



Lake Health Update: Little Silver & Rainbow Lakes

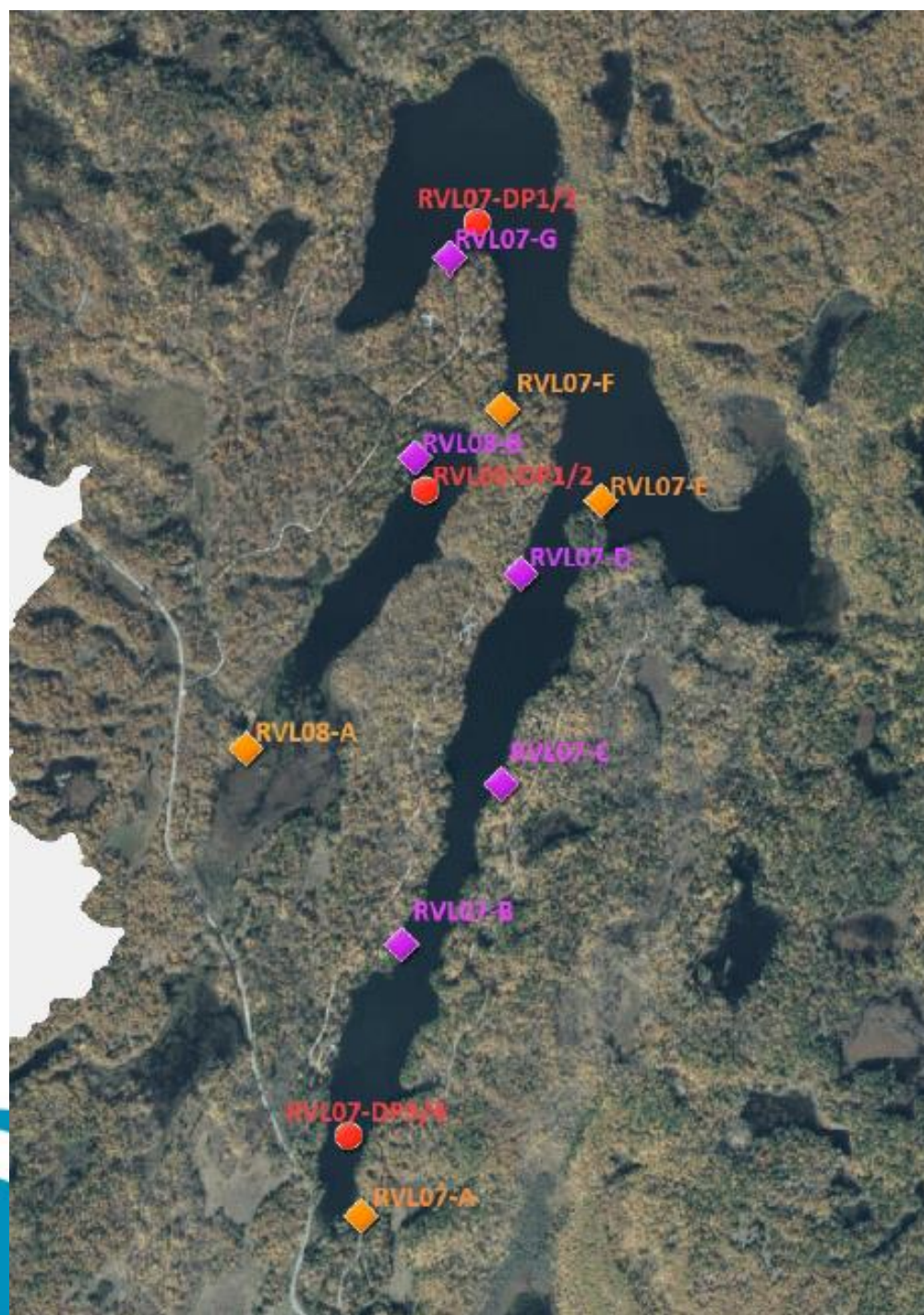
Haley Matschke – Surface Water Quality Coordinator

