over 400 cottages—now has its very first protected area.

The Kerry and AJ Mueller Easement protects 65 acres of diverse forest habitat and 3,500 feet of natural shoreline. It contains a wide variety of large old trees including ironwood, trembling aspen, yellow birch, white pine, and eastern hemlock which will now be free to grow without disturbance.

The forest habitat is interspersed with rock barrens, a one-acre swamp, three streams, and several ponds, which provide habitat for a variety of animals, including at least five species at risk. This refuge will help ensure that Otter Lake's animal populations remain vibrant into the future.

The property is already home to a Motus Wildlife Tracking Station, a small tower that records the movements of passing birds, bats, and insects for conservation research. We are so grateful to Kerry and AJ for taking this next step in dedicating the land to nature. We hope that the creation of this protected area will enrich Otter Lake for generations to come, and inspire others nearby to consider conservation too.

Do you own land that you would like to preserve in its natural state forever?

The Georgian Bay Land Trust works with individuals who wish to preserve the land they love and leave a legacy for the future. Learn more at gblt.org/landowner.

Reflections on my First Year with the Georgian Bay Land Trust

By Aaron Rusak, Protected Areas Manager, Georgian Bay Land Trust

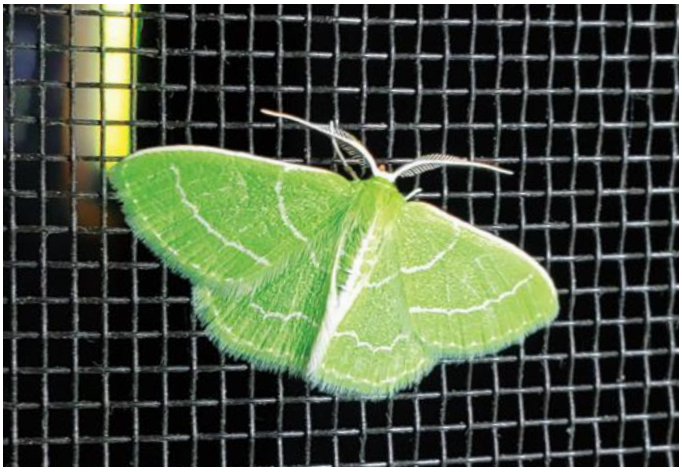
The whirlwind of summer is finally finished, with monitoring and species surveys wrapping up until the snow melts. With the colder temperatures forcing me to stay indoors more often, I have some time to look back at the year and some of the highlights that I've had with the Georgian Bay Land Trust.

This is the first year in quite some time (maybe ever) that I've spent almost all of the summer on Georgian Bay. The ecosystem is incredibly unique. Being able to watch how it changed with the seasons was truly incredible. It also revealed some interesting interactions that I wasn't familiar with. One of the more interesting occurrences from the early summer was flushing gulls from within the forest. I was walking along the shoreline and all of a sudden, tens of gulls flew up out of the juniper bushes in the forest. For a species normally on rocky outer islands and in the water, seeing the burst from the bushes was an odd sight. I walked in and saw nothing that would have attracted them, but in hindsight realized that there was likely a hatch of an ant or some other insect that would have lured them inland.

Animal behaviours are not the only thing to be noticed with the changing of the seasons on Georgian Bay. Spending the summer on the bay allowed me to watch the different stages of flora development, from the spring ephemerals to the late summer aquatic plants. Watching how Arrow-leaved Tearthumb or Woolgrass grows into the sprawling plants they become also illustrates the importance of the diversity of flora species along the coast. The beauty of the flowers of Early Saxifrage is lost if you don't make it to Georgian Bay until June.

Georgian Bay is also home to some incredible natural events that are highly time sensitive, so if you're not watching you can often miss these. The hatch of Prince Baskettails on American Camp was a stunning display, with thousands of dragonflies flying on one day in June. Another astounding day was a day of fall migration that I spent looking up into the sky and counting the birds flying overhead. In one day, I counted almost 2,000 Canada Geese, over 1,000 Blue Jays, 330 Broad-winged Hawks, and ten other species of raptors. Events like these occur only a few times a year and being on the bay full-time allowed me to experience far more than I normally would.

Finally, working with Georgian Bay Land Trust has allowed me to meet many other people who view Georgian Bay as a unique and incredible natural area. Meeting volunteers, cottagers, and land donors who believe in the importance of conserving this ecosystem has made me more enthused and passionate about ensuring that the region remains protected forever.



