WHEATLEY RIVER WATERSHED NEWS

WELCOME BACK

Another successful summer at WRIG has come and gone! Although things were slightly different this season, our team was still able to accomplish a great deal. From finishing a major stream restoration project upstream of Rackham's Pond to planting over 700 native trees and shrubs, it was certainly a prosperous summer.

IN THIS ISSUE

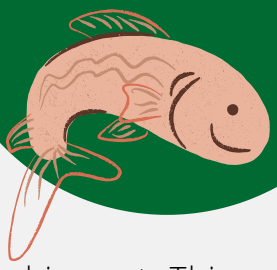
NOW THAT THE LEAVES ARE CHANGING, SO IS OUR WORKPLACE

After a very busy summer, we were so pleased to receive funding from the Environmental Careers Organization (ECO) Canada to keep two of our summer staff on through the fall and winter! Tessa Craig is doing a 6-month internship and Izzy Fitzpatrick is doing a part time co-op placement until December. So far we have been finishing summer projects, conducting fall headwater surveys, helping the Hunter-Clyde Watershed Group with electrofishing surveys, applying for project funding opportunities, and planning future projects.

WRIG'S SUMMER 2020 STREAM RESTORATION PROJECT

FUN FACT

Nov. 21st is national fisheries day!



Natural streams typically have a meandering path and alternating riffle-pool pattern. Human activity can disrupt this configuration, thereby weakening the ecosystem and damaging local wildlife populations. In-stream structures called flow deflectors concentrate low water flow in the channel center, helping to restore a natural stream pattern. During the 2017 field season, three deflectors were built upstream of Rackham's Pond. Since their installation, they have had limited impact. This summer, WRIG returned to the deflector project and intensified efforts. Following the recommendations of the PEI Watershed Alliance and Fish and Wildlife PEI, one new wing deflector was built, and adjustments were made to the 2017 structures.

The new structure mirrors the downstream deflector; together, they "pinch" the stream. Narrowing the channel increases flow rate, which scours pools for fish refuge. The downstream deflector point had been undermined, resulting in a small cavity. This bypass impedes the efficacy of the deflectors, so we filled the cavity with extra rock and armoured the base. The width of one upstream deflector was expanded by one foot. The other was reinforced with granite rock, as there was little rock still in place from 2017.

This project was made possible with the help of Bedeque Bay Environmental Management Association and Hunter-Clyde Watershed Group and funding from the PEI Wildlife Conservation Fund. Thank you!

INVASIVE SPECIES

WHAT IS AN INVASIVE SPECIES?

"An organism that has become established outside of its native range, has a tendency to spread, and causes ecological, economic or social problems." (PEIISC)

DID YOU KNOW?

On PEI, there are 33 reported invasive plants, 6 invasive insects, and 2 fungal diseases.

WHY DO WE MONITOR AND REMOVE THEM?

Invasive species can reduce biodiversity, lower habitat quality, and out-compete native species. They can negatively impact industries and harm human health. (PEIISC)

This summer, WRIG spent many hours removing bittersweet nightshade, *Solanum ducamara*, a perennial climbing vine that can choke out native riparian vegetation. In streams, it can impede water flow and increase sediment deposition, thereby degrading fish habitat. Izzy is pictured below holding a large mat of nightshade roots removed from Rackham's Pond.

Bittersweet nightshade removal is a time-consuming and physically demanding process. We remove as much of the plant and root system as possible to prevent vegetative reproduction. Invasive species' plant debris must be bagged and taken to PEI Energy Systems for incineration.

This plant has leaves similar in size and shape to that of Morning Glory, though its flowers are purple instead of pink. If you suspect Bittersweet Nightshade (or other invasive vegetation) is present on your land, y ou can contact WRIG or the PEI Invasive Species Council (PEIISC).

PHOTO CONTEST

Calling all shutterbugs!
WRIG's photo contest has returned. We want you to capture our stunning watershed area! There are three entrance categories: land, water, and wildlife. Photos will be judged by professional photographer John Sylvester. PRIZES available!

Submit your entries via email to manager@wheatleyriver.ca by January 1, 2020

THE SCIENCE BEHIND FALL FOLIAGE

by Tessa Craig

To understand why leaves turn those jaw-dropping shades of red, orange, and yellow, it is important to know why they're green first. It all begins with photosynthesis, the process through which plants and other primary producers convert solar energy into chemical energy. We see leaves as green because they are full of chlorophyll, a photosynthetic pigment that reflects green light. As chlorophyll absorbs photons of red and blue light, it harnesses the light energy to power a series of chemical reactions turning water and carbon dioxide into sugar and oxygen.

As summer comes to an end, temperatures decline, daylight hours dwindle, and deciduous trees begin their transition to winter dormancy. When photosynthesis becomes inefficient, chlorophyll degradation and nutrient and water reabsorption from the leaves begins. As chlorophyll is broken down, other pigments become visible.

DID YOU KNOW?

The shortening of the days also triggers the formation of the abscission layer, a corky layer between the leaf and the branch, that protects the branch tip after leaf drop.

FUN FACT

Carrots are indeed good for your eyes! They get their orange colour from carotenoids, which help prevent light damage.

We all know that too much sun can be harmful. In plants, the excess absorption of light energy creates a highly reactive form of oxygen that can damage cells. Trees rely on photo-protective pigments like carotenoid and anthocyanin to prevent this reaction. Carotenoid is present in the leaves all summer, but its red, orange, and yellow colours are masked by the abundance of chlorophyll. Anthocyanin is only produced in the fall prior to leaf drop and is responsible for red, blue, purple, and black hues.

