



2018 Aquatic Weed Harvesting Final Report

Baddacook Pond Groton, MA

Prepared For:

The Town of Groton
173 Main Street
Groton, MA 01450

Prepared By

Strategic Environmental Services
362 Putnam Hill Road
Sutton, MA 01590

SES Project No.18-0302

Report Date

November 2018

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Introduction

Strategic Environmental Services, Inc. (SES) was contracted by the Town of Groton for the purpose of controlling and reducing the amount of invasive species and biomass throughout the littoral zone of Baddacook Pond in Groton, Massachusetts. The project consisted of two mechanical harvestings, hydro-raking and the transportation and disposal of the Bio-mass accumulated. The bio-mass and cuttings generated were transported for composting to the Town of Groton recycling center in Groton, MA. Pre and post- Management surveys of the work zones were also performed. A site Locus map is attached as Figure 1.

Pre-Management Survey Assessment

On July 10, 2018 a pre-management survey and assessment of the pond was performed. The area within the littoral zone around the entire pond was surveyed for plant composition and density. Survey methods included throw-rake tosses and hydro-acoustic sonar mapping. Results from hydro-acoustic sonar are mapped and attached as Figure 2.

Results indicated two known invasive species, variable water milfoil (*Myriophyllum heterophyllum*) and Fanwort (*Cabomba caroliniana*), located throughout the circumference of the entire pond. Other species of non-invasive plants were also observed in the pond including, large-leaf pondweed (*Potamogeton amplifolius*) and stonewort (*Nitella* sp.). The shallower areas of the pond (less than 4 feet) were populated with white waterlily (*Nymphaea odorata*), yellow waterlily (*Nuphar variagata*), and watersheild (*Brasenia schreberi*).

Mechanical Harvesting Operations

SES secured a Special Use Permit (Permit # 12130) from the Massachusetts Department of Fish and Game, Office of Fishing and Boating Access, for launching and retrieving equipment and loading harvested weeds from the water between the dates of July 7, 2018 and September 28, 2018. The permit and other applicable permits are attached in Appendix III.

The objective of the harvesting operations was focused on the removal of invasive species located along the lateral zone of the pond. Harvesting primarily occurred within 125 feet of the shoreline and around an island located in the northeast quadrant of the pond. Two separate harvestings of the pond occurred. Both harvestings began in the northwest cove nearest the boat ramp and continued in a counter clockwise fashion around the pond. A Garmin GPSMAP 78s handheld mapping device was used during the operation of the harvester to track the areas that were harvested. Maps generated from the GPS data are attached as Figures 3 & 4.

During harvesting operations, a daily log was kept referencing the date of work, location of work, number of harvesting hours worked, number of loads harvested, the number of loads transported to the Groton Recycling Center and any notes pertaining to machine breakdowns and repairs. Copies of the daily logs are attached as Appendix I.

Phase One Operations:

The first phase of aquatic weed harvesting took place from July 11, 2018 to July 27, 2018. As previously indicated two invasive species were targeted for harvesting; variable water milfoil (*Myriophyllum heterophyllum*) and Fanwort (*Cabomba caroliniana*). Phase I harvesting operations lasted thirteen (13) days totaling ninety (90) operating hours. Operations consisted of harvesting vegetation with an aquatic harvester. The harvester trays would fill with cut vegetation and once filled be transported to the boat ramp for unloading. At the boat ramp the harvester would transfer the load into a skid steer loader. The loader would then place the material into a 20- yard roll-off container to dewater. Once the roll-off container was full it was picked and transported to the Groton DPW Recycling Center. Seven (7) containers, approximately 140 cubic yards, of vegetation were removed from the site. A map depicting the areas harvested and associated dates is attached as Figure 3.

Phase 2 Operations:

A second phase of aquatic weed harvesting took place from September 12, 2018 to September 26, 2018. MassWildlife Natural Heritage and Endangered Species Division (NHESP) made a finding that given the likely presence of Blanding's Turtle hatchlings in the Pond, the Division requires that the harvester (and hydro-rake) operations remain 50 feet from the water's edge between September 15 and April 15 in order to avoid adverse effects to the actual Resource Area habitats of state listed wildlife species (310 CMR 10.59) and to avoid prohibited take of state-listed species (321 CMR 10.18 (2)(a)).

Due to the NHESP finding, harvesting operations from September 12 to September 14, 2018 were focused on locations within 50ft of the shoreline. From September 17, 2018 to September 26, 2018 harvesting operations focused on locations outside the 50ft buffer of the shoreline. A total of nine (9) days and 80 operating hours were completed. A map depicting the areas harvested during Phase 2 is attached as Figure 4.

Off-loading procedures were conducted differently than Phase 1 operations. Instead of off-loading the harvester into a skid loader and then a roll-off container the Harvester unloaded directly into the bed of a one ton dump truck at the boat ramp and transported the load directly to the designated disposal site, the Town of Groton Recycling Center. Each load was approximately 4 cubic yards in volume. A total of 66 loads were transported to the recycling center for disposal.

Mechanical Hydro-raking Operation

Hydro-raking operations started on August 20, 2018 and ran to September 11, 2018 and was performed in conjunction with Solitude Lake Management. Thirteen (13) days totaling ninety-six (96) operation hours were completed. Hydro-raking activities focused on removing thick water lily islands taking over select coves in order to free choked coves and improve access for future mechanical harvesting operations. The hydro-rake work focused on two specific coves located at the south and northeast quadrant of the pond. Hydro-raking locations are depicted on Figure 5.

Floating Islands, submerged and emergent vegetation material were removed via hydro-rake and loaded onto a transport barge and transported to shore for unloading. Two different shoreline off-loading

methods were employed. Initially, the transport barge unloaded into a front end loader which then loaded the material into 20 yard roll-off containers. Due to lack of space, SES ceased the use of a front end loader and roll-off containers. A second, more efficient method, utilizing a dump truck was employed, similarly to the Phase 2 Harvesting operation. The transport barge offloaded its contents directly into the bed of a one ton dump truck, which then transported the material directly to the recycling center for disposal.

Two (2) 20 cubic yard roll-off containers were filled and brought off site for disposal, totaling 40 cubic yards before off-loading methods were changed. However, 109 loads or approximately 436 cubic yards of material were transported and disposed utilizing the dump truck method to the Town recycling center. Before and after photos depicting the hydro-rake locations are attached as Appendix II.

Post Management Survey Assessment

A final Survey of the plant material was conducted on September 27, 2018. SES was on site to perform a survey of the plant material remaining. The methods employed included throw-rake tosses and hydro-acoustic sonar mapping. Similarly to the Pre-management Survey Variable water milfoil (*Myriophyllum heterophyllum*) and Fanwort (*Cabomba carolinana*) were still present and the dominate species in the pond. However, a reduction in density of these targeted species was observed, most notably in areas near the boat ramp and eastern shoreline. Hydro-raked areas also showed significant signs of decreased vegetation and bio-mass within the targeted coves. Results of the Post Management hydro-acoustic sonar survey are mapped and attached as Figure 6.

Summary/Recommendations

In summary, 170 hours of mechanical harvesting took place which resulted in the removal and disposal of 404 cubic yards of vegetation from the pond. Furthermore, 96 hours of hydro-raking resulted in the removal and disposal of 436 cubic yards of bio-mass from the pond. The project totaled 266 operational hours resulting in approximately 840 cubic yards of aquatic biomass removed from the pond for the duration of the project.

The operation was successful at effectively maintaining and reducing the invasive plant bio-mass in Baddacook Pond. Harvesting efforts successfully controlled invasive plant infestation with the post management survey showing decreased density of invasive vegetation in areas where the pre-management survey showed high density. Hydro-raking operations also showed positive results reducing the amount of plant biomass and restoring targeted vegetated choked out coves to open-water areas.

With success of the 2017 operation and successful results of the 2018 mechanical harvesting and hydro-raking operations it is recommended that these methods continue to be employed in order to obtain more data and closely examine the success of the operation over a three year period.

