



## Trees for Woolwich and TWEEC

### *2022- The Usual...and the Unusual*

It will be no news that we planted lots of trees again this year, but this year featured a flying hoop house, and a Landscape Ontario award for the Elmira Nature Reserve.

First came the drama of a wild spring windstorm which picked up our nursery hoop house and pivoted it 180 degrees (or so). Quick action by several volunteers tried to save the tender seedlings by building a temporary shelter, but sadly most were lost. It's a reminder that we need to work with Mother Nature and occasionally she lets us know who is in charge. The hoop house

is back in place now with some extra reinforcement to prevent further attempts to fly.



*After the storm*

*Gimme shelter!*



*Upright again*



#### Fun fact

Our nursery contains over 2000 trees and 30 different speci

*And now for the good news*

## **Nature Reserve Wins an Award of Excellence!**

The Ontario Landscape Association has awarded The Elmira Nature Reserve a construction excellence award as well as a green stamp for sustainability. Earthscape, as a Landscape Ontario member, made the nomination. Kudos goes to Mark Schwarz who designed the Reserve and worked tirelessly to make it happen over the past 2 years. Each and every volunteer and donor should take pride in their part in making this vision a reality. It is an enormous benefit to the community as well as the flora and fauna which it supports. It wouldn't have happened without a huge combined effort! Here is a link to some of the pictures and prose, which were submitted on our behalf in the [nomination](#)

2022 saw lots of activity at the **Nature Reserve**. In the winter 2 more areas were cleared of buckthorn, one on the eastern side of the Reserve and one in the south. A pit and mound terrain was dug to encourage ponds for amphibians. Then spring brought a planting of over 1900 trees ranging in size from seedlings to Treenormous!