Wavy-lined Emerald - Photo by Aaron Rusak

Spoonleaf Sundew - Photo by Aaron Rusak

Georgian Bay **QUERY:**

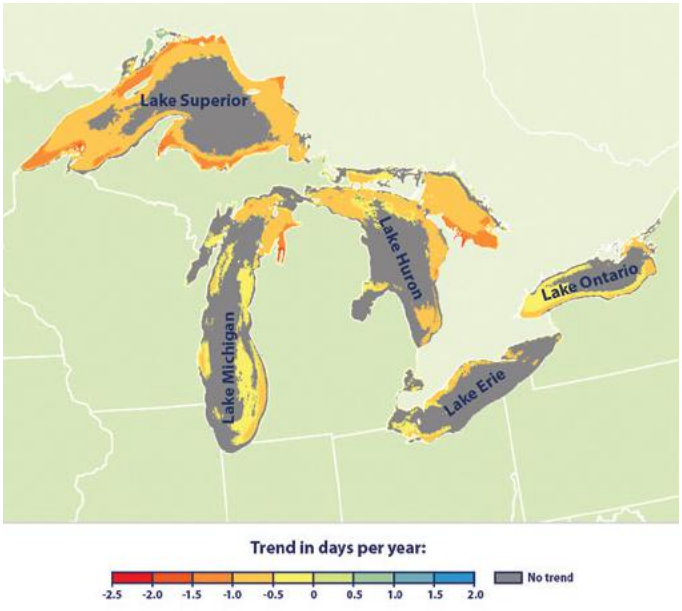
Answered by: James Rusak, Adjunct Professor, Department of Biology, Queen's University

How is lake ice changing and what does that mean for the Georgian Bay ecosystem and us?

Both locally and globally across the Northern Hemisphere, the length of ice cover is becoming shorter and shorter. The Great Lakes region is no different and Georgian Bay is one of the areas currently undergoing some of the largest changes (see map inset). Depending on where you are in the offshore areas of the bay, this reduction in ice cover is on the order of 20 - 40 days since the early 1970s. These changes in ice cover are directly linked to warmer air temperatures resulting from human-induced increases in greenhouse gas concentrations that have resulted in a changing climate. Although this may allow for an earlier cottage opening and later closing for many, there are numerous other less desirable outcomes of these losses of ice cover for the Georgian Bay ecosystem.

The impacts of reduced ice duration can be both direct and indirect. Ice cover can protect incubating eggs (e.g., lake trout, lake whitefish) by lessening wave action on shallow spawning shoals. Further, once small fish do hatch, reductions in ice cover can affect how quickly a lake warms and therefore the timing of the zooplankton (food for young fish) production. Reductions in ice coverage can also have impacts on water temperature that carry over to subsequent seasons, leading to unseasonably warmer temperatures in the summer and fall. Longer growing seasons typically support the production of blue-green algae which can form toxic algal blooms, harming fish, aquatic habitats, and water quality alike. Less ice cover can also result in greater evaporation from the

Changes in Ice Cover Duration in the Great Lakes, 1973-2019



This map shows the average annual rate of change in the duration of ice cover in the Great Lakes from 1973 to 2019. Duration is measured as the number of days in which each pixel on the map was at least 10 percent covered by ice. Gray areas are labeled "no trend" because the change over time is not statistically significant (using a 90-percent confidence level).

From: NOAA (National Oceanic and Atmospheric Administration). 2019. Great Lakes Environmental Research Laboratory: Historical ice cover.

lake surface, which in turn can lead to greater variability in lake levels over the long-term and increases in snow and rain in areas adjacent to the Bay. In southern Georgian Bay, greater snowfall (and earlier rain events) can wash nutrients off agricultural lands before they can be taken up by crops, providing additional potential for harmful algal blooms later in the ice-free season.

Ice safety is directly related to ice thickness and warmer winters typically lead to reductions in ice thickness that can result in unsafe ice conditions relative to cooler winters. In fact, increased winter drownings are known to occur in ice-covered regions during warmer winters. Warmer winters can also affect the quality of lake ice. We usually learn that it is okay to walk on ice if the ice thickness is 10 cm or more. However, 10 cm of ice holds up to 1,753 kg under clear or "black" ice conditions, but under certain white ice conditions ice strength can be an order of magnitude less. Because the strength of white ice is so low, an increase in the proportion of white ice can jeopardize the use of seasonally ice-covered lakes for subsistence, recreation, transportation, and other purposes.