Figures



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

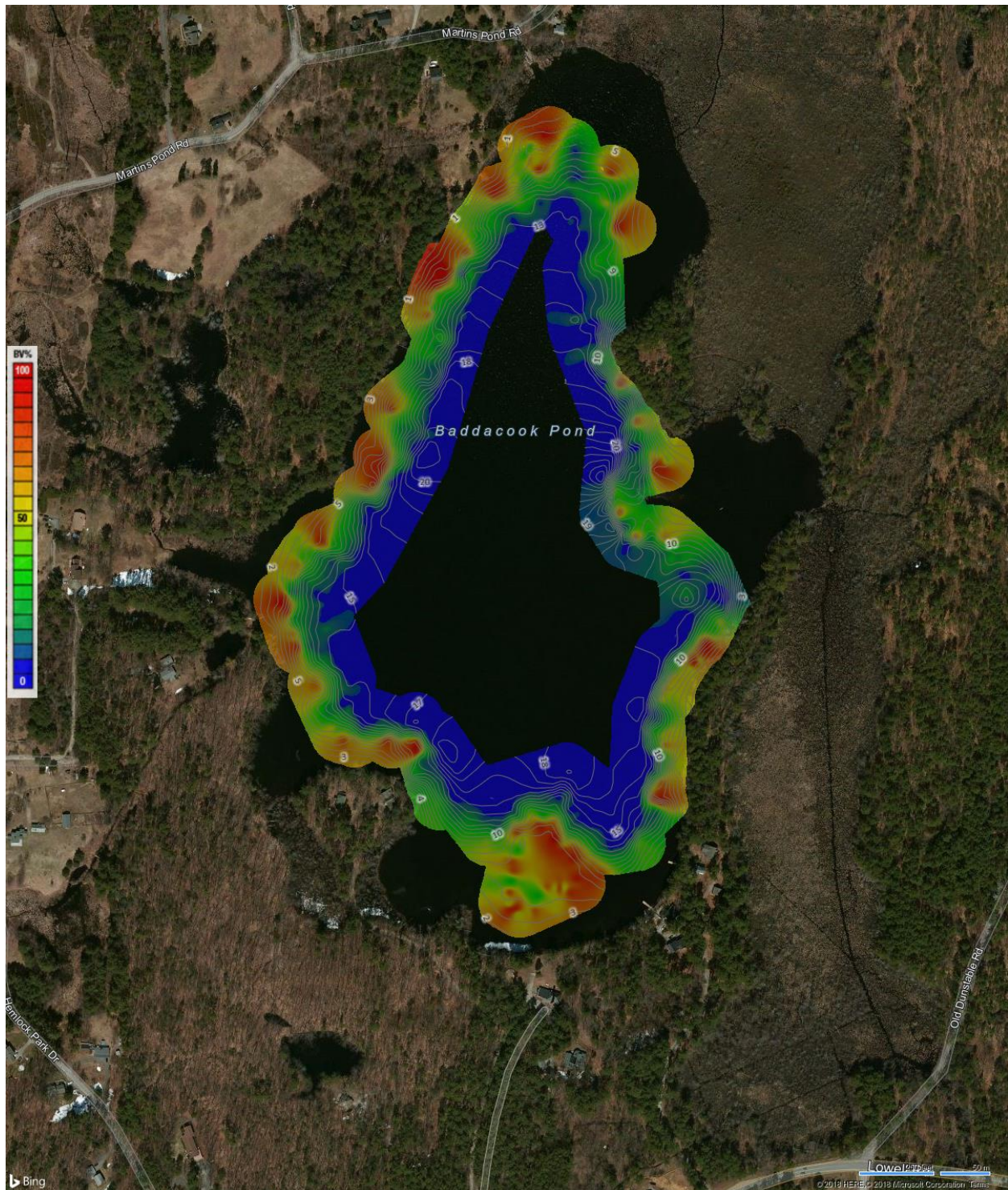
FIGURE 1-Project Locus

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by: MR



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

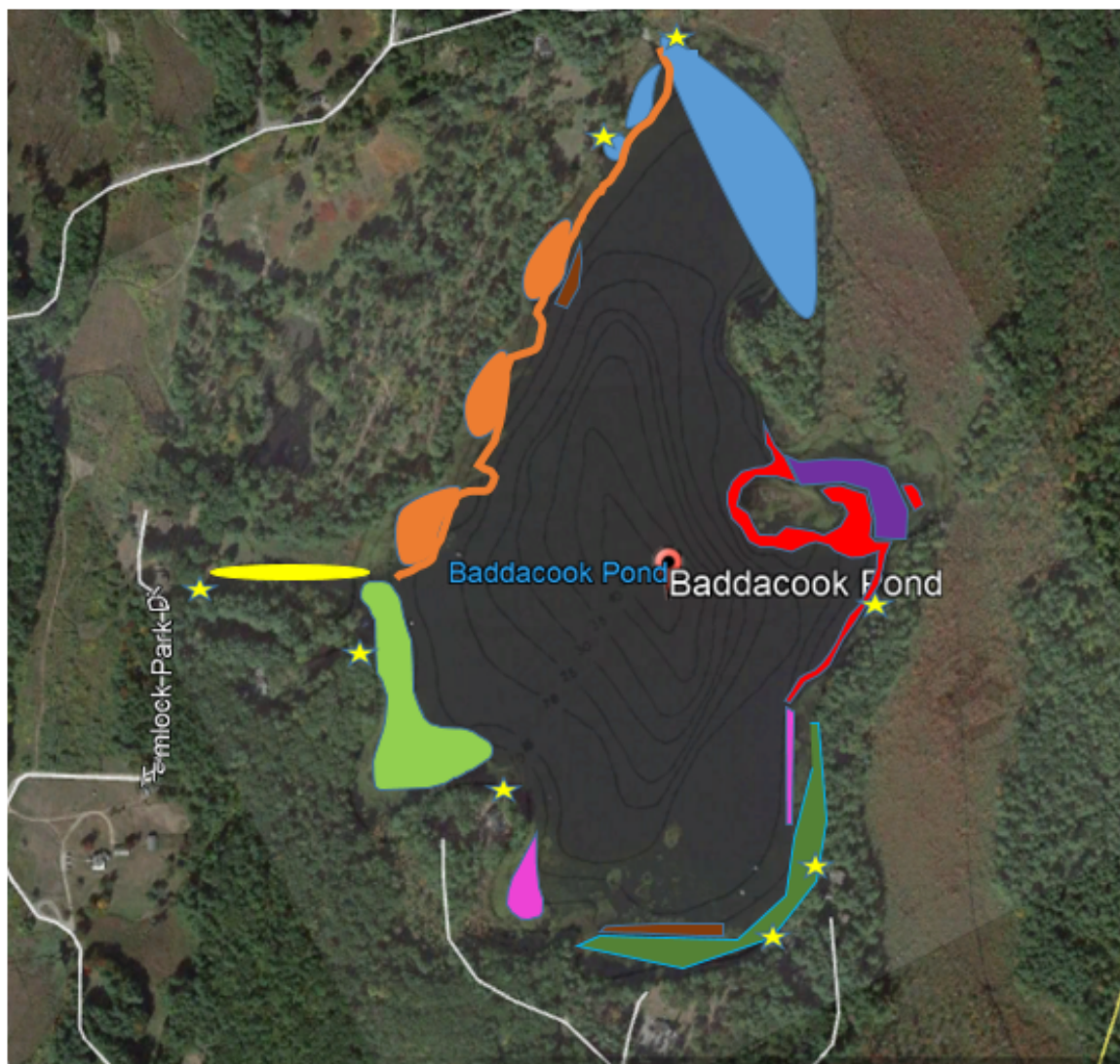
FIGURE 2: Pre Management Survey

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by:



- ★ Docks
- 7/11/18
- 7/12/18
- 7/13/18
- 7/16/18
- 7/17/18
- 7/18/18
- 7/19/18
- 7/23/18
- 7/24/2018
- 7/25/2018
- 7/26/2018
- 7/27/2018



