404 Wyman Street, Ste. 375
Waltham, MA 02451
T 781.419.7696
TRCcompanies.com

January 21, 2025

Town of Leicester
Conservation Commission
3 Washburn Square
Leicester, MA 01524

***Re: Cedar Meadow Lake Management Program***
***Notice of Intent***
***Leicester, Massachusetts***

Dear Leicester Commissioners,

Enclosed, please find a Notice of Intent (NOI) application for the management of invasive plant growth at Cedar Meadow Lake in Leicester, Massachusetts. TRC Environmental Corporation (TRC) has prepared this NOI application on behalf of the Cedar Meadow Lake Watershed District for compliance with the Massachusetts Wetlands Protection Act (WPA) and the Leicester Wetlands Protection Bylaw and its associated Regulations (Chapter 14 of the Leicester General Bylaws). A copy of the complete NOI application will be submitted online to the Massachusetts Department of Environmental Protection Central Regional Office.

If you have any questions, please contact me, Anna Chase, at (781) 419-7716 or AChase@TRCcompanies.com. Thank you for your attention to this matter.

Sincerely,

**TRC Environmental Corporation**

Anna Chase
Project Manager

cc: Tommy Lee, Cedar Meadow Lake Watershed District
MassDEP Central Regional Office

# Cedar Meadow Lake Management Program

## Notice of Intent

TRC Project No. 586968.0000.0000

February 2025

## Leicester, Massachusetts

**Prepared For:**
Cedar Meadow Lake Watershed District
P.O. Box 320
Leicester, MA 01524-0320

**Prepared By:**
TRC
404 Wyman Street, Suite 375
Waltham, Massachusetts 02451

**Submitted To:**
Leicester Conservation Commission
3 Washburn Square
Leicester, MA 01524

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## FIGURES



## ATTACHMENTS

# WPA FORM 3 – NOTICE OF INTENT

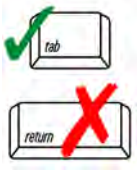
**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Leicester
City/Town

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




Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

## A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Rawson Street — a. Street Address
Leicester — b. City/Town
01524 — c. Zip Code

Latitude and Longitude:
42.228110 — d. Latitude
-71.940561 — e. Longitude

Map 28 — f. Assessors Map/Plat Number
Lot A12 — g. Parcel /Lot Number

2. Applicant:

Tommy — a. First Name
Lee — b. Last Name
Cedar Meadow Lake Watershed District — c. Organization
PO Box 320 — d. Street Address
Leicester — e. City/Town
MA — f. State
01524 — g. Zip Code
7744-239-1799 — h. Phone Number
i. Fax Number
tommyjoelee@gmail.com — j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Anna — a. First Name
Chase — b. Last Name
TRC — c. Company
404 Wyman st. Suite #375 — d. Street Address
Waltham — e. City/Town
MA — f. State
02451 — g. Zip Code
781.419.7716 — h. Phone Number
i. Fax Number
achase@trccompanies.com — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$500.00 — a. Total Fee Paid
$237.50 — b. State Fee Paid
$262.50 — c. City/Town Fee Paid

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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## A. General Information (continued)

6. General Project Description:

The Cedar Meadow Lake Watershed District proposes to implement an aquatic plant management program at Cedar Meadow Lake, which would entail the treatment and removal of aquatic invasive plant species in the lake using a variety of methods, resulting in up to approximately 151 acres (6,578,000 sq ft) of total temporary impact to the Land Under Water (LUW) of the lake.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☒ Yes ☐ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

310 CMR 10.53(4)(e)(5): Other ecological restoration projects

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

| | |
|---|---|
| Worcester | |
| a. County | b. Certificate # (if registered land) |
| N/A | N/A |
| c. Book | d. Page Number |

## B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

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## B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Bank | 1. linear feet | 2. linear feet |
| b. ☐ Bordering Vegetated Wetland | 1. square feet | 2. square feet |
| c. ☒ Land Under Waterbodies and Waterways | 6,578,000<br>1. square feet<br>3. cubic yards dredged | 2. square feet |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| d. ☐ Bordering Land Subject to Flooding | 1. square feet<br>3. cubic feet of flood storage lost | 2. square feet<br>4. cubic feet replaced |
| e. ☐ Isolated Land Subject to Flooding | 1. square feet<br>2. cubic feet of flood storage lost | 3. cubic feet replaced |

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

**Note:** for coastal riverfront areas, please complete **Section B.2.f**. above.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

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## B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| a. ☐ Designated Port Areas | Indicate size under Land Under the Ocean, below | |
| b. ☐ Land Under the Ocean | 1. square feet<br>2. cubic yards dredged | |
| c. ☐ Barrier Beach | Indicate size under Coastal Beaches and/or Coastal Dunes below | |
| d. ☐ Coastal Beaches | 1. square feet | 2. cubic yards beach nourishment |
| e. ☐ Coastal Dunes | 1. square feet | 2. cubic yards dune nourishment |

| Resource Area | Size of Proposed Alteration | Proposed Replacement (if any) |
|---|---|---|
| f. ☐ Coastal Banks | 1. linear feet | |
| g. ☐ Rocky Intertidal Shores | 1. square feet | |
| h. ☐ Salt Marshes | 1. square feet | 2. sq ft restoration, rehab., creation |
| i. ☐ Land Under Salt Ponds | 1. square feet<br>2. cubic yards dredged | |
| j. ☐ Land Containing Shellfish | 1. square feet | |
| k. ☐ Fish Runs | Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above<br>1. cubic yards dredged | |
| l. ☐ Land Subject to Coastal Storm Flowage | 1. square feet | |

4. ☐ Restoration/Enhancement

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.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

**Massachusetts Department of Environmental Protection**
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## C. Other Applicable Standards and Requirements

☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

### Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☐ Yes ☐ No

**If yes, include proof of mailing or hand delivery of NOI to:**

**Natural Heritage and Endangered Species Program**
**Division of Fisheries and Wildlife**
**1 Rabbit Hill Road**
**Westborough, MA 01581**

b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands
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Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
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## C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Bourne to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Plymouth to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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Provided by MassDEP:

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Leicester
City/Town

## C. Other Applicable Standards and Requirements (cont'd)

**Online Users:** Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☐ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☐ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☐ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

## D. Additional Information

☒ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

**Online Users:** Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☐ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☐ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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## D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☐ List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

## E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

| | |
|---|---|
| TBD | TBD |
| 2. Municipal Check Number | 3. Check date |
| N/A - paid online | |
| 4. State Check Number | 5. Check date |
| TRC | |
| 6. Payor name on check: First Name | 7. Payor name on check: Last Name |

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

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## F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

| | |
|---|---|
| 1. Signature of Applicant | 2. Date |
| 3. Signature of Property Owner (if different) | 4. Date |
| 5. Signature of Representative (if any) | 6. Date |

**For Conservation Commission:**
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

**For MassDEP:**
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

**Other:**
If the applicant has checked the “yes” box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

# WETLANDS FEE TRANSMITTAL FORM

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# NOI Wetland Fee Transmittal Form

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

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


## A. Applicant Information

1. Location of Project:

| | |
|---|---|
| Rawson Street | Leicester |
| a. Street Address | b. City/Town |
| TBD | $262.50 |
| c. Check number | d. Fee amount |

2. Applicant Mailing Address:

| | | |
|---|---|---|
| Tommy | | Lee |
| a. First Name | | b. Last Name |
| Cedar Meadow Lake Watershed Distric | | |
| c. Organization | | |
| PO Box 320 | | |
| d. Mailing Address | | |
| Leicester | MA | 01524-0320 |
| e. City/Town | f. State | g. Zip Code |
| 774-239-1799 | | tommyjoelee@gmail.com |
| h. Phone Number | i. Fax Number | j. Email Address |

3. Property Owner (if different):

| | | |
|---|---|---|
| | | |
| a. First Name | | b. Last Name |
| c. Organization | | |
| d. Mailing Address | | |
| e. City/Town | f. State | g. Zip Code |
| h. Phone Number | i. Fax Number | j. Email Address |

## B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

**Step 1/Type of Activity:** Describe each type of activity that will occur in wetland resource area and buffer zone.

**Step 2/Number of Activities**: Identify the number of each type of activity.

**Step 3/Individual Activity Fee:** Identify each activity fee from the six project categories listed in the instructions.

**Step 4/Subtotal Activity Fee:** Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

**Step 5/Total Project Fee:** Determine the total project fee by adding the subtotal amounts from Step 4.

**Step 6/Fee Payments:** To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# NOI Wetland Fee Transmittal Form

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

## B. Fees (continued)

| Step 1/Type of Activity | Step 2/Number of Activities | Step 3/Individual Activity Fee | Step 4/Subtotal Activity Fee |
|---|---|---|---|
| Category 2h - Control Vegetation | 1 | $500.00 | $500.00 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**Step 5/Total Project Fee:** $500.00

**Step 6/Fee Payments:**

| | |
|---|---|
| Total Project Fee: | $500.00 (a. Total Fee from Step 5) |
| State share of filing Fee: | $237.50 (b. 1/2 Total Fee **less $**12.50) |
| City/Town share of filling Fee: | $262.50 (c. 1/2 Total Fee **plus** $12.50) |

## C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

**To MassDEP Regional Office** (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

# WPA FORM 3, APPENDIX A – ECOLOGICAL RESTORATION LIMITED PROJECTS CHECKLIST

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent
## Appendix A: Ecological Restoration Limited Project Checklists
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Leicester
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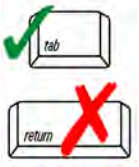
## Eligibility Checklist

This Ecological Restoration Limited Project Eligibility Checklist guides the applicant in determining if their project is eligible to file as an Inland or Coastal Ecological Restoration Limited Project (310 CMR 10.53(4) or 310 CMR 10.24(8) respectively). These criteria must be met when submitting the Ecological Restoration Limited Project Notice of Intent to ensure that the restoration and improvement of the natural capacity of a Resource Area(s) to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

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




### Regulatory Features of All Coastal and Inland Ecological Restoration Limited Projects

(a) May result in the temporary or permanent loss of/or conversion of Resource Area: An Ecological Restoration Limited Project that meets the requirements of 310 CMR 10.24(8) may result in the temporary or permanent loss of Resource Areas and/or the conversion of one Resource Area to another when such loss is necessary to the achievement of the project's ecological restoration goals.

(b) Exemption from wildlife habitat evaluation: A NOI for an Ecological Restoration Limited Project that meets the minimum requirements for Ecological Restoration Projects and for a MassDEP Combined Application outlined in 310 CMR 10.12(1) and (2) is exempt from providing a wildlife habitat evaluation (310 CMR 10.60).

Note:
Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

(c) The following are considerations for applicants filing an Ecological Restoration Limited Project NOI and for the issuing authority approving a project as an Ecological Restoration Limited Project:

- ☐ The condition of existing and historic Resource Areas proposed for restoration.
- ☐ Evidence of the extent and severity of the impairment(s) that reduce the capacity of the Resource Areas to protect and sustain the interests identified in M.G.L. c. 131, § 40.
- ☐ The magnitude and significance of the benefits of the Ecological Restoration Project in improving the capacity of the affected Resource Areas to protect and sustain the other interests identified in M.G.L. c. 131, § 40.
- ☐ The magnitude and significance of the impacts of the Ecological Restoration Project on existing Resource Areas that may be modified, converted and/or lost and the interests for which said Resource Areas are presumed significant in 310 CMR 10.00, and the extent to which the project will:
  a. avoid adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that can be avoided without impeding the achievement of the project's ecological restoration goals.
  b. minimize adverse impacts to Resource Areas and the interests identified in M.G.L. c. 131, § 40, that are necessary to the achievement of the project's ecological restoration goals.
  c. utilize best management practices such as erosion and siltation controls and proper construction sequencing to avoid and minimize adverse construction impacts to resource areas and the interests identified in M.G.L. c. 131, § 40.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent
# Appendix A: Ecological Restoration Limited Project Checklists

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

Provided by MassDEP:

MassDEP File Number

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## Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8))

Complete this Eligibility Criteria Checklist ***before*** filling out a Notice of Intent Application to determine if your project qualifies as a Coastal Ecological Restoration Limited Project. (310 CMR 10.24(8)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

**General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects**

Notwithstanding the requirements of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and the Wildlife Habitat evaluations in 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.24(8)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in the WPA M.G.L. provided that the project meets all the requirements in 310 CMR 10.24 (8).

☐ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.24(8)(e)].

☐ Tidal Restoration.

☐ Shellfish Habitat Restoration.

☐ Other Ecological Restoration Limited Project Type.

☐ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.

- ☐ Protection of public or private water supply.
- ☐ Protection of ground water supply.
- ☐ Flood control.
- ☐ Storm damage prevention.
- ☐ Prevention of pollution.
- ☐ Protection of land containing shellfish.
- ☐ Protection of fisheries.
- ☐ Protection of wildlife habitat.

☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will not have any adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.

# WPA Form 3 – Notice of Intent
## Appendix A: Ecological Restoration Limited Project Checklists

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

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## Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

**General Eligibility Criteria for All Coastal Ecological Restoration Limited Projects** (cont.)

☐ If the project is located in a Coastal Dune or Barrier Beach, the project avoids and minimizes armoring of the Coastal Dune or Barrier Beach to the maximum extent practicable.

☐ The project complies with all applicable provisions of 310 CMR 10.24(1) through (6) and 310 CMR 10.24(9) and (10).

**Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types**

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

☐ This Ecological Restoration Limited Project application meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.24(8)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below.

☐ **Tidal Restoration Projects**

☐ A project to restore tidal flow that will not significantly increase flooding or storm damage impacts to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

☐ **Shellfish Habitat Restoration Projects**

☐ The project has received a Special Projects Permit from the Division of Marine Fisheries or, if a municipality, has received a shellfish propagation permit.

☐ The project is made of cultch (e.g., shellfish shells from oyster, surf or ocean clam) or is a structure manufactured specifically for shellfish enhancement (e.g., reef blocks, reef balls, racks, floats, rafts, suspended gear).

☐ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.24(8)(a) through (d).

☐ Restoration, enhancement, or management of Rare Species habitat.

☐ Restoration of hydrologic and habitat connectivity.

☐ Removal of aquatic nuisance vegetation to impede eutrophication.

☐ Thinning or planting of vegetation to improve habitat value.

☐ Fill removal and re-grading.

☐ Riparian corridor re-naturalization.

☐ River floodplain re-connection.

## Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

**Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types**

- ☐ In-stream habitat enhancement.
- ☐ Remediation of historic tidal wetland ditching.
- ☐ Eelgrass restoration.
- ☐ Invasive species management.
- ☐ Installation of fish passage structures.
- ☐ Other. Describe: _____

☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure (310 CMR 10.24(9).

- ☐ The NOI attachment labeled _____ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
- ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.

☐ This project proposes to replace an existing stream crossing (310 CMR 10.24(10). The crossing complies with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI. The crossing type:

- ☐ Replaces an existing non-tidal crossing that is part of an Anadromous/Catadromous Fish Run (310 CMR 10.35)
- ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.

☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:

- ☐ The potential for downstream flooding;
- ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
- ☐ Potential for erosion and head-cutting;
- ☐ Stream stability;
- ☐ Habitat fragmentation caused by the crossing;
- ☐ The amount of stream mileage made accessible by the improvements;
- ☐ Storm flow conveyance;

## Eligibility Criteria - Coastal Ecological Restoration Limited Projects (310 CMR 10.24(8)) (Cont.)

**Additional Eligibility Criteria for Specific Coastal Ecological Restoration Limited Project Types**

- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

## Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4))

Complete this Eligibility Criteria Checklist ***before*** filling out a Notice of Intent Application to determine if your project qualifies as an Inland Ecological Restoration Limited Project. (310 CMR 10.53(4)) Sign the Eligibility Certification at the end of Appendix A, and attach the checklist with supporting documentation and the Eligibility Certification to your Notice of Intent Application.

**General Eligibility Criteria for All Inland Ecological Restoration Limited Projects**

Notwithstanding the requirements of any other provision of 310 CMR 10.25 through 10.35, 310 CMR 10.54 through 10.58, and 310 CMR 10.60, the Issuing Authority may issue an Order of Conditions permitting an Ecological Restoration Project listed in 310 CMR 10.53(4)(e) as an Ecological Restoration Limited Project and impose such conditions as will contribute to the interests identified in M.G.L. c. 131, § 40, provided that:

☒ The project is an Ecological Restoration Project as defined in 310 CMR 10.04 and is a project type listed below [310 CMR 10.53(4)(e)].

- ☐ Dam Removal
- ☐ Freshwater Stream Crossing Repair and Replacement
- ☐ Stream Daylighting
- ☐ Tidal Restoration
- ☐ Rare Species Habitat Restoration
- ☐ Restoring Fish Passageways
- ☒ Other (describe project type): Removal of aquatic invasive vegetation, thinning of vegetation to improve habitat value (310 CMR 10.53[4][e][5]

## Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

**General Eligibility Criteria for All Inland Ecological Restoration Limited Projects**

☒ The project will further at least one of the WPA (M.G.L. c. 131, § 40) interests identified below.

- ☐ Protection of public or private water supply
- ☐ Protection of ground water supply
- ☐ Flood control
- ☐ Storm damage prevention
- ☒ Prevention of pollution
- ☐ Protection of land containing shellfish
- ☒ Protection of fisheries
- ☒ Protection of wildlife habitat

☐ If the project will impact an area located within estimated habitat which is indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands, a NHESP preliminary written determination is attached to the NOI submittal that the project will have no adverse long-term and short-term effects on specified habitat sites of Rare Species or the project will be carried out in accordance with an approved NHESP habitat management plan.

☐ The project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3).

☐ If the project involves the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification has been applied for or obtained.

☒ The project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).

## Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

**Additional Eligibility Criteria for Specific Inland Ecological Restoration Limited Project Types**

These additional criteria must be met to qualify as an Ecological Restoration Limited Project to ensure that the restoration and improvement of the natural capacity of a Resource Area to protect and sustain the interests identified in the WPA is **necessary** to achieve the project's ecological restoration goals.

☒ This project application meets the eligibility criteria for Ecological Restoration Limited Project in accordance with [310 CMR 10.53(4)(a) through (d) and as proposed, furthers at least one of the WPA interests is for the project type identified below:

☐ **Dam Removal**

☐ Project is consistent with MassDEP's 2007 Dam Removal Guidance.

☐ **Freshwater Stream Crossing Repair and Replacement**. The project as proposed and the NOI describes how:

☐ Meeting the eligibility criteria set forth in 310 CMR 10.13 would result in significant stream instability or flooding hazard that cannot otherwise be mitigated, and site constraints make it impossible to meet said criteria.

☐ The project design ensures that the stability of the bank is NOT impaired.

☐ To the maximum extent practicable, the project provides for the restoration of the stream upstream and downstream of the structure as needed to restore stream continuity and eliminate barriers to aquatic organism movement.

☐ The project complies with the requirements of 310 CMR 10.53(7) and (8).

☐ **Stream Daylighting Projects**

☐ The project meets the eligibility criteria for Ecological Restoration Limited Project [310 CMR 10.53(4)(a) through (d)] and as proposed the NOI describes how the proposed project meets to the maximum extent practicable, consistent with the project's ecological restoration goals, all the performance standards for Bank and Land Under Water Bodies and Waterways.

☐ The project meets the requirements of 310 CMR 10.12(1) and (2) and a wildlife habitat evaluation is not included in the NOI.

☐ **Tidal Restoration Project**

☐ Restores tidal flow.

☐ the project, including any proposed flood mitigation measures, will not significantly increase flooding or storm damage to the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure.

## Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

☒ **Other Ecological Restoration Projects** that meet the criteria set forth in 310 CMR 10.53 (4) (a) through (d).

- ☐ Restoration, enhancement, or management of Rare Species habitat.
- ☐ Restoration of hydrologic and habitat connectivity.
- ☒ Removal of aquatic nuisance vegetation to impede eutrophication.
- ☒ Thinning or planting of vegetation to improve habitat value.
- ☐ Riparian corridor re-naturalization.
- ☐ River floodplain re-connection.
- ☐ In-stream habitat enhancement.
- ☐ Fill removal and re-grading.
- ☐ Flow restoration.
- ☐ Installation of fish passage structures.
- ☒ Invasive species management.
- ☐ Other. Describe: _____

☐ This project involves the construction, repair, replacement or expansion of public or private infrastructure. (310 CMR 10.53(7))

- ☐ The NOI attachment labeled _____ is an operation and maintenance plan to ensure that the infrastructure will continue to function as designed.
- ☐ The operation and maintenance plan will be implemented as a continuing condition in the Order of Conditions and the Certificate of Compliance.

☐ This project replaces an existing stream crossing (310 CMR 10.53(8)). The crossing type:

- ☐ Replaces an existing non-tidal crossing designed to comply with the Massachusetts Stream Crossing Standards to the maximum extent practicable with details provided in the NOI.
- ☐ Replaces an existing tidal crossing that restricts tidal flow. The tidal restriction will be eliminated to the maximum extent practicable.

## Eligibility Criteria - Inland Ecological Restoration Limited Project (310 CMR 10.53(4)) (cont.)

☐ At a minimum, in evaluating the potential to comply with the standards to the maximum extent practicable the following criteria have been consider site constraints in meeting the standard, undesirable effects or risk in meeting the standard, and the environmental benefit of meeting the standard compared to the cost, by evaluating the following:

- ☐ The potential for downstream flooding;
- ☐ Upstream and downstream habitat (in-stream habitat, wetlands);
- ☐ Potential for erosion and head-cutting;
- ☐ Stream stability;
- ☐ Habitat fragmentation caused by the crossing;
- ☐ The amount of stream mileage made accessible by the improvements;
- ☐ Storm flow conveyance;
- ☐ Engineering design constraints specific to the crossing;
- ☐ Hydrologic constraints specific to the crossing;
- ☐ Impacts to wetlands that would occur by improving the crossing;
- ☐ Potential to affect property and infrastructure; and
- ☐ Cost of replacement.

**Massachusetts Department of Environmental Protection**
Bureau of Resource Protection - Wetlands

# WPA Form 3 – Notice of Intent
## Appendix A: Ecological Restoration Limited Project Checklists
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

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Leicester
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## Required Actions (310 CMR 10.11)

Complete the Required Actions before submitting a Notice of Intent Application for an Ecological Restoration Project and submit a completed copy of this Checklist with the Notice of Intent.

☒ **Massachusetts Environmental Policy Act (MEPA) / Environmental Monitor**
https://www.mass.gov/service-details/the-environmental-monitor

For Ecological Restoration Limited Projects, there are no changes to MEPA requirements.

☒ Submit written notification at least 14 days prior to the filing of a Notice of Intent (NOI) to the Environmental Monitor for publication. A copy of the written notification is attached and provides at minimum:

☒ A brief description of the proposed project.

☒ The anticipated NOI submission date to the conservation commission.

☒ The name and address of the conservation commission that will review the NOI.

☒ Specific details as to where copies of the NOI may be examined or acquired and where to obtain the date, time, and location of the public hearing.

☐ **Massachusetts Endangered Species Act (MESA) /Wetlands Protection Act Review**

☐ Preliminary Massachusetts Endangered Species Act Review from the Natural Heritage and Endangered Species Program (NHESP) has been met and the written determination is attached.

☐ Supplemental Information for Endangered Species Review has been submitted.

1. ☐ Percentage/acreage of property to be altered:

   a. Within Wetland Resource Area _____ Percentage/acreage

   b. Outside Wetland Resource Area _____ Percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work.

4. ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

5. ☐ Photographs representative of the site

6. ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review)

## Required Actions (310 CMR 10.11) (cont.)

Make check payable to "Commonwealth of Massachusetts - NHESP" and mail to NHESP:

**Natural Heritage & Endangered Species Program**
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

7. Projects altering 10 or more acres of land, also submit:

   a. ☐ Vegetation cover type map of site

   b. ☐ Project plans showing Priority & Estimated Habitat boundaries

OR Check One of the Following:

1. ☐ Project is exempt from MESA review.

Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/ma-endangered-species-act-mesa-overview; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59 – see C4 below)

2. ☐ Separate MESA review ongoing.

a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed. Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

☐ **Estimated Habitat Map of State-Listed Rare Wetlands Wildlife**

If a portion of the proposed project is located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP), complete the portion below. To view habitat maps, see the **Massachusetts Natural Heritage Atlas** or view the maps electronically at: https://www.mass.gov/guides/masswildlife-publications#-massachusetts-natural-heritage-atlas-

☐ A preliminary written determination from Natural Heritage and Endangered Species Program (NHESP) must be obtained indicating that:

☐ Project will NOT have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP.

☐ Project will have long- or short-term adverse effect on the actual Resource Area located within estimated habitat indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetlands Wildlife published by NHESP. A copy of NHESP's written preliminary determination in accordance with 310 CMR 10.11(2) is attached. This specifies:

☐ Date of the map: _____

## Required Actions (310 CMR 10.11) (cont.)

☐ If the Rare Species identified is/are likely to continue to be located on or near the project, and if so, whether the Resource Area to be altered is in fact part of the habitat of the Rare Species.

☐ That if the project alters Resource Area(s) within the habitat of a Rare Species:

☐ The Rare Species is identified;

☐ NHESP's recommended changes or conditions necessary to ensure that the project will have no short or long term adverse effect on the habitat of the local population of the Rare Species is provided; or

☐ An approved NHESP habitat management plan is attached with this Notice of Intent.

Send the request for a preliminary determination to:
Natural Heritage & Endangered Species Program
MA Division of Fisheries & Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

☐ **Division of Marine Fisheries**

☐ If the project will occur within a coastal waterbody with a restricted Time of Year, [see Appendix B of the Division of Marine Fisheries (DMF) Technical Report TR 47 "Marine Fisheries Time of Year Restrictions (TOYs) for Coastal Alteration Projects" dated April 2011 https://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/MA/TR-47.pdf].

☐ Obtain a DMF written determination stating:

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. Specific recommended TOY restriction and recommended conditions on the proposed work is attached.

☐ If the project may affect a diadromous fish run [re: Division of Marine Fisheries (DMF) Technical Reports TR 15 through 18, dated 2004: https://www.mass.gov/service-details/marine-fisheries-technical-reports]

☐ Obtain a DMF written determination stating:

☐ The design specifications and operational plan for the project are compatible with the passage requirements of the fish run.

☐ The design specifications and operational plan for the project are not compatible with the passage requirements of the fish run.

# WPA Form 3 – Notice of Intent
## Appendix A: Ecological Restoration Limited Project Checklists

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

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## Required Actions (310 CMR 10.11) (cont.)

Send the request for a written or electronic determination to:

South Shore – Bourne to Rhode Island border, and the Cape & Islands:
Division of Marine Fisheries –
South Coast Field Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore – Plymouth to New Hampshire border:
Division of Marine Fisheries –
North Shore Field Station
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

☐ **Division of Fisheries and Wildlife –** https://www.mass.gov/orgs/division-of-fisheries-and-wildlife

☐ Projects that involve silt-generating, in-water work that will impact a non-tidal perennial river or stream and the in-water work will not occur between May 1 and August 30.

☐ Obtain a written determination from the Division of Fisheries and Wildlife (DFW) as to whether the proposed work requires a TOY restriction.

☐ The proposed work does NOT require a TOY restriction.

☐ The proposed work requires a TOY restriction. The DFW determination with TOY restriction and other conditions is attached.

☐ **MassDEP Water Quality Certification**

☐ Project involves dredging of 100 cubic yards or more in a Resource Area or dredging of any amount in an Outstanding Resource Water (ORW). A copy and proof of the MassDEP Water Quality Certification pursuant to 314 CMR 9.00 is attached to the NOI.

☐ This project is a Combined Permit Application for 401 Dredging and Restoration (BRP WW 26).

☐ **MassDEP Wetlands Restriction Order**

Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

☐ Yes ☒ No

☐ **Department of Conservation and Recreation**

**Office of Dam Safety**

☐ For Dam Removal Projects, obtain a written determination from the Department of Conservation and Recreation Office of Dam Safety that the dam is not subject to the jurisdiction of the Office under 302 CMR 10.00, a written determination that the dam removal does not require a permit under 302 CMR 10.00 or a permit authorizing the dam removal in accordance with 302 CMR 10.00 has been issued.

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## Required Actions (310 CMR 10.11) (cont.)

**Areas of Critical Environmental Concern (ACECs)**

Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations).

Name of ACEC

## Minimum Required Documents (310 CMR 10.12)

Complete the Required Documents Checklist below and provide supporting materials before submitting a Notice of Intent Application for an Ecological Restoration Project.

☒ This Notice of Intent meets all applicable requirements outlined in for Ecological Restoration Projects in 310 CMR 10.12. Use the checklist below to ensure that all documentation is included with the NOI.

At a minimum, a Notice of Intent for an Ecological Restoration Project shall include the following:

☒ Description of the project's ecological restoration goals;

☒ The location of the Ecological Restoration Project;

☒ Description of the construction sequence for completing the project;

☒ A map of the Areas Subject to Protection Under M.G.L. c. 131, § 40, that will be temporarily or permanently altered by the project or include habitat for Rare Species, Habitat of Potential Regional and Statewide Importance, eel grass beds, or Shellfish Suitability Areas.

☒ The method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.) is attached with documentation methodology.

☐ List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title

b. Prepared by

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

☐ If there is more than one property owner, attach a list of these property owners not listed on this form.

☒ Attach NOI Wetland Fee Transmittal Form.

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# WPA Form 3 – Notice of Intent
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## Minimum Required Documents (310 CMR 10.12)

- ☐ An evaluation of any flood impacts that may affect the built environment, including without limitation, buildings, wells, septic systems, roads or other man-made structures or infrastructure as well as any proposed flood impact mitigation measures;
- ☐ A plan for invasive species prevention and control;
- ☐ The Natural Heritage and Endangered Species Program written determination in accordance with 310 CMR 10.11(2), if needed;
- ☐ Any Time of Year restrictions and/or other conditions recommended by the Division of Marine Fisheries or the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3), (4), (5), if needed;
- ☒ Proof that notice was published in the Environmental Monitor as required by 310 CMR 10.11(1;
- ☒ A certification by the applicant under the penalties of perjury that the project meets the eligibility criteria set forth in 310 CMR 10.13;
- ☐ If the Ecological Restoration Project involves the construction, repair, replacement or expansion of infrastructure, an operation and maintenance plan to ensure that the infrastructure will continue to function as designed;
- ☐ If the project involves dredging of 100 cubic yards or more or dredging of any amount in an Outstanding Resource Water, a Water Quality Certification issued by the Department pursuant to 314 CMR 9.00;
- ☐ If the Ecological Restoration Project involves work on a stream crossing, information sufficient to make the showing required by 310 CMR 10.24(10) for work in a coastal resource area and 310 CMR 10.53(8) for work in an inland resource area; and
- ☐ If the Ecological Restoration Project involves work on a stream crossing, baseline photo-points that capture longitudinal views of the crossing inlet, the crossing outlet and the upstream and downstream channel beds during low flow conditions. The latitude and longitude coordinates of the photo-points shall be included in the baseline data.
- ☐ This project is subject to provisions of the MassDEP Stormwater Management Standards. A copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) is attached.
- ☐ Provide information as the whether the project has the potential to impact private water supply wells including agricultural or aquacultural wells or surface water withdrawal points.

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City/Town

## Certification that the Ecological Restoration Project Meets the Eligibility Criteria

I hereby certify under penalties of perjury that the Ecological Restoration Project Notice of Intent application does not meet the Eligibility criteria for an Ecological Restoration Order of Conditions set forth in 310 CMR 10.13, but does meet the Eligibility Criteria for a Ecological Restoration Limited Project set forth in 10.24(8) or 10.53(4) whichever is applicable. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent

Printed Name of Applicant or Authorized Agent

Date

The certification must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 2) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

# TOWN OF LEICESTER RIGHT TO ENTER FORM

# Town of Leicester
## CONSERVATION COMMISSION
LEICESTER, MASSACHUSETTS, 01524-1333
Phone: 508-892-7007 Fax: 508-892-7070
www.leicesterma.org


Date:_____

The applicant, its agent, employees and all successors assigns in interest or control, do hereby grant the members of the Leicester Conservation Commission and/or its agents, to the **Right to Enter** upon and inspect the premises subject to this application prior to the issuance of Orders of Conditions and to evaluate compliance with the Orders of Conditions until such time as a Certificate of Compliance is issued by the Commission.

_____

Applicant/Authorized Agent (print and sign)

_____

Property Address (print)

# ABUTTER NOTIFICATION MATERIAL

# Notification to Abutters

By Hand Delivery, Certified Mail (return receipt requested), or Certificates of Mailing

*This is a notification required by law. You are receiving this notification because you have been identified as the owner of land abutting another parcel of land for which certain activities are proposed. Those activities require a permit under the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40).*

In accordance with the second paragraph of the Massachusetts Wetlands Protection Act, and 310 CMR 10.05(4)(a) of the Wetlands Regulations, you are hereby notified that:

A. A Notice of Intent was filed with the Town of Leicester Conservation Commission on January 21, 2025 seeking permission to remove, fill, dredge, or alter an area subject to protection under M.G.L. c. 131 §40. The following is a description of the proposed activity/activities:

> The Cedar Meadow Lake Watershed District proposes to implement an aquatic plant management program at Cedar Meadow Lake, which would entail the treatment and removal of aquatic invasive plant species in the lake using a variety of methods.

B. The name of the applicant is: Cedar Meadow Lake Watershed District

C. The address of the land where the activity is proposed is: Rawson Street, Leicester, MA. Assessors Map/Block/Lot Map 28, Lot A12.

D. Copies of the Notice of Intent may be examined or obtained at the office of the Leicester Conservation Commission, located at 3 Washburn Square, Leicester, MA 01524. The regular business hours of the Commission are Monday, Wednesday, and Thursday 8:00 a.m. – 5:00 p.m. and Tuesday 8:00 a.m.-7:00 p.m.. The Commission may be reached at 508.892.7007. An administrative fee may be applied for providing copies of the NOI and plans.

E. Copies of the Notice of Intent may be obtained from the applicant by calling Anna Chase, TRC at 781-419-7716.

F. Information regarding the date, time, and location of the public hearing regarding the Notice of Intent may be obtained from the Leicester Conservation Commission. Notice of the public hearing will be published at least five business days in advance, in the Worcester Telegram & Gazette.

# FILING FEE EVIDENCE

Filing Fee Evidence

As indicated on the NOI Wetland Fee Transmittal Form, the type of activity for this Project falls under Category 2h – Control Vegetation. Activities in Category 2 are $500; therefore, the state share of the filing fee is $237.50, and the town share of the filing fee is $262.50.

Per Table 1 of the Leicester Wetland Regulations, the Town of Leicester Local Wetland Bylaw Fees for NOI applications are 25% of the Total State Fee.

$500 X .25 = **$125.00**

# PROOF OF TAXES PAID FORM

# Town of Leicester

LEICESTER, MASSACHUSETTS, 01524-1333
Phone: 508-892-7000 Fax: 508-892-7070
www.leicesterma.org


## Proof of Taxes Paid

Please submit the following information and include with your permit application to the appropriate board, office, department, or commission of the Town of Leicester pursuant to "M.G.L. Chapter 40, Section 57: Local licenses and permits; denial, revocation or suspension for failure to pay municipal taxes or charges" adopted by the Town on 5/3/1993.

**********

Name of Applicant: Cedar Meadow Lake Watershed District

Address of Applicant: Cedar Meadow Lake, Rawson Street, Leicester, MA

**TAX COLLECTOR:**

Please verify outstanding tax/fee status for the following property owner:

Property Owner: Cedar Meadow Lake Watershed District

Property Location: Charles St.

Assessors Parcel ID: 28-A12

✓ The license/permit may be released.