Leaf colours depend on the concentration of each pigment and the interactions between them. Pigment formation varies with temperature, moisture, and sunlight, so each tree is unique every fall. Chlorophyll, carotenoid, and anthocyanin all break down with light exposure, so fall foliage always fades to brown, due to tannin compounds in the cell membrane.

Check out the following page for some examples of native fall foliage!

1 - Red Maple
2 - Sugar Maple
3 - Bunchberry Dogwood
4 - Red Oak

NATIVE REPTILES

by Izzy Fitzpatrick

October 21st was Reptile Awareness Day! PEI has three native reptile species, all of which are snakes. (Sorry Indiana Jones fans - he may not want to visit our beautiful Island after hearing that)! Oftentimes, they are not as fearsome as people think; PEI's snake species are all non-venomous. It is unfortunate that snakes are frequently misrepresented because they are actually vital organisms in many ecosystems. As both a predator and prey species, snakes are crucial to maintaining a balance in food webs and are natural pest control.

DID YOU KNOW?

Snakes spend the winter in a dormant state called brumation. Sometimes they brumate in group sites called hibernaculums.

PEI's three native reptiles include the Common Garter Snake (*Thamnophis sirtalis*), the Red-Bellied Snake (*Storeria occipitomaculata*), and the Smooth Green Snake (*Opheodrys vernalis*). While Green snakes are mainly insectivorous, Garter snakes eat insects, amphibians, and mice. Red-bellied snakes eat insects and invertebrates like slugs and snails: common garden pests!

Although many people are reluctant to like snakes, it is important to educate everyone on the importance of these wriggly creatures. Due to habitat loss from clear-cutting, and the use of insecticides, snake populations are declining. If you still feel hesitant to give them the benefit of the doubt, remember that they eat spiders!

Here's a Red-Bellied Snake that we saw near Rackham's Pond!

Corporate Sponsors and Funding Sources

- Cymbria Lions Club
- Oyster Bed Esso & RiteSTOP
- Creekfield Homeowner's Association
- Cymbria Campground
- Vanco Farms Ltd.
- PEI Watershed Management Fund
- PEI Wildlife Conservation Fund
- Skills PEI Student Funding
- PEI Jobs for Youth Program
- Canada Summer Jobs Program
- ECO Canada Employment Programs

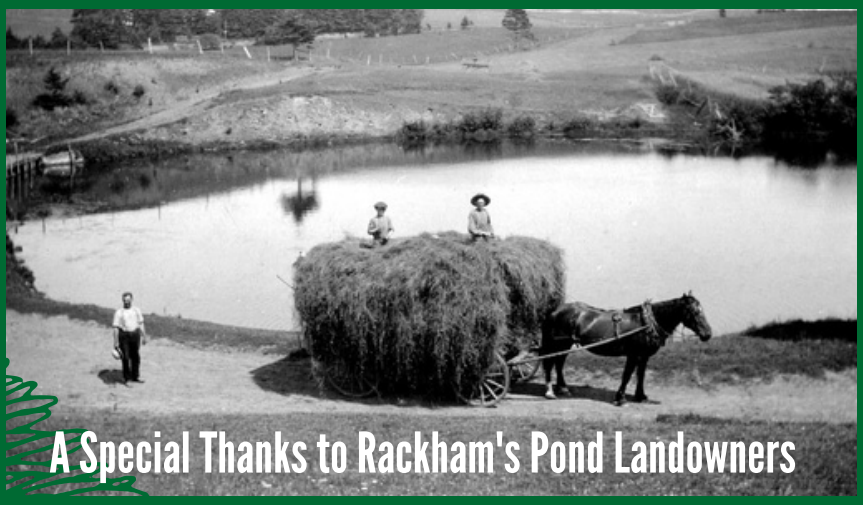
The Wheatley River Improvement Group
@wheatleyriverimprovementgroup

2020-21 Board of Directors

Gary Loo - Secretary
Hailey Blacquiere - Treasurer
Kayla Nieuwhof - Director
Mélanie Labelle - Director
Micah Gallant - Director
Peter McDougall - Director
Renée Pastoor - Chairperson
Stewart MacRae - Director

Contact Information

Watershed Manager: Maggie McConnell
Email: manager@wheatleyriver.ca
Phone: 902-963-3198
Website: www.wheatleyriver.ca
Office: 2184 Church Road, Rustico



A Special Thanks to Rackham's Pond Landowners

Grant & Nancy Rackham
Steven Rackham
Craig & Michele Ling
Charles & Laura Lipnicki
Phillip & Shirley Weatherbee
Jody Mokler
Susan Axworthy
Melvin & Debbie Ling

WE NEED YOUR SUPPORT!

Would you like to be a part of restoring and protecting our watershed? This is your chance to help - join WRIG's 2021 membership! All proceeds and donations go directly back into our community as we work to preserve and enhance the quality of our environment in the Wheatley River and sub watersheds.

WHEATLEY RIVER IMPROVEMENT GROUP 2021 MEMBERSHIP

Individual or Family $10.00
Corporate or Supporting $50.00
Name: _____
Address: _____
Telephone: _____
Email: _____
Add to WRIG's email list? YES ___ NO ___
Amount enclosed: $_____

Please mail the completed form and payment (cash or cheque) to:
2184 Church Road Hunter River, PE, C0A 1N0
Or send an e-transfer to:
manager@wheatleyriver.ca

Thank you for your support!