



ENVIRONMENTAL SCIENTIST:  
JAMES LACASSE  
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CALL/TEXT WITH ANY QUESTIONS!



## FIELD NOTES SUMMARY

**Customer:** City of Framingham  
**Pond Name:** Big Farm Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

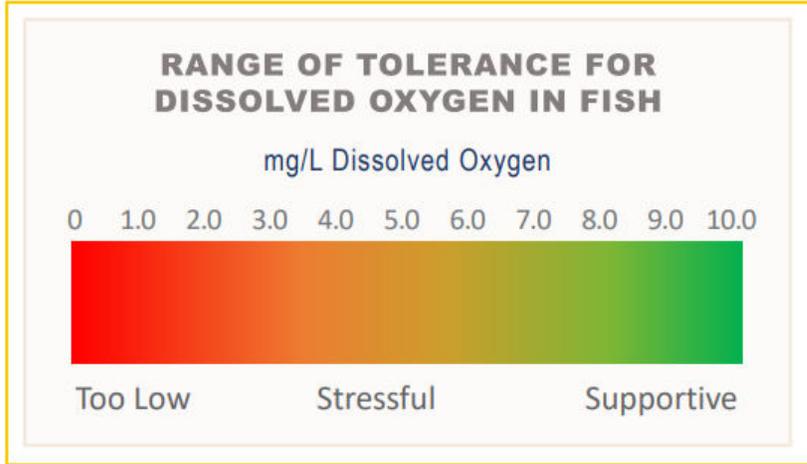
On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Big Farm Pond. The following services were completed during the visit:

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
Eurasian Milfoil*	<i>Myriophyllum spicatum</i>
Waterlilies	<i>Nymphaeaceae</i>
Curly-leaf Pondweed*	<i>Potamogeton crispus</i>
Water Chestnut*	<i>Trapa natans</i>
Common Waterweed/Elodea	<i>Elodea canadensis</i>
Clasping Leaf Pondweed	<i>Potamogeton perfoliatis</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>
Robbin's Pondweed	<i>Potamogeton robbinsii</i>
Benthic Algae	
Coontail	<i>Ceratophyllum demersum</i>

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	24.7	10.41
1 ft	24.3	9.04
2 ft	24.1	8.42
3 ft	23.8	8.42
4 ft	23.7	8.40
5 ft	23.2	8.12
6 ft	22.6	7.96
7 ft	22.5	7.91
8 ft	21.6	6.98
9 ft	21.2	6.76

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	
Secchi Disk Depth (Feet)	6'4"

Water Quality Parameters
Microbial Bacteria (total coliforms & E. coli)
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Invasive species documented in Big Farm Pond are consistent with those documented during the 2023 season. The most dominant invasive species was Eurasian watermilfoil. This species was found in varying densities ranging from trace to dense. Curly-leaf pondweed was the second most prevalent invasive species. This was found scattered within the Eurasian milfoil in trace to moderate densities. Water chestnut was found at the northern and southern points of the pond. Native species were also identified throughout the pond. The dominant native species include Robbin’s pondweed, coontail, and common waterweed (elodea). A full list of the species found during the survey is included above. Several swans were noted during the survey. Water samples were collected, preserved, and shipped to the lab for analysis.

Given the Natural Heritage Endangered Species Program restrictions, no management will occur in 2024. It is worth considering hand-pulling of water chestnut if NHESP allows. Water chestnut spreads rapidly and requires long-term management given the reproductive cycle of this plant. If managed before further spread, it will help long-term and allow for hand-pulling of this species to continue in lieu of treatment.

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



Photo 2



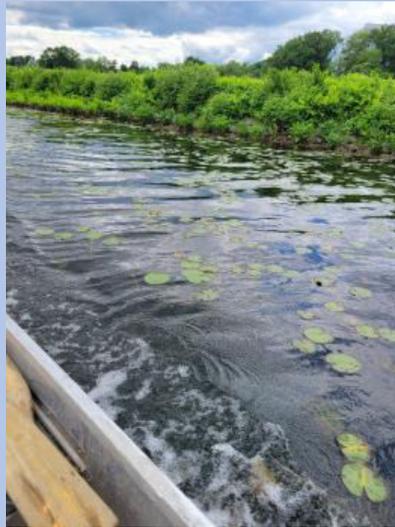
Photo 3



Photo 4



Photo 5



- Water Chestnut
- Curly-leaf Pondweed
- ▽ Scattered Eurasian Milfoil and Curly-leaf; Sparse to Dense Robbins' Pondweed, Thin-leaf Pondweed, Coontail, and Clapsing-Leaf Pondweed
- ▨ Sparse to Dense Eurasian Milfoil
- Sparse to Moderate Clapsing-leaf Pondweed



Maxar, Microsoft



**Big Farm Pond**  
 Vegetation Assemblage  
 Framingham, MA

Survey Date  
 5/29/2024

Map Date  
 5/30/2024





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## FIELD NOTES SUMMARY

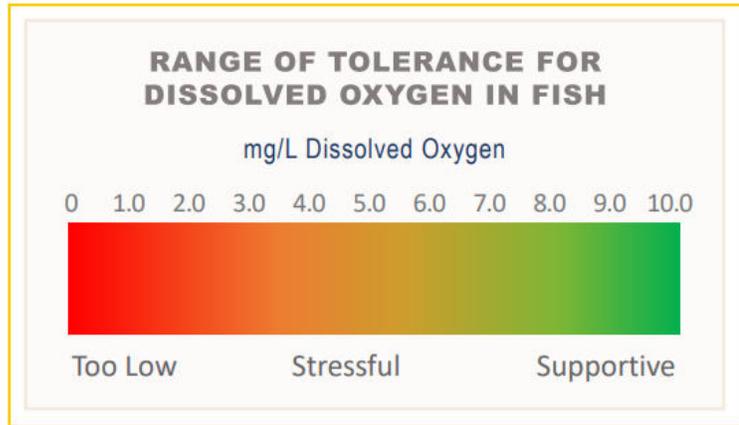
**Customer:** City of Framingham  
**Pond Name:** Gleason Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Gleason Pond. 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
Waterlilies	<i>Nymphaeaceae</i>
Robbin's Pondweed	<i>Potamogeton robbinsii</i>
Filamentous Algae	
Curly-leaf Pondweed*	<i>Potamogeton crispus</i>
Coontail	<i>Ceratophyllum demersum</i>
Thinleaf Pondweed	<i>Potamogeton pusillus</i>
Bladderwort	<i>Utricularia</i>
White Waterlilies	<i>Nymphaea odorata</i>
Snailseed Pondweed	<i>Potamogeton bicupulatus</i>
Water Chestnut*	<i>Trapa natans</i>

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	25.7	8.42
1 ft	25.6	8.4
2 ft	24.7	7.93
3 ft	23.9	7.63
Bottom	23.8	6.75

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	
Secchi Disk Depth (Feet)	2'4" - to vegetative cover

Water Quality Parameters
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity
Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Several native species were documented during the survey. These predominantly included Robbin's pondweed and waterlilies; however, bladderwort was also found. Filamentous algae was mixed in within the vegetation and occasionally on the surface. Two invasive species were documented. These include curly-leaf pondweed which was found along some shorelines in intermittent clusters (see map). Water chestnut was established within the water column along the eastern shoreline. Pollen was noted on the surface along wind-blown shorelines. This is not to be confused with microscopic algae. Water samples were collected, preserved, and shipped to the lab for analysis.

