



# Wellesley Pond Enhancement Project



# Wellesley Friends of the Pond

- In the fall of 2016, the Friends of the Pond started meeting again to move forward with a plan to improve the ecological health of the pond.
- Membership was solicited from the Lions Club, the Board of Trade, the Apple Butter and Cheese Committee and the Greenwood Rod and Gun Club. Local churches were also asked to participate
- The FoP expanded as interest in the community grew.
- A partnership was created with the FoP acting as the organizing committee, the Grand River Conservation Authority, which owns the pond, providing technical support and advice; Wellesley Township, which maintains the shoreline, serving as the contact for work done on the pond; and the Wellesley Lions Club serving as applicant for grant applications.

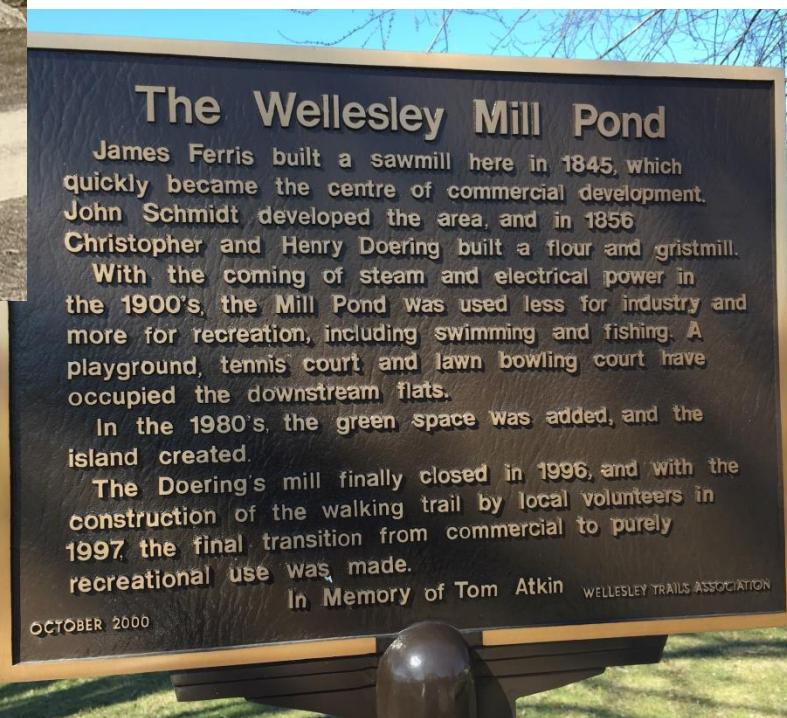


# Friends of the Pond

## Sponsors:



# The Historical Wellesley Pond





# First Dam

- In 1846, what is now Firella Creek was dammed in order to create the pond as a source of power for a grist mill and later a flour mill.
- The current path through Albert Erb Park runs on the top of the original earthen work.
- The dam has been upgraded several times over the years.

# Albert Erb Park, 1902-1906 (Ottmann)





# Original Pond

- Once the natural flood plain had been filled with water by the dam, the pond extended over a surface area that was roughly twice the size it is today.
- The pond north of Queen Street (Queen's Bush Rd.) occupied the area now taken by the automotive shop.
- At one time there was a dock serving the pond at the base of Water St.



# Wellesley Pond, 1920



# A Power Source

---

- The water from the pond was channeled through raceways linked to a grist mill, and lumber mill located on the flood plain beneath the dam.
- A raceway also ran under Nafziger Road to the feed mill which still stands.

# Feed Mill



# Pond Depth

---

- The original pond was approximately eight feet deep on average with a firm clay bottom, and its water was clean and cold.
- The following slide shows the depth of the pond at Queens St. during a winter draw-down to allow repair of the bridge.

# Queen Street Bridge during a Pond Draw-down, Winter 1905. (Ottmann)



# The Pond Changes

---

- Eventually, the pond was no longer needed to supply power.
- In 1955, the village of Wellesley Council decided to change the pond to a recreational venue.
- By this time, the pond had silted in with run-off from farmers' fields and had to be dredged to be usable.
- The surface area of the pond was greatly reduced, especially north of Queen St.
- The depth of the pond was increased to near the original depth.

# Dredging of Wellesley Pond, 195





# Second Dredging

---

- Eventually, the pond silted in again and had to be dredged a second time in 1988.
- At this time the surface area was again reduced. Dredged material was used to build the walking trail along the east shore, enlarge the southern shore along the dam walkway, and construct the island.

# Wellesley Pond, 2018





# Scenic Pond

- The pond remained a picturesque landscape feature in the manner of Victorian landscape design.
- On the surface it still makes a very pretty picture.

# 2015



- Unfortunately, the silt from farmers' fields has again filled the pond.