____ The license/permit may not be released.

Treasurer/Collector

Date 12/30/24

# PROJECT NARRATIVE

# 1.0 Introduction

Cedar Meadow Lake is an approximately 151-acre impoundment of Burncoat Brook located entirely within Leicester, Massachusetts (Figure 1). The main basin of the lake is located south of Rawson Street and a small, shallow sub-basin abuts is located to the north of Rawson Street. Burncoat Brook enters this northern sub-basin from Burncoat Pond, located immediately upstream of Cedar Meadow Lake. Burncoat Brook exits Cedar Meadow Lake over the dam spillway at the southeastern end of the lake. A small impoundment of Burncoat Brook, Bouchard Pond, is located downstream of the Cedar Meadow Lake outlet. Two other unnamed tributaries (one perennial and one intermittent) feed into the northeastern region of Cedar Meadow Lake and a third (perennial) tributary connects the lake with a wetland area to the south. The lake provides habitat suitable for amphibians and reptiles including green frogs (*Lithobates clamitans*), pickerel frogs (*Lithobates palustris*), painted turtles (*Chrysemys picta*) and snapping turtles (*Chelydra serpentina*), as well as other wildlife and fish species.

TRC Environmental Corporation (TRC, formerly ESS Group, LLC), on behalf of the Cedar Meadow Lake Watershed District (the District), conducted monitoring of the lake in 2022 and 2024. Vegetation monitoring and water quality sampling results are presented in Attachments A and B. The aquatic invasive species fanwort (*Cabomba caroliniana*) and variable-leaf milfoil (*Myriophyllum heterophyllum*) are present in Cedar Meadow Lake. Invasive plant growth can impair habitat for native aquatic vegetation, fish, and wildlife species, and result in decreased water quality and aesthetics. The management of invasive plant growth in Cedar Meadow Lake is intended to address the following goals:

- Restore aquatic habitat and ecological function of the lake
- Decrease the extent of invasive fanwort and variable-leaf milfoil, which are currently present throughout Cedar Meadow Lake
- Prevent establishment of new invasive plants in the lake
- Improve water quality

The District is seeking an Order of Conditions (OOC) from the Leister Conservation Commission so that they may proceed with the management actions identified during the 2022 Cedar Meadow Lake Assessment and Management Recommendations Report, the 2024 Cedar Meadow Lake Late Season Aquatic Plant Monitoring Report, and described below (Section 3.0). Proposed management actions to control invasive plant growth include herbicide applications and harvesting. Additionally, the District is seeking approval for the use of algaecide should they become necessary to control excessive algal growth in the lake.

Since the proposed restoration actions will occur within a jurisdictional wetland resource area, this filing is made pursuant to the Massachusetts Wetlands Protection Act (WPA), (M.G.L. c. 131 § 40) and its implementing regulations (310 CMR 10.00), as well as the Town of Leicester Wetlands

Protection Bylaw (Chapter 14 of the Leicester General Bylaws). Wetland resource areas present in and around Cedar Meadow Lake include Land Under Water (LUW) (310 CMR 10.56), Bordering Vegetated Wetland (BVW) (310 CMR 10.55), Inland Bank (310 CMR 10.54), and Riverfront Area (310 CMR 10.58), as well as Bordering Land Subject to Flooding (BLSF) (310 CMR 10.57) (Figure 2).

## 2.0 Existing Conditions

Cedar Meadow Lake is an approximately 151-acre impoundment in the Town of Leicester. Tne lake is bordered by Rawson Street to the north, Lakeview Drive to the east, Fairview Drive to the southwest, and Lake Shore Drive to the northwest (Figure 1). Burncoat Brook flows into the lake from the northwest and exist Cedar Meadow Lake in the southeast. Two other unnamed tributaries (one perennial, one intermittent) enter the northeastern portion of Cedar Meadow Lake, and an unnamed perennial tributary connects Cedar Meadow Lake to a wetland area to the south.

Most of the Cedar Meadow Lake shoreline is developed as residential properties. Land use in the vicinity of the lake primarily includes low-density residential and forest land. Cedar Meadow Lake is used for recreation, including boating, swimming, and fishing, during the summer months.

The aquatic invasive species fanwort and variable-leaf milfoil are established throughout Cedar Meadow Lake. Management of these species was first initiated in Cedar Meadow Lake in 2015. Spot treatments using the herbicides diquat dibromide and flumioxazin have been applied as recently as 2022 (authorized under a previously issued OOC, DEP File No. 197-0579) to reduce the density and extent of these species in the waterbody. In August 2024, fanwort was found to be the dominant aquatic plant species in Cedar Meadow Lake; over 102 acres of fanwort growth was documented throughout the lake, mostly as sparse (plants covering between 1% and 25% of the pond bottom) growth (Figure 3, Attachment B). Variable-leaf milfoil was observed growing in approximately 4.6 acres of Cedar Meadow Lake in August 2024, primarily in shoreline areas (Figure 4, Attachment B).

In addition to fanwort and variable-leaf milfoil, two additional invasive species, brittle naiad (*Najas minor*) and water chestnut (*Trapa natans*), have previously been observed in Cedar Meadow Lake. A small number of water chestnut plants were observed, and subsequently hand harvested, in 2020. This species has not been documented at the lake in subsequent years. Brittle naiad was observed for the first time in Cedar Meadow Lake in 2020 but has not been observed during any more recent survey efforts.

Cedar Meadow Lake is not designated as an Outstanding Resource Water (ORW) and is not located in an Area of Critical Environmental Concern (ACEC). Cedar Meadow Lake is not a public drinking water supply and is not located in a Zone A, B, or C Surface Water Protection Area. The lake is not located within any mapped Zone I, Zone II, or Interim Wellhead Protection Areas. A photographic log is provided in Attachment C.

Resource areas within and adjacent to Cedar Meadow Lake include Bordering Vegetated Wetland (BVW), Land Under Water (LUW), Riverfront Area, and Bordering Land Subject to Flooding (BLSF) (Figure 2). Several of these resource areas have associated buffer zones which begin at the edge of the resource area boundary. These wetland resource areas are described in the sections below.

## 2.1 Wetland Resource Areas

Several areas subject to protection under the WPA are located in and around Cedar Meadow Lake, including Inland Bank, BVW, LUW, Riverfront Area, BLSF, and associated zones (Figure 2). The approximate boundaries of these resource areas were determined based on aerial imagery interpretation and a review of publicly available geospatial data layers published by MassGIS.

### Inland Bank

Inland Bank, defined at 310 CMR 10.54, is "*the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland.*" Inland Bank provides habitat for vegetation and a variety of animals, including small mammals, reptiles, and amphibians.

Residential development is located in close proximity to the Inland Bank of Cedar Meadow Lake. Shoreline areas are developed as residential lots, many of which include docks, sandy beaches, and shoreline protection structures along the bank.

There will be no impact to the Inland Bank of Cedar Meadow Lake as a result of the proposed Project.

### Bordering Vegetated Wetland

BVWs, defined in 310 CMR 10.55, are *"freshwater wetlands which border on creeks, rivers, streams, ponds, and lakes. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants*."

One area of BVW is mapped to occur to the west and north of a cove located on the western shoreline of Cedar Meadow Lake. Vegetation in this BVW has not been surveyed, but the adjacent cove (LUW) is dominated by dense (51% to 75% cover) fanwort growth (Figure 3). Sparse variable-leaf milfoil is also present in this cove (Figure 4). Proposed invasive species management practices in the LUW of Cedar Meadow Lake, including herbicide application, will provide indirect

benefits to this BVW area due to the removal of exotic invasive plant species, which may be encroaching into the BVW and impacting water quality in the area.

**Land Under Water**

Per 310 CMR 10.56, LUW is the *"the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock."* LUW provides substrate for aquatic plant growth and habitat for aquatic animals.

The land under Cedar Meadow Lake is considered LUW. At normal pool elevation, the LUW area associated with Cedar Meadow Lake is approximately 151 acres in size.

The proposed herbicide application will beneficially impact the LUW of Cedar Meadow Lake through the removal of invasive plant species (fanwort and variable-leaf milfoil) which currently grow in the LUW and out-compete other native and desirable aquatic vegetation. Removal of the excessive plant growth will also improve dissolved oxygen levels in the water column by allowing for increased oxygen circulation at the water's surface. Management actions proposed as part of this project will also help control algal blooms at the lake, which will improve water quality. Work is proposed to stay within the limits of the Cedar Meadow Lake LUW.

**Riverfront Area**

Riverfront Area, defined in 310 CMR 10.58, is ""*the area of land between a river's mean annual high-water line measured horizontally outward from the river and a parallel line located 200 feet away ".* Riverfront Areas serve to protect surface and groundwater supplies, control flooding, and provide wildlife habitat.

Burncoat Brook, both upstream and downstream of Cedar Meadow Lake, as well as the two unnamed perennial tributaries to Cedar Meadow Lake, have associated 200-foot Riverfront Ares (Figure 2).

No impacts to Riverfront Areas are anticipate as a result of the proposed project, other than where the Riverfront Area overlaps with LUW.

**Bordering Land Subject to Flooding**

BLSF, defined in 310 CMR 10.57, is an "*area which floods from a rise in a bordering waterway or waterbody."*

According to Federal Emergency Management Agency (FEMA) flood zone data (Figure 2), the immediate shoreline of Cedar Meadow Lake, as well as the lake itself, are within Flood Zone A (FEMA Flood Map No. 25027C0780F and 25027C0781F, Effective Date June 21, 2023). Flood

Zone A is defined by FEMA as areas subject to inundation by the 1-percent-annual-chance flood event (100-year flood).

As the proposed Project involves work only within LUW, it is not anticipated that there will be impacts to BLSF that may alter the flood water storage capacity of the area.

**Buffer Zones**

The Inland Bank, BVW, and any intermittent streams have an associated 100-foot Buffer Zone under the WPA. No impacts to buffer zones are anticipated. In addition to the WPA's 100-foot Buffer Zone, the Town of Leicester mandates a 25-foot No Disturb Buffer; no impacts to this buffer are anticipated.

### 2.2 State-listed Species

Based on a review of current Massachusetts Natural Heritage and Endangered Species Program (NHESP) data, Cedar Meadow Lake is not located within mapped Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife.

## 3.0 Project Description

The District is seeking approval from the Leicester Conservation Commission for a variety of management strategies for controlling the spread of aquatic invasive species and improving water quality conditions in Cedar Meadow Lake. Management strategies include the uce of chcemical controls (herbicides), and harvesting. The District is also seeking approval for the use of algaecide treatments should they become necessary to control algae blooms following the management of aquatic invasive plant species in the lake.

Aquatic plant mapping conducted by TRC in August of 2024 indicated that fanwort and variable-leaf milfoil are present through Cedar Meadow Lake (Attachment B). Management of these species could begin in early spring or summer of 2025 (dependent upon funding), with follow-up management in subsequent years as needed to effectively control aquatic invasive species within the lake. The specific management techniques to be employed each year will be based on aquatic plant surveys and water quality sampling of the lake conducted pre- and post-treatment. Proposed management actions are described in more detail in the following sections.

### 3.1 Herbicide Treatments

In the short-term, herbicide treatment is usually the most cost-effective means by which to rapidly achieve the goal of reducing aquatic weed biomass over a large area. Herbicides may also be used over the long-term as part of a comprehensive management plan to treat areas of recurring infestations that are not readily controllable through other means.

The District is seeking approval for the use of the herbicides below to target invasive and nuisance aquatic plant growth in Cedar Meadow Lake. Herbicide product labels are included in this filing as Attachment D. In all cases, herbicides would only be applied to Cedar Meadow Lake by a Massachusetts-licensed herbicide applicator in strict accordance with the product label and only after obtaining a License to Apply Herbicide.

- **Fluridone**: Fluridone (trade name Sonar) is a systemic herbicide that reduces photosynthesis in affected plants by inhibiting the formulation of the plant pigment carotene which causes the rapid degradation of chlorophyll in the plant by sunlight, leading to eventual starvation of the entire plant. Fluridone is the only systemic herbicide that is highly effective on fanwort while also providing some control of variable-leaf milfoil. A systemic herbicide is one that can kill the plant and its roots and therefore has potential to provide two or more years of control. Due to the slow action of this herbicide, plant dieback is gradual and dissolved oxygen sags are rarely problematic. Sonar may be applied as a liquid formulation or as a controlled-release granular formulation to maximize effectiveness in areas with persistent beds or where inflows or circulation result in rapid dilution (e.g., near tributary inlets).
- **Flumioxazin**: Flumioxazin (trade name Clipper) is a contact herbicide that works by inhibiting protoporphyrinogen oxidase (PPO), an enzyme necessary for photosynthesis. Inhibition of PPO causes destruction of plant cell plasma membranes in the presence of sunlight, resulting in a rapid dieback of plant tissues. Clipper is effective against fanwort and variable-leaf milfoil, and breaks down very quickly, thereby limiting risks to non-target areas. Additionally, Clipper has very low toxicity to most animal life, including humans and birds, and does not require any post-application restrictions for drinking water or recreation. Treatment is most successful when applied in late spring or early summer, when targeted plants are expected to be rapidly maturing.

  In addition to the label restrictions, special conditions for use of Clipper in Massachusetts were published by the Massachusetts Department of Agricultural Resources (MDAR), Massachusetts Division of Fisheries and Wildlife (DFW), and Massachusetts Department of Environmental Protection in 2013. Aquatic plant management at Cedar Meadow Lake will comply with these conditions, as follows:

  - The maximum application concentration would be 200 ug/L or less.
  - No more than one-fourth of the water body would be treated with Clipper in any one year.
  - Treated areas would not be retreated with Clipper or any herbicide with a similar mode of action (i.e., light dependent peroxidizing herbicide) for three consecutive years in order to prevent the development of herbicide resistance in treated plants and allow for the recolonization of mussels and other native biota. The exception to this restriction is repeat targeted treatments in consecutive years in the

immediate vicinity around shoreline structures (e.g., boat launches, docks, swimming beaches, dams, water intake pipes).

- Clipper is excluded from use in State-listed aquatic species habitats, unless otherwise authorized in writing on a case-by-case basis by DFW pursuant to the Massachusetts Endangered Species Act, MGL c.131A and its implementing regulations 321 CMR 10.00. No such habitats are currently mapped at Cedar Meadow Lake.

**Diquat dibromide:** Diquat dibromide (trade name Reward) is a contact herbicide that works quickly by interrupting the photosynthetic process, resulting in the dieback of leaf and stem cells. Diquat offers immediate control of thin-leaf pondweed and variable-leaf milfoil but is not effective for control of fanwort. Application of diquat would be limited to no more than one-half of total lake area per label restrictions to prevent reductions in dissolved oxygen from the rapid dieback of treated plants.

- **Florpyrauxifen-benzyl**: Florpyrauxifen-benzyl (trade name ProcellaCOR) is a systemic herbicide that is selective for control of exotic milfoils without impacting most native aquatic plant species. As a systemic herbicide, ProcellaCOR kills the entire plant, thereby providing control over multiple seasons. ProcellaCOR received full approval for aquatic use in Massachusetts in 2019 and is known to be effective on exotic milfoils at low concentrations. However, ProcellaCOR does not provide control of fanwort.

The District proposes to use a combination of the above listed herbicides for controlling invasive aquatic vegetation at Cedar Meadow Lake. Herbicides will be applied to the lake or target vegetation by a Massachusetts-licensed herbicide applicator.

Herbicides will be applied to the lake over the course of one day by a Massachusetts-licensed herbicide applicator early in the growing season, typically late spring or early summer. Liquid herbicide formulations will be applied from a vessel with downward pointing spray nozzles at or immediately below the water's surface. Follow-up treatments may occur later in the summer or during the subsequent growing seasons depending on herbicide effectiveness and plant regrowth. Long-term control of established invasive aquatic plants typically requires consistent reapplication to the same bed over multiple years, depending on the herbicide used and the results achieved. Direct access to Cedar Meadow Lake will be restricted on the day of treatment as standard practice. Cedar Meadow Lake will also be posted by the herbicide applicator prior to treatment in accordance with the label requirements and the License to Apply Herbicides to Waters of the Commonwealth (BRP WM 04).

## 3.2 Hand Harvesting and DASH

While herbicide treatment is the preferred management technique for controlling aquatic invasive plant species over a large area and/or in deeper waters, hand harvesting and/or diver harvesting can be useful techniques for control of invasive species in small areas. In general, these methods

can be initiated at any time the targeted plants are visible and accessible. The selective nature of harvesting allows for desirable native plants to remain in place while nuisance or exotic species are removed.

***Hand Harvesting:*** The simplest form of harvesting is hand pulling of selected plants. Depending on the depth of the water at the targeted site, hand harvesting may involve wading, snorkeling, SCUBA diving, or pulling plants from a small watercraft (in the case of floating leaved plants like water chestnut). Harvested plants, including root systems, and fragments are placed in a mesh bag or container that allows for transport and disposal of the vegetation. Harvested plants and fragments would be disposed of and composted away from waterbodies and wetlands to prevent material from re-entering surface waters and to achieve the additional benefit of removing nutrients (contained in decaying plants) from the system. Hand harvesting of submerged vegetation aims to remove entire plants, including the roots, thereby preventing regrowth in subsequent seasons. At Cedar Meadow Lake, hand harvesting could be used to control pioneer infestations of new invasive species.

***DASH***: DASH is similar to hand harvesting but more efficient because entire plants are fed into a suction hose and lifted to a collection vessel at the surface, thereby significantly reducing the time it takes for the diver to handle and return plants to the surface. DASH can also reduce the potential for release of plant fragments because these are efficiently lifted to the surface. DASH could be used to provide precision control of target species in areas up to a few acres in size.

### 3.3 Algaecide Treatments

Aquatic vegetation control may sometimes be associated with a local increase in algal growth, due to reduced competition for light and nutrients in managed areas. Copper-based algaecides registered for use in Massachusetts are sold under different trade names but all formulations are designed to result in almost immediate control of a broad spectrum of planktonic and filamentous algae.

Copper-based algaecide applications are most effective when algal blooms are actively growing. Under the plan proposed in this NOI, applications of copper-based algaecide would only be triggered as needed to control developing or active algae blooms, specifically cyanobacteria blooms. Algaecides would only be applied at Cedar Meadow Lake by a Massachusetts-licensed herbicide applicator and only algaecide products registered and approved for use in Massachusetts would be applied.

## 4.0 Alternatives Analysis

As an alternative to the proposed management approaches described above, a “No Alteration” alternative (no management of invasive aquatic plant species or algal blooms) was considered for Cedar Meadow Lake.

Under the No Alteration alternative, invasive plants would not be controlled, and algae blooms, should they occur, would not be addressed. Fanwort and variable-leaf milfoil are incredibly hardy invasive species that are well established in Cedar Meadow Lake. Under the No Alteration alternative, continued expansion of these invasive species would be expected. Fanwort and variable-leaf milfoil would continue to crowd out native species, resulting in further negative impacts to fish and wildlife habitat in the lake. Unmanaged growth of fanwort and variable-leaf milfoil in Cedar Meadow Lake would continue to produce weed fragments that could be transported to downstream waterbodies, or accidentally moved by lake users to non-hydrologically connected waterbodies. The No Alteration alternative may also pose a safety concern for those recreating on the lake. Excessive plant growth may limit the accessibility of certain lake areas and pose an entanglement risk for swimmers.

Unmanaged algal blooms can be harmful to human and animal health, wildlife habitat, and water quality. The decomposition of large quantities of algal cells can cause dissolved oxygen levels to drop, resulting in fish kills and impacts to other wildlife. Additionally, cyanobacteria blooms can be directly harmful to human and wildlife health, as these organisms can produce toxins.

In order to protect the biological integrity and recreational value of Cedar Meadow Lake, as well as the safety of those using the lake, the No Alteration alternative is not recommended.

# 5.0 Impact Avoidance and Minimization

All work for the proposed Project will take place within LUW. Other resource areas around the lake, which include Inland Bank, BVW, and Riverfront Area, BLSF, and buffer zone, will not be impacted.

## 5.1 Herbicide Treatments

The herbicides proposed for use at Cedar Meadow Lake (Fluridone, Flumioxazin, Diquat, Florpyrauxifen-benzyl) have been approved for use in Massachusetts waters by the Massachusetts Department of Agricultural Resources (MDAR), MassDEP, and the United States Environmental Protection Agency (EPA). Herbicides would only be applied by a Massachusetts-licensed herbicide applicator with a valid License to Apply Herbicides issued by MassDEP. Herbicide application will be conducted strictly in accordance with the product labels and safety data sheets, using the minimum effective dose to achieve the desired control of target species (Attachment D). LUW will be beneficially impacted through the management of invasive aquatic plant species. Management of invasive species will create additional habitat for a more diverse native plant assemblage which will improve water quality and provide higher quality fish and wildlife habitat.

Notice of herbicide application will be posted by the herbicide applicator prior to treatment. There are no restrictions for use of a recreational waterbody following treatment with any of the herbicides proposed for use at the lake; however, the herbicide applicator may post Cedar Meadow Lake to restrict recreation on the day of herbicide treatment as standard practice.

## 5.2 Hand Harvesting

The use of hand harvesting for control of invasive aquatic plant species will beneficially impact the LUW of Cedar Meadow Lake by removing and controlling the spread of fanwort, variable-leaf milfoil, and any other pioneer invasive species (should they appear). Since harvesting can be targeted to individual plants, minimal impacts to non-target species are anticipated. The in-lake harvesting of aquatic plant species will create additional habitat for beneficial native plants in Cedar Meadow Lake. Harvested plants will be removed and disposed of, or composted, in an upland area away from the lake to avoid re-introduction and to achieve the additional benefit of removing nutrients from the waterbody.

A temporary increase in turbidity and total suspended solids may result from the removal of rooted plants as small amounts of sediment within and around the plant roots are disturbed during plant harvesting. This effect is expected to be very localized and temporary. Following the completion of aquatic plant harvesting, any disturbed sediments are expected to quickly settle to the bottom of the lake. Temporary impacts to fisheries from harvesting activities are expected to be highly localized to the immediate vicinity of the control activity. Fish may temporarily demonstrate attraction to or avoidance of active work areas but are otherwise not expected to be adversely affected.

## 5.3 Algaecide Treatments

Algaecide treatment may be conducted in cases where excessive algae growths or developing cyanobacteria blooms are observed in Cedar Meadow Lake. It is possible that algaecide application may not be needed over the course of the management program. However, by including algaecide treatment, the applicant will have available tools to manage excessive algal growth, should management become necessary. In such a case, LUW would be beneficially impacted through the management of excessive algae growth; treating algae blooms improves water quality, provided higher quality aquatic habitat in the lake, decrease the likelihood of fish kills, and supports recreational uses of the Lake

# 6.0 Regulatory Compliance

## 6.1 Massachusetts Wetland Protection Act

The WPA (M.G.L. c. 131, § 40) and its implementing regulations (310 CMR 10.00) provide for the protection of wetland resource areas and the public benefits provided by these areas as identified by the Act. The proposed project is subject to the WPA and its implementing regulations because it will take place within LUW associated with Cedar Meadow Lake, which is an area subject to protection under the WPA.

### *6.1.1 Ecological Restoration Limited Project Provisions*

The primary purpose of the proposed Project is to restore the natural capacity of a wetland resource area, prevent unhealthy pond conditions, protect wildlife habitat, which are interests identified in the WPA in M.G.L. c. 131 §40. This Project is therefore eligible to be reviewed as an Ecological Restoration Limited Project pursuant to 310 CMR 10.53(4)(e)(5): Other Restoration Projects.

Pursuant to 310 CMR 10.11(1), at least two weeks prior to filing an NOI for an Ecological Restoration Limited Project, the Applicant must submit written notification of the proposed filing for publication in the Environmental Monitor. In accordance with this provision, notice was provided to the Massachusetts Environmental Policy Act (MEPA) office on December 30, 2024 for publication in the January 8, 2025 publication of the Environmental Monitor (Attachment E). This Project has been designed to be consistent with the *Eutrophication and Aquatic Plant Management Final Generic Environmental Impact Report* (EEA 2004a) and *The Practical Guide to Lake and Pond Management in Massachusetts* (EEA 2004b).

Projects seeking review as Ecological Restoration Limited Projects must comply with the provisions in 310 CMR 10.53(4)(a). The Project's compliance with these provisions is discussed below.

**310 CMR 10.53(4)(a)(1):** *The Issuing Authority determines that the project is an Ecological Restoration Project as defined in 310 CMR 10.04.*

The term "Ecological Restoration Project" is defined in 310 CMR 10.04 as "*a project whose primary purpose is to restore or otherwise improve the natural capacity of a Resource Area(s) to protect and sustain the interests identified in M.G.L. c. 131, § 40, when such interests have been degraded or destroyed by anthropogenic influences*."

As stated in Section 1.0, one of the goals of this Project is to improve the natural capacity of the resource area to prevent pollution and protect fish and wildlife habitat through management of

non-native invasive plant species. Therefore, the Project meets the definition of an Ecological Restoration Project under 310 CMR 10.04.

**310 CMR 10.53(4)(a)(2):** *If the project will impact an area located within estimated habitat which is indicated on the most recent* Estimated Habitat Map of State-listed Rare Wetlands Wildlife *published by the Natural Heritage and Endangered Species Program (Program), the applicant has obtained a preliminary written determination from the Program in accordance with 310 CMR 10.11(2) that the project will not have any adverse long-term and short-term effects on specified habitat sites of Rare Species, or the project will be carried out in accordance with a habitat management plan that has been approved in writing by the Natural Heritage and Endangered Species Program and submitted with the Notice of Intent.*

The Project will not impact an area located within Estimated Habitat. As stated in Section 2.2, there are no mapped Estimated Habitats located at Cedar Meadow Lake.

**310 CMR 10.53(4)(a)(3):** *The applicant demonstrates that the project will be carried out in accordance with any time of year restrictions or other conditions recommended by the Division of Marine Fisheries for coastal waters and the Division of Fisheries and Wildlife in accordance with 310 CMR 10.11(3).*

The proposed Project is not located in coastal waters (310 CMR 10.11(3)) and will not involve silt-generating in water work that will impact a non-tidal perennial river or stream (310 CMR 10.11(5)).

**310 CMR 10.53(4)(a)(4):** *If the project involves the dredging of 100 cubic yards of sediment or more or dredging of any amount in an Outstanding Resource Water, the applicant has applied for or obtained a Water Quality Certification by the Department.*

The Project does not involve dredging.

**310 CMR 10.53(4)(a)(5):** *The project complies with all applicable provisions of 310 CMR 10.53(1), (2), (7), and (8).*

310 CMR 10.53(1) states in part: "*If the Issuing Authority determines that a Resource Area is significant to an interest identified in M.G.L. c. 131, § 40 for which no presumption is stated in the Preamble to the applicable section, the Issuing Authority shall impose such conditions as are necessary to contribute to the protection of such interests. …* "

The Applicant will comply with conditions imposed on the Project by the Issuing Authority. Erosion and sedimentation controls will not be necessary during aquatic plant management as no construction or other land-disturbing activities are proposed.

310 CMR 10.53(2) states: "*When the site of a proposed project is subject to a Restriction Order which has been duly recorded under the provisions of M.G.L. c. 131, § 40A, such a project shall conform to both the provisions contained in that Order and 310 CMR 10.51 through 10.60.*"

The Project Site is not subject to a Wetlands Restriction Order.

310 CMR 10.53(7) states: "*The Notice of Intent for any projects involving the construction, repair, replacement or expansion of public or private infrastructure shall include an operation and maintenance plan to ensure that the infrastructure will continue to function as designed. Implementation of the operation and maintenance plan as approved by the Issuing Authority shall be a continuing condition that shall be set forth in the Order of Conditions and the Certificate of Compliance.*"

The proposed Project does not involve the construction, repair, replacement, or expansion of public or private infrastructure.

310 CMR 10.53(8) states: "*Any person proposing the replacement of an existing stream crossing shall demonstrate to the Issuing Authority that the impacts of the crossing have been avoided where possible, and when not possible have been minimized and that mitigation measures have been provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40.*"

The Project does not involve stream crossings.

### *6.1.2 Land Under Water*

The management actions proposed as part of this plan – herbicide and algaecide treatments, and hand and diver harvesting – could potentially occur anywhere within Cedar Meadow Lake during the course of the management program and impact the LUW.

The activities described in this NOI do not entail the construction of structures, soil-disturbing activities, dredging or filling, or similar physical alterations to the land; therefore, the work will not impair the water carrying capacity within the defined channel. The Project does not entail silt-generating work in surface waters, new stormwater discharges to surface waters or groundwater, or the installation of new impervious surfaces. All products proposed for use have been approved by state and federal regulators and will be used in accordance with label restrictions. Therefore, the activities described in this NOI will not impair the quality of surface water or groundwater. Removal of nuisance vegetation is expected to improve the capacity of the LUW resource area to protect the interests identified in the WPA, including prevention of pollution, and protection of wildlife habitat.

### *6.1.3 Other Resource Areas*

As discussed in Section 5.0, the proposed work will not occur within or impact Inland Bank, BVW, BLSF, Riverfront Area, or the buffer zone.

## 6.2 Town of Leicester Wetland Bylaws

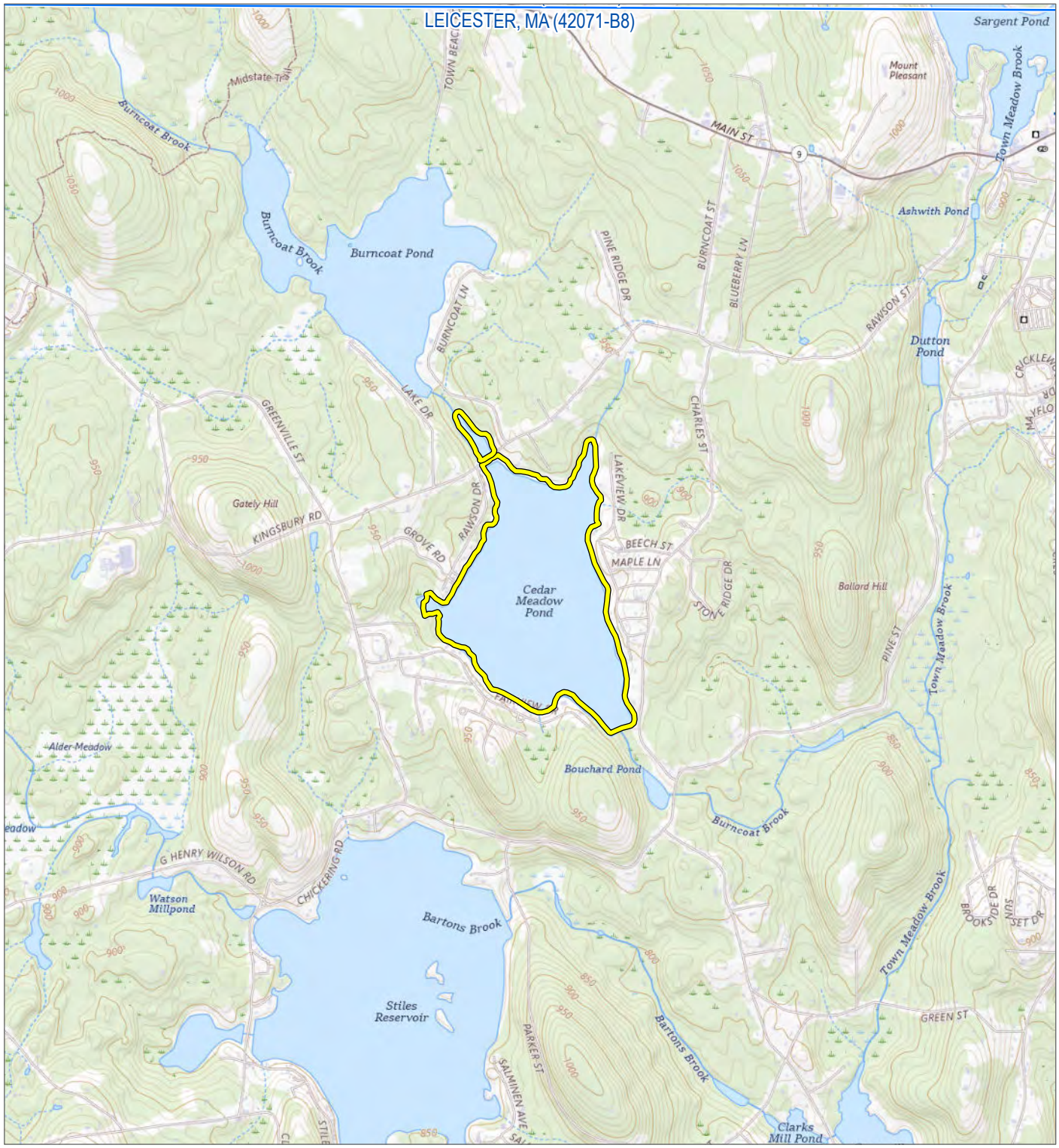
The Project is subject to the Town of Leicester Conservation Commission Wetlands Protection Regulations and the Leicester Wetlands Protection By-Law. The Project intends to comply with the town regulations as applicable.