*Planting big trees in honour of Sarah Bradshaw*

Click [here](#) to see the Impact Report about all that went on in the Nature



*Planting the north entrance Pine Allee*



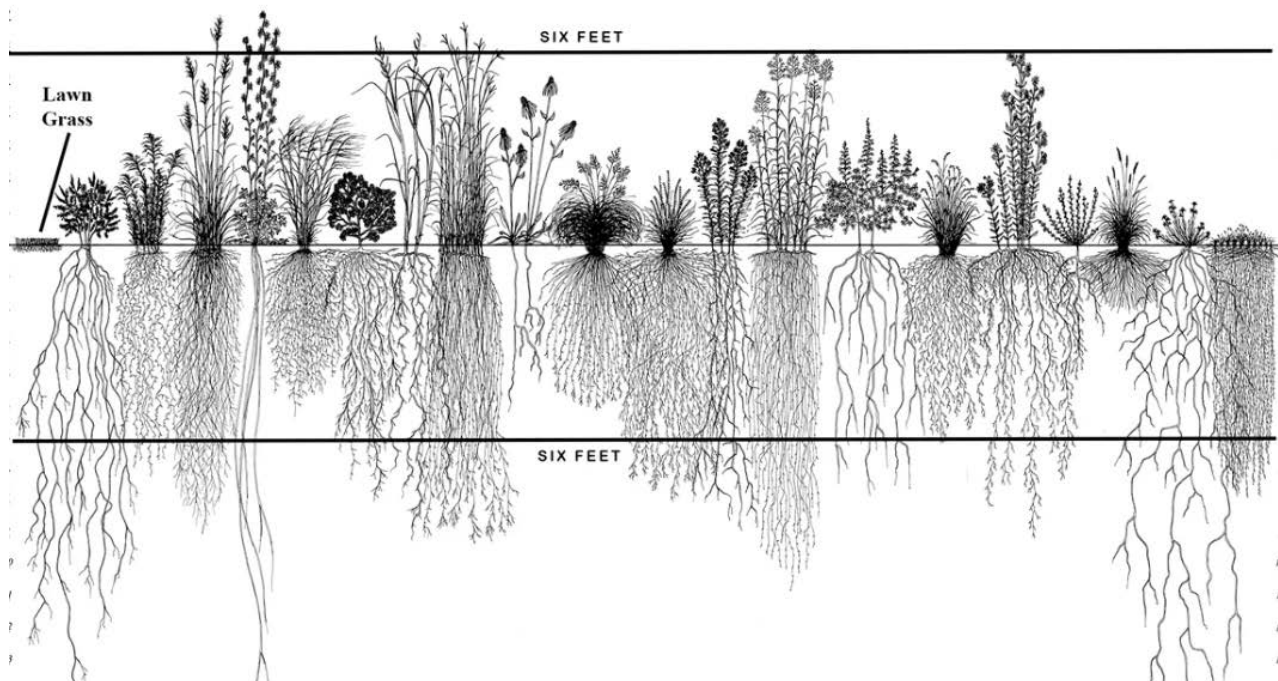
## Spotlight on Tall Grass Prairie

The tall grass prairie was allowed to grow this summer rather than being mown. As a result we got to see some of the brown-eyed Susans popping up. The plan is to burn the tall grass in spring 2023 to discourage weeds. This is historically how prairies were managed either by Mother Nature or indigenous tribes. In our case a professional company will manage the burn. The enormously deep roots of the native plants allow them to survive while weeds succumb. Did you know that because of their deep roots, prairies are tremendous carbon sinks (even though there are no trees:). By July the prairie will be lushier than ever. More details in the spring!



### Root Systems of Prairie Plants

Conservation Research Institute, Heidi Natura 1997



#### Nature reserve Plans for 2023

- Buckthorn was removed over 2 acres in November to clear the area for native plantings. This revealed some large oak trees, the beginnings of an oak savannah
- In the spring 2 acres of tall grass prairie will be seeded
- Invasive species eradication will continue both by hand and by machine.
- 220 trees will be planted in the north end
- New trails in the north section will be mowed as well as maintaining the southern section
- Manual watering will continue in last year's plantings.

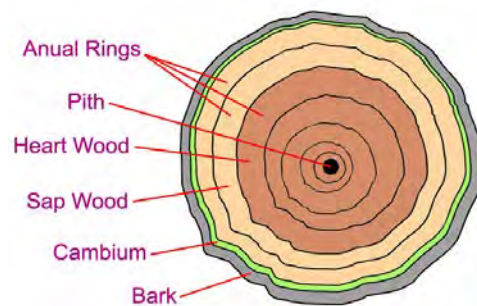
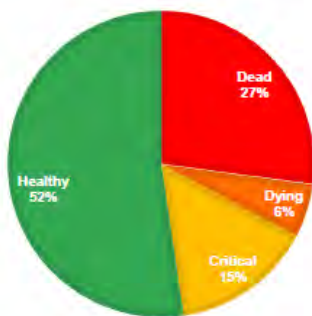
The Elmira Nature Reserve now  
every species contains represented  
in the Woolwich Township Botanical  
Survey of 1886- 33 species

## WE HELPED SAVE SOME TREES!

Just as important as planting trees is caring for the infrastructure we already have. It had become increasingly obvious that the trees in Woolwich Parks were being seriously damaged or killed by aggressive string trimming.

Trees for Woolwich (TFW) conducted a tree health survey for 15 of the Township's parks in March 2022. While conifers and larger trees above 9" DBH (diameter at breast height) were generally healthy, we found that 48% of deciduous trees between 3" DBH and 9" DBH were dead, dying, or critically ill. The total number of destroyed trees (dead, dying and critical) is 237,

**TREE HEALTH SUMMARY  
DECIDUOUS TREES < 9" DBH**



This is a cross section of the trunk of a *dicotyledon* type of tree. The only growing point is the cambium which produces new *xylem* and *phloem* cells which add to the girth (circumference) of the trunk or stem

The careless use of string trimmers cuts through the bark and into the delicate phloem layer just underneath. This cambium layer is where most of the trees nutrients are transported. If that layer is damaged, then trees don't get the nourishment they need. That means they grow more slowly or in the case of extensive damage they die. Basically, they starve to death or rot gets into the tree through the wound

After the township's repeated discussions with their contractor did not stop the damage, the township agreed to stop all sting trimming until the trees could be properly protected. All trees planted by us receive a protective tubing to prevent this damage but the medium sized trees- 3-9 inches in diameter are at risk. The township will work to mulch all the trees so that string trimming is unnecessary. Some citizens have complained that some grass around the base of the trees looks messy but that is a small price to pay to keep our trees alive!



photos: Mark Schwarz

## We Plant Everywhere!

This year, in addition to the Nature Reserve, Trees for Woolwich planted all over the township. Most is on public land but we also assist landowners who demonstrate good tree stewardship.

