



Chemical Treatment Hickory Hills Lake Little Hickory Pond

Prepared for:

Main Lake Task Force Request for Services
Hickory Hills Landowners Inc.

PO Box 298

Lunenburg, MA 01462

hickoryhills@net1plus.com

mlr@hickoryhillslake.com

March 16, 2020

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590 Lake Street

Shrewsbury, MA 01545

Prepared By: Joe Onorato, Business Development Consultant

Phone: (508)250-6238

FAX: (774)745-0277

JOnorato@Solitudelake.com

www.solitudelakemanagement.com



March 16, 2020

Main Lake Task Force Request for Services
Hickory Hills Landowners, Inc.
PO Box 298
Lunenburg, MA 01462
Submitted Electronically via email

RE: Request for Services – Chemical Treatment
Hickory Hills Lake & Little Hickory Pond
Lunenburg, MA

Dear Board Members,

Solitude Lake Management (SLM) is pleased to submit this Proposal to Hickory Hills Landowners, Inc. through its Aquatics Task Force in response to the Request for Services for chemical treatment at Hickory Hills Lake and Little Hickory Pond.

As you know, SOLitude (and its predecessors) have been working with Hickory Hills Landowners for more than two decades. During that time, a lot has been accomplished including multiple surveys, treatments and general consulting assistance. Our great familiarity with Hickory Hills Lake and Little Hickory Pond has helped us to fully understand the scope of the Request for Services. Our proposal addresses all of the individual tasks listed in the request. We are confident that our recommendations for permitting, treatment and monitoring will provide desired results at both Hickory Hills Lake and Little Hickory Pond. Please do not hesitate to contact me directly if you have any questions or would like to discuss our submittal in greater detail. Thank you.

Sincerely,



Joe Onorato

Business Development Consultant

SOLitude Lake Management

(508) 250-6238 / JOnorato@Solitudelake.com

SCOPE OF SERVICES

The following Scope of Services addresses the specific requests and conditions listed in the Request for Services and takes in to account our vast knowledge of Hickory Hills Lake and Little Hickory Pond.

HICKORY HILLS LAKE - FANWORT

The objective of the project is to control invasive fanwort throughout Hickory Hills Lake with a Sonar herbicide treatment program. Fluridone, the active ingredient in Sonar herbicide, is a slow-acting systemic herbicide that can effectively control fanwort.

Based on our experience utilizing Sonar for the control of fanwort in Massachusetts over the last several decades, as well as our knowledge of Hickory Hills Lake, we recommend using a combination of the liquid and time-release pellet formulations of Sonar.

Preferred Approach:

The pellet formulations (SonarONE and/or H4C) will help to maximize the herbicide concentration-exposure-time to ensure complete control of the plants, and will help to limit the potential for downstream loss of fluridone. Recent research also suggests that the lower portions of the plants may absorb more herbicide, which also favors the use of pellet formulations. Sonar Genesis – the recommended liquid formulation – will also be utilized to raise the fluridone concentrations quickly and to ensure that lethal concentrations are being maintained lake-wide.

In most situations 60-90 days of exposure to lethal concentrations of fluridone are needed to ensure complete control of the fanwort is achieved. Early treatments and use of pellet formulations results in more rapid control of the target species and reduces the amount of Sonar needed to achieve complete control of the fanwort growth. This treatment approach is recommended at Hickory Hills Lake given our experience with the Lake and the potential for high flow.

Critical factors for the success of the Sonar herbicide treatment program as proposed include:

- Beginning the treatment program early in the growing season (by April 30), which will expose the targeted invasive plants to fluridone just as they are beginning active growth. This will slow and eventually stop vertical growth of the plants. As a result, there will be less plant tissue to die-back which will result in weed free conditions earlier in the summer and reduce the chance of adverse impacts to water quality as the plants decompose. Beginning the treatment program at the early stages of onset fanwort growth also increases the duration of control in subsequent years following treatment. Given that April and May have the highest chance of increased flow, achieving the desired concentration at this time is best achieved by using the granular time released formulations of Sonar (One/H4C)
- Minimize outflow following treatment that will be accomplished by lowering the water level prior to the initial application. This will keep fluridone in the pond longer and should ultimately reduce the total amount of herbicide needed to achieve complete control. The Hickory Hills Landowners will be responsible for coordinating the pre-treatment water level lowering.
- Use of the newest and most appropriate formulations of the Sonar herbicide to maximize exposure to the target plants. Given the potential for higher flow, we will perform three “split” applications guided by periodic inspections and FasTest monitoring results; however, we will also include a potential 4th and 5th application to fully insure the desired results.

SOLitude Lake Management (SLM) will prepare and file the required site-specific License to Apply Chemicals permit from MA DEP – Office of Watershed Management.

Prior to treatment, SOLitude will survey Hickory Hills Lake to visually document the extent and maturity of the target fanwort growth. During and following completion of the treatment program SOLitude will inspect target plant growth conditions. Surveys will be performed from a boat using a throw-rake and visual observation and may also include an underwater camera system. These surveys will be coordinated with the Hickory Hills Landowners Task Force.

In advance of treatment SOLitude Lake Management will prepare a written notification of treatment to be published in the local newspaper. Immediately prior to treatment, SOLitude will post laser-printed 8 ½ x 11 warning signs on colored stock that detail the treatment date and water use restrictions to be imposed following treatment.

Sonar (fluridone) herbicide, both granular (Sonar One/H4C) and some liquid (Sonar Genesis/AS) formulations, will be applied to Hickory Hills Lake to control fanwort (*Cabomba caroliniana*). The liquid formulations will be applied subsurface from a calibrated pumping system and the granular product will be applied using a calibrated spreader. A MA DAR licensed applicator will oversee the treatment. An airboat or other treatment boat equipped with the proper application equipment will be used for the treatment. A Differential/WAAS GPS system will also be used for real-time navigation during the treatment and to ensure that the herbicide is applied evenly within the designated treatment areas.

We would recommend initiating treatment at the onset of active plant growth, probably mid-late April. Using the newest liquid and pellet formulations should reduce the number of applications required and result in plant control by mid-summer. We anticipate conducting an initial application and two (2) follow-up booster applications. Given our experience with Hickory Hills Lake, we also feel that there is a potential need for a 4th and possibly 5th application of Sonar. We will continue to monitor the Lake throughout the Summer and will conduct a 4th and 5th application of Sonar, as needed at no additional cost. Sonar will be applied at a dose sufficient to maintain a concentration between 8-12 ppb for a period of 60-90 days or until plants reach mortality. While our focus is to maintain a lake-wide concentration of fluridone of 8-12 ppb, Sonar will be distributed on the fanwort beds themselves. The granular formulations of Sonar will allow us to achieve these heightened concentrations of fluridone on the fanwort beds. Our anticipated initial dose of fluridone on the beds will be approximately 30 ppb. The multiple “bump” applications will be conducted in a similar manner and will achieve a dose of approximately 70-90-ppb on the fanwort beds and will maintain the target lake-wide dose of 8-12 ppb until plants reach mortality.

SLM will conduct several FastEST sample collections and analysis at Hickory Hills Lake in order to monitor Sonar herbicide concentrations during the course of the project. Samples will be collected and shipped to SePRO (Sonar manufacturer) for immunoassay analysis. Our program cost reflects four rounds of four samples.

Treatments will be scheduled and performed on a date mutually agreed to by Hickory Hills Landowners, Inc. and SLM. We understand that the actual date of treatment will be determined by visual inspection of actively growing fanwort.

Following the post-treatment survey, SOLitude will prepare and submit a written report that provides a) a description of the treatment program, b) plant response observed, and c) on-going management options/recommendations.

With this approach, SOLitude Lake Management guarantees 95% or greater reduction in pre-treatment fanwort biomass during the 2020 season if treatment commences prior to April 30. We also guarantee greater than 85% reduction in fanwort biomass during the 2021 season. In the event that SOLitude does not achieve the desired level of control, we will spot-treat areas of fanwort growth to achieve this guaranteed level of success.

Alternative Approach:

While our vast experience with not only fluridone, but more specifically Hickory Hills Lake has led us to the approach described above, we have also come up with an alternative approach using all liquid Sonar (Sonar AS). This approach comes with a lesser cost, but also some key differences and detriments.

- Alternative is more susceptible to flow.
- Alternative approach forces us to start a bit later.
- Alternative approach has more fluctuation and vulnerability in concentration.
- Alternative approach has less ability to focus concentration on the fanwort beds.
- Given the bullets above, this program is less effective and will provide a shorter duration of control.

SOLitude Lake Management (SLM) will prepare and file the required site-specific License to Apply Chemicals permit from MA DEP – Office of Watershed Management.

Prior to treatment, SOLitude will survey Hickory Hills Lake to visually document the extent and maturity of the target fanwort growth. During and following completion of the treatment program SOLitude will inspect target plant growth conditions. Surveys will be performed from a boat using a throw-rake and visual observation and may also include an underwater camera system. These surveys will be coordinated with the Hickory Hills Landowners Task Force.

In advance of treatment SOLitude Lake Management will prepare a written notification of treatment to published in the local newspaper. Immediately prior to treatment, SOLitude will post laser-printed 8 ½ x 11 warning signs on colored stock that detail the treatment date and water use restrictions to be imposed following treatment.

Sonar liquid (Sonar AS) formulation, will be applied to Hickory Hills Lake to control fanwort (*Cabomba caroliniana*). The liquid formulation will be applied subsurface from a calibrated pumping system A MA DAR licensed applicator will oversee the treatment. An airboat or other treatment boat equipped with the proper application equipment will be used for the treatment. A Differential/WAAS GPS system will also be used for real-time navigation during the treatment and to ensure that the herbicide is applied evenly within the designated treatment areas.

We would recommend initiating treatment in early May. We will conduct an initial application and two (2) follow-up booster applications. Using this approach, we would apply a lake wide dose of Sonar AS at 13ppb early in May. Two weeks later we would return to collect FasTest residue samples at five locations. The following week (on or around May 25) we will apply another 12ppb lake wide concentration of Sonar AS. Two weeks following the 2nd application we would return to collect FasTest residue samples at five locations. The following week (on or around June 15), we would apply a third and final treatment of 10ppb of Sonar AS.

Treatments will be scheduled and performed on a date mutually agreed to by Hickory Hills Landowners, Inc. and SLM. We understand that the actual date of treatment will be determined by visual inspection of actively growing fanwort.

