

Leonard Lake Water Quality Update - 2022

- **Background – why are we concerned ?**
- **What we are doing**

Author : Ken Riley, Leonard Lake Water Team Chair

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A Story and a Question

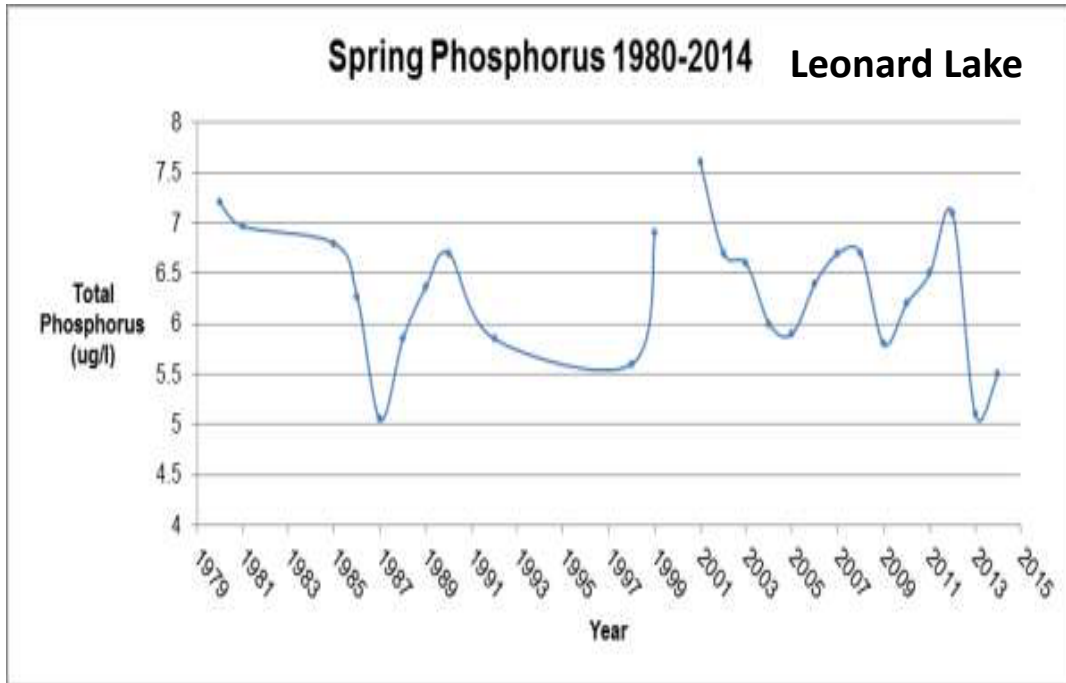


How do Leonard lake residents judge our Water Quality? (2021 survey)

- Only 3 % of residents rate our water quality as “Excellent”
- 60% believe our water quality is declining
- 90% concerned about algal blooms
- Residents’ Concern is based on their Local Knowledge
- Local Knowledge can be more important than data

How do “experts” judge our water quality ?

- District and TML Classification largely based on phosphorus



- Centre of lake phosphorus is low – not increasing
- Nutrient status is Low – Oligotrophic
- Water quality is “excellent” (MWC Report card)
- Leonard Lake no longer classified as “over threshold” for Phosphorus
- Leonard Lake Algal Bloom Causation Study still pending from District – Draft in October?
 - Penn Lake study completed. “blooms caused by Climate Change not development” - an unsatisfactory conclusion
- similar conclusion expected for Leonard lake study .

- **We need our own studies to protect and manage our water quality.**

We have a fantastic Water Team

Active members :

- Esther Giesbrecht – Testing procedures / recording
- Bill Heatlie – Engineer / equipment
- Bruce McNeely – Boat captain
- Betty Isbister – Secchi specialist –water clarity
- Sharon Abbot-Fry - Australian member
- Rohan Riley - Microscopy algal ID
- Deb Solariski – Locating shoreline runoff points
- Ken Riley- Board liaison

Past / Ongoing Water Testing Work

- Participation in other programs- Lake Partner, Muskoka Watershed Council- algae, Muskoka Lakes Association
- 2017 Intensive Study “Leonard Lake Water Quality and Algal Blooms” – Report commissioned by LLSA. Excellent baseline
- 2020- Purchased Fluorimeter - Can measure the “signature” left by blooms after they occur, or possibly before they occur .
- Since 2017 “Eyes on the Lake”, with residents’ participation.
- Yearly Blooms since 2017.
- Detailed documentation and analysis of bloom-related data by water team

Blooms recorded from June to November

-understanding Bloom behavior



July 16, 2022
Sighting -
“streamers “



Positive
confirmation
by
Microscope

Residents
alerted
when
Warranted

2022 Season Project-

Understanding our Water quality and Algal blooms

- Strong support from the Board and Residents – generous financial contributions – Thank You!
- Expert advice from Dr Mark Vershoor – 3 day visit next week
- Economical water chemistry testing at Edmonton Laboratory – same as in 2017
- **How has water quality changed in 5 years ?**
- **Where is the bloom-causing nutrient coming from ?**
 1. Runoff into the Lake ?
 2. Near-shore areas ?
 3. Deep water- released from Lake bottom ?

Tracking the Nutrient

1. . Runoff from shore

- 10 points identified around Lake - permission from residents- thank you!
- sampled during runoff and after rain
- Testing with Fluorimetry, and total phosphorus



Sampled with bottle
fastened to broomstick

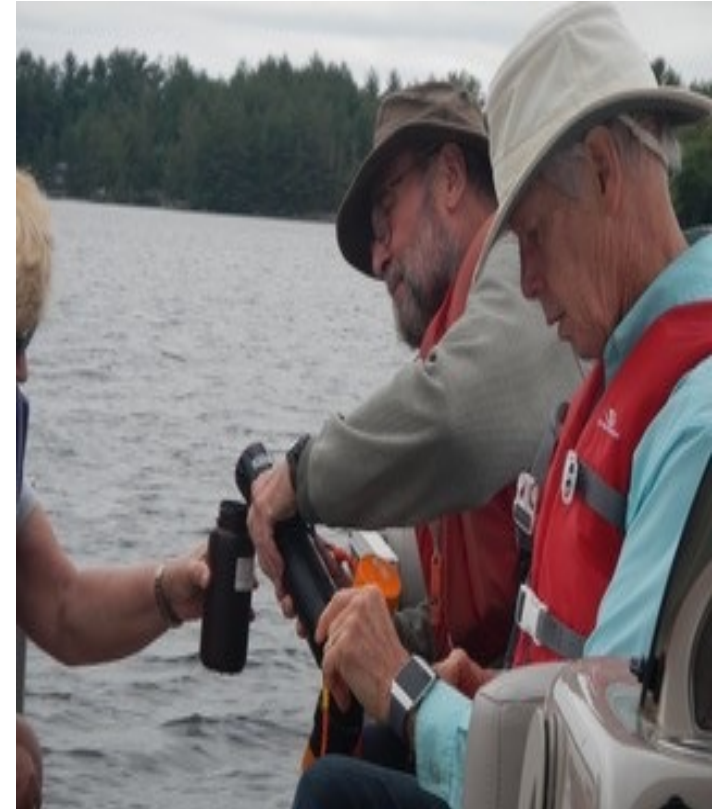
Tracking the Nutrient. 2

Nearshore sampling

- 3 locations sampled biweekly along shore, where blooms have occurred in past years.
- Bottle- on –a- stick sampling
- Testing with fluorimetry, also phosphorus

Tracking the Nutrient 3

Deep water – Legacy phosphate release?



This testing starts next week – Stay tuned!
For more information visit our water table