Little Silver and Rainbow Lake AGM

July 4th, 2026

Monitoring Locations

- Little Silver Lake:
 - 2 Deep Points
 - 3 Annual Shoreline Sites
- Rainbow Lake
 - 1 Deep Point
 - 1 Annual Shoreline Site
- 2026 – Full sampling year! All Sampling locations will be monitored



2025 Sampling Results : Little Silver

- Total Phosphorus and Total Kjedahl Nitrogen considered key parameters in lake health
- Guideline exceedances observed at DP1
 - Highest exceedance observed during the late summer when oxygen depletion is at it's highest
- TKN exceedances at nearshore site E. Unclear if isolated elevation due to a runoff event.
- Collected May Samples from 2026 indicate improvements and no guideline exceedances

Little Silver Lake 2025 Sampling Information								
Deep Point								
Round	Date Sampled	Site	Calcium (mg/L)	Carbon (mg/L)	E.Coli (CFU/100mL)	TKN (mg/L)	TP (mg/L)	Secchi (m)
1 (May)	2025-05-09	DP1				0.4	0.02	4
		DP3				0.4	0.015	4
2 (June/July)	2025-07-04	DP1		7.9		0.4	0.017	5
		DP3		7.6		0.4	0.011	4
3 (August/September)	2025-08-06	DP1	18.1			0.5	0.049	6
		DP3	17.9			0.4	0.01	4
4 (October)	2025-10-06	DP1				0.4	0.011	4
		DP3				0.4	0.017	3
Shoreline Samples								
Round	Date Sampled	Site	Calcium (mg/L)	Carbon (mg/L)	E.Coli (CFU/100mL)	TKN (mg/L)	TP (mg/L)	Secchi (m)
2 (June/July)	2025-07-04	A			9	0.4	0.014	N/A
		E			4	0.3	0.017	N/A
		F			6	0.4	0.014	N/A
3 (August/September)	2025-08-06	A			4	0.4	0.006	N/A
		E			2	1.2	0.01	N/A
		F			2	0.4	0.009	N/A
Water Quality Guidelines and Recommendations								
Type		Guideline Source					Guideline	
Total Phosphorus (TP)		Provincial Water Quality Objective (PWQO) - Lakes					<0.020mg/L	
TKN - Nitrogen		Secondary Indicator, Ministry of the Environment Recomend Guideline					<0.500mg/L	
E.Coli		Provincial Water Quality Objective (PWQO)					<100 CFU/100mL	

2025 Sampling Results : Rainbow

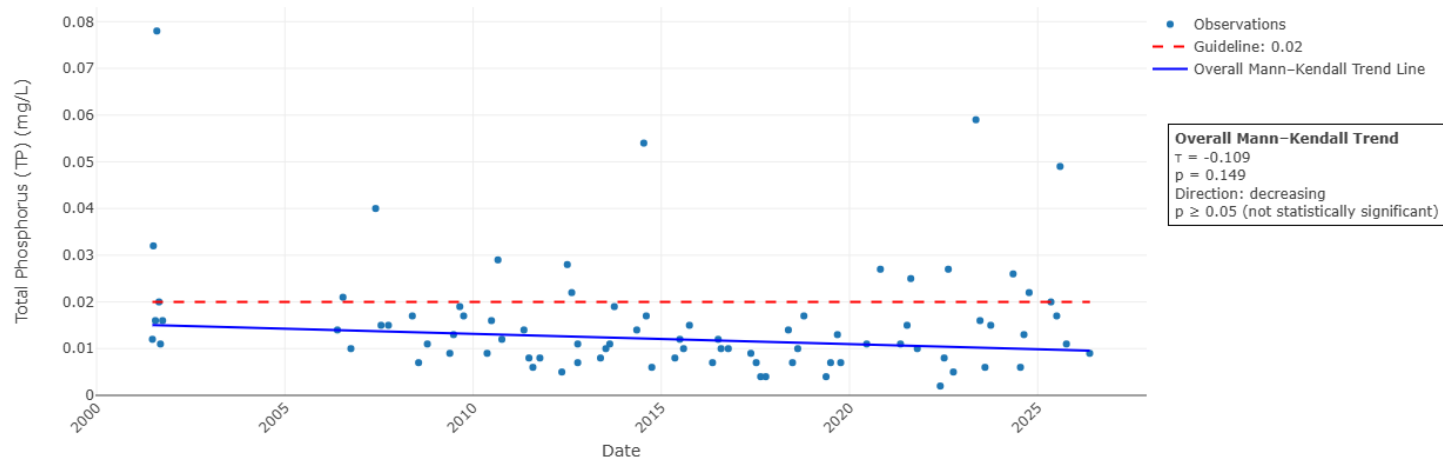
- Guideline exceedances observed in the nearshore environment at Site A
 - Site A is placed within the upstream wetland and may be influenced by its natural characteristics

