Draft Massachusetts Integrated List of Waters for the Clean Water Act 2024/2026 Reporting Cycles

Appendix 6
Blackstone River Basin
Assessment and Listing Decision Summary

Prepared by:
Watershed Planning Program
Division of Watershed Management, Bureau of Water Resources
Massachusetts Department of Environmental Protection

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Rebecca L. Tepper, Secretary
Massachusetts Department of Environmental Protection
Bonnie Heiple, Commissioner
Bureau of Water Resources
Kathleen M. Baskin, Assistant Commissioner

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Watershed Planning Program

The mission of the Watershed Planning Program (WPP) in the Massachusetts Department of Environmental Protection is to protect, enhance, and restore the quality and value of the waters of the Commonwealth. Guided by the federal Clean Water Act, WPP implements this mission statewide through five Sections that each have a different technical focus: (1) Surface Water Quality Standards; (2) Surface Water Quality Monitoring; (3) Data Management and Water Quality Assessment; (4) Total Maximum Daily Load; and (5) Nonpoint Source Management. Together with other MassDEP programs and state environmental agencies, WPP shares in the duty and responsibility to secure the environmental, recreational, and public health benefits of clean water for all people of the Commonwealth.

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Disclaimer

References to trade names, commercial products, manufacturers, or distributors in this report constituted neither endorsement nor recommendation by MassDEP.

Contact Information

Watershed Planning Program
Division of Watershed Management, Bureau of Water Resources
Massachusetts Department of Environmental Protection
8 New Bond Street, Worcester, MA 01606
Watershed Planning Program website
Email address: dep.wpp@mass.gov

Notice of Availability

This report is available on the Massachusetts Department of Environmental Protection website.

Overview of Appendix Contents

This Integrated Report (IR) Appendix functions as a watershed-based Assessment and Listing Decision Summary that catalogs the most recent assessment decisions for each assessment unit (AU) that was updated as part of the 2024/2026 IR cycle.

The appendix begins with 2024/26 Cycle Impairment Changes, a comprehensive table summarizing all impairments that were either added, removed, changed, or unchanged between the 2022 and 2024/2026 reporting cycles. This table presents the overall impairment status at the waterbody scale, across all designated uses. The table does not detail use-specific impairment changes; those details are provided in subsequent sections of the appendix.

Following 2024/26 Cycle Impairment Changes, the appendix provides an individual section for each AU updated during the 2024/2026 cycle. Each AU section details the supporting data and rationale for each designated use attainment determination, including any associated impairment removal decisions. Changes in impairment status at the designated use level are documented in full within the corresponding Designated Use Attainment Decision. AUs where no usable data were available for the 2024/2026 IR cycle are included, but with the assessment information from the 2022 cycle is carried forward.

The following abbreviations are used when referencing designated uses:

- ALU - Aquatic Life Use
- FC - Fish Consumption Use
- SH - Shellfish Harvesting Use
- AES - Aesthetic Use
- PCR - Primary Contact Recreation Use
- SCR - Secondary Contact Recreation Use

When listing an impairment, parentheses and an asterisk (*) are utilized to denote “pollution” or non-pollutant impairments that do not require the development of a Total Maximum Daily Load (TMDL). Where applicable, further explanation of the ATTAINS impairment code is provided within square brackets [].

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2024/26 Cycle Impairment Changes

