

CLEARING THE CURRENT

AQUATIC INVASIVE MANAGEMENT UPDATE

FEB 8, 2024 | 6:30 PM | CAMBRIDGE BOAT CLUB

We protect, restore, and enhance the Charles River and its watershed through **science, advocacy, and the law.**

We develop science-based strategies to **increase resilience, protect public health, and promote environmental equity** as we confront a changing climate.

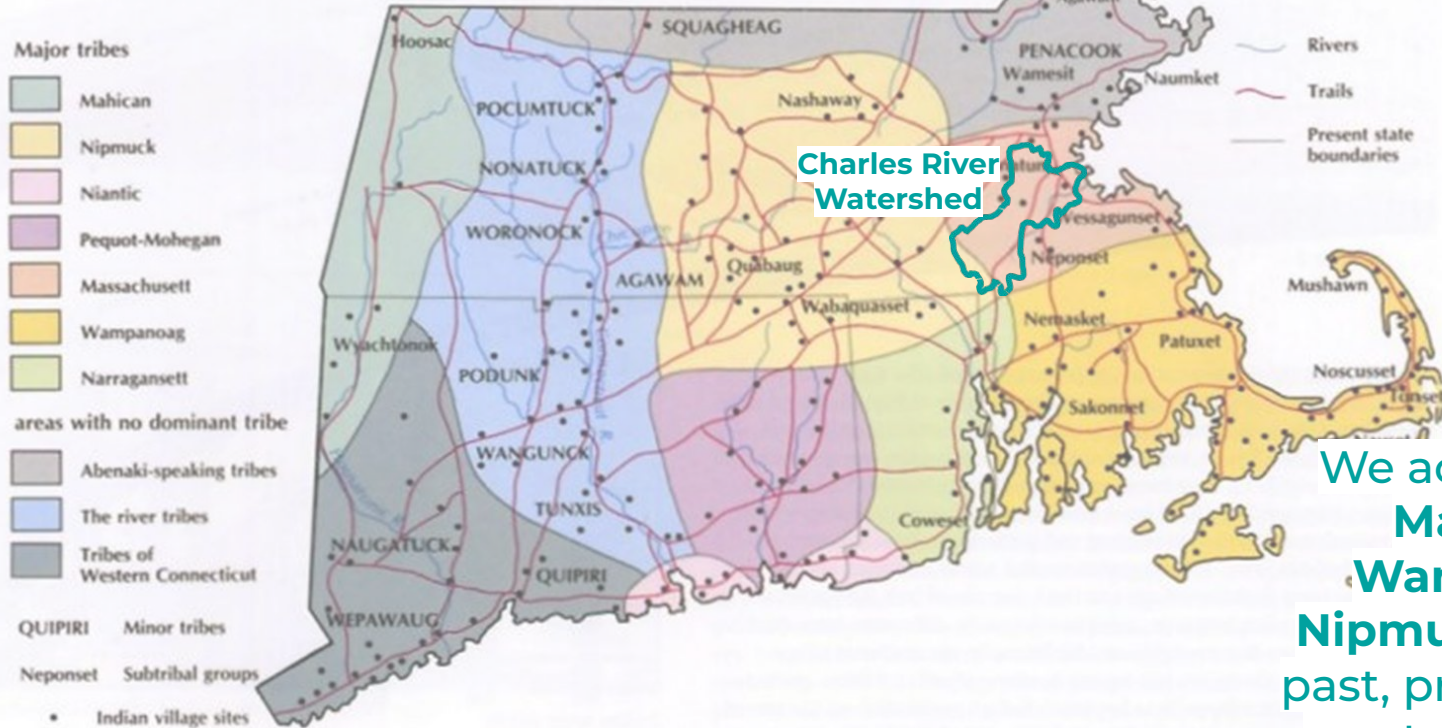
Program Areas:

- Climate Resilience
- River Science
- **River Restoration**
- Stormwater Solutions
- Education & Outreach



LAND & WATER ACKNOWLEDGEMENT

NATIVE SETTLEMENTS AND TRAILS c.1600–1650



We acknowledge the
Massachusetts,
Wampanoag, and
Nipmuc Nations as the
past, present, and future
caretakers of this land.

- ❖ **Welcome**
- ❖ **CRWA Introduction**
- ❖ **DCR Project History**
- ❖ **2023 Results & 2024 Plans**
- ❖ **Question & Answer**
- ❖ **Fundraising Report**



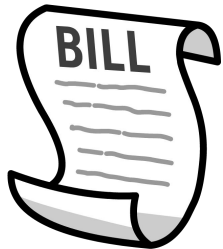
CRWA'S INVASIVES PROJECTS



**VOLUNTEER
INVASIVE PLANT
REMOVALS**



**DCR'S 5-YEAR
MANAGEMENT
PLAN**



INVASIVES BILL

**RESTORATION
PROJECT SUPPORT**



Bittersweet Removals



6 groups, 130 volunteers
5 sites around watershed

In 2023...

Water Chestnut Removals



5 groups, 120 volunteers
4,500 lbs of water chestnuts

→ crwa.org/volunteer

Meet Larry Smith.

Anyone who knows anything about water chestnuts in the Charles undoubtedly knows Larry. He's just that guy.



Water Chestnuts & the Charles River

A Volunteer Success Story

Skyler Kim for Charles River Watershed Association
September 21, 2023

by **Skyler Kim**

→ crwa.org/invasive-species

INVASIVES BILL

“An Act Responding to the Threat of Invasive Species.”

Sponsored by Senator Patricia Jehlen and Representative Dave Rogers (HB.890 / SB. 508).



OVER 60 INVASIVE PLANTS pose a serious threat to our ecosystems.

This Bill Would:

- Create a new centralized office by combining the existing MA Invasive Plant Advisory Group & DCR's Aquatic Invasive Management Plan.
- Launch a new Invasive Species Trust Fund to provide grants to cities and towns, state agencies, and non-profit organizations to tackle invasive species outbreaks on the ground.
- Create a State Coordinator to provide guidance, resources, and direction to municipalities on invasive species management.

