

December 20, 2023

Walpole Conservation Commission  
135 School Street  
Walpole, MA 02081  
Sent via email: [Lhershey@walpole-ma.gov](mailto:Lhershey@walpole-ma.gov)

## Re: Walpole Ponds (Clarks Pond, Turner Pond, and Memorial Pond) – 2023 Year End Report

Dear Ms. Hershey:

It is our pleasure to present a 2023 Year-End Summary Report to The Town of Walpole regarding the Aquatic Management Programs at Clarks Pond, Turner Pond, and Memorial Pond.

### Clark's Pond

Clarks Pond (pictured in Figure 1) is approximately 6.6 surface acres and is located in Walpole, MA, specifically in Clarks Pond Conservation Area. The Pond is primarily bordered by sparse woodlands to the west and east, with a handful of properties scattered on the southern cove and northeastern shoreline. Stone Street runs along the northern portion of the Pond. Spring Brook feeds Clarks Pond from the eastern shoreline, with the outlet located on the northern point of the Pond. This outlet from Clarks Pond continues back into Spring Brook. Clarks Pond is a popular recreational waterbody for fishing from the shoreline.



Figure 1: Clarks Pond - Walpole, MA

Historically, Clarks Pond has battled nuisance densities of filamentous algae and waterlilies (*Nymphaeaceae*), as well as invasive species variable milfoil (*Myriophyllum heterophyllum*), curly-leaf pondweed (*Potamogeton crispus*), with trace observations of water chestnut (*Trapa natans*) and phragmites (*Phragmites australis*). The goal of the 2023 Aquatic Management Program was to manage both invasive and nuisance native species around the shoreline and within Clarks Pond through a proactive monthly schedule. Basic water quality parameters

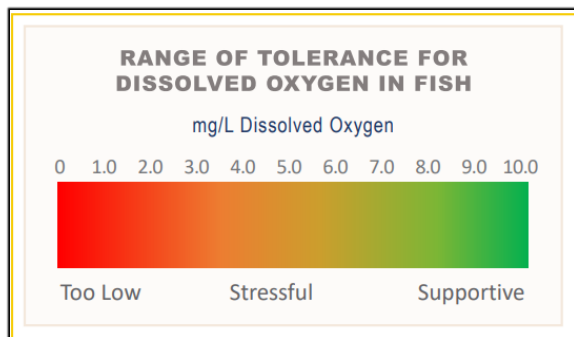


Figure 2: Dissolved oxygen table

were also tested during each site visit to monitor water quality data. This would be accomplished by implementing an Aquatic Management Program that focused around performing all applicable tasks, including planning, permitting, surveys, treatments, and reporting.

During each visit to the Pond, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Additionally, Dissolved oxygen (DO) and

temperature readings were collected throughout the season 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, please see the figure provided for 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 (illustrated in Figure 2 above). Water clarity was also assessed using a Secchi Disk. 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 measurement of the transparency of the water. All readings are included in the tables throughout this report.

All permitting, treatment, and survey tasks were completed without issue and at the proper times. The table below provides the specific dates of each task. Below the table, each visit/task performed is described in additional detail.

#### Summary Of 2023 Management Activities

Date	Task/Description
May 17, 2023	A pre-treatment survey was performed in order to document baseline conditions of the Pond, note the current vegetation species/densities present, and to guide future 2023 management; The initial herbicide/algacide treatment was performed
June 7, 2023	A survey was conducted to evaluate the effectiveness of the previous treatment; An algacide treatment was performed
July 5, 2023	A survey was conducted to evaluate the effectiveness of the previous treatments and to guide future management
August 7, 2023	A survey was conducted to determine the effectiveness of the algacide treatment and to document the overall conditions of the Pond; Water chestnut was hand-pulled and properly disposed of
September 11, 2023	A post-treatment inspection was completed to evaluate the effectiveness of the 2023 Aquatic Management Program and to help guide recommendations for 2024

#### **May 17, 2023 - Initial Monitoring Site Visit / Pre-Treatment Survey / Initial Treatment**

On May 17<sup>th</sup>, Senior Environmental Scientist, James Lacasse, completed a site visit to Clarks Pond. The visit consisted of performing a survey, collecting basic water quality data, and conducting a treatment. Conditions during the visit were sunny with a slight breeze.