- **Ann Street Park.** With the support of neighbours, Walter Plein and Jordan Weber, who faithfully watered the trees. We have started to naturalize small portions of parks to create habitat that is more pollinator friendly. Open areas need to be left for kids to play on!
- **Bristow Park** Whole families came out to help!
- **Kramp Rd** – roadside. The WILD Outside Group from Canadian Wildlife Fed really pitched in
- **Toyota Boshoku** plant Elmira.
- Windbreak at Andrew Bauman farm- **Lundy Rd**
- Graham Snyder farm **Bloomingtondale**
- **Floradale Rd** – roadside
- **Lerch Rd** –roadside
- **Bolender Park** – Elmira
- **River Run woodlot** - Conestogo



Additionally The Grand River Conservation Authority works with landowners to plant trees near watercourses, as windbreaks and shelter belts.

In total 5,969 **new trees** were planted. Since 2011, the total in Woolwich is **54,698!**

## Our Community Partners

Besides **our** many volunteers and individual donors, each year companies and organizations help to make dreams a reality. Both **Toyota-Boshoku** and **Lanxess** have provided ongoing funding to help complete the Nature Reserve. **Erb St. Mennonite** Church has been a supporter over several years

Some corporations have organized their employees to come out and help with planting. This year we had help from:

- **Wallenstein Feed** provided funding for the gorgeous elm and pine trees planted along the Nature Reserve entranceways and staff came to help plant them. They brought refreshments- always appreciated ☺
- **Township of Woolwich** employees pitched in for planting in Bolender Park
- **Earthscape** employees came and brought equipment, tools and expertise
- **Toyota-Boshoku** staff not only planted on their own land but came out to help at the Nature Reserve





**Enviro- Stewards.**  
Their employees and families have helped us out for several years and everyone seems to have a good time.



• **Elmira Beavers** helped to plant along the Health Valley Trail in St Jacobs

Students from **St John's Kilmarnock School** learned the value of windbreaks for farm fields as they planted one on Andrew Bauman's farm while dodging a thunderstorm. They also donated their shovels to Trees for Woolwich!







The students from the high school “U Turn” program got really enthusiastic about pulling invasive buckthorn for cookies



## You Can't Start Too Young! Seedlings in the Classroom

30 classrooms from schools around the township participated this year after 2 covid frustrated years. The children planted bur, red, and chinquapin oak acorns in seed trays which we provided at the end of February. They then lovingly tended them until May when they came out to the nursery where

keen volunteers potted them up. Thanks go to the teachers who supervised and who did the hardening off



Before: March



After: May

## Tree Giveaway

The second year of the township’s tree giveaway was a roaring success! The township offered trees to residents on 2 dates in October. With some smaller stature trees like serviceberry and dogwood and some fruit trees on offer, the cars, and buggies, were lined up outside the Memorial Centre. Participants received information on the trees as well as planting and care instructions. Fingers crossed for a good survival rate.

Most of the trees were purchased by the Township from nearby nurseries but the oak, sycamore and catalpa trees were grown in our tree nursery in the Nature Reserve. Organized by Ann Roberts and Township staff, lots of Trees for Woolwich volunteers helped to make the operation pretty slick. We ran out of trees at the same time we ran out of demand. Perfect!



Stay Tuned for the 2023 Giveaway!

## Carbon Capture – Environmental Benefits

With almost 6000 trees planted this year, our calculations show the benefits across time. This shows that a tree captures an average of 25 kg CO<sub>2</sub> per year over 40 years. A typical passenger vehicle emits about 4.6 tonnes of CO<sub>2</sub> per year.

	40 years	80 years
CO <sub>2</sub> captured (tonnes)	5,904	25,276
Stormwater (cu meters)	23352	91.000
Airborne pollutants (tonnes)	34	134

**It takes 184 trees to absorb the annual CO<sub>2</sub> emissions of one car.**



# Looking Forward into 2023

## BRING BACK THE MAPLES

With lots of cooperation and some serious fundraising, 2023 might be our biggest year yet! Feeling the urgency of climate mitigation and the continued lack of trees on our roadsides, we have created **Bring Back The Maples!** We did a very successful roadside planting in 2006 on Lundy Road and 16 years later the results speak for themselves. The “before” and “after” pictures are below. This project brings home the possibility and benefits of roadside plantings.



