



WOODLANDS
& WATERWAYS
EcoWatch



Testing the Waters

Water Quality Monitoring on Bob Lake

Jack Scott - Water Quality Coordinator

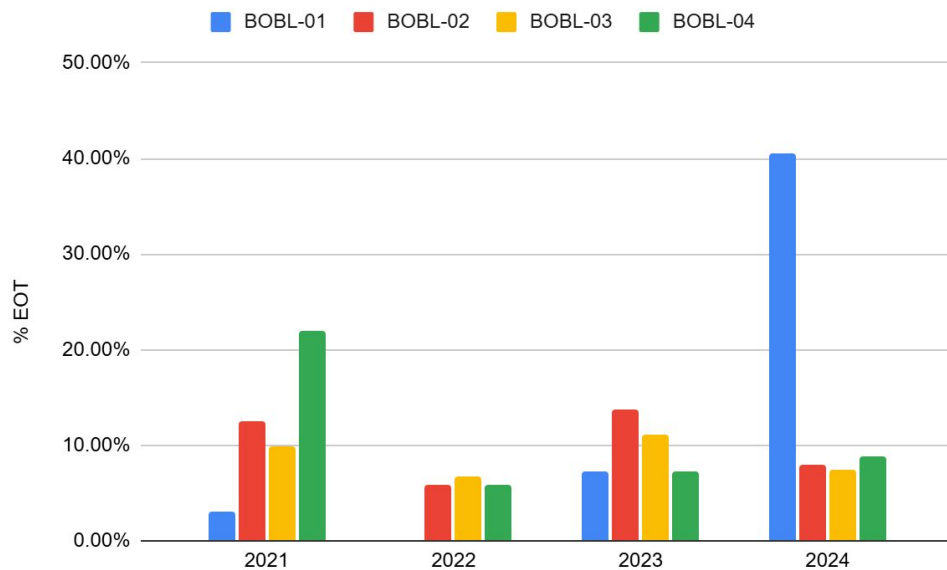
The background of the slide is a photograph of a calm lake. In the foreground, the blue metal bow of a boat is visible. The water is dark and reflects the sky. The far shore is lined with trees showing vibrant autumn colors, including shades of red, orange, and yellow, interspersed with some green trees. The sky is a pale, clear blue.

Current State of Testing the Waters Program

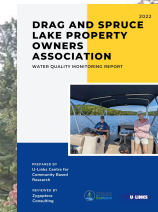
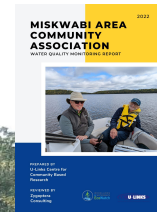
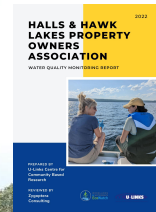
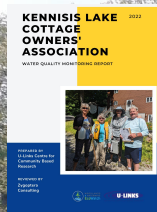
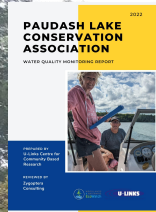
- 61 Sites across 39 Lakes in Partnership with 25 Lake Associations
- Lake Association Volunteer Supported
- Standardized, Region Specific Protocols
- Actionable Reporting for Stewardship
- Expanding Capacity for Long-term Trend Analysis

Woodlands and Waterways Ecowatch

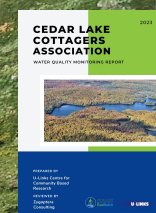
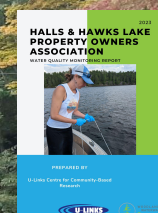
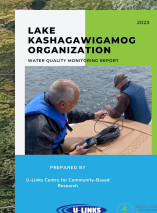
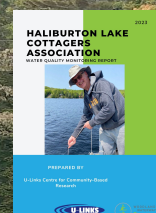
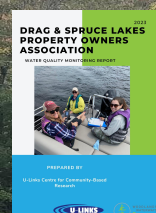
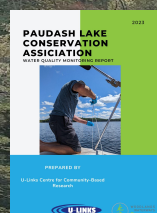
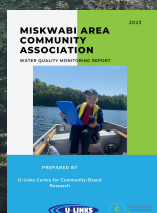
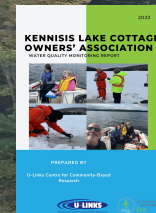
- 4 Years of Benthic Biomonitoring