White ice is commonly formed when snow accumulates on ice, melts, and refreezes or when rain falls on the snow layer to form slush that subsequently freezes. Warmer winter air temperature can increase the number of days with air temperatures near the freezing point, thus increasing the proportion of white ice. Ice conditions that traditionally have been safe during winters of the past will become unsafe in the future and there is an urgent need to consider this change in ice quality to ensure safe travel on ice. White ice also has implications for the ecosystem too as it only allows small amounts of light to penetrate. Low light conditions in spring caused by a white ice layer and/or snow on ice may change the base of the food web with consequences that could potentially cascade throughout, with substantial consequences for zooplankton and fish populations.

Changing ice duration and ice quality have the potential to change many aspects of the Bay and how we come to enjoy all it has to offer. Doing what we can to slow the rate of climate change can be an important part of what we can do to mitigate these effects.

Photo: Geordie Dalglish

Photo: Sarah Koetsier

Photo: Eleanor Proctor

Winter Wildlife in Georgian Bay

It is easy to picture the animals of Georgian Bay leaving or hibernating during the winter months and often this is true: Many bird and some insect species migrate to warmer climes, while the reptiles, amphibians, and some mammals such as Black Bears and bats hunker down and "sleep" through the cold and snowy conditions. Many of the creatures of Georgian Bay, however, are active all winter and the evidence of their day-to-day lives are easier to spot than in other seasons. Not only are the animals themselves easier to see on a white background but they leave their footprints in the snow for us to find. Here are some of the most commonly-encountered Georgian Bay winter denizens.

Carnivorous Mammals

Photo: Doug Wilson

Otter tracks in Go Home Bay

The Weasels (Mustelid family)

Weasels have long bodies and short legs which results in a distinctive gait, known as the "Mustelid bound". If you can picture an **American Mink** (*Neogale vison*) running along the shoreline, you are picturing the characteristic bound—they almost look like running teeter-totters. In Georgian Bay during the winter, the semi-aquatic **North American River Otter** (*Lontra canadensis*) and its tracks are especially noticeable. Otters often travel in groups over the ice and tend to slide on their bellies in between bounds, behaviours that leave very characteristic tracks.

The **Fisher** (*Pekania pennanti*) is another weasel that is abundant in Georgian Bay, but rarely seen in the spring and summer months. Despite the name they very rarely eat fish, and prefer Snowshoe Hares, rodents, and are the only proficient predators of Porcupines. They also prey on domestic cats—a good reason to keep your kitties inside! Fishers are about the same size, and have similar colouration, as otters but they appear bulkier, have bushier tails, and tend to stick to forested habitats—they are excellent tree climbers.

Photo: Will Crawford Brown

A Fisher in Go Home Bay

Photo: Nancy Leonard Robitaille

This Red Fox visited Nancy in Cognashene and was photographed through her window

The Dogs (Canidae family)

Not only can we find evidence of the Dog family all over Georgian Bay, by finding their tracks in the snow and their hair-laden scat, but they can be spotted crossing large expanses of ice while searching for food. They are also quite vocal! Packs of wolves and coyotes howl at night as a means of advertising and defending their territories, with each pack member howling in a different key, so their numbers are adequately reflected (if they all used the same key, listeners would not be able to gauge the size of the pack!).

The most commonly encountered member of the Dog family in Georgian Bay winters is the **Red Fox** (*Vulpes vulpes*). They are not as fearful of humans as the other members of the family and use this to their advantage—often visiting several cottages or homes a day in the hopes of receiving gifts of food. Feeding any wild animal comes with benefits and risks—to both the humans and the animals. We benefit by seeing a wild creature up close and they benefit from the added nutrition—but dependence on human sources of food can become problematic, as anyone who has had a close encounter with a Black Bear can attest. If you do feed Foxes, make sure they are getting high quality nutrition (like raw eggs) rather than cooked or highly-processed foods and never attempt to approach them.

Herbivorous Mammals

Photo: Bill Lougheed

White-tailed Deer in Go Home Bay

The Deer (Cervid Family)

White-tailed Deer (*Odocoileus virginianus*) are all over Georgian Bay and in winter they can be found in forested and edge habitats where they feed on the buds and twigs of trees and shrubs. They are especially drawn to mixed and coniferous forests where the evergreen trees limit the amount of snow reaching the ground: The shallower the snow, the easier it is for them to travel and escape predators. Deer will travel quite far in the late-fall to find suitable habitat for the winter, and can be found grouped together in "deer yards" where they feed and bed down each night. White-tailed Deer and their close relatives, the **Moose** (*Alces alces*), have unmistakable tracks—two pointed toes. Sometimes, two small dots can be seen behind the toe-prints—these are the marks made by their dew-claws (vestigial claws on the back of their legs).