Upon arrival, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. The first noticeable observation was that there was a slight reduction in variable milfoil from the 2022 ProcellaCOR treatment. Variable milfoil was documented throughout the Pond, in sparse to dense densities. The most



*Figure 3: Filamentous algae mats and pondweeds surfacing*

# WATER & WETLAND LAKE, POND & WETLAND MANAGEMENT



Figure 4: Water and Wetland biologists collecting basic water quality data

Pond, adjacent to the road.

dense area of milfoil was found in the middle of the Pond. Filamentous algae and epiphytic algae was noted throughout the Pond as well. Filamentous algae was documented both of the bottom of the Pond and on the surface, forming mats of algae on the surface of the Pond. Epiphytic algae was noted on roughly a third of the variable milfoil. Waterlilies were observed growing throughout the water column and surfacing in a handful of areas. Pollen was mixed throughout the surfacing pondweeds and algae. Watermeal (*Wolffia*) and duckweed (*Lemna minor*) were also documented in sparse densities, primarily around the shoreline. Japanese knotweed (*Reynoutria japonica*) was found around the shoreline of the

Based on the survey, a treatment was conducted for the control of Variable milfoil and algae. The liquid herbicide/algaecide was applied using a treatment boat equipped with a calibrated sub-surface injection system. This application methodology allows for even coverage within the treatment areas. Bright pink posters stating the restrictions associated with the treatment were posted around the Pond prior to treatment.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
20.1	12.26	To the bottom

## **June 7, 2023 - Survey / Follow-up Algaecide Treatment**

On June 7<sup>th</sup>, Senior Environmental Scientist, James Lacasse completed a site visit to Clarks Pond. The visit consisted of performing a survey, collecting basic water quality data, and conducting a treatment. Conditions during the visit were sunny and calm.

A survey was conducted in order to evaluate the effectiveness of the previous treatment. Among the waterlilies, and in scattered patches within the Pond, there were mats of benthic filamentous algae (algae pictured in Figure 5 to the right). In addition, there were trace densities of both variable milfoil and water chestnut observed, which was a significant improvement compared to last season. There was also a layer of pollen on the surface of the water, specifically most dense along the wind-blown shorelines. Based on the conditions documented during the survey, a treatment was conducted for the control of algae as the variable milfoil was treated during the previous visit and any remaining milfoil appeared unhealthy/dying. Water chestnut would be addressed during the July and August visits.



Figure 5: Conducting a survey at Clarks Pond

As planned, and based on the survey, a treatment was conducted for the control of algae. The liquid contact algaecide was applied using a treatment boat equipped with a calibrated sub-surface injection

system. This application methodology allows for even coverage within the treatment areas. The treatment was completed without issue. There were no restrictions associated with this treatment.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
17.4	8.81	To the bottom

#### **July 5, 2023 - Survey**



*Figure 6: Clarks Pond post-treatment*

On July 5<sup>th</sup>, Senior Environmental Scientist, James Lacasse, and Field Assistant, Grace Adams, completed a site visit to Clarks Pond. The visit consisted of conducting a survey and collecting basic water quality data. Conditions during the visit were warm and sunny.

The Pond's conditions had significantly improved since the previous treatments (improved conditions documented in Figure 6). Along the shoreline and throughout the Pond, there was minimal vegetation observed. The most dominant species were waterlilies, which were found throughout the Pond, especially in the southern and eastern shoreline areas. In addition to waterlilies, there were scattered patches of filamentous algae and duckweed along the shoreline. Overall, the Pond looked great, and no phragmites were noted in the areas where it was previously treated. Based

on the survey, treatment was not necessary.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
27.3	7.67	To the bottom

#### **August 7, 2023 - Survey / Water Chestnut Hand-Pulling**

On August 7<sup>th</sup>, Senior Environmental Scientist, James Lacasse, and Field Assistant, Grace Adams, completed a site visit to Clarks Pond. The visit consisted of performing a survey, collecting basic water quality data, and hand-pulling Water Chestnut.

Upon completing our survey, it was determined that no treatment was necessary during today's visit. The target invasive species and algae have been controlled through the 2023 program. While some Filamentous Algae was present, it was extremely scattered at only trace densities and did not warrant treatment. Waterlilies, which are native, were scattered around the shoreline of the Pond (Figure 7). These provide valuable habitat and cover and did not reach a density/cover which would warrant management. Weather conditions were light rain, calm, with an air temperature of approximately 70 degrees F.