# 7.0 References


[EEA] Commonwealth of Massachusetts, Executive Office of Environmental Affairs. 2004a. Eutrophication and Aquatic Plant Management Final Generic Environmental Impact Report. https://www.mass.gov/files/documents/2016/08/sd/eutrophication-and-aquatic-plant-management-in-massachusetts-final-generic-environmental-impact-report-mattson.pdf

[EEA] Commonwealth of Massachusetts, Executive Office of Environmental Affairs. 2004b. The Practical Guide to Lake and Pond Management in Massachusetts: A Companion to the Final Generic Environmental Impact Report on Eutrophication and Aquatic Plant Management in Massachusetts. https://www.mass.gov/files/documents/2016/08/uk/practical-guide-no-pics.pdf

# Figures




INLAND BANK

USGS 7.5' QUADRANGLE BOUNDARY

BASE MAP: ESRI "USGS TOPO MAP" ONLINE SERVICE LAYER
7.5' QUADRANGLE: LEICESTER, MA
DATA SOURCES: ESRI, USGS, TRC

N

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FEET

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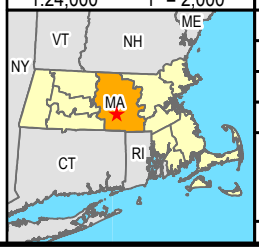


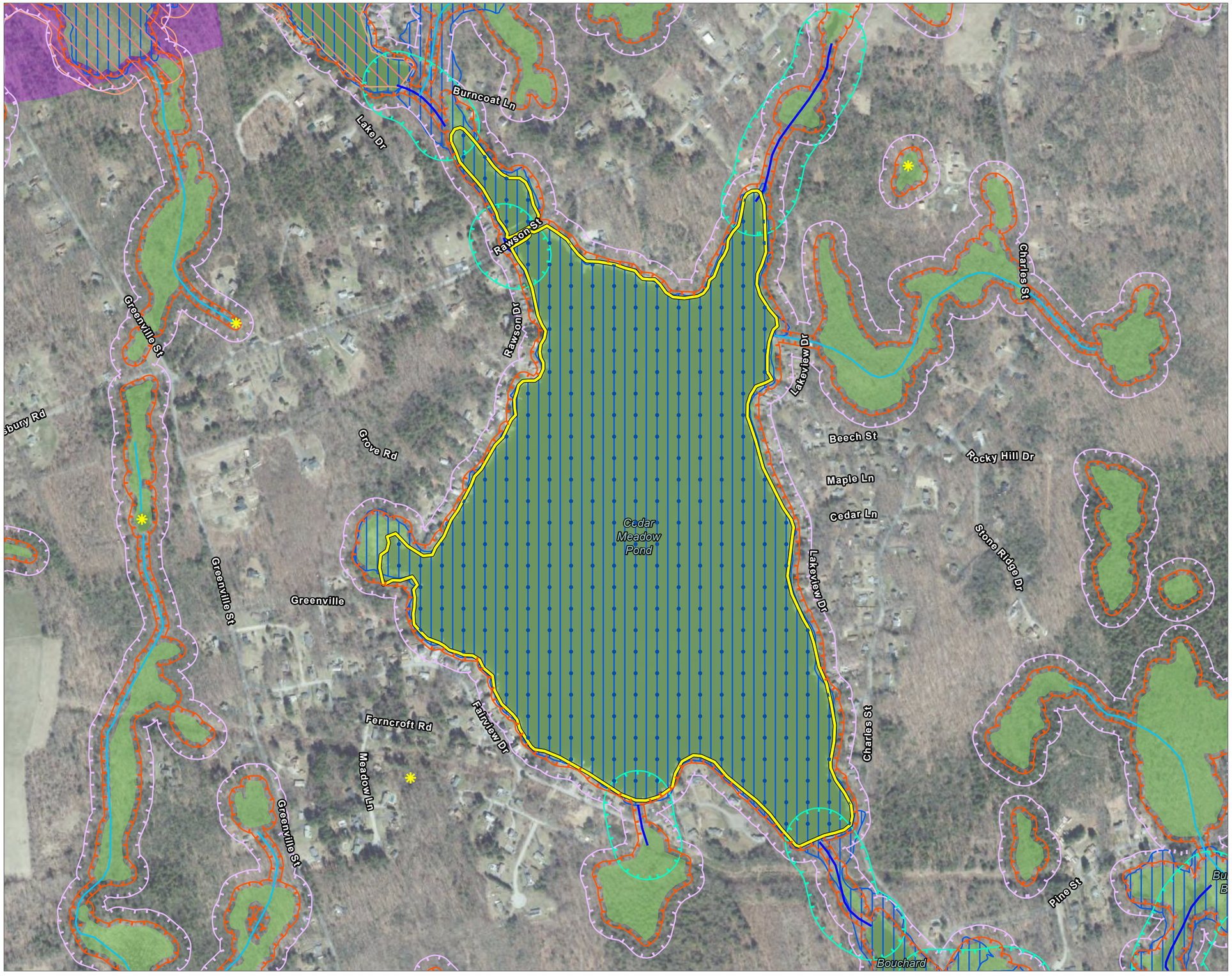

PROJECT:
**CEDAR MEADOW LAKE MANAGEMENT PROJECT**
**LEICESTER, MASSACHUSETTS**

TITLE:
**USGS SITE LOCATION MAP**

| | | | |
|---|---|---|---|
| DRAWN BY: | A. FARRIS | PROJ. NO.: | 586968.0000.0000 |
| CHECKED BY: | M. BILLINGS | | |
| APPROVED BY: | I. MOHAMMADI-HALL | | **FIGURE 1** |
| DATE: | DECEMBER 2024 | | |

TRC
650 SUFFOLK STREET
SUITE 200
LOWELL, MA 01854
PHONE: 978.970.5600

FILE: 586968_CEDARMEADOWLAKE_RESOURCES




- INLAND BANK
- NHESP POTENTIAL VERNAL POOL
- PERENNIAL STREAM (DEP)
- INTERMITTENT STREAM (DEP)
- LAND UNDER WATER
- MADEP WETLAND (2005)
- 25-FT NO DISTURB ZONE
- 100-FT BUFFER ZONE
- 200-FT RIVERFRONT AREA
- SPECIAL FLOOD HAZARD AREA (1-PERCENT ANNUAL CHANCE FLOOD OR 100-YEAR FLOOD - FEMA)
- NHESP PRIORITY HABITAT
- ARTICLE 97 LAND

RESOURCES REVIEWED:
CERTIFIED AND POTENTIAL VERNAL POOLS, PUBLIC WATER SUPPLIES, MHC DATA, FLOOD HAZARD AREA, DEP STREAMS, DEP WETLANDS, NATIONAL WETLAND INVENTORY (NWI), WELLHEAD PROTECTION AREAS, NHESP HABITATS, OUTSTANDING RESOURCE WATERS, AQUIFER PROTECTION DISTRICT, OPEN SPACE AND RECREATIONAL LAND, ARTICLE 97 LAND, WATERSHED PROTECTION ZONES, 2014 INTEGRATED LIST-305(B)/303(D), CHAPTER 91 TIDELANDS JURISDICTIONAL DATA

BASE MAP: MASSGIS 2021 ORTHO PHOTOS.
DATA SOURCES: MASSGIS


N

1:7,200
1" = 600'

0 300 600 FEET

PROJECT:
**CEDAR MEADOW LAKE MANAGEMENT PROJECT**
**LEICESTER, MASSACHUSETTS**

TITLE:
**RESOURCE MAP**

| | | | |
|---|---|---|---|
| DRAWN BY: | A. FARRIS | PROJ. NO.: | 586968.0000.0000 |
| CHECKED BY: | M. BILLINGS | | |
| APPROVED BY: | I. MOHAMMADI-HALL | | **FIGURE 2** |
| DATE: | DECEMBER 2024 | | |

TRC
650 SUFFOLK STREET
SUITE 200
LOWELL, MA 01854
PHONE: 978.970.5600

FILE: 586968_CedarMeadowLake_Resources.aprx

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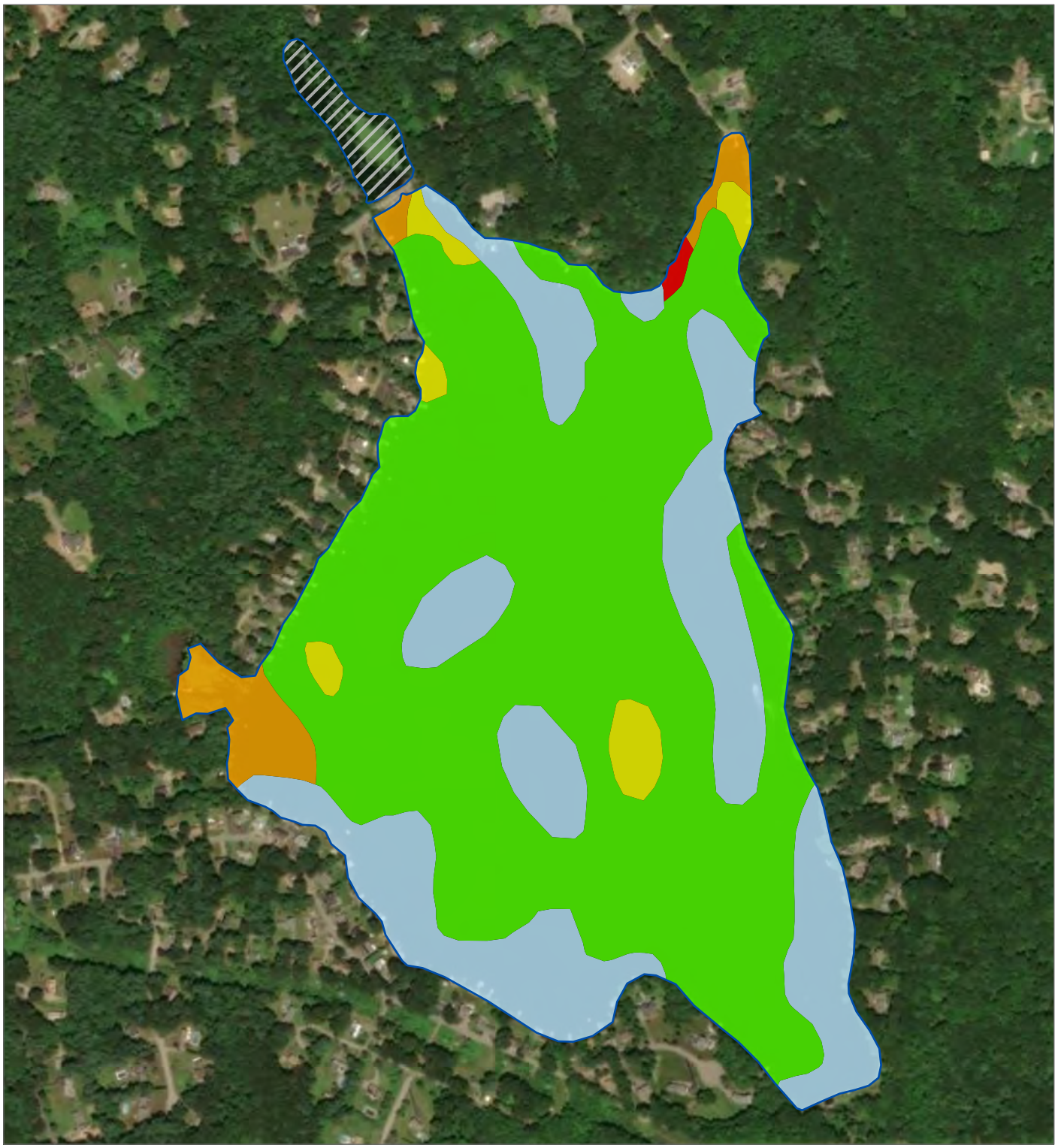


SHORELINE

FANWORT COVER

- 0% (40.0 ACRES)
- 1% - 25% (92.5 ACRES)
- 26% - 50% (4.04 ACRES)
- 51% - 75% (5.44 ACRES)
- 76% - 100% (0.35 ACRES)
- NOT SURVEYED (3.07 ACRES)

BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600

FEET

1:7,200 1" = 600'


PROJECT:

**CEDAR MEADOW LAKE 2024**

**LEICESTER, MASSACHUSETTS**

TITLE:

**FANWORT COVER**
**AUGUST 2024**

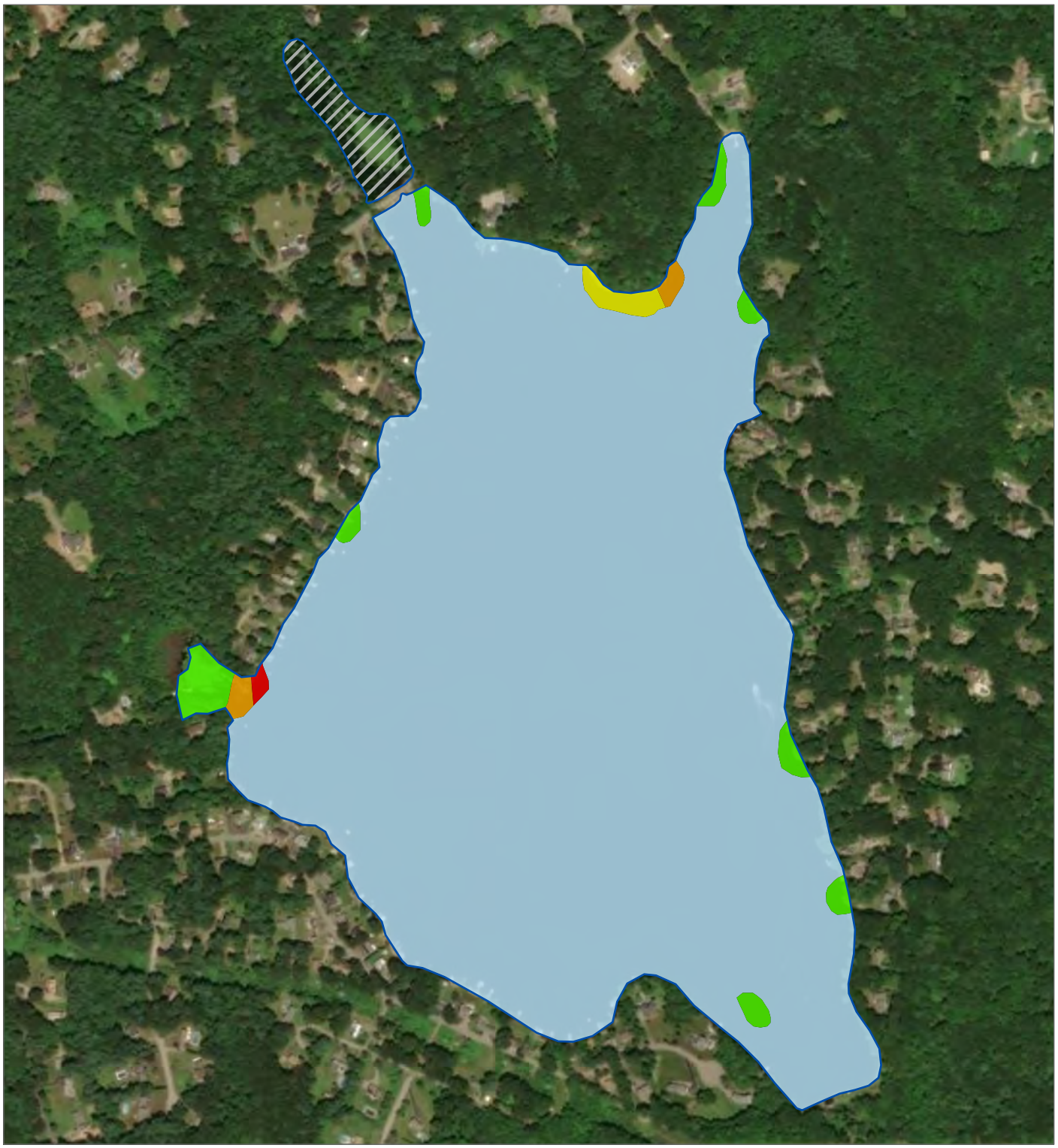
| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 3**


TRC

404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS



SHORELINE

VARIABLE-LEAF MILFOIL COVER

- 0% (137.8 ACRES)
- 1% - 25% (3.05 ACRES)
- 26% - 50% (0.75 ACRES)
- 51% - 75% (0.64 ACRES)
- 76% - 100% (0.18 ACRES)
- NOT SURVEYED (3.07 ACRES)

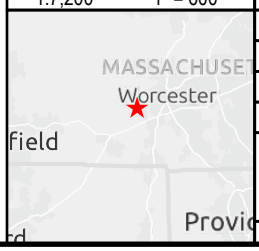
BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600

FEET

1:7,200 1" = 600'




PROJECT:

**CEDAR MEADOW LAKE 2024**

**LEICESTER, MASSACHUSETTS**

TITLE:

**VARIABLE-LEAF MILFOIL COVER**
**AUGUST 2024**

| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 4**


TRC

404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS

# Attachment A: 2022 Cedar Meadow Lake Assessment and Management Recommendations

# Lake Assessment and Management Recommendations - 2022

November 15, 2022

## Cedar Meadow Lake

**Prepared For:**

Tommy Lee
Cedar Meadow Lake Watershed District
P.O. Box 320
Leicester, MA 01524-0320

**Prepared By:**

TRC
404 Wyman Street, Suite 375
Waltham, MA 02845

Anna Chase, Water Resources Scientist

*Prepared and approved by:*

James Treacy, Water Resources Scientist

*Reviewed by:*

## TABLE OF CONTENTS

## TABLES



## FIGURES



## APPENDICES

# 1.0 Introduction

TRC Companies (TRC, formerly ESS Group, LLC) is pleased to present the Cedar Meadow Lake Watershed District (the District) with this report summarizing the assessment of Cedar Meadow Lake completed by TRC this year and our corresponding management recommendations.

Cedar Meadow Lake is an approximately 151-acre impoundment of Burncoat Brook located entirely within the Town of Leicester, Massachusetts. The main basin of the lake is located south of Rawson Street; a small, shallow cove is located north of Rawson Street. Burncoat Brook enters this cove from Burncoat Pond, located approximately 1,200 feet upstream of Rawson Street. Burncoat Brook exits Cedar Meadow Lake over the dam spillway at the southeastern end and feeds a small waterbody, Bouchard Pond. Cedar Meadow Lake has a relatively flat bottom with a maximum depth of approximately 12 feet. Most of the lake's shoreline is developed as residential properties. Land use in the vicinity of the lake includes low-density residential, forest, and agricultural fields.

The invasive aquatic species variable-leaf milfoil (*Myriophyllum heterophyllum*) and fanwort (*Cabomba caroliniana*) are present in Cedar Meadow Lake. A summary of management actions completed in 2022 is presented below.

- May 24, 2022 - TRC conducted a pre-treatment aquatic plant mapping and water quality sampling event.
- June 14, 2022 – The Pond and Lake Connection completed a Clipper (flumioxazin) and Reward (diquat dibromide) treatment of approximately 15 acres of Cedar Meadow Lake for control of fanwort and variable-leaf milfoil.
- August 16, 2022 – TRC conducted a post-treatment aquatic plant mapping and water quality sampling event.

# 2.0 Aquatic Plant Mapping Results

TRC documented 16 species of aquatic macrophytes, including two aquatic invasive species, fanwort and variable-leaf milfoil, that were observed in Cedar Meadow Lake during surveys completed in 2022 (Table 1). This represents a slight decrease in overall species diversity compared the last comparable mapping event, conducted in August of 2020, when 22 species (including 18 native species) were observed. Brittle naiad (*Najas minor*) and water chestnut (*Trapa natans*), invasive species which were last observed in Cedar Meadow Lake in 2020, were not detected during the 2022 surveys.

**Table 1. Aquatic Plant Species Observed During 2022 Pre-treatment and Post-treatment Aquatic Macrophyte Surveys**

| Common Name | Scientific Name | Pre-Treatment | Post-Treatment |
|---|---|---|---|
| Watershield | *Brasenia schreberi* | X | X |
| **Fanwort** | ***Cabomba caroliniana*** | **X** | **X** |
| Muskwort | *Chara Spp.* | X | |
| Spikerush | *Eleocharis Spp.* | X | |
| Canadian Waterweed | *Elodea canadensis* | X | |
| **Variable-leaf milfoil** | ***Myriophyllum heterophyllum*** | **X** | **X** |
| Bushy Naiad | *Najas flexilis* | | X |
| Southern Naiad | *Najas guadalupensis* | | X |
| Stonewort | *Nitella spp.* | X | X |
| Yellow water lily | *Nuphar lutea* | | X |
| White water lily | *Nymphaea odorata* | X | X |
| Bigleaf Pondweed | *Potamogeton amplifolius* | X | |
| Spiral pondweed | *Potamogeton spirillus* | X | X |
| Common bladderwort | *Utricularia macrorhiza* | X | X |
| Purple Bladderwort | *Utricularia purpurea* | X | |
| Water Celery | *Valisineria americana* | X | X |

Red text indicates exotic species

## 2.1 Fanwort (*Cabomba caroliniana*)

In 2022, fanwort was the most widespread and abundant invasive macrophyte species in Cedar Meadow Lake. During pre-treatment mapping this species was present in approximately 49.2 acres of the lake, and coverage exceeded 25% in approximately 9.9 acres (Figure 1). Fanwort was found growing in much of the lake, but growth was generally most dense in the area of the northeastern cove. This species was present in shoreline areas but was also abundant in deeper waters.

Approximately 9.9 acres of fanwort beds (areas mapped as >25% cover) within Cedar Meadow Lake were treated with Clipper (flumioxazin) on June 14, 2022.

*Fanwort found during pre-treatment mapping on May 24 2022.*

Though post-treatment aquatic macrophyte mapping conducted on August 16 indicated that fanwort density in most treated areas had decreased compared to pre-treatment levels, total fanwort cover in the lake increased (Figure 2). During the post-treatment survey, fanwort was present in approximately 55.7 acres of the lake, an increase of approximately 6.5 acres compared to the pre-treatment survey.

## 2.2 Variable-Leaf Milfoil (*Myriophyllum heterophyllum*)

Only three acres of variable-leaf milfoil growth was documented in Cedar Meadow Lake during the pre-treatment survey conducted on May 24, 2022 (Figure 3). This represents a notable decrease in density compared to 2021, when this species was present in approximately 11 acres of the waterbody. This shift may indicate that variable-leaf milfoil is being outcompeted by fanwort in Cedar Meadow Lake.

All mapped areas of variable-leaf milfoil growth (approximately 3 acres) were treated with Reward (diquat dibromide) on June 14, 2022.

During the post-treatment mapping event on August 16, variable-leaf milfoil was not observed in any of the treated areas but was found in one small (~0.4 acre) patch located along the western shoreline (Figure 4).

*Variable-leaf milfoil observed during the pre-treatment mapping on May 24, 2022.*

## 2.3 Overall Plant Cover and Biovolume

Total aquatic plant cover, a measure of the two-dimensional extent of plant growth within the lake, was generally low (1% -25% cover) during the pre-treatment survey (Figure 5). Areas of higher density were most commonly associated with fanwort growth. However, the three locations where plant cover exceeded 75% cover during the May survey were dominated by native species, including stonewort (*Nitella* spp.) and common bladderwort (*Utricularia macrorhiza*). During the post treatment survey, plant cover did not exceed 75% at any sampling location, and fanwort was present at all seven sampling locations where total plant cover ranged from 51% to 75% (Figure 6).

Aquatic plant biovolume, a measure of the three-dimensional extent of plant growth within the water column, was less than 50% at all sites surveyed during both the 2022 pre-treatment and post-treatment vegetation mapping events (Figures 7 and 8). In most cases, areas of relatively higher biovolume (plant material occupying 25% to 50% of the water column) were associated with fanwort and variable-leaf milfoil growth, though native plants, most notably stonewort, also contributed significantly to total biovolume at some locations.

## 3.0 Water Quality Results

Water temperature, dissolved oxygen, and specific conductance values were collected as vertical profiles through the water column at 0.5-meter intervals at the deep hole of Cedar Meadow Lake during the May 24 pre-treatment and August 16 post-treatment sampling events (Table 2). These parameters were vertically consistent (i.e., from the surface to the bottom) during both events. Consistent water temperatures, and relatively consistent dissolved oxygen values, at all depths sampled indicates that Cedar Meadow Lake was not stratified during the time of pre-treatment or post-treatment sampling events. Stratification occurs in some lakes during the summer months due to a lack of mixing between surface and bottom waters, and results in a warmer, well-oxygenated surface layer and a cooler bottom layer with lower dissolved oxygen concentrations. The shallow depth of Cedar Meadow Lake allows for mixing of the water column through wind action, preventing stratification. A well oxygenated water column can reduce the risk of algae blooms by reducing the potential for phosphorus release from bottom sediments.

Dissolved oxygen concentrations within Cedar Meadow Lake ranged from a low of 5.63 mg/L (during the post-treatment monitoring event) to a high of 8.44 mg/L (during the pre-treatment monitoring event). These dissolved oxygen levels are within the range of expected values for small, shallow ponds and are sufficient for supporting aquatic life. Specific conductance values observed at Cedar Meadow Lake, which are related to the concentration of dissolved solids in water, were within the expected range of values for freshwater lakes in Massachusetts.

**Table 2. Water Quality Vertical Profiles at Cedar Meadow Lake During the 2022 Pre-treatment and Post-treatment Sampling Events**

| Depth (m) | Temperature (°C) | | Dissolved Oxygen (mg/L) | | Dissolved Oxygen (%) | | Specific Conductance (µS/cm) | |
|---|---|---|---|---|---|---|---|---|
| | Pre | Post | Pre | Post | Pre | Post | Pre | Post |
| 0.5 | 21.8 | 24.9 | 8.11 | 6.05 | 94.0 | 73.1 | 153.1 | 167.7 |
| 1.0 | 20.9 | 24.9 | 8.17 | 5.80 | 92.9 | 70.1 | 152.7 | 167.6 |
| 1.5 | 20.9 | 24.9 | 8.40 | 5.72 | 95.2 | 69.2 | 152.3 | 167.6 |
| 2.0 | 20.6 | 24.9 | 8.21 | 5.63 | 93.9 | 68.1 | 152.2 | 167.6 |
| 2.5 | 20.6 | 24.9 | 8.44 | 5.71 | 91.0 | 68.7 | 152.2 | 167.6 |

Turbidity, pH, water clarity (Secchi depth), and apparent color were measured at the surface and bottom of the deepest part of the lake (Table 3). Surface and bottom water samples were collected and submitted to Phoenix Environmental Laboratories of Manchester, Connecticut for analysis of true color, dissolved organic carbon, nitrogen, and phosphorus (Table 3). An integrated depth sample was also collected during each sampling event and submitted to Aquatic Analysts of Friday Harbor, Washington for algal identification and enumeration (Table 4).

**Table 3. Surface Water Quality Parameters at Cedar Meadow Lake During the 2022 Pre-treatment and Post-treatment Sampling Events**

| Parameter | Units | Pre-Treatment | | Post-Treatment | |
|---|---|---|---|---|---|
| | | Surface | Bottom | Surface | Bottom |
| Turbidity | NTU | 1.60 | 1.62 | 0.95 | 0.79 |
| pH | SU | 7.34 | 7.25 | 6.69 | 6.90 |
| Secchi Depth | m | Bottom | - | 2.25 | - |
| Total Depth | m | 9.7 | - | 8.8 | - |
| Total Phosphorus | mg/L | 0.016 | 0.022 | 0.017 | 0.021 |

Total phosphorus concentrations are a key water quality parameter because phosphorus is the primary nutrient that fuels growth of aquatic plants and algae. Total phosphorus concentrations in surface water over 0.025 mg/L are of concern, as algae blooms tend to occur more frequently when concentrations are above this threshold. Total phosphorus concentrations in Cedar Meadow Lake remained below this threshold. Turbidity values in the lake were generally low, and pH values were circumneutral, which aligns with expectations.

Total algal density was quite low in the sample collected from Cedar Meadow Lake on May 24, 2022, at just 414 individuals/mL. Multiple types of algae were observed in the sample, including cryptophytes, green algae, bluegreen algae, chrysophytes, and diatoms. The only blue green algae species observed, *Anabaena flos-aquae* was found very low density (347 cells/mL), far below the 70,000 cells/mL public health advisory threshold used by the Massachusetts Department of Public Health. Total algal density was slightly higher, but still low, in the sample collected on August 16, at 555 individuals/mL. Similar to the pre-treatment sample, a variety of species and groups of algae were present in the sample, including cryptophytes, green algae, euglenoids, dinoflagellates, diatoms, and bluegreen algae. Two species of cyanobacteria were present in the sample, but only one, *Aphanizomenon flos-aquae*, was present at high enough densities for cell/mL determination. The total density of this species was very low, at just 59 cells/mL.

## 4.0 Management Recommendations

Though the Clipper treatment conducted in June of 2022 resulted in some local decreases in fanwort density, overall fanwort cover in the lake increased between the May pre-treatment survey and the August Post-treatment survey. Though disappointing, these results are not surprising, as fanwort is established throughout the waterbody. Contact herbicides like Clipper cause rapid die-back of exposed plant structures, but do not impact roots. Therefore, eventual regrowth is expected, and treated areas are also available for recolonization by invasive plants if nearby beds exist. Coverage of variable-leaf milfoil beds did decrease following spot-treatment in June. However, the results of the 2022 mapping events indicate that fanwort is likely outcompeting and displacing variable-leaf milfoil in Cedar Meadow Lake.

To provide control of fanwort and variable-leaf milfoil within Cedar Meadow Lake, we recommend a whole-lake application of the systemic herbicide fluridone (trade name Sonar) in 2023. Sonar acts as a carotenoid biosynthesis inhibitor, effectively leading to the depletion of chlorophyll. This

results in chlorosis (bleaching) and the eventual starvation of the entire plant, including root structures. Sonar concentrations must be maintained at treatment levels (5 to 20 ppb) for at least 6 to 8 weeks to achieve effective treatment. A 2023 Sonar treatment would involve the application of liquid and slow-release formulations of the herbicide in May, with two follow up evaluations and maintenance applications during the summer. Such a program, including management of the herbicide applicator and acquisition of a Massachusetts license to apply herbicides, would cost approximately $60,000.

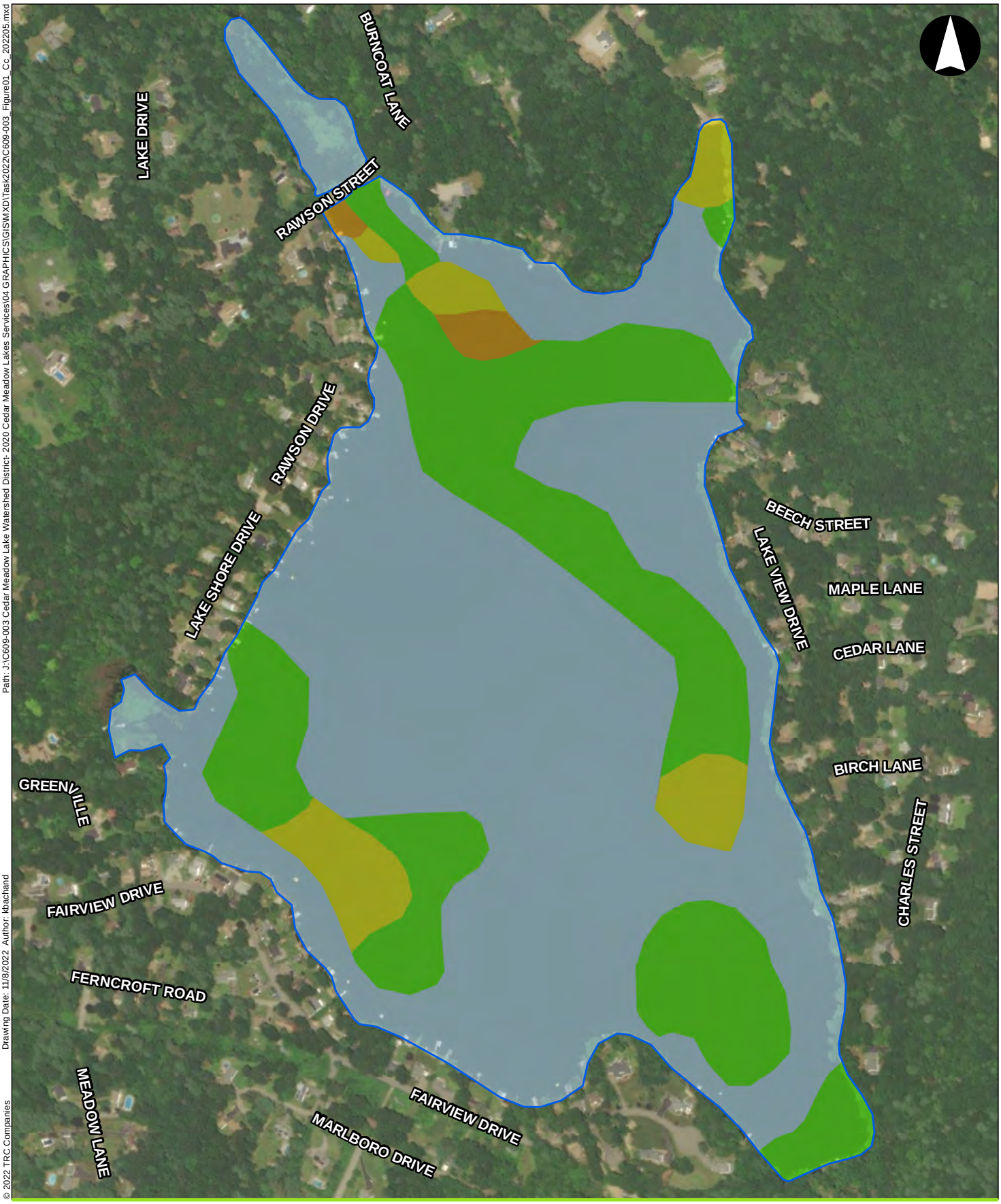
A whole-lake Sonar treatment is expected to provide excellent control of existing infestations through the 2023 season. However, plant fragments entering the pond following the 2023 season (plants arriving in the pond after Sonar levels drop below treatment concentrations) would survive. Limited regrowth of invasives, necessitating spot treatment with contact herbicides (Clipper for fanwort, Reward for variable-leaf milfoil), is to be expected following whole-lake treatment, especially around inlets where herbicide concentrations are harder to maintain. Variable-leaf milfoil is known to be present upstream of Cedar Meadow Lake in Burncoat Pond. However, it is unclear if fanwort is established in upstream waterbodies. Recolonization of variable-leaf milfoil (and potentially fanwort) in Cedar Meadow Lake would be accelerated due to the transport of fragments from upstream.

Alternatively, if whole-lake Sonar treatment is not possible, spot-treatments using contact herbicides could be used to decrease the density of invasive plants in defined areas. The use of contact herbicides in this way would be temporary but could be used to limit invasive plant densities in certain recreationally or aesthetically important areas. However, note that Clipper cannot be applied to the same area more than once every three years. The cost of contact herbicide spot-treatments would depend upon the area targeted, and the species present

TRC recommends that the District conduct two aquatic plant monitoring events during each growing season. Data from early season/pre-treatment surveys and late season/post-treatment surveys are necessary to track trends and changes in the plant community, direct herbicide application, and evaluate the effectiveness of management actions. Surveys can also identify pioneer infestations of new invasive species (water chestnut, *Trapa natans*, was observed and removed by ESS in 2020).

We appreciate the opportunity to continue to provide the Cedar Meadow Lake Watershed District with professional lake management and environmental consulting services. Please contact me at (781) 419-7716 or achase@trccompanies.com if you have any questions.

