

Welcome!



2020 PLA Eco-Workshop  
Saturday July 18, 2020

# PLA Eco-Workshop Agenda



- **Kevin Boyle** (District of Muskoka) - Road Salt Effective Use and a preview of the new Muskoka Flood Plain Maps
- **Mike Peppard** (District of Muskoka) - Monarch Butterflies and Their Habitat
- **Rob Bosomworth** (Safe Quiet Lakes) – Organization Overview and 2020 Programs
- **Wendy Somerville (PLA)** - Algae study pilot project; Algae Causation study; 2019 Pen Lake Testing Results

# Eco Workshop Report of 2019 Testing on Peninsula Lake

1. Algae Causation Study
2. Algae Working Group Pilot Project
3. 2019 Pen Lake Testing Results

**Wendy Somerville (PLA)**



# 1. Algae Causation Study

- Amendment to District of Muskoka Official Plan
- Classification of Peninsula Lake as 'vulnerable' due to 2017 algae bloom
- Triggered a causation study to try and determine the cause of the bloom
  
- All environmental data from the last 10 years reformatted and forwarded to Hutchinson Environmental to aid them in their study
- Testing data from MNRF, bacterial testing and water temperatures and incident reports from Jim Marshall. Also several studies performed by University of Waterloo and Queen's University.



# 1. Algae Causation Study

- Second Stakeholder Meeting being held 'virtually' on Zoom by Hutchinson Environmental on July 22 at 10:00 am.
- They will be presenting their draft findings and recommendations for the public.
- It will give us an opportunity to ask questions and provide feedback
- If you wish to attend contact Emily Crowder

[Emily.crowder@muskoka.on.ca](mailto:Emily.crowder@muskoka.on.ca)



## 2. Algae Working Group – 2019 Pilot Project

### PURPOSE:

- **Monitor** all algae combined and blue-green algae using fluorometric techniques
- **Plan and pilot** methods for fluorometric analysis of phytoplankton for further use by Lake Associations
- **Develop** information materials and a presentation on algae for delivery to Lake Associations
- **Communicate** these efforts to other Lake Associations

### OBJECTIVE:

- Develop a greater understanding of algae by using volunteers to collect **DATA** on the **DISTRIBUTION, ABUNDANCE** and **SEASONAL CYCLE** of phytoplankton across Muskoka area lakes to:
  - a) Identify conditions favouring algae
  - b) Detect trends in phyto plankton abundance
  - c) Provide management advice



## 2. Algae Working Group – 2019 Pilot Project

### Results:

- 4 lakes taking part in a pilot project
- Samples collected every 2 weeks and sent to Dorset lab for testing for the presence of blue/green algae
- Confirmed bloom on 3 Mile Lake in August and it coincided with a prominent spike in the phycocyanin record of that lake over 2 subsequent sampling sessions
- Final 2019 report due soon
- Note: No testing being done in 2020 but perhaps next year



### 3. 'Lake Partners Program' – PLA's Yearly Testing Program

- Peninsula Lake is part of the *Lake Partners Program* and each year at 'spring turnover', Jim Marshall collects water samples at two places on the lake and sends them to MNRF lab in Dorset.
- Samples are tested for Phosphorus and Calcium and are available for any further tests the MNRF wish to perform.
- Jim does additional testing for us at 2 week intervals from mid July to mid September on the following:
  1. Secchi disk reading which tests for clarity
  2. Water temperature
  3. Bacterial testing for both total coliform and E.coli





### 3. 'Lake Partners Program' – PLA's Yearly Testing Program

<b>Classification of Lakes</b>			
	<b>BEST</b> <i>(Oligotrophic)</i>	<b>MODERATE</b> <i>(Mesotrophic)</i>	<b>POOR</b> <i>(Eutrophic)</i>
	Unenriched / Few nutrients	Moderately Enriched	High levels of nutrients
<b>Clarity</b> Secchi disk reading	over 5 meters	3 – 4.9 m	less than 2.9
<b>Phosphorus</b>	less than 10 ug/l	11-20 ug/l	21+ ug/l
<b>Calcium</b>	1.2 – 2.5 mg/L is the threshold for sustainability of crustaceans and mollusks. (water fleas, crayfish, clams, snails)		



### 3. 'Lake Partners Program' – PLA's Yearly Testing Program.

Classification of Lakes				Pen Lake
	<b>BEST</b> <i>(Oligotrophic)</i>	<b>MODERATE</b> <i>(Mesotrophic)</i>	<b>POOR</b> <i>(Eutrophic)</i>	<b>2019 Results</b>
	Unenriched / Few nutrients	Moderately Enriched	High levels of nutrients	
<b>Clarity</b> Secchi disk reading	over 5 meters	3 – 4.9 m	less than 2.9	<b>4.1m</b>
<b>Phosphorus</b>	less than 10 ug/l	11-20 ug/l	21+ ug/l	<b>10.3 ug/l</b>
<b>Calcium</b>	1.2 – 2.5 mg/L is the threshold for sustainability of crustaceans and mollusks. (water fleas, crayfish, clams, snails)			<b>4.3 mg/l</b>

ICE DAYS 2019 = 130 (December 4 – April 13, 2020)

### 3. 'Lake Partners Program' – PLA's Yearly Testing Program.

#### BACTERIAL TESTING

##### Criteria:

- Bacterial counts considered to present a health risk in recreational waters at the following levels:

**Total Coliform:** Greater than **1000** cfu / 100 ml of water

**E. coli:** Greater than **100** cfu / 100 ml of water

##### Methodology:

- 11 sites are tested around the lake, utilizing appropriate controls, at 2 week intervals. If the testing results in a positive test, the sites are retested 2 days later. If retests are still positive the residents or resort owners are notified.

##### 2019 Results:

- Although there were several incidents of E.coli found to be over acceptable limit, only in 1 circumstance did the tests remain positive on retesting and the appropriate people were notified.

Any Questions?

Thank You!