*Figure 7: Waterlilies noted within the Pond*

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
24.0	7.16	To the bottom



### **September 11, 2023 - Survey**

On September 11<sup>th</sup>, Aquatic Biologist Scott Conrad completed a site visit to Clarks Pond. The visit consisted of conducting a survey and collecting basic water quality data. Conditions during the visit were partly cloudy with overcast.

A large number of species were documented at scattered, trace densities during the survey performed. The majority of these species were natives including: thin-leaf pondweed (*Potamogeton pusillus*), white waterlily, coontail (*Ceratophyllum demersum*), bladderwort (*Utricularia sp.*), duckweed, watermeal, American bulrush (*Schoenoplectus americanus*), and cattails (*Typha sp.*). There were also some invasive species present during the survey including: curly-leaf pondweed and water chestnut. Curly-leaf pondweed has a secondary regrowth during this part of the year as the temperatures and light decreases. Only a few water chestnut plants were found as this species was controlled during the season through hand-pulling. We were happy to report that no variable milfoil was documented during this survey.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
24.1	7.82	To the bottom

### **Turner Pond**

Turner Pond (pictured in Figure 8 to the right) is approximately 17.5 surface acres and is located in Walpole, MA. Turner Pond is primarily surrounded by sparse woodlands, with the most dense area of woodlands found along the western shoreline. There are developed properties scattered along the southern and northern shorelines. Elm Street, Mill Pond Road, and Elmcrest Circle are also adjacent to the Pond. The Pond's inlet is in the northern cove, which is fed by Mine Brook. The water flow within the Pond continues through Turner Pond and empties at the outlet on the eastern shoreline, which runs through a culvert under Mill Pond Road. The outlet is controlled by a constructed dam. Access to the Pond was granted from the Camp Building off of Elm Street, adjacent to a parking area.

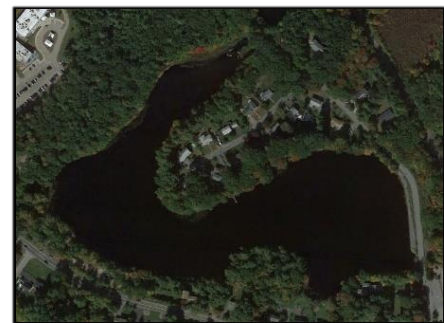


Figure 8: Turner Pond - Walpole, MA

Fanwort (*Cabomba*) and variable milfoil have been the point of focus throughout years in the past as these species have been historically documented throughout the majority of the waterbody. As of the last few years, American featherfoil (*Hottonia inflata*) has additionally emerged along the shoreline in sparse to moderate populations and is a rare species to find in the Northeast. Basic water quality parameters would also be tested with each site visit to monitor water quality. The goal of the 2023 season was to specifically manage 5 acres of invasive fanwort and variable milfoil within Turner Pond. This would be accomplished by implementing an Aquatic Management Program that focused around performing all applicable tasks, including planning, permitting, surveys, treatments, and reporting.

All permitting, treatment, and survey tasks were completed without issue and at the proper times. The table below provides the specific dates of each task. Below the table, each visit/task performed is described in additional detail.

### Summary Of 2023 Management Activities

Date	Task/Description
June 7, 2023	A pre-treatment survey was performed in order to document baseline conditions of the Pond, note the current vegetation species/densities present, and to guide future 2023 management; An herbicide treatment was completed
September 11, 2023	Post-treatment survey conducted to determine the effectiveness of the previous treatment and to guide recommendations for 2024 management

#### **June 7, 2023 - Pre-Treatment Survey / Initial Treatment**

On June 7<sup>th</sup>, Senior Environmental Scientist James Lacasse, and Aquatic Field Assistant Grace Adams, completed a site visit to Turner Pond. The visit consisted of performing a survey, collecting basic water quality data, and conducting a treatment. Conditions during the visit were sunny and calm.

