

Elmira Nature Reserve Report 2021

For

Erb St. Mennonite Church

ELMIRA NATURE RESERVE

Walk, Wander and Learn. Lost in the City



Trees for Woolwich

ABOUT THE ELMIRA NATURE RESERVE

Begin 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 deeded 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-sustaining after the initial construction phase is complete.



QR CODE FOR ECOLOGICAL SCAVENGER HUNT



Or use the URL: healthywoolwich.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".





TREESFORWOOLWICH

2021 has been a big year for the Nature Reserve despite the setbacks from covid protocols. Efforts were concentrated in the southern half of the Reserve.

Your donation allowed us to plant 100 native trees in the Reserve this year!

- 544 trees in total were planted primarily in the Habitats area. These included 31 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. While trees have many benefits, several which can be quantified are carbon capture, stormwater capture, and air pollution absorption. Each species behaves differently and a detailed calculation of the benefits is attached at the end of this report.
- Watering these trees was an enormous commitment of time this summer. A pump from the pond and fire hose was used to maximize efficiency but it took 2 very fit and strong people about 12 hours per week to complete all the watering. The result is a 97% survival rate so far! It is expected that they will require 2 years of watering before they are on their own.



- 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, most frequently thistle and teasel.



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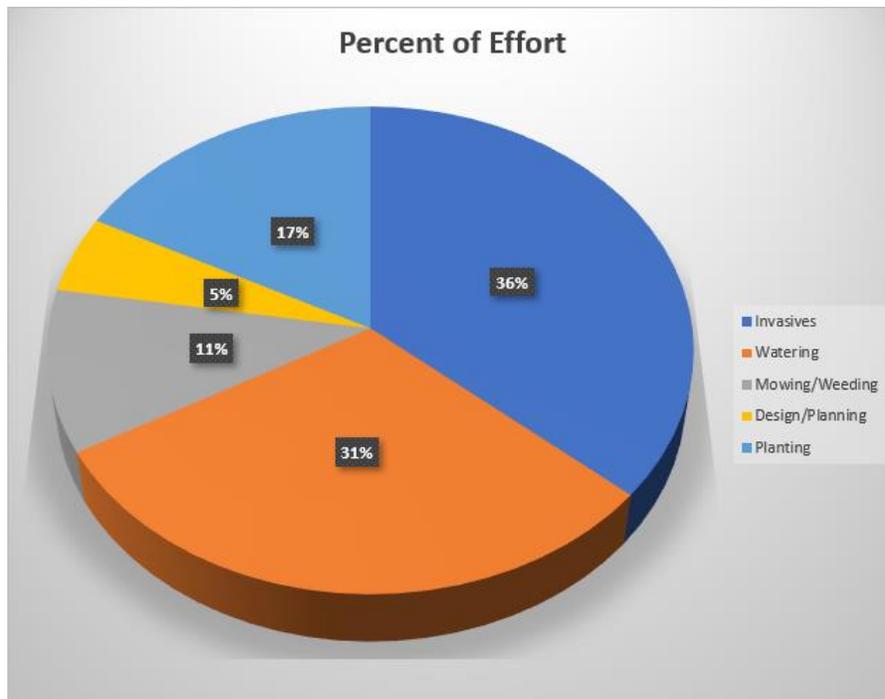
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- Trails were mowed to allow people to enjoy more of the area
- Signs were erected to provide information about the various habitats and for wayfinding
- An inventory of the 67 acre site revealed that some are badly overrun with invasive species. A lot of time, effort and machinery were invested to start removing eradicating phragmites, buckthorn and Manitoba maple. It is estimated we have about 8 acres of areas that are home to nothing but buckthorn! Various methods are being employed depending on size. The phragmites had to be cut in the spring and this years growth sprayed in the fall. While we are not keen to use chemicals there are some situations where nothing else works. Digging or cutting phragmites just seems to encourage it!

Mark Schwarz, our project manager, kept track of the time spent on various activities.



Community Involvement

We have been blessed with enthusiastic volunteers from a broad range of the community. From seniors to the high school students in the work and learn program, from businesses such as Google to farmers, so many have contributed time, equipment and expertise! We couldn't do it without a community wide effort. The resources from the Erb St Mennonite congregation combined with those from both companies and individuals have made this possible. **Thank You!**

Plans for 2022

The work plan for 2022 is ambitious.

- Over the winter an aggressive campaign to cut and mulch large areas of buckthorn will be undertaken.
- In the spring, another 1280 trees need to be planted.
- The wetland area will be enhanced with a pit and mound excavation. The mounds will act as tree refuges and the pits, with standing water, will encourage aquatic plants and creatures. This will create more biodiversity in our habitat.

- Invasive species eradication will continue both by hand and by machine.
- An automated solar powered drip irrigation will be created to water the trees to be planted along the 2 entranceways.
- Manual watering will continue in last year's plantings.

Visitors Welcome!

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

Questions or Comments?

Contact

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Carbon Capture and Long Term Environmental Benefits Tree Planting in the Elmira Nature Reserve 2021



In 2021, 544 trees were planted in the Elmira Nature Reserve. These were from 31 species, ranging from large trees like oak, maple elm and hickory to smaller ones like dogwood and service berry.

85 of these trees were transplanted as large trees – some 30 feet high – the rest ranged from 3 to 6 feet high.

Trees for Woolwich calculates the environmental benefits from its tree plantings, looking at tonnes of CO2 sequestered, kilograms of air pollutants absorbed by the trees and litres of stormwater absorbed. The benefits are calculated over 40 year and 80 year periods.

For the 544 trees planted in the Elmira Nature Reserve in 2021, the 40 year and 80 year expected benefits are listed below.

		40 year benefit	80 year benefit
Carbon Dioxide	Tonnes	388	1518
Stormwater	Litres	2.8 million	10.4 million
Air Pollution	Kilograms	2470	10300

Carbon Dioxide – Trees sequester carbon dioxide in their trunks, branches roots and leaves. During its life, this also puts carbon into the soil. To put it in perspective, an average car produces 4.6 tonnes of CO2 annually, so the 80 year benefit is the equivalent to taking 330 cars off the road for a year.

Stormwater – Trees absorb water through their roots, and breath it out through their leaves. A tree will reduce stormwater runoff through this process, and reduce erosion, flooding and the need to process runoff.

Air Pollution – trees will absorb air pollutants like ozone, carbon monoxide, Sulphur dioxide through their leaf, intercept particulate matter like dust ash and smoke.

Matt Cowan
Trees for Woolwich 2021

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THE HABITATS



LEGEND

- ACCESSIBLE STONE DUST PATH ———
- SECONDARY PATH - - - - -
- RESERVE BOUNDARY ———