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Abbott Run	MA51-57	--	3	None	--	Unchanged
Aldrich Pond	MA51002	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Aldrich Pond	MA51002	5	5	(Fanwort*)	--	Unchanged
Aldrich Pond	MA51002	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Aldrich Pond	MA51002	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Arcade Pond	MA51003	5	5	(Fanwort*)	--	Unchanged
Arcade Pond	MA51003	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Arcade Pond	MA51003	5	5	Algae	--	Unchanged
Arnolds Brook	MA51-32	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Bacon Brook	MA51-41	5	5	Temperature	--	Unchanged
Beaver Brook	MA51-07	5	5	(Fish Kill(s)*)	--	Unchanged
Beaver Brook	MA51-07	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Beaver Brook	MA51-07	5	5	Bottom Deposits	--	Unchanged
Beaver Brook	MA51-07	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Bell Pond	MA51009	3	2	None	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Blackstone River	MA51-03	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Blackstone River	MA51-03	5	5	(Debris*)	--	Unchanged
Blackstone River	MA51-03	5	5	(Flow Regime Modification*)	--	Unchanged
Blackstone River	MA51-03	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Blackstone River	MA51-03	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Blackstone River	MA51-03	5	5	Algae	--	Unchanged
Blackstone River	MA51-03	5	5	Benthic Macroinvertebrates	--	Unchanged
Blackstone River	MA51-03	5	5	Dissolved Oxygen	--	Unchanged
Blackstone River	MA51-03	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Blackstone River	MA51-03	5	5	Fish Bioassessments	--	Unchanged
Blackstone River	MA51-03	5	5	Flocculant Masses	--	Removed
Blackstone River	MA51-03	5	5	Lead	--	Unchanged
Blackstone River	MA51-03	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Blackstone River	MA51-03	5	5	Odor	--	Unchanged
Blackstone River	MA51-03	5	5	Oil and Grease	--	Unchanged
Blackstone River	MA51-03	5	5	PFAS in Fish Tissue	--	Added
Blackstone River	MA51-03	5	5	Phosphorus, Total	--	Unchanged
Blackstone River	MA51-03	5	5	Scum/Foam	--	Unchanged
Blackstone River	MA51-03	5	5	Sedimentation/Siltation	--	Unchanged
Blackstone River	MA51-03	5	5	Trash	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Blackstone River	MA51-03	5	5	Turbidity	--	Unchanged
Blackstone River	MA51-04	5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Blackstone River	MA51-04	5	5	(Flow Regime Modification*)	--	Unchanged
Blackstone River	MA51-04	5	5	(Non-Native Aquatic Plants*)	--	Removed
Blackstone River	MA51-04	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Blackstone River	MA51-04	5	5	(Water Chestnut*)	--	Unchanged
Blackstone River	MA51-04	5	5	Algae	--	Unchanged
Blackstone River	MA51-04	5	5	Benthic Macroinvertebrates	--	Unchanged
Blackstone River	MA51-04	5	5	Cadmium	--	Unchanged
Blackstone River	MA51-04	5	5	Copper	--	Unchanged
Blackstone River	MA51-04	5	5	DDT in Fish Tissue	--	Unchanged
Blackstone River	MA51-04	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Blackstone River	MA51-04	5	5	Fish Bioassessments	--	Unchanged
Blackstone River	MA51-04	5	5	Lead	--	Unchanged
Blackstone River	MA51-04	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Blackstone River	MA51-04	5	5	Odor	--	Unchanged
Blackstone River	MA51-04	5	5	PCBs in Fish Tissue	--	Unchanged
Blackstone River	MA51-04	5	5	PFAS in Fish Tissue	--	Added
Blackstone River	MA51-04	5	5	Phosphorus, Total	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Blackstone River	MA51-04	5	5	Sedimentation/Siltation	--	Unchanged
Blackstone River	MA51-04	5	5	Turbidity	--	Unchanged
Blackstone River	MA51-05	5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Blackstone River	MA51-05	5	5	(Flow Regime Modification*)	--	Unchanged
Blackstone River	MA51-05	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Blackstone River	MA51-05	5	5	Algae	--	Unchanged
Blackstone River	MA51-05	5	5	Benthic Macroinvertebrates	--	Unchanged
Blackstone River	MA51-05	5	5	Cadmium	--	Unchanged
Blackstone River	MA51-05	5	5	Copper	--	Unchanged
Blackstone River	MA51-05	5	5	Enterococcus	R1_MA_2024_04P	Added
Blackstone River	MA51-05	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Blackstone River	MA51-05	5	5	Lead	--	Unchanged
Blackstone River	MA51-05	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Blackstone River	MA51-05	5	5	Odor	--	Unchanged
Blackstone River	MA51-05	5	5	PFAS in Fish Tissue	--	Added
Blackstone River	MA51-05	5	5	Phosphorus, Total	--	Unchanged
Blackstone River	MA51-05	5	5	Polychlorinated Biphenyls (PCBs)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Blackstone River	MA51-05	5	5	Total Suspended Solids (TSS)	--	Unchanged
Blackstone River	MA51-05	5	5	Turbidity	--	Unchanged
Blackstone River	MA51-06	5	5	(Flow Regime Modification*)	--	Unchanged
Blackstone River	MA51-06	5	5	Cadmium	--	Unchanged
Blackstone River	MA51-06	5	5	Copper	--	Unchanged
Blackstone River	MA51-06	5	5	DDT in Fish Tissue	--	Unchanged
Blackstone River	MA51-06	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Blackstone River	MA51-06	5	5	Fish Bioassessments	--	Unchanged
Blackstone River	MA51-06	5	5	Lead	--	Unchanged
Blackstone River	MA51-06	5	5	PCBs in Fish Tissue	--	Unchanged
Blackstone River	MA51-06	5	5	PFAS in Fish Tissue	--	Added
Blackstone River	MA51-06	5	5	Phosphorus, Total	--	Unchanged
Blackstone River	MA51-06	5	5	Total Suspended Solids (TSS)	--	Unchanged
Brierly Pond	MA51010	4c	4c	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Brierly Pond	MA51010	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Brooklawn Parkway Pond	MA51195	3	3	None	--	Unchanged
Burncoat Park Pond	MA51012	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Burncoat Park Pond	MA51012	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Burncoat Park Pond	MA51012	5	5	Turbidity	--	Unchanged
Carpenter Reservoir	MA51015	3	3	None	--	Unchanged
Cedar Swamp Brook	MA51-33	5	5	Fish Bioassessments	--	Unchanged
Center Brook	MA51-34	5	5	Temperature	--	Unchanged
Chase Pond	MA51017	3	3	None	--	Unchanged
Chockalog Pond	MA51018	3	3	None	--	Unchanged
Clark Reservoir	MA51022	3	3	None	--	Unchanged
Coal Mine Brook	MA51-27	5	5	(Fish Kill(s)*)	--	Unchanged
Coal Mine Brook	MA51-27	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Coal Mine Brook	MA51-27	5	5	Fish Bioassessments	--	Unchanged
Coal Mine Brook	MA51-27	5	5	Sedimentation/Siltation	--	Unchanged
Coal Mine Brook	MA51-27	5	5	Temperature	--	Unchanged
Coes Reservoir	MA51024	4c	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Coes Reservoir	MA51024	4c	5	(Water Chestnut*)	--	Unchanged
Coes Reservoir	MA51024	4c	5	Transparency / Clarity	--	Added
Cold Spring Brook	MA51-42	2	2	None	--	Unchanged
Cold Spring Brook	ma51-56	--	4c	(Fanwort*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Cold Spring Brook	ma51-56	--	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Cold Spring Brook	ma51-56	--	4c	Aquatic Plants (Macrophytes)	--	Removed
Cook Allen Brook	MA51-28	5	5	Fish Bioassessments	--	Unchanged
Crane Pond	MA51030	3	3	None	--	Unchanged
Cronin Brook	MA51-45	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Cronin Brook	MA51-45	5	5	Temperature	--	Unchanged
Crystal Lake	MA51031	5	5	Mercury in Fish Tissue	--	Unchanged
Dark Brook	MA51-16	5	5	(Fanwort*)	--	Unchanged
Dark Brook	MA51-16	5	5	Benthic Macroinvertebrates	--	Unchanged
Dark Brook	MA51-16	5	5	Chloride	--	Unchanged
Dark Brook	MA51-16	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Dark Brook	MA51-49	2	2	None	--	Unchanged
Dark Brook Pond	MA51034	3	3	None	--	Unchanged
Dark Brook Reservoir	MA51035	4c	4c	(Brittle Naiad, Najas Minor*)	--	Unchanged
Dark Brook Reservoir	MA51035	4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Dark Brook Reservoir	MA51036	4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Doctors Pond	MA51194	3	3	None	--	Unchanged
Dorothy Pond	MA51039	4a	4a	(Brittle Naiad, Najas Minor*)	--	Unchanged
Dorothy Pond	MA51039	4a	4a	(Curly-leaf Pondweed*)	--	Unchanged
Dorothy Pond	MA51039	4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Dorothy Pond	MA51039	4a	4a	Turbidity	379	Unchanged
Dudley Pond	MA51041	3	3	None	--	Unchanged
Eddy Pond	MA51043	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Eddy Pond	MA51043	4a	4a	(Non-Native Aquatic Plants*)	--	Unchanged
Eddy Pond	MA51043	4a	4a	Nutrient/Eutrophication Biological Indicators	2382	Unchanged
Emerson Brook	MA51-29	2	2	None	--	Unchanged
Fish Pond	MA51047	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Fish Pond	MA51047	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Fish Pond	MA51047	5	5	(Fanwort*)	--	Unchanged
Fish Pond	MA51047	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Fish Pond	MA51047	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Flint Pond	MA51050	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Flint Pond	MA51050	4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Flint Pond	MA51050	4a	4a	(Fanwort*)	--	Unchanged
Flint Pond	MA51050	4a	4a	Nutrient/Eutrophication Biological Indicators	444	Unchanged
Flint Pond	MA51050	4a	4a	Turbidity	444	Unchanged
Flint Pond	MA51188	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Flint Pond	MA51188	4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Flint Pond	MA51188	4a	4a	(Fanwort*)	--	Unchanged
Flint Pond	MA51188	4a	4a	(Non-Native Aquatic Plants*)	--	Unchanged
Flint Pond	MA51188	4a	4a	Nutrient/Eutrophication Biological Indicators	444	Unchanged
Fox Brook	MA51-39	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Girard Pond	MA51053	4c	4c	(Fanwort*)	--	Unchanged
Green Hill Pond	MA51056	4a	4a	Turbidity	498	Unchanged
Greene Brook	MA51-30	3	3	None	--	Unchanged
Hales Pond	MA51057	3	3	None	--	Unchanged
Hathaway Pond	MA51059	3	3	None	--	Unchanged
Hayes Pond	MA51060	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Hayes Pond	MA51060	5	5	(Fanwort*)	--	Unchanged
Hayes Pond	MA51060	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Holden Reservoir 1	MA51063	3	3	None	--	Unchanged
Holden Reservoir 2	MA51064	3	3	None	--	Unchanged
Houghton Pond	MA51067	3	3	None	--	Unchanged
Howe Pond	MA51069	3	3	None	--	Unchanged
Howe Reservoirs	MA51070	4c	4c	(Dewatering*)	--	Unchanged
Howe Reservoirs	MA51071	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Howe Reservoirs	MA51071	4a	4a	Nutrient/Eutrophication Biological Indicators	550	Unchanged
Hunt Pond	MA51072	3	3	None	--	Unchanged
Indian Lake	MA51073	4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Indian Lake	MA51073	4a	4a	Dissolved Oxygen	2323	Unchanged
Indian Lake	MA51073	4a	4a	Harmful Algal Blooms	2323	Unchanged
Indian Lake	MA51073	4a	4a	Nutrient/Eutrophication Biological Indicators	2323	Unchanged
Ironstone Reservoir	MA51074	4c	4c	(Fanwort*)	--	Unchanged
Jenks Reservoir	MA51075	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Joels Pond	MA51076	3	3	None	--	Unchanged
Joes Rock Pond	MA51077	3	3	None	--	Unchanged
Jordan Pond	MA51078	4a	4a	Harmful Algal Blooms	2385	Unchanged
Jordan Pond	MA51078	4a	4a	Turbidity	2385	Unchanged
Kettle Brook	MA51-01	5	5	(Dewatering*)	--	Unchanged
Kettle Brook	MA51-01	5	5	(Fanwort*)	--	Unchanged
Kettle Brook	MA51-01	5	5	Benthic Macroinvertebrates	--	Unchanged
Kettle Brook	MA51-01	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Kettle Brook	MA51-01	5	5	Fecal Coliform	R1_MA_2024_04	Changed
Kettle Brook	MA51-01	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Kettle Brook	MA51-19	2	2	None	--	Unchanged
Kettle Brook Reservoir No. 1	MA51079	3	2	None	--	Unchanged
Kettle Brook Reservoir No. 2	MA51080	3	3	None	--	Unchanged
Kettle Brook Reservoir No. 3	MA51081	3	3	None	--	Unchanged
Kettle Brook Reservoir No. 4	MA51082	3	3	None	--	Unchanged
Lake Hiawatha	MA51062	3	3	None	--	Unchanged
Lake Quinsigamond	MA51125	5	5	(Curly-leaf Pondweed*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Lake Quinsigamond	MA51125	5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Lake Quinsigamond	MA51125	5	5	(Fanwort*)	--	Unchanged
Lake Quinsigamond	MA51125	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Lake Quinsigamond	MA51125	5	5	(Water Chestnut*)	--	Unchanged
Lake Quinsigamond	MA51125	5	5	Algae	644	Unchanged
Lake Quinsigamond	MA51125	5	5	Dissolved Oxygen	644	Unchanged
Lake Quinsigamond	MA51125	5	5	Enterococcus	--	Unchanged
Lake Quinsigamond	MA51125	5	5	Escherichia Coli (E. Coli)	--	Added
Lake Quinsigamond	MA51125	5	5	PFAS in Fish Tissue	--	Added
Lake Ripple	MA51135	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Lake Ripple	MA51135	5	5	(Fanwort*)	--	Unchanged
Lake Ripple	MA51135	5	5	(Water Chestnut*)	--	Unchanged
Lake Ripple	MA51135	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Lake Ripple	MA51135	5	5	PFAS in Fish Tissue	--	Added