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

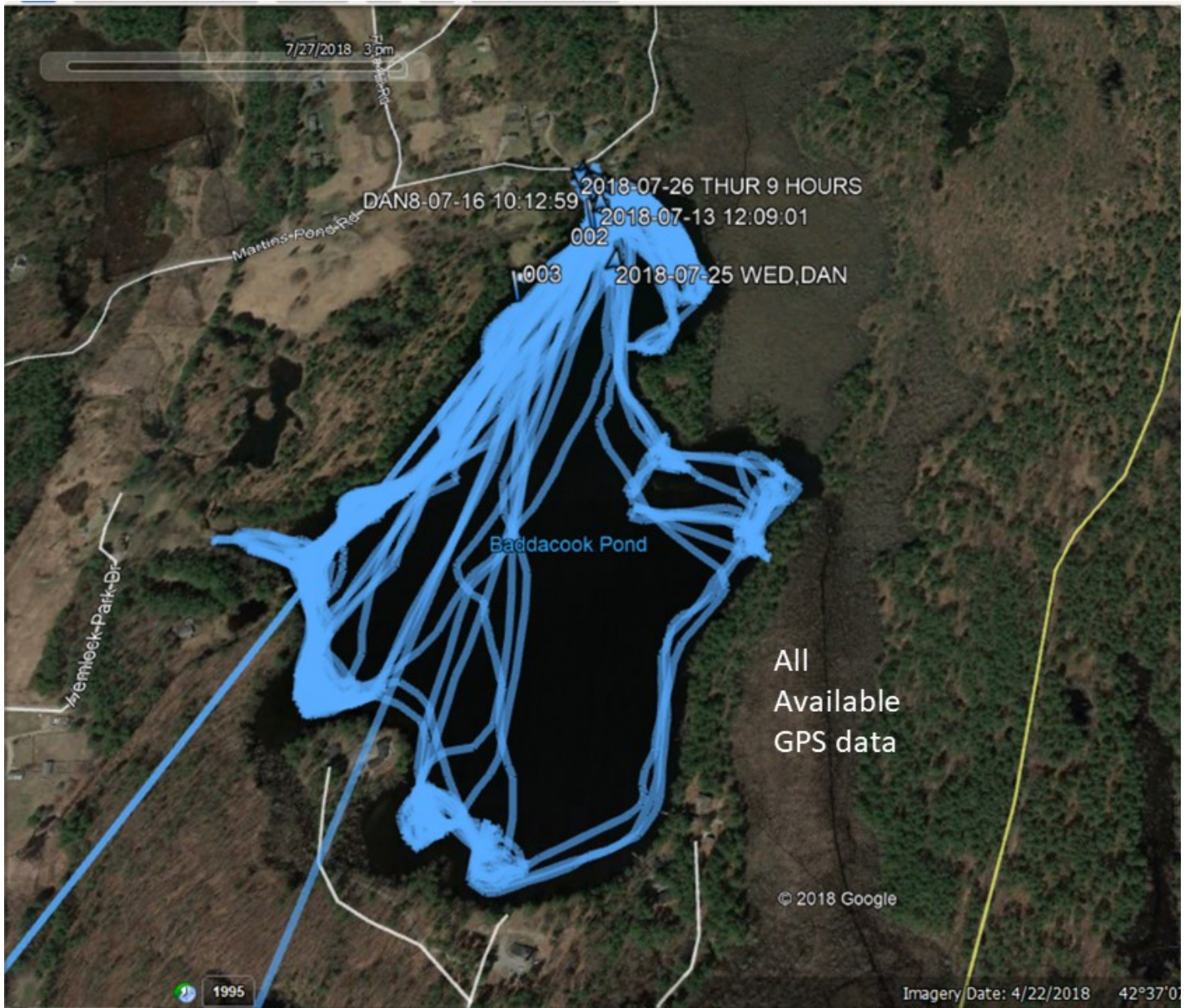
FIGURE 3-Phase I Harvesting Locations

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by: MR



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

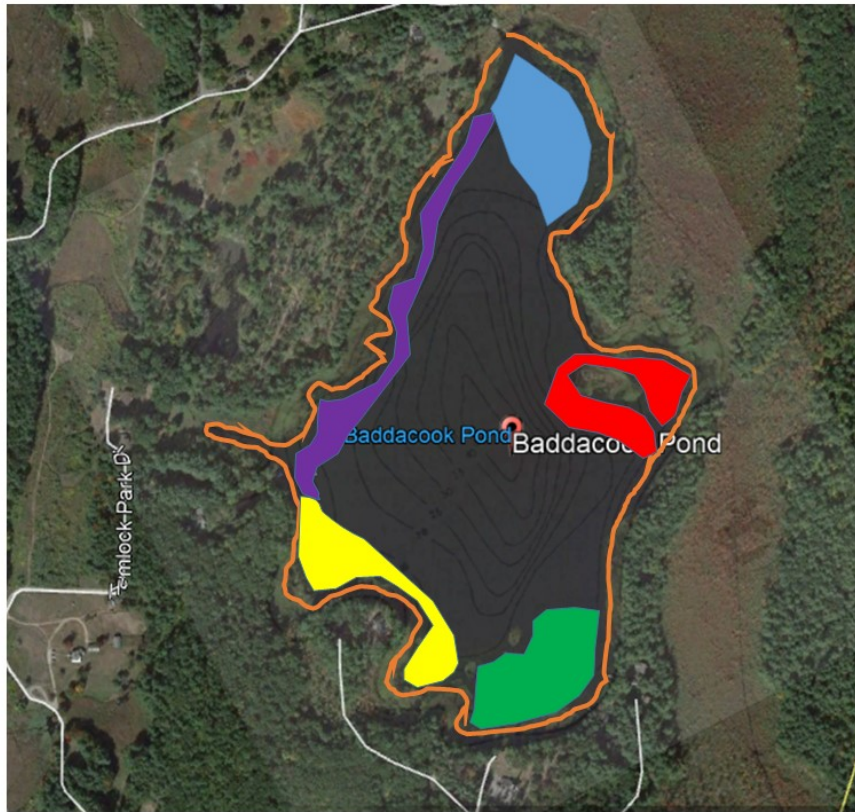
FIGURE 3A-GPS Data Phase 1

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by:



- Within 50 of Shoreline around pond
- 9/12/2018
 - 9/13/2018
 - 9/14/2018
 - 9/17/2018
 - 9/18/2018
 - 9/19/2018
 - 9/20/2018
 - 9/21/2018
 - 9/24/2018
 - 9/25/2018
 - 9/26/2018



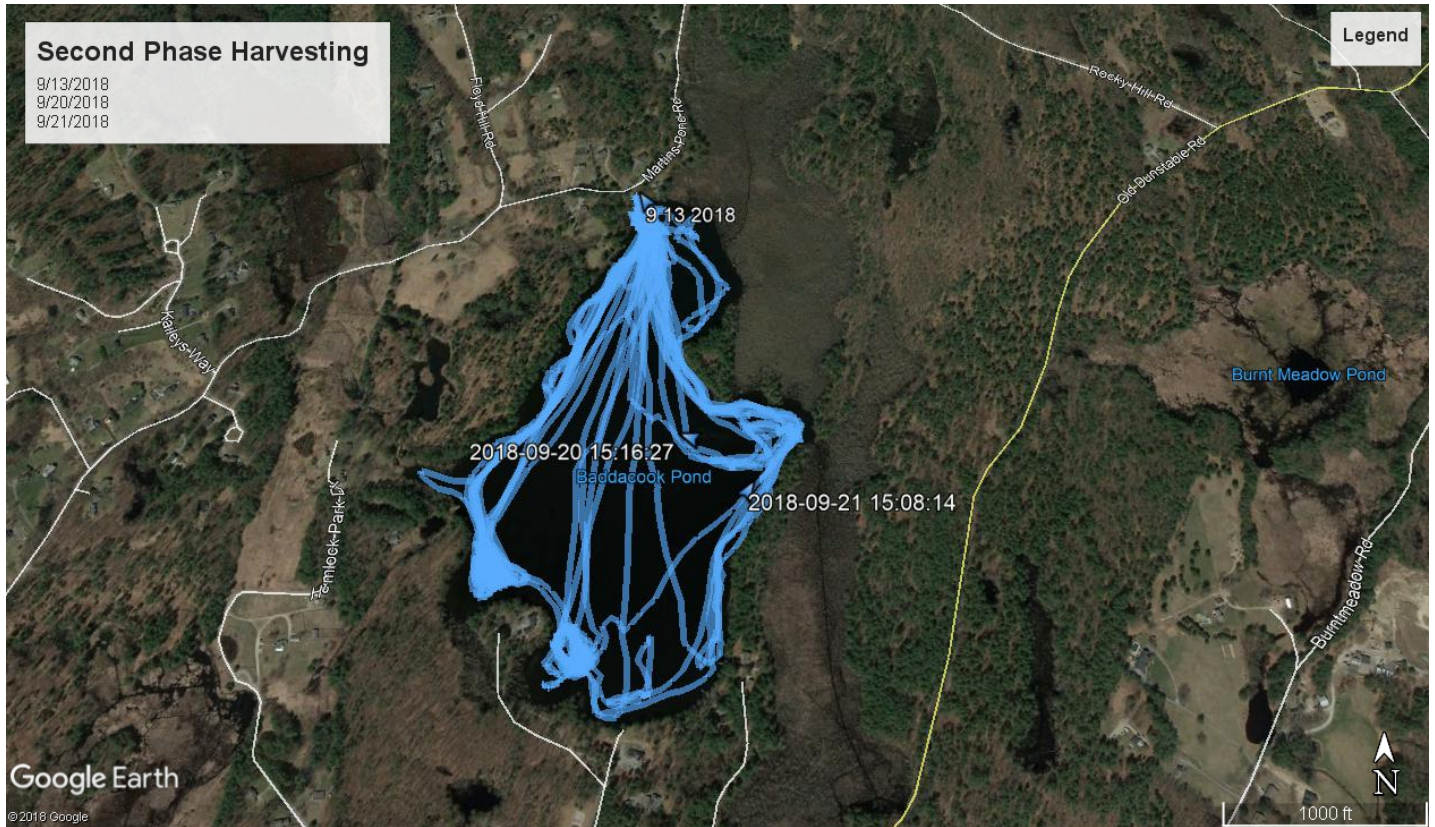
Site: Baddacook Pond Groton, MA

Project No.: 18-0302 **FIGURE 4- Phase 2 Harvesting Locations**

Strategic Environmental Services, Inc.

