

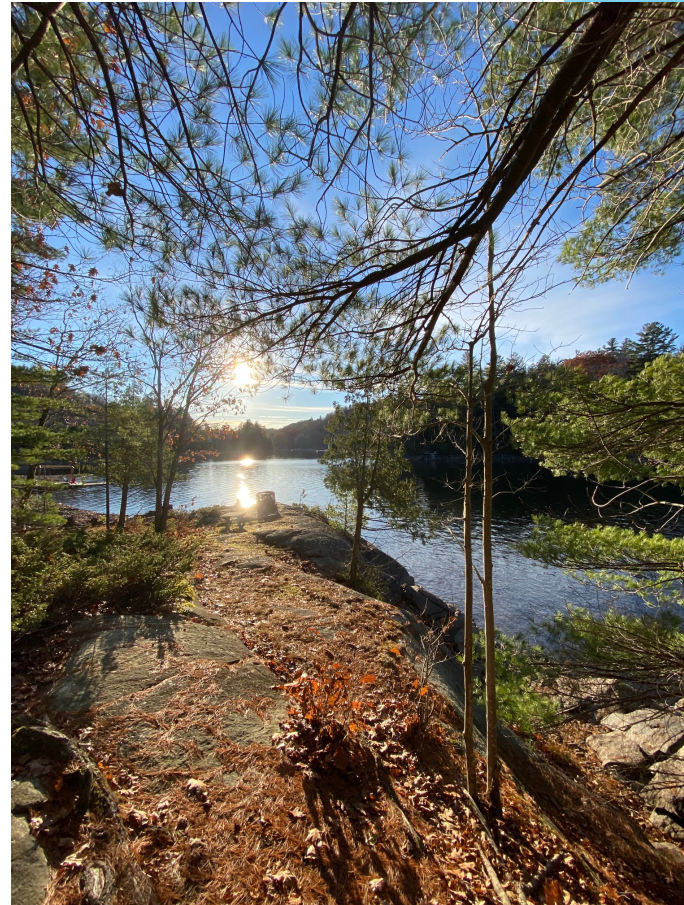
Redstone Lake Cottagers' Association's Lake Health Monitoring & Research