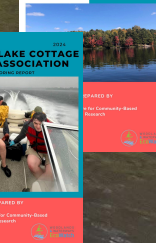
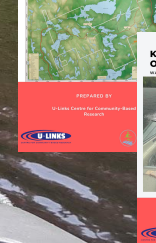
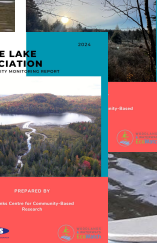
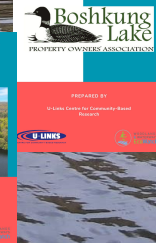
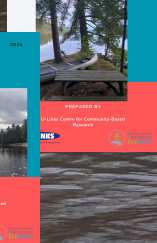
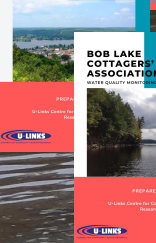
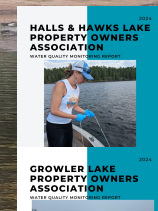
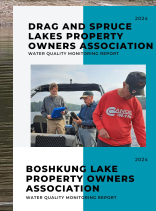
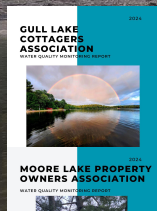
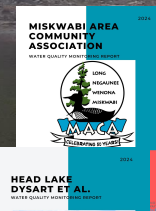
2022

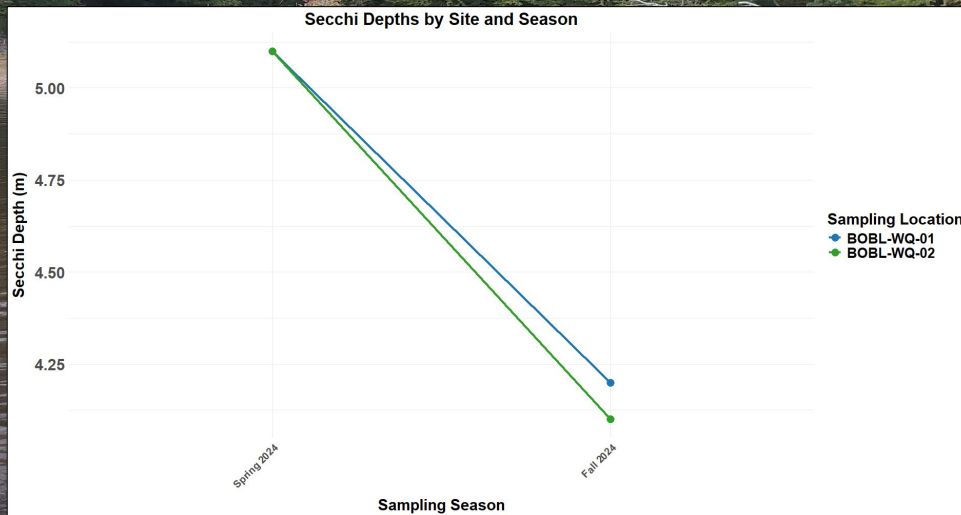
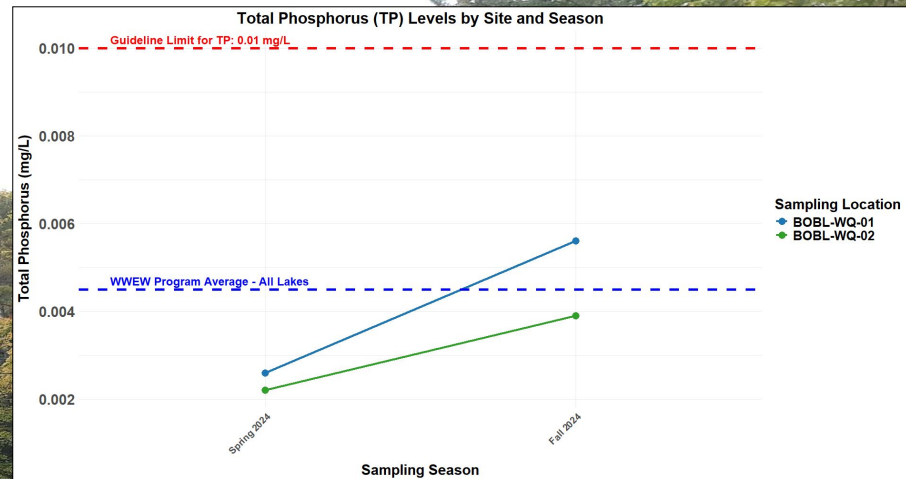
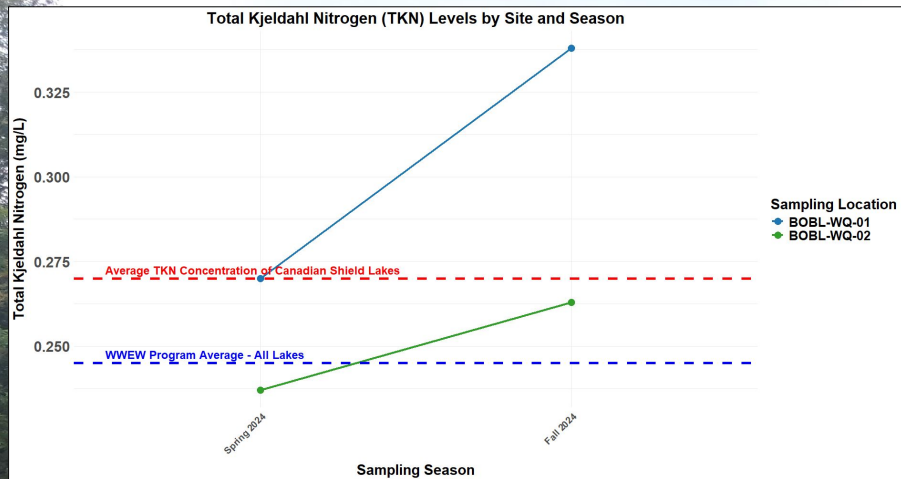