362 Putnam Hill Road
Sutton, MA 01590

Approved by: MR



Site: Baddacook Pond Groton, MA

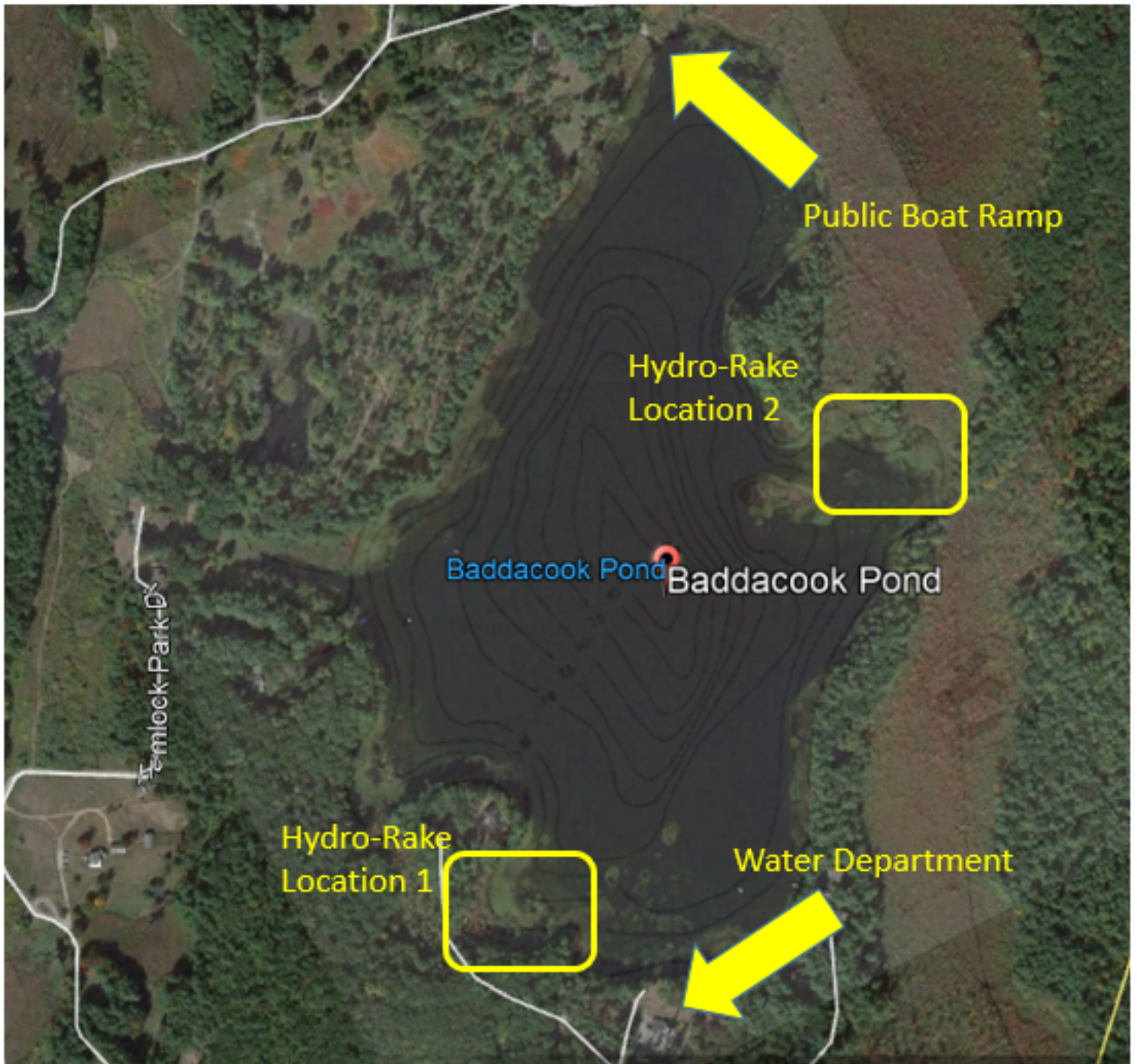
Project No.: 18-0302

FIGURE 4A-GPS Data Phase 2

Strategic Environmental Services, Inc.

362 Putnam Hill Road
 Sutton, MA 01590

Approved by:



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

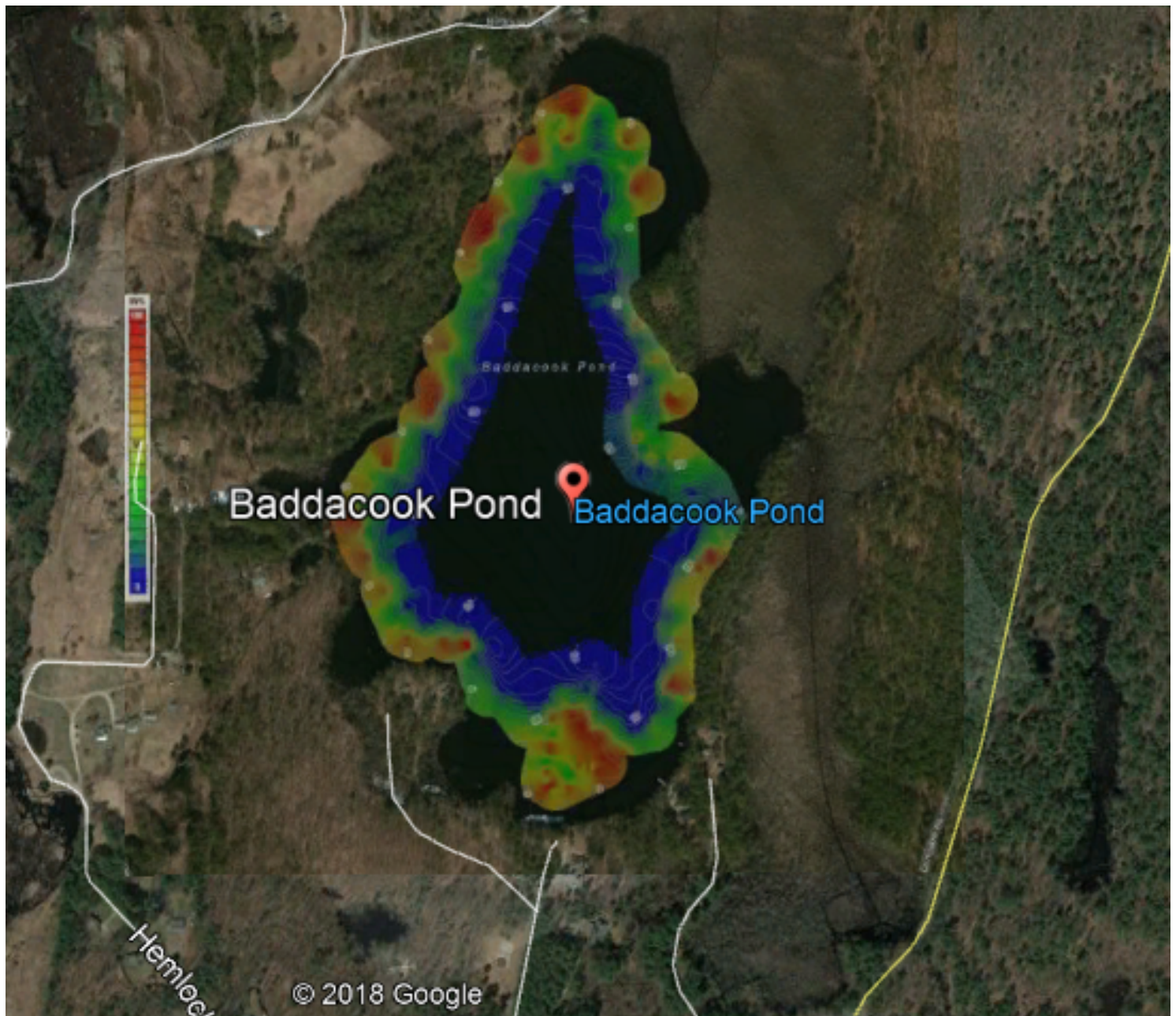
FIGURE 5-Hydro-Rake Locations

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by: MR



Site: Baddacook Pond Groton, MA

Project No.: 18-0302

FIGURE 6: Post Management Survey

Strategic Environmental Services, Inc.