*Lundy Road 2006*

Mark Schwarz has tested and researched a planting plan that will let us plant 22,000 trees over the next 3 years along roadsides in the township at the amazing all in cost of \$15 per tree.

Click [here](#) to see the details and the benefits.



*Lundy Road 16 years later (2022)*

### **Progress!**

**The township has pledged to reduce their greenhouse gas emissions by 80% by 2050 as part of their climate action initiatives. This roadside planting project alone would achieve 40% of that goal in the year 2050**

## Breslau Needs Some Trees

The township has approved a planting along Fountain Street to shelter the adjoining houses from the highway traffic. With the help of Lisa Nadon, one of our volunteers who lives in the area, neighbours will water the plantings. Finding watering resources is harder than planting trees!

After some community consultation, we hope to come up with a plan to plant Hopewell Park which is presently 5 acres of grass. Lots of potential there!



### **Planting Trees Pays**

Studies show landscaping with healthy mature trees adds an average of 10% to a property's values (some estimates are as high as 20%). Research also shows urban trees are correlated with lower crime rates from graffiti, vandalism and littering, to domestic violence



## Volunteer Profiles- Good People doing Good Things

Some of our volunteers have been with us for years and we have the joy of seeing new people join us. What a great group!

Here are two enthusiastic volunteers, Adrian is a veteran tree planter while Jenny is newer and enthusiastic about putting her communication skills to work.

### Jenny Soehner

Jenny's first contact with Trees for Woolwich came through her role as a teacher and her classes' participation in the Seedlings in the Classroom program. She wondered how she could communicate the importance to the environment of the tiny oak seedlings they were nurturing, so she spoke with John Mathers, our prime nursery volunteer.

Born and raised in Elmira, Jenny came out to her first Trees for Woolwich meeting in September 2021. As she says "I was just curious to see what you were doing and to see if there were hands-on projects and not just talking. Everyone was so welcoming and I found out about lots of projects into which people were pouring their energy and talents." Interest in the environment was not new to her. As a teacher at Riverside Public School she has a Forest School Certificate and teaches her classes outside for at least 1/3 of the day. She was part of the committee that planned, fundraised and planted the Naturalized Playground at the school and then helped to organize the school food garden.

She and another teacher also recruited the Lions Club to support the setup of chickadee feeders along the Kissing Bridge Trail. That way her students could walk over and experience the birds eating out of their hands.

Since joining Trees for Woolwich, Jenny has been enthusiastic about coming out to plantings and even bringing some of her family along. She has wonderful communication skills, and helped to create some promo material for Bring Back the Maples, our new roadside tree project. If you want someone enthusiastic to generate new ideas- Jenny is the person!

Jenny says that now that her children are well into their teens she has a bit more time to devote to things she feels are important. "Trees for Woolwich is so respectful of what time I have to offer"



## Adrian Miltenburg

When Adrian retired from his veterinary practice about 5 years ago, one of our long-term volunteers, Dennis Martin, wasted no time recruiting him to Trees for Woolwich.

Adrian is a tree lover from way back. When he moved to his 71/2 acre property in 1988, he started planting before the deal had even closed! Over the years, he has taken advantage of whatever trees were on offer, from tiny walnuts and oaks left over from his son's boy scout planting to purchases from the GRCA. Adrian has planted well over 400 trees on his property, including a windbreak on the west side of the house and reforesting the bare field.

In addition to being a regular at tree plantings and nursery tasks, Adrian has fostered seedlings which arrived in the spring and needed some tender care over the summer. He sheltered them under some shade and created an automatic watering system out of a timer and a garden sprinkler. That way he could go on holiday for a week. 😊 Everyone wants to plant with Adrian because he gets an amazing amount done. "He's a man of few words but every one is worth listening to. He has great hands and a quick mind", enthuses one of his fellow planters. We are lucky to have his passion and his work ethic!





## WE Couldn't Do it Without You!

Our work would not be possible without the enthusiastic support of many people and organizations.