The Rabbits (Leporidae family)

Snowshoe Hares (*Lepus americanus*) are abundant in Georgian Bay and are an essential prey species for many carnivorous mammals and birds but their camouflage and behaviour make them difficult to spot. Snowshoe Hares change their coats in winter, from brown to pure white to help with camouflage. When they sense danger, they freeze and will only bolt away if they are confident they have been spotted and targeted by a predator. Luckily for wildlife-watchers, however, they make extremely distinctive tracks with huge hind footprints. You can read their direction of travel because the large hind feet land in front of the small fore feet with each bound.

Photo: Aaron Rusak

Snowshoe Hare tracks

Birds

Photo: Lasha Milne

A curious and bold Ruffed Grouse

Turkeys and Grouse (Phasianidae Family)

In the spring you may have heard the drumming of a male **Ruffed Grouse** (*Bonasa umbellus*) or the gobble of a **Wild Turkey** (*Meleagris gallopavo*). In winter they are much quieter, but just as active. They do not migrate south and spend the winters foraging: Grouse love tree buds, especially those of Birch, Poplar, and Alder, and can often be found by looking up! Wild Turkeys, on the other hand, tend to forage on the ground: they scratch through the snow, looking for acorns and other seeds, sometimes climbing into shrubs to eat frozen berries and buds. The tracks of these two birds are similar in appearance, except the size of course, with three long toes pointing forward and one short toe pointing back. Ruffed Grouse are specially adapted for winter-walking because, in the fall, their feet grow comb-like growths called pectinations which help disperse their weight over the snow.

True Owls (family Strigidae)

The owl that you are most likely to see in Georgian Bay is the **Barred Owl** (*Strix varia*). They are large birds, with rounded heads (unlike the "eared" members of the family like the Great-horned) and are well-named, as their backs have horizontal barring. They also have all-black eyes, whereas other owls have yellow irises. Like most owls, these birds hunt at night and sleep during the day, something that their intended-prey take advantage of, as do owl-seeking bird-watchers! When smaller winter-resident birds, like Blue Jays and Black-capped Chickadees, find a sleeping owl, they will join together to harass the owl, calling incessantly and even dive-bombing it. This is called "mobbing" and it is thought that, by keeping the owl awake during the day, it will not be as efficient a predator the following night, reducing the likelihood of predation on the smaller birds.

Photo: Rory Green

Barred Owl in Go Home Bay

This is a limited list—it is by no means a full representation of the creatures that can be observed during winter. Put on warm boots, cross-country skis, or snowshoes and go explore, pausing for a minute or two every so often. The combination of standing still, remaining as quiet as possible, and listening creates excellent odds of seeing an animal.

Photo: Angela Larsen

Trumpeter Swans at White's Falls

Another good bet for WWW (winter-wildlife-watching) is open water. Strong currents create turbulent surfaces and, on lakes, they are slow to ice-over, if at all. Streams and many stretches of most rivers are ice-free all winter. Open water is where waterfowl congregate, where birds and land mammals go to drink, and where semi-aquatic mammals go to access air and land. Make sure when you approach open water you do so safely, by staying on land and not getting too close. This is for their sake and yours: an animal could get startled and fall in or you might walk on thin ice and fall through—neither outcome is desirable!

If you don't have the pleasure, or inclination, of being in the Georgian Bay area over the winter, trail cameras are an excellent way to document the wildlife of the Bay, especially the nocturnal and extremely shy ones.

Alliance of Canadian Land Trusts
Alliance canadienne des organismes de conservation

Alliance of Canadian Land Trusts is off to a great start

This past October, Georgian Bay Land Trust staff attended the first ever Canadian Land Trust Summit in Ottawa. The summit was the first event hosted by the new Alliance of Canadian Land Trusts, with help from its three largest member organizations: the land trust alliances of Ontario, Quebec, and British Columbia. We were thrilled to have the opportunity to meet up with colleagues from across the country, share knowledge and experiences, speak with Members of Parliament, and learn from a variety of experts.