This bill was **favorably reported** out of the Joint Committee on Environment and Natural Resources and is now being considered by both House and Senate Ways and Means. **This is a tremendous opportunity to reach out to your legislators** and let them know how important this bill is to developing a comprehensive invasives strategy in Massachusetts!

DCR'S 5-YEAR MANAGEMENT PLAN

- Citizen's Alliance for Noxious weed Eradication (CANoE) organized in 2012
- CRWA & CANoE have lobbied for mechanical harvesting funding since 2013
- CRWA followed DCR's CRVMP process
- Advocated for aquatic invasive species to be included in plan





Kara Sliwoski

Mass. Department of Conservation
& Recreation (DCR)



Keith Gazaille

SOLitude Lake Management

Charles River Aquatic Invasive Plant Management Program

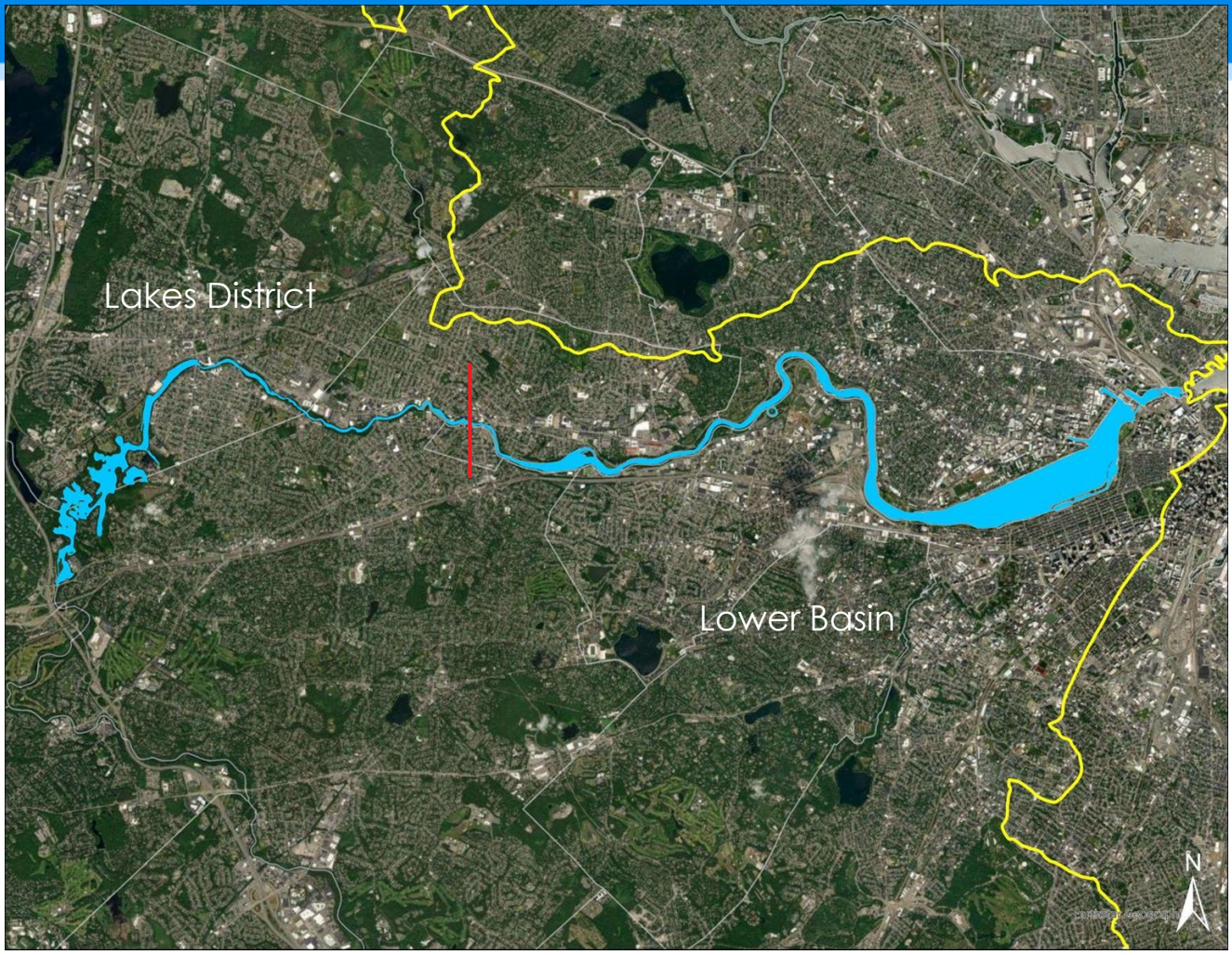
2023 Year-End Review

dcr  MASSACHUSETTS DEPARTMENT OF
CONSERVATION AND RECREATION

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Restoring Balance. Enhancing Beauty.





- Modify pre-treatment survey methods to better document native species identified at low abundance and distribution. Conduct rake toss method at a subset of the established sample points.
- Employ large-scale Sonar herbicide treatment in the Lakes District to address existing fanwort and prevent expansion into previously milfoil dominated areas.
- Spot-treatment of any EWM regrowth in the Lower Basin with ProcellaCOR
- Possible area specific Sonar treatment to control fanwort growth in the Lower Basin

- Requested and were granted a 46-day incursion into the TOY restriction with an initial treatment date of May 31, 2023
TOY restrictions: February 15 – July 15, September 1 – November 15
- Total of four treatment applications
- Water quality monitoring schedule consisted of 10 sampling rounds at 6 locations, with all having pH, temperature, dissolved oxygen, turbidity and Secchi measurements, and 6 rounds also having FasTest herbicide residue sampling.
- Biobase biovolume mapping conducted at 1, 25, 40, and 60 DAT
- DMF staff joined for a survey in mid-July and the ProcellaCOR treatment in late August