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Laurel Brook	MA51-23	2	2	None	--	Unchanged
Leesville Pond	MA51087	4a	4a	(Fanwort*)	--	Unchanged
Leesville Pond	MA51087	4a	4a	Dissolved Oxygen	671	Unchanged
Leesville Pond	MA51087	4a	4a	Phosphorus, Total	671	Unchanged
Lynde Brook Reservoir	MA51090	3	3	None	--	Unchanged
Manchaug Pond	MA51091	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Manchaug Pond	MA51091	5	5	(Fanwort*)	--	Unchanged
Manchaug Pond	MA51091	5	5	Dissolved Oxygen	--	Unchanged
Manchaug Pond	MA51091	5	5	Mercury in Fish Tissue	42392	Unchanged
Marble Pond	MA51093	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Marble Pond	MA51093	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Marble Pond	MA51093	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Martin Street Pond	MA51095	3	3	None	--	Unchanged
Merrill Pond No. 3	MA51098	3	3	None	--	Unchanged
Merrill Pond No. 4	MA51099	3	3	None	--	Unchanged
Middle River	MA51-02	5	5	(Debris*)	--	Unchanged
Middle River	MA51-02	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Middle River	MA51-02	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Middle River	MA51-02	5	5	Benthic Macroinvertebrates	--	Unchanged
Middle River	MA51-02	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Middle River	MA51-02	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Middle River	MA51-02	5	5	Trash	--	Unchanged
Middle River	MA51-02	5	5	Turbidity	--	Unchanged
Mill Pond	MA51104	4c	4c	(Fanwort*)	--	Unchanged
Mill Pond	MA51104	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Mill River	MA51-35	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Mill River	MA51-35	5	5	(Fanwort*)	--	Unchanged
Mill River	MA51-35	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Mill River	MA51-35	5	5	Metals	--	Unchanged
Mill River	MA51-35	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Mill River	MA51-35	5	5	PCBs in Fish Tissue	--	Unchanged
Mill River	MA51-35	5	5	PFAS in Fish Tissue	--	Added
Mill River	MA51-36	5	4a	(Fanwort*)	--	Unchanged
Mill River	MA51-36	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Miscoe Brook	MA51-21	2	2	None	--	Unchanged
Miscoe Brook	MA51-37	2	2	None	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Miscoe Lake	MA51106	4c	4c	(Fanwort*)	--	Unchanged
Muddy Brook	MA51-40	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Mumford River	MA51-13	2	2	None	--	Unchanged
Mumford River	MA51-14	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Mumford River	MA51-14	5	5	(Fanwort*)	--	Unchanged
Mumford River	MA51-14	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Mumford River	MA51-14	5	5	(Water Chestnut*)	--	Unchanged
Mumford River	MA51-14	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Newton Pond	MA51110	4c	4c	(Fanwort*)	--	Unchanged
Newton Pond	MA51110	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Nipmuck Pond	MA51111	3	3	None	--	Unchanged
North Pond	MA51112	4c	4c	(Brittle Naiad, Najas Minor*)	--	Unchanged
North Pond	MA51112	4c	4c	(Fanwort*)	--	Unchanged
North Pond	MA51112	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Number 1 Pond	MA51114	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Number 1 Pond	MA51114	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Number 1 Pond	MA51114	5	5	Turbidity	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Number 2 Pond	MA51115	3	3	None	--	Unchanged
Peabody Pond	MA51119	3	3	None	--	Unchanged
Peters River	MA51-18	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Peters River	MA51-18	5	5	Temperature	--	Unchanged
Pondville Pond	MA51120	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Added
Pondville Pond	MA51120	4a	4a	(Fanwort*)	--	Unchanged
Pondville Pond	MA51120	4a	4a	Algae	938	Unchanged
Poor Farm Brook	MA51-17	5	5	(Dewatering*)	--	Unchanged
Poor Farm Brook	MA51-17	5	5	Aquatic Plants (Macrophytes)	--	Removed
Poor Farm Brook	MA51-17	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Poor Farm Brook	MA51-17	5	5	Temperature	--	Unchanged
Pout Pond	MA51121	3	3	None	--	Unchanged
Pout Pond	MA51122	3	3	None	--	Unchanged
Pratt Pond	MA51123	4c	4c	(Fanwort*)	--	Unchanged
Pratt Pond	MA51123	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Pratts Pond	MA51124	3	3	None	--	Unchanged
Quinsigamond River	MA51-09	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Quinsigamond River	MA51-09	5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Quinsigamond River	MA51-09	5	5	(Fanwort*)	--	Unchanged
Quinsigamond River	MA51-09	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Quinsigamond River	MA51-09	5	5	Benthic Macroinvertebrates	--	Unchanged
Ramshorn Pond	MA51126	3	3	None	--	Unchanged
Reservoir No. 4	MA51128	3	3	None	--	Unchanged
Reservoir No. 6	MA51130	5	5	Mercury in Fish Tissue	--	Unchanged
Riley Pond	MA51134	5	5	Turbidity	--	Unchanged
Riverlin Street Pond	MA51137	4c	4c	(Aquatic Plants (Macrophytes)*)	--	Added
Riverlin Street Pond	MA51137	4c	4c	(Curly-leaf Pondweed*)	--	Unchanged
Riverlin Street Pond	MA51137	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Rivulet Pond	MA51138	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Rock Meadow Brook	MA51-58	--	3	None	--	Unchanged
Round Top Brook	MA51-55	--	2	None	--	Unchanged
Scadden Brook	MA51-24	2	2	None	--	Unchanged
Schoolhouse Pond	MA51144	3	3	None	--	Unchanged
Scott Brook	MA51-53	2	2	None	--	Unchanged
Sewall Brook	MA51-44	5	5	Temperature	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Sewall Pond	MA51191	3	3	None	--	Unchanged
Shirley Street Pond	MA51196	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Shirley Street Pond	MA51196	4a	4a	(Water Chestnut*)	--	Unchanged
Shirley Street Pond	MA51196	4a	4a	Nutrient/Eutrophication Biological Indicators	2392	Unchanged
Sibley Reservoir	MA51148	4c	4c	(Dewatering*)	--	Unchanged
Silver Hill Pond	MA51149	3	3	None	--	Unchanged
Silver Lake	MA51150	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Silver Lake	MA51151	4c	4c	(Water Chestnut*)	--	Unchanged
Singletary Brook	MA51-31	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Singletary Pond	MA51152	4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Slaughterhouse Pond	MA51153	3	3	None	--	Unchanged
Southwick Pond	MA51157	4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Southwick Pond	MA51157	4a	4a	Nutrient/Eutrophication Biological Indicators	2390	Unchanged
Spring Brook	MA51-25	2	2	None	--	Unchanged
Steamburg Brook	MA51-59	--	3	None	--	Unchanged
Stevens Pond	MA51159	4c	4c	(Fanwort*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Stoneville Reservoir	MA51161	3	3	None	--	Unchanged
Stump Pond	MA51162	3	3	None	--	Unchanged
Sutton Falls	MA51163	5	5	Harmful Algal Blooms	--	Unchanged
Sutton Falls	MA51163	5	5	Turbidity	--	Unchanged
Swans Pond	MA51164	4c	4c	(Aquatic Plants (Macrophytes)*)	--	Added
Swans Pond	MA51164	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Taft Pond	MA51165	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Taft Pond Brook	MA51-26	2	2	None	--	Unchanged
Tatnuck Brook	MA51-15	5	5	(Fanwort*)	--	Unchanged
Tatnuck Brook	MA51-15	5	5	(Flow Regime Modification*)	--	Unchanged
Tatnuck Brook	MA51-15	5	5	Benthic Macroinvertebrates	--	Unchanged
Tatnuck Brook	MA51-15	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Tatnuck Brook	MA51-15	5	5	Sedimentation/Siltation	--	Unchanged
Tatnuck Brook	MA51-48	2	2	None	--	Unchanged
Tinker Hill Pond	MA51167	4c	4c	(Brittle Naiad, Najas Minor*)	--	Unchanged
Tinkerville Brook	MA51-22	2	2	None	--	Unchanged
Town Farm Pond	MA51168	3	3	None	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Tuckers Pond	MA51169	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Unnamed Tributary	MA51-08	5	5	(Debris*)	--	Unchanged
Unnamed Tributary	MA51-08	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Ammonia, Un-ionized	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Chloride	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
Unnamed Tributary	MA51-08	5	5	Fecal Coliform	R1_MA_2024_04	Changed
Unnamed Tributary	MA51-08	5	5	Flocculant Masses	--	Removed
Unnamed Tributary	MA51-08	5	5	Metals	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Odor	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Oil and Grease	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Other Organics	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Unnamed Tributary	MA51-08	5	5	Scum/Foam	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Sedimentation/Siltation	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Trash	--	Unchanged
Unnamed Tributary	MA51-08	5	5	Turbidity	2319	Unchanged
Unnamed Tributary	MA51-20	5	5	(Debris*)	--	Unchanged
Unnamed Tributary	MA51-20	5	5	(Dewatering*)	--	Unchanged
Unnamed Tributary	MA51-20	5	5	(Fanwort*)	--	Unchanged
Unnamed Tributary	MA51-20	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Unnamed Tributary	MA51-20	5	5	Sedimentation/Siltation	--	Unchanged
Unnamed Tributary	MA51-20	5	5	Trash	--	Unchanged
Unnamed Tributary	MA51-38	5	5	Chloride	--	Unchanged
Unnamed Tributary	MA51-46	2	2	None	--	Unchanged
Unnamed Tributary	MA51-51	2	2	None	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Unnamed Tributary	MA51-52	2	2	None	--	Unchanged
Unnamed Tributary	MA51-54	3	2	None	--	Unchanged
Unnamed Tributary	MA51-60	--	5	Escherichia Coli (E. Coli)	--	Added
Waite Pond	MA51170	4a	4a	Mercury in Fish Tissue	33880	Unchanged
Wallum Lake	MA51172	2	5	PFAS in Fish Tissue	--	Added
Warren Brook	MA51-47	2	2	None	--	Unchanged
Weasel Brook	MA51-61	--	3	None	--	Unchanged
Wellman Brook	MA51-50	2	2	None	--	Unchanged
Welsh Pond	MA51176	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Welsh Pond	MA51176	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Welsh Pond	MA51176	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Welsh Pond	MA51176	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
West Brook	MA51-43	2	2	None	--	Unchanged
West River	MA51-11	5	5	(Fanwort*)	--	Unchanged
West River	MA51-11	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
West River	MA51-11	5	5	Lack of a Coldwater Assemblage	--	Unchanged
West River	MA51-11	5	5	Temperature	--	Unchanged
West River	MA51-12	5	5	(Curly-leaf Pondweed*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
West River	MA51-12	5	5	(Fanwort*)	--	Unchanged
West River	MA51-12	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
West River	MA51-12	5	5	(Water Chestnut*)	--	Unchanged
West River	MA51-12	5	5	Dissolved Oxygen	--	Unchanged
Whitin Reservoir	MA51179	3	3	None	--	Unchanged
Whitins Pond	MA51180	4c	4c	(Fanwort*)	--	Unchanged
Whitins Pond	MA51180	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Whitins Pond	MA51180	4c	4c	(Non-Native Fish/Shellfish/Zooplankton*)	--	Unchanged
Whitins Pond	MA51180	4c	4c	(Water Chestnut*)	--	Unchanged
Windle Pond	MA51184	3	3	None	--	Unchanged
Woolshop Pond	MA51186	5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
Woolshop Pond	MA51186	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Woolshop Pond	MA51186	5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
Woolshop Pond	MA51186	5	5	Nutrient/Eutrophication Biological Indicators	--	Added
Woolshop Pond	MA51186	5	5	Turbidity	--	Unchanged

Abbott Run (MA51-57)

Location:	From the MA/RI border south of Route 295, North Attleborough to 1000 feet from the MA/RI border north of Route 123 and Robin Hollow Pond, North Attleborough (the lower 1000 feet represents "All Interstate surface waters that are public water supply in Rhode Island from 1000 feet upstream of the State Line" which are designated as Class A/PWS/ORW in 314CMR4.00, January 2007).
AU Type:	RIVER
AU Size:	3.2 MILES
Classification/Qualifier:	B

No usable data were available for Abbott Run (MA51-57) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	3	None	--	Unchanged

