WATER & WETLAND
LAKE, POND & WETLAND MANAGEMENT

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

CALL/TEXT WITH ANY QUESTIONS!

FIELD NOTES SUMMARY

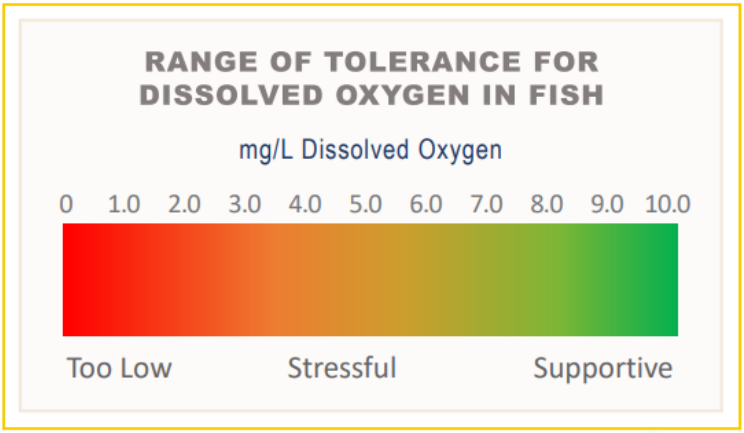
Customer: Hop Brook Protection Association
Pond Name: Carding Millpond, Grist Millpond, Stearns Millpond
Site Location: Sudbury, MA
Date: 8/1/24

On 8/1/24, Senior Aquatic Biologist, Colin Gosselin, and Aquatic Field Assistant, Jake McNary, made a visit to Carding 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**
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	27.8	9.67
1’	27.4	8.33
2’	27.0	8.12
3’	26.8	8.09
Bottom	26.2	7.12

Grist Millpond - Temperature & Dissolved Oxygen		
Depth (Feet)	Temp (°C)	DO (mg/L)
Surface	27.8	9.0
1’	27.6	8.25
2’	26.5	7.12
3’	26.5	7.10
Bottom	26.4	6.43

Stearns Millpond - Temperature & Dissolved Oxygen		
Depth (Feet)	Temp (°C)	DO (mg/L)
Surface	28.4	7.54
1’	27.6	7.10
2’	27.2	6.43
Bottom	27.2	6.41

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	2’3”
Grist Millpond	8”
Stearns Millpond	1’7”

WATER & WETLAND
LAKE, POND & WETLAND MANAGEMENT

A follow-up treatment was conducted for the control of invasive water chestnut. Clearcast (imazamox), was paired with a non-ionic surfactant. The mixture was applied to live water chestnut via foliar application using low-volume calibrated spray equipment. This methodology allows for even coverage and distribution to the target water chestnut, while limiting any non-target impacts. 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
Grist Millpond contained sparse densities of water chestnut, though the majority of the plants noted were found near the outlet and the boat launch. Only a handful of plants were located near the inlet. Dense mats of filamentous algae were observed in the middle of the pond, and the water was bright green due to what visually appeared to be a dense microscopic algae bloom. Water clarity was extremely low. The treatment went well, and we anticipate an extremely high level of control. Carding Millpond contained scattered patches of water chestnut plants in low densities throughout the entire water body; however, the densities of plants were greatly reduced compared to the conditions documented during/immediately prior to the last treatment. There was also an algae bloom present at Carding, but this bloom appeared to be less dense than Grist Millpond. The treatment went extremely well. Stearns Millpond also had an algae bloom that discolored the water. Water chestnut in Stearns was scattered in smaller bunches throughout the waterbody. Based on the densities in Stearns Millpond, hand-pulling was also incorporated with the treatment. Navigation in Stearns was especially challenging due to dense vegetative mats, although this was manageable. Overall, we anticipate an extremely high level of success through this year's water chestnut treatment program. The weather for this event was perfect. The boat, when used in multiple water bodies, was cleaned in between launches. Some consideration should be given to algae sampling, based on the visual indicators of a current algal bloom.

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.

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

WATER & WETLAND
LAKE, POND & WETLAND MANAGEMENT

Photo 1 - Grist Millpond	Photo 2 – Grist Millpond	Photo 3 – Carding Millpond

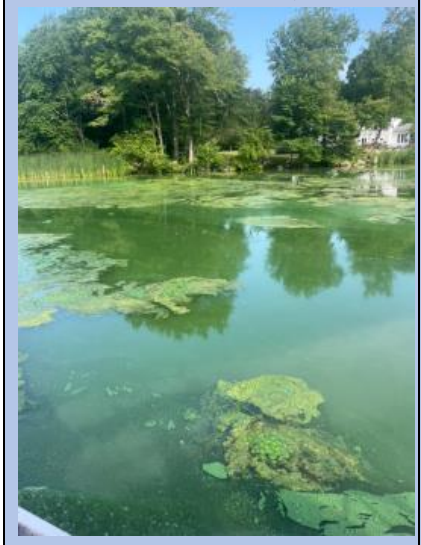
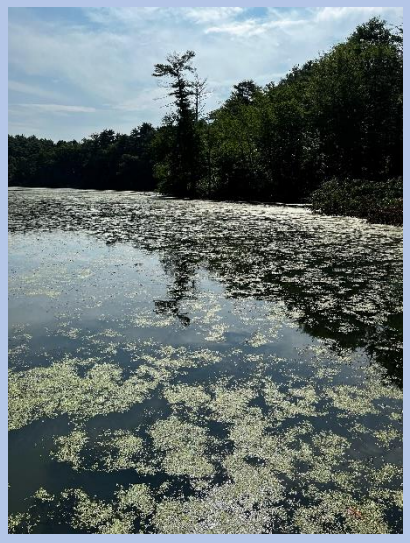
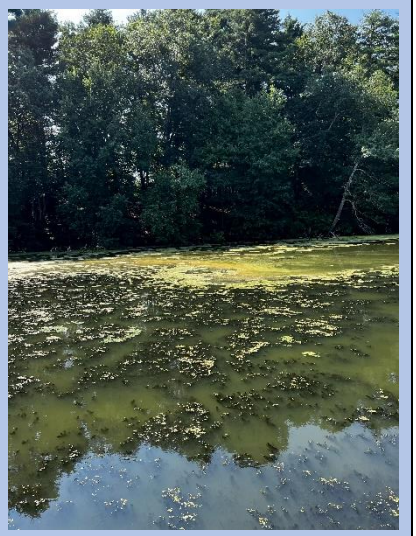



Photo 4 – Carding Millpond	Photo 5 – Stearns Millpond	Photo 6 – Stearns Millpond
		

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