Lakes District

Common Name	Scientific Name
Common Bladderwort	<i>Utricularia vulgaris</i>
Coontail	<i>Ceratophyllum demersum</i>
Curly-leaf Pondweed	<i>Potamogeton crispus</i>
Duckweed	<i>Lemna minor</i>
Eurasian Watermilfoil	<i>Myriophyllum spicatum</i>
Fanwort	<i>Cabomba caroliniana</i>
Filamentous Algae	<i>Spirogyra sp.</i>
Slender Naiad	<i>Najas flexilis</i>
Thin-leaf Pondweed	<i>Potamogeton pusillus</i>
Variable Watermilfoil	<i>Myriophyllum heterophyllum</i>
Water Smartweed	<i>Persicaria amphibia</i>
Waterweed	<i>Elodea canadensis</i>
White Waterlily	<i>Nymphaea odorata</i>
Yellow Waterlily	<i>Nuphar variegata</i>

Note: red text indicates an invasive species

Lower Basin

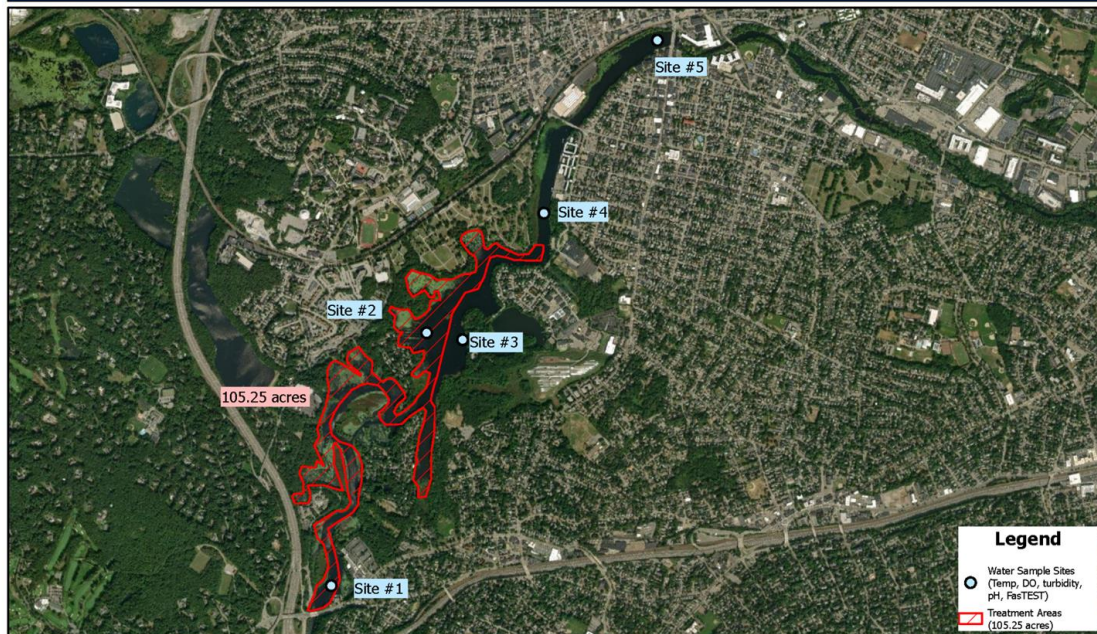
Common Name	Scientific Name
Curly-leaf Pondweed	<i>Potamogeton crispus</i>
Filamentous Algae	<i>Spirogyra sp.</i>
Ribbon-leaf Pondweed	<i>Potamogeton epihydrus</i>
Slender Naiad	<i>Najas flexilis</i>
Water Chestnut	<i>Trapa natans</i>
White Waterlily	<i>Nymphaea odorata</i>
Common Waterweed	<i>Elodea canadensis</i>

Note: red text indicates an invasive species

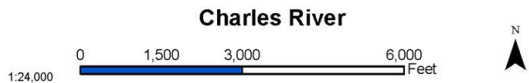
- Pre-Treatment survey conducted on May 8 & 9
- Inspected 48 established points for better species documentation
- Fanwort dominant in Lakes District
- No milfoil growth observed in Lower Basin

FIGURE 1: Charles River Treatment Areas and Sample Stations

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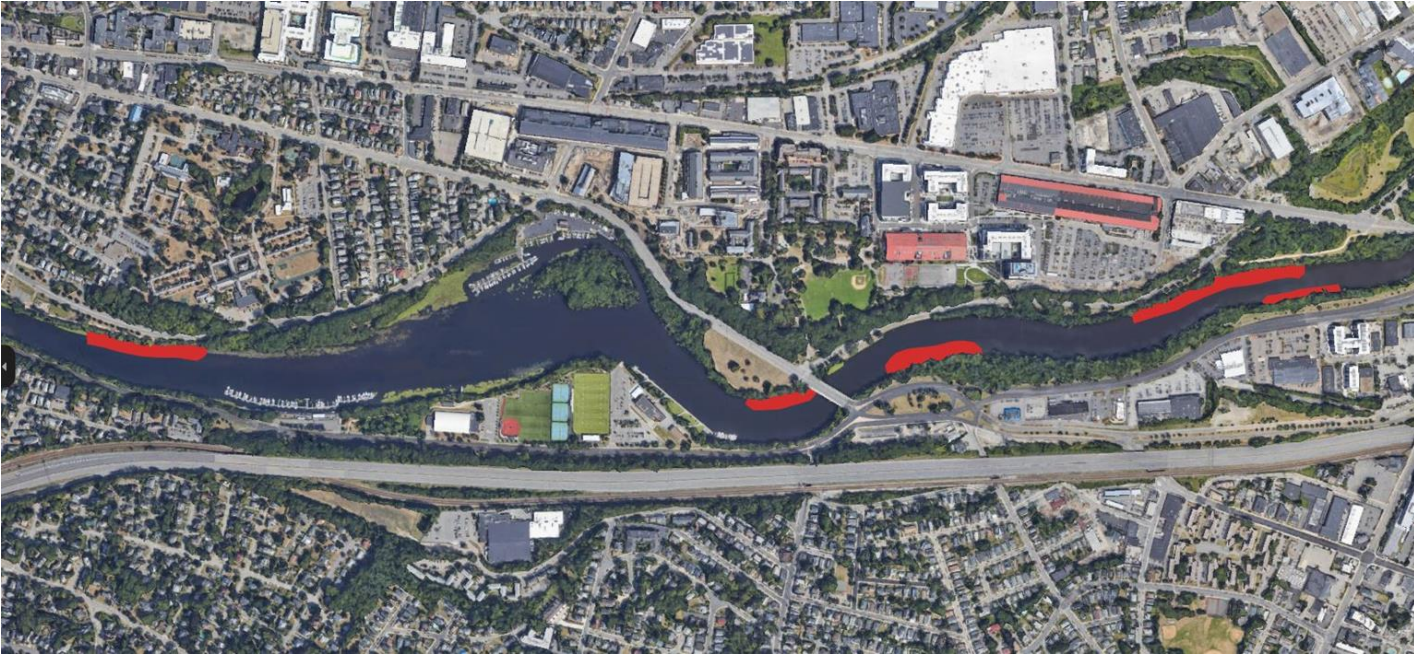