Aldrich Pond (MA51002)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Aldrich Pond (MA51002) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that 75-100% of the entire pond was covered with aquatic plants of all types (floating, submerged, and emergent), including the non-rooted, floating species, *Ceratophyllum* sp. (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and September 2017 show high amounts of plant coverage (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1994 WBS Coding Sheet (MassDEP 2002)**:**

WBID: MA51002 WATERSHED: Blackstone (51) (Printed 02/03/98)
NAME: Aldrich Pond TYPE: Lake/Pond
CODE: 51002 SIZE: 2.00(acres) CLASS: B

LATITUDE: 42.16306
LONGITUDE: 71.74111 (420947/714428)
Lake/Pond Name: Aldrich Pond, Sutton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

LAKES (51)

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				2.00		
ALUS			2.00			
FISH CONSUMPTION					2.00	
PRIMARY CONTACT				2.00		
SECONDARY CONTACT				2.00		
Aesthetics					2.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	2.00	M
2600- Exotic species	2.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	2.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 14 JULY 1994 SYNOPTIC SURVEY INDICATES THAT CLOSE TO THE ENTIRE POND WAS COVERED WITH AQUATIC PLANTS OF ALL TYPES (FLOATING LEAF, SUBMERGED, AND EMERGENT). THE NON-NATIVE MYRIOPHYLLUM HETEROPHYLLUM WAS PRESENT AND LIKELY CONTRIBUTED TO THE NON-SUPPORTING AQUATIC LIFE, PRIMARY CONTACT, AND SECONDARY CONTACT CRITERIA. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

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1994 Synoptic Survey Field Sheet (MassDEP 1994):

9/20/94

Page 1 of 2

Lake/Pond Aldrich P. Date 7/14/94

Town/City Sutton Observers G. DeCesare
R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Through woods off Boston Rd. - No formal access

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Private

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
Turbid, green/brown -; oily sheen on surface

Record of aquatic plant "species" observed (see note below):

Nymphaea, Brasenia, Myriophyllum heterophyllum, Cabomba
Ceratophyllum echinatum, Sparganium, Typha latifolia
Pontederia, filamentous algae

Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**

75-100% ~~the~~ entire pond, mid. all types

Other notes (e.g., overt pollution, construction, and water uses:

Washed out gully ~~the~~ thru woods from Rt. 146.

3056 - Eutrophic

1° Contact ✓ 100% Non-support
2° Contact ~~✓~~ 100% Partial support
~~Ag~~. Life — 100% Partial support

Causes - Exotic plants. M (total acreage); Noxious plants M (total acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Aldrich Pond, 3/30/2009 (Google Earth Pro Undated):



Google Earth image of Aldrich Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Aldrich Pond, 9/12/2017 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Aldrich Pond (MA51002) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Aldrich Pond (MA51002) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators impairment is being added. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Aldrich Pond (MA51002) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that 75-100% of the entire pond was covered with aquatic plants of all types (floating, submerged, and emergent), including the non-rooted, floating species, *Ceratophyllum sp*. (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and September 2017 show high amounts of plant coverage (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Ceratophyllum sp*.). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for Aldrich Pond.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Aldrich Pond (MA51002) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Aldrich Pond (MA51002) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Arcade Pond (MA51003)

Location:	Northbridge.
AU Type:	FRESHWATER LAKE
AU Size:	20 ACRES
Classification/Qualifier:	B

No usable data were available for Arcade Pond (MA51003) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Algae	--	Unchanged

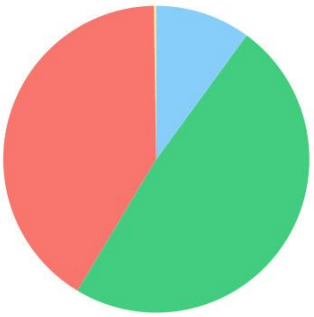
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Algae	Source Unknown (N)	--	--	X	X	X

Arnolds Brook (MA51-32)

Location:	Headwaters, perennial portion, from outlet of unnamed pond at Whitehall Way, Bellingham to mouth at confluence with Peters River, Bellingham.
AU Type:	RIVER
AU Size:	1.7 MILES
Classification/Qualifier:	B

Arnolds Brook (MA51-32)

Watershed Area: 1.25 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.25	1.25	0.26	0.26
Agriculture	0.3%	0.3%	0%	0%
Developed	41.1%	41.1%	34.3%	34.3%
Natural	48.6%	48.6%	41.2%	41.2%
Wetland	10.1%	10.1%	24.5%	24.5%
Impervious	16.7%	16.7%	11.7%	11.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Illicit Connections/Hook-ups to Storm Sewers (N)	--	--	--	X	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Livestock (Grazing or Feeding Operations) (N)	--	--	--	X	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Arnolds Brook (MA51-32) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Arnolds Brook (MA51-32), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert

Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Arnolds Brook (MA51-32) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli*) impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Arnolds Brook (MA51-32) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Arnolds Brook at W1756 [Pinegrove Avenue, Bellingham] from May-Aug 2008 (n=6). Analysis of this historic single year limited frequency *E. coli* dataset from W1756 indicated 42% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 151 CFU/100ml. Historic *E. coli* data from W1756 meet 2024 CALM guidance, however since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1756	MassDEP	Water Quality	Arnolds Brook	[Pinegrove Avenue, Bellingham]	42.027270	-71.485472

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

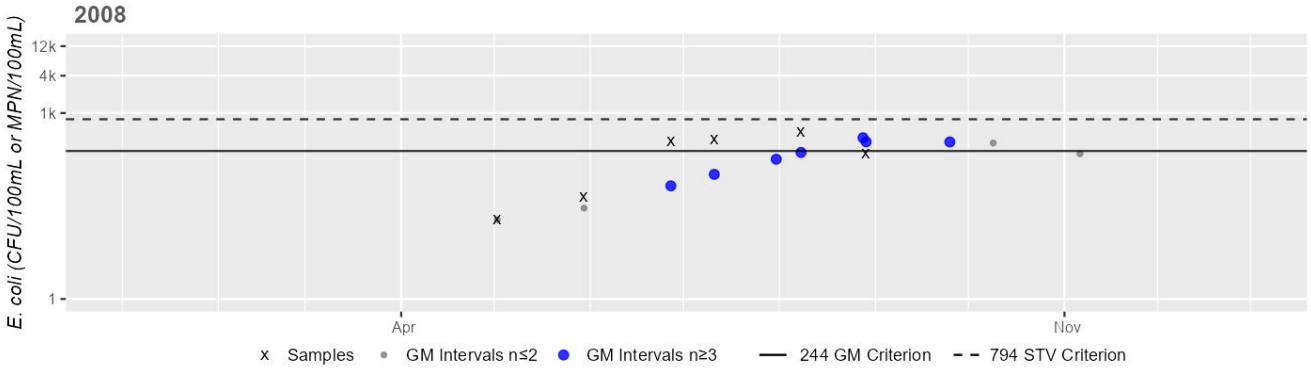
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1756	MassDEP	E. coli	05/01/08	08/28/08	6	19	490	151

Station MASSDEP_W1756 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	151
#GMI	7
#GMI Ex	3
%GMI Ex	42%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
42%

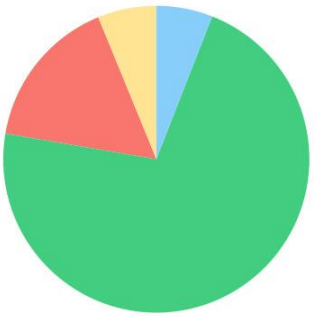
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Bacon Brook (MA51-41)

Location:	Outlet Ironstone Reservoir, Uxbridge to mouth at confluence with the Blackstone River, Uxbridge.
AU Type:	RIVER
AU Size:	0.6 MILES
Classification/Qualifier:	B

Bacon Brook (MA51-41)

Watershed Area: 5.84 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	3.79	3.79	1.21	1.21
Agriculture	6.2%	6.2%	4.6%	4.6%
Developed	16.1%	16.1%	10.6%	10.6%
Natural	71.7%	71.7%	72.9%	72.9%
Wetland	6%	6%	11.9%	11.9%
Impervious	7.9%	7.9%	5.6%	5.6%

**Land cover analysis only includes watershed area within Massachusetts.*

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Temperature	Dam or Impoundment (Y)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Bacon Brook (MA51-41) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Bacon Brook (MA51-41) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station three-quarters of the way down this Bacon Brook AU ~700 feet upstream from River Road, Uxbridge (W2207 2011, n=6). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted trash on two occasions.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2207	MassDEP	Water Quality	Bacon Brook	[approximately 700 feet upstream from River Road, Uxbridge]	42.029322	-71.605422

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2207	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2207 on Bacon Brook (MA51-41) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2207	2011	6	6	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2207	Bacon Brook	2011	Aquatic Plant Density, Overall	None	6	6
W2207	Bacon Brook	2011	Color	Light Yellow/Tan	2	6
W2207	Bacon Brook	2011	Color	None	4	6
W2207	Bacon Brook	2011	Objectionable Deposits	No	4	6
W2207	Bacon Brook	2011	Objectionable Deposits	Yes	2	6
W2207	Bacon Brook	2011	Odor	Musty (Basement)	1	6
W2207	Bacon Brook	2011	Odor	None	5	6
W2207	Bacon Brook	2011	Periphyton Density, Filamentous	None	5	6
W2207	Bacon Brook	2011	Periphyton Density, Filamentous	Sparse	1	6
W2207	Bacon Brook	2011	Periphyton Density, Film	None	4	6
W2207	Bacon Brook	2011	Periphyton Density, Film	Sparse	2	6
W2207	Bacon Brook	2011	Scum	No	6	6
W2207	Bacon Brook	2011	Turbidity	None	6	6

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Bacon Brook (MA51-41) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down this Bacon Brook AU at W2207 [~700 ft upstream from River Rd, Uxbridge] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2207 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 37 CFU/100ml. *E. coli* data from W2207 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2207	MassDEP	Water Quality	Bacon Brook	[approximately 700 feet upstream from River Road, Uxbridge]	42.029322	-71.605422