Based on the survey, treatment of curly-leaf pondweed may be warranted, given that this species is invasive. Water chestnut should be hand-pulled later in the season, prior to seeds dropping (typically in mid-August). This could either be accomplished by volunteers, or Water & Wetland could provide a crew to hand-pull the invasive water chestnut.

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.

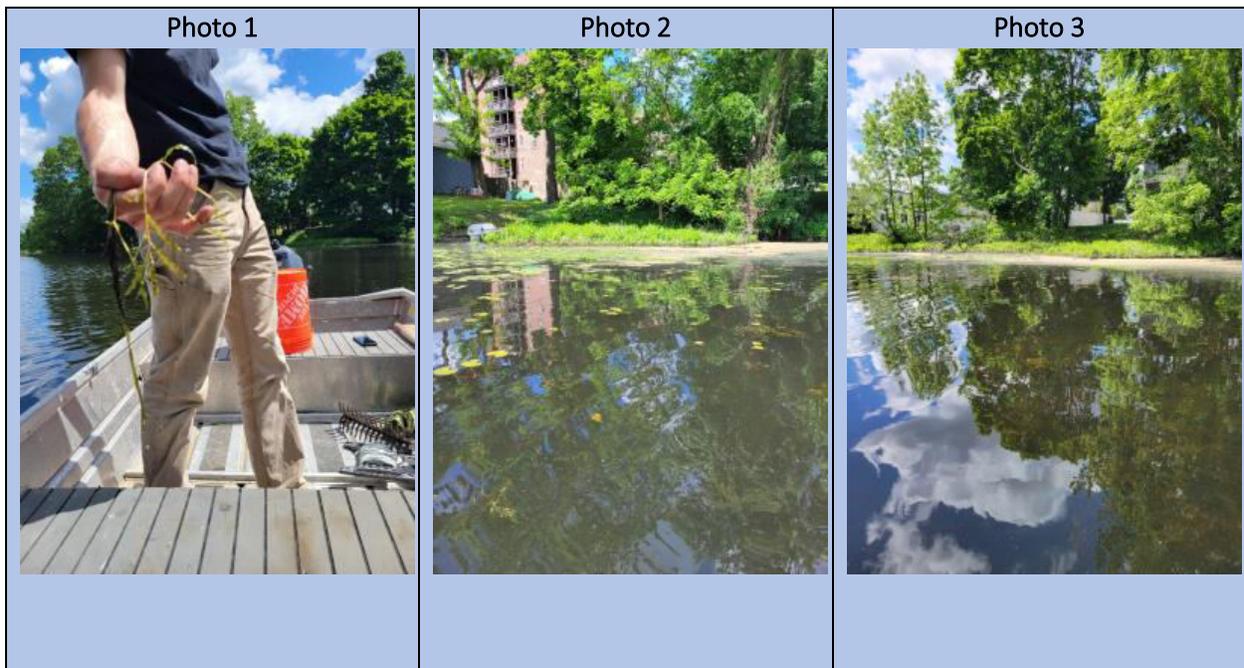


Photo 4



Photo 5

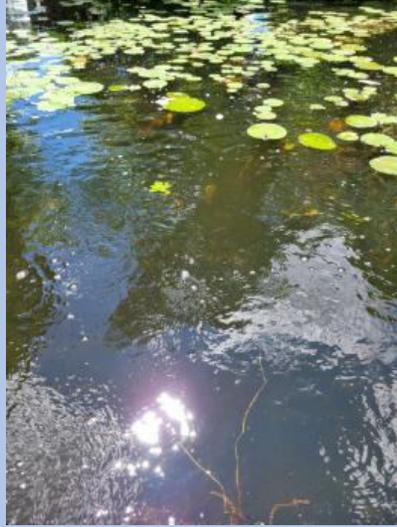
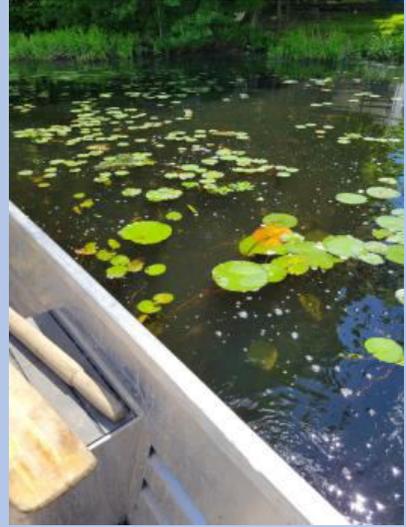


Photo 6





- Water Chestnut
- Curly-leaf Pondweed

Maxar, Microsoft



**Gleason Pond**  
 Invasive Species Distribution  
 Framingham, MA

Survey Date  
 5/29/2024

Map Date  
 5/30/2024



- ✘ Moderate to Dense Robbins' Pondweed mixed with Coontail, Bladderwort, and Thin-leaf Pondweed
- ✘ Moderate to Dense Waterlilies



**Gleason Pond**  
Native Species Assemblage  
Framingham, MA

Survey Date  
5/29/2024

Map Date  
5/30/2024



 <b>WATER &amp; WETLAND</b> LAKE, POND & WETLAND MANAGEMENT	<b>ENVIRONMENTAL SCIENTIST:</b> JAMES LACASSE JAMES@WATERANDWETLAND.COM C: (774) 276-6098 CALL/TEXT WITH ANY QUESTIONS!	
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## FIELD NOTES SUMMARY

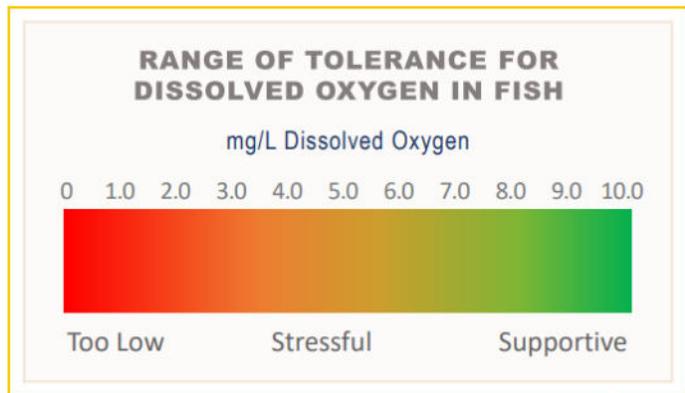
**Customer:** City of Framingham  
**Pond Name:** Learned Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Learned Pond. 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
Cattails	<i>Typha</i>
Waterlilies	<i>Nymphaeaceae</i>
Filamentous Algae	
Low-water milfoil	<i>Myriophyllum humile</i>
Ribbon Leaf Pondweed	<i>Potamogeton epihydrus</i>
Benthic Algae	