Following the post-treatment survey, SOLitude will prepare and submit a written report that provides a) a description of the treatment program, b) plant response observed, and c) on-going management options/recommendations.

With this approach, SOLitude Lake Management guarantees 85% or greater reduction in pre-treatment fanwort biomass during the 2020 season. In the event that SOLitude does not achieve the desired level of control, we will spot-treat areas of fanwort growth to achieve this guaranteed level of success.

HICKORY HILLS LAKE – AMERICAN LOTUS

SOLitude will treat areas of American lotus using Aquapro (glyphosate) foliar application. Our pricing accounts for an initial application and one follow-up application. The follow-up application ensures that areas missed due to boat passes, splashing, etc. will be properly treated, to achieve the desired level of control.

Glyphosate – has been used effectively in the treatment of Cattails, Phragmites, Lilies, Lotus and other emergent and floating leaf aquatic vegetation in prior years. We would recommend initiating treatment once the American lotus have surfaced and are focusing their energy downward towards the root system; this will help translocate the systemic herbicide to the roots. This method achieves the greatest amount of control. We anticipate conducting two applications between July and September. In the event, HHLI chooses not to use glyphosate, additional options could be incorporated such as Clearcast (imazamox).

Treatment(s) will be scheduled and performed on a date mutually agreed to by Hickory Hills Landowners, Inc. and SLM. We understand that the actual date of treatment(s) will be determined by visual inspection of actively growing target.

HICKORY HILLS LAKE – NUISANCE NATIVE VEGETATION

As requested in the Request for Services, diquat herbicide liquid, will be applied to the targeted areas of Hickory Hills Lake to control nuisance native vegetation, as agreed upon by Hickory Hills Landowners, Inc. in conjunction with SOLitude Lake Management. The herbicide will be applied subsurface from a calibrated pumping system. A MA DAR licensed applicator will oversee the treatment. A boat equipped with the proper application equipment will be used for the treatment. A GPS system will also be used for real-time navigation during the treatment and to ensure that the herbicide is applied evenly within the designated treatment areas.

Diquat has proven efficacy on many native pondweeds, bladderwort and other nuisance plant species. We would recommend initiating treatment at the onset of active plant growth, probably Late-May in to June. We have provided pricing for treatment in ten (10) acre increments, as requested.

LITTLE HICKORY POND - FANWORT

Similarly, to our proposed scope of work to control fanwort in Hickory Hills Lake, we recommend using a combination of the liquid and time-release pellet formulations of Sonar. The pellet formulations will help to maximize the herbicide concentration-exposure-time to ensure complete control of the plants, and will help to limit the potential for downstream loss of fluridone.

SOLitude Lake Management (SLM) will prepare and file the required site-specific License to Apply Chemicals permit from MA DEP – Office of Watershed Management.

Prior to treatment, SOLitude will survey Little Hickory Pond to visually document the extent and maturity of the target fanwort growth. During and following completion of the treatment program SOLitude inspect target plant growth conditions. Surveys will be performed from a boat using a throw-rake and visual observation and may also include an underwater camera system. These surveys will be coordinated with the Hickory Hills Landowners Task Force.

In advance of treatment SOLitude Lake Management will prepare a written notification of treatment to published in the local newspaper. Immediately prior to treatment, SOLitude will post laser-printed 8 ½ x

11 warning signs on colored stock that detail the treatment date and water use restrictions to be imposed following treatment.

Sonar (fluridone) herbicide, both granular (Sonar One) and liquid (Sonar Genesis) formulations, will be applied to Little Hickory Pond to control fanwort (*Cabomba caroliniana*). The liquid formulations will be applied subsurface from a calibrated pumping system and the granular product will be applied using a calibrated spreader. A MA DAR licensed applicator will oversee the treatment. An airboat or other treatment boat equipped with the proper application equipment will be used for the treatment. A Differential/WAAS GPS system will also be used for real-time navigation during the treatment and to ensure that the herbicide is applied evenly within the designated treatment areas.

We would recommend initiating treatment at the onset of active plant growth, probably late April and would use the same protocol and dosing as described in our narrative for management of fanwort in Hickory Hills Lake.

SLM will conduct several FasTEST sample collections and analysis at Little Hickory Pond in order to monitor Sonar herbicide concentrations during the course of the project. Samples will be collected and shipped to SePRO (Sonar manufacturer) for immunoassay analysis.

Treatments will be scheduled and performed on a date mutually agreed to by Hickory Hills Landowners, Inc. and SLM. We understand that the actual date of treatment will be determined by visual inspection of actively growing fanwort.

Following the post-treatment survey, SOLitude will prepare and submit a written report that provides a) a description of the treatment program, b) plant response observed, and c) on-going management options/recommendations.

LITTLE HICKORY POND – WATER LILY CONTROL

SOLitude will treat areas of waterlilies in Little Hickory Pond using Clearcast (imazamox) foliar application. Our pricing accounts for an initial application and one follow-up application. The follow-up application ensures that areas missed due to boat passes, splashing, etc. will be properly treated, to achieve the desired level of control.

Clearcast (imazamox) – has been used effectively in the treatment of Cattails, Phragmites, Lilies, and other emergent and floating leaf aquatic vegetation in prior years. We would recommend initiating treatment once the waterlilies have surfaced and are focusing their energy downward towards the root system; this will help translocate the systemic herbicide to the roots. This method achieves the greatest amount of control. We anticipate conducting two applications between July and September.

Treatment(s) will be scheduled and performed on a date mutually agreed to by Hickory Hills Landowners, Inc. and SLM. We understand that the actual date of treatment(s) will be determined by visual inspection of actively growing target. Our pricing is on a per acre basis as requested in the Request for Services. Aquapro (glyphosate) also has great efficacy on waterlilies and could be substituted in place of Clearcast in the event that HHLI chooses to do so.

LITTLE HICKORY POND – ALGAE CONTROL

SOLitude has more experience utilizing nutrient inactivation techniques in New England waterbodies than any other company. Our experience utilizing aluminum sulfate and polyaluminum chloride is unparalleled in the industry.

Aluminum sulfate and polyaluminum chloride are chemical precipitants that are commonly used in wastewater and drinking water treatment to remove particulate matter and reduce high nutrient levels.

Alum irreversibly binds with phosphorus and other particulate matter and precipitates out of solution, reducing the available nutrients to be utilized by plants and algae. Once the precipitate, or floc, reaches the pond bottom higher dose alum functionally seals the bottom sediments, preventing the release of additional nutrients/phosphorus. In small ponds similar to Little Hickory, it is not uncommon to perform annual low dose applications to maintain low dissolved nutrient levels and prevent problematic plant and algae growth from occurring. Typically, when using a low-dose approach treatment is conducted early in the growing season (April/May).

This management technique will be implemented as a preventive measure to mitigate potential unbalanced growth of algae and the need for reactionary measures like copper-based algacides. By reducing the nutrients that filamentous algae and potentially toxic cyanobacteria thrive upon, more desirable green-algae species will populate the pond. These algae species are more easily integrated into the food web of the pond.

Liquid polyaluminum chloride (PAC) will be applied at a rate of 1 PPM aluminum from a specially designed spray boat equipped with a calibrated pumping system which will inject the products just below the surface of the water and into the prop wash of the outboard engine in order to provide flash-mixing. We anticipate a dose of approximately 1ppm to be applied to Little Hickory Pond.

The PAC treatment will be preceded, accompanied and followed by sampling in Little Hickory Pond (three events). Each sampling event will include one (1) sample for the following parameters: dissolved phosphorus, aluminum, pH and alkalinity.

SCHEDULE OF PERFORMANCE

- DEP – License to Apply Chemicals Permit	Upon Notice to Proceed
- Pre-Management Survey	April
- Initial Sonar Treatments (fanwort)	April/May (Based on Option)
- PAC Treatment – Little Hickory Pond (algae)	May
- Follow-up Sonar Treatment (fanwort)	May
- Diquat treatment (nuisance native species)	June
- Follow-up Sonar Treatment (fanwort)	June
- Glyphosate Treatments (lotus)	July - September
- Imazamox Treatments (waterlilies)	July - September
- Interim Monitoring / Herbicide Residue Testing	April - September
- Year-End Report	December

MANAGEMENT SUMMARY AND PROJECT STAFFING

Senior Environmental Engineer / Project Manager - Dominic Meringolo has worked with SOLitude for the past 25 years, originally working summers while completing his Master’s degree in Environmental Engineering from Worcester Polytechnic Institute (WPI). Dominic is licensed to perform chemical treatments in MA, CT and NY. He also has considerable experience with lake assessment and monitoring work. Dominic’s Master’s Thesis focused on internal water circulation patterns within Wachusett Reservoir. Dominic is an active member of the Northeast Aquatic Plant Management Society and has

presented at numerous professional conferences as well as various municipal agencies and lake groups. While Dominic regularly performs treatments and lake surveys, his expertise lies in the more “quantitative” and technical aspects of lake management.

Kara Sliwoski, Regional Manager is an aquatic biologist overseeing scientific teams in SOLitude’s Northern New England and NY territories. She works with her colleagues to determine the most appropriate management strategies for waterbodies across the region while considering client goals and the most ecologically responsible ways to achieve them. Kara works with state and municipal regulatory agencies, private property owners and associations to ensure proper project coordination and execution from beginning to end of their aquatic management plans and programs. Kara’s experience extends to both large and small waterbodies, as well as significant projects with public entities, including the Massachusetts Department of Conservation and Recreation and prominent waterbodies in Vermont. Kara graduated from Roger Williams University with a degree in Marine Biology and Environmental Science and is active in the aquatics industry, maintaining relationships with the Northeast Aquatic Plant Management Society (NEAMPS), the Lake and Ponds Association of Western Massachusetts (LAPA West), and the Massachusetts Congress of Lake and Pond Associations (MA COLAP).

James Lacasse, Environmental Scientist – Mr. Lacasse will assist in planning, management and survey work. James is a licensed aquatic applicator and takes a special interest in conducting aquatic, marsh and upland vegetation surveys to help identify nuisance plant species that may be detrimental to the ecological balance of lakes and ponds. Before coming to SOLitude, James graduated from the University of Rhode Island with a Bachelor of Science degree in Environmental Science, and broadened his industry experience with the Massachusetts Audubon Society, Aquatic Control Technology and Triumvirate Environmental as a Field Chemist.