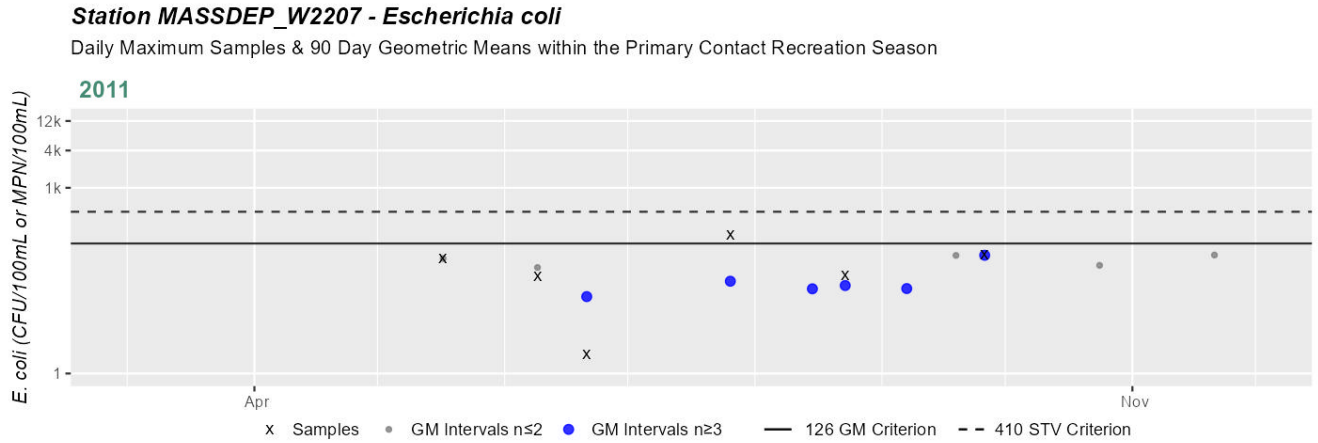
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2207	MassDEP	E. coli	05/17/11	09/26/11	6	2	172	37



Variable*	Result
Samples	6
SeasGM	37
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Bacon Brook (MA51-41) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down this Bacon Brook AU at W2207 [~700 ft upstream from River Rd, Uxbridge] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2207 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 37 CFU/100ml. *E. coli* data from W2207 meet 2024 CALM guidance.

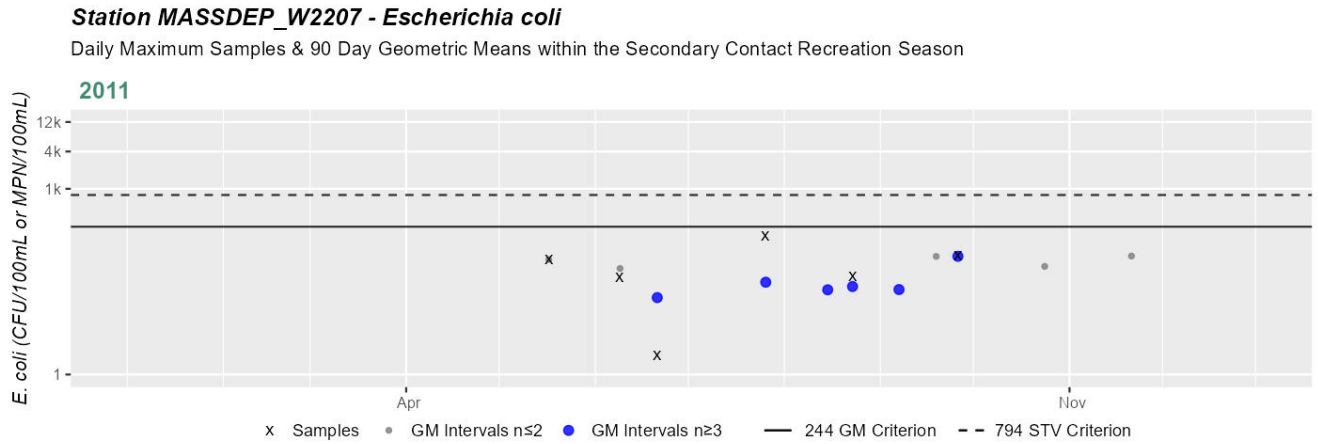
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2207	MassDEP	Water Quality	Bacon Brook	[approximately 700 feet upstream from River Road, Uxbridge]	42.029322	-71.605422

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 8) (MassDEP Undated 4)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2207	MassDEP	E. coli	05/17/11	09/26/11	6	2	172	37



Variable*	Result
Samples	6
SeasGM	37
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

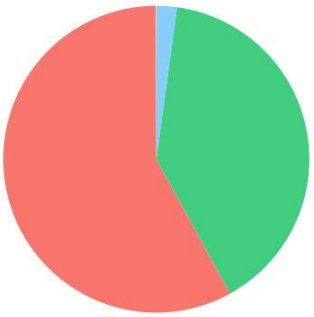
*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Beaver Brook (MA51-07)

Location:	Outlet of small unnamed impoundment north of Beth Israel School and Flag Street School, Worcester to mouth at confluence with Middle River, Worcester (includes underground portion).
AU Type:	RIVER
AU Size:	2.9 MILES
Classification/Qualifier:	B: WWF, HQW

Beaver Brook (MA51-07)

Watershed Area: 4.37 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	4.37	3.51	0.99	0.61
Agriculture	0.1%	0%	0.1%	0%
Developed	57.9%	59.6%	55.3%	61.6%
Natural	39.8%	38.6%	39.9%	35.9%
Wetland	2.2%	1.7%	4.7%	2.6%
Impervious	36.6%	38.8%	31.7%	36.1%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fish Kill(s)*)	--	Unchanged
5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	Bottom Deposits	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fish Kill(s)*)	Source Unknown (N)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Channelization (Y)	X	--	--	--	--
Bottom Deposits	Channelization (Y)	X	--	--	--	--
Bottom Deposits	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Illicit Connections/Hook-ups to Storm Sewers (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Unspecified Urban Stormwater (N)	--	--	--	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Beaver Brook (MA51-07) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Beaver Brook (MA51-07), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Beaver Brook (MA51-07) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Beaver Brook (MA51-07) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2003 & 2008. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Beaver Brook at W0499 [upstream at Park Avenue, Worcester] in 2003 and 2008 (n=5-6/yr). Analysis of this historic multi-year limited frequency *E. coli* dataset from W0499 indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2003 and 2008, 100 & 100%), 2 yrs had ≥2 samples exceed the 794 CFU/100ml STV (2003 and 2008, n=2 & 6), and cumulatively across years 100% of intervals had GMs >244 CFU/100ml. Historic data from W0499 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0499	MassDEP	Water Quality	Beaver Brook	[upstream at Park Avenue, Worcester]	42.250538	-71.830997

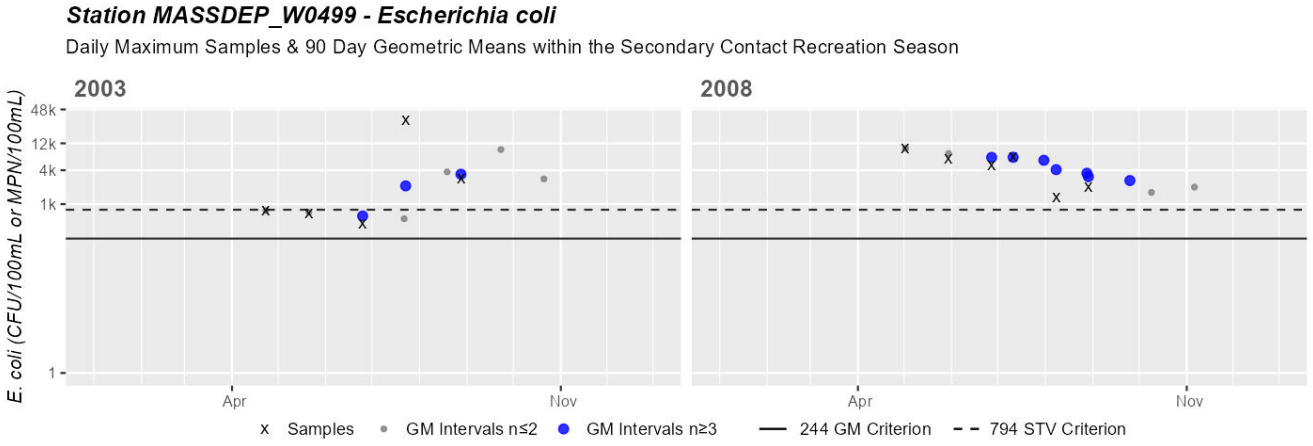
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0499	MassDEP	E. coli	04/23/03	08/28/03	5	450	31000	1823
W0499	MassDEP	E. coli	05/01/08	08/28/08	6	1300	9800	4203



Variable*	Result
Samples	5
SeasGM	1823
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	2
%n>STV	40%

Variable*	Result
Samples	6
SeasGM	4203
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	6
%n>STV	100%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Bell Pond (MA51009)

Location:	Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	10 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Insufficient Information	No

2024/26 Use Attainment Summary
There is Insufficient Information to assess the Fish Consumption Use for Bell Pond (MA51009). Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Bell Pond (MA51009) at station F0028 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. However, no site-specific fish consumption advisory was issued by MDPH.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MassDEP Undated 6)

Summary Statement
Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Bell Pond (MA51009) at station F0028 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. No site-specific fish consumption advisory was issued by MDPH.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Bell Pond (MA51009) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Bell Pond (MA51009) is assessed as Fully Supporting. In Bell Pond the City of Worcester Lakes and Ponds Program (CWLPP) collected Secchi depth data at deep hole station CWLPP_BP2 in 2021-2022. Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at CWLPP_BP2 in 2021 (n=11, 3.81-5.18m) and 2022 (n=12, 2.21-5.18m). CWLPP staff/volunteers also collected *E. coli* bacteria samples in Bell Pond (MA51009) at CWLPP_BP2 [Deep Hole] from 2021-2022 (n=11-12/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_BP2 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >126 CFU/100ml, 0 yrs had ≥2 samples exceed the 410 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >126 CFU/100ml. *E. coli* data from CWLPP_BP2 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_BP2	City of Worcester Lakes and Ponds Program	Water Quality	Bell Pond	Deep Hole	42.271643	-71.783555