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	23.9	9.33
1 ft	23.7	9.29
2 ft	23.5	9.27
3 ft	23.1	9.14
4 ft	23.0	9.12
5 ft	22.9	9.05
6 ft	22.9	8.99
7 ft	22.4	8.87
8 ft	22.1	8.45
9 ft	21.5	8.02
Bottom	20.9	7.97

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	
Secchi Disk Depth (Feet)	10'10" - to bottom

Water Quality Parameters
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity
Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Consistent with previous years at Learned Pond, no invasive species were found. The water clarity was excellent. A healthy assemblage of native species was documented. One patch of low-water milfoil was found. This is a native milfoil. Cattails were documented along the shoreline in healthy densities. Pollen was found along the surface in wind-blown areas, which is common this time of year. This is not to be confused with microscopic algae. In addition to the water quality parameters collected on-site, samples were collected, preserved, and shipped to the lab for analysis.

Based on the survey, we do not recommend management/treatment at this time.

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**



**Photo 2**



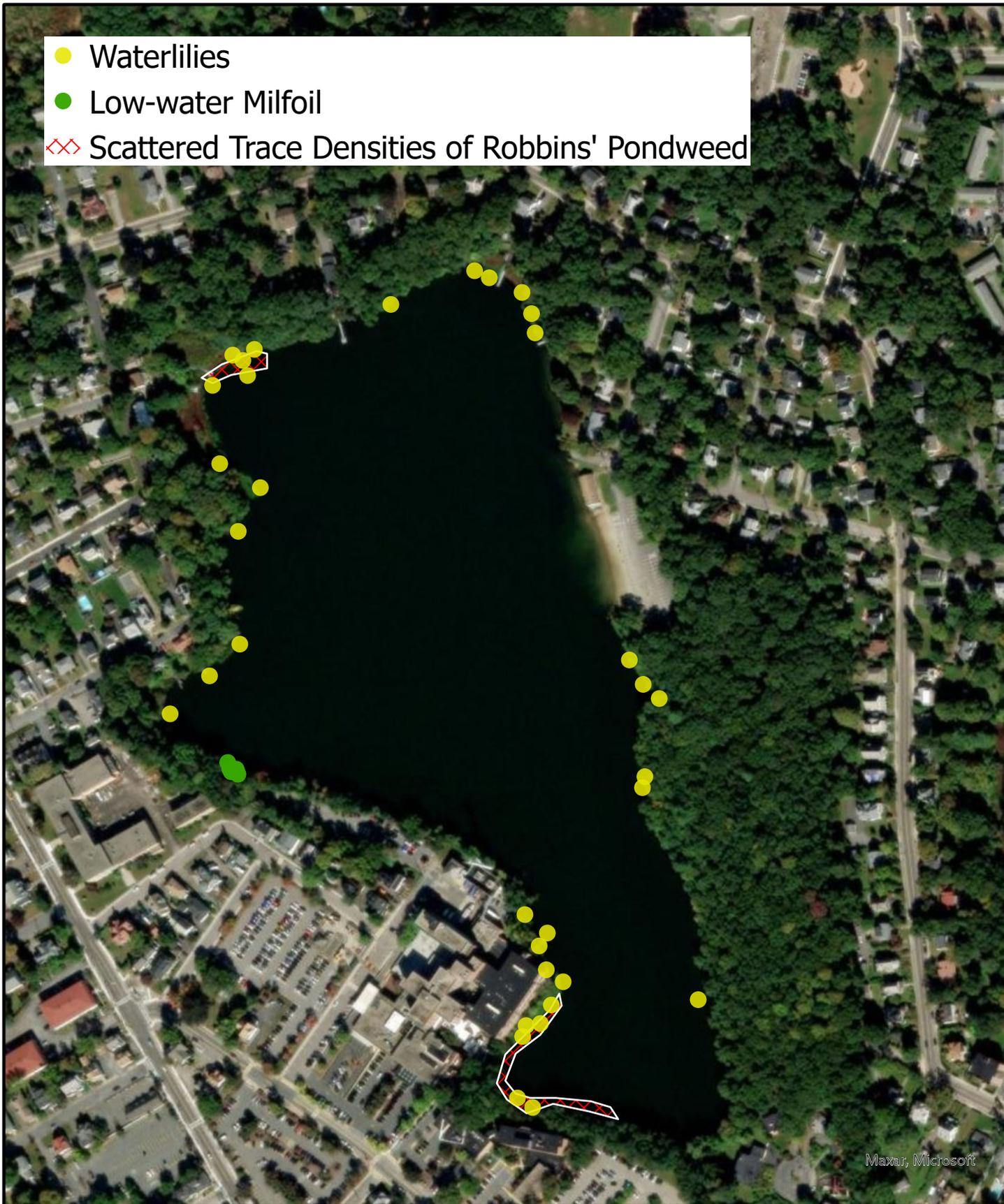
**Photo 3**



**Photo 4**



- Waterlilies
- Low-water Milfoil
- ◇◇◇ Scattered Trace Densities of Robbins' Pondweed



Maxar, Microsoft



**Learned Pond**  
Vegetation Assemblage  
Framingham, MA

Survey Date  
5/29/2024

Map Date  
5/30/2024



 <p><b>WATER &amp; WETLAND</b> LAKE, POND &amp; WETLAND MANAGEMENT</p>	<p><b>ENVIRONMENTAL SCIENTIST:</b> JAMES LACASSE JAMES@WATERANDWETLAND.COM C: (774) 276-6098</p> <p>CALL/TEXT WITH ANY QUESTIONS!</p>	
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## FIELD NOTES SUMMARY