Charles River
Weston/Waltham/Watertown/Newton, MA



Map Date: 4/28/2023
File: CharlesRiver_Trt
Prepared by: KV
Office: Shrewsbury, MA

- 105 acre treatment area in 246 acre Lakes District
- Four Sonar Q applications targeting a dose of 10 ppb
- May 31- initial
- June 23 - Booster 1 (23 DAT)
- July 12 - Booster 2 (42 DAT)
- August 3 - Booster 3 (64 DAT)



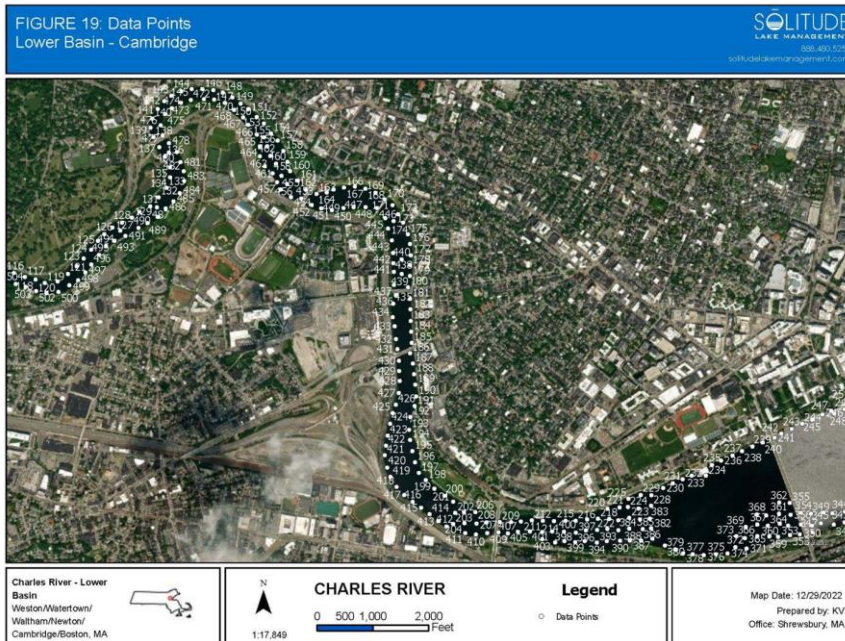
- August 22 spot treatment of 5.0 acres of milfoil regrowth with ProcellaCOR herbicide.

- All water chestnut control was completed through CRWA volunteer hand-pulling
- 250 individual volunteers logged 750 hand-pulling hours over the course of the season
- A total of 4,500 lbs of water chestnut biomass removed