We are also happy to announce that our Executive Director, Bill Lougheed, has recently been appointed to the Alliance's board. Bill worked for years with the Canadian Land Trusts Working Group (precursor to the Alliance) to help advocate for and shape the role of land trusts in the federal government's investment in conservation. Thanks to the group's work, 28 land trusts received a total of $10 million in grants in the first two years of the federal Nature Fund, which they used to create 65 new protected areas totaling over 6,000 hectares of habitat. Land trusts have demonstrated ourselves to be a good investment, and are on track to well exceed the targets set for us by the end of the program in 2023.

Bill's role on the Alliance's board will build on this success, and focus on increasing the funding available to Land Trusts across the country through granting streams, so that we can continue to deliver on Canada's conservation priorities. We're excited to be part of the positive momentum that is developing through the Alliance of Canadian Land Trusts, and are looking forward to the coming years in conservation.

Philanthropy Award: Sandy Phillips

We are delighted to recognize **Sandy Phillips** with this year's Philanthropy Award.

Sandy has been an active supporter of the Georgian Bay Land Trust since our earliest days, serving as a board member in the 90s, and a committed advisor for many years afterward. He played a key role in the protection of some of our most beloved properties, including Umbrella and American Camp Islands. Sandy has consistently magnified his support by sharing his enthusiasm for conservation freely with others, bringing in new donors, and making impactful connections.

Sandy has continued to support the Land Trust's work, most recently with a generous donation in memory of his beloved wife Marilyn, with whom he spent over 60 summers on Georgian Bay. Here's why he's involved:

Where does your love of Georgian Bay come from?

My family has been coming to Georgian Bay since the 1890s, when my grandfather made fishing trips from Pennsylvania. He built the family cottage in 1902, and I made my first trip there in 1936, when I was two years old. I've spent every summer of my life since then on Georgian Bay, up until a few years ago.

As a teenager I was a councillor at Camp Hurontario, which reinforced everything I knew about how special Georgian Bay is. We had a great group of kids that we would take on canoe trips, one of whom turned out to be the painter Ed Bartram.

What's your favourite thing about the bay?

The beauty, the air, the open spaces, pristine woodlands, and the wonderful cottage community that has been part of all our lives. We just love it.

What inspired you to get involved in conservation?

My dad had been conservation oriented all his life. We saw the advent of the outboard motor during World War II, which showed what could happen to island communities as demand for properties rose. We saw places that we used to go to picnic, no longer available.

Our family owned Umbrella Island, which used to be considered a remote island. You'd be there by yourself every time you went out. Gradually that changed, and we realized we could no longer protect it on our own. Organizing the protection of that property was the high point of everything I've done with the Land Trust. It is being looked after very nicely now.

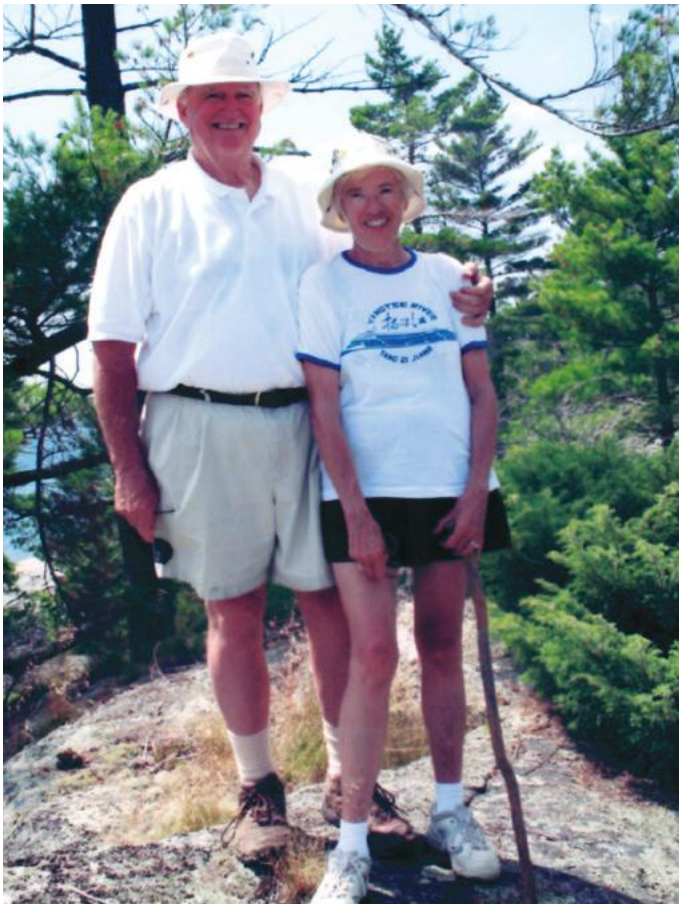
Why do you continue to support the Georgian Bay Land Trust?