A survey was initially conducted in order to document baseline conditions and confirm treatment areas. Along the entire shoreline, variable milfoil was observed in dense densities and flowering at the surface (illustrated in Figure 9). Fanwort was much more scattered but documented in dense densities. Snailseed pondweed (*Potamogeton bicupulatus*) and thin-leaf pondweed, both native species, were noted in trace densities. Waterlilies were documented in varying densities. American featherfoil was scattered around the shoreline in increased densities from 2022 – which the increase in distribution can be attributed to last year’s drought. A layer of pollen was observed on the surface of the water, and certain populations of the vegetation were covered in epiphytic algae, an indication that the plant was dead or decaying. pH was sampled using calibrated meters. The pH was 7.8 which is within a standard range for freshwaters.

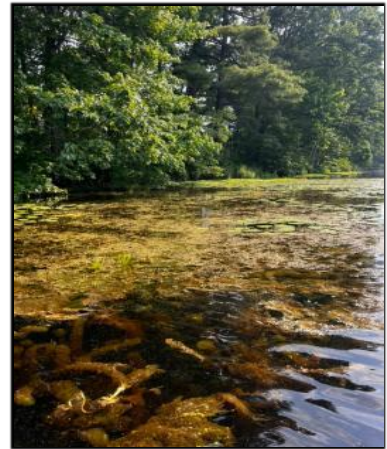


Figure 9: Filamentous algae, variable milfoil, and fanwort surfacing at Turner Pond

A treatment was conducted for the control of target nuisance/invasive plant growth, specifically targeting both fanwort and variable milfoil. The liquid contact herbicide was applied using a treatment boat equipped with a calibrated sub-surface injection system. This application methodology allows for even coverage within the treatment areas. The treatment was completed without issue. We anticipated plant die-off within just a few days to a few weeks. Bright pink posters stating the restrictions associated with the treatment were posted around the Pond prior to the treatment.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
17.4	6.72	3'

#### **September 11, 2023 - Post-Treatment Survey**

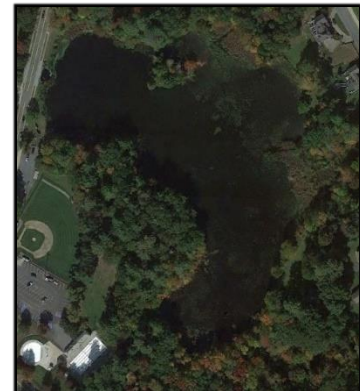
On September 11<sup>th</sup>, Aquatic Biologist, Scott Conrade, made a visit to Turner Pond to complete a post-treatment survey. Conditions during the site visit were mainly cloudy and calm. The purpose of this site visit was to assess the efficacy of the 2023 treatment at Turner Pond in addition to guiding subsequent years’ management. Variable milfoil and fanwort were documented during the survey but were noted as greatly

reduced within the treatment/management areas and somewhat reduced outside the direct treatment/management areas. The densest areas of these species were by the inlet. Overall, open-water was greatly improved through the treatment. There was a slight algae bloom occurring during the survey and the Secchi Disk reading was slightly less than what we'd anticipate to see at Turner Pond this time of year.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
23.7	7.53	1'8"

## Memorial Pond

Memorial Pond (pictured in Figure 10) is located in Walpole, MA and is approximately 6.5 surface acres. The Pond is primarily surrounded by woodlands with scattered, small wetlands to the northeast and south. There are a few residential properties scattered along the eastern shoreline, off Diamond Street and Pond Lane. Carolyn Woodward Memorial Playground borders the waterbody through the small woodlands to the west (off of School Street). The public parking lot and fishing pier are located within the western basin (off of School Street as well). A small island, roughly 0.17 acres in size, is found along the northern half of the Pond. The inlet, fed by Spring Brook, is found within the southeastern shoreline as water flows within the Pond from the south to northwest. The outlet (a dammed structure) is on the western shoreline which feeds back into Spring Brook and eventually into the Neponset River. Memorial Pond is a popular recreational waterbody for activities such as fishing and hiking.



*Figure 10: Memorial Pond - Walpole, MA*

Historically, Memorial Pond has battled several invasive species including curly-leaf pondweed, variable milfoil, water chestnut, and fanwort. The goal of the 2023 program was to manage the invasive species within Memorial Pond while monitoring native species growth along with collecting basic water quality. This would be accomplished by implementing an aquatic management program that focused around performing all applicable tasks, including planning, permitting, surveys, treatments, and reporting.

All permitting, treatments, and survey tasks were completed without issue and at the proper times. The table below provides the specific dates of each task. Below the table, each visit/task performed is described in additional detail.