# Figures





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**Cedar Meadow Lake 2022**
Leicester, Massachusetts

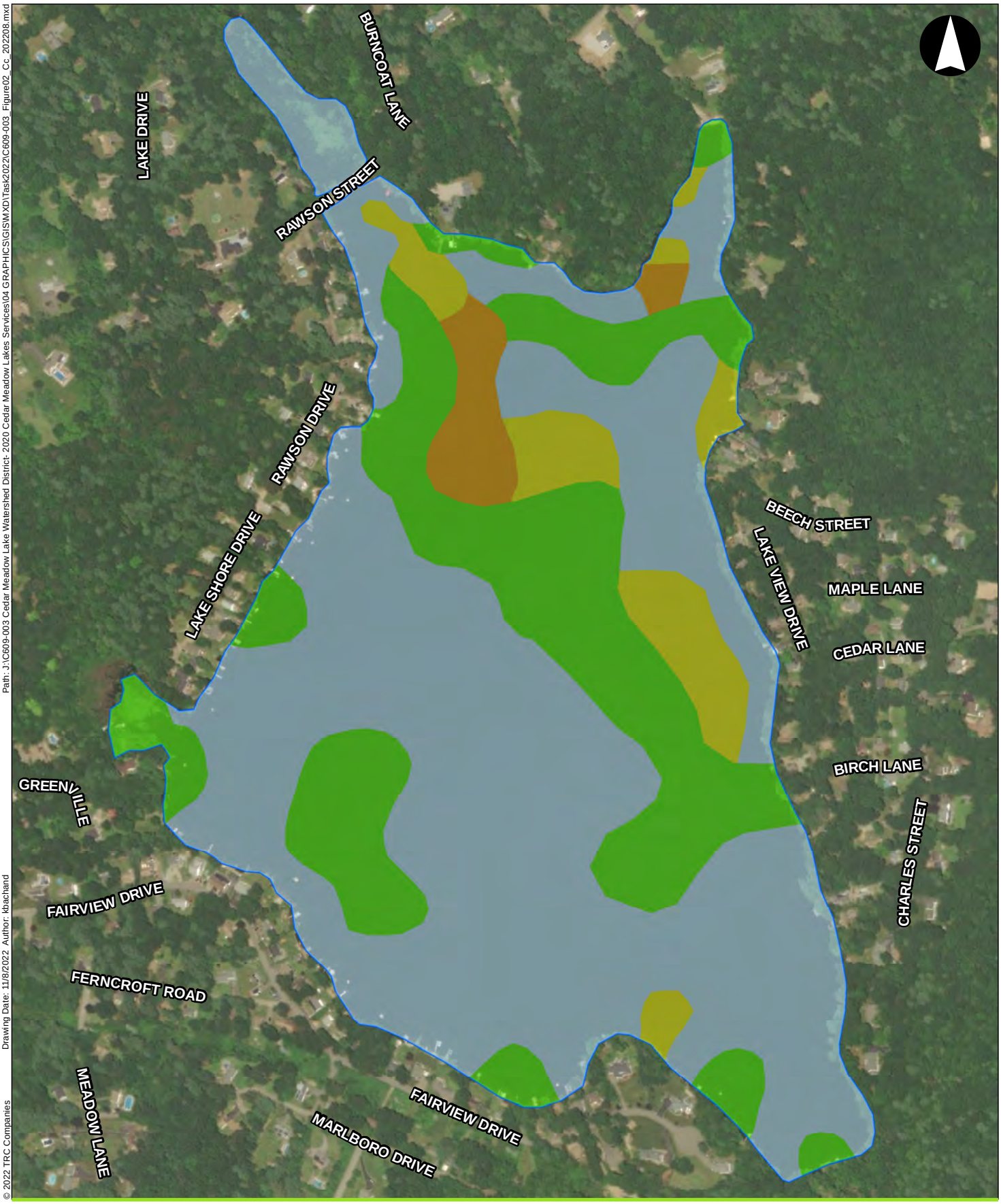
**Fanwort Cover**
**May 24, 2022**

**Fanwort Cover**
- 0% (96.4 Acres)
- 1% - 25% (39.3 Acres)
- 26% - 50% (8.4 Acres)
- 51% - 75% (1.5 Acres)
- 76% - 100% (0 acres)

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Figure 1**






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task\2022\C609-003_Figure02_Cc_202208.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Fanwort Cover**
**August 16, 2022**

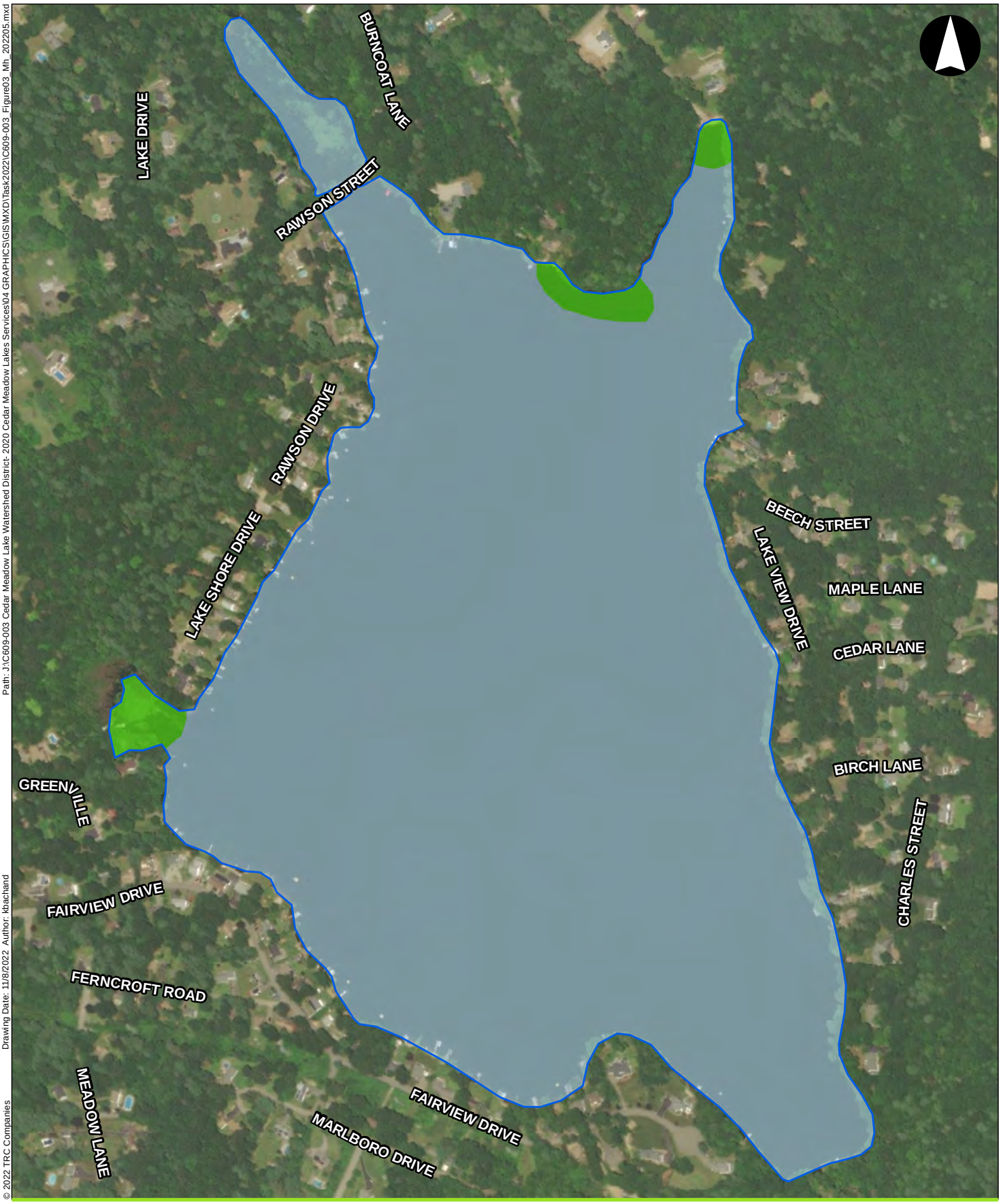
**Fanwort**

- 0% (89.8 acres)
- 1% - 25% (40.5 acres)
- 26% - 50% (10.4 acres)
- 51% - 75% (4.77 acres)
- 76% - 100% (0 acres)

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Figure 2**






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure03_Mh_202205.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Variable Leaf Milfoil Cover**
**May 24, 2022**

TRC

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Variable Leaf Milfoil (2022 ESS Survey)**

- 0% (142.5 Acres)
- 1% - 25% (3.0 Acres)
- 26% - 50% (0 acres)
- 51% - 75% (0 acres)
- 76% - 100% (0 acres)

**Figure 3**




Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure04_Mh_202208.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Variable Leaf Milfoil Cover**
**August 16, 2022**

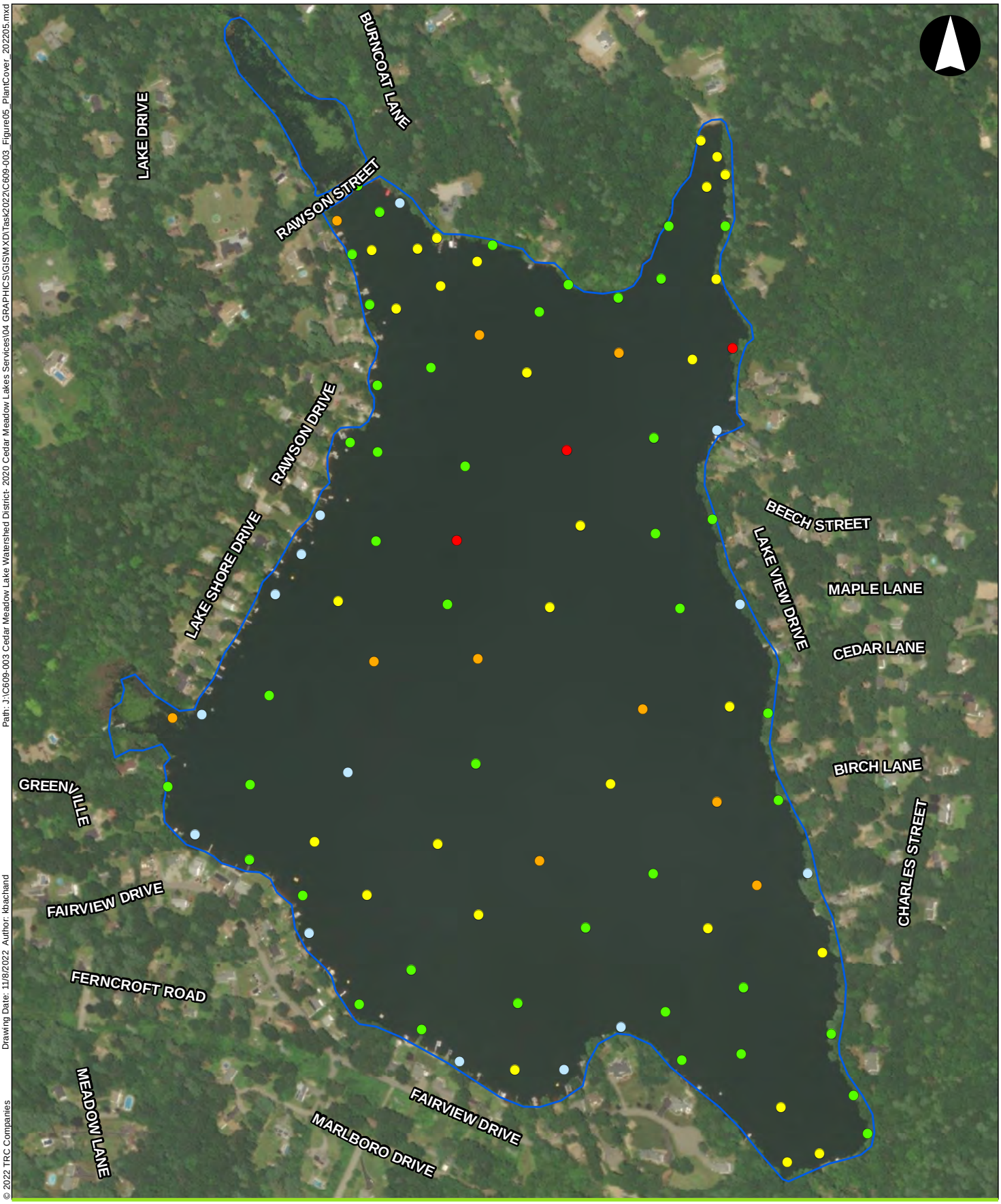
**Variable Leaf Milfoil**

- 0% (145.1 acres)
- 1% - 25% (0.4 acres)
- 26% - 50% (0 acres)
- 51% - 75% (0 acres)
- 76% - 100% (0 acres)

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Figure 4**






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure05_PlantCover_202205.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Plant Cover**
**May 24, 2022**

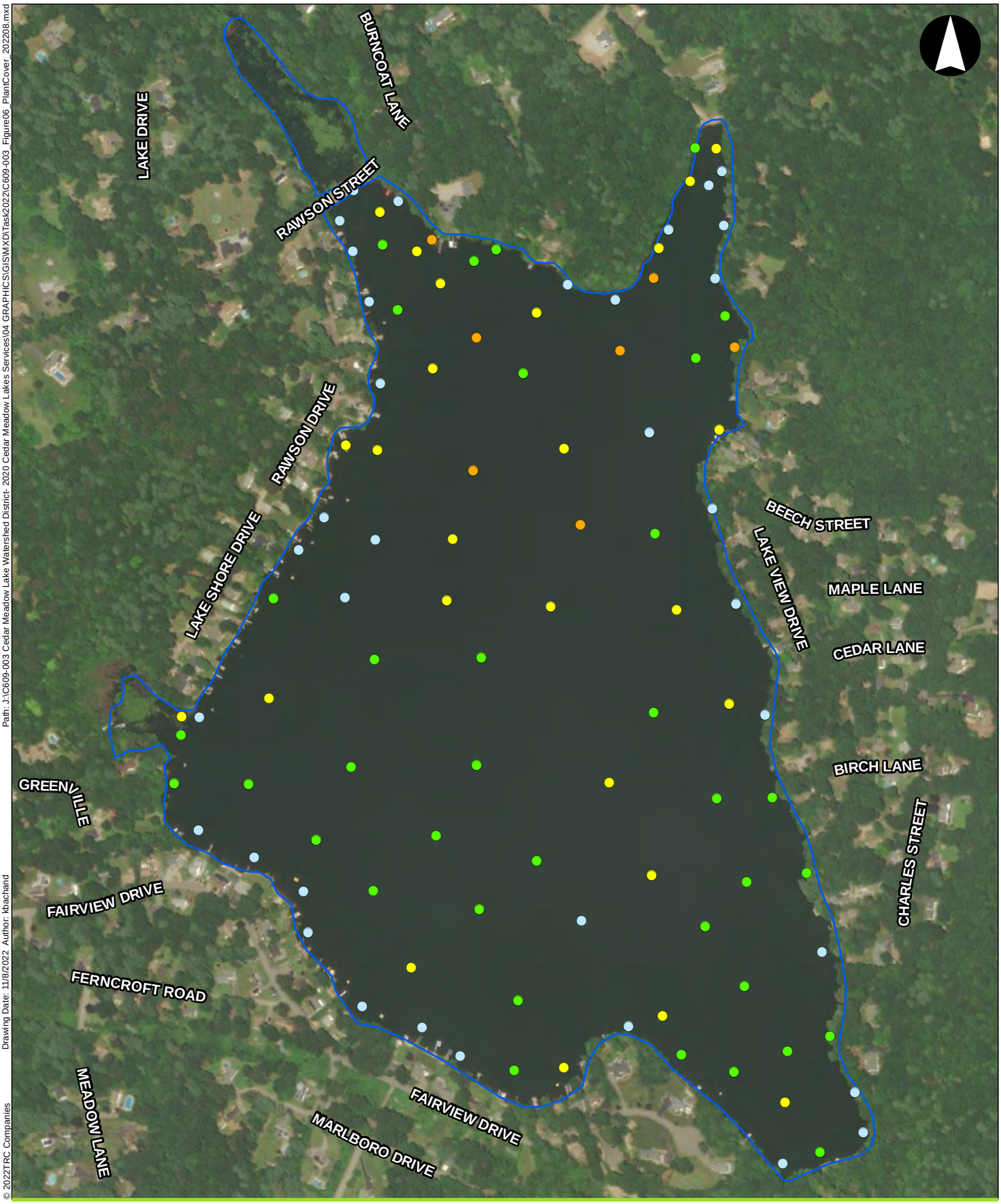
**Plant Cover**

- 0% (14 points)
- 1% - 25% (43 points)
- 26% - 50% (28 points)
- 51% - 75% (10 points)
- 76% - 100% (3 points)

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

0 250 500 Feet

**Figure 5**






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure06_PlantCover_202208.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Plant Cover**
**August 16, 2022**

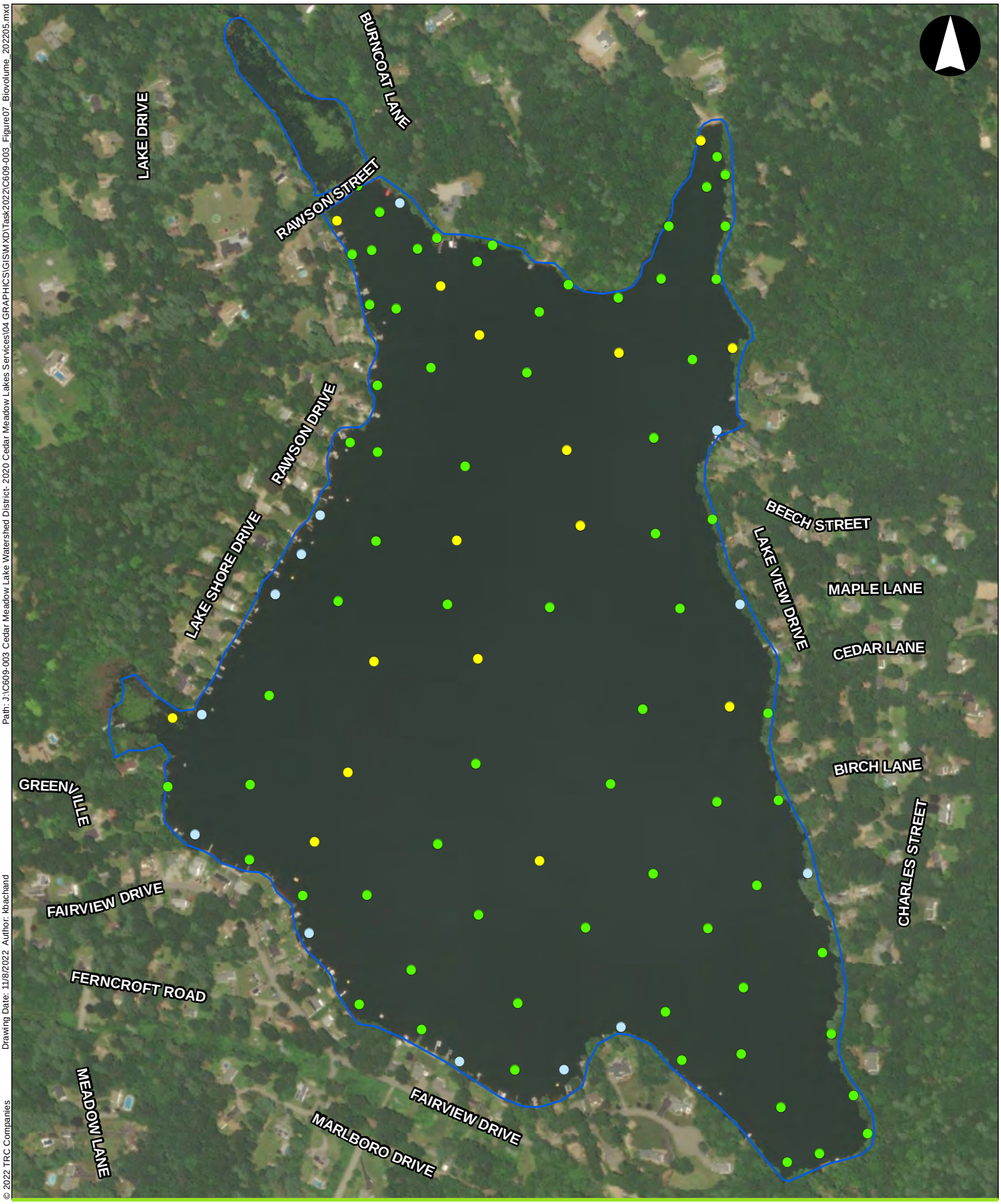
**Plant Cover**

- 0% (35 points)
- 1% - 25% (36 points)
- 26% - 50% (25 points)
- 51% - 75% (7 points)
- 76% - 100% (0 points)

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

0 250 500 Feet

**Figure 6**






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure07_Biovolume_202205.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Plant Biovolume**
**May 24, 2022**

**Figure 7**

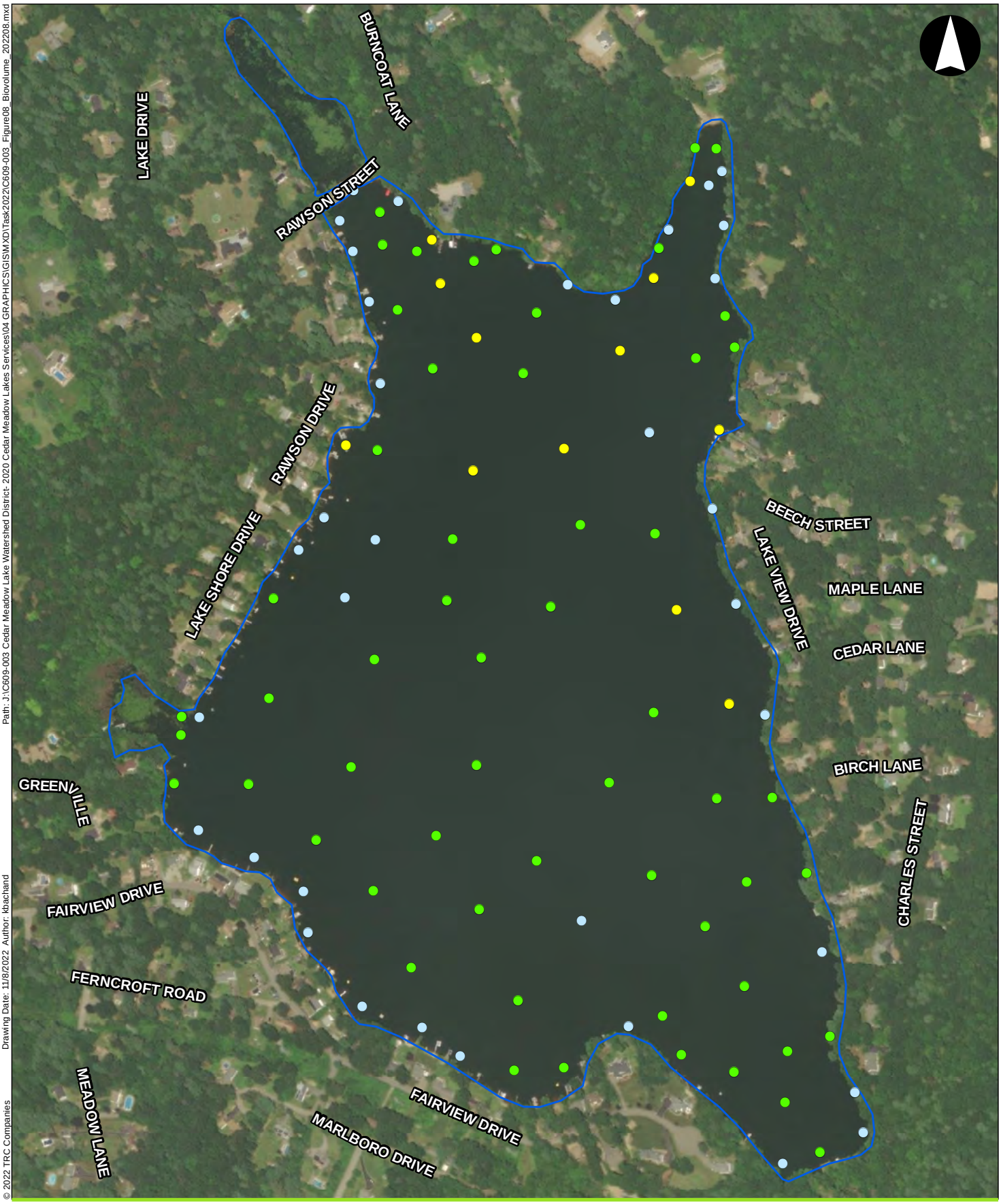
TRC

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Plant Biovolume**

- 0% (13 points)
- 1% - 25% (69 points)
- 26% - 50% (16 points)
- 51% - 75% (0 points)
- 76% - 100% (0 points)






Drawing Date: 11/8/2022 Author: kbachand

Path: J:\C609-003 Cedar Meadow Lake Watershed District- 2020 Cedar Meadow Lakes Services\04 GRAPHICS\GIS\MXD\Task2022\C609-003_Figure08_Biovolume_202208.mxd

**Cedar Meadow Lake 2022**
Leicester, Massachusetts

**Plant Biovolume**
**August 16, 2022**

**Figure 8**

TRC

0 250 500 Feet

Source:
1) GPS data, ESS 2022
2) ESRI World Imagery, 2021

**Plant Biovolume**

- 0% (35 points)
- 1% - 25% (56 points)
- 26% - 50% (12 points)
- 51% - 75% (0 points)
- 76% - 100% (0 points)

# Appendix A: Laboratory Reports

PHOENIX
Environmental Laboratories, Inc.

**Tuesday, May 31, 2022**

**Attn: Mr Matt Ladewig**
**ESS Group Inc. A TRC Company**
**10 Hemingway Drive 2nd Floor**
**Riverside, RI 02915-2224**

**Project ID:** **CEDAR MEADOW LAKE**
**SDG ID:** **GCL38039**
**Sample ID#s:** **CL38039 - CL38040**

**This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.**

**This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.**

**A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.**

**If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.**

**Sincerely yours,**

**Phyllis Shiller**
**Laboratory Director**

**NELAC - #NY11301**
**CT Lab Registration #PH-0618**
**MA Lab Registration #M-CT007**
**ME Lab Registration #CT-007**
**NH Lab Registration #213693-A,B**
**NJ Lab Registration #CT-003**
**NY Lab Registration #11301**
**PA Lab Registration #68-03530**
**RI Lab Registration #63**
**UT Lab Registration #CT00007**
**VT Lab Registration #VT11301**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Sample Id Cross Reference

May 31, 2022

SDG I.D.: GCL38039

Project ID: CEDAR MEADOW LAKE

| Client Id | Lab Id | Matrix |
|---|---|---|
| CML-S | CL38039 | SURFACE WATER |
| CML-B | CL38040 | SURFACE WATER |

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

May 31, 2022

FOR: Attn: Mr Matt Ladewig
ESS Group Inc. A TRC Company
10 Hemingway Drive 2nd Floor
Riverside, RI 02915-2224

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SURFACE WATER | Collected by: | | 05/24/22 | 13:10 |
| Location Code: | ESSGRPRI | Received by: | B | 05/25/22 | 15:48 |
| Rush Request: | Standard | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GCL38039
Phoenix ID: CL38039

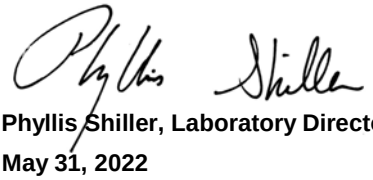
Project ID: CEDAR MEADOW LAKE
Client ID: CML-S

| Parameter | Result | RL/ PQL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|
| Phosphorus, as P | 0.016 | 0.003 | mg/L | 0.5 | 05/26/22 | MI | SM4500PE-11 |

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

**Comments:**

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**
**May 31, 2022**
**Reviewed and Released by: Rashmi Makol, Project Manager**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

May 31, 2022

FOR: Attn: Mr Matt Ladewig
ESS Group Inc. A TRC Company
10 Hemingway Drive 2nd Floor
Riverside, RI 02915-2224

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SURFACE WATER | Collected by: | | 05/24/22 | 13:00 |
| Location Code: | ESSGRPRI | Received by: | B | 05/25/22 | 15:48 |
| Rush Request: | Standard | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GCL38039
Phoenix ID: CL38040

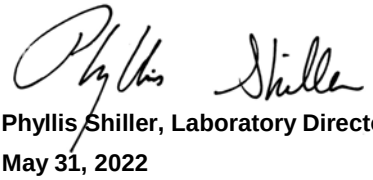
Project ID: CEDAR MEADOW LAKE
Client ID: CML-B

| Parameter | Result | RL/ PQL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|
| Phosphorus, as P | 0.022 | 0.003 | mg/L | 0.5 | 05/26/22 | MI | SM4500PE-11 |

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

**Comments:**

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



**Phyllis Shiller, Laboratory Director**
**May 31, 2022**
**Reviewed and Released by: Rashmi Makol, Project Manager**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# QA/QC Report

May 31, 2022

## QA/QC Data

SDG I.D.: GCL38039

| Parameter | Blank | Blk RL | Sample Result | Dup Result | Dup RPD | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA/QC Batch 626511 (mg/L), QC Sample No: CL38054 (CL38039, CL38040) | | | | | | | | | | | | | |
| Phosphorus, as P | BRL | 0.01 | 0.021 | 0.018 | NC | 103 | | | 100 | | | 85 - 115 | 20 |

Comment:

Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
May 31, 2022

Tuesday, May 31, 2022

Criteria: None

State: MA

# Sample Criteria Exceedances Report

## GCL38039 - ESSGRPRI

| SampNo | Acode | Phoenix Analyte | Criteria | Result | RL | Criteria | RL Criteria | Analysis Units |
|---|---|---|---|---|---|---|---|---|

*** No Data to Display ***

**Environmental Laboratories, Inc.**
**587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045**
**Tel. (860) 645-1102 Fax (860) 645-0823**

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Comments

May 31, 2022 SDG I.D.: GCL38039

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Cooler: Yes [x] No [ ]
Coolant: IPK [x] ICE [ ] No [ ]

# PHOENIX
Environmental Laboratories, Inc.

## CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
**Client Services (860) 645-8726**

Temp 1.8 °C Pg of

**Data Delivery/Contact Options:**
[ ] Fax:
[ ] Phone:
[x] Email: achase@trcompanies.com

Customer: ESS Group ~~Inc~~ LLC - TRC
Address: 10 Hemingway Dr 2nd Floor
East Providence, RI
02915

Project: Cedar Meadow Lake
Report to: Anna Chase
Invoice to: Barbara Cabral
QUOTE #

Project P.O:

***This section MUST be completed with Bottle Quantities.***

**Client Sample - Information - Identification**

Sampler's Signature _____ Date: _____

**Matrix Code:**
**DW**=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
**RW**=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
**B**=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request

| PHOENIX USE ONLY SAMPLE # | Customer Sample Identification | Sample Matrix | Date Sampled | Time Sampled | total phosphorus | MS/MSD* | GL Amber 8 oz. w/H3PO4 | Soil VOA Vials [ ] methanol [ ] H2O | GL Soil container ( ) oz | GL Soil container ( ) oz | 40 ml VOA Vial [ ] As is [ ] HCL | GL Amber 1000ml [ ] As is [ ] H2SO4 | PL As is [ ] 250ml [ ] 500ml [ ] 1000ml | PL H2SO4 [x] 250ml [ ] 500ml | PL HNO3 250ml | PL NaOH 250ml | Bacteria Bottle w/thio | Bacteria Bottle as is |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ~~CML-S~~ | | | | | | | | | | | | | | | | | |
| | ~~CML-S~~ | | | | | | | | | | | | | | | | | |
| | ~~CML-B~~ | | | | | | | | | | | | | | | | | |
| 38039 | CML-S | ~~SW~~ | 5-24-22 | 1316 | X | | | | | | | | 1 | | | | | |
| 38040 | CML-B | ~~SW~~ | 5-24-22 | 1300 | X | | | | | | | | 1 | | | | | |

| Relinquished by: | Accepted by: | Date: | Time: |
|---|---|---|---|
| | | | |
| | | 5-25-22 | 9:45 |
| | | 5/25 | 1548 |

**Comments, Special Requirements or Regulations:**
low detect on phos 0.01 mg/L or better

**MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.*

**Turnaround Time:**
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[x] Standard
[ ] Other
* SURCHARGE APPLIES

**RI**
[ ] (Residential) Direct Exposure
[ ] (Comm/Industrial) Direct Exposure
[ ] GA Leachability
[ ] GB Leachability
[ ] GA-GW Objectives
[ ] GB-GW Objectives

**CT**
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

**MA**
[ ] MCP Certification
[ ] GW-1 [ ] MWRA eSMART
[ ] GW-2 [ ] S-1 10% CALC
[ ] GW-3
[ ] S-1 GW-1 [ ] S-1 GW-2 [ ] S-1 GW-3
[ ] S-2 GW-1 [ ] S-2 GW-2 [ ] S-2 GW-3
[ ] S-3 GW-1 [ ] S-3 GW-2 [ ] S-3 GW-3
[ ] SW Protection

**State where samples were collected:** MA

**Data Format**
[x] Excel
[x] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

**Data Package**
[ ] Tier II Checklist
[ ] Full Data Package*
[x] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

PHOENIX
Environmental Laboratories, Inc.

**Friday, August 19, 2022**

**Attn: Anna Chase**
**ESS Group Inc. A TRC Company**
**10 Hemingway Drive 2nd Floor**
**Riverside, RI 02915-2224**

**Project ID:** **CEDAR MEADOW LAKE 016108.000B.0000**
**SDG ID:** **GCM07215**
**Sample ID#s: CM07215 - CM07216**

**This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.**

**This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.**

**A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.**

**If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.**

**Sincerely yours,**

**Phyllis Shiller**
**Laboratory Director**

**NELAC - #NY11301**
**CT Lab Registration #PH-0618**
**MA Lab Registration #M-CT007**
**ME Lab Registration #CT-007**
**NH Lab Registration #213693-A,B**
**NJ Lab Registration #CT-003**
**NY Lab Registration #11301**
**PA Lab Registration #68-03530**
**RI Lab Registration #63**
**VT Lab Registration #VT11301**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Sample Id Cross Reference

August 19, 2022

SDG I.D.: GCM07215

Project ID: CEDAR MEADOW LAKE 016108.000B.0000

| Client Id | Lab Id | Matrix |
|---|---|---|
| CML-S | CM07215 | SURFACE WATER |
| CML-B | CM07216 | SURFACE WATER |

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

August 19, 2022

FOR: Attn: Anna Chase
ESS Group Inc. A TRC Company
10 Hemingway Drive 2nd Floor
Riverside, RI 02915-2224

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SURFACE WATER | Collected by: | | 08/16/22 | 13:30 |
| Location Code: | ESSGRPRI | Received by: | CP | 08/17/22 | 15:45 |
| Rush Request: | Standard | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GCM07215
Phoenix ID: CM07215

Project ID: CEDAR MEADOW LAKE 016108.000B.0000
Client ID: CML-S

| Parameter | Result | RL/ PQL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|
| Phosphorus, as P | 0.017 | 0.003 | mg/L | 0.5 | 08/18/22 | JR | SM4500PE-11 |

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

**Comments:**

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

**Phyllis Shiller, Laboratory Director**
**August 19, 2022**
**Reviewed and Released by: Anil Makol, Project Manager**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Analysis Report

August 19, 2022

FOR: Attn: Anna Chase
ESS Group Inc. A TRC Company
10 Hemingway Drive 2nd Floor
Riverside, RI 02915-2224

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SURFACE WATER | Collected by: | | 08/16/22 | 13:35 |
| Location Code: | ESSGRPRI | Received by: | CP | 08/17/22 | 15:45 |
| Rush Request: | Standard | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GCM07215
Phoenix ID: CM07216

Project ID: CEDAR MEADOW LAKE 016108.000B.0000
Client ID: CML-B

| Parameter | Result | RL/ PQL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|
| Phosphorus, as P | 0.021 | 0.003 | mg/L | 0.5 | 08/18/22 | JR | SM4500PE-11 |

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

**Comments:**

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

**Phyllis Shiller, Laboratory Director**
**August 19, 2022**
**Reviewed and Released by: Anil Makol, Project Manager**

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# QA/QC Report

August 19, 2022

## QA/QC Data

SDG I.D.: GCM07215

| Parameter | Blank | Blk RL | Sample Result | Dup Result | Dup RPD | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA/QC Batch 638052 (mg/L), QC Sample No: CM07012 (CM07215, CM07216) | | | | | | | | | | | | | |
| Phosphorus, as P | BRL | 0.01 | 8.09 | 8.24 | 1.80 | 99.8 | | | 91.3 | | | 85 - 115 | 20 |

Comment:

Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
August 19, 2022

Friday, August 19, 2022

Criteria: None

State: MA

# Sample Criteria Exceedances Report

## GCM07215 - ESSGRPRI

| SampNo | Acode | Phoenix Analyte | Criteria | Result | RL | Criteria | RL Criteria | Analysis Units |
|---|---|---|---|---|---|---|---|---|

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

**Environmental Laboratories, Inc.**
**587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045**
**Tel. (860) 645-1102 Fax (860) 645-0823**

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Comments

August 19, 2022 SDG I.D.: GCM07215

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Cooler: Yes [X] No [ ]
Coolant: IPK [X] ICE [ ] No [ ]

# PHOENIX
*Environmental Laboratories, Inc.*

## CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email Makrina Nolan: makrina@phoenixlabs.com Fax (860) 645-0823
**Client Services (860) 645-1102**

Temp 2.3 °C Pg of

**Data Delivery/Contact Options:**
[ ] Fax:
[ ] Phone:
[✓] Email: achase@trccompanies.com

Customer: ESS Group/TRC Companies
Address: 10 Hemingway Drive
East Providence, RI 02915

Project: Cedar Meadow Lake #016108.0000.0000 Phase 3 (Proj.)
Report to: achase@trccompanies.com
Invoice to: bcabral@trccompanies.com
QUOTE #
Project P.O:

**This section MUST be completed with Bottle Quantities.**

Sampler's Signature: Joseph Butler Date: 8/16/2022

**Client Sample - Information - Identification**

Analysis Request

**Matrix Code:**
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = SW (Other)

| PHOENIX USE ONLY SAMPLE # | Customer Sample Identification | Sample Matrix | Date Sampled | Time Sampled | Total Phosphorus | MS/MSD* | GL Amber 8 oz. [ ] H3PO4 [ ] NAHSO4 | Soil VOA Vials [ ] methanol [ ] H2O | GL Soil container ( ) oz | GL Soil container ( ) oz | 40 ml VOA Vial [ ] As is [ ] HCl | GL Amber 1000ml [ ] As is [ ] H2SO4 | PL As is [ ] 250ml [ ] 500ml [ ] 1000ml | PL H2SO4 [ ] 250ml [ ] 500ml | PL HNO3 250ml | PL NaOH 250ml | Bacteria Bottle w/thio | Bacteria Bottle as is |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 07215 | CML-S | SW | 8/16/22 | 1330 | X | | | | | | | | 1 | | | | | |
| 07216 | CML-B | SW | 8/16/22 | 1335 | X | | | | | | | | 1 | | | | | |

| Relinquished by: | Accepted by: | Date: | Time: |
|---|---|---|---|
| Joseph Butler | | 8/17/22 | 935 |
| | | 8/17 | 1545 |

**Comments, Special Requirements or Regulations:**

*MS/MSD are considered site samples and will be billed as such in accordance with the prices quoted.