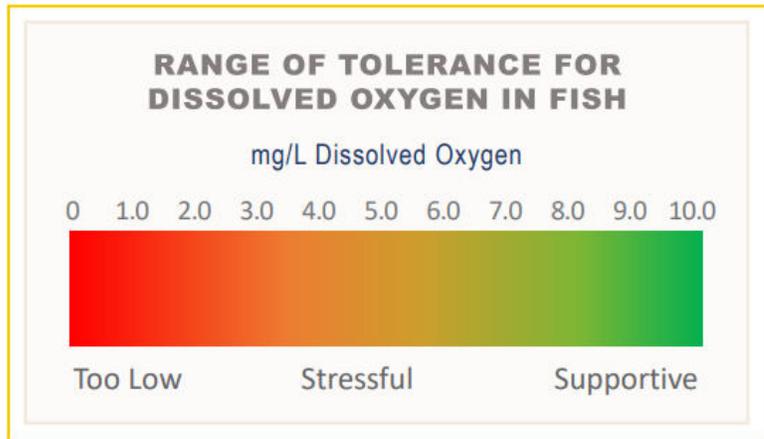
**Customer:** City of Framingham  
**Pond Name:** Little Farm Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Little Farm Pond. 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
Eurasian Milfoil*	<i>Myriophyllum spicatum</i>
Cattails	<i>Typha</i>
Waterlilies	<i>Nymphaeaceae</i>
Common Waterweed/Elodea	<i>Elodea canadensis</i>
Curly-leaf Pondweed*	<i>Potamogeton crispus</i>
Robbin's Pondweed	<i>Potamogeton robbinsii</i>
Water Chestnut*	<i>Trapa natans</i>
Filamentous Algae	
Benthic Algae	
Coontail	<i>Ceratophyllum demersum</i>

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	25.4	8.52
1 ft	25.2	8.47
2 ft	25.2	8.43
3 ft	24.8	8.29
4 ft	24.2	8.14
5 ft	23.6	7.64
6 ft	22.6	6.97
7 ft	21.9	6.14

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	
Secchi Disk Depth (Feet)	6'9"

**Water Quality Parameters**

WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity

Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Species composition appears to have remained relatively similar to that of the 2023 spring survey. Dominant invasive species included Eurasian watermilfoil and curly-leaf pondweed. These species were documented in varying densities. Water chestnut was scattered throughout the waterlily patches, especially along the southeastern shoreline. The densest areas of cattails were along the western and northern shorelines. The densest area of waterlilies was in the western corner of the pond. Native species such as Robbin's pondweed, elodea, and coontail were found at similar densities to Big Farm Pond. Water samples were collected, preserved, and shipped to the lab for analysis.

Due to Natural Heritage Endangered Species Program restrictions, no management will occur in 2024. At a minimum, consideration should be given to seeking NHESP approval to allow for hand-pulling of the invasive water chestnut. If this approval is gained, this could likely be completed by volunteers.

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



Photo 2



Photo 3



Photo 4



- Water Chestnut
- Curly-leaf Pondweed
- Eurasian Milfoil
- ⊠ Moderate to Dense Elodea, Coontail, and Robbins' Pondweed
- ⊠ Moderate to Dense Waterlilies



Maxar, Microsoft



**Little Farm Pond**  
 Vegetation Assemblage  
 Framingham, MA

Survey Date  
 5/29/2024

Map Date  
 5/30/2024



 <b>WATER &amp; WETLAND</b> LAKE, POND & WETLAND MANAGEMENT	<b>ENVIRONMENTAL SCIENTIST:</b> JAMES LACASSE JAMES@WATERANDWETLAND.COM C: (774) 276-6098 CALL/TEXT WITH ANY QUESTIONS!	
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## FIELD NOTES SUMMARY

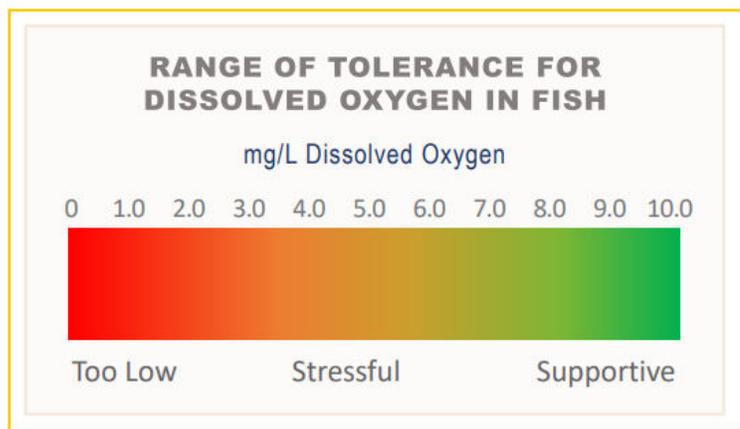
**Customer:** City of Framingham  
**Pond Name:** Mohawk Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Mohawk Pond. 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
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Filamentous Algae	
Cattails	<i>Typha</i>
Waterlilies	<i>Nymphaeaceae</i>

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	19.5	10.48
1 ft	19.5	9.97
2 ft	19.2	8.87

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	
Secchi Disk Depth (Feet)	1'3"

Water Quality Parameters
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity
Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

*Additional Notes from the Biologist*
Consistent with historical records, one invasive species was found during the survey. This includes variable watermilfoil which was found scattered in isolated patches. It's still somewhat early in the season, but the milfoil was found in only trace to sparse densities. It does appear however that the milfoil presence has increased from 2023. While not dense, the population was documented growing throughout the water column and occasionally surfacing. Filamentous algae and waterlilies were also noted. These species were scattered around the shoreline of the pond. Native cattails were noted along the northwestern shoreline. Pollen was noted on the surface.
Based on the survey, management of invasive variable milfoil is recommended.

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



Photo 2



Photo 3

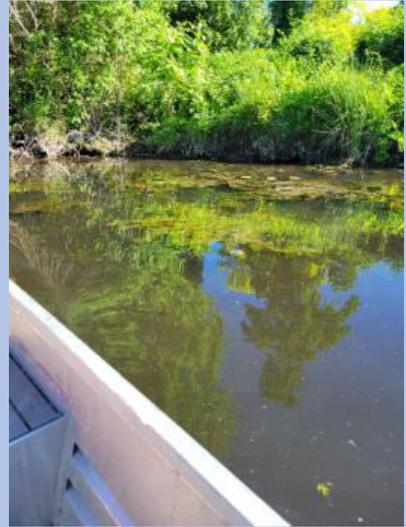


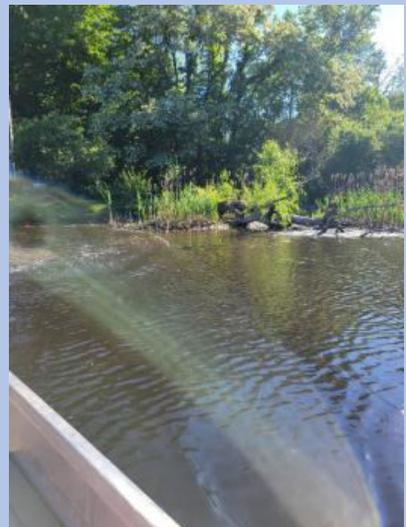
Photo 4



Photo 5



Photo 6



● Variable Milfoil



Maxar, Microsoft



**Mohawk Pond**  
Invasive Species Distribution  
**Framingham, MA**

Survey Date  
5/29/2024

Map Date  
5/30/2024



 <b>WATER &amp; WETLAND</b> LAKE, POND & WETLAND MANAGEMENT	<b>ENVIRONMENTAL SCIENTIST:</b> JAMES LACASSE JAMES@WATERANDWETLAND.COM C: (774) 276-6098 CALL/TEXT WITH ANY QUESTIONS!	
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## FIELD NOTES SUMMARY