2023

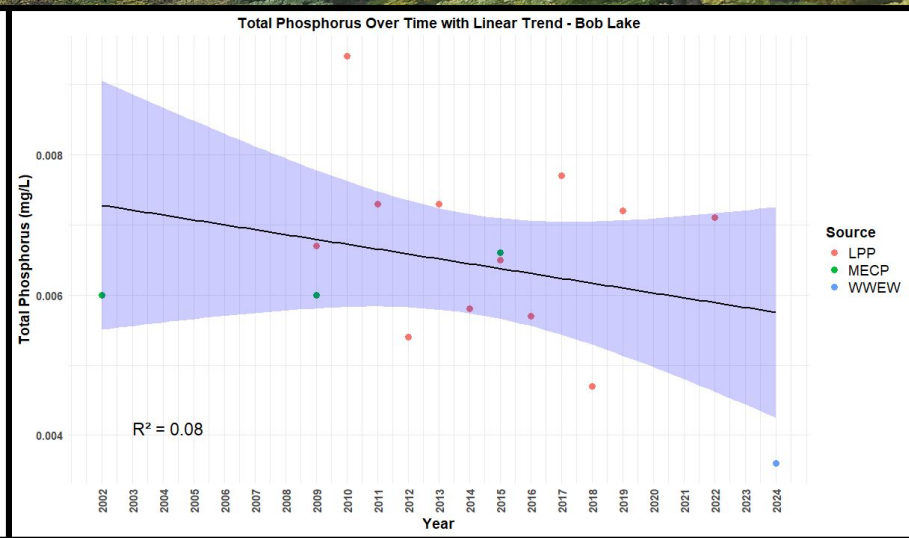
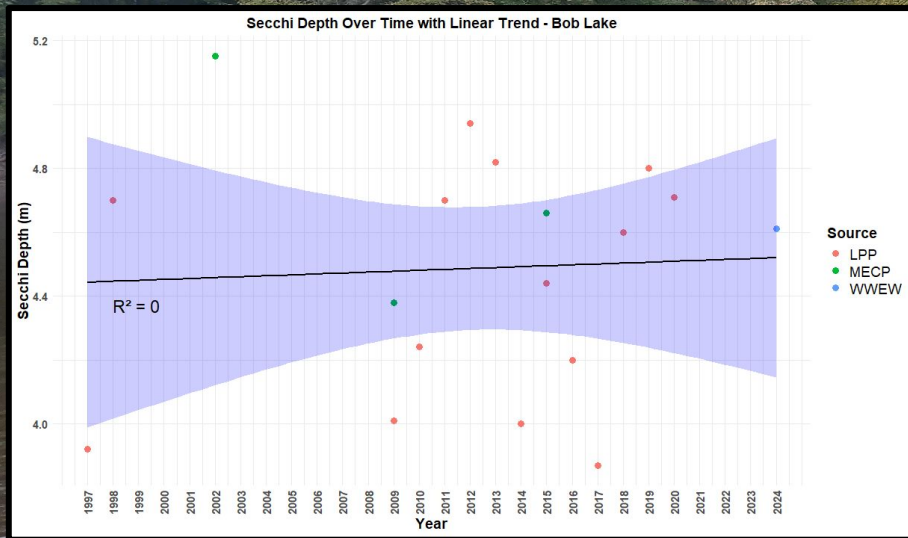