362 Putnam Hill Road

Sutton, MA 01590

Approved by:

Appendix I Harvesting Daily Logs

Weed Harvesting Log Phase I

Date	Harvesting operation hours	# of Harvester Loads	# of Loads to Transfer station	Areas Harvested (in general)	Issues or Repairs	#of Turtles	#of Turtle Deaths
7/11/2018	8	4	0	boat lanch coves	Right paddle wheel hydraulic valve lever (1hr)	27	0
7/12/2018	7	4	1	southwest shoreline and coves	none	4	0
7/13/2018	6	4	1	Boat launch, southwest shoreline and coves	none	1	0
7/16/2018	8	6	0	shoreline coves, southwest finger, southwest basin	none	0	0
7/17/2018	5	4	1	shoreline cove, north east area near island	add 2 qts oil, short day due to inclement weather	0	0
7/18/2018	8	7	1	shoreline cove, north east area near island, coast up to first home dock	daily maint.	6	0
7/19/2018	8	6	0	shoreline cove, northeast area outside of island, southern coast cove	daily maint.	1	0
7/20/2018	1	1	1	east coast shoreline	dead battery, left cutter bar connection repair and weld (7hrs)	1	0
7/23/2018	5	3	0	East shoreline	left cutter bar connection repair (second weld) (3hrs)	2	0
7/24/2018	9	5	1	cove near island, coast near docks in all areas and finger lake	none	7	0
7/25/2018	8	5	0	north cove near boat ramp, west shore line passed first dock, south cove near	None	5	0
7/26/2018	9	5	0	around island and southern coves	none	4	0
7/27/2018	8	7	1	northern cove and touch ups on shore and cove around entire pond	none	15	0

Contracted Hours 90

Completed 90

Remaining 0

Weed Harvesting Log Phase II

Date	Harvesting operation hours	# of Harvester Loads	# of Loads to Transfer station	Areas Harvested (in general)	Issues or Repairs	#of Turtles	#of Turtle Deaths
9/12/2018	10	9	9	northern and western coast line		18	0
9/13/2018	9	8	8	shoreline around pond	fuel filter replacements, done early morning, no interruptions to work	6	0
9/14/2018	9.5	5	4	shorelines		1	0
9/17/2018	0	0	0	N/A	pond association trouble shoot 5 hours, SES mechanic on site 3 hours	0	0
9/18/2018	0	0	0	N/A	engine mechanic Repair	0	0
9/19/2018	7	7	7	Boat Ramp cove	dump truck issue	7	0
9/20/2018	9	8	8	Island Cove	N/A	11	0
9/21/2018	9	8	8	Southern Coves	N/A	4	0
9/24/2018	9	7	7	southern cove and east shore	N/A	6	0
9/25/2018	9	8	8	west shore and coves	N/A	2	0
9/26/2018	8.5	7	7	Boat ramp cove	N/A	6	0

Contracted Hours	80
Completed	80
Remaining	0

Appendix II Associated Photos

Before Hydro-raking



After Hydro-raking



Site: Baddacook Pond Groton, MA.

Project No.: 18-0302

North cove before and after

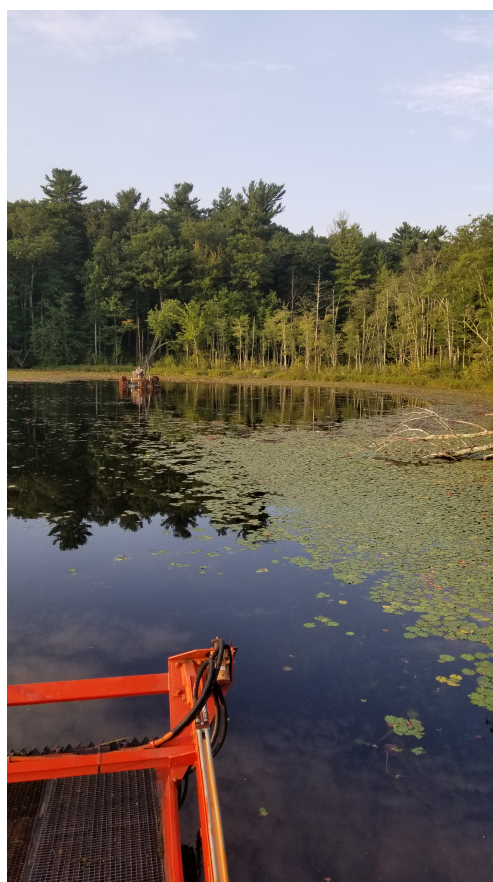
Strategic Environmental Services, Inc.
362 Putnam Hill Road
Sutton, MA 01590

Approved by:

South Cove
Before hydro-
raking



South Cove After
Hydro-raking



**Site: Baddacook Pond
Groton, MA**

Project No.: 18-0302

South cove-before and after

Strategic Environmental Services, Inc.
362 Putnam Hill Road
Sutton, MA 01590

Approved by: MR



BEFORE



AFTER



Site: Baddacook Pond	
Groton, MA	
Project No.: 18-0302	SOUTH COVE BEFORE AND AFTER
Strategic Environmental Services, Inc.	
362 Putnam Hill Road	
Sutton, MA 01590	Approved by: MR

Appendix III Associated Permits

THE COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF FISH AND GAME

OFFICE OF FISHING AND BOATING ACCESS

53 Groton Shirley Road

AYER, MA 01432

TEL. 978-772-4658

FAX 978-772-9824



2018 SPECIAL USE PERMIT

Summer

Event Date Monday, July 09, 2018

Permit # **12130**

End Date Friday, September 28, 2018

Waterbody Baddacook Pond

Location Groton

Organization Town Of Groton- Baddacook Pond Restoration

Type of Event: Other (please Specify)

Arrival Time 6:00 AM

Start Time 6:30 AM

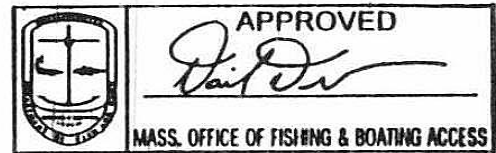
Return Time 4:00 PM

Max Vehicles 2

Max. Boats 2

Environmental

Police Officer Required **No**



Comments / Special Conditions

This Permit Is For Launching And Retrieving Equipment And Loading Harvested Weeds Onto Trucks. The Ramp Shall Not Be Blocked Or Closed To The General Public For The Duration Of The Project.

STOP the spread off nuisance aquatic plants and animals. REMOVE all plants and animals from boat, trailer and equipment.

DISPLAY THIS PERMIT IN YOUR VEHICLE WINDSHIELD

cut along this line

Michael Ruggieri
362 Putnam Hill Road
Sutton, MA 01590



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

MASS.GOV/MASSWILDLIFE

June 12, 2018

Groton Conservation Commission
173 Main St
Groton MA 01450

Board of Selectmen
Town of Groton
Town Hall, 173 Main Street

RE: Applicant: Board of Selectmen
 Project Location: Baddacook Pond, Groton
 Project Description: Aquatic Vegetation Management 2018/2019; hydro-raking and
 harvesting
 DEP Wetlands File No.: 169-1138
 NHESP File No.: **09-26352**

Dear Commissioners & Applicant:

On March 19, 2018, the Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received a request to extend the approval for vegetation management in Baddacook Pond using physical means for 2018 and 2019. A conference call was conducted on June 12, 2018 to resolve questions about the proposed project.