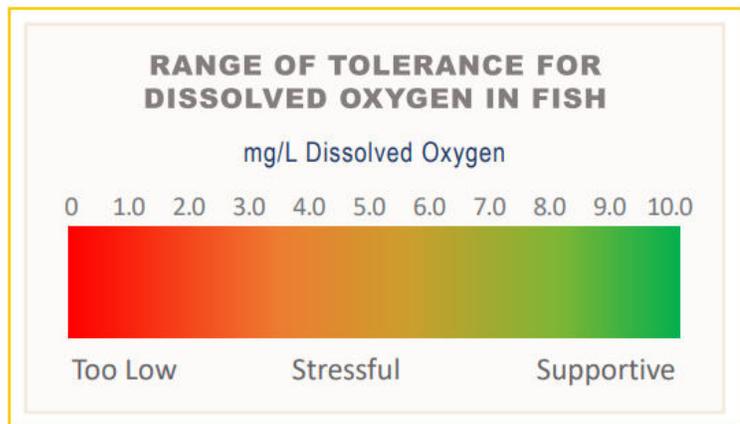
**Customer:** City of Framingham  
**Pond Name:** Norton Pond  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Norton Pond. 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
Duckweed	<i>Lemna</i>
Watermeal	<i>Wolffia</i>
Filamentous Algae	

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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	21.5	9.59
1 ft	21.1	9.39
2 ft	20.9	8.58
3 ft	20.4	7.94

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	
Secchi Disk Depth (Feet)	2' 7"

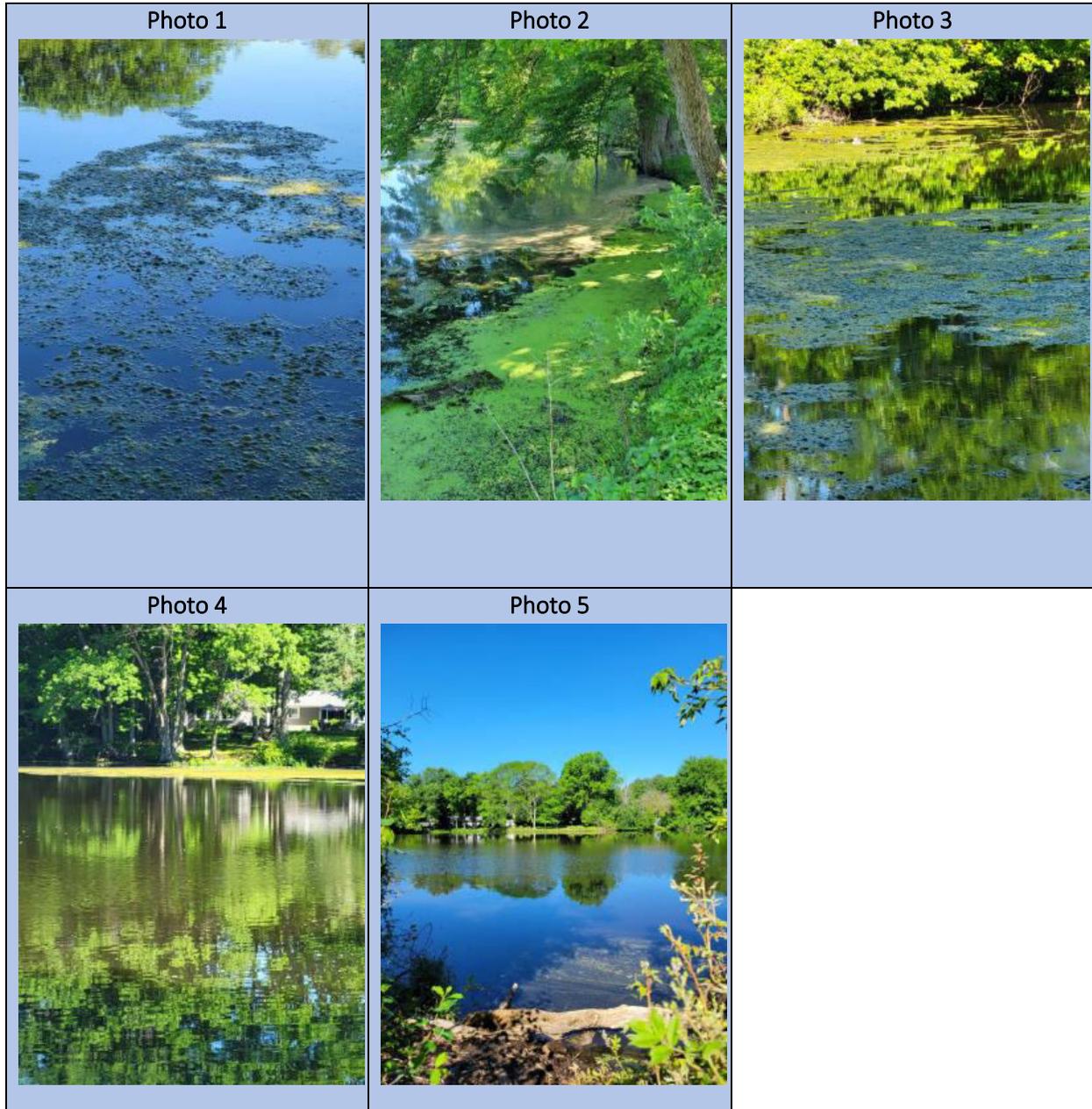
Water Quality Parameters
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity
Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

*Additional Notes from the Biologist*
No invasive species were found during the survey. Watermeal, duckweed, and filamentous algae were found around the edges of the pond. Densities varies from sparse to dense. The middle of the pond was all open-water habitat. Pollen was found on the surface at the middle of the pond and also mixed in with the duckweed, watermeal, and algae along the shoreline. Water samples were collected, preserved, and shipped to the lab for analysis.
Watermeal, duckweed, and filamentous algae have the ability to cover the majority of shallow pond such as Norton Pond. At this time, densities likely do not warrant management of these native species. We recommend an additional visit in June and potentially additional visits throughout the summer months. If densities of these species increase, treatment will likely be warranted at that time.

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.