Rainbow Lake 2025 Sampling Information								
Deep Point								
Round	Date Sampled	Site	Calcium (mg/L)	Carbon (mg/L)	E.Coli (CFU/100mL)	TKN (mg/L)	TP (mg/L)	Secchi (m)
1 (May)	05-27-2025	DP1				0.5	0.013	3.5
2 (June/July)	07-04-2025	DP1		8.9		0.5	0.017	2.5
3 (August/September)	2025-08-06	DP1	20.9			1	0.013	2
4 (October)	2025-10-06	DP1				0.5	0.009	3.75
Shoreline Samples								
Round	Date Sampled	Site	Calcium (mg/L)	Carbon (mg/L)	E.Coli (CFU/100mL)	TKN (mg/L)	TP (mg/L)	Secchi (m)
2 (June/July)	2025-07-04	A			4	0.8	0.035	N/A
3(August/September)	2025-08-06	A			5	0.6	0.018	N/A
Water Quality Guidelines and Recommendations								
Type	Guideline Source						Guideline	
Total Phosphorus (TP)	Provincial Water Quality Objective (PWQO) - Lakes						<0.020mg/L	
TKN - Nitrogen	Secondary Indicator, Ministry of the Environment Recommended Guideline						<0.500mg/L	
E.Coli	Provincial Water Quality Objective (PWQO)						<100 CFU/100mL	

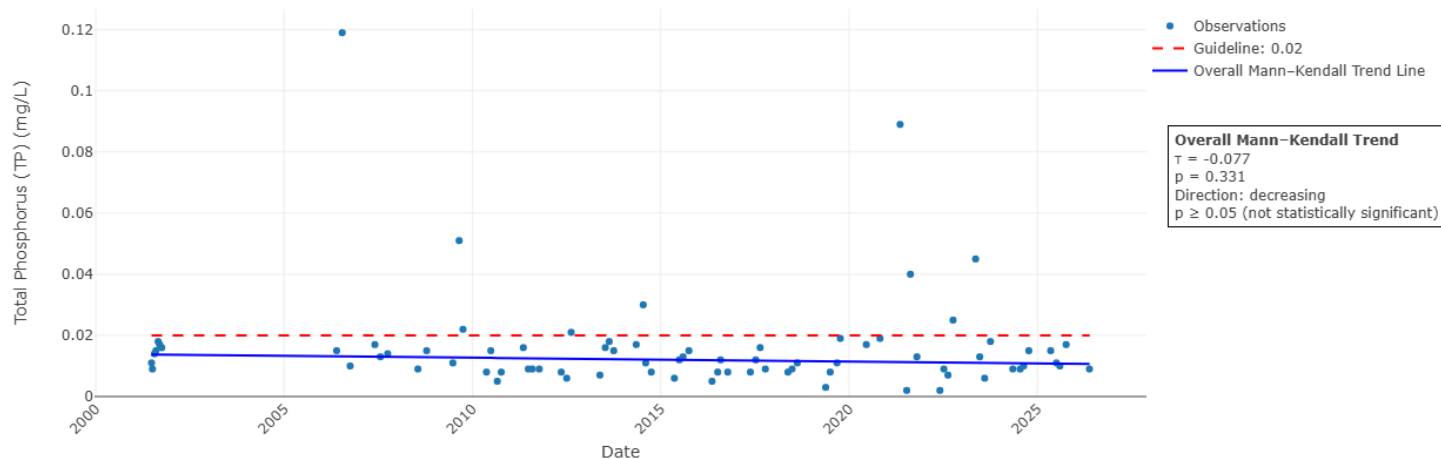
Long Term Trends - Total Phosphorus: Little Silver

- No statistically significant trends observed at either Deep point.
- Highlights significant variability across sampling years.