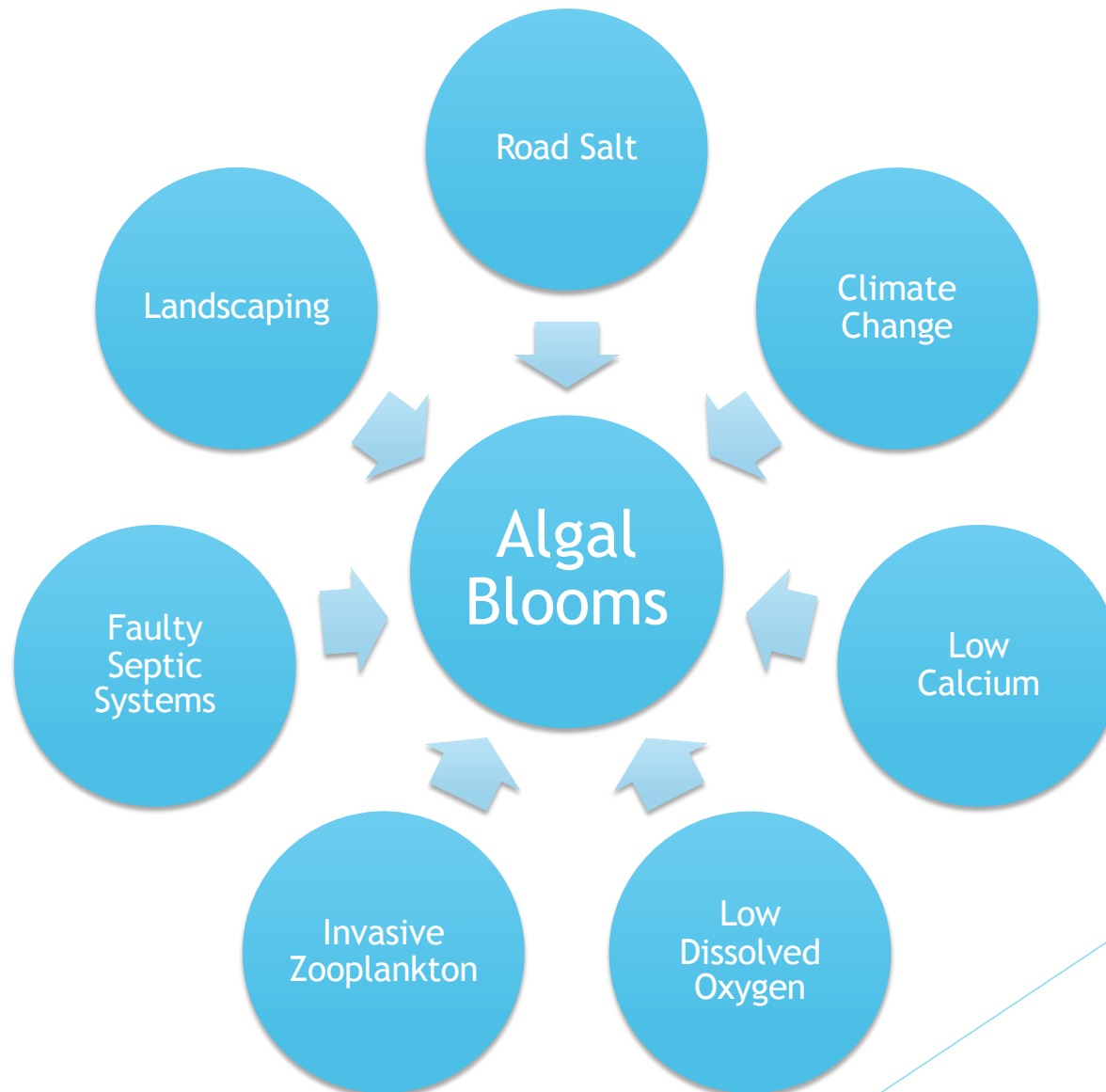
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Aquatic Ecologist - Anglerfish Aquatic Science
PhD Student - Water Institute, University of Waterloo

Cumulative Effects

Cumulative effects are changes to the environment caused by the combined impact of past, present, and future human activities and natural processes.