### Summary Of 2023 Management Activities

Date	Task/Description
May 17, 2023	A pre-treatment survey was conducted to document baseline conditions of the Pond, note the current vegetation species/densities present, and to guide future 2023 management
July 5, 2023	A brief survey was conducted in order to confirm potential treatment areas; The initial herbicide treatment was performed

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July 26, 2023	A survey was performed to evaluate the effectiveness of the previous treatment; Follow-up herbicide treatments were completed
August 14, 2023	A post-treatment survey was conducted to evaluate the previous treatments; An herbicide treatment was completed
September 11, 2023	A post-treatment inspection was completed to evaluate the effectiveness of the 2023 Aquatic Management Program and to help guide recommendations for 2024

## May 17, 2023 - Pre-Management Survey



Figure 11: Dense pondweeds and algae surfacing throughout portions of Memorial Pond

On May 17<sup>th</sup>, Senior Environmental Scientist, James Lacasse, completed a site visit to Memorial Pond. The visit consisted of conducting a survey and collecting basic water quality data. Conditions during the visit were sunny and calm.

Upon arrival, a survey was conducted using visual observation paired with a standard throw-rake and handheld GPS/ArcGIS Field Maps, as applicable. Three invasive species were documented during the survey, including water chestnut, variable milfoil, and curly-leaf pondweed. Variable milfoil and water chestnut were the most dominant invasive species as they were noted in varying densities ranging from sparse to dense

throughout the Pond (Figure 11). Curly-leaf pondweed was found mixed throughout the water chestnut and variable milfoil. Other species noted included Elodea (*Elodea canadensis*), thin-leaf pondweed, waterlilies, duckweed, and watermeal. There was scattered filamentous algae both on the surface and bottom of the Pond (see Figure 11 for Pond conditions). Epiphytic algae was noted in a small portion of the vegetation. Pollen was found mixed throughout the surfacing pondweeds and algae. Fanwort was not yet documented but would also be a target in Memorial Pond through the anticipated Sonar treatment program once permits are put in place. The Water chestnut has spread steadily since our previous survey of Memorial Pond.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
21.6	8.42	5'

## July 5, 2023 - Monitoring / Initial Herbicide Treatment

On July 5<sup>th</sup>, Senior Environmental Scientist, James Lacasse, and Field Assistant Grace Adams, completed a site visit to Memorial Pond. The visit consisted of performing a survey, collecting basic water quality data, and conducting a treatment. Conditions during the visit were mostly sunny and calm.

Upon arrival, a brief survey was conducted to confirm treatment areas. The eastern half of the Pond, being very shallow, contained the densest populations of both native and invasive species. The most dominant species was Water chestnut (pictured in Figures 12 and 13),



Figure 12: Water chestnut along the shoreline



which was noted in dense densities in the eastern portion of the Pond. The other two invasive species found in moderate densities were fanwort and variable milfoil, which appeared unhealthy in the shallow areas of the Pond. The treatment went well, and excellent coverage was achieved. Other species noted during the site visit included pickerelweed (*Pontederia cordata*), cattails, watermeal, duckweed, waterlilies, and coontail.



Figure 13: A mix of dense waterlilies and water chestnut

As planned, a treatment was conducted for the control of nuisance and invasive species. The Pond was due a “reset” with Sonar (active ingredient: fluridone). Both liquid and granular Sonar were applied to the Pond. The liquid herbicide was applied using a treatment boat equipped with a calibrated sub-surface injection system. The granular herbicide was applied using a calibrated blower. The herbicide was evenly distributed onto the target plant beds. We did anticipate some impacts to native waterlilies and water chestnut, but the dominant target of the treatment was invasive Fanwort, as well as Variable Milfoil. Sonar works by maintaining the desired concentration of Fluridone for a period of 45-60+ days. To achieve this, this initial treatment is completed, and 1-2 additional treatments were completed to “boost” the concentration within the water column. Sonar provides carry over control of the target species, but does work slowly, so results are not instantaneous.

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

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
27.8	5.06	5'2"

#### **July 26, 2023 - Survey / Follow-up Herbicide Treatment**

On July 26<sup>th</sup>, Senior Environmental Scientist James Lacasse completed a site visit to Memorial Pond. The visit consisted of performing a survey, collecting basic water quality data, and completing a treatment. Conditions during the visit were warm and sunny.