I like what you're doing. Steadily protecting properties that I love, far and wide up and down the coast of Georgian Bay. I'm glad to see there's an organization like the GBLT willing to take them on.

What does Georgian Bay mean to you?

It's just a part of me. My wife and I have lived in 25 different homes. We travelled all over the world. But every year we came back to the Georgian Bay. I am so delighted that my grandchildren—I have five—are all absolutely gaga about Georgian Bay.

Thank you, Sandy, for the conservation legacy that you are leaving for your family and many others!



Sandy & Marilyn Phillips

Species Spotlight:

The Beaver: Nature's Engineer

By Eleanor Proctor, Land Procurement Assistant, Georgian Bay Land Trust

The Beaver (*Castor canadensis*) is North America's largest, and the world's second largest, rodent. Only the South American Capybara (*Hydrochoerus hydrochaeris*) is bigger, weighing up to 68 kg (150 lbs). In comparison, an adult beaver can reach almost 26 kg (80 lbs), a big animal compared to most rodents, which are often measured in grams!

Photo: Christine Cole

Being a rodent, Beavers have upper and lower incisors that never stop growing. The front of these teeth have a layer of enamel strengthened with iron compounds (imparting an orange colour). The act of chewing wears away the softer back portion of the teeth faster than the front, resulting in extremely sharp chisels. These incisors, plus a massive skull and strong jaw muscles, give the Beaver the power to chew through tree trunks. And though trees are a main source of food, Beavers do not actually eat the wood. They eat the bark, young twigs, buds, and leaves of the trees they harvest, and aquatic plants and submerged roots. In our area, Beavers create food caches for the winter. They collect and interweave branches and sticks into a pile in the water, which they access by swimming under the ice from the lodge. Many people in the Georgian Bay area are familiar with a Beaver food cache, as docks are frequently used for their stores! Where ice does not form in winter, beavers do not need or create food caches, as the shoreline and its trees are accessible all year round.

Beavers are known as semi-aquatic, in that they spend time on land, but they are very well adapted to life under water. Their hind feet are webbed, their large flattened tail acts as a rudder, they can seal their nostrils and ears, their eyes have protective membranes, and their lips meet behind their incisors so they can chew wood underwater. When they dive, a reflex slows their heart and reduces blood flow to their limbs which conserves enough oxygen to remain submerged for 15 minutes.

We are all familiar with the engineering capabilities of Beavers—no other creature (besides humans) are capable of altering their environment so profoundly. Their dams, which greatly slow—but do not stop—the flow of water, create the flooded conditions they need. Water slowly percolates through the full expanse of a dam, rather than over the top, because the current created by water running over the dam would cause continuous erosion. Beavers maintain their dams obsessively, checking them daily and sometimes hourly. If running water is heard in an unacceptable location, they will immediately search out and plug the source.

With the sudden increase in the water's depth and coverage, the Beavers can easily access trees which would otherwise

Photo: Blake Maybank

Photo: Gord Darlington

have required spending more time on land, where they are cumbersome. Deep water also creates a relatively safe area for their lodges—by having their homes in the middle of a pond the likelihood of becoming prey to larger, more nimble land predators is reduced.

There is a natural progression in Beaver-altered landscapes: When a pair or colony moves into a forested area with a source of water, their first order of business is to build a dam, or two, or several! Dams are a composite of logs, branches, rocks and mud and can span hundreds of metres. Once dams are in place and water begins to build up, the Beavers can then create their lodge. Lodges have underwater entrances near the pond bottom, deep enough to deter predators and, in the northern parts of their range, to remain accessible when the ice layer forms. Inside, a platform is built up until there is enough dry space on which to live. Just like dams, the lodge requires constant attention and, because of this investment, it is highly desirable to other Beavers and requires defence! Beavers are extremely territorial and defend their ponds and lodges with fervour from other Beavers, sometimes even killing intruders. They also scent mark with castoreum—a pungent secretion that gives Beavers and their territories their characteristic smell.

As time passes, their tree-harvesting thins the forest and the Beavers must travel further inland to reach the trees they desire for food (Poplars/Aspens are a favourite food tree). As this distance increases, the size of the trees they will harvest decreases, and they usually won't go more than 50m from the water for any size tree. At a certain point, additions and amendments to their dams no longer increase the expanse of the pond, trees become inaccessible for them, and the Beavers will move on to a new location where they start the process of altering the land afresh. Once abandoned, dams may last for years without care, but eventually they fail. The draining of the pond results in a rich wetland known as a Beaver meadow, which dries and fills with grasses, sedges, herbs, shrubs, and a succession of tree species. The original water source returns to its previous course, and sooner or later, after the trees have regrown, a new family of Beavers will make a new home.