**2000** volunteer hours this year went into planting and planning alone!

- Special mention goes to the folks from Earthscape who provided lots of big equipment, expertise and... Mark Schwarz. Kudos to Conestoga Contracting who used even bigger machines to pull that big equipment out of the mud 😊
- The Township of Woolwich, through Ann Roberts, the ever conscientious Environmental Coordinator, continues to support our efforts in so many ways.
- The Region of Waterloo, especially Albert Hovingh, environmental planner for their support and expertise.



This year we have had an increase in donations from the community, private citizens who recognize the importance of this work. Every tree counts and every dollar helps! We have made donations easier by linking with [Canada Helps](#). (Just choose "Trees for Woolwich" in the right hand drop down list))

Thanks to all who gave of their time, talents and resources!

## WANT TO GET INVOLVED? ITS VERY SATISFYING!

This year there will be lots of opportunities to get involved!

- tree planting
- tree watering
- helping tend the nursery
- help with promotion and organization.
- Park guardian
- Nature reserve overseer in training
- DONATE [Canada Helps](#) or contact us

We have an outlet for every talent! Just get in touch with Ann Roberts

[aroberts@woolwich.ca](mailto:aroberts@woolwich.ca) 519 514 7027 or Inga Rinne [inga@rinne.ca](mailto:inga@rinne.ca) or 519 212 1352.

We guarantee a sense of satisfaction!



Written and edited by Inga Rinne and Matt Cowan

## Elmira Nature Reserve-

### Excerpts from the Landscape Ontario Award Nomination

*Small Town. Big Nature.*

The Elmira Nature Reserve is a 67-acre piece of unused land and floodplain on the edge of the town of Elmira that is being transformed into a community hub for recreation and ecological education. The project fulfills the vision of the volunteer group Trees for Woolwich to restore an area consisting of unused cropland, remnant woodlots overgrown with invasive species, and storm water ponds.

Using the design skills, skilled labour, and project management expertise of a local landscape firm, volunteers have constructed a series of trails connecting a variety of habitats designed to showcase land types that would have thrived in the area hundreds of years ago: maple-beech forest, early successional wetland, elm-ash-silver maple swamp, tallgrass prairie, oak savannah. In recreating these habitats, invasive species have been replaced with more than 40 species of native trees and shrubs. A hectare of old cropland has been replaced with prairie, using more than 30 species of native grasses and forbs.

As they wander, trail walkers can learn from wayfinding and informational signage along the way. A scavenger hunt for particular plants, wildlife and special features has been designed to encourage visitors to explore further. Valuable learning for at-risk youth is also incorporated in the project, as the landscape firm is partnered with a local non-profit group to employ at-risk youth to work on the Reserve.



*forever mowing paths*



*Ali Forever pulling out beaver dams*

Because the timeframe of this project maturing is measured in decades or more, in our photos we have highlighted here the collaboration and community effort involved in constructing the Reserve. Thousands of person hours were required since 2020 in designing, specifying, permitting, planting, watering, mowing, hand weeding prairie, herbicide spraying, forestry mulching, chain sawing invasive trees, destroying beaver dams, and more.





*Buckthorn forest before forest mulching, during, after, and finally after replanting*



*Tours inform people*

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# Impact Report 2022

## ELMIRA NATURE RESERVE Walk, Wander and Learn. Lost in the City



Trees for Woolwich

### ABOUT THE ELMIRA NATURE RESERVE

Began in 2002, the Elmira Nature Reserve now comprises 27 hectares (67 acres) that have been permanently set aside for nature conservation and public enjoyment. The lands have been donated to the Township by private citizens, and purchased by the Township.

Construction started on this long term project in 2004, and all phases are expected to be substantially completed by 2025. Most of the ecosystems within the reserve are designed to be self-restoring after the initial construction phase is complete.



### QR CODE FOR ECOLOGICAL SCAVENGER HUNT



Or use the URL:  
[healthwoolwich.org/scavenger](http://healthwoolwich.org/scavenger)

Citizen volunteers at Trees for Woolwich (TFW) are responsible for much of the work you see here. TFW goal is to increase forest cover within our Township, by planting trees and restoring forest habitat on public and private lands.