×× Sparse to Dense Densities of Mixed Filamentous Algae, Duckweed, and Watermeal



Maxar, Microsoft





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## FIELD NOTES SUMMARY

**Customer:** City of Framingham  
**Pond Name:** Sudbury River  
**Site Location:** Framingham, MA  
**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Sudbury River. The following services were completed during the visit:

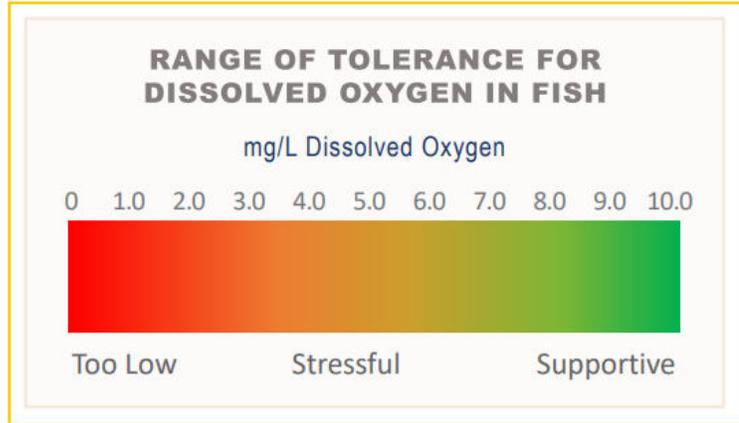
Upon arrival to the site, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Plants documented during the survey are documented in the table below. (\*) denotes an invasive species. Invasive species are non-native to the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

Species Identified	
Common Name	Latin Name
Curly-leaf Pondweed*	<i>Potamogeton crispus</i>
Fanwort*	<i>Cabomba caroliniana</i>
Eurasian Milfoil*	<i>Myriophyllum spicatum</i>
Waterlilies	<i>Nymphaeaceae</i>
Watershield	<i>Brasenia schreberi</i>
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Water Chestnut*	<i>Trapa natans</i>
Yellow Waterlilies	<i>Nuphar variegata</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>
Filamentous Algae	
Cattails	<i>Typha</i>
Purple Loosestrife*	<i>Lythrum salicaria</i>
Arrowhead	<i>Sagittaria latifolia</i>
Common Waterweed/Elodea	<i>Elodea canadensis</i>
Floating Leaf Pondweed	<i>Potamogeton natans</i>
Ribbon Leaf Pondweed	<i>Potamogeton epihydrus</i>

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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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	22.3	7.55
1 Ft	23.2	7.54
2 Ft	22.8	7.47
3 Ft	22.4	7.36

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	
Secchi Disk Depth (Feet)	2'1" - to the bottom for most of the river

Water Quality Parameters
WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity
Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Water chestnut densities have been greatly reduced over the years within this stretch of the Sudbury River. Some chestnut was surfaced whereas some was still within the water column. The chestnut is scattered in fairly low density “clumps” or groupings. The water chestnut was predominantly located in the shallow, more stagnant areas. Several water chestnut seeds were observed floating on the surface of the water. Consistent with previous years, several other invasive species are also present within this stretch of the river including variable milfoil, Eurasian milfoil, fanwort, and curly-leaf pondweed. There was a strong presence of native waterlilies along the shoreline. Pollen was noted along the surface in various locations. Water samples were collected, preserved, and shipped to the lab for analysis.

Based on the survey, management of water chestnut is still recommended to prevent seeds from dropping and thus adding to the seed bed which has been depleted through several years of management. We anticipate treatment initially. In lieu of follow-ups, we recommend that the water chestnut be hand-pulled, which is similar to what we did during the 2023 season.

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.

