WATER & WETLAND
LAKE, POND & WETLAND MANAGEMENT

BIOLOGIST:
COLIN GOSSELIN
C: (508) 259-3153
COLIN@WATERANDWETLAND.COM

CALL/TEXT WITH ANY QUESTIONS!

FIELD NOTES SUMMARY

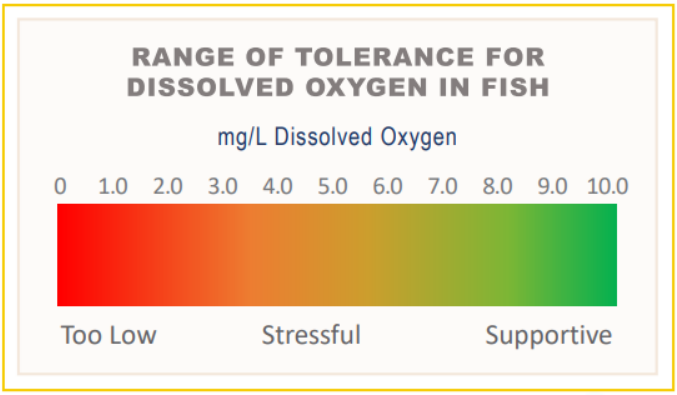
Customer: Hop Brook Protection Association
Pond Name: Grist Millpond/Carding Millpond/Stearns Millpond
Site Location: Sudbury, MA
Date: 7/2/24

On 7/2/24, Senior Aquatic Biologist, Colin Gosselin, and Aquatic Field Assistant, Jake McNary, made a visit to Grist Millpond/Carding Millpond/Stearns Millpond. The following services were completed during the visit:

Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (*) denotes an invasive species. Invasive species are non-native to the ecosystem and are likely to cause economic harm, environmental harm, or harm to human health.

Species Identified	
Common Name	**Latin Name**
Curly-leaf Pondweed*	*Potamogeton crispus*
Filamentous Algae	
Duckweed	*Lemna*
Water Chestnut*	*Trapa natans*
Common Waterweed/Elodea	*Elodea canadensis*
Coontail	*Ceratophyllum demersum*

While on-site, dissolved oxygen (DO) and temperature readings were collected using a calibrated YSI meter with optical sensor. Dissolved oxygen is the amount of oxygen in water that is available to aquatic organisms. DO is necessary to support fish spawning, growth, and activity. Tolerance varies by species, but the figure below provides a general range of fish tolerance (Source: epa.gov). Dissolved oxygen can be affected by many outside



factors, such as: temperature, time of day, and pollution. Dissolved oxygen levels are typically lowest early in the morning. Healthy water should generally have concentrations of about 6.5-8+ mg/L.

Results from the visit are included in the table below:

Carding Millpond - Temperature & Dissolved Oxygen		
Depth (Feet)	Temp (°C)	DO (mg/L)
Surface	25.3	9.97
1’	25.0	9.59
2’	24.9	8.7
3’	24.5	8.06
4’	24.2	7.57
Bottom	24.2	7.43

Grist Millpond - Temperature & Dissolved Oxygen		
Depth (Feet)	Temp (°C)	DO (mg/L)
Surface	23.4	8.91
1’	23.4	8.27
2’	23.1	8.12
3’	22.8	7.57
Bottom	22.4	7.43

Stearns Millpond - Temperature & Dissolved Oxygen		
Depth (Feet)	Temp (°C)	DO (mg/L)
Surface	27.6	8.54
1’	26.0	7.87
2’	24.4	7.45
Bottom	24.1	7.13

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A Secchi disk is a disk with alternating black and white quadrants. It is lowered into the water of a lake until it can no longer be seen by the observer. This depth of disappearance, called the Secchi depth, is a measure of the transparency of the water.