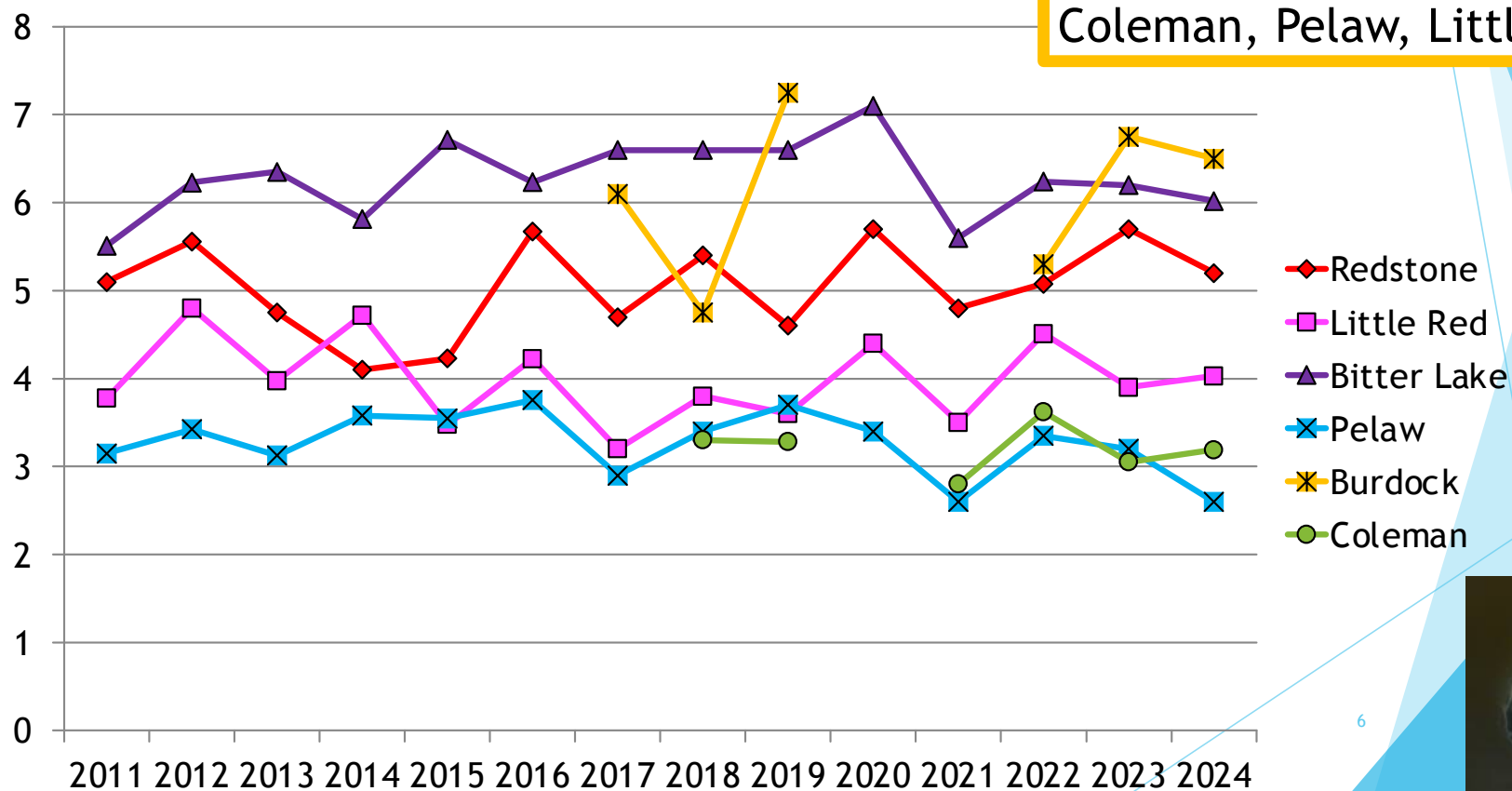
What do we know about the health of RLCA's lakes?