The request to extend the approval includes hydro-raking in seven (7) additional areas of the pond, in addition to revisiting some or all of the nine (9) sites from 2017 (see attached, *New Hydro-raking Sites for 2018/2019* and *Sites from 2017*). The harvesting area is proposed to remain the same as in 2017 (see attached, *Figure 2: 2017 Harvested Areas*).

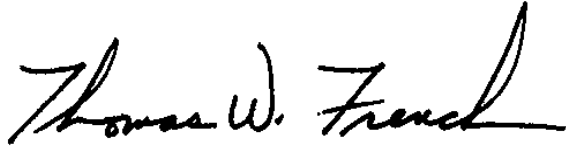
Given the likely presence of Blanding's Turtle hatchlings in the Pond **the Division requires the harvester and hydro-rake to remain 50 feet from the water's edge between September 15 and April 15** in order to avoid adverse effects to the actual Resource Area habitats of state-listed wildlife species (310 CMR 10.59) and to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)).

Work as described in the submitted materials and described herein can be conducted under this authorization for 2018 and 2019. An updated filing will be required with our office for work to occur in 2020 or thereafter, which coincides with the expiration of the existing Order of Conditions for this project.

MASSWILDLIFE

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Misty-Anne Marold, Senior Endangered Species Review Biologist, at (508-389-6356.

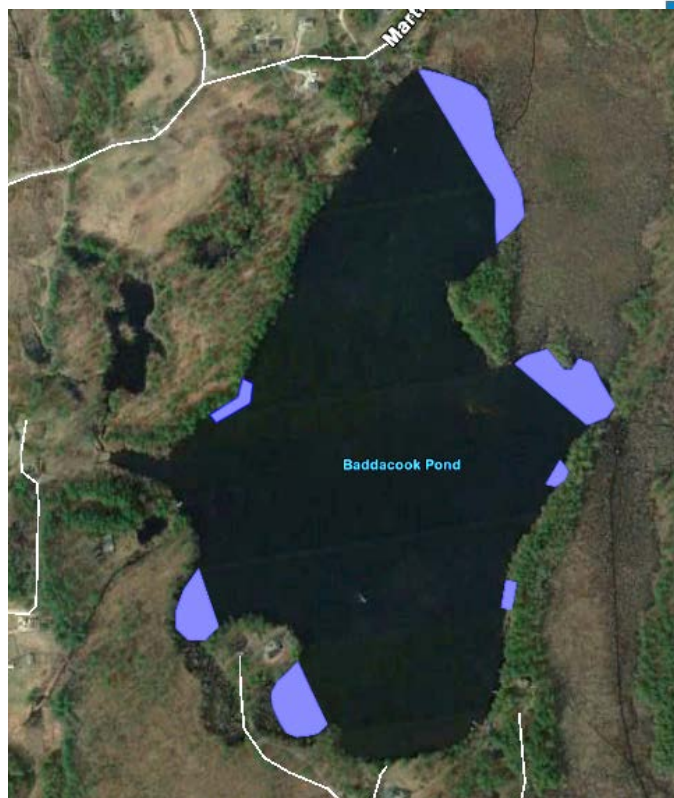
Sincerely,



Thomas W. French, Ph.D.
Assistant Director

cc: Jim Luening, Chair, Great Ponds Advisory Committee

NEW HYDRO-RAKING SITES FOR 2018/2019

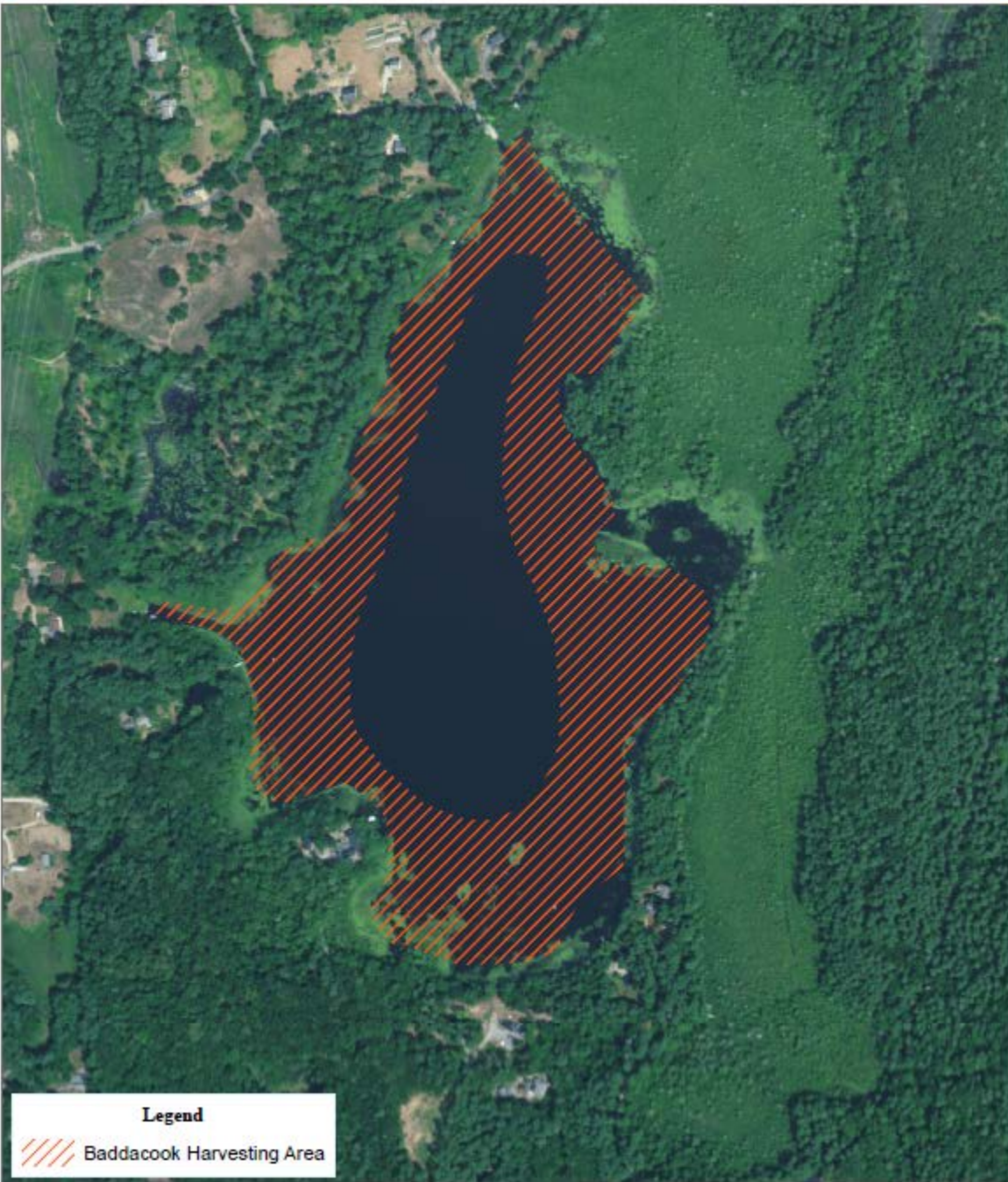


SITES FROM 2017

Figure 3: 2017 Hydro-raked Areas



Figure 2: 2017 Harvested Areas





TOWN OF GROTON
Conservation Commission

173 Main Street
Groton, MA 01450-1237
(978) 448-1106
Fax: 978-448-1113
e-mail: ttada@townofgroton.org

June 17, 2016

Mark Haddad, Town Manager
Town of Groton
173 Main Street
Groton, MA 01450

**RE: Order of Conditions – Baddacook Pond Weed Management
DEP #169-1138**

Dear Mr. Haddad:

The Groton Conservation Commission voted to issue the enclosed original Order of Conditions at its regular meeting on June 14, 2016. The entire Order must be recorded at the Middlesex South Registry of Deeds prior to the start of work. The Registry is located at 208 Cambridge St., PO Box 68, E. Cambridge, MA 02141.

Page 12 of the Order of Conditions should be returned to the Commission with the recording information filled in. Page 3 of the Bylaw Special Conditions, the Acknowledgment, should also be signed by you as the owner and any contractors or consultants working on the project and returned to the Commission.

As noted on Page 11 of the Order of Conditions, there is a ten-day appeal period. Please contact me if you have any questions about the Order.