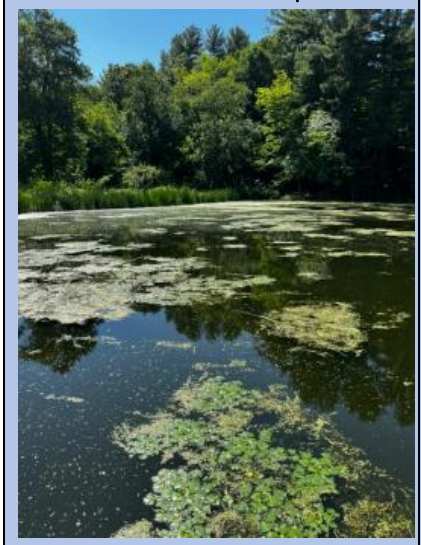
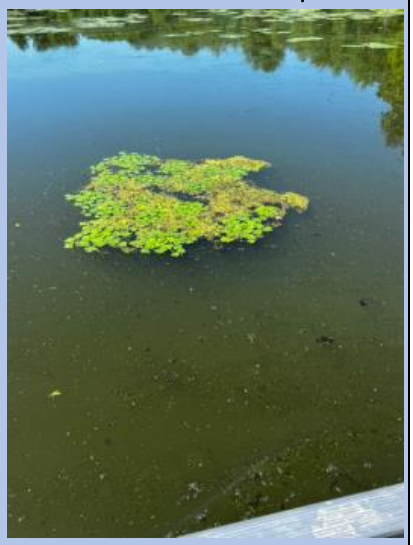
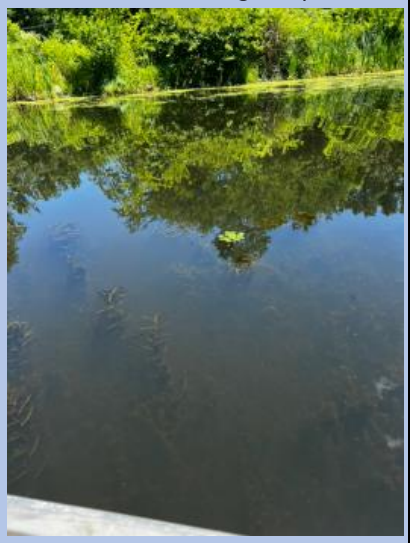
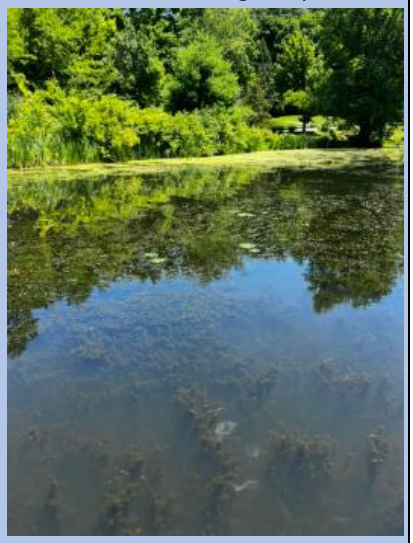
Secchi Disk Clarity (Feet, Inches)	
Carding Millpond	3'2"
Grist Millpond	2'3"
Stearns Millpond	2'6" (To the bottom)

A treatment was conducted for the control of water chestnut. The liquid herbicide, Clearcast (imazamox), was applied using the most appropriate boat, equipped with a calibrated pump, which is used to target the water chestnut plants via foliar application methodology. This method allows for even and precise coverage. Weather was also closely monitored prior to treatment to ensure a treatment date without rain or high winds.

Prior to the treatment(s), the shoreline was posted with neon signage noting the treatment, affiliated water use restrictions, and Water & Wetland contact information. The signs fulfill permit obligations for shoreline posting.

Additional Notes from the Biologist
Prior to the visit, the weather was closely monitored to ensure a date without precipitation forecasted or high winds. Overall, the weather during and after the treatment was perfect with little wind and clear skies. Upon arrival at each pond, a brief survey was conducted to confirm conditions and to guide the treatment process. Many of the species observed throughout the ponds are documented in the table above; however, for a full list of plant species, please refer back to the pre-management survey summaries. Overall, water chestnut is greatly reduced from last year which is a fantastic sign. Grist Millpond contained scattered plants throughout with the majority being near the inlet and a few large patches near the outlet. Topped out elodea was found throughout the pond mixed with duckweed and algae. Stearns also showed great reduction, with scattered small patches or individual plants throughout. Carding contained small patches and or singular plants without many large patches. Based on the survey, treatment was conducted using Imazamox herbicide. We also chose to incorporate selective hand-pulling when appropriate (where individual plants were observed). The treatment went well, and excellent coverage was achieved. Both an airboat and a jon boat were used. Both boats were thoroughly cleaned prior to being brought to the site. If used on multiple ponds, the boats were washed and inspected in between launches. Our plan is to wait several weeks to let the slow-acting systemic herbicide penetrate the plants and to allow the plants to fall from the water column. The second visit will occur late in July. We may also incorporate selective hand-pulling into this visit, if appropriate.

As always, we will notify you prior to any upcoming visits, as applicable. Please feel free to reach out to us directly with any questions.

Photo 1 – Grist Millpond 	Photo 2 – Grist Millpond 	Photo 3 – Stearns Millpond 
Photo 4 – Stearns Millpond 	Photo 5 – Carding Millpond 	Photo 6 – Carding Millpond 

Water & Wetland, LLC
Upton, MA
(888) 4WETLAN(D)
www.waterandwetland.com