Bacteria Data

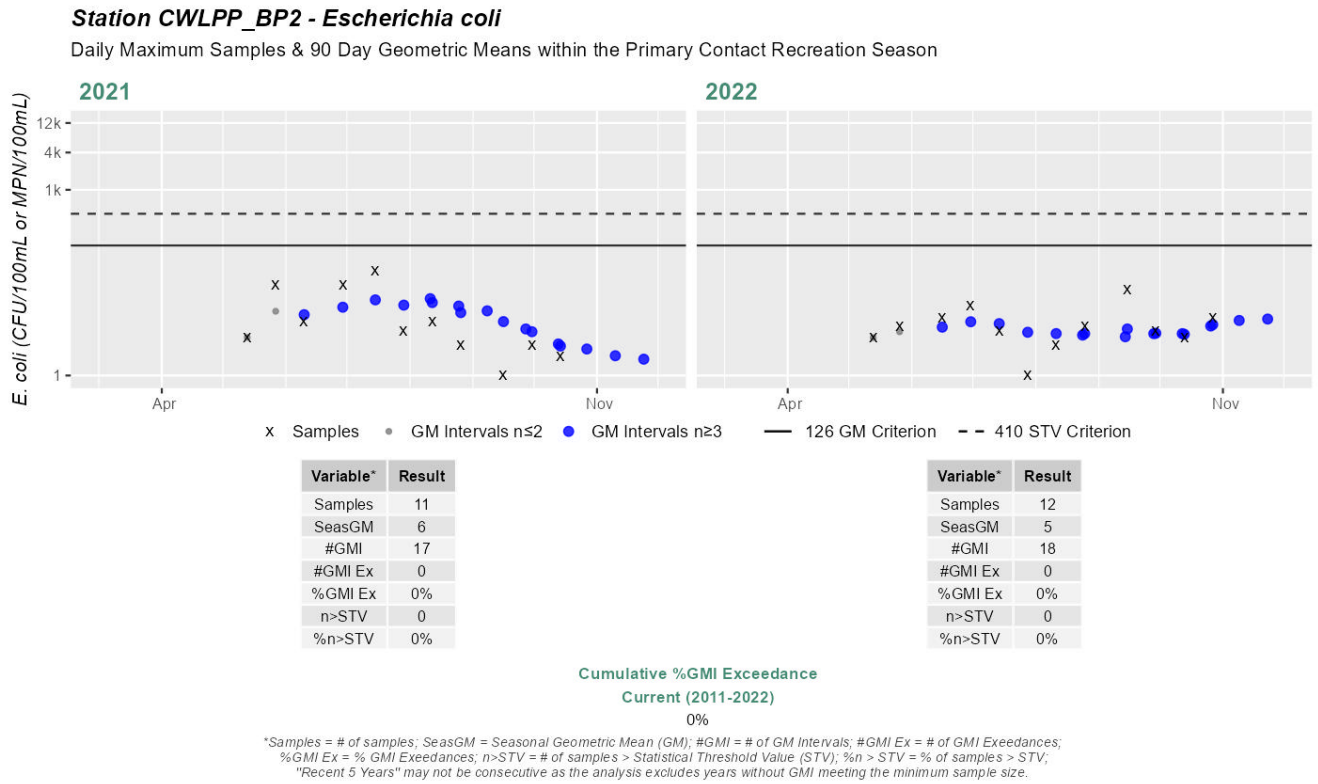
Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(Worcester Lakes and Ponds 2023) (MassDEP Undated 3)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_BP2	City of Worcester Lakes and Ponds Program	E. coli	05/13/21	11/10/21	11	1	49	6

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_BP2	City of Worcester Lakes and Ponds Program	E. coli	05/13/22	10/27/22	12	1	24	5



Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 3)

Data Year(s)	Summary
2021-2022	In Bell Pond (MA51009), CWLPP collected Secchi data at CWLPP_BP2 (2021-2022). In 2021 at station CWLPP_BP2 (station depth=5.18 m) the Secchi depth measurements ranged from 3.81-5.18 m (n=11) indicating water clarity meeting the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_BP2 (station depth=5.18 m) the Secchi depth measurements ranged from 2.21-5.18 m (n=12) indicating water clarity meeting the 1.2 m (4 ft) threshold.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Bell Pond (MA51009) is assessed as Fully Supporting. City of Worcester Lakes and Ponds Program (CWLPP) staff/volunteers collected *E. coli* bacteria samples in Bell Pond (MA51009) at CWLPP_BP2 [Deep Hole] from 2021-2022 (n=12-13/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_BP2 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. *E. coli* data from CWLPP_BP2 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_BP2	City of Worcester Lakes and Ponds Program	Water Quality	Bell Pond	Deep Hole	42.271643	-71.783555

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

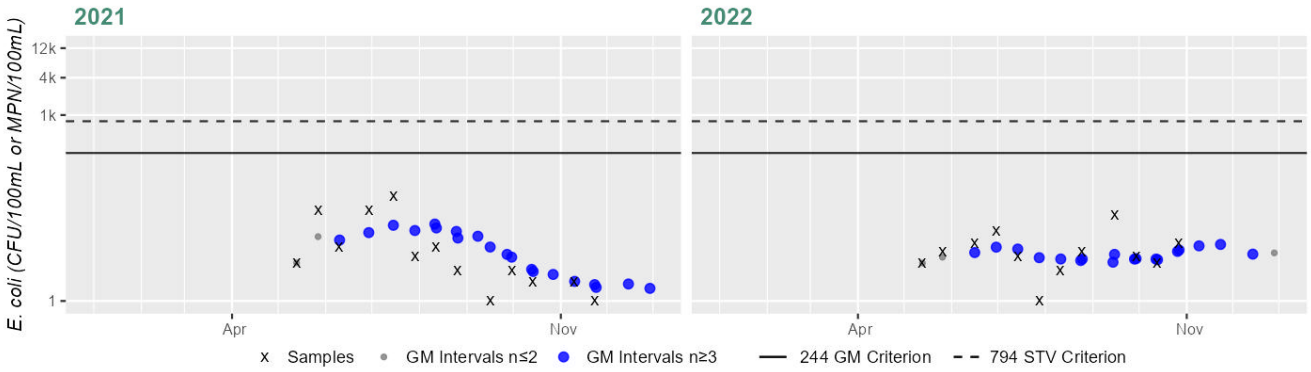
(Worcester Lakes and Ponds 2023) (MassDEP Undated 2)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_BP2	City of Worcester Lakes and Ponds Program	E. coli	05/13/21	11/23/21	13	1	49	5
CWLPP_BP2	City of Worcester Lakes and Ponds Program	E. coli	05/13/22	10/27/22	12	1	24	5

Station CWLPP_BP2 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	13
SeasGM	5
#GMI	20
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	12
SeasGM	5
#GMI	18
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance

Current (2011-2022)

0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Blackstone River (MA51-03)

Location:	Confluence of Middle River and Mill Brook (downstream of the railroad spur bridge west of Tobias Boland Way), Worcester to Fisherville Pond Dam (NATID: MA00577), Grafton (through a portion of former 2008 segment: Fisherville Pond MA51048) (mileage includes length of braid).
AU Type:	RIVER
AU Size:	10.4 MILES
Classification/Qualifier:	B: WWF, CSO

Blackstone River (MA51-03)

Watershed Area: 135.15 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	135.13	13.58	49.97	4.38
Agriculture	2%	3.2%	1.3%	2.2%
Developed	34.7%	26.2%	23.7%	18.6%
Natural	55.5%	57.8%	60.7%	54.6%
Wetland	7.7%	12.8%	14.4%	24.6%
Impervious	17.7%	9.3%	11.7%	7.2%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Debris*)	--	Unchanged
5	5	(Flow Regime Modification*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	Algae	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Fish Bioassessments	--	Unchanged
5	5	Flocculant Masses	--	Removed
5	5	Lead	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
5	5	Odor	--	Unchanged
5	5	Oil and Grease	--	Unchanged
5	5	PFAS in Fish Tissue	--	Added
5	5	Phosphorus, Total	--	Unchanged
5	5	Scum/Foam	--	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged
5	5	Trash	--	Unchanged
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Debris*)	Unspecified Urban Stormwater (Y)	--	--	X	X	X
(Flow Regime Modification*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
(Flow Regime Modification*)	Unspecified Urban Stormwater (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Algae	Unspecified Urban Stormwater (Y)	--	--	X	X	X
Benthic Macroinvertebrates	Channelization (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Municipal Point Source Discharges (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Dissolved Oxygen	Municipal Point Source Discharges (Y)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Dissolved Oxygen	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Dissolved Oxygen	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Municipal Point Source Discharges (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Unspecified Urban Stormwater (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	--	--	--	X	X
Fish Bioassessments	Channelization (Y)	X	--	--	--	--
Fish Bioassessments	Municipal Point Source Discharges (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Fish Bioassessments	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Lead	Municipal Point Source Discharges (Y)	X	--	--	--	--
Lead	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Lead	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Odor	Municipal Point Source Discharges (Y)	--	--	X	X	X
Odor	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	--	--	X	X	X
Oil and Grease	Municipal Point Source Discharges (Y)	--	--	X	X	X
Oil and Grease	Unspecified Urban Stormwater (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Oil and Grease	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	--	--	X	X	X
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Phosphorus, Total	Municipal Point Source Discharges (Y)	X	--	--	--	--
Phosphorus, Total	Source Unknown (N)	X	--	--	--	--
Phosphorus, Total	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Phosphorus, Total	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	X	--	--	--	--
Scum/Foam	Municipal Point Source Discharges (Y)	--	--	X	X	X
Scum/Foam	Unspecified Urban Stormwater (Y)	--	--	X	X	X
Scum/Foam	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	--	--	X	X	X
Sedimentation/Siltation	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Sedimentation/Siltation	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Trash	Unspecified Urban Stormwater (Y)	--	--	X	X	X
Turbidity	Municipal Point Source Discharges (Y)	--	--	X	X	X
Turbidity	Unspecified Urban Stormwater (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Turbidity	Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO) (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Flocculant Masses	Data and/or information lacking to determine WQ status; original basis for listing was incorrect	The ADB impairment "Foam/Flocs/Scum/Oil Slicks" was previously applied to Blackstone River (MA51-03) during the 2012 reporting cycle. The impairment was based on field observations by MassDEP staff at the upstream end of the AU at station W0680 (Millbury Street Bridge/Blackstone River Road Bridge), during summer 2002 and 2003, where it was noted that "foam and oily sheens were observed frequently". The "Foam/Flocs/Scum/Oil Slicks" impairment code was subsequently divided into more specific codes and applied automatically to this AU for the final 2016 reporting cycle submittal to EPA's new ATTAINS database. Since there was no mention of "Flocculant Masses" in the field observations, this impairment is being removed (the impairments for "Scum/foam" and "Oil and Grease" are being carried forward).
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Flocculant Masses