Little Silver Lake (RVL-07) - DP1 - Total Phosphorus (TP)



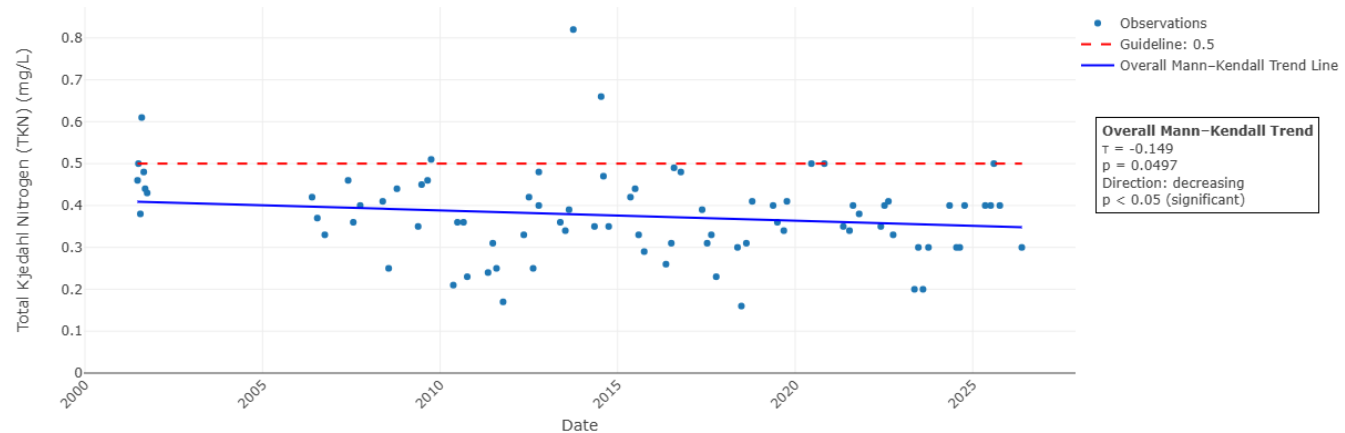
Little Silver Lake (RVL-07) - DP3 - Total Phosphorus (TP)



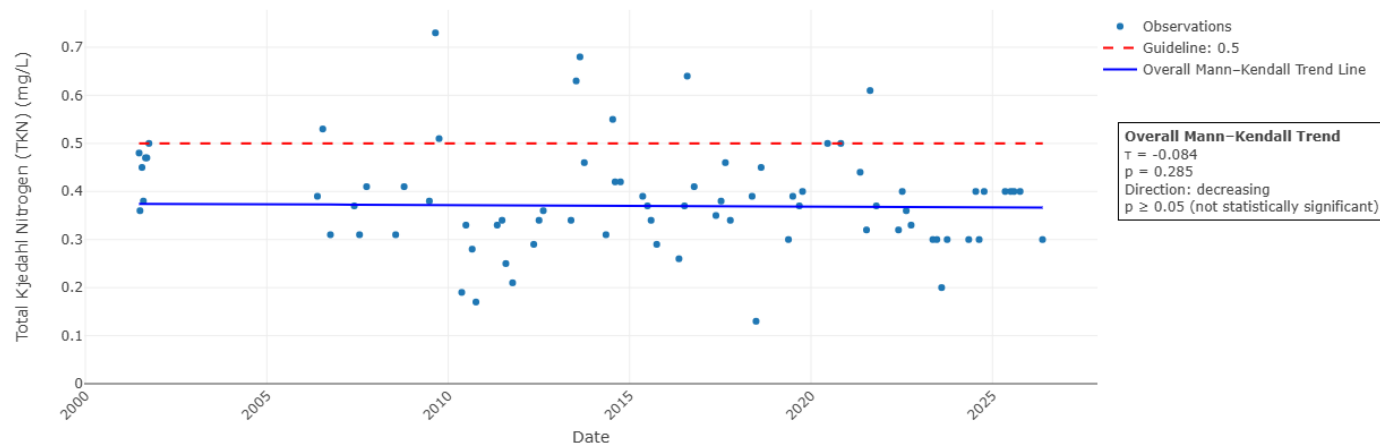
Long Term Trends - Total Kjedahl Nitrogen: Little Silver

- Statistically significant decreasing trend observed at DP1 only
- Primary driver of declining nutrients unclear at this time as variability associated with climate change and increased productivity is not well accounted for.