**Turnaround Time:**
[ ] 1 Day*
[ ] 2 Days*
[✓] 3 Days*
[ ] Standard
[ ] Other
* SURCHARGE APPLIES

**RI**
[ ] (Residential) Direct Exposure
[ ] (Comm/Industrial) Direct Exposure
[ ] GA Leachability
[ ] GB Leachability
[ ] GA-GW Objectives
[ ] GB-GW Objectives

**CT**
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

**MA**
[ ] MCP Certification
[ ] GW-1 [ ] MWRA eSMART
[ ] GW-2 [ ] S-1 10% CALC
[ ] GW-3
[ ] S-1 GW-1 [ ] S-1 GW-2 [ ] S-1 GW-3
[ ] S-2 GW-1 [ ] S-2 GW-2 [ ] S-2 GW-3
[ ] S-3 GW-1 [ ] S-3 GW-2 [ ] S-3 GW-3
[ ] SW Protection

**State where samples were collected:** MA

**Data Format**
[✓] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[ ] Other

**Data Package**
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

PEL-126 REV. 03/22

## Phytoplankton Sample Analysis

**Sample:** Cedar Meadows
**Sample Site:** CML-S
**Sample Depth:**
**Sample Date:** 24-May-22

**Total Density (#/mL):** 414
**Total Biovolume ($um^3$/mL):** 82,691
**Trophic State Index:** 31.9

| | Species | Density #/mL | Density Percent | Biovolume $um^3$/mL | Biovolume Percent |
|---|---|---|---|---|---|
| 1 | Rhodomonas minuta | 198 | 47.7 | 3,951 | 4.8 |
| 2 | Sphaerocystis schroeteri | 34 | 8.1 | 7,437 | 9.0 |
| 3 | Anabaena flos-aquae | 29 | 7.0 | 23,244 | 28.1 |
| 4 | Cryptomonas erosa | 29 | 7.0 | 15,033 | 18.2 |
| 5 | Mallomonas sp. | 29 | 7.0 | 10,986 | 13.3 |
| 6 | Kephyrion spirale | 29 | 7.0 | 1,821 | 2.2 |
| 7 | Kephyrion littorale | 14 | 3.5 | 1,373 | 1.7 |
| 8 | Achnanthes minutissima | 10 | 2.3 | 482 | 0.6 |
| 9 | Tabellaria fenestrata | 5 | 1.2 | 11,564 | 14.0 |
| 10 | Synedra radians | 5 | 1.2 | 1,735 | 2.1 |
| 11 | Nitzschia frustulum | 5 | 1.2 | 578 | 0.7 |
| 12 | Kephyrion sp. | 5 | 1.2 | 304 | 0.4 |
| 13 | Ankistrodesmus falcatus | 5 | 1.2 | 482 | 0.6 |
| 14 | Chrysococcus rufescens | 5 | 1.2 | 410 | 0.5 |
| 15 | Chlamydomonas sp. | 5 | 1.2 | 1,566 | 1.9 |
| 16 | Nitzschia acicularis | 5 | 1.2 | 1,349 | 1.6 |
| 17 | Oocystis lacustris | 5 | 1.2 | 376 | 0.5 |

Anabaena flos-aquae cells/mL = 347

**Aquatic Analysts**

**Sample ID:** YK29

## Phytoplankton Sample Analysis

**Sample:** Cedar Meadows Pond
**Sample Site:** CML-S
**Sample Depth:**
**Sample Date:** 16-Aug-22 1330

**Total Density (#/mL):** 555
**Total Biovolume ($um^3$/mL):** 229,524
**Trophic State Index:** 39.3

| | Species | Density #/mL | Density Percent | Biovolume $um^3$/mL | Biovolume Percent |
|---|---|---|---|---|---|
| 1 | Cryptomonas erosa | 104 | 18.7 | 54,120 | 23.6 |
| 2 | Sphaerocystis schroeteri | 79 | 14.3 | 13,877 | 6.0 |
| 3 | Crucigenia quadrata | 59 | 10.7 | 6,066 | 2.6 |
| 4 | Trachelomonas volvocina | 45 | 8.0 | 84,079 | 36.6 |
| 5 | Glenodinium sp. | 40 | 7.1 | 27,754 | 12.1 |
| 6 | Rhodomonas minuta | 30 | 5.4 | 595 | 0.3 |
| 7 | Cyclotella stelligera | 30 | 5.4 | 1,635 | 0.7 |
| 8 | Oocystis pusilla | 25 | 4.5 | 2,275 | 1.0 |
| 9 | Chlamydomonas sp. | 25 | 4.5 | 8,054 | 3.5 |
| 10 | Crucigenia tetrapedia | 20 | 3.6 | 1,685 | 0.7 |
| 11 | Euglena sp. | 15 | 2.7 | 8,624 | 3.8 |
| 12 | Synedra radians | 15 | 2.7 | 5,353 | 2.3 |
| 13 | Dinobryon sertularia | 10 | 1.8 | 1,189 | 0.5 |
| 14 | Achnanthes minutissima | 10 | 1.8 | 496 | 0.2 |
| 15 | Aphanizomenon flos-aquae | 5 | 0.9 | 3,747 | 1.6 |
| 16 | Tetraedron regulare | 5 | 0.9 | 570 | 0.2 |
| 17 | Navicula graciloides | 5 | 0.9 | 2,156 | 0.9 |
| 18 | Scenedesmus denticulatus | 5 | 0.9 | 892 | 0.4 |
| 19 | Crucigenia crucifera | 5 | 0.9 | 843 | 0.4 |
| 20 | Mallomonas sp. | 5 | 0.9 | 1,883 | 0.8 |
| 21 | Scenedesmus quadricauda | 5 | 0.9 | 1,289 | 0.6 |
| 22 | Staurastrum dejectum | 5 | 0.9 | 1,982 | 0.9 |
| 23 | Chroococcus minimus | 5 | 0.9 | 139 | 0.1 |
| 24 | Schroederia sp. | 5 | 0.9 | 223 | 0.1 |

Aphanizomenon flos-aquae cells/mL = 59

**Aquatic Analysts**

**Sample ID:** ZM14

# Attachment B: 2024 Cedar Meadow Lake Late Season Aquatic Plant Monitoring Report

404 Wyman Street, Ste. 375
Waltham, MA 02451
T 781.419.7696
TRCcompanies.com

December 6, 2024

Tommy Lee
Cedar Meadow Lake Watershed District
P.O. Box 320
Leicester, MA 01524-0320

***Re: 2024 Late Season Aquatic Plant Monitoring Report***
***Leicester, MA***
***TRC Project No. 586968.0000.0000***

Dear Mr. Lee,

TRC is pleased to present the Cedar Meadow Lake Watershed District (the District) with this report summarizing results of the 2024 late season aquatic plant monitoring program and our corresponding management recommendations.

## Aquatic Plant Mapping Results

TRC conducted aquatic plant mapping in Cedar Meadow Lake on August 15, 2024. During this mapping event, a total of fifteen species of aquatic plants, including the invasive species fanwort (*Cabomba caroliniana*) and variable-leaf milfoil (*Myriophyllum heterophyllum*), were documented. This represents a slight decrease in overall species diversity compared to 2022 (when aquatic plant mapping was last undertaken), when sixteen species including fanwort and variable-leaf milfoil were observed. Brittle naiad (*Najas minor*) and water chestnut (*Trapa natans*), invasive species which were last reported in Cedar Meadow Lake in 2020, were not detected during the 2024 survey.

**Table 1. Aquatic Plant Species Documented at Cedar Meadow Lake in 2024**

| Common Name | Scientific Name |
|---|---|
| Watershield | *Brasenia schreberi* |
| **Fanwort** | ***Cabomba caroliniana*** |
| Waterwort | *Elatine spp.* |
| Spikerush | *Eleocharis spp.* |
| **Variable-leaf milfoil** | ***Myriophyllum heterophyllum*** |
| Bushy Naiad | *Najas flexilis* |
| Southern Naiad | *Najas guadalupensis* |
| Stonewort | *Nitella spp.* |
| Yellow Water Lily | *Nuphar lutea* |
| White Water Lily | *Nymphaea odorata* |
| Bigleaf Pondweed | *Potamogeton amplifolius* |
| Spiral Pondweed | *Potamogeton spirillus* |
| Common Bladderwort | *Utricularia vulgaris* |
| Purple Bladderwort | *Utricularia purpurea* |
| Water Celery | *Valisineria americana* |

**Bold** text indicates exotic species

### Fanwort (*Cabomba caroliniana*)

Fanwort was the most widespread and abundant aquatic plant species observed in Cedar Meadow Lake during the August 2024 mapping event. Approximately 102.3 acres of fanwort growth was documented throughout shoreline areas and deeper waters of the lake (Figure 1). Growth was most commonly sparse (1% - 25% cover, approximately 92.5 acres), though denser areas were also observed, primarily in northern and western cove and shoreline regions. Dense (51% - 75% cover) to very dense (76% - 100% cover) fanwort beds were confined to shallower areas of the lake, totaling approximately 5.78 acres.

*Dense fanwort growth in Cedar Meadow Lake during the August 2024 plant mapping event. Fanwort growth was observed throughout much of the lake.*

Fanwort coverage in Cedar Meadow Lake notably increased between August 2022 and August 2024. In 2022, a total of approximately 55.7 acres of fanwort growth was documented throughout the lake. The 102.3 acres of total fanwort growth observed in 2024 represents an increase of approximately 46.6 acres.

### Variable-leaf Milfoil (*Myriophyllum heterophyllum*)

Approximately 4.6 acres of variable-leaf milfoil growth was documented at Cedar Meadow Lake during the August 2024 mapping event (Figure 2). Variable-leaf milfoil was observed in numerous discontinuous patches, scattered along the lake shoreline or in shallow waters. Growth was primarily sparse (1% - 25% cover), though areas of higher density were also reported.

Total coverage of variable-leaf milfoil increased between August 2022 and August 2024 by approximately 1.6 acres. However, 2024 variable-leaf milfoil cover was markedly lower than was observed in 2021, when the species was present over approximately 11 acres of Cedar Meadow Lake. It is possible that expansion of variable-leaf milfoil is being limited due to competition with fanwort.

### Overall Plant Cover and Biovolume

Total aquatic plant cover, a measure of the two-dimensional extent of plant growth within the lake, was generally low (<50% cover) during the 2024 survey (Figure 3). Areas of higher density were most commonly associated with fanwort growth. However, dense beds of the native species purple bladderwort (*Utricularia purpurea)* and common bladderwort (*Utricularia vulgaris*) also accounted for some areas of high plant density during the August 2024 survey.

Very dense weed masses, composed primarily of common and purple bladderwort, but also containing fanwort and variable-leaf milfoil stems, were reported in an area along the eastern Cedar Meadow Lake shoreline by the District in May and June of 2024. Common and purple bladderwort are non-rooted species which can form dense aggregations due to wind and water movement. These masses may become a nuisance to lake users and impede recreational uses when present in shoreline areas. Dense

aggregations of native weeds were not observed along the eastern pond shoreline during TRC's August survey.

Aquatic plant biovolume, a measure of the three-dimensional extent of plant growth within the water column, was less than 50% at all but 15 sites (approximately 15% of survey locations) during the August 2024 survey (Figure 4). Areas of higher biovolume (plant material occupying greater than 50% of the water column) were almost exclusively associated with fanwort growth.

## Management Recommendations

Management of fanwort and variable-leaf milfoil in Cedar Meadow Lake was last conducted in June of 2022. At that time, the contact herbicide flumioxazin (trade name Clipper) was applied to a portion of fanwort growth (9.9 acres) within the pond, resulting in decreased fanwort density in treated areas. However, overall fanwort cover in the lake increased following the June 2022 treatment, as the species colonized new areas outside of treatment zones through the summer months. This trend of increasing overall fanwort density continued through 2024, when the species was observed growing in over 102 acres of the lake.

Approximately 3 acres of variable-leaf milfoil (all areas where the plant was identified during the pre-treatment survey) was treated with the contact herbicide diquat in June 2022. Variable-leaf milfoil was not observed in any of the treated areas during the 2022 post-treatment survey, but a small area of new growth (~0.4 acres) was documented. Though total variable-leaf milfoil coverage in Cedar Meadow Lake increased from 2022 to 2024, fanwort is currently far more abundant and is therefore of greater management concern.

To provide control of fanwort and variable-leaf milfoil within Cedar Meadow Lake, TRC recommends a whole-lake application of the systemic herbicide fluridone (trade name Sonar). Fluridone acts as a carotenoid biosynthesis inhibitor, effectively leading to the depletion of chlorophyll. This results in chlorosis (bleaching) and the eventual starvation of the entire plant, including root structures. Fluridone concentrations must be maintained at treatment levels (5 to 20 ppb) for at least 6 to 8 weeks to achieve effective control. Treatment would involve the application of liquid and slow-release formulations of fluridone in May, with follow up evaluations and maintenance applications throughout the summer.

*Variable-leaf milfoil growth, and scattered fanwort stems, in Cedar Meadow Lake during the August 2024 Mapping event.*

A whole-lake fluridone treatment would be expected to provide control of existing infestations during the treatment year. However, plant fragments entering the pond following the treatment (plants arriving in the pond after fluridone levels drop below treatment concentrations) would survive. Upstream sources of invasive species are of concern at Cedar Meadow Lake; variable-leaf milfoil is known to be present in Burncoat Pond, and it is unclear if fanwort is also established in upstream waterbodies. Recolonization of variable-leaf

milfoil (and potentially fanwort) in Cedar Meadow Lake would therefore be accelerated due to the transport of fragments from upstream waterbodies. In addition to reintroduction of fragments, limited regrowth of invasive species, especially around inlets where herbicide concentrations are harder to maintain, is to be expected following whole-lake treatment.

Invasive species regrowth observed following a whole-lake fluridone treatment could be addressed by spot treatment with contact herbicides (flumioxazin for fanwort, diquat for variable-leaf milfoil). Though contact herbicides cause rapid die-back of exposed plant structures, these treatments do not impact roots. Therefore, eventual regrowth is expected, and treated areas are also available for recolonization by invasive plants, if nearby sources exist.

The systemic herbicide florpyrauxifen-benzyl (trade name ProcellaCOR) could also be used for control of limited areas of variable-leaf milfoil regrowth. Florpyrauxifen-benzyl is a reduced risk systemic herbicide that disrupts growth processes by mimicking auxin (a key plant hormone). In milfoils, florpyrauxifen-benzyl is very effectively translocated throughout plant tissues, allowing for growth disruption and eventually death of the entire plant. Florpyrauxifen-benzyl is relatively selective and requires much less contact time than most other systemic herbicides (two applications are generally required throughout the growing season). Note that florpyrauxifen-benzyl is not effective for control of fanwort.

Alternatively, if whole-lake fluridone treatment is not possible, spot-treatments using contact herbicides could be used to decrease the density of invasive plants in defined areas. The use of contact herbicides in this way would only result in temporary control of invasive species growth, but this approach could be used to limit plant densities in certain recreationally or aesthetically important areas of the lake. Note that flumioxazin cannot be applied to the same area more than once every three years, so the development of a multi-year spot treatment plan would be recommended. Spot treatment with florpyrauxifen-benzyl could also be undertaken for control of variable-leaf milfoil. Due to the systemic nature of this herbicide, rapid regrowth in treated areas would not be expected. However, these areas could be readily recolonized by fragments from upstream waterbodies or other regions of the Lake.

TRC recommends that the District conduct aquatic plant monitoring during each growing season, ideally in both the early-season and the late season. Data collected during the early season/pre-treatment survey could be used to direct herbicide applications, and late season/post-treatment surveys would provide information to track trends and changes in the plant community and evaluate the effectiveness of management actions. Surveys can also identify pioneer infestations of new invasive species, allowing for rapid and cost-efficient management to prevent species establishment.

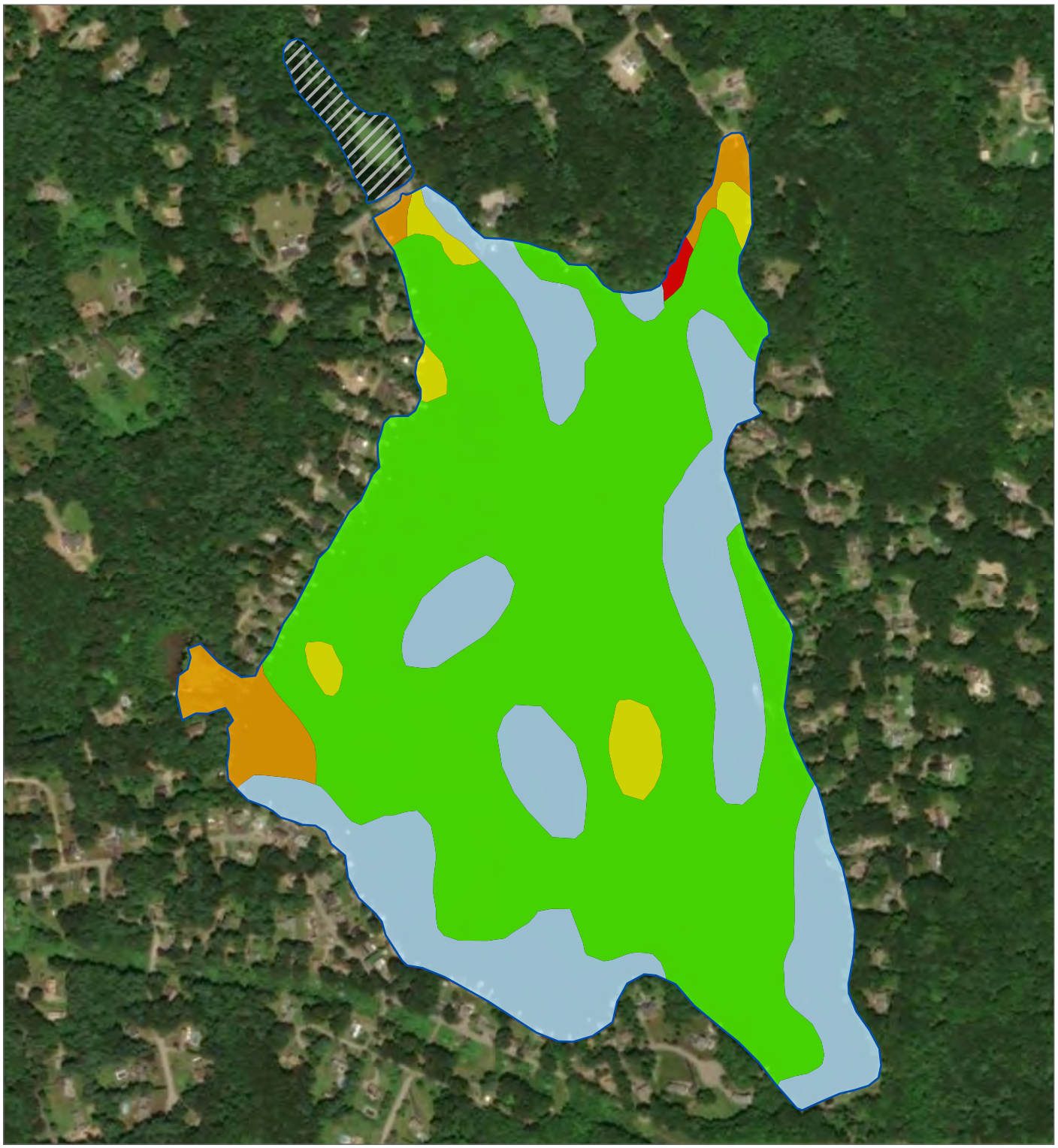
We appreciate the opportunity to continue to provide the Cedar Meadow Lake Watershed District with professional lake management and environmental consulting services. Please contact me at (781) 419-7716 or achase@trccompanies.com if you have any questions.

Sincerely,

**TRC Companies**

Anna L. Chase

Anna L. Chase
Project Manager



SHORELINE

FANWORT COVER

- 0% (40.0 ACRES)
- 1% - 25% (92.5 ACRES)
- 26% - 50% (4.04 ACRES)
- 51% - 75% (5.44 ACRES)
- 76% - 100% (0.35 ACRES)
- NOT SURVEYED (3.07 ACRES)

BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600

FEET

1:7,200 1" = 600'


PROJECT:
**CEDAR MEADOW LAKE 2024**
**LEICESTER, MASSACHUSETTS**

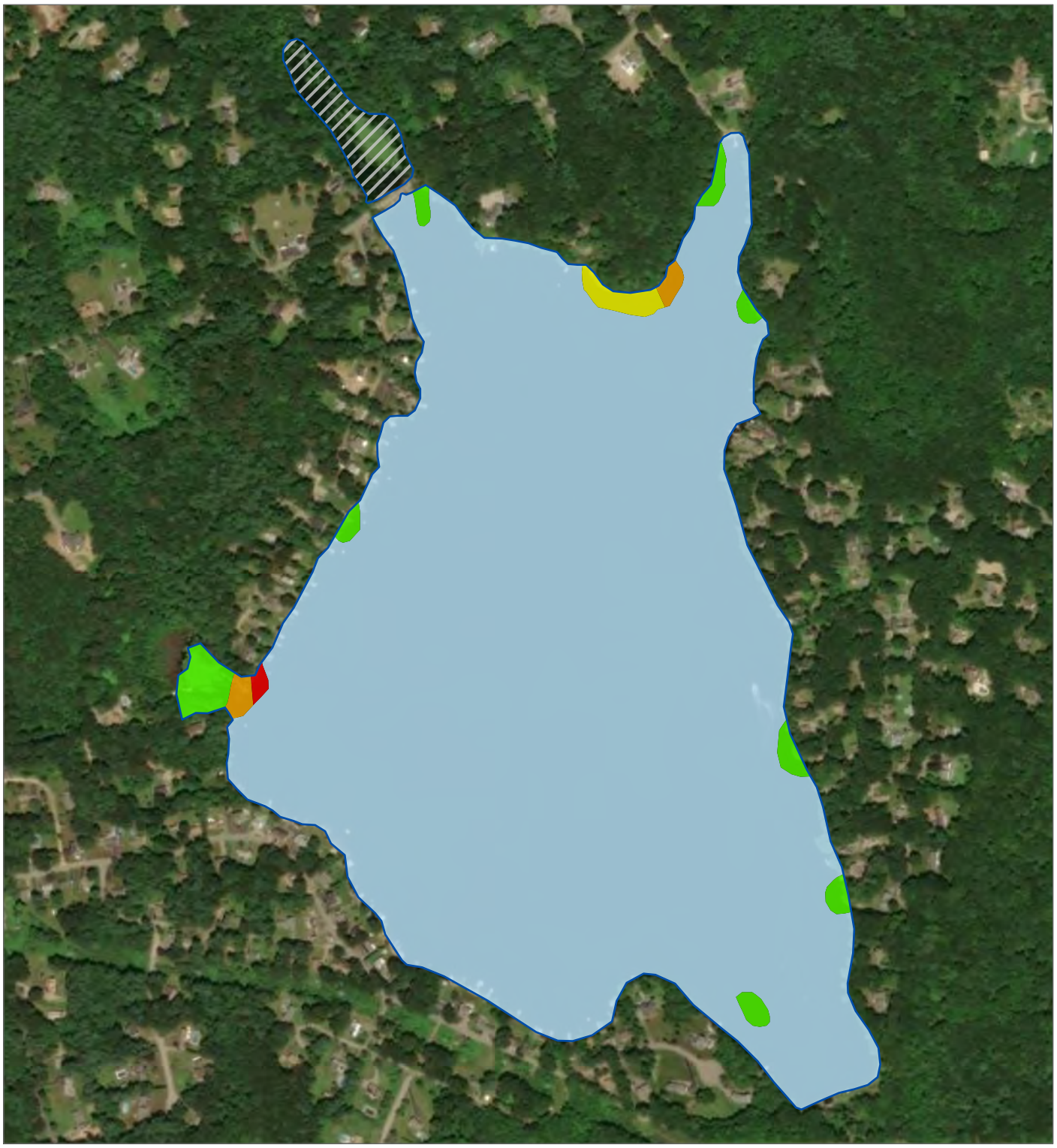
TITLE:
**FANWORT COVER**
**AUGUST 2024**

| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 1**


TRC
404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS



SHORELINE

VARIABLE-LEAF MILFOIL COVER

- 0% (137.8 ACRES)
- 1% - 25% (3.05 ACRES)
- 26% - 50% (0.75 ACRES)
- 51% - 75% (0.64 ACRES)
- 76% - 100% (0.18 ACRES)
- NOT SURVEYED (3.07 ACRES)

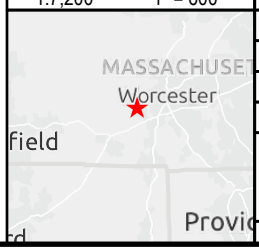
BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600

FEET

1:7,200 1" = 600'




PROJECT:
**CEDAR MEADOW LAKE 2024**
**LEICESTER, MASSACHUSETTS**

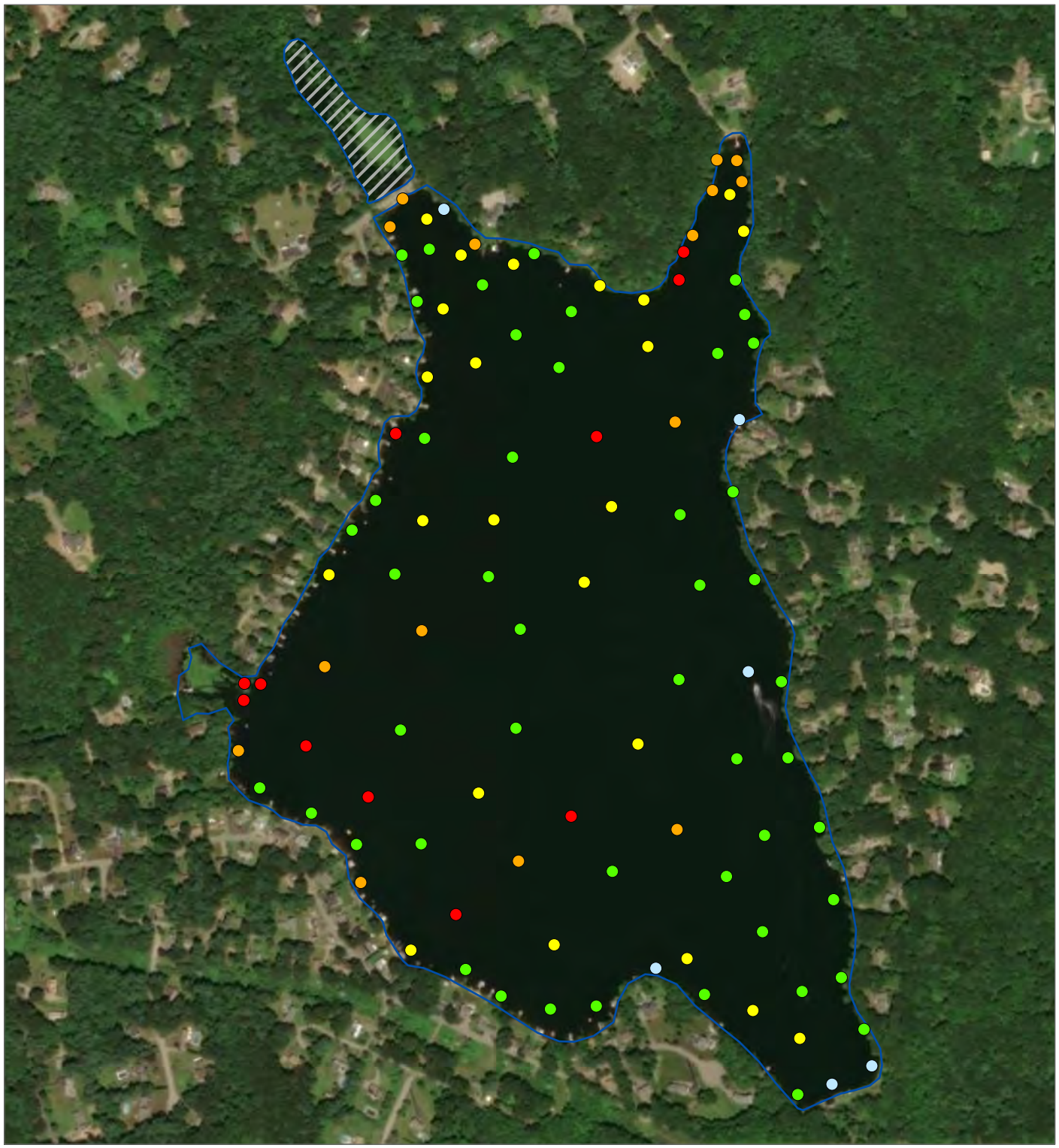
TITLE:
**VARIABLE-LEAF MILFOIL COVER**
**AUGUST 2024**

| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 2**


TRC
404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS



SHORELINE

PLANT COVER

- 0% (6 POINTS)
- 1% - 25% (48 POINTS)
- 26% - 50% (23 POINTS)
- 51% - 75% (15 POINTS)
- 76% - 100% (11 POINTS)

NOT SURVEYED

BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600
FEET
1:7,200 1" = 600'


PROJECT:
**CEDAR MEADOW LAKE 2024**
**LEICESTER, MASSACHUSETTS**

TITLE:
**PLANT COVER**
**AUGUST 2024**

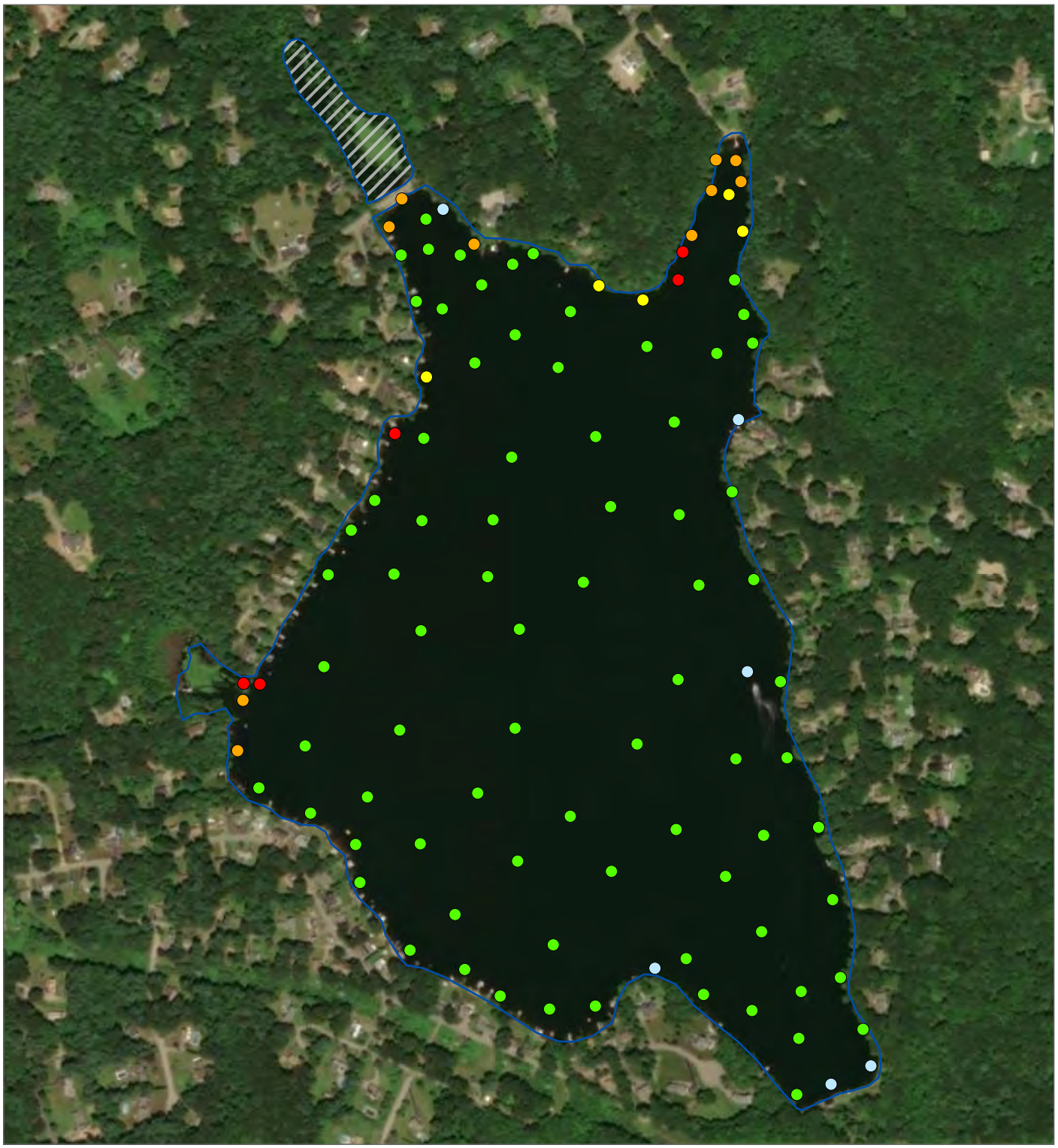
| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 3**


TRC
404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS


COORDINATE SYSTEM: NAD 1983 2011 STATEPLANE MASSACHUSETTS MNLD FIPS 2001 FTUS; MAP ROTATION: 0
-- SAVED BY: KBACHAND ON 9/3/2024, 17:52:35 PM; FILE PATH: T:\1-PROJECTS\CEDARMEADOWLAKEASSOCIATION\2-APRX\586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS\586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS.APRX; LAYOUT NAME: 586968_CEDARMEADOWLAKE_FIG03_COVER



SHORELINE

PLANT BIOVOLUME

- 0% (6 POINTS)
- 1% - 25% (77 POINTS)
- 26% - 50% (5 POINTS)
- 51% - 75% (10 POINTS)
- 76% - 100% (5 POINTS)
- NOT SURVEYED

BASE MAP: ESRI WORLD IMAGERY WEB SERVICE, 2023
DATA SOURCES: TRC, PLANT MAPPING, 8/15/2024

N

0 300 600

FEET

1:7,200 1" = 600'


PROJECT:

**CEDAR MEADOW LAKE 2024**

**LEICESTER, MASSACHUSETTS**

TITLE:

**PLANT BIOVOLUME**
**AUGUST 2024**

| | | | |
|---|---|---|---|
| DRAWN BY: | K. BACHAND | PROJ. NO.: | 586968 |
| CHECKED BY: | A. OCHS | | |
| APPROVED BY: | A. CHASE | | |
| DATE: | SEPTEMBER 2024 | | |

**FIGURE 4**


TRC

404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696


FILE: 586968_CEDARMEADOWLAKE_2024PLANTMAPPING_FIGS

# Attachment C: Photographic Log

# PHOTOGRAPHIC LOG
## Notice of Intent Filing

| Project Name: | Site Location: | Project No. |
|---|---|---|
| Cedar Meadow Lake Management | Cedar Meadow Lake, Leicester MA | 586968.0000.0000 |

**Photo No. 1.**

**Date:**
8/15/2024

**Description:**

Cedar Meadow Lake access location (61 Fairview Drive) looking north.

