THE BAXTER

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BAXTER CREEK WATERSHED: MAPPING COMMON GROUND

Baxter Creek Watershed Alliance was once again awarded with a **Fleming College GeoCommunity** project for 2023. We have three post-graduate geomatics students who just started with us on March 10, 2023. These young professionals will be working with us until June 28, 2023.

Please watch our website's Baxter Creek Watershed Hub to see the new mapping and tools they will releasing to assist us with our watershed research.

Do you want to help with our watershed monitoring? Do you know a high school student looking for volunteer hours? Last year we launched an Anuran (Frogs and Toads) Wetland Monitoring protocol for recording breeding abundance in local wetland areas. Amphibians are a key indicator of water quality and wetland habitat! If you are interested in volunteering to help us send an email to baxtercreekwatershed@gmail.com and request an information package.

Trent University School of the Environment placement for credit:

We were fortunate to start this year with an undergraduate student placement from Trent University's School of the Environment. Brooke Ceci started her placement with us as a Research Assistant in January and has been working on a stream water quality trend analysis project using water quality data sampled from Baxter Creek over the last 40+ years!

Baxter Creek in Cedar Valley; Courtesy: Kirk Hillsley, 2022

A TIME FOR TRILLIUMS

One of the enduring signs of spring in our rural area, are the carpets of trilliums in bloom throughout woodlands in our watershed. These lovely native plants are referred to as 'spring ephemerals' because of their short bloom time before deciduous trees fully leaf out. Trilliums are actually very sensitive to light and usually bend toward the sun as it moves across the sky. The blossoms are usually facing the sun.

Each trillium grows from a small rhizome (root), produces a whorl of three leaves and a single flower with three green or reddish sepals and three usually white petals but can also be in shades of red, purple, pink, yellow or even green!

Did you know?

1. There are five species of Trillium found in Ontario. The drooping trillium is an endangered species in Ontario. In 1753, Swedish botanist Carl Linnaeus established the genus Trillium. The word Trillium has its origin in Latin meaning 'three" describing this plant's three leaves and three flower segments.

2. Trillium roots were once used to treat wounds. Several trillium species contain phytochemicals called sapogenins which exhibit antimicrobial properties, guarding against fungi, bacteria and viruses. In folk medicine they have also been used as uterine stimulants, the inspiration for the common name "birthwort". Trilliums are also sometimes referred to as "wake-robin" because the flowers appear in early spring before robins begin to appear or are sometimes called "toadshade".

3. Trilliums are extremely fragile. If you pick a trillium bloom, the plant may not survive. If you pick the flower no other trillium will grow in its place, even if the rhizome (root) is left undisturbed. It may simply rot away.

4. Trilliums are pollinated by honey bees, bumblebees and wasps. However, the Red Trillium has no nectar and is pollinated by flies and beetles instead. The petals of the flowers exude an odor that attract carrion flies and beetles which pollinate the flower.

5. Trilliums have a symbiotic relationship with ants and an interesting way of dispersing their seeds. After flowering, a round capsule forms at the end of a long stalk, which bends down to the ground as the seeds inside are ripening. As the seeds mature and grow the pressure splits the capsule open on one side, and the seeds fall to the ground in clusters. Each seed has a light-colored fleshy crest attached to it, and ants love to eat it. Ants collect trillium seeds and bring them back to their nests, where they eat the attached crest and discard the seeds as garbage, thus dispersing them to different parts of the woods. Ants have been observed to carry trillium seeds as far as 9 metres (thirty feet) from the plant!

6. Each trillium contains on average about 16 seeds. It takes a long time for seeds to germinate - at least two years of cycles or warm and cold weather.

7. It takes a trillium plant up to 10 years to produce its first flower! A plant can live up to 25 years.

8. White-tailed deer love to eat trilliums — especially the white ones!

9. Contrary to popular belief, it's not illegal to pick trilliums in Ontario – but because they are so fragile, it is best to look and take photos but to not pick them.

10. The trillium became Ontario's official floral emblem in 1937.

11. The trillium has been the Ontario government's official logo since 1964.

12. Trilliums are very difficult to transplant from the wild, so resist the urge to do so. Instead buy plants from a reputable nursery.