Senior Biologist, Director of Lake Management – Keith Gazaille will serve as senior oversight for this project. Keith received his degree in Biology from Framingham State College and currently manages numerous projects in Massachusetts, Connecticut and Rhode Island. Keith is a supervisory applicator in those states and has extensive experience with aquatic plant surveys and herbicide applications.

Amanda Mahaney, Biologist – Ms. Mahaney’s primary responsibilities include aquatic plant survey work and GIS mapping. Amanda has performed dozens of aquatic plant surveys and authored numerous reports and aquatic plant management plans. She is well versed in maintaining an array of water quality instruments, including maintenance and calibration of several water quality parameter meters. Amanda holds a Bachelor’s Degree in Environmental Science from Anna Maria College in Paxton, MA.

SOLitude also staffs more than 20 additional full-time professionals (Biologists, Mechanical Specialists, Environmental Engineer, and GIS analysts) and several experienced Field Technicians that will be available to assist with all aspects of the project as the need arises.

Staff	Contact Information	Responsibilities
Dominic Meringolo, Senior Environmental Engineer Project Manager	Mobile – 508-373-4526 dmeringolo@solitudelake.com	Project Manager – will serve as primary point of contact and supervisory applicator.
Kara Sliwoski, Aquatic Biologist Region Manager	Mobile – 508-523-1024 ksliwoski@solitudelake.com	Secondary point of contact to DCR; Assistance with scheduling, resources and work review.
James Lacasse, Environmental Scientist	Mobile – 774-276-6098 jlacasse@solitudelake.com	Assistance with treatments, surveys and reporting.

Amanda Mahaney, Aquatic Biologist	Mobile – 774-633-0538 amahaney@solitudelake.com	Assistance with surveys and reporting.
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INSURANCE COVERAGE

SOLitude Lake Management is properly insured to undertake aquatic herbicide and algaecide application work in Massachusetts. Insurance Certificates can be provided immediately upon our selection for the project.

FIRM EXPERIENCE AND QUALIFICATIONS

SOLitude works on and manages over 10,000 waterbodies throughout the country each year, employing a variety of chemical and non-chemical nuisance plant control strategies. We chemically treat an estimated 1,000 ponds/lakes annually within New England area alone. This is far more treatment projects than any other company engaged in aquatic plant management. In Massachusetts alone, we treat about two-thirds of all ponds and lakes that are chemically managed each year. We have more Sonar treatment experience than any other New England firm. We have an extensive library of reference data covering the toxicology, human health effects, and ecological impacts for these chemicals to be used. We are adept at providing effective and credible public presentations for the lake management projects on which we are engaged.

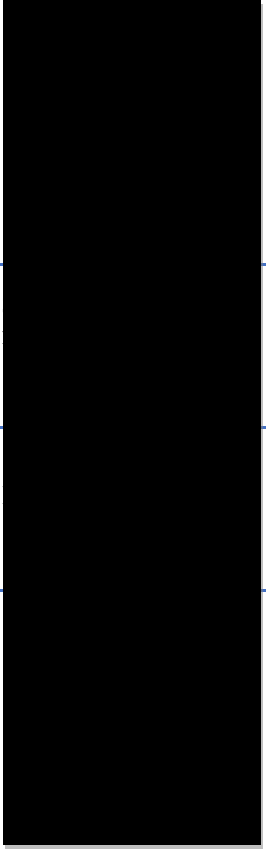
Perhaps more important than the sheer number of projects, however, are the type and diversity of our projects and clients and our consistent selection for numerous challenging and high-profile projects. In 2006 alone, we were selected and performed aquatic invasive plant consulting or management services to the following state and federal agencies. These clients included; MA DCR, MWRA, CT DEP, RI DEM, VT DEC, ME DEP, NH DES, US Fish & Wildlife Service and the US Army Corps of Engineers. In 1999, Aquatic Control was selected to perform a "whole lake" Sonar application at Onota Lake in Pittsfield. Onota is a 620-acre, multiple use waterbody that was heavily choked with Eurasian watermilfoil. This is by far the largest whole-lake aquatic herbicide treatment to have occurred to date in Massachusetts. In 2001, we successfully performed a whole-lake SONAR treatment at the Congamond Lakes in Southwick, MA. Treating this 450-acre lake was particularly challenging due to the presence rare and endangered wetland plants and the fact that lake water is used for irrigation of nearby tobacco farms. In 2004, we successfully completed a lake –wide Sonar treatment program on 1,100 acre Lake St. Catherine located in Poultney and Wells, VT. To date, this is the largest Sonar treatment performed anywhere in the Northeast. SOLitude has successfully been managing water chestnut through the use of Clearcast at the Sudbury River in Framingham, and the Del Carte Ponds in Franklin, MA over the last several years. We have been selected for a number of municipal projects that were previously funded by MA DEM's Lake and Pond Grant Program and more recent projects performed under contract to MA DCR- probably more projects than any other company. These projects have included chemical and mechanical weed control, as well as Water Quality Studies and the development of Lake Management Plans. We have also been contracted by DCR directly for nuisance weed control at several State Parks. A list of many of the Massachusetts municipal and DCR funded projects that we have worked on is provided as an attachment.

Aside from herbicide and algaecide treatments, SOLitude practices a truly integrated approach to lake management. We have performed several of the largest and most successful alum applications in the country. At Lake Morey in VT, a single alum application that we performed there in 1987 has now provided 23 years of effective algae control. In September of 2006 we successfully completed a hypolimnetic alum treatment at Ashumet Pond in Falmouth. This project, performed for the US Air Force, was performed under the most rigorous treatment protocol. We own and operate one of the largest fleets of mechanical harvesters and hydro-rakes for contract hire in the Country. We sell and install

bottom weed barriers and aeration equipment. Our professional staff conducts numerous water quality studies, vegetation surveys, dredging and drawdown feasibility studies, nutrient loading analyses and lake management plans each year. It is our philosophy and practice to specifically tailor management programs to each waterbody that we work on.

PRICING

TASK / SERVICE	COST
<p>Task 1) Fanwort Control in Hickory Hills Lake</p> <p>Prepare and file MA-DEP License to Apply Chemicals Permit</p> <p>Surveys and Reporting</p> <p>FasTest Herbicide Residue Testing</p> <p><u>Herbicide Treatment</u></p> <p><u>PREFERRED APPROACH - Sonar Treatment Program (labor and product for all applications)</u></p> <ul style="list-style-type: none"> The total price of the Sonar treatment program includes all product and labor for up-to five applications, as needed to achieve the guaranteed level of control. Based on our narrative contained within our scope of services, we anticipate a direct chemical cost of [REDACTED] however actual product cost will depend on conditions pre- and during treatment as well as on-going plant response. The remainder of the [REDACTED] encompasses labor for treatments, notifications and posting, as well as mobilizations, freight and storage costs. <p><u>OPTION 2: ALTERNATIVE APPROACH - Sonar Treatment Program (labor and product for all applications)</u></p> <ul style="list-style-type: none"> The total price of the Sonar treatment program includes all liquid product and labor for three applications to achieve the guaranteed level of control. Based on our narrative contained within our scope of services, we anticipate a direct chemical cost of \$[REDACTED]. The remainder of the [REDACTED] encompasses labor for treatments, notifications and posting, as well as mobilizations, freight and storage costs. 	
<p>Task 2) American Lotus Control in Hickory Hills Lake</p> <p>Includes initial and one-follow-up treatment. Price includes treatment of American lotus within the cove east of Hemlock Terrace (approximately 4,000 sq. ft.)</p>	<p>Included when Task 1 is opted for.</p>

<p>Task 3) Nuisance Native Vegetation Control in Hickory Hills Lake</p> <ul style="list-style-type: none"> Diquat treatment of nuisance native vegetation in Hickory Hills Lake. Pricing is on a per 10 acres basis. <p>Given our experience with Hickory Hills Lake, we anticipate a dose of two (2) gallons per surface acre which equates to a direct chemical cost of \$ [REDACTED] acres.</p>	
<p>Task 4) Fanwort Control in Little Hickory Pond</p> <ul style="list-style-type: none"> Our direct chemical cost for Little Hickory Pond is [REDACTED] and we have decided to include Little Hickory at our direct cost, when Task 1 is opted for. 	
<p>Task 5) Water Lily Control in Little Hickory Pond</p> <ul style="list-style-type: none"> Imazamox treatment of waterlilies in Little Hickory Pond, includes initial and one follow-up treatment. Pricing is on a per acre basis. 	
<p>Task 6) Algae Control in Little Hickory Pond</p> <ul style="list-style-type: none"> PAC treatment in Little Hickory Pond. Includes one treatment as well as water sampling, per the specifications provided in scope of services. <p>Our direct costs for product and laboratory analysis are [REDACTED]. The remainder of this cost is for affiliated labor for treatment, sample collections and reporting as well as mobilizations, transportation and preservation of water quality samples.</p>	

*Pricing for tasks 2-6 is contingent upon Hickory Hills Landowners, Inc. opting for task 1. We have factored in a labor savings on tasks 2-6 and have provided premium pricing contingent upon being on site many times during the season to complete task 1; as such, the costs provided are not separate and severable.

Invoices will be submitted to Hickory Hills Landowners, Inc. commensurate with the work performed. Our standard practice that payment is due within 30 days of the issuance of each invoice. However, we agree to negotiate final payment terms and schedule with the client if we are selected for this project.