Little Silver Lake (RVL-07) - DP1 - Total Kjedahl Nitrogen (TKN)



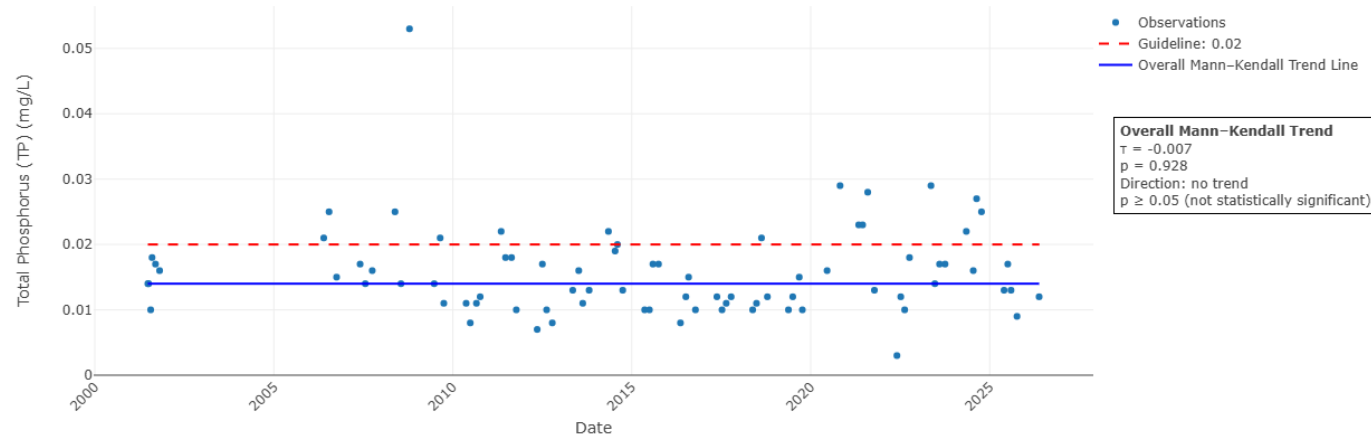
Little Silver Lake (RVL-07) - DP3 - Total Kjedahl Nitrogen (TKN)



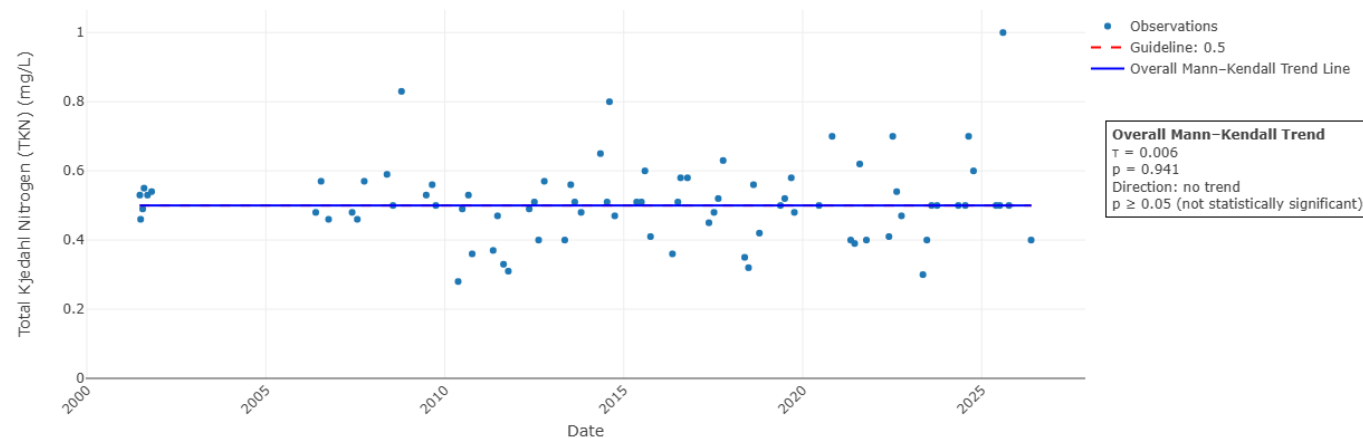
Long Term Trends: Rainbow Lake

- No Statistically significant decreasing trend observed across TP and TKN at the deep point.
- Highlights variability across sampling years.