Some local garden centres and nurseries carry trilliums which can be planted in home gardens under deciduous trees or areas with rich woodland conditions. Inset photo - Trillium luteum -an unusual Ontario native yellow-flowering lemon-scented trillium with large stalk less triple gray green marbled leaves, which is available in some local nurseries and fares well in native and non-native gardens in our area.

"One swallow does not make a summer, but one skein of geese, cleaving the murk of a March thaw, is the spring."

— Aldo Leopold

BAXTER CREEK WATERSHEDS' NATURAL GREEN INFRASTRUCTURE

In our last issue we highlighted Millbrook's Wastwater Treatment Plant (Volume 2, Issue 1), before that Millbrook's Municipal Groundwater Well (Volume 1, Issue 4) and in the issue before that we focused on the Wellhead Protection Area (Volume 1, Issue 3). In this issue, we wanted to introduce the topic of natural green infrastructure which is becoming a key mechanism in urban planning to reduce pollutants and excess stormwater from being released directly into the environment especially into our Baxter Creek.

Green infrastructure is really any human-made landscape feature that reduces pollutants or water runoff from rain or snowmelt entering directing into wetlands, watercourses, or groundwater recharge areas.

In settled areas, people may recognize naturalized stormwater ponds as green infrasture. In Millbrook, as new communities are developed we are seeing modern stormwater ponds, an example of green infrastructure, being included in site plans to reduce the risk of downstream flooding. However, these ponds are often designed as two-stage ponds, where the first pond traps pollutants (such as sediments like sand) by allowing the sediments to settle while the secondary ponds acts to contain excess water flows. During high runoff events, this system helps to reduce the amount of direct runoff, including some pollutants, from directly entering nearby waterways.

Stormwater ponds are just one form of green infrastructure. If you have a rain barrel on your property, or a gravel driveway, or have built a swale or ditch for your property, all of these features are types of green instrastructure. Naturalizing these features is a good step in reducing pollutant and water volume loadings to streams.

As natural areas and pervious surfaces like agricultrural lands are reduced through residential development, finding opportunties to offset these losses through restoration and conservation in other areas of the watershed is an important way to balance change in the landscape. Baxter Creek Watershed Alliance is actively monitoring the state of our green infrastructure and looking to consider a proposal of baseline targets for our watershed to help off the loss of natural areas.

A two-stage water quality and water quantity stormwater ponds at the centre of the map, located at the new Towerhill Highlands community in Millbrook. Wetlands adjacent the ponds provide habitat and groundwater discharge. Connecting streams and ditches connect the ponds with the natural system and into Baxter Creek. Map courtesy: Baxter Creek Watershed Hub, Baxter Creek Watershed Alliance.

"Spring is nature's way of saying, 'Let's party!'"

- Robin Williams

OTHER SPRING EMPHERALS

Hepatica. One of the earliest spring flowers in our watershed. Photo courtesy: Craig Onafrychuk

Trilliums are perhaps the most popular spring wildflower but are there other spring "empherals" that are your sign spring is here? One of the earliest spring flowers to appear across wooded areas of the Baxter Creek watershed is Hepatica. This wildflower comes in a vareity of colours from white, pink to violet. It is quite something to see across a woodland valley before other vegetation has emerged.

Bloodroot is another native wildflower that comes out quite early in the spring. As the leaves unfurl a brilliant whilte flower emerges. It is said bloodroot got its name due to the dark pigment that comes from the roots and was used by some Indigenous peoples for pigment.

A Trillium surrounded by Trout Lily. Photo courtesy: Craig Onafrychuk

The Marsh Marigold is another popular native wildflower that emerges in wet areas across the watershed. It is quite tolerant and grows even in roadside ditches and disturbed areas. The bright yellow flowers stay for a short time but are a definite sign that warmer weather has arrived! The Trout Lily is another easily recognizible spring ephemeral that grows in decidous forests across the Baxter Creek watershed. It is said that the Trout Lily has leaves that resemble the pattern of Brook Trout and emerge right around the time that local trout become active in our coldwate streams.

Bloodroot. Another early native wildflower in our watershed. Photo courtesy: Craig Onafrychuk

Baxter Creek Watershed Alliance (Corporation# 13483819) is a Canadian federal nonprofit corporation entity registered with Corporations Canada, located in the Village of Millbrook, Township of Cavan-Monaghan, County of Peterborough, Ontario, Canada.

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