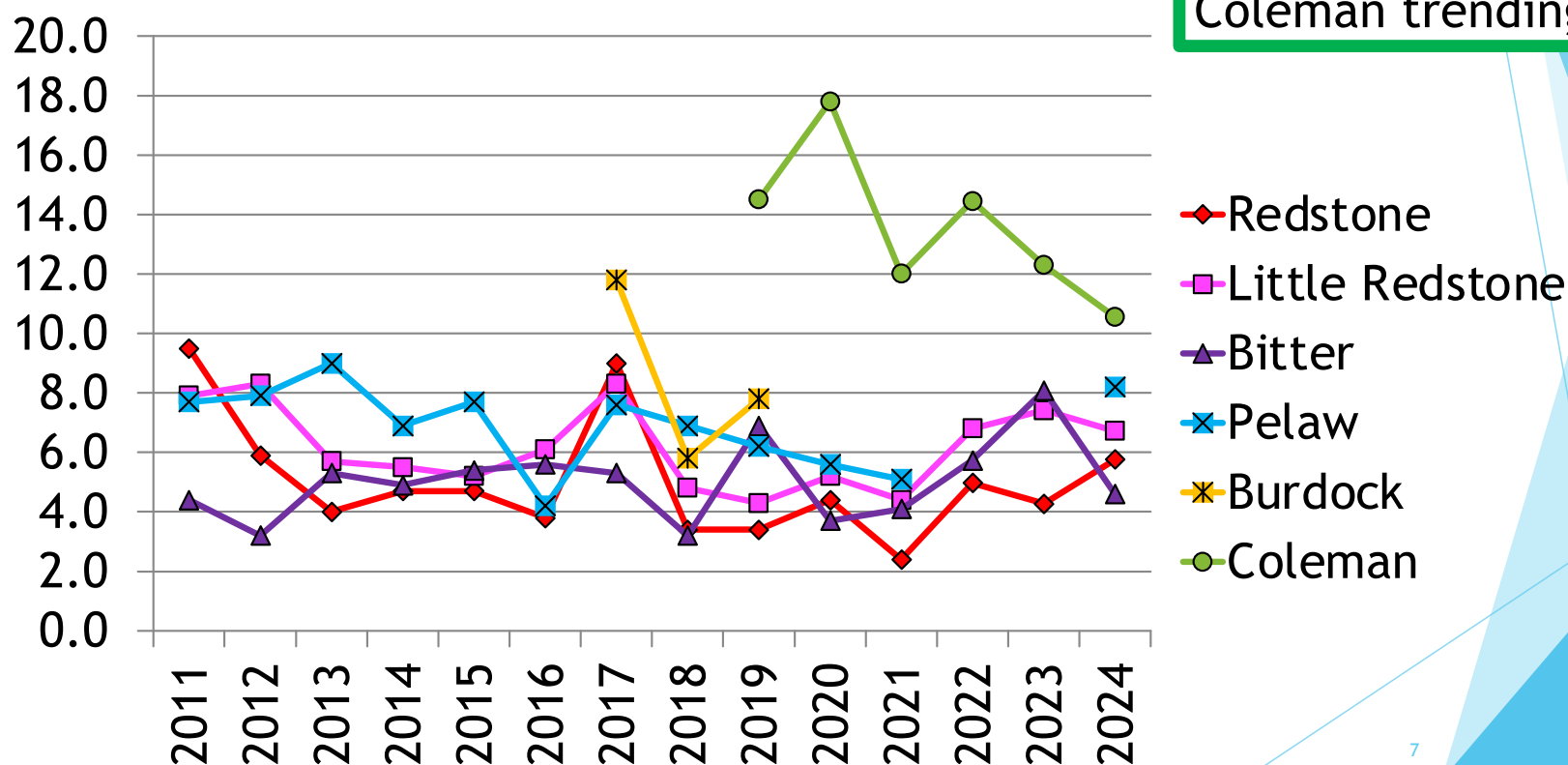
Secchi Disk Depth (m)