Did you know? The Township has created an Ecological Scavenger Hunt that spans all of the parks in Elmira. Varying complexities can be attempted, from "Easy" all the way to "Impossible".



LEGEND	
ACCESSIBLE STONE	— (solid red line)
DUST PATH	- - - (dashed red line)
SECONDARY PATH	· · · (dotted red line)
RESERVE BOUNDARY	— (solid yellow line)





TREESFORWOOLWICH

## IMPACT SUMMARY

- 1905 trees planted by volunteers- mulch and guards installed
- Increased carbon capture, flood control and air pollution reduction – 950 tonnes of carbon captured over 40 years
- Active watering to achieve 90% survival rate for trees
- An automated solar powered irrigation system was designed and installed for the entryway trees
- Invasive species control - 15 acres of buckthorn were eliminated and biodiversity increased
- Pit and Mound excavation created ponds in the wetland area and allowed tree planting on the mounds
- The impact of your financial donation was amplified by approximately 1800 hours of volunteer time
- Public use of Nature Reserve for recreation continued to increase from previous year
- Total budget for 2022 was \$38,000

2022 has seen a peak in the level of activity with 3 times as many trees planted as last year. We started in March with the removal of 13 acres of invasive buckthorn trees which were choking out any native trees. We ended on November 15<sup>th</sup> with a planting of sycamore, despite a little snow .



### Your donation helped to achieve all this.

- 1905 trees in total were planted throughout the southern section. These included 28 varieties, each suited to the particular habitat into which they were being planted. The largest numbers were sugar maple, bur oak, pagoda dogwood, and white pine.
- More rare and endangered species were planted throughout, including disease resistant elm, tulip tree, American chestnut and witch-hazel.
- While trees have many benefits, several that can be quantified are carbon capture, stormwater capture, and air pollution absorption. Each species behaves differently and a detailed calculation of the benefits is underway.
- Watering these trees was an enormous commitment especially during the drought this summer. A pump from the stormwater pond and fire hose was used to maximize efficiency, but in midsummer it was discovered the pond had dangerously high levels of salt, which was impacting the trees, and an emergency pivot was required. Many thanks goes to our neighbour **Engineered Lifting Systems** who allowed us to run a hose from their building and provided clean water.



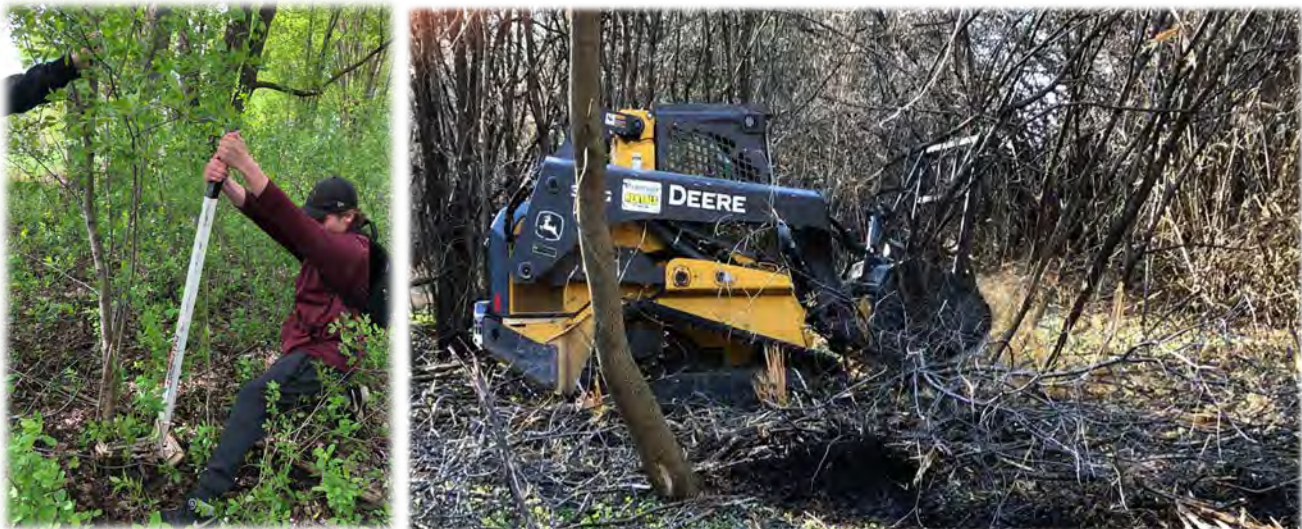


- The 2 acre Tall Grass Prairie section of the Habitats was seeded in the fall of 2020 and had to be weeded throughout the summer to limit invasive weeds.
- Trails were mowed to allow people to enjoy more of the area.
- Signs recognizing our founding sponsors are placed at each entrance. They also provide information about the various habitats and for wayfinding.