ATTACHMENT A:

- Resumes for Key Project Personnel
- Representative MA Municipal Projects
- Representative Sonar Treatment Projects
 - Professional References
 - Insurance Certificate



PROFESSIONAL HISTORY

Aquatic Control Technology - 20 years with firm

EDUCATION

Worcester Polytechnic Institute - Worcester, MA
M.S. in Environmental Engineering, 1998
B.S. in Engineering Science, 1995

PROFESSIONAL REGISTRATIONS & AFFILIATIONS

NALMS – North American Lake Management Society
NEAEB – New England Association of Environmental Biologists
APMS – Aquatic Plant Management Society
NEAPMS – Northeast Aquatic Plant Management Society
Supervisory Aquatic Pesticide Applicator – MA, CT, NY

TECHNICAL SPECIALTIES / FIRM RESPONSIBILITIES

- Lake and Watershed Assessment Studies
 - Baseline Biological Surveys
 - Aquatic Vegetation Mapping and Management Studies
 - Water Quality Monitoring / Modeling
 - Limnological Investigations
 - Limited Dredging and Drawdown Feasibility Studies
 - Algal Identification and Enumeration Studies
- Account Manager for Connecticut, Massachusetts and New York Projects
- Permitting and Compliance Reporting for all Pond/Lake/Wetland Restoration Projects at Local, State and Federal Levels
- Supervisory Chemical Applicator
- ACT Computer Operations and Mapping Systems Manager
- Business Development

REPRESENTATIVE PROJECT EXPERIENCE

- Mystic Lake – Project Manager and Supervisory Applicator for the phosphorus inactivation treatment of this 150-acre lake in Barnstable, MA. The project involved extensive planning, monitoring and regulatory interaction (ConCom, DEP, MA NHESP) along with two weeks of alum & sodium aluminate application. 2010
- Bantam Lake – Performed a vegetation monitoring and management program on this 946-acre lake in Morris/Litchfield, CT. Bantam Lake is the largest natural body of water in Connecticut. This project involved substantial planning and regulatory interactions and annual herbicide treatment. 2006-2014
- Lovers Lake & Stillwater Pond – Restoration of two kettle-hole ponds in Chatham, utilizing aluminum sulfate & sodium aluminate to reduce internal phosphorus loading. 2010

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- Silver Lake – Performed a limited diagnostic/feasibility study of this 70-acre lake located in Bellingham, Massachusetts. Along with another sub-consultant, a multiple round water quality monitoring program, vegetation surveys and water quality modeling was conducted. This project was partially funded with a grant from the MA DEM Lakes & Ponds grant program. 2000-2001
- Ashumet Pond – Worked with a team of consultants and Town agencies to perform a partial lake treatment of buffered alum on this 216-acre waterbody in Mashpee/Falmouth. This project involved extensive planning and monitoring and was funded by the Air Force. 2001 & 2010
- Long Pond – Based on a cooperative treatment design with Dr. Ken Wagner of ENSR/Aecom, Dominic was the project manager for the alum treatment of this pond in Brewster/Harwich, MA. This was the largest buffered alum treatment ever performed in New England. 2007
- Ayer Ponds Baseline Biological Survey - Performed Biological Survey on 6 ponds located in the Town of Ayer, MA and prepared a recommended management plan. 2005
- Ayer Ponds Aquatic Management Program – Project manager for an ongoing monitoring and management program on three large ponds located in the Town of Ayer, MA. 1998-2013
- Wachusett Reservoir – Worked with the MA Department of Conservation and Recreation (formerly the Metropolitan District Commission) and the Massachusetts Water Resources Authority to plan and implement a Eurasian watermilfoil control project utilizing benthic barrier and diver handpulling. The Wachusett Reservoir is one of the two primary sources of drinking water for the metropolitan Boston area. 2002-2014
- Brooks Pond - Performed a detailed bathymetric survey and limited drawdown assessment of this 180-acre private waterbody located in central Massachusetts. Other aspects of the project include an annual water quality monitoring and herbicide treatment program. 1995-2014.
- Quaddick Lake – Performed a diagnostic/feasibility study of the multiple use waterbody located in northeast Connecticut. This project was partially funded with a grant from the CT DEP. 1999-2001. Vegetation Management Program performed 2008-2014
- Rogers Lake – Served as project manager and investigator for the diagnostic/feasibility study of this 260-acre waterbody located in Lyme/Old Lyme, CT. The project involved an 8-month long in-lake and watershed sampling program, vegetation surveys, lake modeling and development of a management plan. Results were presented to the residents during two public informational sessions. 2001-2003
- Needham Sportsman's Club - Performed limited dredging assessment/feasibility study on a 2-acre trout pond in Needham, MA. Developed dredging specifications. Prepared and filed required permits with the Town of Needham, MA DEP and the Army Corp of Engineers 1998-1999
- Fells Reservoir - Served as project manager for the design and implementation of an alum treatment on this 15-acre MWRA emergency reservoir in Stoneham, MA. 2000

GUEST LECTURES

- Northeast Aquatic Plant Management Society (NEAPMS)
- North American Lake Management Society – New England Chapter (NEC-NALMS)
- Massachusetts Congress of Lakes and Ponds, Inc. (COLAP)
- New York Federation of Lake Associations (FOLA)
- Connecticut Federation of Lake Associations
- Numerous Town hearings and Lake Association meetings

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Kara Sliwoski

District Manager, Aquatic Biologist

Professional History

SOLitude Lake Management – since 2016

Aquatic Control Technology – since 2015

Education

Roger Williams University

B.Sc. Marine Biology – 2015

B.S.c. Environmental Science – 2015

Professional Registration & Affiliations

NEAPMS – Northeast Aquatic Plant Management Society

MA COLAP – Massachusetts Coalition of Lakes and Ponds

Commercially Certified Aquatic Pesticide Applicator – CT, MA, NH, VT, NY

Technical Specialties / Firm Responsibilities

- Regional Leader / Project Manager for Northeastern Massachusetts, Vermont, New Hampshire, and New York Projects
- Lake and Watershed Assessment Studies
 - Baseline Biological and / or Point-Intercept Surveys
 - Aquatic Vegetation Mapping
 - Preparing Aquatic Vegetation Management Plans
 - Water Quality Monitoring
- GPS and GIS Experienced Operator
- Educational presentations at professional conferences / organizations

Representative Project Experience

• Lake St. Catherine – Wells/Poultney, VT: Conducted aquatic vegetation inventories to assess Eurasian watermilfoil growth stage prior to treatment to finalize treatment areas, coordinated treatment date and notifications to involved agencies and stakeholders, completed large scale triclopyr herbicide treatments, conducted comprehensive point-intercept post-treatment monitoring, analyzed post-treatment data to assess trends and align management goals for future years, prepared and submitted annual report to client and VT DEC

• Lake Fairlee – Fairlee/Thetford/West Thetford, VT: Conducted aquatic vegetation surveys (cursory and point-intercept) to assess Eurasian watermilfoil growth and distribution to plan for future management approaches, designed and completed large scale triclopyr herbicide treatment, coordinated post-treatment herbicide residue sample collection, conducted comprehensive point-intercept post-treatment monitoring, analyzed post-treatment data to assess trends and align management goals for future years, prepared and submitted annual report to client and VT DE

• Richmond Pond – Richmond/Pittsfield, MA: Conducted aquatic vegetation inventories before treatment to determine treatment area of curlyleaf pondweed and Eurasian watermilfoil and following



treatment to assess impacts, coordinated and completed herbicide treatment, performed interim monitoring, prepared and submitted year-end report and maps to client

· Lake Attitash – Amesbury/Merrimac, MA: Performed pre- and post-treatment surveys in coordination with the client, completed herbicide treatments for control of curlyleaf pondweed, variable watermilfoil and Eurasian watermilfoil, prepared year-end report and maps to submit to the client and the Towns

· Ware's Cove (of the Charles River) – Newton/Waltham, MA: Coordinated season of management with the consultants and MA DCR, installed limno-barrier prior to herbicide treatment, performed fluridone (Sonar) herbicide management program for Eurasian watermilfoil, fanwort and curlyleaf pondweed control, collected water samples for analysis, submitted necessary reporting to the client

· Mystic River – Somerville/Medford/Malden, MA: Coordinated past management and potential future management with associated agencies and towns, scheduled and conducted low-dose fluridone treatment for Eurasian watermilfoil control within the River and portions of the nearby Malden River, collected water samples to be analyzed for herbicide residue to appropriately time subsequent treatment events, conducted post-management survey to assess impacts and successes to be communicated to the stakeholders on management moving forward

James Lacasse
Aquatic Biologist

Professional History

SOLitude Lake Management – 2016-Present
Triumvirate Environmental, Inc. – 2015-2016
Aquatic Control Technology – 2012-2014

Education

University of Rhode Island
B.S.c. Environmental Science - 2015

Professional Registration & Affiliations

NEAPMS – Northeast Aquatic Plant Management Society
Commercially Certified Aquatic Pesticide Applicator – CT, MA, RI

Technical Specialties / Firm Responsibilities

- Aquatic Biologist / Project Manager for Northeastern Massachusetts, Vermont, and New Hampshire
- Lake and Watershed Assessment Studies
 - Baseline Biological and / or Point-Intercept Surveys
 - Aquatic Vegetation Mapping / Terrestrial Vegetation Mapping
 - Preparing Aquatic Vegetation Management Plans
 - Water Quality Monitoring
 - Certified SCUBA Diver
- GPS and GIS Experienced Operator
- Educational presentations at professional conferences / organizations

Representative Project Experience

- Roger Williams Park Ponds – Providence, RI: Conducted aquatic vegetation survey before treatment to determine treatment area of Curly-leaf Pondweed / Variable watermilfoil and following treatment to assess impacts, coordinated and completed herbicide treatment, performed interim monitoring, prepared and submitted year-end report to client
- Mystic River – Somerville, Medford, Malden: Performed pre- and post-treatment surveys in coordination with the client, completed herbicide treatments for control of Phragmites, coordinated and performed the cutting/mulching of Phragmites, prepared year-end report and maps to submit to the client and the Towns

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- Sudbury River – Framingham, MA: Conducted aquatic vegetation inventories before treatment to determine treatment area of Water Chestnut and following treatment to assess impacts, coordinated and completed herbicide treatment, performed interim monitoring, prepared and submitted year-end report and maps to client
- Winnecunnet Pond – Norton, MA: Conducted aquatic vegetation inventories to assess Variable watermilfoil and Fanwort growth stage prior to treatment to finalize treatment areas, coordinated treatment date and notifications to involved agencies and stakeholders, completed large scale fluridone herbicide treatments, conducted comprehensive point-intercept post-treatment monitoring, analyzed post-treatment data to assess trends and align management goals for future years, prepared and submitted annual report to client
- Reservoir Pond – Canton, MA: Conducted comprehensive point-intercept vegetation surveys to assess plant distribution to plan for future management approaches, collected water quality samples required for monitoring, analyzed post-treatment data to assess trends and align management goals for future years, prepared and submitted annual report to client

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KEITH R. GAZAILLE
Senior Biologist/Regional Director

PROFESSIONAL HISTORY

- SOLitude Lake Management (1998)
- Dukes County Endangered Species Project (Piping Plover)
Norton Point Beach – Edgartown, MA (1995 & 1996)