**Photo No. 2.**

**Date:**
08/15/2024

**Description:**

Dense fanwort growth in Cedar Meadow Lake observed during TRC's August 2024 survey event.

# PHOTOGRAPHIC LOG
## Notice of Intent Filing

| Project Name: | Site Location: | Project No. |
|---|---|---|
| Cedar Meadow Lake Management | Cedar Meadow Lake, Leicester MA | 586968.0000.0000 |

**Photo No. 3.**

**Date:**
08/15/2024

**Description:**

Close up photograph of fanwort showing leaf structure and white flower.

**Photo No. 4.**

**Date:**
08/15/2024

**Description:**

Dense variable-leaf milfoil growth (dull greenish brown) and scattered fanwort stems (bright green) in Cedar Meadow Lake.

# Attachment D: Herbicide Product Labels

## SPECIMEN LABEL

# ProcellaCOR™ EC

**A selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).**

| FLORPYRAUXIFEN-BENZYL | GROUP 4 | HERBICIDE |
|---|---|---|

Produced for:
SePRO Corporation
11550 North Meridian Street, Suite 600
Carmel, IN 46032, U.S.A.


EPA Reg. No. 67690-80
FPL20180226

**Active Ingredient:**

| | |
|---|---|
| Florpyrauxifen-benzyl: 2-pyridinecarboxylic acid, 4-amino-3-chloro-6-(4-chloro-2-fluoro-3-methoxy-phenyl)-5-fluoro-, phenyl methyl ester | 2.7% |
| **Other Ingredients:** | 97.3% |
| **TOTAL:** | 100.0% |

Contains 0.0052 lb florpyrauxifen-benzyl per Prescription Dose Unit™ (PDU™) or 0.21 lb florpyrauxifen-benzyl/gallon. 1 PDU is equal to 3.2 fl. oz. of product.

## Keep Out of Reach of Children

# CAUTION

**Refer to the inside of label booklet for additional precautionary information including directions for use.**

**Notice:** Read the entire label before using. Use only according to label directions. **Before buying or using this product, read *Warranty Disclaimer* and *Misuse* statements inside label booklet. If terms are not acceptable, return at once unopened.**

**Agricultural Chemical:** Do not ship or store with food, feeds, drugs or clothing.

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.**

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators and other handlers must wear:**
- Long-sleeved shirt and long pants;
- Shoes plus socks;
- Protective eyewear; and
- Waterproof gloves.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**Engineering Controls:** When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**
**Users should:**
- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

| FIRST AID | |
|---|---|
| **If in eyes** | • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.<br>• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye.<br>• Call a poison control center or doctor for treatment advice. |

**HOTLINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**.

**Environmental Hazards**
Under certain conditions, treatment of aquatic weeds can result in oxygen depletion or loss due to decomposition of dead plants, which may cause fish suffocation. Water bodies containing very high plant density should be treated in sections to prevent the potential suffocation of fish. Consult with the State agency for fish and game before applying to public waters to determine if a permit is needed.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**Shake well before using.**

## PRODUCT INFORMATION

ProcellaCOR EC is a selective systemic herbicide for management of freshwater aquatic vegetation in slow-moving/quiescent waters with little or no continuous outflow: ponds, lakes, reservoirs, freshwater marshes, wetlands, bayous, drainage ditches, and non-irrigation canals, including shoreline and riparian areas in or adjacent to these sites. Also for management of invasive freshwater aquatic vegetation in slow-moving/quiescent areas of rivers (coves, oxbows or similar sites).

Apply ProcellaCOR EC directly into water or spray onto emergent foliage of aquatic plants. Depending upon method of application and target plant, ProcellaCOR EC is absorbed by aquatic vascular plants through emergent or floating leaves and from water through submersed plant shoots and leaves. In-water treatments are effective in spot and partial treatment designs with relatively short exposure times (hours to several days). Species susceptibility to ProcellaCOR EC may vary depending upon time of year, stage of growth, and water movement. For best results, apply to actively growing plants. However, effective control can be achieved over a broad range of growth stages and environmental conditions. Application to mature target plants may require higher application rates and longer exposure periods to achieve control.

**Resistance Management**
ProcellaCOR EC is classified as a WSSA Group 4 Herbicide (HRAC Group O). Weed populations may contain or develop biotypes that are resistant to ProcellaCOR EC and other Group 4 herbicides. If herbicides with the same mode of action are used repeatedly at the same site, resistant biotypes may eventually dominate the weed population and may not be controlled by these products. Unless ProcellaCOR EC is used as part of an eradication program or in a plant management system where weed escapes are aggressively controlled, do not use ProcellaCOR EC alone in the same treatment area for submersed and emergent plant control for more than 2 consecutive years, unless used in combination or rotated with an herbicide with an alternate mode of action.

To further delay herbicide resistance consider taking one or more of the following steps:

- Use tank mixtures with herbicides from a different group if such use is permitted; Consult your local extension service or SePRO Corporation if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use, and that considers other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by using an alternative herbicide from a different group or by a mechanical method that minimizes plant fragmentation.
- If a weed pest population continues to progress after treatment with this product, switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local extension specialist or SePRO Corporation for additional pesticide resistance-management and/or integrated weed-management recommendations for specific weed biotypes.

**Stewardship Guidelines For Use**

Apply this product in compliance with Best Management Practices (BMP) that include site assessment, prescription, and implementation. BMP have been developed to ensure accurate applications, minimize risk of resistance development, and monitor concentrations in water to document levels needed for optimal performance and manage potential irrigation use. SePRO Corporation will work with applicators and resource managers to implement BMP for application and monitoring to meet management objectives and ensure compatibility with potential water uses.

**Use Precautions**

- There are no restrictions for recreational purposes, including swimming and fishing.

**Use Restrictions**

- **Obtain Required Permits:** Consult with appropriate state or local water authorities before applying this product to public waters. State or local public agencies may require permits.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- For in-water applications, the maximum single application rate is 25.0 Prescription Dose Units (PDU) per acre-foot of water with a limit of three applications per year.
- For aquatic foliar applications, do not exceed 10.0 PDU per acre for a single application, and do not apply more than 20.0 PDU total per acre per year.
- To minimize potential exposure in compost, do not allow livestock to drink treated water.
- Do not compost any plant material from treated area.
- Allow 14 days or greater between applications.
- Do not use water containing this product for hydroponic farming.
- Do not use treated water for any form of irrigation, except as described in the Application to *Water Used for Irrigation on Turf and Landscape Vegetation* section.
- Do not use for greenhouse or nursery irrigation.
- Make applications in a minimum of 10 gallons per acre (GPA) for ground and a minimum of 15 gallons per acre (GPA) for aerial applications.
- Do not apply to salt/brackish water.
- Do not apply ProcellaCOR EC directly to, or otherwise permit ProcellaCOR EC to come into contact during an application, with carrots, soybeans, grapes, tobacco, vegetable crops, flowers, ornamental shrubs or trees, or other desirable broadleaf plants, as serious injury may occur. Do not permit spray mists containing ProcellaCOR EC to drift onto desirable broadleaf plants. Further information on spray drift management is provided in the Spray Drift Management section of this label.
- For treatments out of water, do not permit spray mists containing this product to drift onto desirable broadleaf plants as injury may occur. Further information on spray drift management is provided in the *Spray Drift Management* section of this label.
- Do not allow tank mixes of ProcellaCOR EC to sit overnight. See additional tank mix restrictions below.
- Do not use organosilicone surfactants in spray mixtures of this product.
- Do not tank mix this product with malathion or methyl parathion.
- Do not make an application of malathion or methyl parathion within 7 days of an application of this product. See additional tank mix restrictions below.

**Application to Water Used for Irrigation on Turf and Landscape Vegetation**

To reduce the potential for injury to sensitive vegetation, follow the waiting periods (between application and irrigation) and restrictions below, and inform those who irrigate with water from the treated area. Follow local and state requirements for informing those who irrigate.

When monitoring ProcellaCOR EC concentrations, analyze water samples using an appropriate analytical method for both the active ingredient and the acid form. Use of HPLC (High-Performance Liquid Chromatography), which is also referenced as FasTEST®, is recommended.

**Applications to invasive freshwater aquatic vegetation in slow-moving/ quiescent areas of rivers (coves, oxbows or similar sites).**

- Users must be aware of relevant downstream use of water for irrigation that may be affected by the treatment and must ensure all label restrictions are followed. All potential downstream water intakes with irrigation practices that may be affected by the treatment must be documented and affected irrigation users notified of the restrictions associated with such treatment.

**Residential and other Non-Agricultural Irrigation** (such as shoreline property use including irrigation of residential landscape plants and homeowner gardens, golf course irrigation, and non-residential property irrigation around business or industrial properties. Excludes greenhouse or nursery irrigation).

- Turf Irrigation: Turf may be irrigated immediately after treatment.
- For irrigation of landscape vegetation or other forms of non-agricultural irrigation not excluded above, conduct one of the following:
  - o analytically verify that water contains less than 2 ppb (SePRO recommends use of FasTEST); or
  - o if treated area(s) have the potential to dilute with untreated water, follow the precautionary waiting periods described in the tables 1 and 2 below for in-water or foliar application.

**TABLE 1: Non-agricultural irrigation following in-water application**

| Waiting Period (Days) for Irrigation at Specific Target Treatment Rates (PDU per acre-foot) | | | | | | |
|---|---|---|---|---|---|---|
| Percent Area of Waterbody Treated* | 1-3 PDU | >3-5 PDU | >5.0 to 10.0 PDU | >10.0 to 15.0 PDU | >15.0 to 20.0 PDU | >20.0 to 25.0 PDU |
| 2% or less | 6 hours | 1 day | 1 day | 2 days | 2 days | 3 days |
| 3 - 10% | 1 day | 3 days | 5 days | 7 days | 10 days | 14 days |
| 11 - 20% | 3 days | 7 days | 10 days | 10 days | 14 days | 21 days |
| 21 - 30% | 5 days | 10 days | 14 days | 21 days | 28 days | 35 days |
| >30% | 7 days | 14 days | 21 days | 28 days | 35 days | 35 days |

* Assumes treated area(s) have the potential to dilute with untreated water. If the treated area is not projected to dilute rapidly (example: confined cove area), utilize FasTEST to confirm below 2 ppb or verify vegetation tolerance before irrigation use. Consult a SePRO Aquatic Specialist for additional site-specific recommendations.

**TABLE 2: Non-agricultural irrigation following foliar application**

| Waiting Period (days) for Irrigation at Specific Target Treatment Rates | | |
|---|---|---|
| Percent Area of Waterbody Treated* | 5.0 PDU / acre | >5.0 to 10.0 PDU / acre |
| 10% or less | 0.5 day | 1 day |
| 11 - 20% | 1 day | 2 days |
| >20% | 2 days | 3 days |

* Assumes treated area(s) have the potential to dilute with untreated water. If the treated area is not projected to dilute rapidly (example: confined cove area), utilize FasTEST to confirm below 2 ppb or verify vegetation tolerance before irrigation use. Consult a SePRO Aquatic Specialist for additional site-specific recommendations.

**Susceptible Plants**

Do not apply where spray drift may occur to food, forage, or other plantings that might be damaged. Spray drift may damage or render crops unfit for sale, use or consumption. Small amounts of spray drift that may not be visible may injure susceptible broadleaf plants. **Before making a foliar or surface spray application, please refer to your state's sensitive crop registry (if available) to identify any commercial specialty or certified organic crops that may be located nearby. At the time of a foliar or surface spray application, the wind cannot be blowing toward adjacent cotton, carrots, soybeans, corn, grain sorghum, wheat, grapes, tobacco, vegetable crops, flowers, ornamental shrubs or trees, or other desirable broadleaf plants.**

**Spray Drift Management**
Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to limit off-target drift movement from aerial applications:

**Aerial Application:**
- Aerial applicators must use a minimum finished spray volume of 15 gallons per acre.
- Drift potential is lowest between wind speeds of 2 to 10 mph. Do not apply below
  2 mph due to variable wind direction and high potential for temperature inversion. Do not apply in wind speeds greater than 10 mph.
- To minimize spray drift from aerial application, apply with a nozzle class that ensures coarse or coarser spray (according to ASABE S572) at spray boom pressure no greater than 30 psi.
- The distance of the outer most operating nozzles on the boom must not exceed 70% of wingspan or 80% of rotor diameter.
- Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
- Do not apply under conditions of a low-level air temperature inversion.
- The maximum release height must be 10 feet from the top of the weed canopy, unless a greater application height is required for pilot safety.

Evaluate spray pattern and droplet size distribution by applying sprays containing a water-soluble dye marker or appropriate drift control agents over a paper tape (adding machine tape). Mechanical flagging devices may also be used. Do not apply under conditions of a low-level air temperature inversion. A temperature inversion is characterized by little or no wind and lower air temperature near the ground than at higher levels. The behavior of smoke generated by an aircraft-mounted device or continuous smoke column released at or near site of application will indicate the direction and velocity of air movement. A temperature inversion is indicated by layering of smoke at some level above the ground and little or no lateral movement.

**Ground Application**
- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- To minimize spray drift from ground application, apply with a nozzle class that ensures coarse or coarser spray (according to ASABE S572).
- For boom spraying, the maximum release height is 36 inches from the soil for ground applications.
- Where states have more stringent regulations, they must be observed.

The applicator should be familiar with, and take into account the information covered in the following Aerial Drift Reduction Advisory (this information is advisory in nature and does not supersede mandatory label requirements.)

**Aerial Drift Reduction Advisory**
**Information on Droplet Size:** The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

**Controlling Droplet Size:**
- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Do not exceed the nozzle manufacturer's specified pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length:** To further reduce drift without reducing swath width, boom must not exceed 70% of wingspan or 80% of rotor diameter.

**Application Height:** Do not make applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Do not make applications below 2 mph due to variable wind direction and high inversion potential. Do not apply in wind speeds greater than 10 mph. Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity:** When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** Do not apply during a local, low level temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**USE DIRECTIONS**
ProcellaCOR EC performance and selectivity may depend on dosage, time of year, stage of growth, method of application, and water movement.

**Aquatic Plants Controlled: In-Water Application**
**Table 3** lists the expected susceptible species under favorable treatment conditions for aquatic plant control. Use of lower rates will increase selectivity on some species listed. Consultation with SePRO Corporation is recommended before applying ProcellaCOR EC to determine best in-water treatment protocols for given target vegetation.

**TABLE 3. Vascular aquatic plant control with in-water application**

| Vascular Aquatic Plants Controlled: In-Water Application | |
|---|---|
| **Common name** | **Scientific name** |
| ***Floating Plants*** | |
| Mosquito fern | *Azolla* spp. |
| Water hyacinth | *Eichhornia crassipes* |
| ***Emersed Plants*** | |
| Alligatorweed | *Alternanthera philoxeroides* |
| American lotus | *Nelumbo lutea* |
| Floating heart | *Nymphoides* spp. |
| Water pennywort | *Hydrocotyle umbellata* |
| Water primrose | *Ludwigia* spp. |
| Watershield | *Brasenia schreberi* |
| ***Submersed Plants*** | |
| Bacopa | *Bacopa* spp. |
| Coontail[1] | *Ceratophyllum demersum* |
| Hydrilla[1] | *Hydrilla verticillata* |
| Parrotfeather | *Myriophyllum aquaticum* |
| Water chestnut | *Trapa* spp. |
| Watermilfoil, Eurasian | *Myriophyllum spicatum* |
| Watermilfoil, Hybrid Eurasian | *Myriophyllum spicatum X M.* spp. |
| Watermilfoil, Variable | *Myriophyllum heterophyllum* |

[1] Higher-rate applications within the specified range may be required to control less-sensitive weeds.

**Aquatic Plants Controlled: Foliar Application**
**Table 4** lists the expected susceptible species using labeled foliar rates (5.0 – 10.0 PDU per acre) under favorable treatment conditions for aquatic plant control. Use higher rates in the rate range on more established, dense vegetation. Consultation with SePRO Corporation is recommended before applying ProcellaCOR EC to determine best foliar treatment protocols for given target vegetation.

**TABLE 4. Vascular aquatic plant control with foliar application**

| Vascular Aquatic Plants Controlled: Foliar Application | |
|---|---|
| **Common name** | **Scientific name** |
| ***Floating Plants*** | |
| Mosquito fern | *Azolla* spp. |
| Water hyacinth | *Eichhornia crassipes* |
| ***Emersed Plants*** | |
| Alligatorweed | *Alternanthera philoxeroides* |
| American lotus | *Nelumbo lutea* |
| Floating heart | *Nymphoides* spp. |
| Parrotfeather (emersed) | *Myriophyllum aquaticum* |
| Water pennywort | *Hydrocotyle umbellata* |
| Water primrose | *Ludwigia spp.* |
| Watershield | *Brasenia schreberi* |

## APPLICATION INFORMATION

### Mixing Instructions

**In-Water Application to Submersed or Floating Aquatic Weeds**
ProcellaCOR EC can be applied undiluted or diluted with water for in-water applications. To dilute with water, it is recommended to fill the spray tank to one-half full with water. Start agitation. Add correct quantity of ProcellaCOR EC. Continue agitation while filling spray tank to required volume and during application.

**Foliar Application to Floating and Emergent Weeds**
Dilute ProcellaCOR EC with water to achieve proper coverage of treated plants. To dilute with water, it is recommended to fill spray tank to one-half full with water. Start agitation. A surfactant must be used with all post-emergent foliar applications. Use only surfactants that are approved or appropriate for aquatic use. For best performance, a methylated seed oil (MSO) surfactant is recommended. Read and follow all use directions and precautions on aquatic surfactant label. After adding ProcellaCOR EC and surfactant, continue agitation while filling spray tank to required volume and during application.

## TANK-CLEANOUT INSTRUCTIONS

ProcellaCOR EC should be fully cleaned from application equipment prior to use for other applications. Contact a SePRO Aquatic Specialist for guidance on methods for thorough cleaning of application equipment after use of the product.

## APPLICATION METHODS

**In-Water Application to Submersed or Floating Aquatic Weeds**
ProcellaCOR EC can be applied via trailing hose, by sub-surface injection, or surface spray as an in-water application to control weeds such as hydrilla, floating heart, water hyacinth, and other susceptible weed species. This product has relatively short exposure requirements for in-water treatments (hours to days), but treatments with high exchange and short exposure periods should be carefully planned to achieve best results. Where greater plant selectivity is desired - such as when controlling hydrilla or other more susceptible species, choose a lower dose in the specified range. A SePRO Aquatic Specialist can provide site-specific prescriptions for optimal control based on target weed, management objectives, and site conditions.

Apply ProcellaCOR EC to the treatment area at a prescription dose unit (PDU) to achieve appropriate concentrations. A PDU is a unit of measure that facilitates the calculation of the amount of product required to control target plants in 1 acre-foot of water or 1 acre for foliar applications. Per Table 5 below, 1-25 PDU are needed to treat 1 acre-foot of water, depending on target species and the percent of waterbody to be treated.

Use Table 5 to select the dose needed to treat 1 acre-foot of water.

**TABLE 5: Prescription Dose Units (PDU**) per acre-foot of water***

| Percent Area of Waterbody Treated | Target Species | | | |
|---|---|---|---|---|
| | Eurasian Watermilfoil | Hybrid Watermilfoil | Variable Leaf Watermilfoil | Other |
| ≤ 2% | 3 - 4 | 4 - 5 | 3 - 5 | 3 - 25 |
| >2 - 10% | 2 - 3 | 3 - 5 | 3 - 4 | 3 - 20 |
| >10 - 20% | 1 - 3 | 3 - 4 | 2 - 4 | 3 - 15 |
| >20 - 30% | 1 - 2 | 2 - 3 | 2 - 3 | 2 - 10 |
| >30% | 1 - 2 | 2 - 3 | 1 - 2 | 1 - 5 |

* In all cases, user may apply up to the maximum of 25 PDU per acre-foot. Consult your SePRO Aquatics Specialist for site-specific recommendations.
** 1 PDU contains 3.17 fl. oz. of product.

To calculate the amount of product needed in fluid ounces, use the formula below:
Number of acres X average depth (feet) X PDU* X 3.17 = fluid ounces
*: from Table 5

Example Calculation:
To control hybrid watermilfoil in 2 acres of a 5-acre lake (>30% treated) with an average depth of 2 feet:
2 acres X 2 feet X 3 PDU X 3.17 = 38.04 fl. oz.

For in-water applications, the maximum single application is 25.0 PDU / acre-foot, with a limit of three applications per year. Allow 14 days or greater between applications. Product may be applied as a concentrate or diluted with water prior to or during the application process. Use an appropriate application method that ensures sufficiently uniform application to the treated area.

**Foliar Application to Floating and Emergent Weeds**
Apply ProcellaCOR EC as a foliar application to control weeds such as water hyacinth, water primrose, and other susceptible floating and emergent species. Use an application method that maximizes spray interception by target weeds while minimizing the amount of overspray that inadvertently enters the water.

For all foliar applications, apply ProcellaCOR EC at 5.0 to 10.0 PDU per acre. Use of a surfactant is required for all foliar applications of ProcellaCOR EC. Use only surfactants that are approved or appropriate for aquatic use. Methylated seed soil (MSO) is a recommended surfactant and is typically applied at 1.0% volume/volume. Refer to the surfactant label for use directions. For best results, apply to actively growing weeds. ProcellaCOR EC may be applied more than once per growing season to meet management objectives. Do not exceed 10.0 PDU per acre during any individual application or 20.0 PDU total per acre, per year from all combined treatments.

**Foliar Spot Treatment**
To prepare the spray solutions, thoroughly mix ProcellaCOR EC in water at a ratio of 5.0 to 10.0 PDU per 100 gallons (0.12 to 0.24% product) plus an adjuvant. For best results, a methylated seed oil at 1% volume/volume is the recommended spray adjuvant. When making spot application, ensure spray coverage is sufficient to wet the leaves of the target vegetation but not to the point of runoff.

**Aerial Foliar Application to Floating and Emergent Weeds**
Apply ProcellaCOR EC in a spray volume of 15 gallons per acre (GPA) or more when making a post-emergence application by air. Apply with coarse to coarser droplet category per S-572 ASABE standard; see NAAA, USDA or nozzle manufacturer guidelines. Follow guidelines and restrictions in the *Spray Drift Management and Aerial Drift Reduction Advisory* sections to minimize potential drift to off-target vegetation. Aircraft should be patterned per Operation Safe/PAASS program for calibration and uniformity to provide sufficient coverage and control.

**Boat or Ground Foliar Application to Floating and Emergent Weeds**
When applying ProcellaCOR EC by boat or with ground equipment to emergent or floating-leaved vegetation, use boom-type, backpack or hydraulic handgun equipment. Apply ProcellaCOR EC in a sufficient spray volume (e.g. 20 to 100 gpa) to provide accurate and uniform distribution of spray particles over the treated vegetation while minimizing runoff. Use higher spray volumes for medium to high density vegetation. For boom spraying, use coarse or coarser nozzle spray quality per S-572 ASABE standard; see USDA literature or nozzle manufacturer guidelines. Follow nozzle manufacturer's recommendations for nozzle pressure, spacing and boom height to provide a uniform spray pattern. Follow appropriate spray drift management information where drift potential is a concern.

## TANK MIXES WITH OTHER AQUATIC HERBICIDES

DO NOT TANK MIX ANY PESTICIDE PRODUCT WITH THIS PRODUCT without first referring to the following website for the specific product: www.3206tankmix.com. This website contains a list of active ingredients that are currently prohibited from use in tank mixture with this product.

Only use products in tank mixture with this product that: 1) are registered for the intended use site, application method and timing; 2) are not prohibited for tank mixing by the label of the tank mix product; and 3) do not contain one of the prohibited active ingredients listed on www.3206tankmix.com website.

Applicators and other handlers (mixers) who plan to tank-mix must access the website within one week prior to application in order to comply with the most up-to-date information on tank mix partners.

Do not exceed specified application rates for respective products or maximum allowable application rates for any active ingredient in the tank mix.

Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels. It is the pesticide user's

responsibility to ensure that all products in the mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.
**Pesticide Storage:** Store in original container only. Keep container closed when not in use. Do not store near food or feed. In case of spill or leak on floor or paved surfaces, soak up with vermiculite, earth, or synthetic absorbent.
**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.
**Container Handling**
**Non-refillable Container. DO NOT reuse or refill this container.** Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.
**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.
**Triple rinse containers too large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.
**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Warranty Disclaimer:** SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

**Misuse:** Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

For additional important labeling information regarding SePRO Corporation's Terms and Conditions of Use, Inherent Risks of Use and Limitation of Remedies, please visit *http://seprolabels.com/terms* or scan the image below.



**SePRO Corporation**
11550 North Meridian Street, Suite 600
Carmel, IN 46032, U.S.A.

**GROUP 14 HERBICIDE**

# Clipper® SC

## AQUATIC HERBICIDE

**FOR THE MANAGEMENT OF UNDESIRABLE AQUATIC VEGETATION IN SLOW MOVING OR QUIESCENT WATERS**

| | |
|---|---|
| **ACTIVE INGREDIENT:** | |
| Flumioxazin* | 41.4% |
| **OTHER INGREDIENTS:** | 58.6% |
| **TOTAL:** | 100.0% |

*2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl]-4,5,6,7-tetrahydro-1H-isoindole-1,3(2H)-dione

Clipper SC contains 4 pounds flumioxazin per gallon.

**Shake Well Before Use**

# KEEP OUT OF REACH OF CHILDREN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label, find someone to explain it to you in detail.)

**SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS**

**For Chemical Spill, Leak, Fire, or Exposure, Call CHEMTREC (800) 424-9300**
**For Medical Emergencies Only, Call (877) 325-1840**

**EPA REG. NO. 71368-114**

**Manufactured for**
**Nufarm Inc.**
**11901 S. Austin Ave.**
**Alsip, IL 60803**

**Net Contents**
**1 Pt.**
**Nonrefillable**
**Container**

Nufarm
Grow a better tomorrow

## PRECAUTIONARY STATEMENTS
## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

### HOT LINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-877-325-1840 for emergency medical treatment information.

## PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some of the materials that are chemical-resistant to this product are listed below.

**Applicators and other handlers must wear:**

- long-sleeved shirt and long pants
- chemical-resistant gloves made of any waterproof material
- shoes and socks.

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

## USER SAFETY RECOMMENDATIONS

**Users Should:**

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

If not used in accordance with directions on the label, this product can be toxic to non-target plants and aquatic invertebrates. Do not apply directly to treated, finished drinking water reservoirs or drinking water receptacles when the water is intended for human consumption. Drift and runoff may be hazardous to non-target plants and aquatic organisms in water adjacent to treated areas. Do not apply where runoff is likely to occur. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This pesticide is toxic to plants. Use strictly in accordance with the drift and run-off precautions on this label in order to minimize off-site exposures.

Treatment of aquatic weeds can result in oxygen loss from decomposition of dead weeds. This loss can cause fish suffocation. Therefore, to minimize this hazard, treat 1/3 to 1/2 of the water area in a single operation and wait at least 10 to 14 days between treatments.

Begin treatment along the shore and proceed outwards in bands to allow fish to move into untreated areas. Consult with the State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is needed.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

## PHYSICAL OR CHEMICAL HAZARDS

Do not mix or allow coming in contact with oxidizing agent. Hazardous chemical reaction may occur.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Read the entire label before using this product. Use strictly in accordance with label precautionary statements and directions, and with applicable state and federal regulations.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## RISKS OF USING THIS PRODUCT

The Buyer and User (referred to collectively herein as "Buyer") of this product must be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Nufarm. The Buyer must be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN DO NOT APPLY THIS PRODUCT. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND TO THE FULLEST EXTENT ALLOWED BY LAW, AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Nufarm shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth

on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

See also **WARRANTY DISCLAIMER** and **LIMITATION OF LIABILITY** sections of the label for additional information.

## WEED RESISTANCE MANAGEMENT

This product is a Group 14 herbicide. Any weed population may contain or develop plants naturally resistant to this product and other Group 14 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Appropriate resistance-management strategies should be followed. To delay herbicide resistance take one or more of the following steps:

- Rotate this product or other Group 14 herbicides within a growing season sequence or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g., higher crop seedling rates; precision fertilizer application method and timing to favor the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.

- Fields should be scouted prior to application to identify the weed species present and their growth stage to determine if the intended application will be effective. Fields should be scouted after application to verify that the treatment was effective and to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of action.
- Contact your local sales representative, agricultural dealer, consultant, local extension specialist, applicator, crop advisor, and/or appropriate state agricultural extension service representative

for additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- Report any incidence of non-performance of this product against a particular weed species to your local sales representative or agricultural dealer.

## BEST MANAGEMENT PRACTICES

- Plant into weed-free fields and keep fields as weed-free as possible.
- Use a diversified approach toward weed management. Whenever possible incorporate multiple weed-control practices such as mechanical cultivation, biological management practices, and crop rotation.
- Fields with difficult to control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action or different management practices.
- Do not allow weed escapes to produce seeds, roots or tubers. Manage weed seeds at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Prevent an influx of weeds into the field by managing field borders.
- Identify weeds present in the field through scouting and field history and understand their biology. The weed-control program should consider all of the weeds present.
- Difficult to control weeds may require sequential applications of herbicides with differing mechanisms of action.
- Apply this herbicide at the correct timing and rate needed to control the most difficult weed in the field.

- Use a broad spectrum soil-applied herbicide with a mechanism of action that differs from this product as a foundation in a weed-control program. Do not use more than two applications of this or any other herbicide with the same mechanism of action within a single growing season unless mixed with an herbicide with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- If resistance is suspected, treat weed escapes with an herbicide with a different MOA or use non-chemical methods to remove escapes.

## TANK MIXES

**NOTICE: Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor, to the extent allowed by applicable law.**

It is the pesticide user's responsibility to ensure that all products are registered for the intended use. Read and follow the applicable restrictions for use on all product labels involved in tank mixing. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

## PRODUCT INFORMATION

This product is a fast acting contact herbicide that controls selected submersed, emergent, and floating aquatic weeds. It is most effective when applied to young, actively growing weeds in water with a pH of less than 8.5.

This product may be applied to the following quiescent or slow moving bodies of water:

- Bayous
- Canals
- Drainage ditches
- Lakes
- Marshes
- Ponds (including golf course ponds)
- Reservoirs

Application of this product to public aquatic areas may require special approval and/or permits. Consult with local state agencies, if required.

**USE RESTRICTIONS**

- Do not apply to intertidal or estuarine areas.
- Do not exceed 400 ppb of this product during any one application.
- Do not re-treat the same section of water with this product more than 6 times per year.
- Do not retreat the same section of water within 28 days of application, except in areas with dense weed vegetation. In these areas, treat the remaining weeds within 10 to 14 days.
- In high density weed populations only treat 1/2 the water body at one time.
- Treated water may not be used for irrigation purposes on food crops until at least five (5) days after application.
- Do not use in water utilized for crawfish farming.

## USE PRECAUTIONS

- There is no post-application holding restriction against use of treated water for drinking or recreational purposes (e.g. swimming, fishing).
- Treated water may be used for irrigation purposes on turf and landscape ornamentals as outlined in the *Irrigation Restrictions Following Application* table.

## IRRIGATION RESTRICTIONS FOLLOWING APPLICATION

| Application Method | Application Rate | Average Water Depth | Turf and Landscape Ornamentals | Ornamentals grown for production in Greenhouse and Nursery |
|---|---|---|---|---|
| Surface Spray | 6 to 12 oz per surface acre | Greater than 3 feet | None | 5 days |
| | | Less than 3 feet | 12 hours | 5 days |
| Subsurface | Less than 200 ppb | N/A | 1 day | 5 days |
| | 200 to 300 ppb | N/A | 2 days | 5 days |
| | 300 to 400 ppb | N/A | 3 days | 5 days |

## SPRAY DRIFT MANAGEMENT

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment and weather-related factors determine the potential for spray drift. The applicator is responsible for considering all these factors when making decisions.

Do not spray this product under circumstances where spray droplets may drift on to unprotected persons, or plantings of food, forage or crops that might be damaged, or rendered unfit for sale, use or consumption. These precautions are not applicable for subsurface injection by closed systems.

- Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. For ground boom and aerial applications, use medium or coarser spray nozzles according to ASAE 572 definition for standard nozzles or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles.
- Make aerial, ground or watercraft-based surface applications when wind velocity favors on-target product deposition. Apply only when the wind speed is less than or equal to 10 mph.
- Do not make aerial or ground applications into areas of temperature inversions. Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

- Low humidity and high temperatures increase the evaporation rate of spray droplets, and therefore the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures.

Properly maintain and calibrate all aerial, ground and water based application equipment.

Where states have more stringent regulations, observe them.

## APPLICATION AND SPRAYER INFORMATION

### Mixing Instructions

- Mix with water having pH of 5 to 7. If pH is higher than 7, use an appropriate buffer to reduce pH to desirable range.
- Fill clean spray tank 1/2 full of desired level with water and add buffering agent if necessary.
- Add the required amount of this product to the spray tank while agitating.
- Fill spray tank to desired level with water. Ensure that this product is thoroughly mixed before making applications. Continue agitation until spray solution has been applied.
- Mix only the amount of spray solution that can be applied the day of mixing. Apply this product within 48 hours of mixing.

### ADDITIVES

When applying this product to the foliage of floating or emerged aquatic weeds, mix with an adjuvant approved for use in aquatic sites. Mix this product with a non-ionic surfactant containing at least 80% active ingredient. Follow adjuvant manufacturer's label rates. Verify mixing compatibility by a jar test before using.

## JAR TEST TO DETERMINE COMPATIBILITY OF ADJUVANTS AND THIS PRODUCT

Perform a jar test before mixing commercial quantities of this product, when using this product for the first time, when using new adjuvants or when a new water source is being used.

1. Add 1 pint of the water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 milliliter of this product to the quart jar for every 3 fl oz of this product per acre being applied (4 ml if 12 fl oz per acre is the desired rate of this product), gently mix until product goes into suspension.
3. Add 1 milliliter of non-ionic surfactant, gently mix.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank mix combination will be uniform. If any of the following conditions are observed question the choice of adjuvant:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.

### Sprayer Cleanup

If spray equipment is dedicated to application of aquatic herbicides, the following steps are to clean the spray equipment:

- Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.

If spray equipment will be used for purposes other than applying aquatic herbicides, it must be thoroughly cleaned following application

of this product. The following steps must be used to clean the spray equipment:

1. Completely drain the spray tank and rinse the application equipment thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the tank with clean water and flush all hoses, booms, screens and nozzles.
3. Top off tank with clean water.
4. Circulate through sprayer for 5 minutes.
5. Then flush all hoses, booms, screens and nozzles for a minimum of 15 minutes.
6. Drain tank completely.
7. Remove all nozzles and screens and rinse them with clean water.

## AERIAL APPLICATION

To obtain satisfactory weed control, aerial application of this product, must provide uniform coverage of surface weeds and sufficient contact time. When applied by air, this product may not provide adequate control of some submersed weeds. Do not apply by air when significant drift on to non-target plants may occur or when wind velocity is more than 10 mph. Avoid spraying this product within 200 feet of dwellings, adjacent sensitive crops or environmentally sensitive areas. To obtain satisfactory application and avoid drift, the following directions must be observed:

### Volume and Pressure

Apply this product in a minimum of 5 gallons of water per acre with a maximum spray pressure of 40 PSI. Application at less than 5 gallons per acre may not provide adequate weed control. Higher gallonage applications provide more consistent weed control.

## Nozzles and Nozzle Operation

Use nozzles that produce flat or hollow cone spray patterns. Use non-drip type nozzles including diaphragm type nozzles to avoid unwanted discharge of spray solution. The nozzle must be directed toward the rear of the aircraft, at an angle between 0° and 15° downward. Do not place nozzles on the outer 25% of the wings or rotors.

## Adjuvants

Refer to the additive section or the tank mix partners label for adjuvant specifications.