Rainbow Lake (RVL-08) - DP1 - Total Phosphorus (TP)



Rainbow Lake (RVL-08) - DP1 - Total Kjeldahl Nitrogen (TKN)



Oxygen Conditions: Little Silver

- Late summer stratification often represents the “worst conditions”
- Significant low oxygen (<4 mg/L) conditions at depth can impact available fish habitat and increase nutrient release from the sediment.
- Decreased oxygen conditions at depth during stratification is quite common among smaller shallower lakes.
- Oxygen is often replenished during fall turnover

Sampling Information			
Site:	RVL07-DP1		
Date:	08-06-2025		
Physiochemical Information			
Surface		Bottom	
pH	7.89	pH	6.85
SPC (us/cm)	133.5	SPC (us/cm)	170.7
Secchi		6	
Deep-point Profile			
Depth (m)	Temp (°C)	DO (%)	DO (mg/L)
0.1	24.2	98.8	8.28
1	24.2	98.8	8.28
2	24.2	98.7	8.27
3	24.2	98.5	8.26
4	24.1	97.3	8.17
5	20.2	89.8	8.1
6	15.8	81.5	8.15
7	12.4	50.5	5.39
8	9.9	6.9	0.77
9	8.9	5.3	0.61
10	8.5	4.7	0.55
11	8.2	4.5	0.53

Sampling Information			
Site:	RVL07-DP3		
Date:	08-06-2025		
Physiochemical Information			
Surface		Bottom	
pH	8.25	pH	7.19
SPC (us/cm)	134.5	SPC (us/cm)	252.9
Secchi		4	
Deep-point Profile			
Depth (m)	Temp (°C)	DO (%)	DO (mg/L)
0.1	24.6	100.8	8.39
1	24.5	100.3	8.37
2	24.5	99.8	8.31
3	24.4	98.2	8.2
4	24.4	97.8	8.16
5	21	17.1	1.51
6	16.8	7.2	0.68

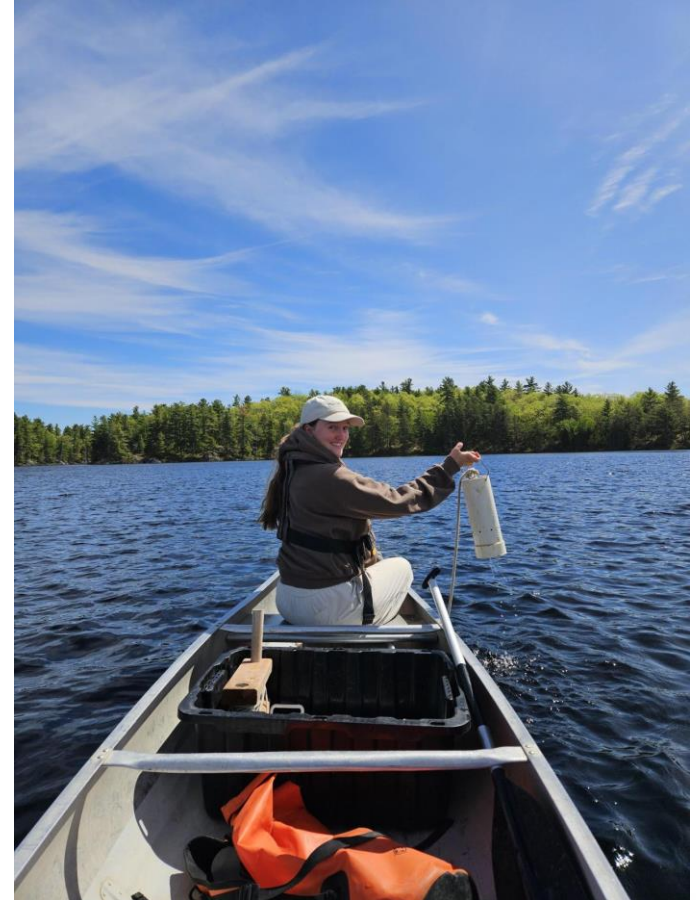
Oxygen Conditions: Rainbow Lake

- Low oxygen (<4 mg/L) conditions limited to the bottom layer immediately above the sediment