Upon arrival, a survey was conducted to evaluate the effectiveness of the previous treatment. The Sonar treatment worked well as the tips of fanwort and variable milfoil appeared to be chlorotic, illustrating that the Sonar was penetrating the plant (pictured in Figure 15). Other species that appeared effected included waterlilies, water chestnut, and coontail. The Sonar booster applied today increased contact exposure time to further control the plants, as Sonar works slowly. Water chestnut was noted forming seeds, which typically begin to drop in the middle of August. The water chestnut was noted throughout the Pond, especially around the perimeter, middle of the Pond, and within the eastern and southern coves (dense water chestnut documented in Figure 14). Water chestnut



Figure 14: Dense water chestnut within the northeastern cove

was documented in isolated populations in addition to mixed within waterlily populations (densities pictured in Figures 14 and 15).



Figure 15: Epiphytic Algae covering pondweeds; Water Chestnut and submersed pondweeds appearing discolored/chlorotic

Two separate treatments were completed during the site visit. The first treatment was conducted for the control of water chestnut. The liquid herbicide, Clearcast (Imazamox), was applied using a small Jon 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. The second treatment was conducted to target invasive variable milfoil and fanwort, using Sonar. Weather was also closely monitored prior to treatment to ensure a treatment date without rain or high winds. We had one more Sonar “bump” treatment scheduled and would again target water chestnut at that time. The water chestnut treatment today would create access lanes to access more chestnut during the next visit.

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

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
28.3	6.81	4'11"

#### **August 14, 2023 - Survey / Herbicide Treatment**

On August 14<sup>th</sup>, Senior Environmental Scientist James Lacasse, and Field Assistant Brian Sweeney, completed a site visit to Memorial Pond. The visit consisted of performing a survey, collecting basic water quality data, and conducting treatments. Conditions during the site visit were calm and mostly sunny.

Upon arrival, a brief survey was performed to assess the effectiveness of the previous treatment and to confirm potential treatment areas. All variable milfoil populations appeared very unhealthy and covered in epiphytic algae; indicating that the plant was dead or dying. A large amount of the water chestnut population was dead or decaying at the time of today’s visit also as a result of our previous treatment. Other species noted included waterlilies, duckweed, watermeal, purple loosestrife (*Lythrum salicaria*), fanwort, and filamentous algae. Overall, conditions within Memorial Pond had significantly improved since 2023 management had begun (see Figure 16).

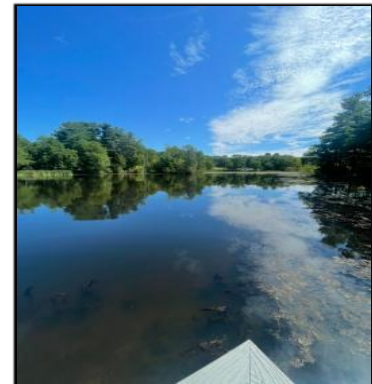


Figure 16: Conditions within Memorial Pond improving with each treatment

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*Figure 17: Dense Water chestnut targeted during the treatment*

A follow-up treatment was conducted for the control of water chestnut (Figure 17). 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. This was not included in the original scope of work but was completed at no additional cost.

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

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
26.2	7.22	5'9"

## **September 11, 2023 - Monitoring Site Visit / Post-Management Survey**

On September 11<sup>th</sup>, Aquatic Biologist Scott Conrade completed a site visit to Memorial Pond. The visit consisted of conducting a post-management survey. The purpose of the post-management survey is to determine the efficacy of the management/treatments performed during the 2023 season, as well as to guide the 2024 program. Overall, the Sonar treatment program worked extremely well this year, despite being started slightly later than we'd hope due to permit delays. Fanwort was still present but was greatly reduced and the majority of remaining fanwort (primarily documented on the inlet side of the Pond) did not appear healthy. Water chestnut was also greatly reduced through the provided treatments, which were not part of the scope but were completed in an effort to greatly improve conditions this year. Any remaining water chestnut was near the inlet side of the Pond, with a few individual plants near the outlet area. Overall, the program worked well; however, continued management would be necessary to further improve and maintain conditions. Species documented during the survey included waterlilies, duckweed, water chestnut, fanwort, pickerelweed, cattails, benthic algae, and thin-leaf pondweed.