Please see the removal comment above.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for this Blackstone River AU (MA51-03) is assessed as Not Supporting with a new impairment being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in the next downstream Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the 2025 list. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in the next downstream Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the 2025 list. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for PFAS in Fish Tissue for this Blackstone River AU (MA51-03).

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Blackstone River (MA51-03) continues to be assessed as Not Supporting, with the Odor, Scum/foam, Turbidity, Algae, Debris, Trash and Oil/Grease impairments being carried forward. The Flocculant Masses impairment is being removed (see supporting information for removed impairments). Since the Total Phosphorus impairment was redundantly duplicated across multiple uses for this waterbody, the Total Phosphorus impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. MassDEP staff recorded aesthetics observations at two stations in Worcester at the upstream end of this Blackstone River AU, from up to downstream as follows; ~ 1000 feet downstream from 'Mill Brook' confluence with the Blackstone River (W2239 2011, n=8) and at the Blackstone River Road bridge (W0680 2011, 2012 and 2013, n=3-5/yr). Objectionable conditions observed include multiple observations of deposits (trash) each summer at both stations, as well as petroleum/sewage odors in 2011 at both stations (n=2 and n=4 times respectively), as well as dense film algae at W2239 (n=3 in 2011) and W0680 (n=2 in 2012). Other observations at W2239 included a scum that was an oily sheen and there were two observations of grey colored water at W0680 (in 2012).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0680	MassDEP	Water Quality	Blackstone River	[Blackstone River Road bridge, Worcester (prior to October 2002 at old Millbury Street location approximately 350 feet downstream/south of current bridge, (see April 2001 orthophoto)]	42.227782	-71.787355
W2239	MassDEP	Water Quality	Blackstone River	[approximately 1000 feet downstream from 'Mill Brook' confluence with the Blackstone River, Worcester]	42.231609	-71.790627

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0680	2011	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0680 on Blackstone River (MA51-03) during 5 site visits between Mar 2011 and Nov 2011. There were some objectionable conditions recorded, including petroleum or sewage odor (n=3). Field staff also noted objectionable deposits (n=4). These conditions are indicative of an Alert status.

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0680	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0680 on Blackstone River (MA51-03) during 5 site visits between Feb 2012 and Nov 2012. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted grey water color (n=2) and objectionable deposits (n=4).
W0680	2013	3	Aesthetic observations were made by MassDEP field sampling crews at Station W0680 on Blackstone River (MA51-03) during 3 site visits between Jan 2013 and May 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted an aesthetics impairment flag (n=1), grey water color (n=1), high turbidity (n=1), and objectionable deposits (n=2).
W2239	2011	8	Aesthetic observations were made by MassDEP field sampling crews at Station W2239 on Blackstone River (MA51-03) during 8 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted grey water color (n=1), petroleum or effluent odor (n=2), high turbidity (n=1), and objectionable deposits (n=7).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0680	2011	5	4	1
W0680	2012	5	5	2
W0680	2013	3	2	1
W2239	2011	8	6	3

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0680	Blackstone River	2011	Aquatic Plant Density, Overall	None	5	5
W0680	Blackstone River	2011	Color	Brownish	1	5
W0680	Blackstone River	2011	Color	Light Yellow/Tan	1	5
W0680	Blackstone River	2011	Color	None	2	5
W0680	Blackstone River	2011	Color	Reddish	1	5
W0680	Blackstone River	2011	Objectionable Deposits	No	1	5
W0680	Blackstone River	2011	Objectionable Deposits	Unobservable	1	5
W0680	Blackstone River	2011	Objectionable Deposits	Yes	3	5
W0680	Blackstone River	2011	Odor	Other (Soil)	1	5
W0680	Blackstone River	2011	Odor	Petroleum	3	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0680	Blackstone River	2011	Odor	Raw sewage	1	5
W0680	Blackstone River	2011	Periphyton Density, Filamentous	None	4	5
W0680	Blackstone River	2011	Periphyton Density, Filamentous	Unobservable	1	5
W0680	Blackstone River	2011	Periphyton Density, Film	Dense	1	5
W0680	Blackstone River	2011	Periphyton Density, Film	Moderate	3	5
W0680	Blackstone River	2011	Periphyton Density, Film	Unobservable	1	5
W0680	Blackstone River	2011	Scum	No	1	5
W0680	Blackstone River	2011	Scum	Yes	4	5
W0680	Blackstone River	2011	Turbidity	Moderately Turbid	1	5
W0680	Blackstone River	2011	Turbidity	None	1	5
W0680	Blackstone River	2011	Turbidity	Slightly Turbid	3	5
W0680	Blackstone River	2012	Aquatic Plant Density, Overall	None	5	5
W0680	Blackstone River	2012	Color	Brownish	1	5
W0680	Blackstone River	2012	Color	Greyish	2	5
W0680	Blackstone River	2012	Color	Light Yellow/Tan	2	5
W0680	Blackstone River	2012	Objectionable Deposits	No	1	5
W0680	Blackstone River	2012	Objectionable Deposits	Yes	4	5
W0680	Blackstone River	2012	Odor	Musty (Basement)	2	5
W0680	Blackstone River	2012	Odor	None	1	5
W0680	Blackstone River	2012	Odor	Other (Eutrophic)	1	5
W0680	Blackstone River	2012	Odor	Raw sewage	1	5
W0680	Blackstone River	2012	Periphyton Density, Filamentous	Moderate	1	5
W0680	Blackstone River	2012	Periphyton Density, Filamentous	None	4	5
W0680	Blackstone River	2012	Periphyton Density, Film	Dense	2	5
W0680	Blackstone River	2012	Periphyton Density, Film	None	3	5
W0680	Blackstone River	2012	Scum	No	3	5
W0680	Blackstone River	2012	Scum	Yes	2	5
W0680	Blackstone River	2012	Turbidity	Moderately Turbid	2	5
W0680	Blackstone River	2012	Turbidity	None	2	5
W0680	Blackstone River	2012	Turbidity	Slightly Turbid	1	5
W0680	Blackstone River	2013	Aesthetics Impaired?	NR	2	3
W0680	Blackstone River	2013	Aesthetics Impaired?	Yes	1	3
W0680	Blackstone River	2013	Aquatic Plant Density, Overall	None	2	3
W0680	Blackstone River	2013	Aquatic Plant Density, Overall	Unobservable	1	3

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0680	Blackstone River	2013	Color	Greyish	1	3
W0680	Blackstone River	2013	Color	None	2	3
W0680	Blackstone River	2013	Objectionable Deposits	Unobservable	1	3
W0680	Blackstone River	2013	Objectionable Deposits	Yes	2	3
W0680	Blackstone River	2013	Odor	None	3	3
W0680	Blackstone River	2013	Periphyton Density, Filamentous	None	1	3
W0680	Blackstone River	2013	Periphyton Density, Filamentous	NR	1	3
W0680	Blackstone River	2013	Periphyton Density, Filamentous	Unobservable	1	3
W0680	Blackstone River	2013	Periphyton Density, Film	Dense	1	3
W0680	Blackstone River	2013	Periphyton Density, Film	None	1	3
W0680	Blackstone River	2013	Periphyton Density, Film	Unobservable	1	3
W0680	Blackstone River	2013	Scum	No	3	3
W0680	Blackstone River	2013	Turbidity	Highly Turbid	1	3
W0680	Blackstone River	2013	Turbidity	None	1	3
W0680	Blackstone River	2013	Turbidity	Slightly Turbid	1	3
W2239	Blackstone River	2011	Aquatic Plant Density, Overall	None	7	8
W2239	Blackstone River	2011	Aquatic Plant Density, Overall	Unobservable	1	8
W2239	Blackstone River	2011	Color	Greyish	1	8
W2239	Blackstone River	2011	Color	Light Yellow/Tan	2	8
W2239	Blackstone River	2011	Color	None	4	8
W2239	Blackstone River	2011	Color	NR	1	8
W2239	Blackstone River	2011	Objectionable Deposits	No	1	8
W2239	Blackstone River	2011	Objectionable Deposits	Yes	7	8
W2239	Blackstone River	2011	Odor	Effluent (Treated)	1	8
W2239	Blackstone River	2011	Odor	Musty (Basement)	1	8
W2239	Blackstone River	2011	Odor	None	5	8
W2239	Blackstone River	2011	Odor	Petroleum	1	8
W2239	Blackstone River	2011	Periphyton Density, Filamentous	None	5	8
W2239	Blackstone River	2011	Periphyton Density, Filamentous	Sparse	1	8
W2239	Blackstone River	2011	Periphyton Density, Filamentous	Unobservable	2	8
W2239	Blackstone River	2011	Periphyton Density, Film	None	3	8
W2239	Blackstone River	2011	Periphyton Density, Film	Unobservable	2	8
W2239	Blackstone River	2011	Periphyton Density, Film	Very Dense	3	8