Sampling Information			
Site:	RVL08-DP1		
Date:	08-06-2025		
Physiochemical Information			
Surface		Bottom	
pH	7.31	pH	6.85
SPC (us/cm)	170	SPC (us/cm)	236
Secchi		2	
Deep-point Profile			
Depth (m)	Temp (°C)	DO (%)	DO (mg/L)
0.1	24.1	82.7	6.94
1	23.7	82.1	6.96
2	23.7	81.7	6.91
3	23	7.7	0.71
4	21.8	5.6	0.49

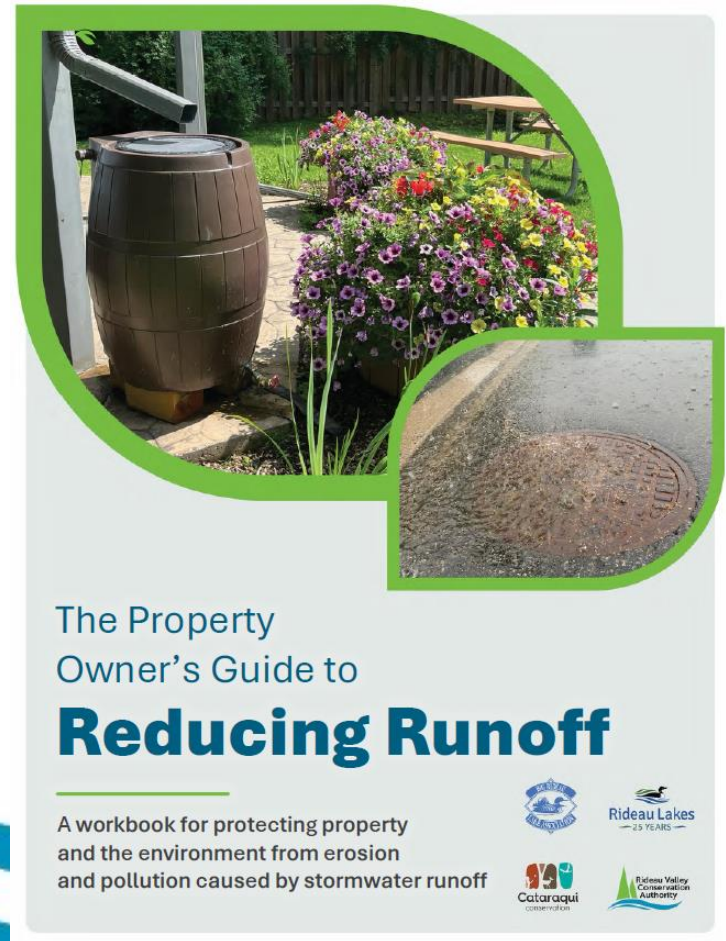
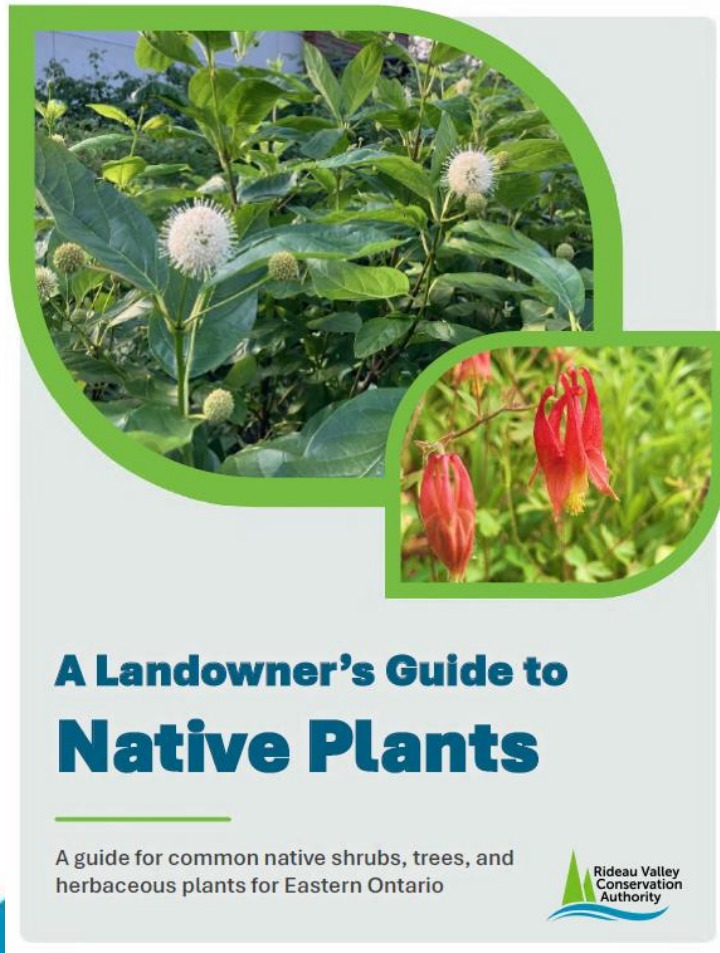
Lake Health Summary