2024





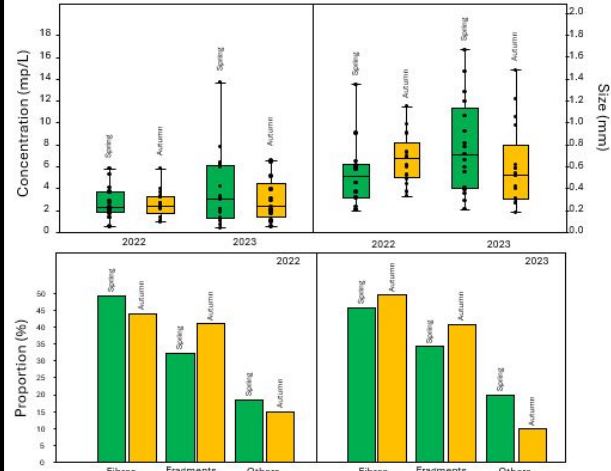
Linear Trends Over Time



Microplastics

Three Year Average

lake	Sum of volume (L)	Concentration (mp/L)	fibre %	fragment %	other % (bead, film, foam)	
BHAW	15.331	4.631139521	BHAW	71.83	23.94	4.23
BIGK	26.6	2.142857143	BIGK	73.68	10.53	15.79
CEDA	15.389	2.924166613	CEDA	53.33	28.89	17.78
DRAG	30.437	3.581167658	DRAG	51.38	33.94	14.68
HALB	46.14	4.009536194	HALB	51.35	39.46	8.65
HALL	11.095	2.073005858	HALL	34.78	56.52	8.70
KASH	43.855	2.006612701	KASH	35.23	48.86	15.91
LHAW	34.325	2.447195921	LHAW	30.95	64.29	4.76
LITK	26.6	1.503759398	LITK	55.00	25.00	20.00
LONG	15.405	2.596559559	LONG	40.00	40.00	20.00
MISK	14.461	2.835211949	MISK	26.83	31.71	41.46
NGAU	15.259	3.08014942	NGAU	38.30	48.94	12.77
OBLO	15.311	2.808438378	OBLO	46.51	44.19	9.30
PADB	11.4	2.631578947	PADB	73.33	23.33	3.33
PAUD	49.4	2.854251012	PAUD	64.54	25.53	9.93
SPRU	11.4	3.50877193	SPRU	60.00	25.00	15.00
STOC	15.2	2.894736842	STOC	63.64	25.00	11.36
WENO	30.711	3.158477419	WENO	47.42	49.48	3.09
Grand Total	428.319	2.871534248				



Water Clarity

- Naturalized Shorelines
- Septic (Re)inspections
 - No such thing as too often
- Recovery from Acidification

Aquatic Vegetation

- Common Native Vegetation

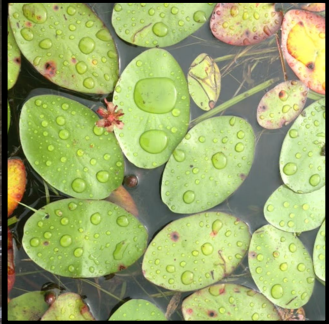


Coontail
(*ceratophyllum demersum*)

Pickerelweed
(*pontedia cordata*)



Water Shield
(*brasia schreberi*)



- Common Introduced and Invasive Vegetation



Eurasian Water Milfoil
(*myriophyllum spicatum*)

European Frogbit
(*Hydrocharis morsus-ranae*)



Opportunities for Engagement

A scenic view of a lake with a forested shoreline in autumn. The water is calm, reflecting the trees. A small boat is visible in the foreground.