Beavers can live 10 to 15 years and often reside in one pond for several years or even their entire lives. This long and relatively sedentary life has resulted in another rarity in the world of rodents—life-long partnerships. Pairs live and work and raise offspring together for years. And, because their ponds, dams, and lodges are so valuable to them and require so much care, pairs often allow some of their offspring to remain with them in order to help with the maintenance, patrol and defence of their home. The size of a Beaver colony likely depends on the size and quality of their territory—many colonies have five or six members, but a 12-member colony has been recorded.

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

The Georgian Bay Land Trust is a 1% for the Planet non-profit partner!

The 1% for the Planet network connects businesses and non-profits to protect the planet. If you own a business, consider joining 1% for the Planet, naming the Georgian Bay Land Trust as your beneficiary.

For more information visit onepercentfortheplanet.org.

LandMark Speaker Series:

Fall Migration

This past fall, our Protected Areas Manager Aaron Rusak gave a talk on fall migration, and how to approach it from a birdwatching perspective. Here are his tips for you to put to use this year—starting as early as July!

The first thing to know about fall migration is that it is more spread out than in springtime, with different birds moving south in predictable windows from July through November. Rather than heading outdoors with binoculars and expecting a bonanza of movement, in the fall it's important to know where to look at which times. Here is Aaron's monthly breakdown for the best in fall birdwatching:

Photo: Aaron Rusak

JULY: While most of us are still firmly focused on summer pursuits, shorebirds on their arctic breeding grounds are already preparing to wrap up the season. Birds who didn't find a mate this year, or whose nest was unsuccessful, will head south early rather than trying to breed a second time. July is a good time to look for these birds stopping on Georgian Bay's outer islands. Head out in a small boat that allows you to get close to the islands without actually landing (since many of these rocks also host gull nesting colonies, those who go ashore risk being mobbed). Look for islands without trees, and scan them with your binoculars. Success is hit and miss, but if you do see something interesting consider checking other islands too, as a shift in the weather may have prompted multiple birds to land.

AUGUST: This is when the typical "fall" migrants (warblers, sparrows, etc.) start to move through Georgian Bay. They often travel in mixed flocks of up to 10-15 species, and are most often seen in wooded or grassy habitats. This is a good month to watch how birds move through your home or cottage property, and wait for them to come to you. Aaron's favourite trick is to keep an ear out for the chatter of chickadees, because although many birds are silent as they migrate, chickadees will keep singing, and can often tip you off to the presence of a larger mixed flock. Many of the warblers that you see at this time of year will be tricky to identify, as they are in the process of switching to their drab non-breeding plumage. If you're concerned about this, seek out a field guide specific to fall warblers.

SEPTEMBER: This is the month to start scanning the skies for hawks, terns, and gulls. Pay attention to wind patterns (Aaron recommends using the "Windy" app), and plan your birding for days when there are strong northwest winds. If you choose correctly, you can see thousands of hawks moving overhead over the course of a single day. Study the hawk and eagle silhouette pages of your field guide to help narrow down what you're seeing overhead.

OCTOBER AND NOVEMBER: Waterfowl are our latest fall migrants, so these are the months to turn your eyes to open water. The more water you can see from your birding location, the more birds you are likely to encounter. It's a good idea to position yourself above the water line to avoid the shimmer that can occur due to air/water temperature differences, and use a pair of binoculars or a scope to zoom in on birds that are far away. Wild weather in October and November can also blow migrating birds off course, and sometimes a rare bird will be seen far outside of its normal range. Aaron recommends photographing anything that looks strange to you to verify later. Finally, leave your hummingbird feeders up through these months, as there's a chance an off-course rarity will show up for a drink long after our local hummingbirds have left.

Enjoy your fall birdwatching, and let us know what you see!