- Low water conditions were significant across the watershed in 2025 and may have impacted lake conditions and sampling results
- Little Silver and Rainbow lake continue to show variability across sampling and demonstrates few significant trends across key parameters
- Guideline exceedances were observed in 2025. Preliminary 2026 sampling results show return to lower spring values
- Full sampling year will provide additional information on nearshore conditions across the lake



NEW! RVCA Resources

- **New!** Native Plant Guide
- **New!** Property Owner's guide to Reducing your Runoff



RVCA Stewardship Programs & Opportunities

- **Shoreline Naturalization Program**

- Suitable for any shoreline property, No minimum requirements
- Benefits of Shoreline Naturalization:
 - natural erosion control
 - slows and filters runoff
 - contributes to the “ribbon of life” habitat
 - deters geese
- **Meaghan McDonald:** meaghan.mcdonald@rvca.ca

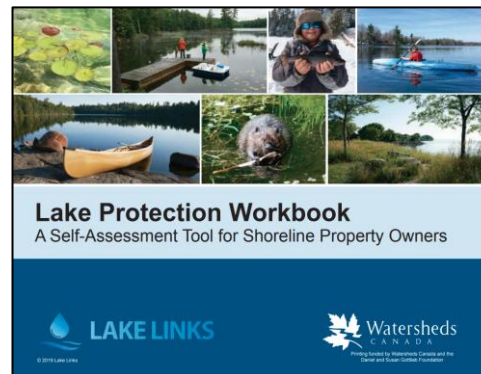
- **Forestry Program**

- Large scale tree planting program
- **Ian Cochrane:** ian.cochrane@rvca.ca

- **Rural Clean Water Program & ALUS**

- Provides incentive grants for several project categories aimed at improving water quality in rural areas.
- Examples include:
 - Erosion Control- Shoreline: 90% up to \$3,500
 - Buffer grants (usually used to top-up Shoreline Naturalization Program)
 - Septic Repair- 50% up to \$1000
 - Well Projects (decommissioning, upgrades, replacements): \$500 to \$2000
 - Education Projects- 75% up to \$1000
- **Derek Matheson:** derek.matheson@rvca.ca

- **All programs are actively conducting site visits for the 2027 season!**



RVCA 60th Anniversary

- RVCA 60th Anniversary!
- Upcoming Public Events:
 - **Free Beach Day: July 4th** @ Foley Mountain, Baxter Beach, and Rideau Ferry
 - **Yoga by the River: September 13th** @ Baxter Conservation Area
 - **Fall Colors & Forestry Guided Hike: October 3rd** @ Mill Pond Conservation
- Order your **free stickers** online at:
www.rvca.ca/adventure



Questions/Concerns?

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or

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