Sincerely yours,

Takashi Tada
Conservation Administrator

Enclosure

cc: Land Use Departments
Great Pond Advisory Committee
DEP Central Regional Office



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
169-1138
MassDEP File #
826127
eDEP Transaction #
Groton
City/Town

A. General Information

Please note:
this form has
been modified
with added
space to
accommodate
the Registry
of Deeds
Requirements

Important:
When filling
out forms on
the
computer,
use only the
tab key to
move your
cursor - do
not use the
return key.



1. From: Groton Conservation Commission
Conservation Commission

2. This issuance is for (check one):
a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

a. First Name Town of Groton, Board of Selectmen b. Last Name _____
c. Organization 173 Main Street
d. Mailing Address Groton
e. City/Town MA f. State 01450 g. Zip Code
City/Town State Zip Code

4. Property Owner (if different from applicant):

a. First Name Commonwealth of Massachusetts b. Last Name _____
c. Organization _____
d. Mailing Address _____
e. City/Town _____ f. State _____ g. Zip Code _____

5. Project Location:

Baddacook Pond (off Martins Pond Road) Groton
a. Street Address b. City/Town
n/a n/a
c. Assessors Map/Plat Number d. Parcel/Lot Number
Latitude and Longitude, if known: 42d37m07.032s 71d31m50.196s
d. Latitude e. Longitude



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
169-1138
MassDEP File #
826127
eDEP Transaction #
Groton
City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

a. County		b. Certificate Number (if registered land)	
c. Book		d. Page	
04/21/2016		06/14/2016	
a. Date Notice of Intent Filed		b. Date Public Hearing Closed	
06/17/2016		c. Date of Issuance	
7. Dates:			
8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):			
Feasibility Study Proposal / Scope of Work			
a. Plan Title			
Ted Fiust, Aquatic Vision LLC			
b. Prepared By		c. Signed and Stamped by	
04/12/2016			
d. Final Revision Date		e. Scale	
Harvest Map; Natural Resource Description			
f. Additional Plan or Document Title		g. Date	

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- | | | |
|---|--|---|
| a. <input checked="" type="checkbox"/> Public Water Supply | b. <input type="checkbox"/> Land Containing Shellfish | c. <input checked="" type="checkbox"/> Prevention of Pollution |
| d. <input checked="" type="checkbox"/> Private Water Supply | e. <input checked="" type="checkbox"/> Fisheries | f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| g. <input checked="" type="checkbox"/> Groundwater Supply | h. <input checked="" type="checkbox"/> Storm Damage Prevention | i. <input checked="" type="checkbox"/> Flood Control |

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

169-1138

MassDEP File #

826127

eDEP Transaction #

Groton

City/Town

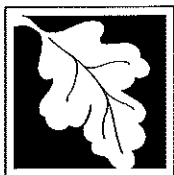
B. Findings (cont.)

Denied because:

- b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
3. ☒ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) 0
a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input type="checkbox"/> Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. <input checked="" type="checkbox"/> Land Under Waterbodies and Waterways	1,524,600 a. square feet	1,524,600 b. square feet	0 c. square feet	0 d. square feet
	e. c/y dredged	f. c/y dredged		
7. <input type="checkbox"/> Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. <input type="checkbox"/> Riverfront Area	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	g. square feet	h. square feet	i. square feet	j. square feet



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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
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City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	a. square feet	b. square feet	c. nourishment cu yd	d. nourishment cu yd
14. <input type="checkbox"/> Coastal Dunes	a. square feet	b. square feet	c. nourishment cu yd	d. nourishment cu yd
15. <input type="checkbox"/> Coastal Banks	a. linear feet	b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	a. square feet	b. square feet		
17. <input type="checkbox"/> Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	a. c/y dredged	b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	a. square feet	b. square feet		



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B. Findings (cont.)

* #22. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

22. ☐ Restoration/Enhancement *:

a. square feet of BVW

b. square feet of salt marsh

23. ☐ Stream Crossing(s):

a. number of new stream crossings

b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
"File Number 169-1138 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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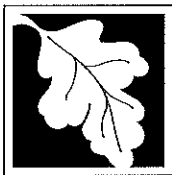
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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
 - (1) ☐ is subject to the Massachusetts Stormwater Standards
 - (2) ☒ is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
 - i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
 - ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
 - iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See attached Special Conditions under the Wetlands Protection Act.

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☒ Yes ☐ No
2. The Groton Conservation Commission hereby finds (check one that applies):
Conservation Commission
 - a. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

<u>1. Municipal Ordinance or Bylaw</u>	<u>2. Citation</u>
--	--------------------

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.
 - b. ☒ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

<u>Groton Wetlands Protection Bylaw</u>	<u>Ch. 215</u>
<u>1. Municipal Ordinance or Bylaw</u>	<u>2. Citation</u>
3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

SEE ATTACHED SPECIAL CONDITIONS UNDER THE GROTON WETLANDS BYLAW.



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E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

[Handwritten signatures of three Conservation Commission members]

[Handwritten signature of Bruce Hanson]
O-CATHROP

☒ by hand delivery on

Date

6/17/2016

☐ by certified mail, return receipt requested, on

Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



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G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for: Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

ATTACHMENT TO WETLANDS PROTECTION ACT ORDER OF CONDITIONS

SPECIAL CONDITIONS

#169-1138

Street – off Martins Pond Road (Baddacook Pond)

Map n/a Parcel n/a

Applicant – Town of Groton

FINDINGS: This Order of Conditions is written under and subject to the Massachusetts Wetlands Protection Act M.G.L. Ch. 131 §40, as amended. The project involves removal of invasive aquatic weeds from Baddacook Pond using a combination of mechanical harvesting, diver assisted suction harvesting (DASH), and surface assisted suction harvesting (SASH). The invasive weed species targeted for removal are Fanwort (*Cabomba caroliniana*) and Variable Milfoil (*Myriophyllum heterophyllum*). The purpose is to assure safe swimming areas, to provide a navigable waterway channel, to reduce opportunities for the spread of invasive weeds, to slow the eutrophication process through the removal of biomass, and to maintain biodiversity and enhance rare species habitat.

The harvested weeds will be offloaded at three sites: 1) Baddacook Boat Ramp; 2) Baddacook Field/Shattuck Homestead Conservation Area; and 3) Baddacook Well, Groton Water Dept. The Groton DPW will transport the harvested weeds from the offloading sites to the Town's composting facility. Minor disturbance of vegetation in the Buffer Zone is anticipated at the Baddacook Field/Shattuck Homestead offloading site to facilitate access by DPW's dump truck.

The weed harvesting will occur in Land Under Water (Baddacook Pond). Offloading will occur in the Buffer Zone. Baddacook Pond is a 'Great Pond' of the Commonwealth. It is located in the Petapawag Area of Critical Environmental Concern (ACEC) and also occurs within habitat of rare species as mapped by the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife. NHESP has approved the project under the habitat management exemption of the MA Endangered Species Act (MESA).

PLANS: The work shall conform to the following plans and documents, unless otherwise specified in this Order:

- a) Notice of Intent filed by the Town of Groton, MassDEP File No. 169-1138, dated 4/20/2016.
- b) Project description & plans entitled "Feasibility Study Proposal / Scope of Work", prepared by Ted Fiust, Aquatic Vision LLC, dated 4/4/2016, most recently revised 4/12/2016.
- c) "Natural Resource Description" prepared by the Great Pond Advisory Committee (GPAC); attachment to the Notice of Intent.
- d) Rare species determination letter, NHESP Tracking No. 09-26352, dated 5/25/2016.