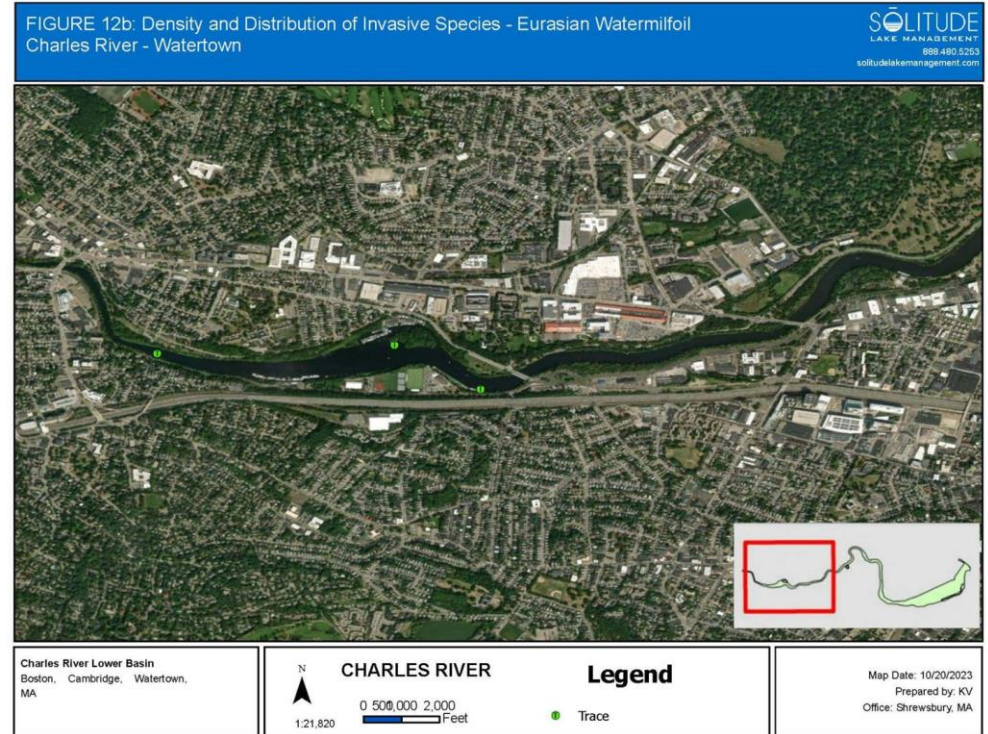


Courtesy of CRWA

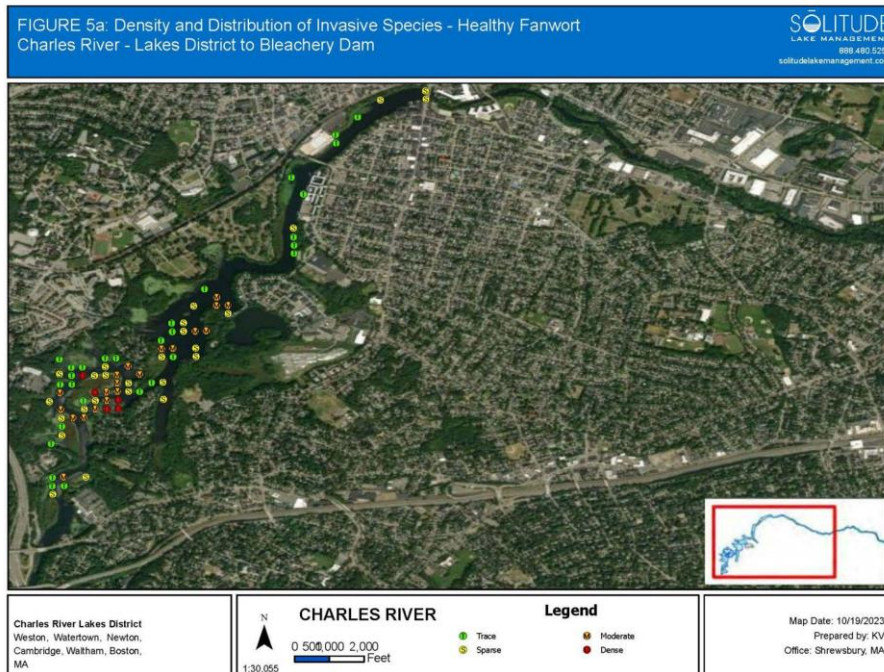
- Point Intercept Method vegetation survey was replicated during the period of September 19, 20, 28, 2023
- A total of 978 established points were sampled using rake-toss method (555 pts. - Lower Basin & 423 pts. - Lakes District)
- Two survey crews (4 biologist and 2 survey boats) were employed to expedite the data collection
- All field data collection was overseen by the Environmental Monitor Kara Sliwoski - MA DCR Water Resources Scientist



- A high level of EWM & VWM carry-over control experienced
- Frequency of Occurrence rose from 0.2% in 2022 to 0.54% in 2023 (one sample location to three)
- Species richness remained static at 15 species
- Overall species diversity went down from 1.6 (Shannon-Weaver Index) to 1.02
- The overall reduction in plant abundance in the LB is likely the result of the higher flows and water levels experienced in 2023
- Despite no active management spiny naiad and fanwort FOO decreased - 6.0% to 0.36% and 1.44% to 0.54% respectively



- Observed a slight increase in FOO of EWM - 2.4 % 2022 to 6.1% 2023
- EWM carry-over control still very good as FOO in 2021 prior to management was 60%
- Modest reduction in targeted fanwort growth resulting from Sonar treatment program - 8% YOY
- Species richness decline from 21 species in 2022 to 17 species in 2023 - potentially influenced by high flows and water levels
- Slight increase in species diversity - Shannon-Weaver Index 2.1 in 2022 to 2.26 in 2023.



Charles River at Waltham, MA - 01104500

December 20, 2022 - December 20, 2023

Discharge, cubic feet per second

902 ft³/s - Jul 29, 2023 10:15:00 PM EDT



IMPORTANT Data may be [provisional](#)

Discharge, cubic feet per second

— Recorded

Median: — 1932 - 2023

Data approval period

■ Approved

■ Provisional

2023 Fluridone Concentration Monitoring

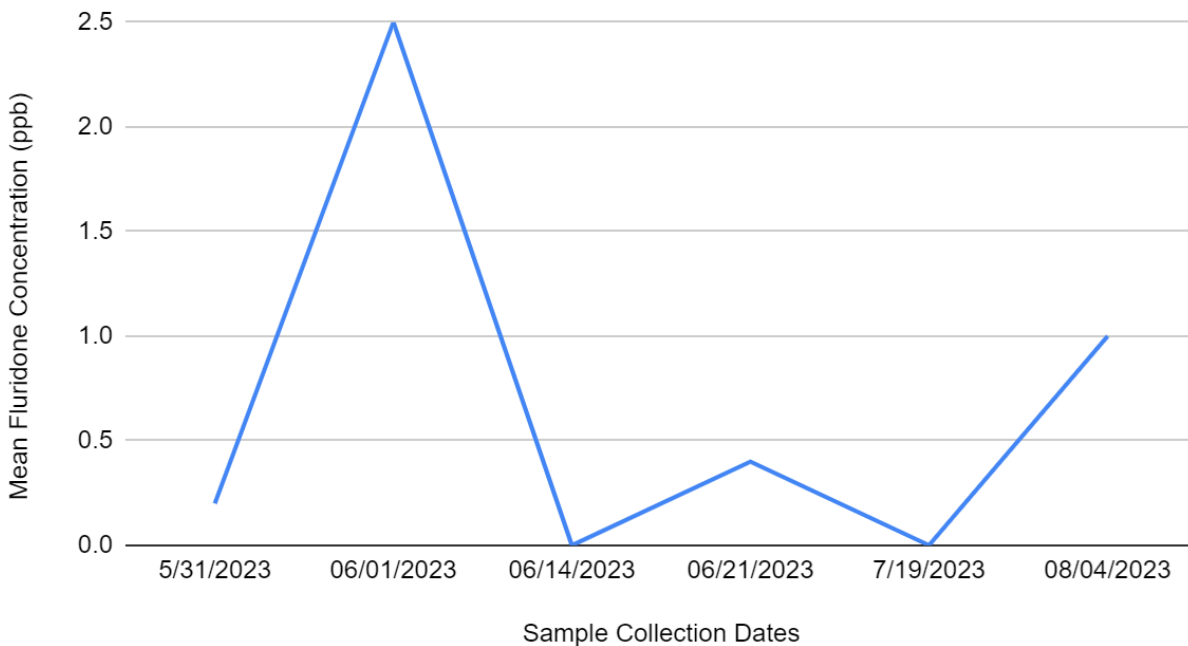


FIGURE A: Vegetation BioBase Data Collected from June 1, 2023
Charles River Lakes District

