Robinson Pond: A Management Plan for Balancing the Sustainability of Aquatic Resources and Recreational Usage

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Robinson Pond is in Hudson New Hampshire (figure 1). The data for the lake was sent by the Department of Environmental Services. VLAP collected the data at Robinson Pond and has been doing so since 2000 (Figure 6). The data taken was analyzed and from that, a plan is proposed.

Figure 1. Robinson Pond.

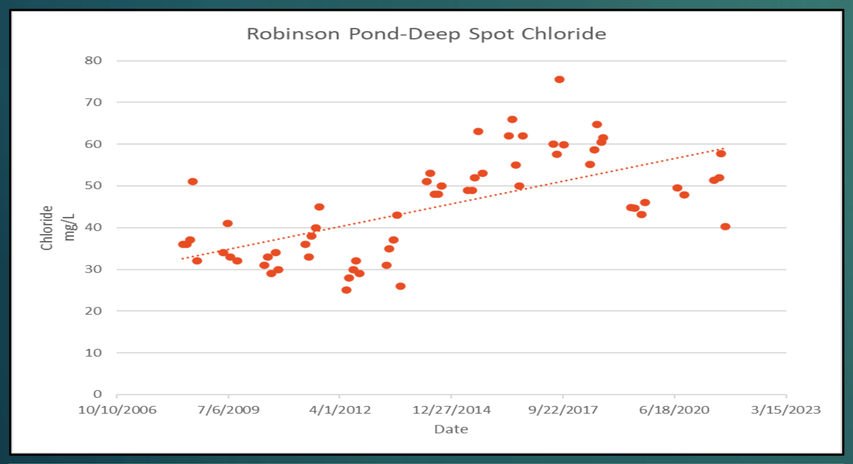

Figure 2. The incline of chloride.

Chloride and Conductivity from the runoff from roadways from the salt used. There is a seasonality trend in the mid-summer stage that there is higher chloride and conductivity.

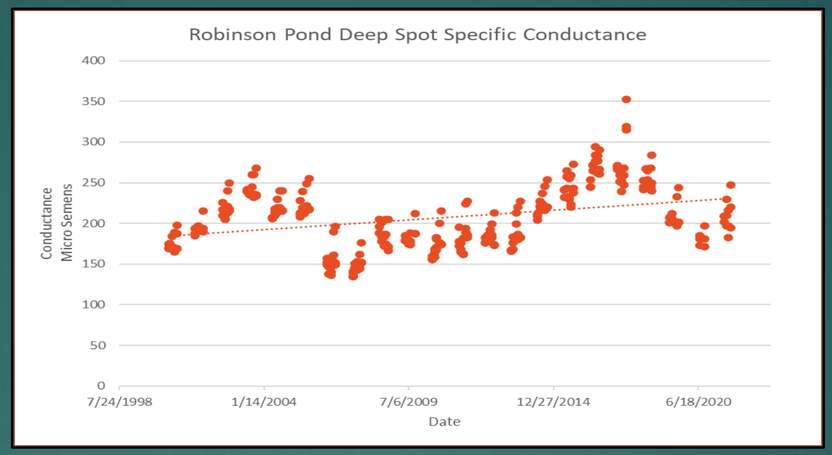

Figure 3. The incline of conductance.

In the past, there have been cyanobacteria blooms that have been closing the lake to the citizens of Hudson. Cyanobacteria eat excess amounts of phosphorus (Figure 4). This harms the aquatic life as well as people and any animals that go to drink from the lake.

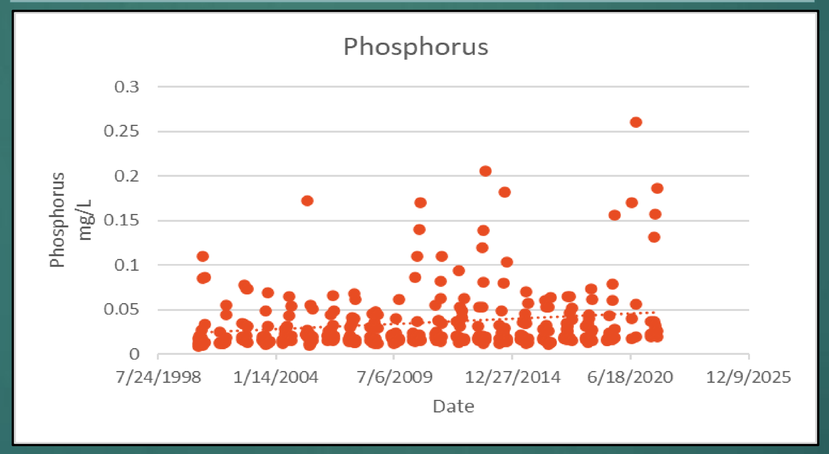

Figure 4. The incline of phosphorus.

Stormwater runoff is more than likely affecting the lake by depositing an excess amount of nutrients in the lake. Rain gardens, drainage and filtrations system would help with this. They would divert or catch the stormwater runoff. Using sand would also lower chloride and conductivity.

	Robinson Pond levels	Ideal Range
Turbidity	2.34 NTU	.5-1.00 NTU
SECCHI Disk Transparency	5.8 m	.1-31.6 m
pH	6.5	6.5-9.00
Dissolved Oxygen	65-90%	80-120%
Conductivity	200-350 micro siemens	200/1000 micro siemens
Chloride	60 mg/L	600 mg/L
Phosphorus	0.01-0.05 mg/L	.5 mg/L

Figure 5. Table of data collected at Robinson pond and data from averages of other lakes.

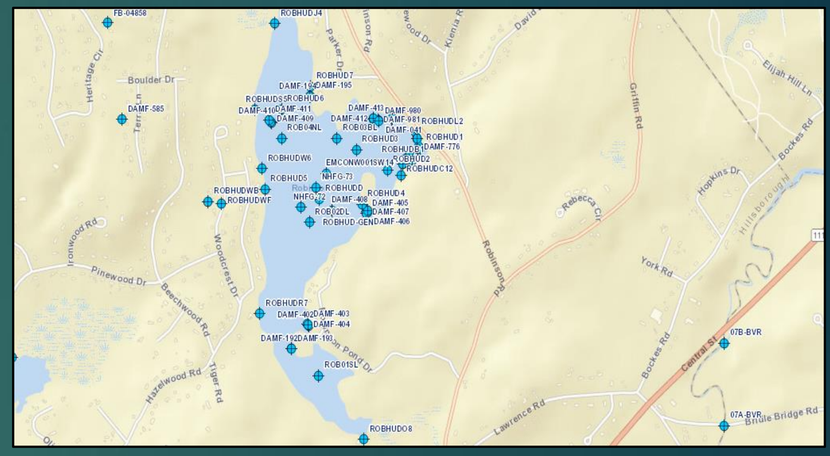

Figure 6. DES environmental data collection points(NHDES n.d.).

References

Likens, G.E., Buso, D.C. Salinization of Mirror Lake by Road Salt. *Water Air Soil Pollut* **205**, 205 (2010). https://doi.org/10.1007/s11270-009-0066-0

Geocortex Viewer for HTML5. (n.d.). Retrieved April 4, 2022, from http://nhdesonestop.sr.unh.edu/html5viewer/

Sharma, R., & Malaviya, P. (2021). Management of stormwater pollution using green infrastructure: The role of rain gardens. *WIRES Water*, *8*(2), 1–21. https://doi.org/10.1002/wat2.1507

Bacteria and our beaches. Clean Lakes Alliance. (2022, January 24). Retrieved February 14, 2022, from https://www.cleanlakesalliance.org/e-coli/

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