- Based on the inventory completed the previous year, a lot of time, effort and machinery was invested to start eradicating phragmites, buckthorn and Manitoba maple. 13 acres of buckthorn were eradicated in March using an enormous forest mulcher (lower right). This process uncovered 3 large elm trees which had evaded the ravages of Dutch Elm disease. Smaller buckthorn were pulled by hand (lower left) . The phragmites had responded well to the cutting and spraying the previous year and seems to be under control.

In November, the forest mulcher attacked a further 2 acres of buckthorn in the northern section of the Reserve.



- A public open house in September provided tours of the Reserve and information on the work done.

## Community Involvement

The involvement of a broad section of the community providing volunteer labour, equipment, and expertise allowed us to get a great deal accomplished at a very low cost. From seniors to students, farmers to city slickers, all contributed their skills and resources to make this possible. We owe a special thanks to our project manager, Mark Schwarz of Earthscape, and Ann Roberts, the Township of Woolwich Environmental Coordinator. Several companies including Enviro-Stewards, Wallenstein Feed and Toyota-Boshoku gave their employees time to come and help. **We couldn't do it without you!**

## Plans for 2023

The work plan for 2023 is ambitious and will focus on the northern section of the Reserve.

- Buckthorn was removed over 2 acres in November to clear for native plantings. This revealed some large oak trees - the beginnings of an oak savannah.
- In the spring 2 acres of tall grass prairie will be seeded.
- Invasive species eradication will continue both by hand and by machine.
- 220 trees will be planted in the north end.
- New trails in the north section will be mowed as well as maintaining the southern section.
- Manual watering will continue in last year's plantings.
- Further signage will be installed.

## Visitors Welcome!

The Reserve welcomes all members of the public but our donors are particularly honoured guests. Group tours can be organized on request.

Questions or Comments?

Contact

Inga Rinne

[inga@rinne.ca](mailto:inga@rinne.ca)

519 212 1352

[Click](#) to return to main report



# Bring Back the Maples

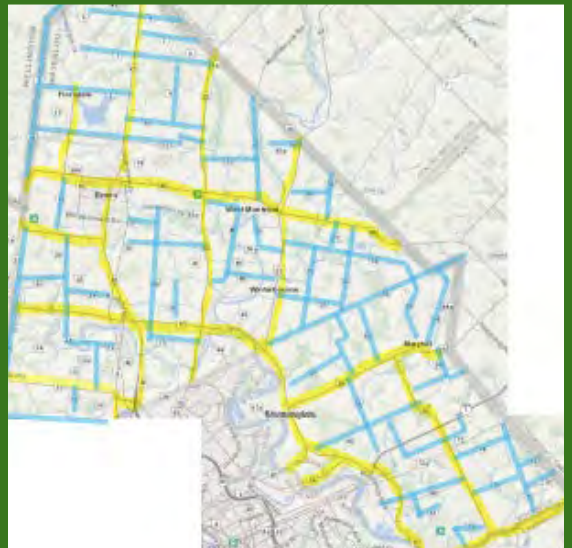
## Township of Woolwich Roadside Tree Planting Project