Surface Temp (°C)	Surface Dissolved Oxygen (mg/l)	Secchi Disk Clarity (ft)
23.7	7.71	3'2"

## **Summary / 2024 Recommendations**

All work at the three Walpole Ponds was conducted in accordance with the Orders of Conditions. 2023 marked the first year at Memorial Pond, which is battling several invasive species. The program was started slightly later than we'd have hoped due to permitting; however, significant progress was made. Clarks Pond management program centers around monitoring which allows us to adjust to ever changing conditions when battling both algae and several invasive species. We were again able to hand-pull water chestnut at Clarks Pond which is a great sign. Turner Pond's program relies on a single treatment to manage variable milfoil and fanwort within a small area of the pond, as use of Clipper is limited to just ¼ of the pond. Ultimately, use of Sonar is recommended in the future if budget allows. If not, continuing with the same approach using contact herbicides has been effective.



### **Clarks Pond**

For 2024, we recommend continuing with a similar management program. The program should consist of monthly monitoring visits, which assists with not over-treating or under-treating. The focus of the program should be to maintain native vegetation at beneficial densities and cover (for fish habitat) while managing invasive vegetation, algae, and nuisance densities of native vegetation (specifically in fishing areas, example – from the shorelines). This would be successfully accomplished through monitoring, basic water quality collection, and treatments only as necessary. We have conducted a full alternatives analysis and have determined that the scope of work originally presented and approved is still most applicable to the ponds. Given that a systemic herbicide was utilized on the encroaching phragmites growth in previous years, we do not anticipate the need to treat this species in 2024. Hand-pulling should continue to be the preferred approach toward water chestnut management. Treatments should be incorporated as densities extend beyond those that can be reasonably hand-pulled. As described above in the report, it seems as if the variable milfoil in Clarks Pond has formed a resistance to the contact herbicide that has been used for several continuous seasons in a row as multiple treatments were necessary in order to control the growth of the variable milfoil. Several years ago, a new milfoil control option called Procellacor became available and is both EPA/MA approved. Procellacor is the ultimate milfoil control tool as it is a systemic product that works quickly like a contact herbicide. It also has extremely low use rates. The largest benefit of Procellacor is that it provides multiple years of nuisance milfoil control (likely 3+ years of nuisance level control). We recommend this product be incorporated in 2024 again in combination with diquat as it was in 2022 and 2023.

### **Turner Pond**

As noted above, fanwort and variable milfoil are found within a majority of Turner Pond. While the entirety of the Pond could have been treated, selecting the 5 acres of treatment came down to determining the highest priority areas. These areas included abutter shorelines/docks and by the inlet. It will be important to keep a close eye on the American featherfoil as well, as this species has the tendency to invade shallow shorelines. While the management of the limited area within Turner Pond worked well, the expansion of the milfoil and fanwort warrants a whole Pond approach, as budget allows. This approach would utilize Sonar (fluridone) herbicide, which is a systemic product geared largely towards “whole pond resets.” Until then, continuing with contact herbicides is imperative.

### **Memorial Pond**

2023 marked the first year in which Water & Wetland managed Memorial Pond. The 2023 season went very well given the late start to the program. An Order of Conditions was obtained in 2023, so an updated alternatives analysis and updated management plan had been recently drafted. The 2023 program relied heavily on real-time monitoring through proactive visits by an aquatic biologist. The focus of the program was to maintain native vegetation at beneficial densities and cover while managing invasive vegetation, algae, and nuisance densities of native vegetation. This was successfully accomplished through monitoring, basic water quality collection, and treatments only as necessary. At no time were adverse impacts noted.

Looking forward to 2024, we recommend continuing with a similar approach due to the extensive distribution of invasive species. The program should include monitoring visits throughout the 2024 growing season. Treatments based on real-time survey data also continue to make the most sense to





manage nuisance plant and algae growth. We recommend visits throughout the Summer paired with use of contact herbicides for the control of submerged invasive species, and continued Clearcast treatments for water chestnut control. Water chestnut seeds are viable for more than a decade so control of this plant remains a long-term commitment.

We have greatly enjoyed working with the Town of Walpole in 2023. We hope that you were impressed by the communication, timeliness, and expertise provided by Water & Wetland throughout the year. We look forward to working with you in 2024 and beyond.

Sincerely,

A handwritten signature in black ink, appearing to read "James Lacasse", is positioned above the printed name.

**James Lacasse**  
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