## DIRECTIONS FOR USE
## TO CONTROL FLOATING AND EMERGED WEEDS USING SURFACE APPLICATION

This product will control weeds and algae listed in Table 1 when applied as a broadcast spray with appropriate equipment. For best results, apply this product to the foliage of actively growing weeds.

**Table 1. Floating and Emerged Weeds**

| Common Name | Scientific Name |
|---|---|
| Alligator Weed | *Alternanthera philoxeroides* |
| Duckweed* | *Lemna* spp. |
| Frog's-bit | *Limnobium spongia* |
| Water Fern | *Salvinia* spp. |
| Water Lettuce | *Pistia stratiotes* |
| Watermeal* | *Wolffia* spp. |
| Water Pennywort | *Hydrocotyle* spp. |
| Filamentous algae | *Pithophara* |
| Filamentous algae | *Cladophora* |

* Coverage is essential for effective duckweed and watermeal control. Any duckweed and/or watermeal escapes left in the water column will quickly re-infest the water body. Apply 200 ppb concentration throughout the water body to control duckweed and watermeal.–see **DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS** section for additional application information.

**Surface Application**

Apply this product as a broadcast spray at 6 to 12 fl oz of formulated product per acre plus an adjuvant approved for use in aquatics.

This product is a contact herbicide that quickly degrades in the water column so plants that do not initially come in contact with the herbicide will not be controlled. Apply this product in a minimum of 30 gallons of water per acre to all areas of the water body where weeds exist. Coverage is essential for effective control as all floating weeds need to be exposed to lethal concentrations in all parts of the water body. Any untreated escapes or re-introductions of plants that were not treated will reestablish in areas where surface weeds had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

Application of this product during early morning hours may enhance weed control. When applying to densely packed actively growing surface weeds, ensure adequate coverage. Rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat floating surface weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with 2,4-D, diquat, glyphosate or other registered foliar applied herbicides for enhanced control of floating and emergent weeds.

Consult a manufacturer's label for specific rate restrictions and weeds controlled. Always follow the most restrictive label restrictions and precautions for all products used when making applications involving tank mixes.

**Application Equipment**
Apply this product with sprayers equipped with nozzles designed to deliver the desired spray pressure and spray volume. Apply by backpack or handgun sprayer, airboat, helicopter, airplane or other application equipment that will ensure thorough coverage of target plant foliage.

## DIRECTIONS FOR USE TO CONTROL SUBMERSED AND FLOATING WEEDS USING SUBSURFACE APPLICATIONS

This product will control submersed and floating weeds listed in Table 2, *Submersed and Floating Weeds Controlled by Subsurface Application*, when applied subsurface with appropriate equipment.

**Table 2. Submersed and Floating Weeds Controlled by Subsurface Application**

| Common Name | Scientific Name |
|---|---|
| Coontail | *Ceratophyllum demersum* |
| Duckweed | *Lemna* spp. |
| Fanwort | *Cabomba caroliniana* |
| Hydrilla | *Hydrilla verticillata* |
| Hygrophila | *Hygrophila polysperma* |
| Naiad, Southern | *Najas guadalupensis* |
| Pondweed, Curlyleaf | *Potamogeton crispus* |
| Pondweed, Sago | *Potamogeton pectinatus* |
| Pondweed, Variable-Leaf | *Potamogeton diversifolius* |
| Water Fern | *Salvinia* spp. |
| Water Lettuce | *Pistia stratiotes* |
| Watermeal | *Wolffia* spp. |
| Watermilfoil, Eurasian | *Myriophyllum spicatum* |
| Watermilfoil, Variable-Leaf | *Myriophyllum heterophyllum* |

**Subsurface Treatment**

Apply this product at a rate that will produce an initial concentration of 200 to 400 ppb (of active ingredient flumioxazin) in the water column.

This product is rapidly absorbed by target plants, but also breaks down quickly in water with a pH greater than 8.5. The pH of water surrounding mats of submersed vegetation can exceed 8.5 by early to mid-day, due to photosynthetic processes. Application of this product under these conditions may provide only partial weed control, and regrowth is likely. For best control, apply this product in a minimum of 30 gallons of water per acre in the early morning to actively growing weeds and early in the season before surface matting occurs. Complete coverage and sufficient contact time of submersed weeds with this product is required for optimal performance. Application of this product with subsurface trailing hoses designed to distribute the herbicide within the plant stand will provide more effective and longer term control of submersed weeds. Use Table 3, *Subsurface Application Rates* to determine the amount of this product needed to achieve desired concentration at different water depths. Use higher concentrations when weed biomass is heavy and/or weeds are more mature and topped out. Any untreated plants that are left in the water column can re-infest treated areas that had previously been controlled. If a second application is required to provide control, make a treatment once the return of these weeds is first observed, but no sooner than 28 days after the last treatment.

When applying this product to densely packed actively growing submersed weeds, a rapid decomposition of vegetation resulting from herbicide treatment can result in loss of oxygen in water. A sudden decrease in dissolved oxygen can result in fish suffocation. If aquatic vegetation is dense, treat submersed weeds in sections to avoid a rapid decrease in dissolved oxygen.

This product may be tank mixed with other registered submersed applied herbicides for enhanced control of submersed and floating weeds.

**Application Equipment for Water Column Treatment**

To improve distribution in the water column and ensure adequate coverage, when possible apply this product with subsurface trailing hoses in order to place the herbicide under the surface and throughout the biomass of aquatic vegetation. Keep swath width to a minimum in order to maximize contact with submersed aquatic vegetation. In small shallow water bodies, surface sprays may be required to apply this product. Apply by backpack or handgun sprayer or other application equipment that will ensure adequate coverage of target plant.

**Information on Hydrilla Control in Florida**

Apply this product as a subsurface treatment for hydrilla control. For best control of hydrilla apply during the late Winter/early Spring and/or early to late Fall. Efficacy of this product will be enhanced at these timings due to lower potential biomass present and lower pH of the water. If applied to mature topped out hydrilla, this product will cause some discoloration and loss of growing tips, but regrowth will be rapid.

Tank mixing this product with other registered herbicides is recommended, especially if hydrilla is approaching maturity or biomass is heavy.

## Subsurface Application Rates

| Water Depth (feet) | Pints of This Product Required Per Surface Acre to Achieve Desired Water Concentration | | |
|---|---|---|---|
| | 200 ppb | 300 ppb | 400 ppb |
| 1 | 1.1 | 1.6 | 2.1 |
| 2 | 2.1 | 3.2 | 4.2 |
| 3 | 3.2 | 4.8 | 6.4 |
| 4 | 4.2 | 6.4 | 8.5 |
| 5 | 5.3 | 8.0 | 10.6 |

**Example:** to achieve an initial concentration of 200 ppb of flumioxazin in a 4 foot deep water column, apply 4.2 pints of this product per surface acre.

# STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.

**PESTICIDE STORAGE**

Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home. For help with any spill, leak, fire or exposure involving this material, call day or night **CHEMTREC (800) 424-9300.**

**PESTICIDE DISPOSAL**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:**

Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. **Triple rinse as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

## WARRANTY DISCLAIMER

**The directions for use of this product must be followed carefully. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, (1) THE GOODS DELIVERED TO YOU ARE FURNISHED "AS IS" BY MANUFACTURER OR SELLER AND (2) MANUFACTURER AND SELLER MAKE NO WARRANTIES, GUARANTEES, OR REPRESENTATIONS OF ANY KIND TO BUYER OR USER, EITHER EXPRESS OR IMPLIED, OR BY USAGE OF TRADE, STATUTORY OR OTHERWISE, WITH REGARD TO THE PRODUCT SOLD, INCLUDING, BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, USE, OR ELIGIBILITY OF THE PRODUCT FOR ANY PARTICULAR TRADE USAGE.** UNINTENDED CONSEQUENCES, INCLUDING BUT NOT LIMITED TO INEFFECTIVENESS, MAY RESULT BECAUSE OF SUCH FACTORS AS THE PRESENCE OR ABSENCE OF OTHER MATERIALS USED IN COMBINATION WITH THE GOODS, OR THE MANNER OF USE OR APPLICATION, INCLUDING WEATHER, ALL OF WHICH ARE BEYOND THE CONTROL OF MANUFACTURER OR SELLER AND ASSUMED BY BUYER OR USER. THIS WRITING CONTAINS ALL OF THE REPRESENTATIONS AND AGREEMENTS BETWEEN BUYER, MANUFACTURER AND SELLER, AND NO PERSON OR AGENT OF MANUFACTURER OR SELLER HAS ANY AUTHORITY TO MAKE ANY REPRESENTATION OR WARRANTY OR AGREEMENT RELATING IN ANY WAY TO THESE GOODS.

## LIMITATION OF LIABILITY

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**If you do not agree with or do not accept any of the directions for use, the warranty disclaimers, or limitations on liability, do not use the product, and return it unopened to the Seller, and the purchase price will be refunded.**



RV051618[2]

SePRO

Specimen Label

| FLURIDONE | GROUP | 12 | HERBICIDE |
|---|---|---|---|

# Sonar Genesis®

**Aquatic Herbicide**

**For management of freshwater aquatic vegetation in ponds, lakes, reservoirs, potable water sources, drainage canals and irrigation canals.**

**For use in New York State, comply with Section 24 (C) Special Local Need labeling for Sonar Genesis, SLN NY**

**Active Ingredient**

Fluridone: 1-methyl-3-phenyl-5-[3-(trifluoromethyl)phenyl]-4(1*H*)-pyridinone ..... .6.3%
**Other Ingredients** ..... 93.7%
**TOTAL** ..... 100.0%

Contains 0.5 pounds active ingredient per gallon.

## Keep Out of Reach of Children

## DANGER / PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

| FIRST AID | |
|---|---|
| **If in eyes** | • Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.<br>• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye.<br>• Call a poison control center or doctor for treatment advice. |
| **If swallowed** | • Call a poison control center or doctor immediately for treatment advice.<br>• Have person sip a glass of water if able to swallow.<br>• Do not induce vomiting unless told to do so by a poison control center or doctor.<br>• Do not give anything by mouth to an unconscious person. |
| **If on skin or clothing** | • Take off contaminated clothing.<br>• Rinse skin immediately with plenty of water for 15 to 20 minutes.<br>• Call a poison control center or doctor for treatment advice. |
| **HOTLINE NUMBER** | |
| Have the product container or label with you when calling a poison control center or doctor, or going for treatment. In case of emergency endangering health or the environment involving this product, call **INFOTRAC** at **1-800-535-5053**. | |
| **NOTE TO PHYSICIAN**: Probable mucosal damage may contraindicate the use of gastric lavage. | |

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Danger. Corrosive. Causes irreversible eye damage. Harmful if swallowed. Avoid contact with skin. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wear long-sleeved shirt and long pants, socks, shoes, and chemical resistant (barrier laminate, butyl rubber ≥ 14 mils, natural rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥14 mils) gloves. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Gloves are required for the following application scenarios:**

- Mixing/loading/applying with hand wand sprayer to ponds/lakes or static canals.
- Mixing/loading/applying with backpack sprayer to static canals.

### ENGINEERING CONTROLS (AIRCRAFT)

Aircraft pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305. *

* Not for use in California.

### ENVIRONMENTAL HAZARDS

Do not apply to water except as specified on the label. Do not apply directly to tidal saltwater sites. Do not contaminate water by disposal of equipment washwaters. Lowest rates should be used in shallow areas where the water depth is considerably less than the average depth of the entire treatment site, for example, shallow shoreline areas. Trees and shrubs growing in water treated with this product may occasionally develop chlorosis. Follow use directions carefully so as to minimize adverse effects on non-target organisms.

### Non-Target Organisms Advisory Statement

This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Read all Directions for Use carefully before applying.

**DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Ensure spray drift to nontarget susceptible species does not occur.

**DO NOT** apply this product in any manner not specifically described in this label.

Observe all cautions and limitations on this label and on the labels of products used in combination with this product. It is the pesticide user's responsibility to ensure that all products in the listed

mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture. **DO NOT** use this product other than in accordance with the instructions set forth on this label. Keep containers closed to avoid spills and contamination.

**IN CASE OF EMERGENCY**
In case of large-scale spillage regarding this product, call INFOTRAC at 1-800-535-5053.
In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- INFOTRAC: 1-800-535-5053

Steps to be taken in case material is released or spilled:

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing, and wash affectedskin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

## PRODUCT INFORMATION

This product is a selective systemic aquatic herbicide for management of freshwater aquatic vegetation in ponds, lakes, reservoirs, drainage canals and irrigation canals, including dry or de-watered areas of these sites. It is absorbed from water by plant shoots and from hydrosoil by the roots of aquatic vascular plants. For in-water treatments, it is important to maintain the specified concentration of this product in contact with the target plants for a minimum of 45 days. Rapid water movement or any condition which results in rapid dilution of this product in treated water will reduce its effectiveness. In susceptible plants, this product inhibits the formation of carotene. In the absence of carotene, chlorophyll is rapidly degraded by sunlight. Herbicidal symptoms appear in seven to ten days and appear as white (chlorotic) or pink growing points in many susceptible plant species. Under optimum conditions, a minimum of 30 to 90 days may be required before the desired level of aquatic plant management is achieved. Plant species susceptibility may vary depending on time of year, stage of growth, and water movement. For best results, apply this product prior to initiation of weed growth or when weeds begin active growth. Application to mature target plants may require an application rate at the higher end of the specified rate range and may take longer to control.

This product is not corrosive to application equipment.

This label provides recommendations on the use of a laboratory analysis for the active ingredient. SePRO Corporation recommends the use of high-performance liquid chromatography (HPLC) for the determination of fluridone concentrations in water. It is recommended to contact SePRO Corporation for the incorporation of this test, known as a FasTEST, in a treatment program. FasTEST is referenced in this label as the preferred method for the rapid determination of the active ingredient in water. Other proven chemical analyses for the active ingredient may also be used.

Application rates and calculations for this product are provided to achieve a desired concentration of fluridone in parts per billion (ppb). **The maximum application rate or sum of all application rates is 90 ppb in ponds and 150 ppb in lakes, reservoirs and static canals per annual growth cycle.** For purposes of this product's labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres. This maximum concentration is the amount of product

calculated as the target application rate, NOT determined by testing the concentration of fluridone in the treated water.

**Weed Resistance Management**

For resistance management, Sonar Genesis is a Group 12 herbicide. Any weed population may contain or develop plants naturally resistant to Sonar Genesis and other Group 12 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same area. Appropriate resistance management strategies should be followed.

To delay herbicide resistance take one or more of the following steps:

- Rotate the use of Sonar Genesis or other Group 12 herbicides within a growing season or among growing seasons with different herbicide groups that control the same weeds.
- Use tank mixtures with herbicides from a different group if such use is permitted; where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or pest control advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed-management program for herbicide use that includes scouting and uses historical information related to herbicide use and that considers mechanical control methods, cultural (e.g., timing to favor the desirable plants and not the weeds), biological (weed-competitive varieties) and other management practices.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method. Prevent movement of resistant weed seeds to other areas by cleaning equipment.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.
- Contact your sales representative, pest control advisors, or local extension specialist for additional pesticide resistance-management and/or integrated weed-management recommendations for specific types of plants and weed biotypes.

**Use Restrictions**

- **Obtain Required Permits:** Consult with appropriate state or local pesticide and/or water authorities before applying this product in or around public waters. Permits and posting or treatment notification may be required by state or local public agencies.
- **Chemigation:** Do not apply this product through any type of irrigation system.
- **Hydroponic Farming:** Do not use water from a Sonar-treated area for hydroponic farming unless one of the following has been verified for the relevant active water intake and its withdrawal of surface water:
  - A FasTEST has been run and the concentration in water at the intake is less than 1 ppb; or
  - A filtration or water treatment process following water intake has been verified analytically to reduce the concentration in potential irrigation water below 1 ppb.

- **Greenhouse and Nursery Plants:** Do not use water from a Sonar-treated area for greenhouse and nursery irrigation unless one of the following has been verified for the relevant active water intake and its withdrawal of surface water:
  - For the irrigation of woody ornamental plants, a FasTEST has been run and the concentration at the intake is less than 5 ppb; or
  - For the irrigation of other greenhouse or nursery plants, the concentration is confirmed less than 1 ppb; or
  - A filtration or water treatment process following water intake has been verified analytically to reduce the concentration in potential irrigation water below either the 1 or 5 ppb levels cited above.
- **Water Use Restrictions Following Applications With Sonar Genesis (Days)**

| Application Rate | Drinking† | Fishing | Swimming | Livestock/Pet Consumption | Irrigation†† |
|---|---|---|---|---|---|
| Maximum Rate (150 ppb) or less | 0 | 0 | 0 | 0 | See irrigation instructions below |

† Note below, under *Potable Water Intakes*, the information for application of this product within ¼ mile (1,320 feet) of a functioning potable water intake.

†† Note below, under *Irrigation*, specific time frames or fluridone concentrations that provide the widest safety margin for irrigating with treated water.

- **Potable Water Intakes:** In lakes and reservoirs or other sources of potable water, do not apply this product at application rates greater than 20 ppb within one-fourth mile (1,320 feet) of any functioning potable water intake. At application rates of 4 to 20 ppb, this product may be applied where functioning potable water intakes are present. **NOTE: Existing potable water intakes which are no longer in use, such as those replaced by potable water wells or connections to a municipal water system, are not considered to be functioning potable water intakes.**
- Aircraft pilots must use an enclosed cab that meets the definition listed in the WPS for agricultural pesticides 40 CFR 170.305. *

  * Not for use in California.

**Use Precautions**

- **Irrigation:** Irrigation from area treated with this product may result in injury to the irrigated vegetation. Follow these precautions and inform those who irrigate from areas treated with this product of the irrigation time frames or FasTEST requirements presented in the table below. Follow the following time frames and assay directions to reduce the potential for injury to vegetation irrigated with treated water. Greater potential for crop injury occurs where treated water is applied to crops grown on low organic and sandy soils.

| Application Site | DAYS AFTER APPLICATION | | |
|---|---|---|---|
| | Established Tree Crops | Established Row Crops/ Turf/Plants | Newly Seeded Crops/Seedbeds or Areas to be Planted Including Overseeded Golf Course Greens |
| Ponds and Static Canals † | 7 | 30 | Assay required |
| Canals | 7 | 14 | Assay required |
| Lakes and Reservoirs †† | 7 | 14 | Assay required |
| Dry or De-watered Canals ††† | 0 | 0 | ††† |

† For purposes of this labeling, a pond is defined as a body of water 10 acres or less in size. A lake or reservoir is greater than 10 acres.

†† In lakes and reservoirs where one-half or greater of the body of water is treated, use the pond and static canal irrigation precautions. When applying this product to exposed sediments of aquatic sites such as lakes and reservoirs, follow these time frames prior to using water for irrigation once sites are reflooded.

††† When this product is applied to exposed sediments of dry or de-watered irrigation canals, treatments must be made at least 2 weeks prior to when the canals are to be refilled, and allow canals to refill for a minimum of 24 hours before using water for irrigation.

Where the use of Sonar Genesis treated water is desired for irrigating crops prior to the time frames established above, the use of FasTEST analysis is recommended to measure the concentration of fluridone in the treated water. Where a FasTEST has determined that the fluridone concentrations are less than 10 parts per billion, there are no irrigation precautions for irrigating established tree crops, plants, row crops or turf. **For tobacco, tomatoes, peppers or other plants within the Solanaceae Family and newly seeded crops or newly seeded grasses such as overseeded golf course greens, do not use treated water if measured fluridone concentrations are greater than 5 ppb. Furthermore, when rotating crops, do not plant members of the Solanaceae family in land that has been previously irrigated with fluridone concentrations in excess of 5 ppb in the previous year without direct consultation with a SePRO Aquatic Specialist. It is recommended that a SePRO Aquatic Specialist be consulted prior to commencing irrigation of these sites.**

## PLANT CONTROL INFORMATION

This product's selectivity is dependent upon dosage, time of year, stage of growth, method of application and water movement. The following categories, controlled and partially controlled are provided to describe expected efficacy under ideal treatment conditions using higher to maximum label rates. Use of lower rates will increase selectivity of some species listed as controlled or partially controlled. Additional aquatic plants may be controlled, partially controlled, or tolerant to this product. It is recommended to consult a SePRO Aquatic Specialist prior to application to determine a plant's susceptibility to the planned treatment.

### Vascular Aquatic Plants Controlled

***Submersed Plants***

bladderwort (*Utricularia* spp.)
common coontail (*Ceratophyllum demersum*)
common elodea (*Elodea canadensis*)
egeria, Brazilian elodea (*Egeria densa*)
fanwort, cabomba (*Cabomba caroliniana*)
hydrilla (*Hydrilla verticillata*)

naiad (*Najas* spp.)
pondweed (*Potamogeton* spp., except Illinois pondweed)
watermilfoil *(Myriophyllum* spp., including *M. spicatum* x *sibiricum* hybrids)

***Emersed Plants***
spatterdock (*Nuphar luteum*)
water-lily (*Nymphaea* spp.)
watershield (*Brasenia schreberi*)

***Floating Plants***
common duckweed (*Lemna minor*)
Salvinia (*Salvinia spp.*)

**Vascular Aquatic Plants <u>Partially Controlled</u>**

***Submersed Plants***
Illinois pondweed (*Potamogeton illinoensis*)
limnophila (*Limnophila sessiliflora*)
tapegrass, American eelgrass (*Vallisneria americana*)

***Emersed Plants***
alligatorweed (*Alternanthera philoxeroides*)
American lotus (*Nelumbo lutea*)
cattail (*Typha* spp.)
creeping waterprimrose (*Ludwigia peploides*)
parrotfeather (*Myriophyllum aquaticum*)
smartweed (*Polygonum* spp.)
spikerush (*Eleocharis* spp.)
waterpurslane (*Ludwigia palustris*)

***Floating Plants***
common watermeal (*Wolffia columbiana*)†

***Shoreline Grasses***
barnyardgrass (*Echinochloa crusgalli*)
giant cutgrass (*Zizaniopsis miliacea*)
reed canarygrass (*Philaris arundinaceae*)
southern watergrass (*Hydrochloa caroliniensis*)
torpedograss (*Panicum repens*)

† Consult with a SePRO Aquatic Specialist about techniques to enhance efficacy of watermeal, including incorporation of Galleon S.C. Aquatic Herbicide into a treatment program, in difficult to control sites.

## MIXING AND APPLICATION DIRECTIONS

The aquatic plants present in the treatment site should be identified prior to application to determine their susceptibility to this product. It is important to determine the area (acres) to be treated and the average depth in order to select the proper application rate. Do not exceed the maximum labeled rate for a given treatment site per annual growth cycle.

This product may be applied or metered directly into the treated area or diluted with water prior to application. Add the specified amount of this product to water in the spray tank during the filling operation. Surface and subsurface application of the spray can be made with conventional spray equipment. This product can also be applied near the surface of the hydrosoil using weighted trailing hoses. A minimum spray volume of 5 to 100 gallons per acre may be used. This product may also be directly metered into the pumping system where it is diluted with water.

**Tank Mix Directions**

This product may be tank mixed with other aquatic herbicides and algaecides to enhance efficacy and plant selectivity provided that this label does not prohibit such mixing. When tank mixing, read and follow the labeled precautionary statements, directions for use, weeds controlled, and other restrictions for each tank mix product. **It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.** No labeled rate or dose should be exceeded. To ensure compatibility, a jar test is recommended before field application of any tank mix combination. It is recommended to consult with SePRO Corporation for latest tank mix recommendations.

**NOTE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be at the exclusive risk of the user, applicator and/or application adviser, to the extent allowed by applicable law.

**Application Rate Calculation**

The amount of this product to be applied to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

**Gallons of product required** = surfaces acres X average water depth of treatment site (feet) **x** desired ppb concentration of active ingredient **x** 0.0054.

For example, the amount per acre of product required to provide a concentration of 30 ppb of active ingredient in a 1 acre pond with an average depth of 5 feet is calculated as follows:

1 acre x 5 feet **x** 30 ppb **x** 0.0054 = 0.81 gallons per treated surface acre

*or*

0.81 gallons x 4 quarts/gallon = 3.2 quarts per treated surface acres

*or*

0.81 gallons x 128 ounces/gallon = 104 ounces per treated surface acre

**Application to Ponds**

This product may be applied to the entire surface area of a pond. For single applications, rates may be selected to provide 30 to 90 ppb to the treated water. Use the higher rate within the rate range where there is a dense weed mass, when treating more difficult to control species, and for ponds less than 5 acres in size with an average depth less than 4 feet. Application rates necessary to obtain these concentrations are shown in the following table. For additional application rate calculations, refer to the *Application Rate Calculation* section of this label. Split or multiple applications may be used to control more difficult target plants and/or where dilution of treated water is anticipated; however, the sum of all applications must not exceed a total of 90 ppb per annual growth cycle.

| Average Water Depth of Treatment Site (feet) | Gallons of product per Treated Surface Acre† | |
|---|---|---|
| | 30 ppb | 90 ppb |
| 1 | 0.16 | 0.48 |
| 2 | 0.32 | 0.97 |
| 3 | 0.48 | 1.45 |
| 4 | 0.64 | 1.94 |
| 5 | 0.81 | 2.43 |
| 6 | 0.97 | 2.91 |
| 7 | 1.13 | 3.40 |
| 8 | 1.29 | 3.88 |
| 9 | 1.45 | 4.37 |
| 10 | 1.62 | 4.86 |

†To calculate the number of quarts of product required, use the calculation as follows:
gallons per surface acre x 4 quarts/gallon = quarts per surface acre

For example: targeting a concentration of 30 ppb in a one acre pond with average depth of 5 feet would require 0.81 gallons or 3.2 quarts.

**Application to Lakes and Reservoirs**

The following treatments may be used for treating both whole lakes or reservoirs and partial areas of lakes or reservoirs (bays, etc.). For best results in treating partial lakes and reservoirs, treatment areas should be a minimum of 5 acres in size. Treatment of areas smaller than 5 acres or treatment of narrow strips such as boat lanes or shorelines may not produce satisfactory results due to dilution by untreated water. Rate ranges are provided as a guide to include a wide range of environmental factors, such as, target species, plant susceptibility, selectivity and other aquatic plant management objectives. Application rates and methods should be selected to meet the specific lake/reservoir aquatic plant management goals.

***Whole Lake or Reservoir Treatments (Limited or No Water Discharge)***

***Single Application to Whole Lakes or Reservoirs***

Where single applications to whole lakes or reservoirs are desired, this product may be applied at an application rate of 10 to 90 ppb. Application rates necessary to obtain these concentrations in treated water are shown in the following table. For additional rate calculations, refer to the *Application Rate Calculation* section of this label. Choose an application rate from the table below to meet the aquatic plant management objective. **Where greater plant selectivity is desired such as when controlling Eurasian watermilfoil and curlyleaf pondweed, an application rate lower in the rate range may be chosen.** For other plant species, it is recommended to contact a SePRO Aquatic Specialist for determining when to choose application rates lower in the rate range to meet specific plant management goals. Use the higher rate within the rate range where there is a dense weed mass or when treating more difficult to control plant species. Retreatments may be required to control more difficult to control species or in the event of a heavy rainfall event where dilution of the treatment concentration has occurred. In these cases, a second application or more may be required; however, the sum of all applications must not exceed 150 ppb per annual growth cycle. Refer to the section of this label entitled, *Split or Multiple Applications to Whole Lakes or Reservoirs,* for guidelines and maximum rate allowed.

| SINGLE APPLICATION | | |
|---|---|---|
| Average Water Depth of Treatment Site (feet) | Gallons of Product per Treated Surface Acre to Achieve† | |
| | 10 ppb | 90 ppb |
| 1 | 0.05 | 0.48 |
| 2 | 0.10 | 0.97 |
| 3 | 0.16 | 1.45 |
| 4 | 0.21 | 1.94 |
| 5 | 0.27 | 2.43 |
| 6 | 0.32 | 2.91 |
| 7 | 0.37 | 3.40 |
| 8 | 0.43 | 3.88 |
| 9 | 0.48 | 4.37 |
| 10 | 0.54 | 4.86 |

†To calculate the number of quarts product required, use the calculation as follows:
gallons per surface acre x 4 quarts/gallon = quarts per surface acre

For example: targeting a dose of 10 ppb in a 20 acre lake with average depth of 5 feet would require 0.27 gallons per surface acre or 1.0 quarts.

***Split or Multiple Applications to Whole Lakes or Reservoirs***

To meet certain plant management objectives, split or multiple applications may be desired in making whole lake treatments. Split or multiple application programs are desirable when the objective is to use the minimum effective dose and, through the use of a water analysis, e.g. FasTEST, add additional product to maintain this lower dose for the sufficient time to ensure efficacy and enhance selectivity. Water may be treated at an initial application concentration of 4 to 50 ppb. Additional split applications should be conducted to maintain a sufficient concentration for a minimum of 45 days or longer. **In controlling Eurasian watermilfoil and curlyleaf pondweed and where greater plant selectivity is desired, an application rate lower in the rate range may be chosen**. For other plant species, it is recommended to contact a SePRO Aquatic Specialist for assistance in selecting the appropriate concentrations and timing of application to meet specific plant management goals. When utilizing split or multiple applications of this product, the utilization of FasTEST is strongly recommended to determine the actual concentration in the water over time. For split or multiple applications, the sum of all applications must not exceed 150 ppb per annual growth cycle.

**NOTE:** In treating lakes or reservoirs that contain functioning potable water intakes and the application requires treating within ¼ mile of a potable water intake, no single application can exceed 20 ppb. Additionally, the sum of all applications must not exceed 150 ppb per annual growth cycle.

***Partial Lake or Reservoir Treatments***

Where dilution with untreated water is anticipated, such as in partial lake or reservoir treatments, split or multiple applications may be used to extend the contact time to the target plants. The application rate and use frequency of this product in a partial lake is highly dependent upon the treatment area. An application rate at the higher end of the specified rate range may be required and frequency of applications will vary depending upon the potential of untreated water diluting

the product's concentration in the treatment area. Use a rate at the higher end of the rate range where greater dilution with untreated water is anticipated.

***Treatment Areas Greater Than ¼ Mile from a Functioning Potable Water Intake***

For single applications, this product may be applied at application rates from 30 to 150 ppb. Split or multiple applications may be made; however, the sum of all applications must not exceed 150 ppb per annual growth cycle. Split applications should be conducted to maintain a sufficient concentration in the target area for a period of 45 days or longer. The use of a FasTEST is recommended to maintain the desired concentration in the target area over time.

***Treatment Areas within ¼ Mile of a Functioning Potable Water Intake***

In treatment areas that are within ¼ mile of a potable water intake, no single application can exceed 20 ppb. When utilizing split or multiple applications for sites which contain a potable water intake, a FasTEST is required to determine the actual concentration in the water. Additionally, the sum of all applications must not exceed 150 ppb per annual growth cycle.

***Application to Sediments of Dry or De-Watered Aquatic Sites***

For application to sediments of dry or de-watered aquatic sites, including exposed sediments of lakes or reservoirs, irrigation canals, non-irrigation canals and drainage canals, apply a maximum of 4 gallons of product per surface acre per annual growth cycle. Apply product evenly to the sediment surface, with a minimum spray solution of 30 to 100 gallons per surface acre. High levels of organic matter in treated-sediments may reduce efficacy. This product may be applied with other aquatic herbicides labeled for this use. It is recommended that a SePRO Aquatic Specialist be consulted for further use recommendations.

**Direct foliar application to floating, topped-out and emerged aquatic vegetation**

For application to floating, topped-out and emerged aquatic vegetation in ponds, lakes, reservoirs, drainage canals and irrigation canals, including dry or de-watered areas of these sites, apply a maximum of 4 gallons of product per surface acre per annual growth cycle. Apply product evenly to the treatment area using properly calibrated broadcast equipment in a minimum spray solution of 20 to 100 gallons per surface acre. For treatment of vegetation in or on water, do not exceed a water concentration of 150 ppb. Spot treatments can be made with up to 5% of this product by volume when application rate does not exceed 4 gallons of product per surface acre. It is recommended that a SePRO Aquatic Specialist be consulted for site specific recommendations.

**Application to Drainage Canals and Irrigation Canals**

***Static Canals***

In static drainage and irrigation canals, apply this product at the rate of 30 to 150 ppb. The maximum application rate or sum of all application rates must not exceed 150 ppb per annual growth cycle.

***Moving Water Canals***

In slow moving bodies of water use an application technique that maintains a concentration of 10 to 40 ppb in the target area for a minimum of 45 days. This product can be applied by split or multiple broadcast applications or by metering in the product to provide a uniform concentration of the herbicide based upon the flow pattern. The use of a FasTEST is recommended to maintain the desired concentration in the target area over time.

***Static or Moving Water Canals Containing a Functioning Potable Water Intake***

In treating a static or moving water canal which contains a functioning potable water intake, applications greater than 20 ppb must be made more than ¼ mile from a functioning potable water intake. Applications less than 20 ppb may be applied within ¼ mile from a functioning potable water intake; however, if applications are made within ¼ mile of a functioning potable water intake, a FasTEST analysis must be utilized to demonstrate that concentrations do not exceed 150 ppb at the functioning potable water intake.

***Application Rate Calculation — Moving Water Drainage and Irrigation Canals***

The amount of product to be applied through a metering system to provide the desired ppb concentration of active ingredient in treated water may be calculated as follows:

1. Average flow rate (feet per second) **x** average canal width (ft.) **x** average canal depth (ft.) = CFS (cubic feet per second).
2. CFS **x** 1.98 = acre feet per day (water movement)
3. Acre feet per day **x** desired ppb **x** 0.0054 = Gallons of product required per day

**SPRAY DRIFT ADVISORIES**

The applicator is responsible for avoiding off-site spray drift. Be aware of nearby non-target sites and environmental conditions.

**Importance of Droplet Size**

An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

***Controlling Droplet Size – Ground Boom***

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

***Controlling Droplet Size – Aircraft***

- Adjust Nozzles - Follow nozzle manufacturers recommendations for setting up nozzles. Generally, to reduce fine droplets, nozzles should be oriented parallel with the airflow in flight. *
  * Not for use in California.

**Boom Height – Ground Boom**

For ground equipment, the boom should remain level with the crop and have minimal bounce.

**Release Height - Aircraft**

Higher release heights increase the potential for spray drift. *
* Not for use in California.

**Shielded Sprayers**
Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

**Temperature and Humidity**
When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

**Temperature Inversions**
Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

**Wind**
Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.
Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

**Boom-less Ground Applications**
Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

**Handheld Technology Applications**
Take precautions to minimize spray drift.

**STORAGE AND DISPOSAL**
Do not contaminate water, food, or feed by storage or disposal.
**Pesticide Storage:** Keep from freezing. Store in original container only. Do not store near feed or foodstuffs. In case of leak or spill, use absorbent materials to contain liquids and dispose as waste.
**Pesticide Disposal:** Wastes resulting from use of this product may be used according to label directions or disposed of at an approved waste facility.
**Container Handling**
**Non-refillable Container. DO NOT reuse or refill this container.** Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.
**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

(Continued)

**Triple rinse containers to large to shake (capacity > 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold coantiainer upside down over application equipment or mix tank, or collect risnate for later use of disposal. Insert pressure rinising nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Warranty Disclaimer:** SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

**Misuse:** Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

For additional important labeling information regarding SePRO Corporation's Terms and Conditions of Use, Inherent Risks of Use and Limitation of Remedies, please visit *http://seprolabels.com/terms* or scan the image below.