EDUCATION

- Framingham State College
B.S. in Biology-Wildlife Concentration, 1996

PROFESSIONAL REGISTRATIONS & AFFILIATIONS

- NALMS – North American Lake Management Society
- NEAEB – New England Association of Environmental Biologists
- NEAPMS – Northeast Aquatic Plant Management Society
- APMS – Aquatic Plant Management Society
- RI CRMC/FHWP Certified Invasive Species Manager
- Certified Pesticide Applicator – MA, CT, RI

TECHNICAL SPECIALTIES / FIRM RESPONSIBILITIES

- Lake and Watershed Assessment Studies
- Baseline Biological Surveys and Aquatic Vegetation Mapping
- Preparing Aquatic Vegetation Management Plans
- Water Quality Monitoring
- Limnological Investigations
- Limited Dredging and Drawdown Feasibility Studies
- Algal Identification and Enumeration Studies
- Wildlife Habitat Quality Assessments and Improvement Plans
- Develop Management Plans for the Control of Wetland and Upland Invasive Vegetation
- Account Manager for Connecticut, Massachusetts, and Rhode Island Contracts
- Permitting and Compliance Reporting for all Pond/Lake/Wetland Restoration Projects at local, State and Federal Levels
- GPS and GIS Mapping
- Supervisory Chemical Applicator
- Business Development

REPRESENTATIVE PROJECT EXPERIENCE

- Stanwich Club, Greenwich, CT – Performed baseline biological survey and limited dredging assessment on the Club's 10 waterbodies. Prepared report outlining results, recommended Best Management Practices and In-Lake Management options - 1998.
- Louisa Lake, Milford, MA - Designed and implemented both a limited in-lake & watershed assessment study and an integrated vegetation management plan consisting of mechanical Hydro-Raking and aquatic herbicide treatment. Oversee and coordinate subsequent nuisance plant control efforts. 1998-2016.



- Long Pond, Barnstable, MA – Performed Sonar herbicide treatments and comprehensive monitoring (tuber sampling, vegetation, and water quality) for the invasive Hydrilla Management Program. 2002-2016.
- Sand Dam Lake, Chepachet, RI – Performed baseline biological survey with a focus on developing a management program for the control of non-native variable watermilfoil. Developed and implemented Navigate (2,4-D) herbicide treatment program. Completed project permitting and pre and post treatment plant survey. 2005; 2007-2009.
- Larkin Pond, Greenwich, CT – Performed baseline biological survey, inclusive of water and sediment sampling, vegetation & bathymetry mapping and unconsolidated sediment distribution. Implemented recommended integrated aquatic vegetation management plan. 1999-2009.
- Medfield Ponds, Medfield, MA – Performed initial baseline assessment of five town-owned waterbodies and developed pond specific nuisance aquatic vegetation management plans. Coordinated implementation of various management tasks including mechanical hydro-raking, aquatic herbicide and algaecide treatment, hand-pulling, and aeration. 2005- 2016.
- Highland Lake, Winchester, CT – Developed an area specific Reward herbicide treatment program for the control of non-native milfoil growth in the presence of state listed species. Conducted project permitting, pre and post-treatment vegetation monitoring, and Reward herbicide applications. ACT 2003; 2007-2009.
- Wakefield Pond, Pascoag, RI – Developed, permitted, and implemented nuisance aquatic vegetation management program. Conducted pre and post-management vegetation surveys to direct future management needs. 2007-2016.
- Designated MA State Parks – Mapped areas of non-native *Phragmites australis* growth and inventoried peripheral native plant species at 20 State properties for MA Department of Conservation and Recreation. Designed, permitted, and implemented site specific *Phragmites* control programs for each of the sites. Performed subsequent monitoring and management efforts. 2004-2008.
- Riverside Flood Control Pond, Hartford, CT – Developed non-native water chestnut control program using 2,4-D amine for the US Fish and Wildlife Service, CT DEP, and City of Hartford. Conducted herbicide treatments and program monitoring. 2007-2008.
- Sachuestt Point National Wildlife Refuge, Middletown, RI – Developed and implemented a non-native common reed (*Phragmites australis*) control program in an tidally controlled salt marsh area. 2015.
- Mystic Lake & Middle Pond, Barnstable, MA – Conducted hydrilla infestation assessment and design of a long-term control/eradication program. Oversaw Diver Assisted Suction Harvesting (DASH) and aquatic herbicide treatment strategies. 2011-2016.
- Slacks Reservoir, Smithfield & Johnston, RI – Managed on-going variable watermilfoil and fanwort infestation. Program has consisted of varying aquatic herbicide treatment approaches of scattered areas around the lake. 2008-2016.
- Mickill Ponds, Westerly, RI – Designed and implemented an ecosystem level restoration of two coastal freshwater ponds infested with non-native *Phragmites*. Program consisted of aquatic herbicide application, mechanical cutting of biomass, hydro-raking of established root mat along pond shorelines, and restorative native buffer and wetland plantings. 2013-2016



- South Meadow Pond, Clinton & Lancaster, MA – Assessed, designed and implemented a rapid response and long-term hydrilla control program in this four pond system. Program involved intensive vegetation monitoring, tuber sampling, and the rotation systemic (Sonar) and contact herbicide treatment (Reward & Aquathol K). 2011-2016
- Flag Lake - Barksdale Air Force Base, Bossier City, LA – Designed and implemented an aquatic plant control program for this 700 acre impounded lake system. Program consisted of the application USEPA and US Air Force approved aquatic herbicides for the control of dioecious hydrilla, water hyacinth, aligatorweed, pennywort, and American lotus. 2016

GUEST LECTURES

- North American Lake Management Society – Northeast Chapter (NEC-NALMS)
- Massachusetts Congress of Lakes & Ponds, Inc. (COLAP)
- URI Watershed Watch Program – University of Rhode Island Cooperative Extension
- North American Lake Management Society (NALMS)
- New England Association of Environmental Biologists (NEAEB)

MUNICIPALITY	WATERBODY	CONTACT/CLIENT	ADDRESS	TELEPHONE	PROJECT DESCRIPTION
Westford ponds	Various	Carol Gumbart	Town Offices 55 Main Street Westford, MA	(978) 692-5524	SOLitude has managed various ponds throughout the Town of Westford for the last several years. Each year, we coordinate the treatment/management effort with ESS Group, who handles the monitoring tasks.
Army Coprs of Engineers, Royalston, MA	Tully Lake	Jennifer Samela	Army Corps of Engineers New England District	978-318-8324	Management and monitoring of cyanobacteria in Tully Lake in 2018. This was a coordinated effort with DeRosa Environmental Consulting, who handled the monitoring tasks and permitting.
Town of Tewksbury	Long Pond	Brian Gilbert, DPW Superintendent	Town Offices 999 Whipple Road Tewksbury, MA	(978) 640-4440	Mechanical Hydro-Raking of Long Pond in coordination with DeRosa Environmental who is handling additional shoreline work.
Town of Halifax	West Monponsett Pond	Charles Seelig	Town Offices 499 Plymouth Street Halifax, MA	(781) 294-1316	Conducted Alum Treatment in 2017 to control phosphorus causing toxic algae blooms. This effort was coordinated with monitoring conducted by Biodrawversity
Andover	Pomps Pond	Kim Stamas, Director Parks & Recreation Dept.	Town Offices Andover, MA	978-623-8276	Assessment, permitting & implementation of an annual management program to control invasive fanwort, curlyleaf pondweed and algae in Pomps Pond, the Town's primary recreation & swim facility. Both Hydro-Raking and herbicide/algaecide treatment are utilized in this program.
Arlington	Spy Pond	Joey Glushko Planning Dept.	Town Offices Arlington, MA 02474	781-316-3093	Sonar herbicide treatments in 2001, 2005, and 2013 for control of Eurasian watermilfoil. Alum treatment in 2004. Also conducted detailed surveys of several town waterbodies in 2007. Treatment of milfoil re-growth in 2009. Phragmites control 2009, 2010, 2011 & 2012
Ashland	Waushakum Pond	Pamela Bathan, Lake Activist	c/o Town Offices Ashland, MA 01721	508-626-8698	Assessment, permitting & implementation of an annual program to manage invasive watermilfoil weed & other nuisance vegetation
Ayer	Flannagans Pond, Sandy Pond, Pine Meadow Pond	Bill Daniels Conservation Commission	Town Offices Ayer, MA 01432	978-772-8249	Treatment of nuisance vegetation in Flannagans and Sandy Ponds on several occasions since the early 1990's. Performed base-line surveys and water quality monitoring program on six town ponds/lakes in 2005. Sonar herbicide treatment conducted at both ponds in 2007 and just Flannagans in 2013
Barnstable	Long Pond	Rob Gatewood, Conservation Administrator	Town Offices Hyannis, MA	508-862-4093	Annual management & monitoring of invasive Hydrilla weed infestation in Long Pond since 2001.
Belchertown	Arcadia Lake, Lake Holland, Lake Metacomet,	Lee Anne Connolly, Con. Comm.	Town Hall, Box 670 Belchertown, MA 01007	413-323-0405	Prepared a Tri-Lakes Management Plan for the Town in 1998. Performed Sonar treatment at Arcadia Lake in 2000