High transparency: > 4m
Big Red, Bitter, Burdock

Moderate transparency: > 2m
Coleman, Pelaw, Little Red



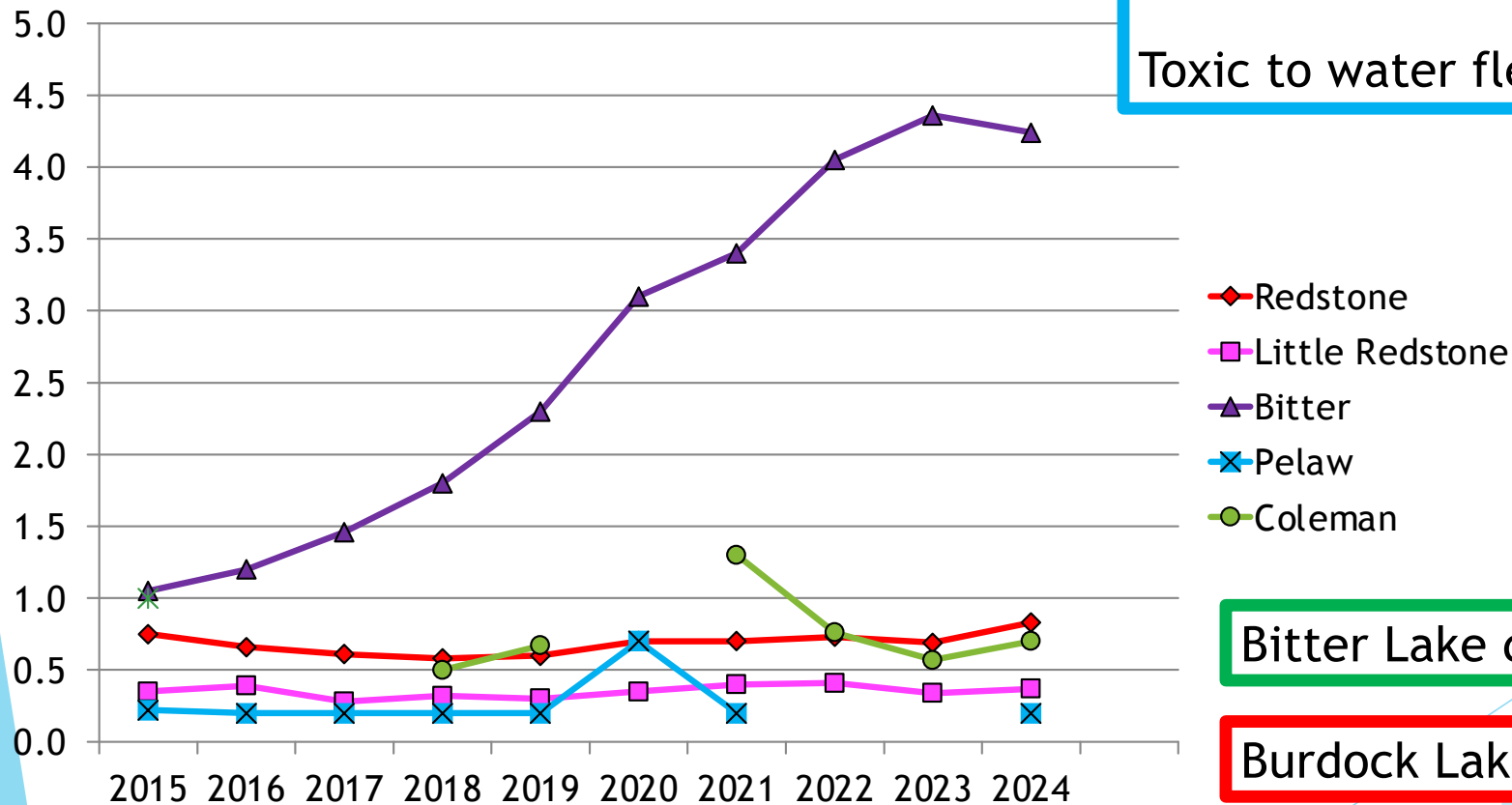
Spring Phosphorus Levels (ug/L)



All lakes below 20 ug/L
threshold for algal blooms

Coleman trending down?

Chloride Levels (mg/L)



