

Wetlands of Sunset: setting the tone

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Once upon a time...

- Engaging Communities Committee of ESRC
- Roman Kruczynski, then President, Woodlands of Sunset Family Council
- Woodlands of Sunset

Woodlands of Sunset Long-term Care Facility

- Facility managed by the region
- Elderly and Alzheimer residents



Sustainability in this context

- **Social-ecological system in balance**
- **Education** (importance of ecosystem service and diversity): Target: the Community, Schools Agencies
- **Environment:** Ecological inventory; Maintenance; Restoration (invasive); Water quality; Characterization of the water quality; Butterflies and birds; Milkweed; Monarch including Monarch release; Community Garden
- **Health** (mental and physical): Residents and family; Staff; Neighbours
- **Social:** Human and nature interactions to study, Family interactions; Community involvement (clubs, naturalists...); Residents - Citizen Science
- **Artists:** Willow Bank School, Liz Chitty and Walker School of Arts and Performing; Walker School of music program for the elderly
- **Economics** Hypothesize that if less stress and wellbeing of residents and family = \$; financial impacts drainage on buildings vs ponds.

The VISION / what the initiative means

- Developed during a workshop
- **Wetlands of Sunset: connecting memories with nature**



STUDENT LOGO DESIGN CONTEST

Wetlands of Sunset: Connecting Memories with Nature

The Woodlands of Sunset Long-term Care Facility in Welland is looking for students to design a logo for a new project called *Wetlands of Sunset: Connecting Memories with Nature*.

We're looking for a logo that shows the relationship between nature, health, & people (the residents who live at Woodlands of Sunset, youth, the local community). We would like the logo to show how these relationships educate & benefit everyone.

PRIZES

Prizes include gift cards and other items valuing over \$50. The winning logo will be featured on our project website & materials.

RULES

- Students must be enrolled in a Welland or Palham elementary school (grades 1-8)
- Students may choose from the following paper sizes: 8.5x11, 8.5x14 or 11x17
- Students may use any medium (including pencil, crayons, markers, paint, crayons, digital, etc.)
- Please include contact information on the back of your picture or with the email submission (name, age, address, phone number, school name, teacher & grade)
- Only one entry per student
- By entering this contest, students declare that the logo submitted is their original work
- By entering this contest, students have the written permission of their parish or legal guardian to participate
- Submissions must be received by June 1st, 2016

ENTRIES

Email: Teachers, parents, or guardians can send submissions online to arsc@brocku.ca
Mail: Environmental Sustainability Research Centre,
Brock University, 1612 Sir Isaac Brock Way,
St. Catharines, ON L2S 3A1



DUE JUNE 1ST 2016

Three submissions



What has been done?

- Wetlands of Sunset Project Report -Project Management Tools for Successful Project Implementation (SSAS)
- Hydrological assessment of the wetlands
- GIS based exercise to explore the contribution of wetlands and surrounding areas in the water quality of Drapers Creek
- Two community nursing students: Laura and Alex
- Restoration assessment with Niagara College
- Milkweed planting
- Bat boxes with NPCA
- Bird Watching: here today

Birds and milkweed



Still many other things to do and study

Drought of this summer



Impacts of
neighbourhood and
new developments

Video

Connecting residents health and the wetlands

Rationale

Residents

Viewing nature has been shown to improve physical and mental health (e.g. less medications for pain, anxiety, aggression, shorter

Seniors in nursing homes have less well-being than those in the community so viewing nature may help them

Wetlands

There is no bird data for this area so we do not know what is here

Does engagement in citizen science impact the well-being of nursing home residents?

Citizen science is the collection and analysis of data relating to the natural world by members of the general public.