Solitude Lake Management

MUNICIPALITY	WATERBODY	CONTACT/CLIENT	ADDRESS	TELEPHONE	PROJECT DESCRIPTION
Bellingham	Jenk’s Reservoir, Silver Lake	Clifford Matthews, Chairman Con. Comm.	Town Hall Bellingham, MA 02019	508-966-2327	Annual treatment of nuisance vegetation and algae.
Billerica	Nuttings Lake	Peggy Hannon-Rizza, Recreation Dept.	248 Boston Road Billerica, MA 01821	978-671-0921	Annual copper sulfate algaecide treatments for nuisance algae control , as requested by Recreation Department.
Boston	Chandler Pond	Stan Ivan Parks and Recreation Department	1010 Massachusetts Ave., Boston, MA 02118	617-635-4505	Sonar treatment program conducted in 2005 & 2009 for the control of Eurasian Watermilfoil at this rapidly flushing, 11-acre park pond in Brighton.
Braintree	Eatons Pond, Sunset Lake	Kelly Phelan Conservation Administrator	1 JFK Memorial Drive Braintree, MA 02184	781-848-1870	Annual monitoring and “spot treatment” program performed annually or biannually since the mid-1990’s.
Danvers	Mill Pond	Robert Lee, Tree & Grounds Division - DPW	Town Hall, Sylvan St. Danvers MA 01923	978-777-0001	Annual treatment of nuisance vegetation and algae since the mid-1990’s
Duxbury	Lower Chandler Mill Pond	Joe Grady, Conservation Administrator	Town Offices Duxbury, MA 02331-332	781-934-1104	Management program design, permitting, implementation & follow-up for Sonar herbicide treatment programs completed in 2000, 2007, and 2013. More than four years of invasive fanwort weed control were provided from the 2000 management program until the pond was re-treated in 2007 and similarly between 2007 and 2013.
Framingham	Farm, Gleason, Learned, Mowhawk, Norton, and Washakum Ponds	Rob McArthur, Conservation Administrator.	Town Offices Memorial Bldg. Framingham, MA 01701	508-532-5460	Annual management programs involving pond assessment and treatment of nuisance vegetation and algae. Program initiated in the mid-1990’s
Groton	Lost Lake, Knops Pond	Art Prest ???	8 Weymisset Rd Groton, MA, 01450	978-448-2384	Designed, permitted, and implemented a Sonar herbicide treatment program to combat dense invasive submerged vegetation growth for 130 acres.
Holbrook	Lake Holbrook	Janet DeLonga, Conservation Administrator	Town Offices 50 N. Franklin St. Holbrook, MA 02343	781-767-9058	Annual treatment of nuisance vegetation and algae at this enhanced, eutrophic waterbody
Hopedale	Hopedale Pond	Rick Espanet, Chmn., Parks & Recreation Commission	129 Mill St. Hopedale, MA 01747	508-473-8139 (evenings)	Annual or bi-annual treatment of nuisance vegetation (predominantly fanwort and invasive watermilfoil weed) and algae since the mid- 1980’s. DEM grant funded Sonar treatment in 1999 and 2004 & 2007. Re-growth of milfoil was treated with Reward herbicide in 2009.
Lexington	Old Res	Karen Simmons, Director, Recreation Dept.	1625 Mass. Ave. Lexington, MA 02173	781-862-0500 ext. 263	Annual treatment of nuisance vegetation and algae as requested by the Recreation Department.

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MUNICIPALITY	WATERBODY	CONTACT/CLIENT	ADDRESS	TELEPHONE	PROJECT DESCRIPTION
Lynn	Flax Pond, Floating Bridge Pond, Sluice Pond	John Kasian, Office of Economic & Community Development	City Hall, Room 311 Lynn, MA	781-586-6767	Designed, permitted and implemented an Aquatic Management Program including chemical treatment, Hydro-Raking and monitoring at these two waterbodies in 2007 with continued management through 2009.
Lynnfield	Pillings Pond	Betty Adelson, Conservation Admin.	Town Offices Lynnfield, MA 01940	781-334-2054 617-645-2126 (cell)	Management of nuisance algae, submersed & floating-leaved vegetation. Program initiated in 2003 and continued annually since then.
Marlborough/Hudson	Fort Meadow Reservoir	Lee Thompson, Chairman Fort Meadow Commission	140 Main Street Marlborough, MA 01752	508-460-3768	Assessment and herbicide treatment of invasive watermilfoil in 2008 & 2009
Melrose	Ell Pond, Towner's Pond	Meredith de -Carbonnel, Chairman Con. Comm.	City Hall Melrose, MA 02176	781-979-4312 (evenings) 617-665-8421	Hydro-Raking of waterlilies in Towner's Pond in 1995 and annual or bi-annual treatment of nuisance vegetation and algae in Ell & Towner's Ponds, since the mid-1990's.
Medfield	Medfield Swim Pond	James Snyder, Director Parks & Recreation Dept.	Town Offices Medfield, MA 02052	508-359-2715	Annual monitoring and buffered Aluminum Sulfate treatment of microscopic algae at this heavily used Town swimming pond
Milford	Louisa Lake	Mike Bresciani, Director Parks & Recreation	52 Main Street Milford, MA 01757	508-634-2391	DEM Grant funded chemical treatment and mechanical hydro-raking program to control nuisance vegetation in the mid-1990's. Bi-annual chemical treatment of invasive milfoil weed & waterlilies since then & up to the present time.
Nantucket	Long Pond, Miacomet Pond	Dave Fonzuto, Marin Supt.	34 Washington St. Nantucket, MA 02554	508-228-7261	Mechanical hydro-raking of Phragmites from Long Pond in 1996 and 1999, and DEM funded study of Miacomet Pond in 1997
Needham	Walker Pond	Patty Carey, Director, Park and Recreation Dept.	1471 Highland Ave. Needham, MA 02192	781-455-7521	Integrated management program utilizing hydro-raking and chemical treatment to control nuisance plant growth 1995-1996. DEM Grant funded. Spot-treatment work in 1997 & 1998.
Newbury	Duck Pond	Tim Leonard, Newbury Highway Department	197 High Road Newbury, MA 01951	978-465-0112	Annual treatment of nuisance vegetation and algae
North Andover	Lake Cochichewick, Stevens Pond	Bruce D Thibodeau, Director of Public Works	Town Offices, 120 Main St. North Andover, MA 01845	978-688-9570	Copper sulfate algaecide treatments of the Town's drinking water reservoir, Lake Cochichewick, (as required) since the early 1990's. In an effort to reduce nuisance algae blooms in Stevens Pond, a low-dose alum treatment was successfully performed in 2013
Northborough	Bartlett Pond	Fred Litchfield, Town Engineer	Town Offices, Main St. Northborough, MA 01532	508-393-5015	Sonar treatment to control invasive watermilfoil and fanwort weed in 1996, 1999, 2003, 2007, and 2011. The distribution of the milfoil/fanwort infestation in 2011 was less than half of what it was prior to the 1999, 2003, and 2007 treatment programs.

Solitude Lake Management

MUNICIPALITY	WATERBODY	CONTACT/CLIENT	ADDRESS	TELEPHONE	PROJECT DESCRIPTION
Norwell	Jacobs Pond	Cliff Prentiss, Conservation Comm. In Norwell & also Conservation Admin. In Hingham	Town Hall P.O. Box 295 Norwell, MA 02061	781-741-1445	Sonar treatment program in 1997 to selectively control fanwort throughout this 59 acre pond. Treatment was repeated in 2001 and 2007.
Peabody	Peabody Reservoirs	Peter Smyrnios, Director DPW - Water Division	Lake Winona Treat. Plant Butternut Ave. Peabody, MA 01960	978-536-5069	Perform copper sulfate algaecide treatments of City's drinking water reservoirs, as requested since the mid-1980's
Pittsfield	Onota Lake	James McGrath, Director, Parks & Recreation Dept.	874 North Street Pittsfield, MA 01201	413-499-9343	Whole-lake Sonar herbicide treatment of 620-acre Onota Lake in 1999/2000 to control Eurasian watermilfoil. Spot-treatments of milfoil in 2000, 2001 & Reward treatment of milfoil in 2005 & 2011
Pittsfield/ Lanesborough	Pontoosuc Lake	Paul Boudreau, Chief Procurement Officer, Town of Lanesborough	83 No. Main St. Lanesborough, MA 01237	413-442-1167	Multiple year Aquatic Management Program to address Eurasian watermilfoil and curlyleaf pondweed in 2009-2013. Treatment of ~200-acres was conducted from 2009-2013 using the Reward herbicide.
Salem	Sargent Pond	Ron Malionek, Supt., Greenlawn Cemetery	1 Salem Green Salem, MA 01970	978-745-0195	Annual treatment of nuisance algae and maintenance of pond aerators as requested by Cemetery staff, since the early 1990's
Shrewsbury/ Worcester	Flint Pond Lake Quinsigamond	Karen Hemmdinger, Shrewsbury Public Works	100 Maple Ave Shrewsbury, MA 01545	508-841-8512	Assessment and herbicide treatment of invasive watermilfoil in 2008 & 2009 for these large multiple use waterbodies.
Southwick	Congamond Lakes	Karl Stinehart, Town Administrator	454 College Highway Southwick, MA 01077	413-569-5995	Performed whole-lake Sonar herbicide treatment of this 450-acre lake system in 2001 for control of Eurasian watermilfoil. Annual "spot-treatment" & maintenance since then.
Upton	Mill, Pratt, Taft and Wildwood Ponds	Jim Bates, Jr, Chmn. Lakes & Ponds Study Committee	Town Offices Upton, MA 01568	508-222-3755	Annual or bi-annual treatment of nuisance vegetation and algae as requested by the Study Committee or Con. Comm.
Wakefield	Crystal Lake	Steven Fitzpatrick, Water & Sewer Department	1 Lafayette St. Wakefield, MA 01880	781-246-6318	Annual copper sulfate algaecide treatments of City's drinking water reservoir, as requested.
Walpole	Memorial Pond & Turners Pond	Landis Hershey, Conservation Agent	135 School Street Walpole, MA 02081	508-660-7253	Management of nuisance aquatic vegetation at Memorial Park & Turner's Ponds
Wayland	Dudley Pond	Ted Fiust, Surface Water Quality Committee	Town Building 41 Cochituate Road Wayland, MA 01778	508-647-1544 (evenings) 508-380-7286 (cell)	Sonar treatment on four occasions since 1992 to manage invasive Eurasian watermilfoil in this important waterbody. Selected by Town for multiple year Sonar and Renovate treatment program in 2008, 2010, and 2013.
Webster	Webster Lake	Dick Ricker, Webster Lake Commission	PO Box 156 Webster, MA 01570	508-561-0207 (cell)	Program design, permitting and implementation of targeted chemical treatments to control invasive watermilfoil weed and fanwort in this large 1,200 acre lake

Solitude Lake Management

MUNICIPALITY	WATERBODY	CONTACT/CLIENT	ADDRESS	TELEPHONE	PROJECT DESCRIPTION
Wellesley	Morses Pond	Jan Kaseta, Director Recreation Dept.	Warren Bldg. 90 Washington St. Wellesley, MA 02481	781-235-2370	Annual monitoring & chemical treatment of nuisance algae (as required) since 2001
Westborough	Chauncy Lake	Frank DeSiata, Dir. Recreation Dept.	Town Offices Westborough, MA 01581	508-366-3066	Annual treatment of nuisance vegetation and algae in Town Beach Area since the 1980's.
Winchester	Upper Mystic Lake, Forebays	Elaine Vreeland, Conservation Admin.	Town Offices Winchester, MA	781-721-7152	Regulatory oversight for treatment program to control nuisance vegetation and algae. Program has continued intermittently from 1994-2013 based on funding availability
Worcester	Crystal Park, Elm Park, Green Hill Park	Rob Antonelli Jr. Parks Commissioner	50 Skyline Drive Worcester, MA 01605	508-799-1190	Annual management programs conducted at three prominent parks in the City.