# Looking south from the bridge (Dec. 2017)



- 
- Over the years, the dredged material has “slumped” and fallen away into the pond returning the silt dredged away in 1988.

# The Pond as It Is (Dec. 2017)



- 
- Although the pond still seems to be the pretty Victorian water feature people value, just below the surface very little vegetation or animal life can survive.

# North of Queen's Bush (Dec. 2017)



# Problems Created by a Shallow Pond

---

- The shallow depth of the pond has several negative effects.
- First, it slows down the water coming from the sources, Firella Creek, Erb's Drain and the Campbell Drain. This means the silt drops out of the water and stays in the pond.
- The water remains muddy and inhibits the growth of natural vegetation which otherwise would clean and oxygenate the water.
- Native species like bass and trout cannot survive in the warm, oxygen-deprived water.

- Second, the water warms so that it leaves the pond 10 degrees Celsius warmer than when it entered.
- Again, this prevents the storage of oxygen in the water preventing natural cold water species like bass and trout from surviving.
- It encourages warm water, slow moving invasive species like carp to thrive.

Carp degrade the shoreline by eating the plants that would ordinarily help oxygenate the water and stabilize the shoreline.



# Nuisance Geese

---

- The high number of Canada Geese also contributes to the degradation of the pond's ecology.
- Grass kept short to the edge of the shoreline encourages geese to land and nest in the area because they can see predators coming.
- Goose feces litter the walking paths and grass along the shoreline of the pond.

# Nuisance Geese



# Nuisance Geese



?





# Nuisance Geese

---

- Goose feces introduce nutrients into the water which encourage the growth of blue-green algae.
- The algae is toxic and contains several types of harmful bacteria. (<http://goodbyegeese.net>)

# Pond Scum





# What Can Be Done?

- Fortunately, renovation of the pond is made easier by the Rural Water Quality Program initiated by the Region of Waterloo almost twenty years ago.
- Region farmers have been very cooperative in keeping crops away from water ways.
- This has significantly reduced field run-off and improved water clarity.

# Rural Water Quality Program, 2000

A typical buffer protecting the water source from agricultural run-off.



- 
- Water coming into the pond from the Campbell Drain is much cleaner than it has been in many years.
  - The waters of Firella Creek are pristine and as clean as any found in the Grand River Watershed

# Firella Creek

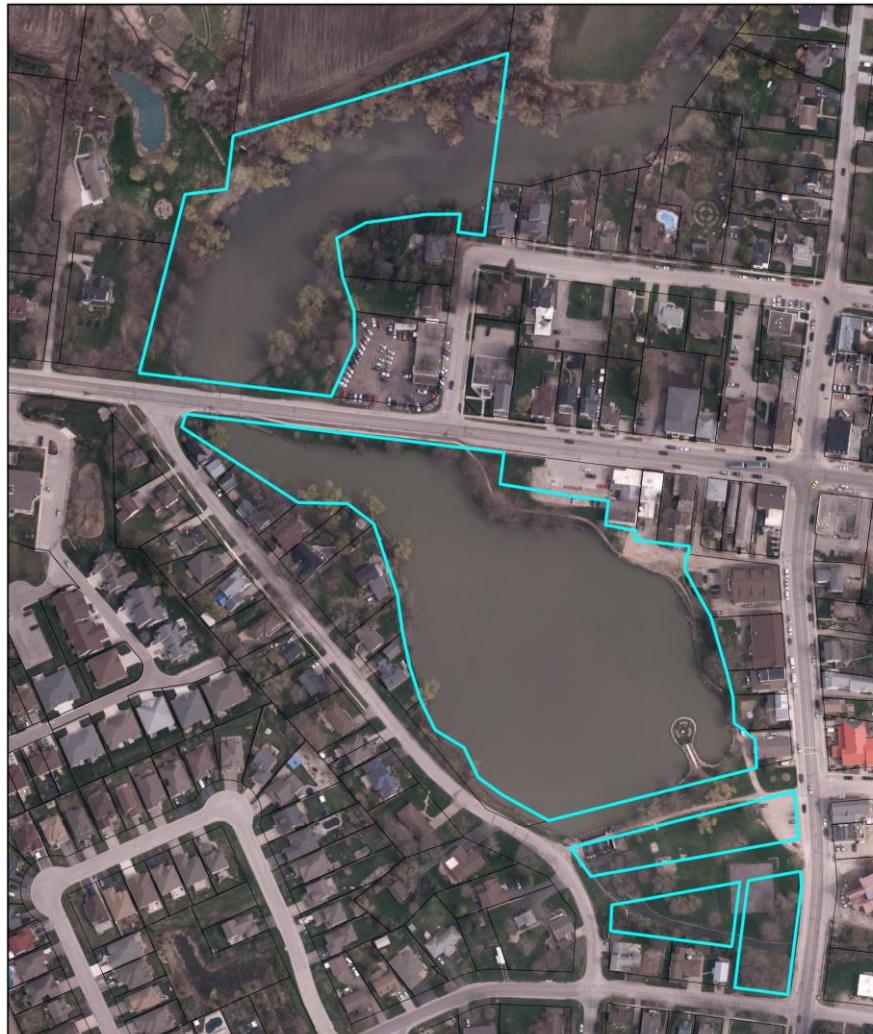


- 
- The FoP have taken on the task of an ecological renovation of the pond that will consists of several steps.
  - Since the pond is the property of the Grand River Conservation Authority all measures taken to renovate the pond must meet with the approval of the GRCA.