- It is a valid and accepted form of data collection.
- Backyard feeder counts: eBird database
Cornell University

What we did: the basics

- 11 people in total in the study (7 experimental, 4 control).
- All completed the well-being questionnaire at initiation, 6 months and 12 months.
- Experimental group received bird watching tutorial, counting sheets and 6-8 weekly visits for questions. Were interviewed at 6 and 12 months.
- Set up 2 bird feeders all residents could view from the common area windows



Responses to date

1. Residents love watching the birds
2. It is an activity they are doing with their family members
3. It calms the Alzheimer's day clients
4. It gives residents a point of conversation with other residents
5. It give some a reason to get out of bed
6. It reminds them of their earlier life
7. It provides a destination during therapy and a rest spot
8. The staff like watching the birds, it makes them feel good and gives a point of conversation with the residents



Outcomes

- Presentation on the results will be made to the Woodlands community
- A written report on the findings will be given to the Region and the Woodlands of Sunset
- A summary of the costs associated with the project and lessons learnt - raccoon proofing!
- 1-2 Academic publications



Project 1: Hydrologic Assessment of Wetlands (2015)

- To know pre-development and post-development scenario.
- Understand its contribution to the local hydrology during a storm event.



Pre-development
(2002)

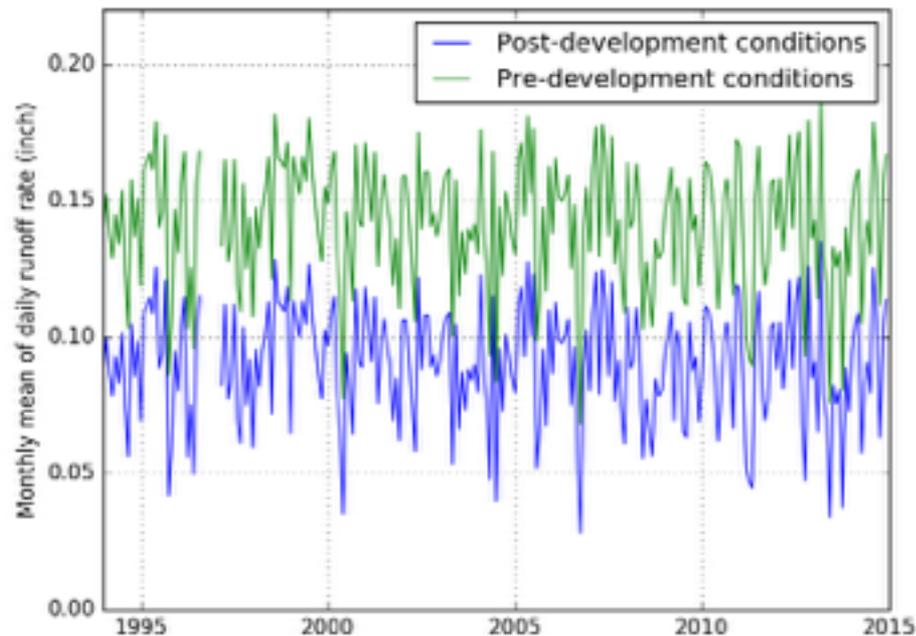


Post-development (2015)