- Community-Based Research Project Proposal Intake



Filters

☐ Nitrate

☐ Sulfate

☐ Total Kjeldahl Nitrogen

☐ Total Phosphorus

☐ Ammonia

☐ Chlorine

☐ Alkalinity

☐ Total Hardness

☐ Dissolved Oxygen

☐ Temperature

☐ pH

☐ Conductivity

☐ Secchi Depth

☐ Total Metals

Date range:

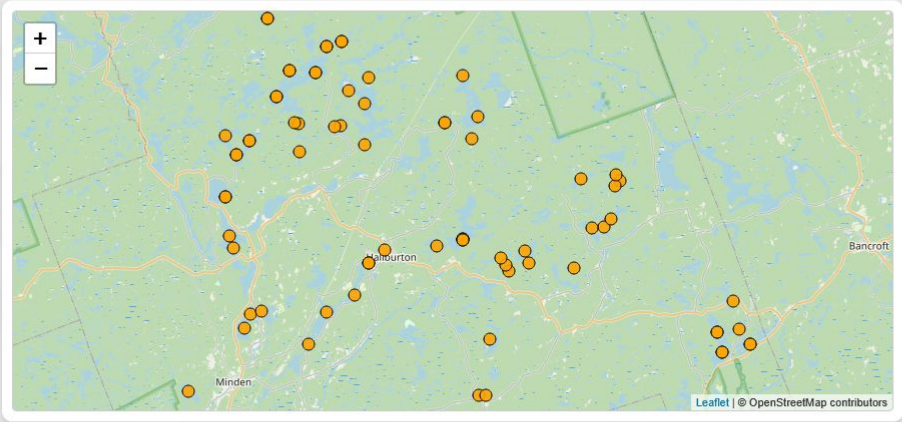
yyyy - mm - dd

to:

yyyy - mm - dd

Visualize Trends

Interactively explore trends and patterns in your data with advanced visualizations.



Submit Selection



Thanks



Jack Scott
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www.ulinks.ca

Thanks



Donations:

- E-Transfer to admin@ulinks.ca
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Sampling Protocol – Parameters Measured

PARAMETER MEASURED	Lake Partner Program	MECP - Trout Lake Monitoring	MNDMNR Broad Scale Monitoring	KLCOA (LPP + Internal Data)	Testing the Waters Haliburton County WQ Monitoring
FREQUENCY	1 Sampling/Year	Every ~5-8 Years 2 Samplings/Year	4-6 Year Cycles for Select Lakes	1-2 Samplings/Year	3 Samplings/Year
Secchi Depth (m) (Clarity)	YES	YES	YES	YES	YES
Total Phosphorus	YES	YES	YES	YES	YES
Nitrogen - Ammonia	NO	YES	YES	YES	YES
Nitrogen - Nitrite	NO	YES	YES	YES	NO
Nitrogen - Nitrate+Nitrite	NO	YES	YES	YES	YES
Total Kjeldahl Nitrogen	NO	YES	YES	NO	YES
Sulphate	NO	NO	YES	NO	YES
Dissolved Organic Carbon	NO	YES	YES	NO	NO
Dissolved Inorganic Carbon	NO	YES	YES	NO	NO
pH	NO	YES	YES	NO	YES
Total Alkalinity	NO	YES	YES	NO	YES
Conductivity (uS/cm)	NO	YES	YES	NO	YES
Calcium	YES	YES	YES	YES	NO
Magnesium	NO	YES	YES	NO	NO
Hardness	NO	YES	YES	NO	YES
Total Suspended Solids	NO	YES	YES	NO	NO
Total Dissolved Solids	NO	YES	YES	NO	NO
Dissolved Oxygen	NO	YES	YES	YES	YES
Temperature	NO	YES	YES	YES	YES
Chloride	YES	NO	YES	YES	NO
Bacterial Contamination					
E. Coli	NO	NO	NO	NO	NO
Total Coliforms	NO	NO	NO	NO	NO

**3 Samples/Year
July/Sept/Winter – Ice On**

Unique Feature: Below-ice winter sampling directed to lakes with water drawdowns, known to be detrimental to certain ecological processes in lakes.

Program Overview – By the Numbers

2022 - Present

**>6600
Physical WQ
Measurements**

**>2900 Water
Chemistry
Samples**

**>1300
Volunteer
Hours**

**>200
Training
Hours**

**> 150
Volunteers**

**39 Lakes
61 Locations**

**25 Lake
Associations**



Data Use – Trend Analysis