- Tens of thousands of trees need to be planted to reach the green infrastructure canopy cover goal.
  - Roadsides are the most available planting areas.
  - Most large trees historically on our country roads were planted 140 years ago: many are now gone, leaving roadsides bare.
  - Trees for Woolwich plans to plant 21,570 trees along viable areas of our 335 km of rural roads.
  - Trees will be planted over 3-1/2 years from 2023 to 2026, at a rate of up to 7,000 trees/year.
- Project management and installation, tree watering, and initial pruning will be performed by Trees for Woolwich in partnership with Earthscape's equipment and their trained youth worker crew.
  - Cost per tree is \$15, including watering and pruning at years 3 and 7. Funding requirements average \$110,000/year, provided by corporate donors, Township of Woolwich, Regional Municipality of Waterloo, and several reforestation and greening programs.
  - Project technical support will be provided by Woolwich Township Infrastructure Services, Region of Waterloo Forestry, and Grand River Conservation Area.
  - The entire program can be approved by two authorities only – the Township of Woolwich (Township) and Regional Municipality of Waterloo (Region of Waterloo).
  - To test logistics, plans for installation and maintenance, trial plantings of over 300 trees were planted along Floradale Road, Kramp Road, and Lerch Road in 2022.
  - All phases of the project have been tested including landowner communications, utility locates, viable tree species, watering, and pruning.
  - The majority of trees will be Sugar Maple, Red Maple, Bur Oak, Walnut and Crab apple, with 10 additional species in less abundance to increase ecosystem resilience

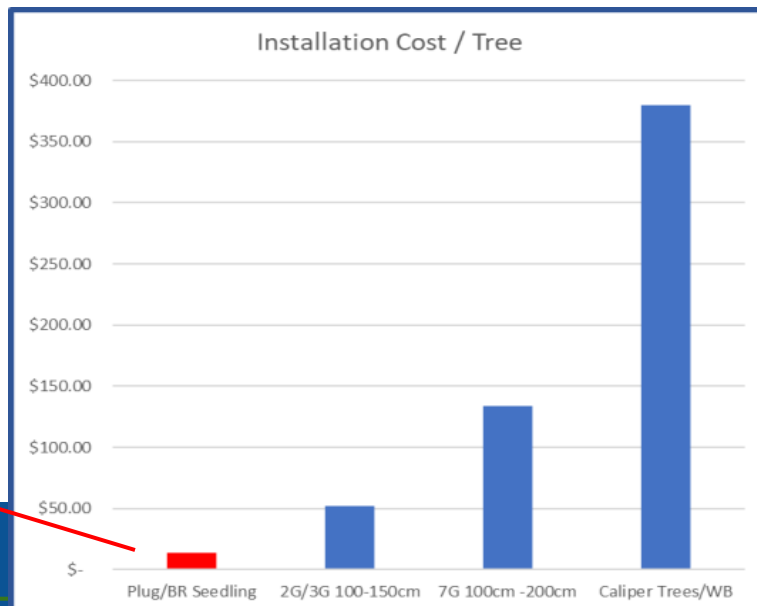
### Roads in Woolwich Township (October 2016)

Regional – 120 km approx. ignoring built up areas

Township – 313 km approx. ignoring built up areas



- Trees will be planted as plugs or bare root seedlings, 30 cm to 100 cm in height, with shelters & a supporting stake to protect from winter snow damage, weeds, & mechanical damage.
- The plug tree size is the least expensive size that will withstand the roadside stresses on trees. See cost comparison chart.



## Benefits

- Tremendous boost to Woolwich's environmental credentials.
- Carbon capture from these open growth broad canopy trees over the next 80 years is 68,000 tonnes of carbon dioxide. Township of Woolwich 2017 CO<sub>2</sub> emissions were 1864 tonnes annually. The 80 year CO<sub>2</sub> capture by the roadside tree project is the equivalent of 36 years of township emissions, or the equivalent of taking 170 cars off the road each year for 80 years. (See chart below.)
- Storm water in the amount of 680,000 cubic meters will be diverted from runoff into soil absorption as trees act as water reservoirs and reduce erosion over the next 80 years.
- Airborne pollution will reduce as the roadside trees absorb 283,000 kg of airborne pollutants over 80 years, such as ozone, carbon monoxide, nitrogen dioxide and sulfur dioxide and intercept micron level particulate matter such as smoke, dust and ash, as well as lowering temperatures.
- Mature roadside trees will form a township wide network of vegetation connecting our forest areas. Roadside vegetation are important wildlife habitats for birds, insects, reptiles, and mammals that support migration and permit outbreeding with broader animal populations.
- Reduced traffic speed, as shown by research on tree-lined rural roads.
- Highly visible "park" will be enjoyed by residents daily, boosting the aesthetic and cultural impact for our township and supporting the Maple Syrup Festival brand.

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