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EPA Accepted Date 08/11/2022

FPL20220929

**SePRO Corporation 11550 N. Meridian Street, Suite 600 Carmel, IN 46032, U.S.A.**

# Clearcast®

## Herbicide

SPECIMEN

SePRO

GROUP 2 HERBICIDE

FOR THE CONTROL OF VEGETATION IN AND AROUND AQUATIC AND NON-CROPLAND SITES INCLUDING AREAS THAT MAY BE GRAZED OR CUT FOR HAY

| | |
|---|---|
| **Active Ingredient:** | |
| ammonium salt of imazamox 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid[1] | 12.1% |
| **Other Ingredients** | 87.9% |
| **TOTAL** | 100.0% |

[1] Equivalent to 11.4% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid

1 gallon contains 1.0 pound of active ingredient as the free acid

**Keep Out of Reach of Children**

## CAUTION/PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See inside for complete Precautionary Statements, Directions for Use, Conditions of Sale and Warranty, and state-specific crop and/or use site restrictions.

Notice: Read the entire label before using. Use only according to label directions. Before buying or using this product, read Warranty Disclaimer and Misuse statements inside label booklet. If terms are unacceptable, return at once unopened.

EPA Reg. No. 241-437-67690
EPA Est. No. 067690-NC-002
NVA 2016-04-299-0160

FPL20161026
166801

Manufactured for:
SePRO Corporation 11550 N. Meridian St., Ste. 600, Carmel, IN 46032 U.S.A.

**Keep Out of Reach of Children**

## CAUTION/PRECAUCIÓN

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

| FIRST AID | |
|---|---|
| **If on skin or clothing** | • Take off contaminated clothing.<br>• Rinse skin immediately with plenty of water for 15 to 20 minutes.<br>• Call a poison control center or doctor for treatment advice. |
| **If in eyes** | • Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes.<br>• Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eyes.<br>• Call a poison control center or doctor for treatment advice. |
| **If inhaled** | • Move person to fresh air.<br>• If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably mouth to mouth if possible.<br>• Call a poison control center or doctor for further treatment advice. |

**HOTLINE NUMBER**

Have the product container or label with you when calling a poison control center or doctor or going for treatment. In case of an emergency endangering life or property involving this product, call **INFOTRAC** for emergency medical treatment information: **1-800-535-5053**.

## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if absorbed through skin or inhaled. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants;
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or Viton ≥ 14 mils;
- Shoes plus socks.

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

### USER SAFETY RECOMMENDATIONS

**Users should:**

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

This pesticide may be hazardous to plants outside the treated area. **DO NOT** apply to water except as specified in this label. **DO NOT** contaminate water when disposing of equipment washwaters and rinsate.

## DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This labeling must be in the possession of the user at the time of pesticide application.

**DO NOT** apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Ensure spray drift to nontarget susceptible species does not occur.

**DO NOT** apply **Clearcast®** Herbicide in any manner not specifically described in this label.

Observe all cautions and limitations on this label and on the labels of products used in combination with **Clearcast.**
**DO NOT use Clearcast** other than in accordance with the instructions set forth on this label. Keep containers closed to avoid spills and contamination.

### STORAGE AND DISPOSAL

**DO NOT** contaminate food, feed or water by storage or disposal.
**Pesticide Storage**
Keep from freezing. **DO NOT** store below 32°F.
**Pesticide Disposal**
Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.
**Container Handling**
**Nonrefillable Container. DO NOT** reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.
**Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.
**Triple rinse containers too large to shake (capacity >5 gallons) as follows:** Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application

## STORAGE AND DISPOSAL *(continued)*

equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse as follows:** Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

**Refillable Container.** Refill this container with pesticide only.

**DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

**Triple rinse as follows:** To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with a pesticide product. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

## IN CASE OF EMERGENCY

In case of large-scale spill of this product, call INFOTRAC at 1-800-535-5053.

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- INFOTRAC: 1-800-535-5053

**Steps to take if material is released or spilled:**

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing, and wash affected skin areas with soap and water.
- Wash clothing before reuse.
- Keep the spill out of all sewers and open bodies of water.

## PRODUCT INFORMATION

**Clearcast® herbicide** is an aqueous formulation that may be diluted in water and either applied directly to water for the control/suppression of certain submerged aquatic vegetation or applied as a broadcast or spot spray to floating and emergent vegetation. Aquatic sites that may be treated include estuarine and marine sites, ponds, lakes, reservoirs, wetlands, marshes, swamps, bayous, arroyos, ditches, canals, streams, rivers, creeks and other slow-moving or quiescent bodies of water. **Clearcast** may also be used during drawdown conditions. **Clearcast** may also be applied for terrestrial and riparian vegetation control in industrial noncropland sites, and railroad, utility, and highway rights-of-way. Industrial noncropland sites include utility plant sites, tank farms, pumping installations, storage areas, fence rows and ditch banks. **Clearcast** may also be used for the establishment and maintenance of wildlife openings. **Clearcast** may also be used on those sites listed above that may be grazed or cut for hay.

**Clearcast** is quickly absorbed by foliage and/or plant roots and rapidly translocated to the growing points stopping growth. Susceptible plants may develop a yellow appearance or general discoloration and will eventually die or be severely growth inhibited.

**Clearcast** is herbicidally active on many submerged, emergent and floating broadleaf and monocot aquatic plants. The relative levels of control and selectivity can be manipulated by using a choice of rates and herbicide placement (water injected or floating/emergent foliar application).

To help maintain the utility of herbicide programs, the use of herbicides with different modes of action is effective in managing weed resistance.

### Spray Adjuvants

Applications of **Clearcast** to emergent, floating or shoreline species require the use of a spray adjuvant. Always use a spray adjuvant that is appropriate for aquatic sites.

**Nonionic Surfactants** - Use a nonionic surfactant at 0.25% volume/volume (v/v) or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with an HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

**Methylated Seed Oils or Vegetable Oil Concentrates** - Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, mix methylated seed oil or vegetable-based seed oil concentrates at 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **Clearcast** deposition and uptake by plants under stress.

**Silicone-based Surfactants** - See manufacturer's label for specific rates. Silicone-based surfactants may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

**Invert Emulsions – Clearcast** can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray runoff, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

**Other** - An antifoaming agent, spray pattern indicator, sinking agent or drift-reducing agent may be applied at the product labeled rate if necessary or desired.

### Spray Drift Requirements for Aerial Application

- Applicators are required to use a coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet. Applicators are required to use a very coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet. Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
- Applicators are required to use upwind swath displacement.
- The boom length must not exceed 60% of the fixed wingspan or 90% of the rotor blade diameter to reduce spray drift.
- **DO NOT** apply when wind speed is greater than 10 mph.
- If applying at wind speeds less than 3 mph, the applicator must determine if
  1. Conditions of temperature inversion exist or
  2. Stable atmospheric conditions exist at or below nozzle height.

**DO NOT** make applications into areas of temperature inversions or stable atmospheric conditions.

### Spray Drift Requirements for Ground Boom Application

- Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.
- Applications with wind speeds greater than 10 mph are prohibited.
- Applications into temperature inversions are prohibited.

**DO NOT** apply when wind conditions may result in drift, when temperature inversion conditions exist, or when spray may be carried to sensitive areas. See *Managing Off-target Movement* section for more drift reduction recommendations.

## AQUATIC USE DIRECTIONS

**Clearcast® herbicide** may be applied directly to the water for the control of submerged aquatic plant species and some emergent and floating species, or as a foliar application specifically for emergent and floating species.

**DO NOT exceed maximum use rate per application:**

- Water treatment - 500 parts per billion (ppb) (173 fl ozs of **Clearcast** per acre foot)
- Foliar broadcast application – 1 gallon per acre (1.0 lb ae/A)
- Foliar spot application - up to 5% **Clearcast** by volume

**Clearcast** may be applied by surface and aerial equipment including both fixed-wing aircraft and helicopter.

## Foliar Application

**Targeted Emergent and/or Floating Vegetation Application**
To make surface applications targeting emergent or floating vegetation, uniformly apply with properly calibrated broadcast or spot treatment equipment in 10 or more gallons of water per acre. Spot treatments can be made with up to 5% **Clearcast** by volume. To ensure thorough spray coverage, higher spray volumes may be required when treating areas with large and/or dense vegetation. Use an appropriate spray pressure to minimize the drift potential depending upon spray equipment, conditions and application objectives.

**Foliar Treatment of Emergent and Floating Vegetation Guidelines**
- Always use a surfactant for foliar applications of emergent and floating weeds.
- Foliar applications of **Clearcast** may be made as a broadcast spray or as a spot spray with a percent spray solution ranging from 0.25% to 5% **Clearcast** by volume.
- Control will be reduced if spray is washed off foliage by wave action.

In aquatic sites, those application techniques described in the *Terrestrial Use Directions section may be used to treat emergent vegetation.*

## Application to Water

**Water Application to Target Submerged and/or Emergent/Floating Vegetation**
**Clearcast** may be broadcast-applied to the water surface or injected below the water surface. **Clearcast** may be applied as undiluted product or diluted with water prior to application. Under surface-matted conditions, inject **Clearcast** below the water surface to achieve better product distribution.

Apply **Clearcast** to water to achieve a final concentration of the active ingredient of no more than 500 ppb. Multiple applications of Clearcast may be made during the annual growth cycle to maintain the desired vegetation response.

| Clearcast Rates Per Treated Surface Acre | | | | |
|---|---|---|---|---|
| Average Water Depth of Treatment Site (feet) | Desired Active Ingredient Concentration (ppb)† | | | |
| | 50 | 100 | 200 | 500 |
| | Clearcast Rate per Treated Surface Acre (fl ozs) | | | |
| 1 | 17 | 35 | 69 | 173 |
| 2 | 35 | 69 | 138 | 346 |
| 3 | 52 | 104 | 207 | 518 |
| 4 | 70 | 138 | 277 | 691 |
| 5 | 87 | 173 | 346 | 864 |
| 6 | 104 | 207 | 415 | 1,037 |
| 7 | 122 | 242 | 484 | 1,210 |
| 8 | 139 | 277 | 553 | 1,382 |
| 9 | 157 | 311 | 622 | 1,555 |
| 10 | 174 | 346 | 691 | 1,728 |

†**Clearcast** contains 1.0 pound of active ingredient per gallon. There are 128 fl ozs in one gallon.

## Aerial Application

**Clearcast** may be applied by both fixed-wing aircraft and helicopter. There is no minimum spray volume when making applications directly to the water. For applications targeting emergent and/or floating vegetation, uniformly apply with properly calibrated equipment in 5 or more gallons of water per surface acre. For best results, make aerial applications using a minimum of 20 gallons per acre.

## Drawdown Application

**Clearcast** may be used in drawdown situations to provide postemergence and/or preemergence control/suppression of aquatic vegetation. Apply **Clearcast** as a broadcast spray at rates up to 1 gallon/A or as a spot spray treatment with up to 5% **Clearcast** by volume. Make applications when water has receded and exposed soil is moist to dry. For postemergence (foliar) applications, wait at least two weeks after application before reintroducing water. When treating irrigation canals, the initial flush of recharge water after application must not be used for irrigation purposes.

## RESTRICTIONS

- **DO NOT** apply **Clearcast** to achieve a total active ingredient concentration in the water greater than 500 ppb.
- **DO NOT** apply more than 1 gallon of **Clearcast** per surface acre for the control of emergent and floating vegetation.

## Irrigation Restrictions

- **DO NOT** use treated water to irrigate greenhouses, nurseries or hydroponics until the imazamox concentration has been determined by an acceptable method to be less than or equal to 1.0 ppb.
- **DO NOT** plant sugar beets, onions, potatoes or non-**CLEARFIELD®** canola in soils that have been previously irrigated with **Clearcast**-treated water until a soil bioassay successfully demonstrates acceptable levels of crop tolerance. The only exception to this restriction is if the water is from foliar applications to emergent and/or floating vegetation in flowing water sites where it has been applied at less than or equal to 1.5 quarts per acre to waters with an average depth of greater than or equal to 4 feet.
- **DO NOT** use **Clearcast**-treated waters resulting in a concentration greater than 50 ppb for irrigation of established (emerged) plants until residue levels have been shown to be less than or equal to 50 ppb by an acceptable method.
- **DO NOT** make **Clearcast** applications in and around golf course irrigation, sod farm irrigation, and vineyard irrigation waterbodies without testing potential irrigation water prior to irrigation and confirming the imazamox concentration to be less than or equal to 1.0 ppb.
- In still or quiescent waters, do not use **Clearcast**-treated water resulting in a concentration greater than 10 ppb for irrigation of newly seeded or newly established plants until residue levels have been shown to be less than or equal to 10 ppb by an acceptable method.
- Wait 24 hours before irrigating from still or quiescent waters after making a **Clearcast** application for submerged vegetation less than 100 feet from an irrigation intake.
- Wait 24 hours before irrigating from still and quiescent waters after making a **Clearcast** application to emergent and/or floating vegetation if greater than 25% of the surface area of the water body has been treated or application was made less than 100 feet from an irrigation intake.
- Flowing waters may be used to irrigate allowable sites with no restrictions when **Clearcast** is applied at less than or equal to 2 quarts per acre to waters with an average depth of greater than or equal to 4 feet.
- After application of **Clearcast** to dry irrigation canals/ditches, the initial flush of water during recharge must not be used for irrigation purposes unless the imazamox concentration has been determined by an acceptable method to be less than 25 ppb.

**Clearcast** applied at less than or equal to 2 quarts per acre in or on waters with a minimum average depth greater than or equal to 4 feet will result in **Clearcast** concentrations less than 50 ppb.

## Other Water Use Restrictions

There are no restrictions on livestock watering, swimming, fishing, domestic use, or use of treated water for agricultural sprays.

## Potable Water

**Clearcast** may be applied to potable water sources at concentrations up to 500 ppb to within a distance of ¼ mile from an active potable water intake. Within ¼ mile of an active potable water intake, **Clearcast** may be applied, but water concentrations resulting from injection and/or foliar applications may not exceed 50 ppb. If water concentrations greater than 50 ppb are required, the potable water intake must be shut and, if necessary, an alternate water supply be made available until the water concentration can be shown to be less than 50 ppb by an acceptable method.

## Endangered Plant Species

To prevent potential negative impacts to endangered plant species, **DO NOT** apply **Clearcast** in a way that adversely affects federally listed endangered and threatened species.

## WEEDS CONTROLLED OR SUPPRESSED BY CLEARCAST

Efficacy and selectivity of **Clearcast** is dependent upon many factors including: dose, time of year, stage of plant growth, plant susceptibility, method of application, and water movement. Rate selection will be partially dependent on characteristics of the treatment area and whether growth regulation or control is desired. Some areas may require a repeat application to control or suppress regrowth. Consult SePRO Corporation to determine best treatment protocols to manage individual species and to meet specific aquatic plant management objectives.

| **Emergent, Floating, and Shoreline Species Controlled with Foliar Application** | | | |
|---|---|---|---|
| **Common Name** | **Scientific Name** | **Rate (fl ozs/A)** | **Comments** |
| Alligatorweed | *Alternanthera philoxeroides* | 64 to 128 | Repeat applications may be necessary. Add 1 qt/A of AquaPro® herbicide for quicker brownout. |
| American lotus | *Nelumbo lutea* | 64 to 128 | |
| Arrowhead | *Sagittaria* spp. | 32 to 64 | |
| Cattail | *Typha* spp. | 32 to 64 | Apply after full green up through killing frost. |
| Chinese tallowtree | *Sapium sebiferum* | 64 to 128 | |
| Common reed | *Phragmites* spp. | 96 to 128 | Use 1 qt/A methylated seed oil (MSO); apply in late vegetative stage up to killing frost. Also apply as a spot treatment using 1% to 2% **Clearcast** per spray volume. Older stands of phragmites and stands growing in water may be more difficult to control and will require follow-up applications. |
| Common salvinia | *Salvinia minima* | 32 to 64 | Apply with MSO or MSO + silicone-based surfactant; retreatment will be necessary. |
| Floating heart | *Nymphoides* spp. | 64 to 128 | Also apply as a spot treatment using 2% to 5% **Clearcast** and 1% MSO per spray volume. |
| Floating pennywort | *Hydrocotyle ranunculoides* | 32 to 64 | Repeat applications may be necessary. |
| Flowering rush | *Butomus umbellatus* | 64 to 128 | |
| Four-leaf clover | *Marsilea* spp. | 32 to 64 | |
| Frog's bit, Sponge plant | *Lymnobium* spp. | 16 to 32 | |
| Giant cane | *Arundo donax* | 64 to 128 | |
| Japanese knotweed | *Polygonum cuspidatum* | 64 to 128 | |
| Mexican lily | *Nymphaea mexicana* | 32 to 64 | |
| Mosquito fern | *Azolla* spp. | – | Apply using 2% to 5% Clearcast and 1% MSO by volume. |
| Parrotfeather | *Myriophyllum aquaticum* | 64 to 128 | Apply only to emergent vegetation. |
| Pickerelweed | *Pontederia cordata* | 32 to 64 | |
| Saltcedar | *Tamarix* spp. | 64 to 128 | Also apply using 2% to 5% **Clearcast** and 1% MSO per spray volume. |
| Smartweed, ladysthumb<br>Smartweed, Pennsylvania<br>Smartweed, swamp | *Polygonum persicaria, Persicaria maculosa*<br>*Polygonum pensylvanicum, Persicaria pensylvanica*<br>*Polygonum coccineum, Persicaria amphibia* | 64 to 128 | |
| Spatterdock | *Nuphar lutea* | 64 to 128 | |
| Variable-leaf milfoil | *Myriophyllum heterophyllum* | 64 to 128 | Apply with MSO (1% v/v) as an emergent foliar treatment when plants have emerged on the surface. Also apply as a spot treatment using 1% to 3% **Clearcast** per spray volume. |
| Water chestnut | *Trapa natans* | 64 to 128 | Apply with MSO to emergent part of plant. Also apply as a spot treatment using 2% to 5% Clearcast per spray volume. |
| Water hyacinth | *Eichhornia crassipes* | 16 to 32 | |
| Water lettuce | *Pistia stratiotes* | 48 to 96 | |
| Water lily | *Nymphaea* spp. | 32 to 64 | |
| Water primrose | *Ludwigia* spp. | 32 to 64 | Add 1 qt/A of AquaPro® herbicide for quicker brownout. |
| Watershield | *Brasenia schreberi* | 48 to 64 | |
| Wild taro | *Colocasia esculenta* | 96 to 128 | |

### Species Susceptible to Water-injected Applications

The following categories are provided to define species that may be growth regulated or controlled with 50 to 500 ppb **Clearcast® herbicide** following in-water applications: susceptible, moderately susceptible, and less susceptible. The rates associated with each susceptibility category, including the **Special Weed Control** section, are provided as guidance with the overriding allowance that an application rate from 50 to 500 ppb may be used depending on the aquatic vegetation management objective and the characteristics of the aquatic vegetation and water body being treated.

Some species that are susceptible to foliar applications of **Clearcast** may be less susceptible to in-water applications. Use of higher rates are necessary to achieve desired control/suppression in areas of greater water exchange; when treating more mature or less susceptible plants; when targeting more difficult-to-control aquatic species; and when treating small areas in larger bodies of water (partial or spot treatments). Lower concentrations are generally used when conducting early season large-scale treatments; when greater selectivity is desired; and treating larger areas, more immature or susceptible plants, and areas with less potential for rapid water exchange.

Use of lower rates may increase selectivity on some species within the same category. Effects on susceptible plants can range from control to growth regulation depending on treatment site characteristics, exposure time, and application rate. Susceptible plant species may exhibit herbicide stress or reduced growth during active treatment phases. Whole lake applications with lower rates may provide plant growth regulation or greater selectivity while higher rates will generally provide broader activity.

### Susceptible Vascular Aquatic Plants (50 to 200 ppb)

| Common Name | Scientific Name |
|---|---|
| Curlyleaf pondweed | *Potamogeton crispus* |
| Eurasian watermilfoil | *Myriophyllum spicatum* |
| Hydrilla | *Hydrilla verticillata* |
| Sago pondweed | *Stuckenia pectinata* |
| Water hyacinth | *Eichhornia crassipes* |
| Water stargrass | *Heteranthera dubia* |

### Moderately Susceptible Vascular Aquatic Plants (100 to 300 ppb)

| Common Name | Scientific Name |
|---|---|
| American pondweed | *Potamogeton nodosus* |
| Bladderwort | *Utricularia* spp. |
| Frog's bit | *Lymnobium spongia* |
| Illinois pondweed | *Potamogeton illinoensis* |
| Pickerelweed | *Pontederia cordata* |
| Salvinia | *Salvinia* spp. |
| Spikerush | *Eleocharis baldwinii* |
| Variable-leaf milfoil | *Myriophyllum heterophyllum* |
| Wigeon grass | *Ruppia maritima* |

### Less Susceptible Vascular Aquatic Plants (200 to 500 ppb)

| Common Name | Scientific Name |
|---|---|
| Bulrush | *Schoenoplectus californicus* |
| Cattail | *Typha* spp. |
| Coontail | *Ceratophyllum demersum* |
| Eelgrass, Japanese | *Zostera japonica* |
| Egeria | *Egeria densa* |
| Flowering rush | *Butomus umbellatus* |
| Southern naiad | *Najas guadalupensis* |
| Spatterdock | *Nuphar lutea* |
| Water lily | *Nymphaea odorata* |
| Watershield | *Brasenia schreberi* |

### Special Weed Control

**Eurasian Watermilfoil.** Apply **Clearcast herbicide** at 100 to 200 ppb to actively growing plants early in the growing season. Applications made to mature Eurasian watermilfoil (vegetation topped out) may require multiple applications.

**Hydrilla.** Apply **Clearcast** at 150 to 200 ppb to actively growing plants early in the growing season. Applications made prior to topped-out hydrilla may require repeat application. A single application of 50 to 75 ppb can be used to suppress and growth-regulate hydrilla for up to 10 to 12 weeks. If desired, an additional 50 to 75 ppb can be applied to extend the period of growth suppression when normal hydrilla growth resumes.

**Japanese Eelgrass.** Japanese eelgrass is a submerged aquatic plant which can be found in tidal and intertidal areas. Clearcast herbicide may be applied directly to the water or directly to the plant (e.g. at low tide).

• **Low-tide application** - To make applications when the plant is exposed at low tide, uniformly apply with properly calibrated broadcast or spot treatment equipment in 10 or more gallons of water per acre. An appropriate spray adjuvant approved for aquatic use may be used but is not required. Spot treatments can be made with up to 5% Clearcast by volume. To ensure thorough spray coverage, higher spray volumes may be required when treating areas with large and/or dense vegetation. Use an appropriate spray pressure to minimize drift potential depending upon spray equipment, conditions, and application objectives. Apply 4 fl ozs to 32 fl ozs Clearcast/A. Use the lower rate for management of seedlings. An appropriate aquatic use spray adjuvant may be used but is not required.

• **In-water application** - When Japanese eelgrass is submerged, Clearcast may be broadcast-applied to the water surface or injected below the water surface. Clearcast may be applied as undiluted product or diluted with water before application. Under surface-matted conditions, inject Clearcast below the water surface to achieve better product distribution. Apply Clearcast to water to achieve a final concentration of the active ingredient of no more than 500 ppb. Multiple applications of Clearcast may be made during the annual growth cycle to maintain the desired vegetation response.

**Sago Pondweed.** In dry ditches (drainage and irrigation), sago pondweed may be controlled or growth-suppressed with soil-applied **Clearcast** at 64 to 128 fl ozs/A. In irrigation canals, apply **Clearcast** after drawdown and prior to water recharge.

## TERRESTRIAL USE DIRECTIONS

### Restrictions

- The maximum amount of active ingredient that can be applied is 1 gallon (equivalent to 1 pound of active ingredient as the free acid) per acre per year.
- **DO NOT** exceed 2 applications of **Clearcast** per year.

**Clearcast** may be applied with ground and aerial equipment including both fixed-wing aircraft and helicopter. Applications may be made using foliar broadcast spray, foliar spot spray, injection (hack and squirt), frill and girdle, cut stump, or basal methods.

### Broadcast Spray Application

**DO NOT** apply more than 1 gallon of **Clearcast** per acre per year.

### Foliar Spot Application

Apply **Clearcast** as a percent solution, containing up to 5% **Clearcast** by volume.

### Injection (Hack and Squirt), Frill and Girdle, and Cut Stump Application

Treatments may be made using up to 100% **Clearcast** by volume.

### Basal Application

Treatments can be made using up to 25% **Clearcast** by volume. Basal applications require the use of a good emulsion system to maintain **Clearcast** in a stable emulsion with the penetrating agent being used.

All foliar applications of **Clearcast** require the use of a spray adjuvant. Refer to *Spray Adjuvants* section for additional information.

### Managing Off-target Movement

The following information is general guidance for managing and minimizing off-target exposure of this product. Specific use directions in this label may vary from these general guidelines depending on the application method and objectives and should supersede the information provided below.

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-related and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outermost nozzles on the boom must not exceed ¾ the length of the fixed wingspan or 90% of rotor blade diameter.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.
3. **DO NOT** apply if wind speed is greater than 10 mph, except when making injection or subsurface applications to water.

Where states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the following aerial drift reduction advisory information.

### Information on Droplet Size

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see *Wind; Temperature and Humidity;* and *Temperature Inversions*).

### Controlling Droplet Size:

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure – DO NOT** exceed the nozzle manufacturer's recommended pressures. For many nozzle types, lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- **Number of Nozzles** - Use the minimum number of nozzles that provides uniform coverage.

- **Nozzle Orientation** - Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is recommended practice. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- **Nozzle Type** - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid-stream nozzles oriented straight back produce the largest droplets and the lowest drift.

### Boom Length

For some use patterns, reducing the effective boom length to less than ¾ of the fixed wingspan or 90% of rotor blade diameter may further reduce drift without reducing swath width.

### Application Height

Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

### Swath Adjustment

When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, smaller droplets, etc.).

### Wind

Drift potential is lowest between wind speeds of 2 to 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application must be avoided below 2 mph due to variable wind direction and high inversion potential.

**NOTE:** Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

### Temperature and Humidity

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

### Temperature Inversions

Applications must not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing that causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light, variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light-to-no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### Sensitive Areas

The pesticide must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

To the extent consistent with the applicable law, applicator is responsible for any loss or damage which results from spraying **Clearcast** in a manner other than directed in this label. In addition, applicator must follow all applicable state and local regulations and ordinances in regard to spraying.

**Clearcast** may be used for the control of the following plant species. **Clearcast** may be effective for the control or suppression of additional plant species not listed below. The use of **Clearcast** for the control or suppression of undesirable plants not listed below may be done at the discretion of the user.

**To the extent consistent with applicable law, the user assumes responsibility for any lack of control or suppression associated with application to weeds not listed on this label.**

| Weeds Controlled | | | |
|---|---|---|---|
| **Common Name** | **Scientific Name** | **Rate Foliar** (fl ozs/A) | **Comments** |
| Alligator weed | *Alternanthera philoxeroides* | 64 to 128 | Addition of AquaPro® herbicide will improve efficacy. |
| Annual ryegrass | *Lolium multiflorum* | 16 to 32 | |
| Artichoke, Jerusalem | *Helianthus tuberosus* | 64 to 128 | |
| Bedstraw | *Galium aparine* | 64 to 128 | |
| Beet, wild | *Beta procumbens* | 64 to 128 | |
| Brazilian pepper*<br>Christmasberry* | *Schinus terebinthifolius* | 96 to 128 | Also apply using 2% to 5% Clearcast per spray volume |
| Buckwheat, wild | *Polygonum convolvulus* | 64 to 128 | |
| Buttercup | *Ranunculus* spp. | 64 to 128 | |
| California bulrush* | *Schoenoplectus californicus* | 64 to 128 | |
| Camphor tree* | *Cinnamomum camphora* | 2% to 5% v/v | |
| Canola, volunteer (non-**Clearfield®**) | *Brassica campestris*<br>*Brassica napus* | 64 to 128 | |
| Cattail | *Typha* spp. | 32 to 64 | |
| Chickweed, common | *Stellaria media* | 64 to 128 | |
| Chinese tallowtree;<br>Popcorn tree | *Sapium sebiferum* | 64 to 128 | See Special Weed Control section. |
| Cocklebur, common | *Xanthium strumarium* | 64 to 128 | |
| Filaree, redstem<br>Filaree, whitestem | *Erodium cicutarium*<br>*Erodium moschatum* | 64 to 128 | |
| Flixweed | *Descurainia sophia* | 64 to 128 | |
| Giant ragweed** | *Ambrosia trifida* | 32 to 64 | |
| Henbit | *Lamium amplexicaule* | 64 to 128 | |
| Jamaican nightshade* | *Solanum jamaicense* | 2% to 5% v/v | |
| Japanese stiltgrass | *Microstegium vimineum* | 32 to 64 | Use MSO at 1% by spray volume. Clearcast will provide some residual control of subsequent seedling emergence. |
| Jimsonweed | *Datura stramonium* | 64 to 128 | |

*continued*

| Weeds Controlled *(continued)* | | | |
|---|---|---|---|
| **Common Name** | **Scientific Name** | **Rate Foliar** (fl ozs/A) | **Comments** |
| Johnsongrass, rhizome<br>Johnsongrass, seedling | *Sorghum halepense* | 32 to 64<br>16 to 32 | |
| Knotweed, prostrate | *Polygonum aviculare* | 64 to 128 | |
| Kochia | *Kochia scoparia* | 64 to 128 | |
| Lambsquarters, common | *Chenopodium album* | 64 to 128 | |
| Lettuce, miner's | *Montia perfoliata* | 64 to 128 | |
| Mallow, common<br>Mallow, Venice | *Malva neglecta Hibiscus trionum* | 64 to 128 | |
| Mustard spp. | *Brassica* spp. | 64 to 128 | |
| Nettle, burning | *Urtica urens* | 64 to 128 | |
| Nettleleaf goosefoot | *Chenopodium murale* | 64 to 128 | |
| Nightshade, black<br>Nightshade, Eastern black<br>Nightshade, hairy | *Solanum nigrum*<br>*Solanum ptycanthum*<br>*Solanum sarrachoides* | 64 to 128 | |
| Old world climbing fern* | *Lygodium microphyllum* | 5% v/v | |
| Pennycress,field | *Thlaspi arvense* | 64 to 128 | |
| Phragmites* | *Phragmites australis* | | Use 1 qt/A methylated seed oil (MSO); apply in late vegetative stage up to killing frost. Also apply as a spot treatment using 1% to 2% Clearcast per spray volume. Older stands of phragmites and stands growing in water may be more difficult to control and will require follow-up applications. |
| Pigweed, prostrate<br>Pigweed, redroot<br>Pigweed, smooth<br>Pigweed, spiny | *Amaranthus blitoides*<br>*Amaranthus retroflexus*<br>*Amaranthus hybridus*<br>*Amaranthus spinosus* | 64 to 128 | |
| Puncturvine | *Tribulus terrestris* | 64 to 128 | |
| Purple loosestrife* | *Lythrum salicaria* | 32 to 64 | |
| Purslane, common | *Portulaca oleracea* | 64 to 128 | |
| Radish, wild | *Raphanus raphanistrum* | 64 to 128 | |
| Ragweed, common<br>Ragweed, giant | *Ambrosia artemisiifolia*<br>*Ambrosia trifida* | 64 to 128 | |
| Rocket, London<br>Rocket, yellow | *Sisymbrium irio*<br>*Barbarea vulgaris* | 64 to 128 | |
| Saltcedar* | *Tamarix* spp. | 64 to 128 | Also apply using 2% to 5% Clearcast and 1% MSO per spray volume. |
| Sedge*, purple<br>Sedge*, yellow | *Cyperus rotundus*<br>*Cyperus esculentus* | 32 to 64 | Also apply using 2% to 5% Clearcast per spray volume. |
| Shepherd's-purse | *Capsella bursa-pastoris* | 64 to 128 | |
| Smartweed, ladysthumb<br>Smartweed, Pennsylvania<br>Smartweed, swamp | *Polygonum persicaria,*<br>*Persicaria maculosa*<br>*Polygonum pensylvanicum,*<br>*Persicaria pensylvanica*<br>*Polygonum coccineum,*<br>*Persicaria amphibia* | 64 to 128 | |
| Spike rush* | *Eleocharis* spp. | 64 to 128 | |
| Spurge, prostrate | *Euphorbia maculata* | 64 to 128 | |
| Sunflower, common | *Helianthus annuus* | 64 to 128 | |
| Swinecress | *Coronopus didymus* | 64 to 128 | |
| Tansymustard, green | *Descurainia pinnata* | 64 to 128 | |
| Taro | *Taro* spp. | 64 to 128<br>5% v/v | |
| Thistle, Russian | *Salsola iberica* | 64 to 128 | |
| Tropical soda apple* | *Solanum viarum* | 2% to 5% v/v | |
| Water primrose | *Ludwigia* spp. | 32 to 64 | Addition of **AquaPro® herbicide** will improve efficacy. |
| Wetland nightshade* | *Solanum tampicense* | 2% to 5% v/v | |
| Whitetop* Hoary cress* | *Cardaria draba* | 8 to 16 | |
| Willoweed panicle | *Epilobium brachycarpum* | 64 to 128 | |
| Velvetleaf | *Abutilon theophrasti* | 64 to 128 | |
| * Use not permitted in California unless otherwise directed by supplemental labeling<br>** Suppression of larger, well-established plants | | | |

In general, the use of methylated seed oil (MSO) at 1% v/v will provide the best control with foliar applications.

## Special Weed Control - Chinese tallowtree

**Clearcast** at 64 to 128 fl ozs/A or 0.5 to 2.0% v/v may be applied as a foliar application for selective control of Chinese tallowtree in and around tolerant tree species. Control Chinese tallowtree with foliar applications using aerial, handgun, or backpack application methods. When treating Chinese tallowtree, ensure that application method and spray volume provide adequate coverage of targeted Chinese tallowtree plants. Add methylated seed oil at 32 fl ozs/A for broadcast applications, or at 1% v/v for spot backpack and handgun applications. Tolerant hardwood species may exhibit varying degrees of leaf discoloration and temporary injury.

## Areas that may be Grazed or Cut for Hay

Apply **Clearcast** to listed aquatic and terrestrial noncrop sites that may be grazed or cut for hay at a maximum use rate of 1 gallon per acre of **Clearcast** or 5% (v/v) spray solution for spot treatments. There are no grazing or haying restrictions.

**Warranty Disclaimer:** SePRO Corporation warrants that this product conforms to the chemical description on the product label. Testing and research have also determined that this product is reasonably fit for the uses described on the product label. To the extent consistent with applicable law, SePRO Corporation makes no other express or implied warranty of fitness or merchantability nor any other express or implied warranty and any such warranties are expressly disclaimed.

**Misuse:** Federal law prohibits the use of this product in a manner inconsistent with its label directions. To the extent consistent with applicable law, the buyer assumes responsibility for any adverse consequences if this product is not used according to its label directions. In no case shall SePRO Corporation be liable for any losses or damages resulting from the use, handling or application of this product in a manner inconsistent with its label.

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# Attachment E: Environmental Monitor Notice

The Cedar Meadow Lake Watershed District will file a Notice of Intent (NOI) for the proposed implementation of the Cedar Meadow Lake Aquatic Plant Management Program with the Town of Leicester Conservation Commission on or around January 21, 2025. The Cedar Meadow Lake Watershed District is proposing to implement a management program to manage invasive species growth (fanwort and variable-leaf milfoil) and algal blooms at the lake. Management actions are expected to include herbicides, algaecides, and harvesting. The Project will improve water quality and aquatic habitats that support fish and wildlife species and restore the natural capacity of the resource area to protect the interests identified in the Wetlands Protection Act (M.G.L. c. 131 §40). The anticipated public hearing date is February 5, 2025.

To obtain additional information regarding the date, time, and location of the public hearing, please check the Leicester Conservation Commission's website. To examine copies of the NOI, contact Lisa Westwell at the Leicester Conservation Commission, 3 Washburn Square, Leicester, MA 01524, (508) 892-7007. To obtain more information regarding this application or to obtain an electronic copy of the application, contact Anna Chase with TRC at AChase@trccompanies.com or (781) 419-7716.