REPRESENTATIVE TREATMENT PROJECTS WITH SONAR (FLURIDONE) HERBICIDE

SOLitude Lake Management

WATERBODY NAME	CLIENT/ CONTACT	YEAR	WATERBODY SIZE	DESCRIPTION & RESULTS
<i>Billington Sea Plymouth, MA</i>	Billington Sea Association Contact: Mike Leary 508-317-7115	2018	280 Acres	A partial lake treatment to control fanwort using Sonar One herbicide within a shallow 80 acre portion of the lake was performed. Limno-barrier was used to maintain concentration within this treatment area. An extensive monitoring program was performed to ensure that the herbicide treatment did not cause mortality of the Eastern Pond Mussel, a species of special concern. The treatment program successfully controlled the fanwort without observable impact to the Eastern Pond Mussel
<i>Neponset Reservoir Foxboro, MA</i>	NRRC Contact: Rhys Bowen 508-698-3599	2009 -2018	315 Acres	Whole-lake Sonar herbicide treatment program performed in 2009 to control fanwort and variable milfoil. The treatment was very effective and cover of both target non-native plants was drastically reduced following treatment. Conditions in the reservoir remained favorable through the summer of 2011, with only limited re-growth of variable watermilfoil fanwort observed. In the fall of 2011 extensive growth of variable watermilfoil was observed in the SW, NW and SE coves of the reservoir, prompting the NRRC to complete a Reward (diquat) herbicide treatment to control areas of dense milfoil growth in 2012. This treatment program successfully controlled variable milfoil for the 2012 summer season.
<i>Attitash Lake Amesbury, MA</i>	Lake Attitash Association Contact: Cindy Roberts 978-388-2445	2012	380	Whole-lake Sonar herbicide treatment program performed in 2012 to control invasive Eurasian milfoil. Milfoil plants dropped out of the water column by mid-late June, leaving the lake free of nuisance milfoil growth for the majority of the summer season. Native plant populations survived and some species even flourished during the year of treatment. No significant drop in water clarity caused by increased microscopic algae growth occurred. There was no downstream migration of fluridone herbicide.
<i>Tri-Lakes Belchertown, MA</i>	Belchertown Conservation Commission Contact: LeaAnne Connolly 413-323-0405	2012 & 2019	52 acres (Metacomet) and 36 acres (Arcadia)	A comprehensive herbicide treatment program to control invasive fanwort (<i>Cabomba caroliniana</i>) and variable milfoil (<i>Myriophyllum heterophyllum</i>) was completed at Lake Arcadia and Lake Metacomet in 2012. The use of the two newest formulations of Sonar was recommended. Sonar One pellets were recommended to allow for strategic placement on herbicide on infested areas and the time-release pellets were desired to maintain long herbicide concentration-exposure-time. Sonar Genesis liquid was also applied. By all accounts, the Sonar herbicide treatment programs performed at Lake Arcadia and Lake Metacomet in 2012 were successful. The length of control will be assessed in the years to come.
<i>Lake Hayward East Haddam, CT</i>	Property Owners Association of Lake Hayward • Contact: Tim Pelton 800-437-8347 (days)	2003 2008, follow up management through 2018	180 Acres	Whole-lake Sonar herbicide treatment program performed in 2003 to control fanwort. That 2003 treatment held up well for the following four years. Treatment was closely scrutinized by DEP Fisheries because the lake is a prized bass fishery. Treatment program provided 3 full years of nuisance level fanwort control. Annual monitoring has been performed since the 2003 treatment program. Another whole-lake Sonar treatment is planned for 2007.

<i>Fosters Pond</i> <i>Andover, MA</i>	Foster's Pond Corporation • Contact: Steve Cotton 978-475-5679 (days/eve.)	2005	120 Acres	Completed a detailed aquatic plant survey and developed a nuisance aquatic vegetation management for this 120-acre pond in 2004. Based on the recommendations of that Report, the Foster's Pond Corporation decided to move forward with the permitting and implementation of a whole-pond Sonar herbicide treatment program for control of fanwort. The treatment program, which was carried out in 2005, provided excellent control of the fanwort plant. A comprehensive Project Completion Report was prepared for the Corporation.
<i>Bartlett Pond</i> <i>Northborough, MA</i>	Engineering Department • Contact: Fred Litchfield 508-393-5015 (days)	1996, 1999 & 2002 & 2007, 2018	45 Acres	Sonar treatment program to selectively control non-native and invasive Eurasian watermilfoil and fanwort growth in this 45-acre pond, while maintaining a diverse assemblage of native plants. Pond has a rapid flushing rate, so a split-treatment program was performed in May and June of 1996. Comprehensive pre and post-treatment aquatic plant monitoring and reporting accompanied this treatment program. Excellent milfoil and fanwort control (>95%) achieved for three years following treatment. The pond has been treated subsequently in 1999, 2002 and 2007. Extended control (4-5 years) of fanwort and milfoil has been experienced between treatments.
<i>Congamond Lakes</i> <i>Southwick, MA / Suffield, CT</i>	Citizens to Restore Congamond • Contact: Gerald Crane 860-668-5783 (days/eve.)	2001, follow up management through 2018	465 acres	Whole lake Sonar AS treatment to control Eurasian watermilfoil. Milfoil biomass and cover were reduced by >95% within 60 days of treatment. Detailed plants surveys and wetlands assessments have accompanied this high profile project. Spot annual treatments with Reward (Diquat) herbicide have been performed since then at just ~ \$10,000 - \$15,000/year to keep invasive milfoil populations well under control.
<i>Copake Lake</i> <i>Copake, NY</i>	Copake Lake Conservation Society • Contact: David Crow 845-724-3359 (day)	2002, follow-up management through 2018	420 Acres	Whole lake Sonar treatment program performed in 2002, to selectively control non-native and invasive Eurasian watermilfoil growth in this 420-acre lake. The treatment program was desired to replace harvesting that was no longer providing sufficient control. The treatment has provided two seasons of excellent milfoil control. Only widely scattered milfoil has returned and it is being aggressively hand-pulled.
<i>Cushing Pond</i> <i>Hingham, MA</i>	Cushing Pond Preservation Group, Inc. • Contact: Mr. Henry Day (781) 749-4868 day/eve.	2007	17-acres	Conducted multiple applications of the Sonar liquid and pellet formulations to control fanwort and curlyleaf pondweed. The pond is 17-acres and experiences very high flow volume in the spring and during storm events. Nearly 100% control of the fanwort was achieved post-treatment as well as a significant reduction in the curly-leaf pondweed. We are expecting 2-3 years of carry over control of fanwort.
<i>Dudley Pond</i> <i>Wayland, MA</i>	Surface Water Quality Committee • Contact: Ted Fiust 508-647-1544 (evening)	1992 & 1996, 1999 & 2003, follow-up management through 2018	91 Acres	Four whole-lake Sonar treatments have occurred at Dudley Pond since 1992. Control of Eurasian watermilfoil. A more comprehensive approach to Sonar treatment is proposed for 2008, with subsequent "spot treatments" of Renovate (Triclopyr) proposed for 2009 and 2010 if needed.

<p><i>Flannagans Pond</i> Ayer, MA</p> <p><i>Sandy Pond</i> Ayer, MA</p>	<p>Board of Selectmen & Conservation Commission</p> <ul style="list-style-type: none"> Contact: Bill Daniels 978-772-8249 	<p>1996, 1999, 2002 & 2007, 2017, 2018</p>	<p>78 Acres</p>	<p>Sonar treatment program to selectively control non-native and invasive variable watermilfoil and fanwort in this 78-acre pond, while maintaining a diverse assemblage of native plants. Pond has a rapid flushing rate, so a split-treatment program performed in May and June of 1996. Excellent milfoil and fanwort control (>95%) achieved for three years following treatment. Sonar AS treatment was repeated in 1999, 2002 and most recently in 2007 with good results.</p> <p>Sandy Pond, which been included in the ongoing monitoring program was treated in 2007 with Sonar pellets to control a fairly new, but rapidly expanding population of fanwort and variable watermilfoil</p>
<p><i>Heart Pond</i> Chelmsford & Westford, MA</p>	<p>Heart Pond Association</p> <ul style="list-style-type: none"> Contact: David Lavoie, President (978) 250-9793 (days) 	<p>2005, follow up management through 2018</p>	<p>91 acres</p>	<p>Whole lake Sonar treatment to selectively control non-native and invasive fanwort growth, while at the same time maintaining a desirable native plant assemblage. Concerns over downstream water use by a local cranberry grower required careful in-pond and downstream monitoring of herbicide concentrations. Excellent control (>95%) of the targeted fanwort was achieved by the end of the 2005 season. Based on the post-treatment conditions, multiple years of control are anticipated.</p>
<p><i>Indian Lake</i> Sharon, CT</p>	<p>Indian Lake Association</p> <ul style="list-style-type: none"> Contact: Don Mayland 860-435-9915 (evenings) 	<p>1994, follow up management through 2018</p>	<p>222 Acres</p>	<p>Sonar SRP treatment program to selectively control non-native and invasive Eurasian watermilfoil growth in the littoral zone of this 222-acre lake located on the border of CT and NY. Excellent control of the milfoil (>95%) was achieved throughout the treatment area and maintained for two seasons following treatment.</p>
<p><i>Jacobs Pond</i> Norwell, MA</p>	<p>Conservation Commission</p> <ul style="list-style-type: none"> Contact: Michelle Simoneaux 781-659-8022 (days) Or: Cliff Prentiss 781-741-1445 (days) 	<p>1997 & 2001 & 2007, 2017, 2018</p>	<p>59 Acres</p>	<p>Sonar treatment program to selectively control non-native and invasive fanwort growth in this 59-acre pond, while maintaining a diverse assemblage of native plants. Treatment performed under scrutiny of the South Shore Natural Science Center, which is located adjacent to the pond and uses the pond as a field laboratory. Pond has a rapid flushing rate, so a split-treatment program was performed in June and July of 1997. Comprehensive pre and post-treatment aquatic plant monitoring and reporting accompanied this treatment program. Excellent fanwort control (>95%) was maintained for nearly four years until the pond was again successfully treated in 2001 and 2007</p>
<p><i>Lake St. Catherine & Lake Hortonia</i> VT</p>	<p>Their respective Lake Associations</p> <p>Contact: Ann Bove at VT DEC 802-241-3782</p>	<p>2004, follow up work through 2018</p>	<p>1,100 and 600 acres, respectively</p>	<p>Whole-lake Sonar AS applications targeting selective control of Eurasian watermilfoil. A series of four treatments were performed at each lake during late spring/summer of 2004. Greater than 95% control of EWM was achieved. This program included comprehensive permitting along with pre and post-treatment monitoring. At 1,100 acres, this is the largest "whole-lake" Sonar treatment performed in the northeast.</p>