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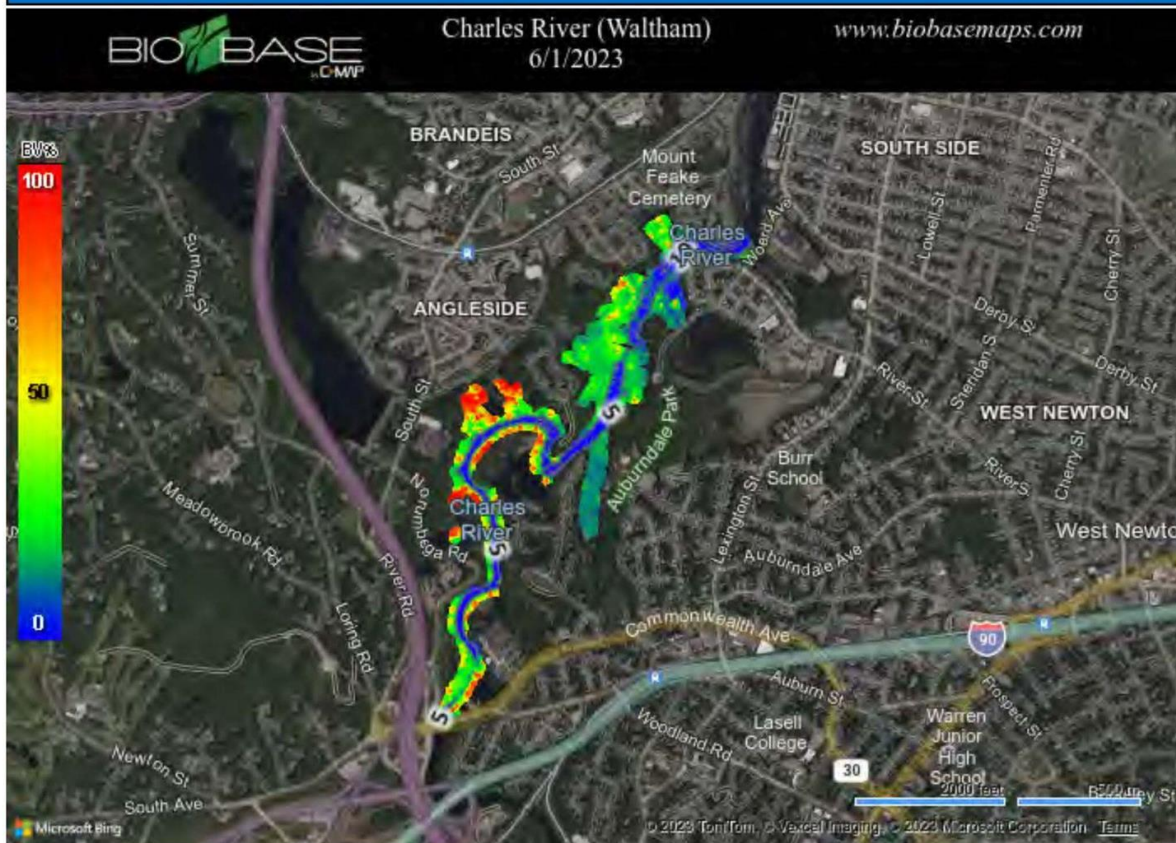


FIGURE B: Vegetation BioBase Data Collected from June 23, 2023
Charles River Lakes District

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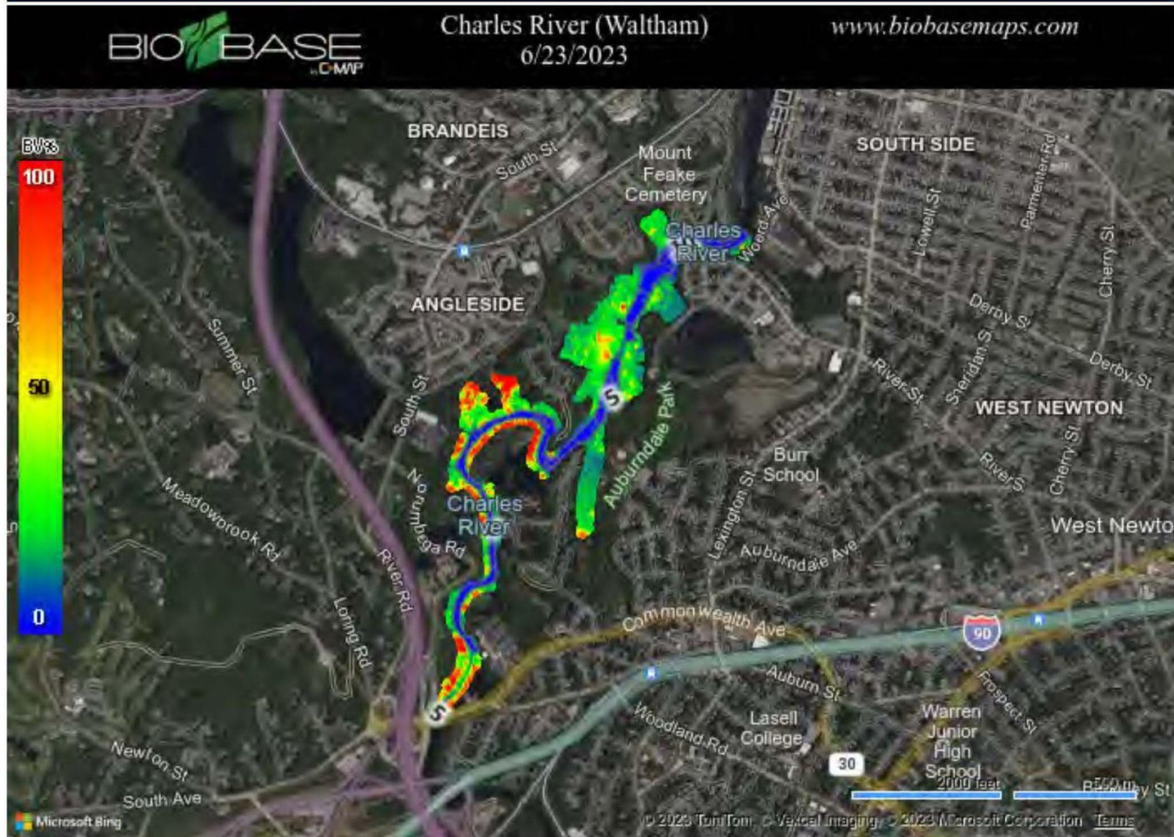