Findings

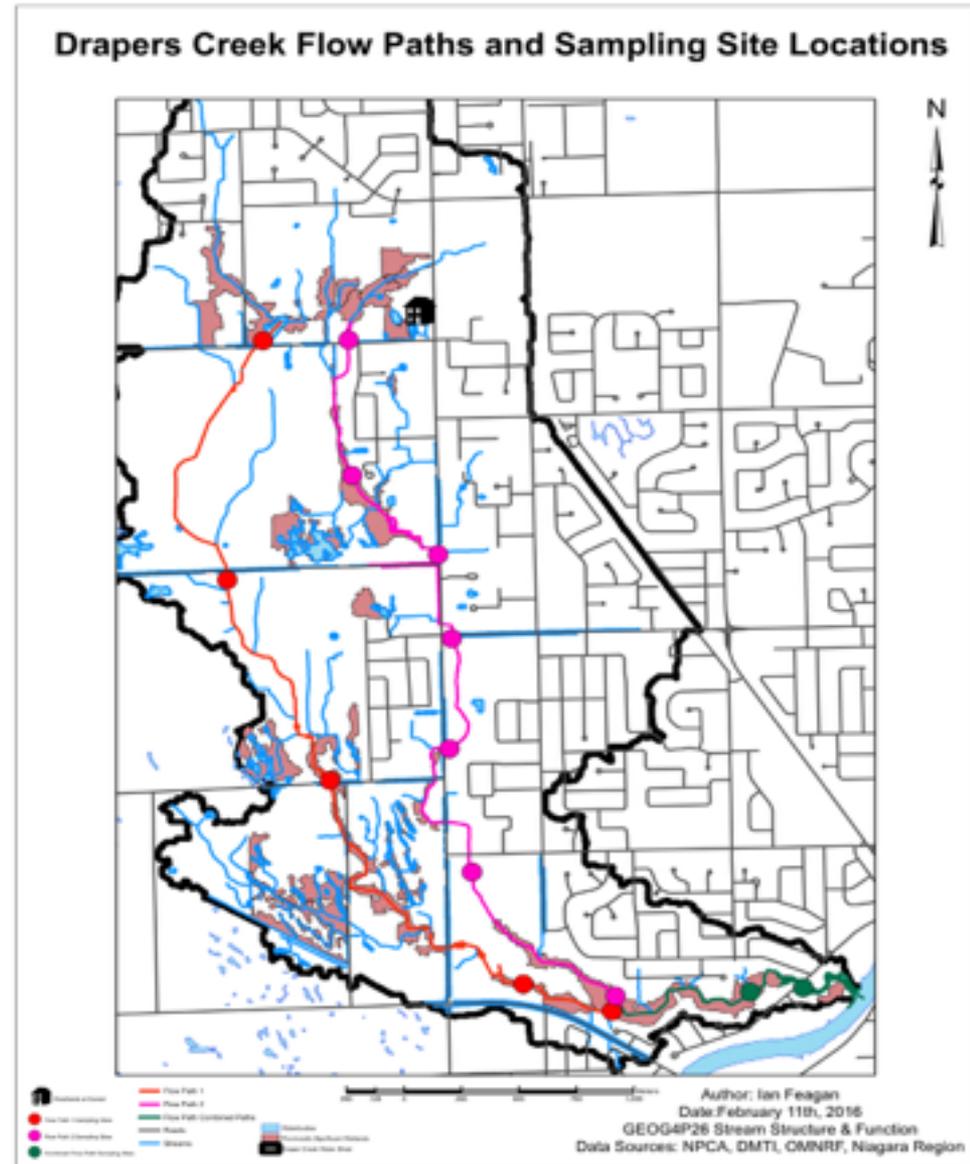
- During normal scenario, the wetlands can handle the runoff.
- During the extreme rainfall event of May 2015 (51.5 mm), the runoff would have increased by 50 mm from the site.
- Groundwater interaction is complex



	Pre-development	Post-development
<i>Forest cover</i>	72.1%	56.1%
<i>Grass cover</i>	20.4%	11.5%
<i>Wetlands</i>	7.5%	7.5%
<i>Runoff (cm)</i>	0.77	1.27
<i>Infiltration</i>	1.98	1.42

Project 2: Contribution of Wetlands and Surrounding areas in the Water Quality of Drapers Creek (2016)

- Identify the flow path from the wetlands to the Drapers Creek.
- Prepare a sampling location plan for water quality within the sub-watershed starting from wetlands to the Drapers Creek.



Next Step

Project 1:

- a) Depth of the wetlands should be measured.
- b) Onsite rainfall, and groundwater monitoring should be done.

Project 2:

- a) Water quality sampling should be conducted to understand the impacts of the developments on the wetlands and the Drapers Creek.
- b) A preliminary literature search indicated that gap exists between our current understanding of inland wetland systems and how they relate to watershed when they are positioned as headwaters in a drainage basin. This should be further studied.