<p><i>Lower Chandler Mill Pond</i></p> <p><i>Duxbury, MA</i></p>	<p>Conservation Commission</p> <ul style="list-style-type: none"> • Contact: Joseph Grady Conservation Administrator 781-934-1104 (days) 	<p>2000 & 2007, 2014, 2019</p>	<p>40</p>	<p>A series of sequential treatments were performed with Sonar herbicide commencing in late spring. Excellent control of the targeted fanwort was obtained throughout the summer of 2000 and 2001. Significant re-growth was not seen until late in 2005, prompting treatment again in 2007. Treatment at the pond in 1999 by another lake management company reportedly provided one year of plant control. We encourage you to call this client.</p>
<p><i>Onota Lake</i></p> <p><i>Pittsfield, MA</i></p>	<p>City of Pittsfield</p> <ul style="list-style-type: none"> • Contact: James Mc Grath 413-499-9343 (days) 	<p>1999/ 2000, follow up management through 2017</p>	<p>620 Acres</p>	<p>Low dose, whole lake Sonar treatment to selectively control Eurasian watermilfoil. Treatment program initiated in 1999 with excellent reductions in Eurasian watermilfoil biomass and distribution. Two-year contract currently being continued through the 2000 season</p>
<p><i>Pine Pond</i></p> <p><i>Kent, NY</i></p>	<p>Gypsy Trail Club</p> <ul style="list-style-type: none"> • Contact: Mark Walsh 518-432-7511 (days) 	<p>1997 & 2001</p>	<p>75-Acres</p>	<p>Whole lake treatment with Sonar AS herbicide was conducted in 1997. Re-growth of milfoil, as of 2001, was limited to a small (<0.5 acre) plot which was successfully treated this year using Sonar SRP herbicide.</p>
<p><i>Pratt Pond</i></p> <p><i>Upton, MA</i></p>	<p>Conservation Commission & Lake Study Committee</p> <ul style="list-style-type: none"> • Contact: Jim Bates, Jr. 508-222-3755 (days) 	<p>1994-2012, follow up management through 2018</p>	<p>38 Acres</p>	<p>Sonar SRP treatment program to selectively control non-native and invasive fanwort growth in the littoral zone of this 38-acre pond, while maintaining a diverse assemblage of native plants. The pond was re-treated in 2002 for control of fanwort with the Sonar AS herbicide and we have been managing the pond for the Town annually since that time.</p>
<p><i>Reservoir Pond</i></p> <p><i>Canton, MA</i></p>	<p>Reservoir Pond Association</p> <ul style="list-style-type: none"> • Contact: Sandy Denehey 508-529-3370 (days) 	<p>2001, follow-up management through present</p>	<p>240 Acres</p>	<p>Sonar AS treatment of this 240 acre impounded waterbody for control of variable watermilfoil and fanwort. Multiple applications yielded excellent control of all targeted plants.</p>
<p><i>Saratoga Lake</i></p> <p><i>Saratoga Springs, Ballston Spa, Malta, NY</i></p>	<p>Saratoga Lake Protection and Improvement District</p> <ul style="list-style-type: none"> • Contact: Joe Finn 518-387-7336 (days) 	<p>2000 and 2007</p>	<p>4,000 Acres</p>	<p>Two 100-acre demonstration plots were treated in 2000 with Sonar herbicide. A comprehensive aquatic plant survey and management program was developed for this very large and important NY lake by Aquatic Control in 2004. Sonar and/or Renovate (Triclopyr) herbicide are intended for use in the lake in 2007-2009. Sonar treatment in 2007 was very effective and well received by the lake users and NY DEC.</p>

<i>Spy Pond</i> <i>Arlington, MA</i>	Spy Pond Association <ul style="list-style-type: none"> Contact: Ms. Joey Glushko 781-316-3093 (days) 	2001 & 2005	103 Acres	Treatment of Eurasian watermilfoil and coontail during the late spring of 2001 & 2005 with Sonar AS herbicide. Greater than 99% control of the milfoil biomass & cover was achieved. In addition to the effective Sonar treatment, ACT successfully, permitted the project in accordance with the Massachusetts Wetland Protection Act.
<i>Sunset Lake</i> <i>Braintree, MA</i>	Planning and Conservation Department <ul style="list-style-type: none"> Contact: Conservation Administrator 781-794-8233 (days) 	1994-2007	57 Acres	Sonar treatment program to selectively control non-native and invasive Eurasian watermilfoil growth in this 57-acre lake. Treatment performed as part of a long-term management program being developed for the lake. Comprehensive pre and post-treatment aquatic plant monitoring and reporting accompanied this treatment program. Excellent milfoil control (>95%) was achieved for three complete years following treatment. Town retained ACT to continue an annual aquatic plant monitoring program. Approximately 15-acres of milfoil was spot-treated with Reward® (Diquat) herbicide in 1997, to prevent a widespread infestation of milfoil from becoming established. Reward "spot treatments" have occurred periodically since then, pending availability of funding.
<i>West Twin Lake</i> <i>Salisbury, CT</i>	Town of Salisbury <ul style="list-style-type: none"> Contact: Curtis Rand, 1st Selectman 860-435-5170 (days) 	2001-2005, follow up management through 2018.	105 Acres	Multiple application Sonar AS treatment to control Eurasian watermilfoil in the "third lake" basin of the Twin Lakes system located in Salisbury, CT. A barrier was used to segregate the treated areas from sensitive upstream habitat containing an endangered submersed plant species. Limited drawdown was used prior to application in order to manage retention times during the treatment. Excellent control of target plants was achieved post-treatment

◆ **Note: For all Massachusetts projects listed above, SOLitude prepared and filed Notice of Intent applications with the Conservation Commission and was successful in obtaining a valid Order of Conditions. In addition, SOLitude prepared and filed the License to Apply Chemicals with MA DEP, Office of Watershed Management.**

**PROFESSIONAL REFERENCES
FOR SOLITUDE LAKE MANAGEMENT KEY
PERSONNEL**

- *Ms. Ann Bove (802) 241-3782 (days)
VT Department of Environmental Conservation (VT DEC)
Oversees Vermont's aquatic invasive plant control program
- * Ms. Amy Smagula (603) 271-2248 (days)
Limnologist/Exotic Species Program Coordinator amy.smagula@des.nh.gov
NH Dept. of Environmental Services (NH DES)
Concord, NH
Oversees New Hampshire's aquatic invasive plant control program
- * Mr. Larry Eichler (518) 644-3541 (days)
Rensselaer Polytechnic Institute
Troy, NY
NY and regional expert on aquatic plants
- * Dr. Kurt Getsinger (601) 634-2498 (days)
US Army Corp of Engineers
Vicksburg, MS
Leading national researcher on chemical control of aquatic plants
- * Dr. William Haller (352) 392-9615 (days)
University of Florida, Aquatic Plant Research Center
Gainesville, FL
Recognized international leader in aquatic plant management and research
- * Dr. Michael Netherland (352) 392-0335 (days)
University of Florida, Aquatic Plant Research Center
Gainesville, FL
Recognized international leader in aquatic plant management
- * Mr. Charles Lee (860) 424-3716 (days)
CT DEP, Bureau of Water Management
Hartford, CT
Oversees management of CT state owned waterbodies.
- * Mr. James Straub (617) 626-1411 (days)
MA Department of Conservation and Recreation (MA DCR)
Boston, MA
Manages MA DCR's Ponds and Lakes Program



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

3/16/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Edgewood Partners Insurance Center 200 Glenridge Point Parkway Suite 400 Atlanta GA 30342	CONTRACT Certificate Unit NAME: PHONE 404-439-8000 FAX 404-439-8001 (A/C, No., Ext): E-MAIL certificate@epicbrokers.com ADDRESS:														
	<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A : ACE American Insurance Company</td> <td>22667</td> </tr> <tr> <td>INSURER B : Old Republic Insurance Company</td> <td>24147</td> </tr> <tr> <td>INSURER C : ACE Property & Casualty Insurance Company</td> <td>20699</td> </tr> <tr> <td>INSURER D : Zurich American Insurance Company</td> <td>16535</td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : ACE American Insurance Company	22667	INSURER B : Old Republic Insurance Company	24147	INSURER C : ACE Property & Casualty Insurance Company	20699	INSURER D : Zurich American Insurance Company	16535	INSURER E :		INSURER F :
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INSURED Solitude Lake Management, LLC Rentokil North America, Inc. (REN462) 1320 Brookwood Dr. Ste H Little Rock AR 72202-4412	RENTOKI-01														

COVERAGES

CERTIFICATE NUMBER: 1192857039

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			OGLG27240331	10/1/2019	10/1/2020	EACH OCCURRENCE \$5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$5,000,000 MED EXP (Any one person) \$5,000 PERSONAL & ADV INJURY \$5,000,000 GENERAL AGGREGATE \$5,000,000 PRODUCTS - COMP/OP AGG \$5,000,000 \$
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY			MWTB314124-19	10/1/2019	10/1/2020	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$10,000			XOOG27239420	10/1/2019	10/1/2020	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	MWC314123-19	10/1/2019	10/1/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$2,000,000 E.L. DISEASE - EA EMPLOYEE \$2,000,000 E.L. DISEASE - POLICY LIMIT \$2,000,000
A D	Errors & Omissions Liability Crime/Client Coverage			OGLG27240331 CRM015168302	10/1/2019 10/1/2019	10/1/2020 10/1/2020	Each Incident/Agg 5,000,000 Each Occurrence 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Hickory Hills Landowners, Inc., to the extent required by written contract, is an additional insured.

CERTIFICATE HOLDER**CANCELLATION**

Hickory Hills Landowners, Inc.
 P. O. Box 298
 Lunenburg MA 01462

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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