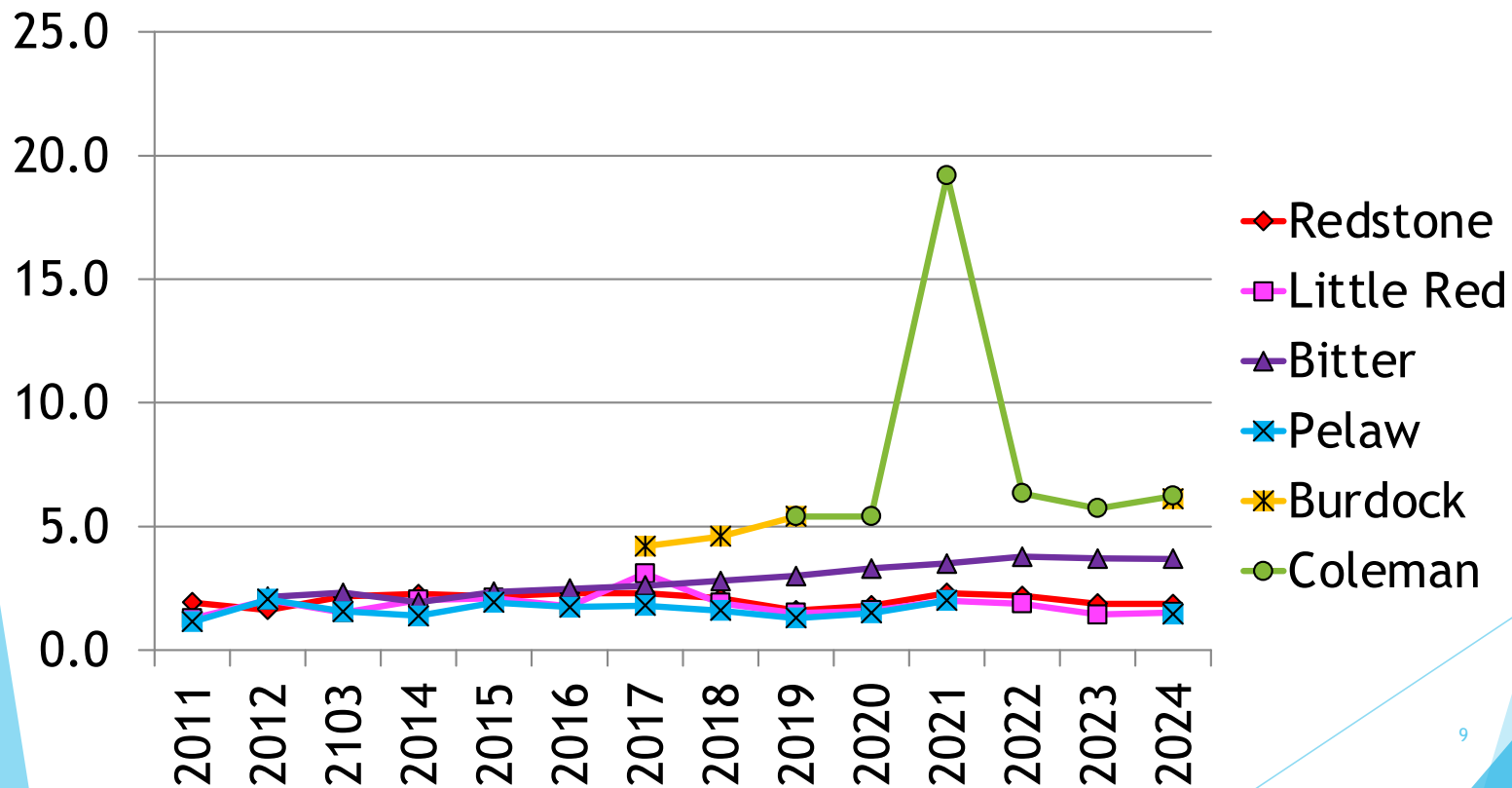
Guideline for Aquatic Life: 120 mg/L

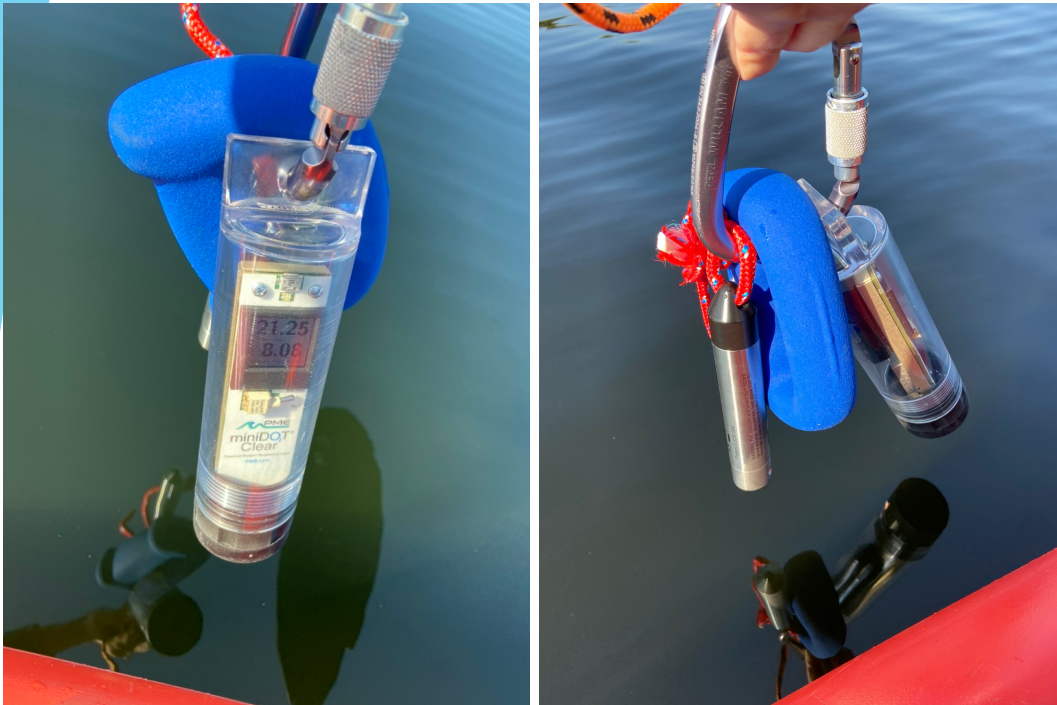
Toxic to water fleas: 10-20 mg/L

Bitter Lake decreasing?

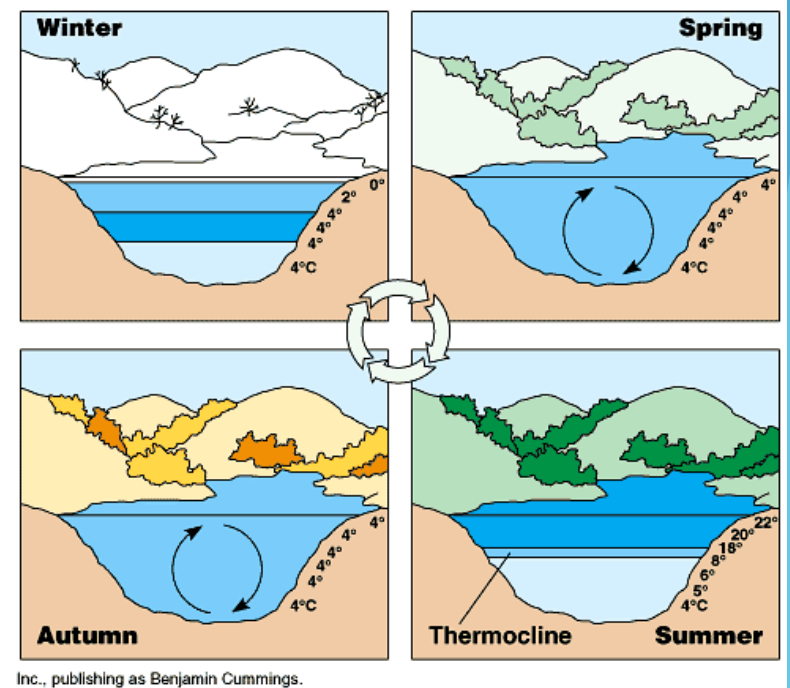
Burdock Lake: 40.9 mg/L

Calcium Levels (mg/L)





Dissolved Oxygen



Late summer anoxia (<1 mg/L)

- Pelaw
- Burdock
- Coleman

What can we do?

► Awareness

- We can work together to reduce the impact of our collective actions.
- Do not assume the current health of our lakes will remain the same.

► Protection

- Shoreline Restoration.
- Reduce boat speed within 30 m of shore.
- Maintain septic systems in good working condition.
- Clean, drain, dry your boats
- Don't alter lake habitat

► Monitoring

- Monitoring lake health will help us to identify the most urgent protective measures.