FIGURE C: Vegetation BioBase Data Collected from July 12, 2023
Charles River Lakes District

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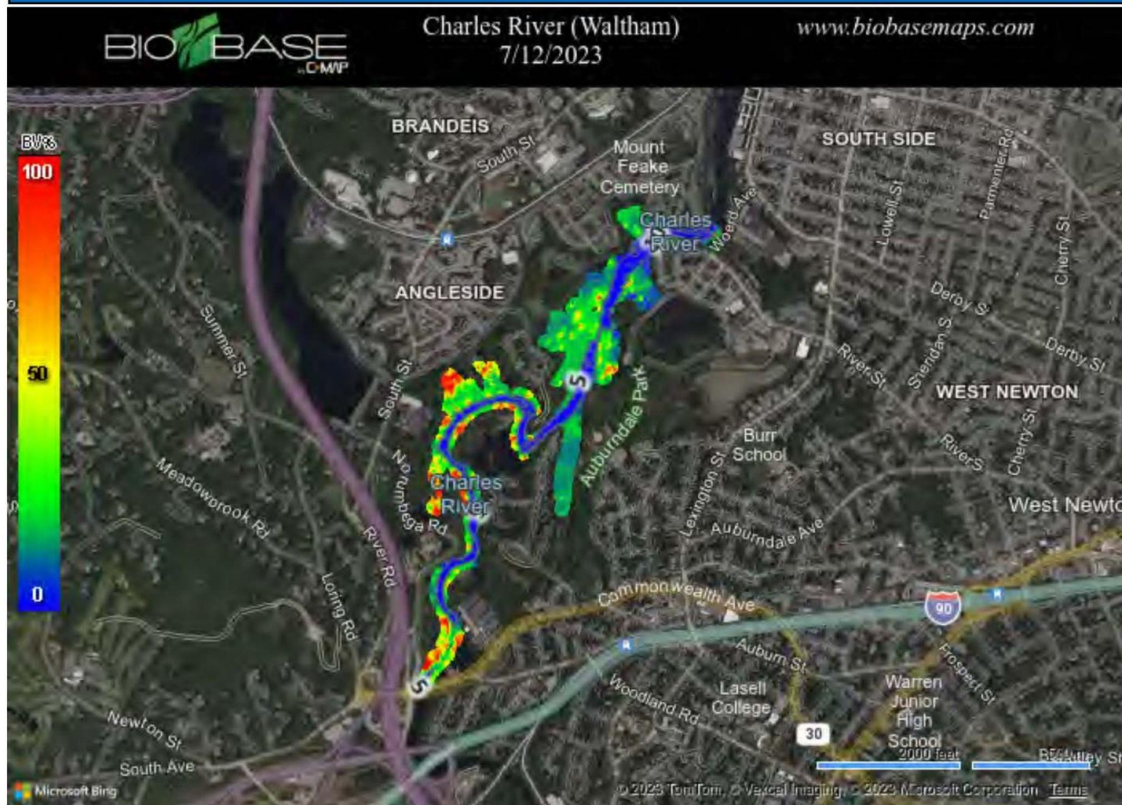
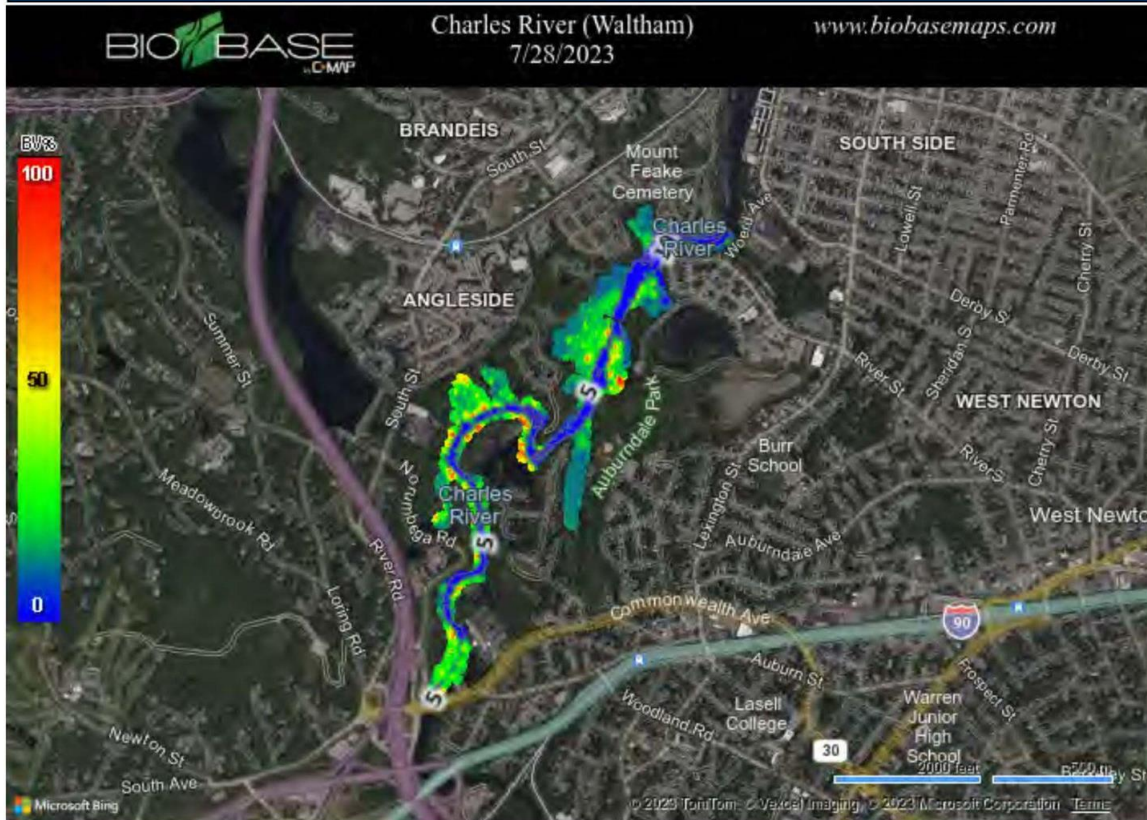