# GRCA Property

Wellesley Pond - GRCA Lands



2512.50 25 50 75 100  
Meters



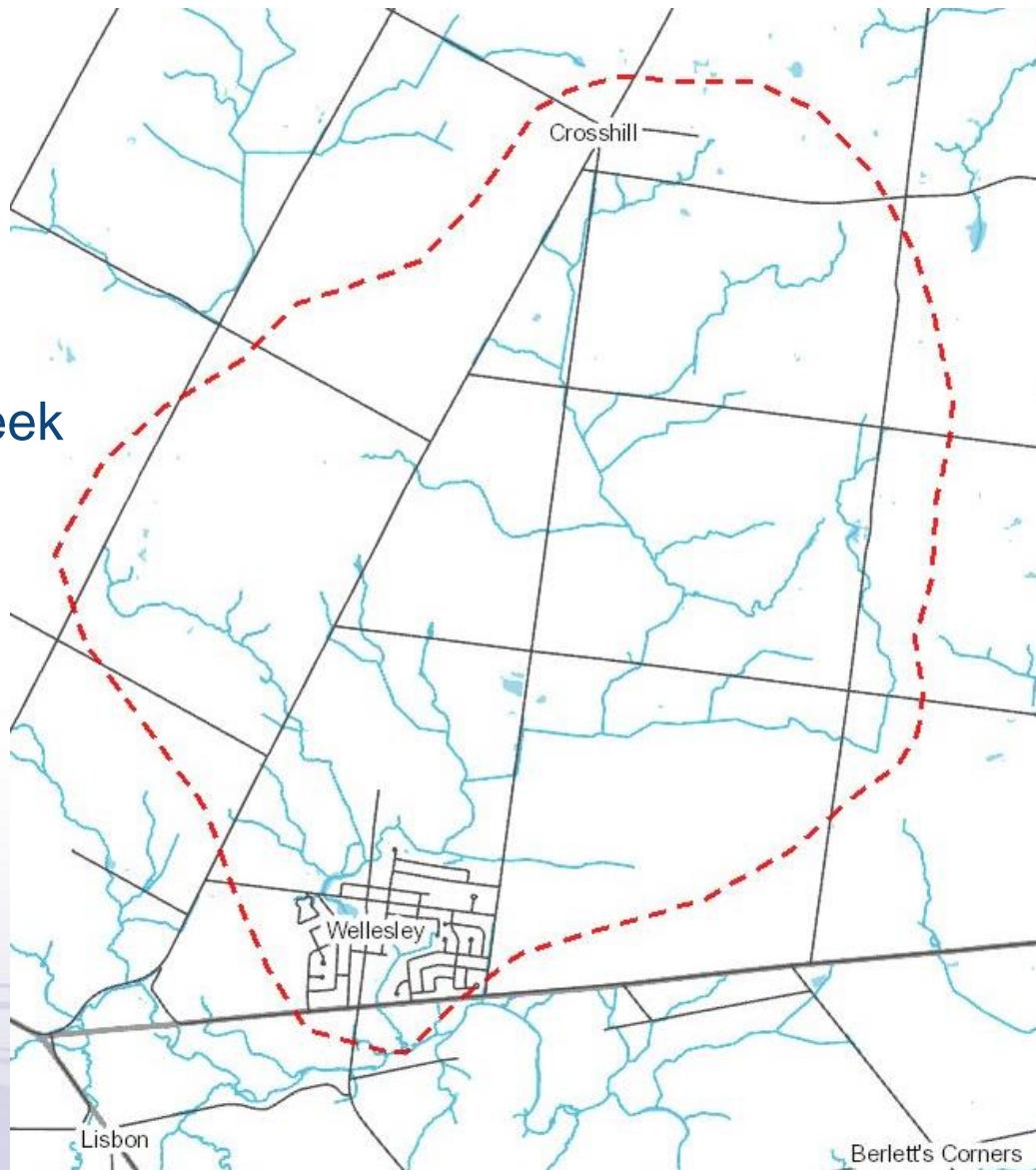
# Watershed

---

- The pond is the southern terminus of the Firella Creek watershed.
- Water drained from a 31 square kilometre area flows into the pond.
- Water is released from the pond into a creek from where it is released into the Nith River.