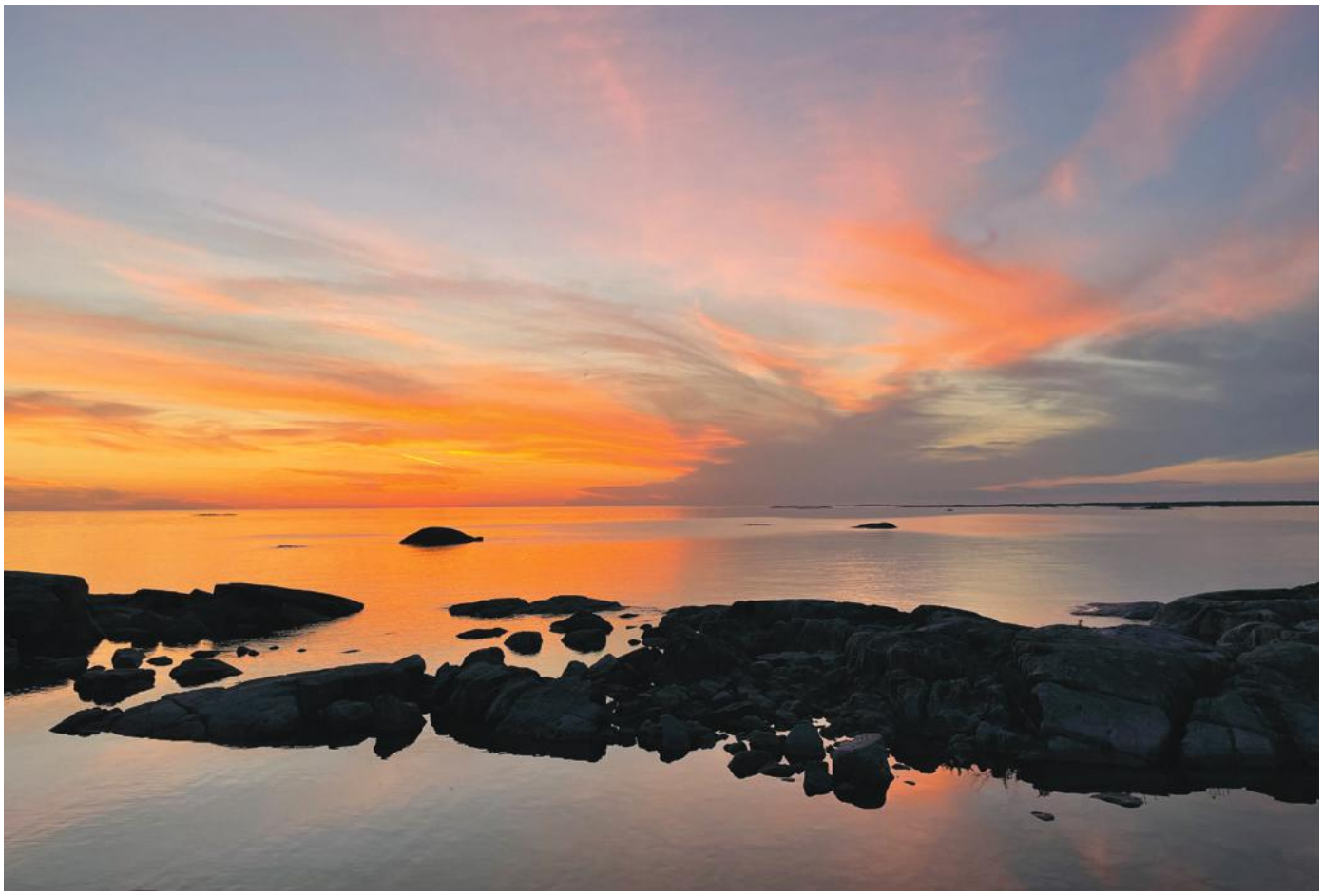
"Big Day" in support of bird research

Follow along this May as Aaron and Eleanor embark on another "Big Day" of birding! They will attempt to see as many birds as possible over a 24-hour period, while fundraising to support the Georgian Bay Land Trust's summer bird research projects. Learn more and support their efforts at gblt.org/events.

Georgian Bay Snapshot

Umbrella Island Sunset
by Jane-Anne Campbell

Jane-Anne Campbell, one of our most dedicated volunteer property stewards, took this picture on a monitoring visit to Umbrella Island last summer. Thanks Jane-Anne for helping us look after this special place, and capturing its beauty!



TributeGIFTS

Received from June 12 – December 31 2022

In Memory

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Allan Baker
Barbara Barrett
Catherine & Derek Bate
A. Priscilla (Tilli) Bennett
John A. (Sandy) Boyd
John Catto
Ron Cinq-Mars
Jan Clarke
Donald L. Clement
Bill Deeks
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WINTER 2023

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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.

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