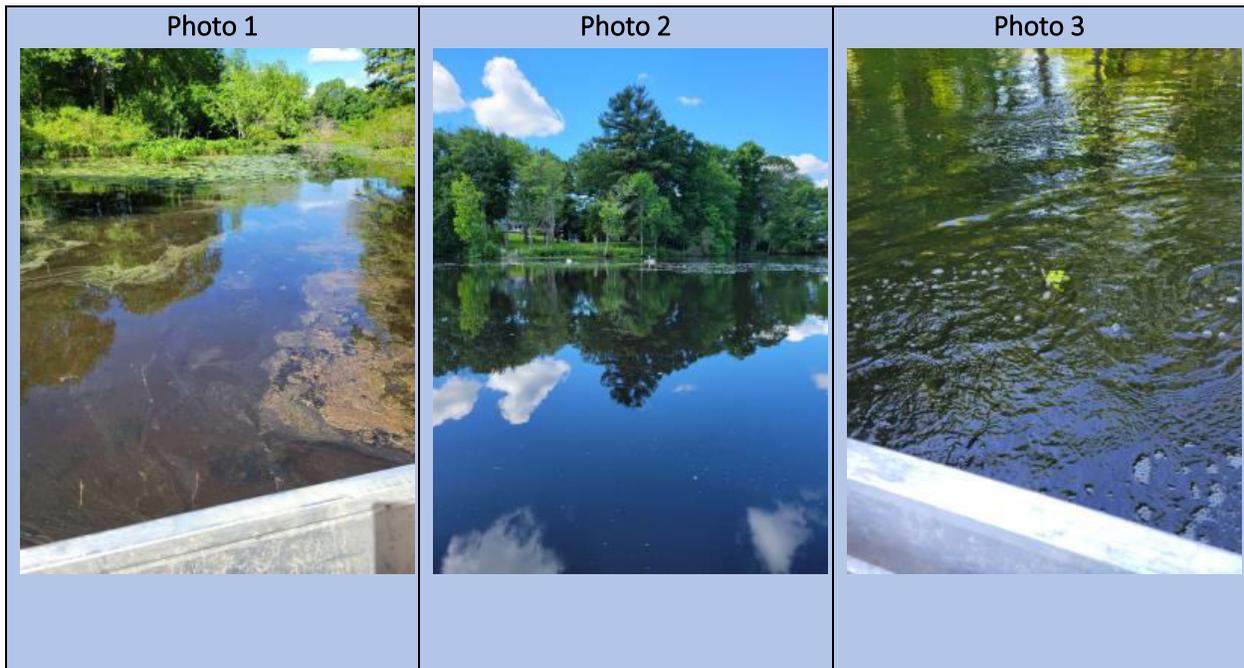


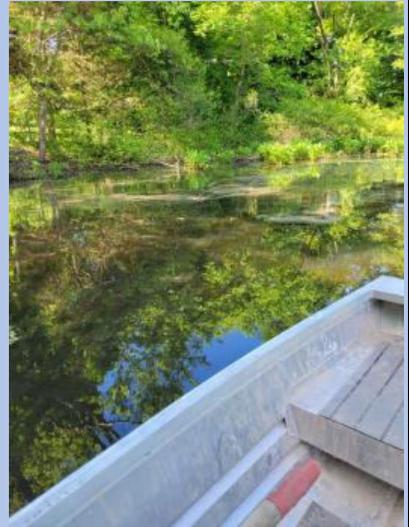
Photo 4



Photo 5



Photo 6



Trace to Sparse Water Chestnut  
● Water Chestnut





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## FIELD NOTES SUMMARY

**Customer:** City of Framingham

**Pond Name:** Waushakum Pond

**Site Location:** Framingham/Ashland, MA

**Date:** 5/29/24

On 5/29/24, Senior Environmental Scientist, James Lacasse, and Aquatic Field Assistant, Harley Westgate, made a visit to Waushakum Pond. 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
Common Waterweed/Elodea	<i>Elodea canadensis</i>
Waterlilies	<i>Nymphaeaceae</i>
Filamentous Algae	
Variable Milfoil*	<i>Myriophyllum heterophyllum</i>
Coontail	<i>Ceratophyllum demersum</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>
Curly-leaf Pondweed*	<i>Potamogeton crispus</i>
Benthic Algae	
Clasping Leaf Pondweed	<i>Potamogeton perfoliatis</i>
Cattails	<i>Typha</i>

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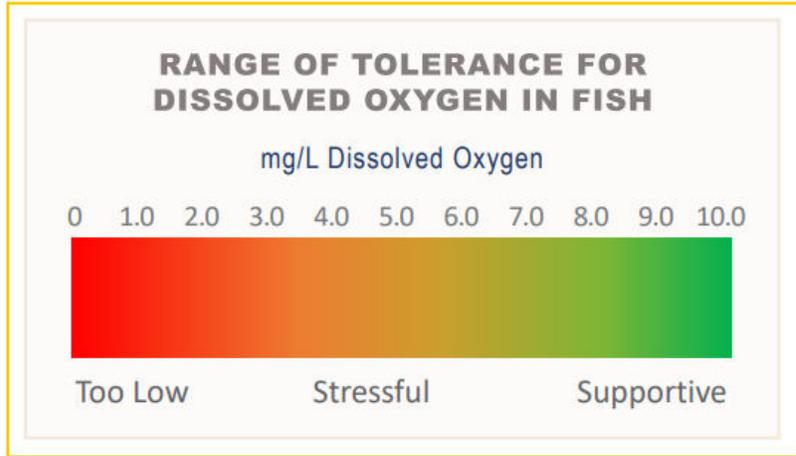
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While on-site, dissolved oxygen (DO) and temperature readings were collected using a calibrated YSI meter with optical sensor. Dissolved oxygen is the amount of oxygen in water that is available to aquatic organisms. DO is necessary to support fish 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:

Temperature & Dissolved Oxygen		
Depth	Surface Temp (°C)	Surface DO (mg/L)
Surface	25.2	10.08
1 ft	25.0	9.96
2 ft	24.8	9.85
3 ft	24.5	9.65
4 ft	23.6	8.74
5 ft	22.9	8.34
6 ft	22.7	8.25
7 ft	21.8	7.87
8 ft	20.9	7.62
9 ft	20.1	6.97
10 ft	19.2	7.62

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	
Secchi Disk Depth (Feet)	8'6"

**Water Quality Parameters**

WQ Baseline Plus Bundle = Alkalinity, Chlorophyll A, Conductivity, Hardness, Nitrates & Nitrites, Nitrogen - Total (Kjeldahl), pH, Phosphorus - Free Reactive (Water), Phosphorus - Total (water), Turbidity

Microbial Bacteria (total coliforms & E. coli)

Additional samples were collected from the contracted locations. The samples were properly preserved, and shipped on-ice via FedEx Overnight, or transported directly to the most appropriate lab. The lab will analyze the samples for the contracted/required parameters which are listed in the table above. Results will be provided upon

receipt from the lab or in the year end-summary report, as applicable. Any concerning results will immediately be brought to the attention of the Client.

**\*Additional Notes from the Biologist\***

Consistent with historical records, two invasive species were documented during the survey. These include curly-leaf pondweed and variable milfoil. These species have expanded since 2023. Curly-leaf pondweed was the primary invasive species located throughout the littoral zone (see map). Many native species were observed including thin-leaf pondweed, elodea, clasping leaf pondweed, waterlilies, and coontail. Clasping leaf pondweed, coontail, and elodea were the most prominent species documented. Waterlilies were seen around the perimeter of the pond. Cattails were also noted at the shoreline in a handful of locations. Smartweed was also seen growing along the shoreline. Water samples were collected, preserved, and shipped to the lab for analysis. There were no signs of an algal bloom. Pollen was seen along wind-blown shorelines and should not be confused with microscopic algae.

Although two invasive species were documented, the most nuisance species in Waushakum Pond have historically been native species. These include clasping leaf pondweed, elodea, and coontail. Based on the survey, this is also the case in 2024. Only triclopyr herbicide is allowed for use in Waushakum for nuisance/invasive aquatic weed control. Triclopyr works somewhat slowly but will impact both milfoil and curly-leaf pondweed. We also anticipate some impacts to the nuisance native species. Our plan is to target the usual amount of acreage in both Framingham and Ashland. Areas will include the densest areas of nuisance and invasive species.