# Firella Creek Subwatershed

- Subwatershed is 31km<sup>2</sup>
- 47kms of watercourse
- Major tributaries are Firella Creek and Campbell Drain
- Wellesley Pond 5ha



# Summary of Wellesley Pond Ecological Challenges

Between 2005-2010 biological and water quality surveys have revealed:

- natural fish species, e.g. trout and bass, have been replaced by invasive species, e.g. carp;
- invasive plant species, e.g. Canada thistle, have been established along the shoreline;
- bottom feeding carp have uprooted water plants and degraded shorelines causing water quality problems;
- Canada geese have fouled the water with droppings;
- and residential run off from culverts has introduced pollutants.

# Wellesley Pond Enhancements

- Why is the community undertaking this project?
  - Address water quality concerns
  - Improve aquatic biodiversity
  - Manage nuisance species
  - Enhance parkland greenspace
  - Enhance recreational opportunities



# Parkland Recreational and Educational Activities



- Art Around the Pond
- Wellesley Apple Butter & Cheese Festival
- Lions Labour Day Fishing Derby
- Elementary school environmental studies





# Project Objectives

- Engage local community in rehabilitation
- Address water quality and sediment accumulation concerns
- Improve pond productivity and biodiversity
- Naturalize portions of shoreline and enhance habitat for wildlife
- Manage nuisance species such as Common Carp and Canada Geese
- Look for opportunities to align with community trail and greenspace initiatives

# What Must Be Done?

---

- The shoreline must be partially naturalized to discourage geese from landing and nesting.
- Shore stabilizing native species must be planted.
- Native plants and bushes must be planted to provide habitat for native species of birds, amphibians and insects.
- The pond must be dredged and narrowed to bring down water temperature and increase the speed of water flow.

# Naturalized Shorelines Will Stabilize the Soil and Discourage Geese from Landing and Nesting..



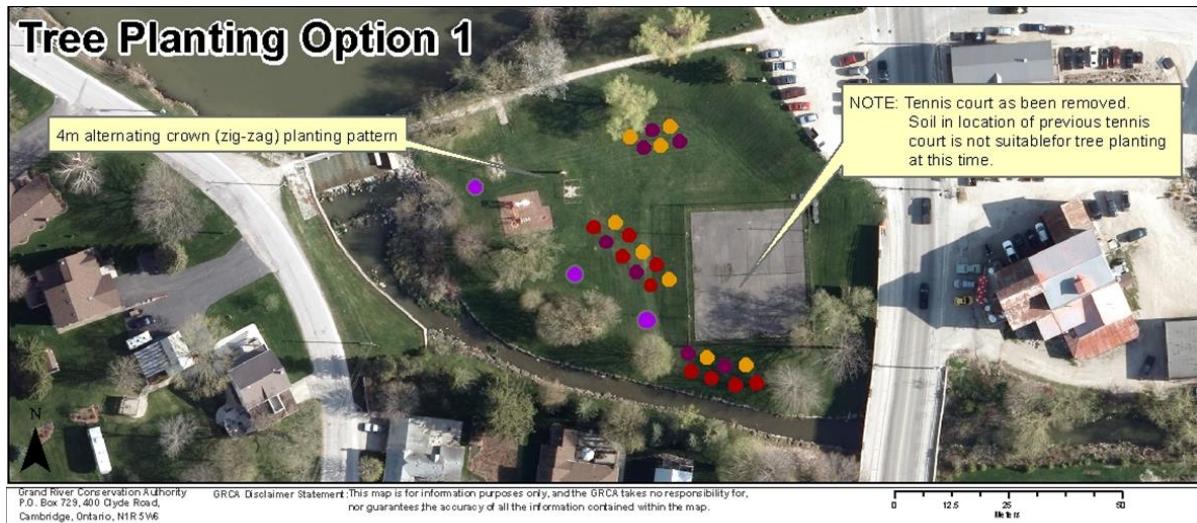
- Shorelines offer the greatest potential to enhance aquatic habitats
- The shoreline along south side of Queen's Bush Road has already been partly naturalized.
- 20 species of native wildflowers and shrubs have been planted.



# The Parkland Has Seen Tree Planting



- Option 2 has been implemented.
- Funded partially by local community group
- 4 species of trees planted to enhance forest cover
- Bushes and shrubs planted to provide habitat for natural species



# Native Species





# Next Steps

---

- Detailed design drawings are expected in June.
- Community consultation will be held regarding details of the plan after the drawings have been received.
- Check the Facebook page: **Wellesley Friends of the Pond** for details.
- Thanks to The Wellesley Heritage and Historical Society for the photos of Wellesley in the past.