FIGURE D: Vegetation BioBase Data Collected from July 28, 2023
Charles River Lakes District

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- Maintain AIS management pressure in the Lakes District by repeating a similar Sonar herbicide treatment program
- Target a similar treatment window (late May start), but add a 5th 10 ppb booster treatment in mid to late August in order to extend exposure time
- Continue spot-management of milfoil and fanwort as required in the Lower Basin
- Continue the effective hand-pulling effort to maintain water chestnut control

QUESTION & ANSWER



EARMARKS FOR INVASIVES

2800-0100, “For the operation of the department of conservation and recreation ... provided further, that not less than \$100,000 shall be expended for aquatic invasives species control for the Charles River and the Mystic River.”

- Introduced by Representative Kay Khan.
- Was not affected by Governor Healey’s 9C budgetary cuts.
- CRWA will continue our budget advocacy in FY25

Department of Conservation and Recreation.

2800-0100 For the operation of the department of conservation and recreation; provided, that notwithstanding section 3B of chapter 7 of the General Laws, the department shall establish or renegotiate fees, licenses, permits, rents and leases and adjust or develop other revenue sources to fund the maintenance, operation and administration of the department;

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provided further, that not less than \$15,000 shall be expended for the Uxbridge youth soccer field project in the town of Uxbridge; provided further, that not less than \$93,000 shall be expended for improvements to the Eli pond gazebo in the city of Melrose; provided further, that not less than \$50,000 shall be expended for the restoration and improvement of the Rotary park playground and facility improvements to the Rotary park public baseball fields in the town of Wilmington; **provided further, that not less than \$100,000 shall be expended for aquatic invasive species control for the Charles river and the Mystic river;** and provided further, that not less than \$50,000 shall be expended for the Middleborough parks department for the reconstruction of the Pierce playground; provided further, that not less than \$250,000 shall be expended for Reilly Memorial Rink

feasibility study	
.....	\$7,188,306

FUNDRAISING UPDATE

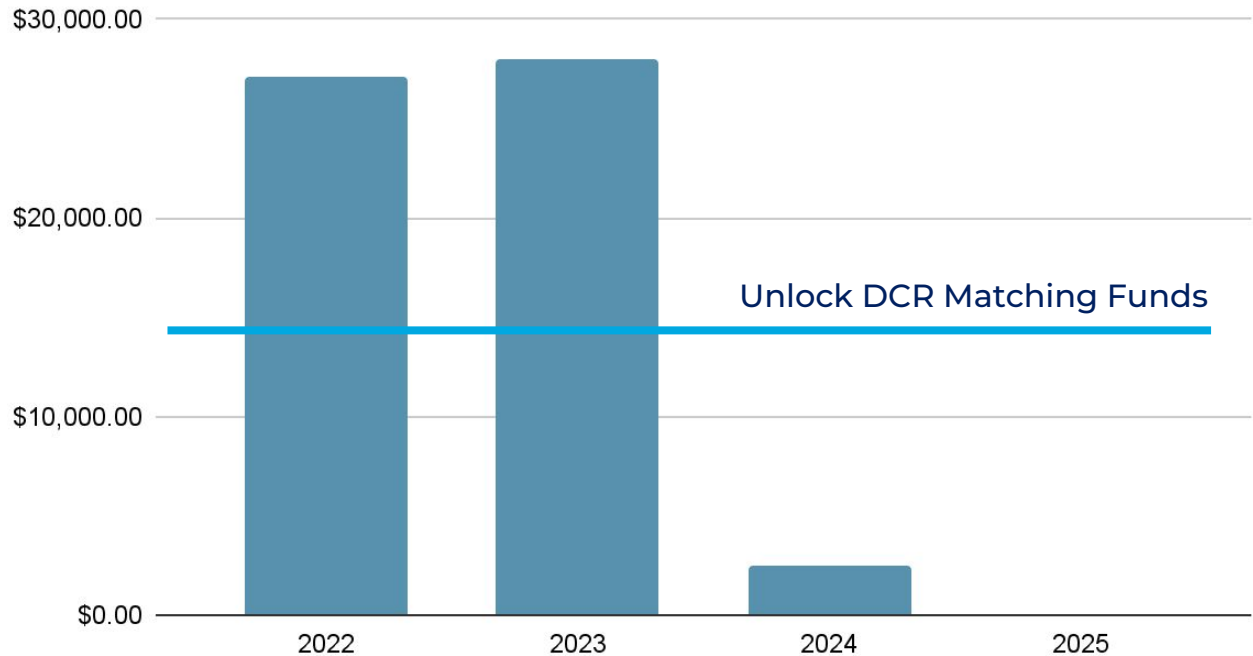
THANK YOU to our funders and DCR!

Continue supporting this collaborative effort to eradicate invasive aquatic species for a cleaner, clearer Charles River.



Donate today!

Fundraising Goals



THANK YOU!

Project Partners:



Project Sponsors:



The Harvard Allston
Partnership Fund

Questions?

Contact Lisa Kumpf
lkumpf@crwa.org



Plus many
generous
individuals!