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



Photo 2



Photo 3



Photo 4

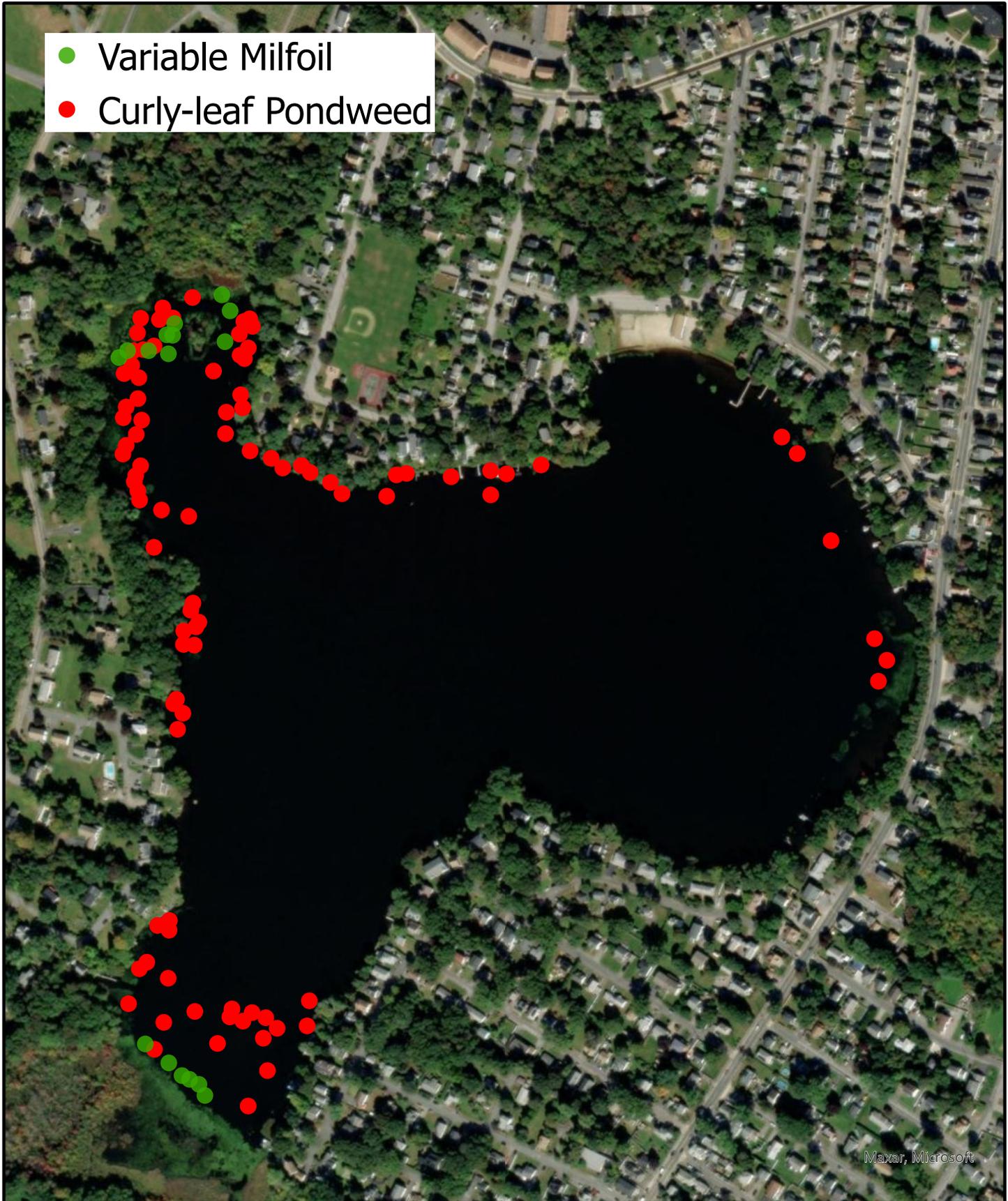


Photo 5



Photo 6





- Variable Milfoil
- Curly-leaf Pondweed

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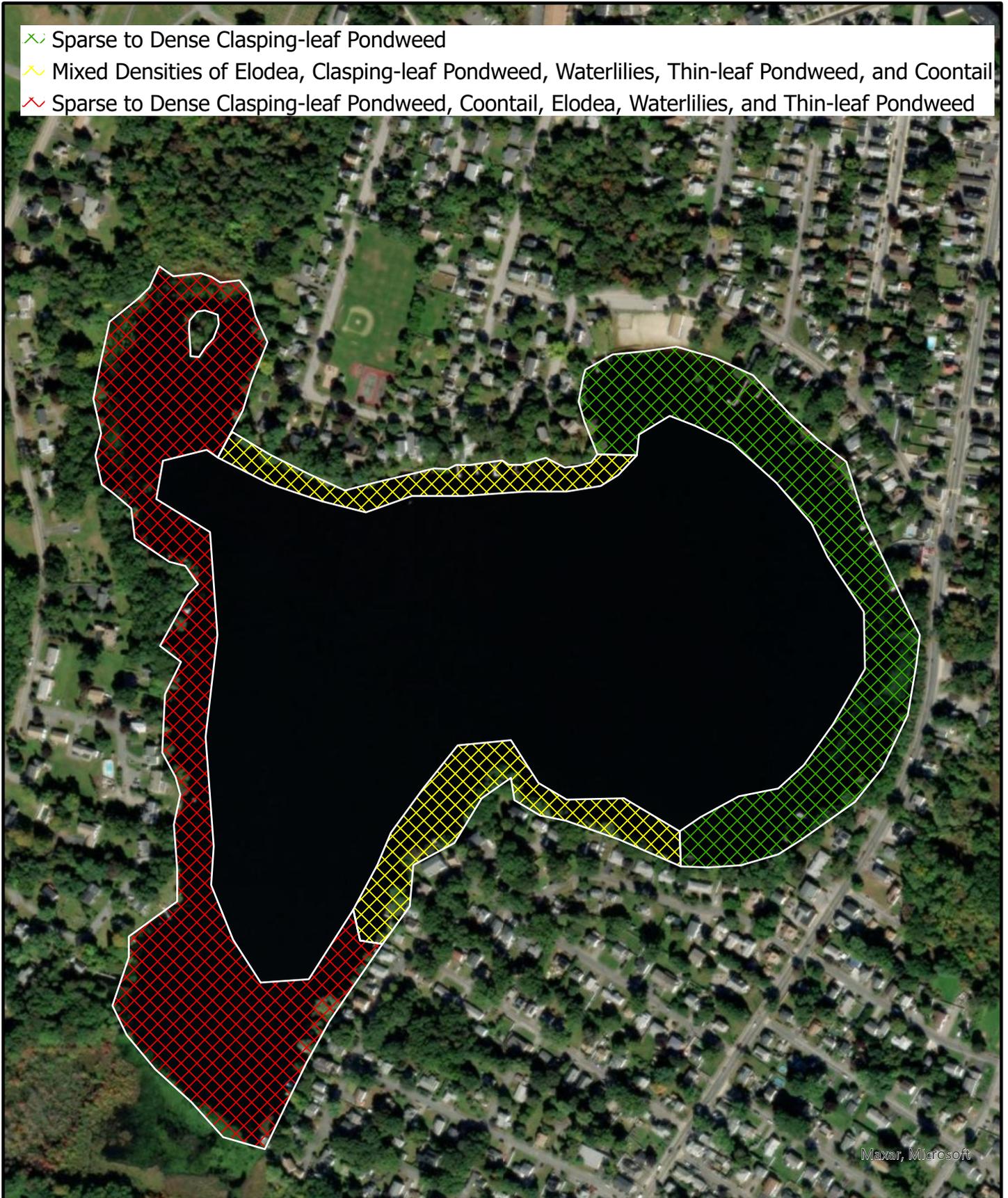
**Waushakum Pond**  
Invasive Species Distribution  
Framingham/Ashland, MA

Survey Date  
5/29/2024

Map Date  
5/30/2024



-  Sparse to Dense Claspingleaf Pondweed
-  Mixed Densities of Elodea, Claspingleaf Pondweed, Waterlilies, Thin-leaf Pondweed, and Coontail
-  Sparse to Dense Claspingleaf Pondweed, Coontail, Elodea, Waterlilies, and Thin-leaf Pondweed



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**Waushakum Pond**  
 Native Species Distribution  
 Framingham/Ashland, MA

Survey Date  
 5/29/2024

Map Date  
 5/30/2024