SPECIAL CONDITIONS – Please review the General Conditions on previous pages:

Pre-Harvesting

20. This Order of Conditions regulates activities proposed in the Notice of Intent within the 100-foot Buffer Zone and Land Under Waterbodies & Waterways as defined in 310 CMR 10.04 (Definitions) of the Wetlands Protection Act. Except as specified herein, no other wetland resource area is proposed to be, or permitted to be, altered under this Order of Conditions.
21. Minimal disturbance of shrubs and herbaceous plants shall be allowed prior to harvesting if absolutely necessary in order to prepare the offloading sites.
22. The Conservation Commission must be notified five working days prior to commencement of any activity that would impact the Wetlands Protection Act.
23. This Order shall apply to any successor in control or successor in interest of the property described in the Notice of Intent and accompanying plans. Within ten (10) calendar days inclusive of the transfer of ownership of the subject parcel, in whole or in part, including lots or buildings conveyed under individual deeds, the Conservation Commission shall be notified in writing of the name and address of the new owner. Within ten (10) calendar days inclusive of such transfer, a written, notarized affidavit shall be filed with the Conservation Commission by the new owner, stating that he or she has read and understood the Order of Conditions and all terms applicable to the project site and intends to comply with all provisions of the Order.
24. The applicant shall submit evidence of recording (receipt) this Order of Conditions at the Middlesex County Registry of Deeds in Cambridge within 21 days or prior to commencement of work, whichever comes first. (see also General Condition #9)
25. Prior to any work on the site the Applicant or his agents shall meet with an agent of the Commission on the site to review the proposed work and measures designed to mitigate any impact on wetlands and to ensure that all of the Conditions of this Order are understood.
26. The Conservation Commission reserves the right to require erosion control or storm damage prevention controls at the access points and offloading sites if necessary.
27. This document and the approved plans shall be included in all contracts and sub-contracts for the proposed work and shall supersede any conflicting contract requirements. It shall also be kept on file at the job site at all times during harvesting.
28. The applicant and any agents or contractors shall sign the attached "Acknowledgment of Order of Conditions" and return it to the Conservation Commission prior to the commencement of work.

29. Any contractor employed to execute the activities within the Buffer Zone and/or Resource Area must be provided with a copy of this Order and thereafter will be held jointly responsible for any violation and the penalties under law for such violation.
30. Members and agents of the Conservation Commission have the right to enter and inspect the premises at reasonable hours to evaluate compliance with the conditions stated in this Order and may require the submittal of any data deemed necessary by the Commission for that evaluation.
31. By acceptance of this Order, the owners indemnify and hold harmless the Town and its residents for any damage attributable to alterations undertaken on this property pursuant to the Order. Issuance of the Order does not in any way imply or certify that the site or downstream areas will not be subject to flooding, storm damage, or any form of water damage.
32. Any changes, additions or omissions, including those due to review by other boards, in the plans identified in Condition #13 above, unless specified otherwise in this Order, shall require the applicant to inquire of the Conservation Commission in writing whether the change is substantial enough to require the filing of a new Notice of Intent. Only those changes which have no potential adverse impact to the interests of the Act and those which will reduce direct alteration to the resource area will be considered.

During Harvesting

33. All equipment shall be operated and maintained so as to comply with the Wetlands Protection Act, M.G.L. Ch. 131, s.40; the Town of Groton Wetlands Protection Bylaw, and this Order of Conditions. Hazardous materials, including but not limited to gasoline, motor oil, hydraulic fluid, etc. shall not be stored on the weed harvesters during the project nor shall the harvesters be serviced within 100 feet of wetlands. Care shall be taken in handling these materials at all times, and suitable oil containment systems shall be kept on hand for emergencies.
34. To the maximum extent practicable, the Applicant shall take care to limit turbidity within the water column resulting from harvesting.
35. All vegetative debris harvested from Baddacook Pond shall be moved to the specified offloading sites and transported to the Town's composting facility.
36. Prior to implementing subsequent harvests, the applicant shall submit an analysis of the effectiveness of the prior year's harvesting efforts and provide specifics (mapping) on what areas are to be harvested in the future. This monitoring report shall include written records as to the number and type of fish, turtles, and invertebrates captured and released from the harvested materials.
37. All disturbed areas located within the Buffer Zone which are to be only temporarily disturbed during the project shall be restored to their original grade, soil profile and

vegetative cover. The area must be 75% re-vegetated with species similar to those disturbed within two growing seasons.

Post-Harvesting

38. All disturbed areas shall be loamed, seeded, and properly stabilized. Disturbed areas shall be mulched with loose straw until vegetation is established. Any plantings shall be native, non-invasive species.
39. The applicant/representative is encouraged to consider the development of a comprehensive lake management plan that addresses the long term management of Baddacook Pond.
40. Upon completion of the project, the Applicant shall submit the following to the Conservation Commission to receive a Certificate of Compliance per General Condition #12:
 - a. A Request for a Certificate of Compliance (DEP WPA Form 8A).
 - b. A final analysis of weed harvesting to date, including vegetation maps and photographs of the Pond.
 - c. A written statement certifying that the work has been completed in compliance with this Order of Conditions and the approved plans referenced herein (or approved revisions). Any discrepancies shall be noted.

ATTACHMENT TO WETLANDS PROTECTION BYLAW ORDER OF CONDITIONS
SPECIAL CONDITIONS

#169-1138

Street – off Martins Pond Road (Baddacook Pond)

Map n/a Parcel n/a

Applicant – Town of Groton

FINDINGS: This Order of Conditions is written under and subject to the Groton Wetlands Protection Bylaw, Ch. 215 of the Code of the Town of Groton, as amended. The project involves removal of invasive aquatic weeds from Baddacook Pond using a combination of mechanical harvesting, diver assisted suction harvesting (DASH), and surface assisted suction harvesting (SASH). The invasive weed species targeted for removal are Fanwort (*Cabomba caroliniana*) and Variable Milfoil (*Myriophyllum heterophyllum*). The purpose is to assure safe swimming areas, to provide a navigable waterway channel, to reduce opportunities for the spread of invasive weeds, to slow the eutrophication process through the removal of biomass, and to maintain biodiversity and enhance rare species habitat.

The harvested weeds will be offloaded at three sites: 1) Baddacook Boat Ramp; 2) Baddacook Field/Shattuck Homestead Conservation Area; and 3) Baddacook Well, Groton Water Dept. The Groton DPW will transport the harvested weeds from the offloading sites to the Town's composting facility. Minor disturbance of vegetation in the Buffer Zone is anticipated at the Baddacook Field/Shattuck Homestead offloading site to facilitate access by DPW's dump truck.

The weed harvesting will occur in Land Under Water (Baddacook Pond). Offloading will occur in the Buffer Zone. Baddacook Pond is a 'Great Pond' of the Commonwealth. It is located in the Petapawag Area of Critical Environmental Concern (ACEC) and also occurs within habitat of rare species as mapped by the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife. NHESP has approved the project under the habitat management exemption of the MA Endangered Species Act (MESA).

BYLAW SPECIAL CONDITIONS - Please review the General Conditions and Special Conditions on previous pages:

1. This Bylaw Order of Conditions hereby incorporates by reference and affirms all conditions set forth in the Massachusetts Wetlands Protection Act Order of Conditions issued simultaneously by the Conservation Commission for this project.
2. This Order of Conditions must be recorded in its entirety (all 18 pages) at the Middlesex Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property; and recording information (Registry book and page numbers or Land Court certificate number) must be submitted to the Conservation Commission in writing, before any work approved in this Order commences.

3. All activities on this property shall comply with the provisions of the GROTON Wetlands Protection Bylaw and Regulations.

Pre-Harvesting

4. Prior to the commencement of any activity on this site, the applicant must submit to the Conservation Commission a letter signed by the property owner granting permission for the Commission, the Town, or its agents to enter the property referenced in this Order to monitor compliance with this Order of Conditions or to conduct work necessary to bring the property into compliance with the conditions stated in this Order. Said entry to conduct work would only occur in the event that the property owner is unable or unwilling to perform the necessary work himself within a reasonable time period after a request by the Commission.

In Perpetuity

The following special conditions shall extend beyond the issuance of a Certificate of Compliance, in perpetuity, and shall be referred to in all future deeds to this property.

5. As part of the long-term lake management plan, residents with land abutting Baddacook Pond shall be advised that fertilizers utilized for landscaping and lawn care shall be organic and of low-nitrogen content, and shall be used in moderation. Naturally vegetated buffer strips shall be considered within the 100-foot buffer zone of Baddacook Pond.

END

ACKNOWLEDGMENT OF ORDER OF CONDITIONS

DEP FILE #169-1138

I, _____, hereby acknowledge that I have read and
am familiar with the approved plans and the Order of Conditions, DEP File #169-1138,
issued to Town of Groton, Board of Selectmen by the Groton Conservation
Commission on June 17, 2016 for the project located at
Baddacook Pond.

Signature

Date

Check as appropriate: _____ Landowner _____ Applicant
_____ Contractor _____ Agent (attorney, P.E., R.L.S.)

Please sign and return to the Groton Conservation Commission, Town Hall, 173 Main St.
Groton, MA 01450, prior to the commencement of work. If you have any questions or
comments you may call 978-448-1106 or use the space provided below.

Please list the telephone numbers and/or e-mail addresses for all parties who sign:

DO NOT RECORD THIS PAGE.