Monitoring Programs

- ▶ RLCA lakes currently participate in the provincial Lake Partner Program
 - ▶ Annual calcium + chloride + phosphorus samples
 - ▶ Monthly secchi disk measurements
- ▶ RLCA Lake Stewards will collect annual DO measurements in September
- ▶ ULINKS + Trent University conduct an annual benthic invertebrate monitoring program



New Lake Stewards

- ▶ Is anyone interested in becoming a lake steward?
- ▶ We need at least one steward for Long/Tedious Lake

2025 Vegetation Surveys?

- ▶ U-Links has asked if we would like to participate in their Aquatic Species Inventory for Headwater Lakes
- ▶ \$3,000 for all 7 lakes
- ▶ Working with a graduate student from Trent University
- ▶ Need volunteer who will be trained
- ▶ Need volunteers with boats for each lake



Get the Lead Out

- ▶ Easily scratched or dented?
- ▶ Weights, sinkers, jigheads
- ▶ 1 ounce or less
- ▶ Any amount accepted
- ▶ 1 lure per cottage/member
- ▶ Sign the petition to ban the sale of lead tackle

Safe Quiet Lakes

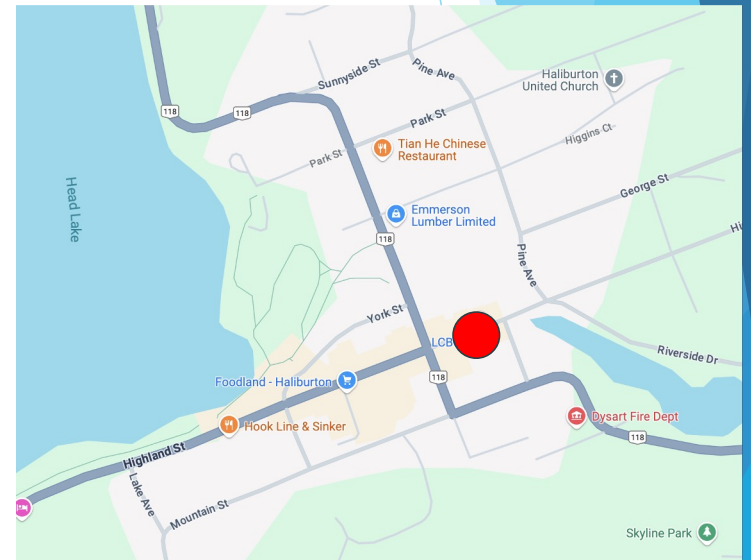
- ▶ Promote safe, quiet waterways and respectful boating practices through education, advocacy and legislative change
- ▶ 2025 Your Lakes - Your View Survey
 - ▶ gathers experiences and opinions of all who use and love the waterways in the Muskoka, Lake of Bays, Haliburton and Georgian Bay regions.
 - ▶ Want to know about the joys of activities on the water, and what detracts from your enjoyment of the lakes.
- ▶ Transport Canada considers response when regulating the noise levels of boats
- ▶ Wake Aware
- ▶ **Safequiet.ca**



Injured turtle?

1. **Pull over** in a safe location
2. **Collect** the turtle
3. **Call or text Turtle Guardians**
4. **Drop off** the turtle in Haliburton

Keep an eye out in wet weather, and on the side of the roads during spring (nesting season).



235 Highland St. Lower Level.
(right next to Pet Value)

Turtles can recover from serious injuries.
They can even lose 70% of their blood and survive.



If you cannot stop: call or text Turtle Guardians.

Phone 705-457-1222

SMS/Text 705-854-2888

But you can be the hero by simply collecting it yourself.



What else can we do?

- ▶ Sample chloride this fall in Burdock to explore if chloride levels are high year-round or if they are likely the result of winter road salting?
- ▶ Collect deep water nutrient samples in the late summer at Coleman, Pelaw, and Burdock to see if nutrients are being released from the sediment during low oxygen conditions.

Are there other concerns for lake health?

Questions?



References

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- Gov BC.. (2021). Elk Valley Cumulative Effects Management Framework. Victoria: Government of British Columbia. Accessed Nov 3, 2021. Available from: <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework/regional-assessments/kootenay-boundary/elk-valley-cemf>.
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- Noble, B. (2021). *Introduction to Environmental Assessment: A Guide to Principles and Practices* (4th ed.). Don Mills: Oxford University Press.