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2239	Blackstone River	2011	Scum	No	5	8
W2239	Blackstone River	2011	Scum	Yes	3	8
W2239	Blackstone River	2011	Turbidity	Highly Turbid	1	8
W2239	Blackstone River	2011	Turbidity	Moderately Turbid	1	8
W2239	Blackstone River	2011	Turbidity	Slightly Turbid	6	8

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for the Blackstone River (MA51-03) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli*) impairment is being carried forward based on a presumptive impairment due to the presence of CSOs and bacteria data not meeting the threshold at 1 station 2011. The prior Algae, Debris, Odor, Oil and Grease, Scum/Foam, Trash, and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the Total Phosphorus and Flocculant Masses impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Primary Contact Recreation Use. Surface water sampling was conducted by the USGS upstream of the Upper Blackstone Clean Water (formerly the Upper Blackstone Water Pollution Abatement District) WWTF discharge on the Blackstone River at stations USGS_01109650 and USGS_01109660 on three dates during August to October 2020, as part of a MassDEP funded project to evaluate 24 PFAS analytes in ambient water samples upstream and downstream of wastewater treatment facilities. The concentrations of six of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS) were all less than the 90 ng/L (ppt) recreational screening value (HFPO-DA/GenX was not analyzed in this study). MassDEP staff collected *E. coli* bacteria samples in the Blackstone River from 2011-2013 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: the upstream end of the AU at W2239 [~1000 ft downstream from 'Mill Brook' confluence with the Blackstone River, Worcester] from May-Oct 2011 (n=7), and also close to the upstream end at W0680 [Blackstone River Rd bridge, Worcester (prior to October 2002 at old Millbury St location ~350 ft downstream/S of current bridge, (see April 2001 orthophoto)] from 2011-2013 (n=1-3/yr). Analysis of the single year moderate frequency *E. coli* dataset from W2239 indicated 100% of intervals had GMs >126 CFU/100ml and 7 samples exceeded the 410 CFU/100ml STV. The available *E. coli* data at W0680 are too limited to assess according to the 2024 CALM, but it should be noted that samples at this station exceeded the 410 CFU/100ml STV in 2012 (n=3, max 1200 CFU), and 2011 (n=1, max 435 CFU). *E. coli* data from W2239 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0680	MassDEP	Water Quality	Blackstone River	[Blackstone River Road bridge, Worcester (prior to October 2002 at old Millbury Street location approximately 350 feet downstream/south of current bridge, (see April 2001 orthophoto)]	42.227782	-71.787355
W2239	MassDEP	Water Quality	Blackstone River	[approximately 1000 feet downstream from 'Mill Brook' confluence with the Blackstone River, Worcester]	42.231609	-71.790627
USGS-01109650	USGS Massachusetts Water Science Center	Water Quality	Blackstone River	BLACKSTONE RIVER RT 146 AT WORCESTER, MA; upstream of Upper Blackstone WWTF	42.228000	-71.788000
USGS-01109660	USGS Massachusetts Water Science Center	Water Quality	Blackstone River	BLACKSTONE RIVER NEAR MILLBURY, MA; downstream of Upper Blackstone WWTF	42.208000	-71.781000

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis)

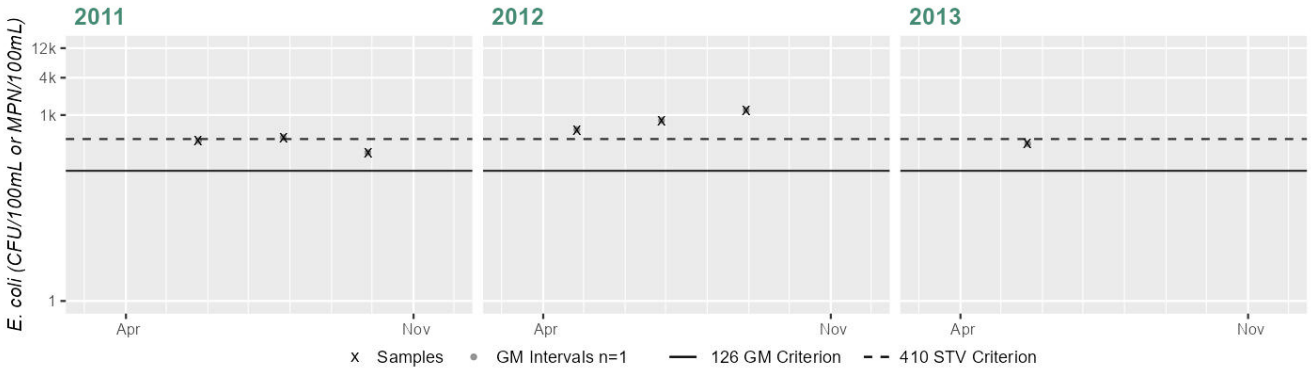
(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0680	MassDEP	E. coli	05/25/11	09/28/11	3	248	435	346
W0680	MassDEP	E. coli	04/25/12	08/29/12	3	579	1200	827
W0680	MassDEP	E. coli	05/21/13	05/21/13	1	345	345	345
W2239	MassDEP	E. coli	05/05/11	10/12/11	7	1120	2420	1890

Station MASSDEP_W0680 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	3
SeasGM	346
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	3
SeasGM	827
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	3
%n>STV	100%

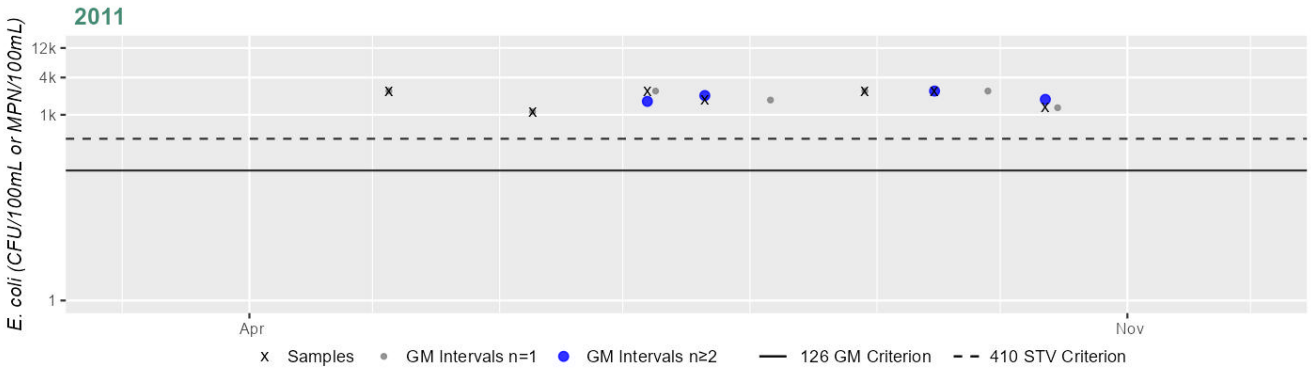
Variable*	Result
Samples	1
SeasGM	345
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2239 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	1890
#GMI	4
#GMI Ex	4
%GMI Ex	100%
n>STV	7
%n>STV	100%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Other Indicators

Summary Statement(s) for USGS 2020 PFAS in Water Column Data (Savoie and Argue 2023) (MassDEP Undated 3)

Summary
Surface water sampling was conducted by the USGS upstream of the Upper Blackstone Clean Water (formerly the Upper Blackstone Water Pollution Abatement District) WWTF discharge on the Blackstone River (MA51-03) at station USGS_01109650 on three dates during August to October 2020 as part of a MassDEP funded project to evaluate 24 PFAS analytes in ambient water samples upstream and downstream of wastewater treatment facilities. The concentrations of six of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS) were all less than the 90 ng/L (ppt) recreational screening value (HFPO-DA/GenX was not analyzed in this study).
Surface water sampling was conducted by the USGS downstream of the Upper Blackstone Clean Water (formerly the Upper Blackstone Water Pollution Abatement District) WWTF discharge on the Blackstone River (MA51-03) at station USGS_01109660 on three dates during August to October 2020 as part of a MassDEP funded project to evaluate 24 PFAS analytes in ambient water samples upstream and downstream of wastewater treatment facilities. The concentrations of six of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS) were all less than the 90 ng/L (ppt) recreational screening value (HFPO-DA/GenX was not analyzed in this study).

USGS 2020 PFAS in Water Column Data Collected Upstream and Downstream of Wastewater Treatment Facilities (Savoie and Argue 2023) (MassDEP Undated 3)

[The ∑PFAS6 equals the sum of PFOA, PFOS, PFNA, PFHxS, PFDA, PFHpA (not all shown individually here). * indicates the ∑PFAS6 concentration is qualified since data for one or more individual PFAS6 analytes were qualified. A concentration with a "<" was less than the reporting detection limit (RDL) and the RDL was used to calculate the ΣPFAS6. E = qualifier "value is estimated"; V = qualifier "value affected by field or laboratory contamination"]

Station Code	Sample Date	PFOA ng/L	PFOS ng/L	PFNA ng/L	PFHxS ng/L	PFBA ng/L	PFBS ng/L	ΣPFAS6 ng/L
USGS-01109650	8/21/2020	7.54	E11.6	E1.33	E5.52	14.1	6.17	32.2*
USGS-01109650	9/15/2020	6.14	E8.99	E1.14	3.82	5.72	3.73	25.4*
USGS-01109650	10/16/2020	4.6	4.91	E1.14	E1.69	5.42	2.34	17.1*
USGS-01109660	8/21/2020	9.26	E5.72	1.88	E2.55	15.7	3.75	24.8*
USGS-01109660	9/15/2020	7.88	E5.95	E0.982	2.23	9.66	4.16	21.9*
USGS-01109660	10/16/2020	6.44	4.89	E1.04	E1.6	7.58	3.02	18.9*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Blackstone River (MA51-03) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on a presumptive impairment due to the presence of CSOs and bacteria data not meeting the threshold at 1 station in 2011. The prior Algae, Debris, Odor, Oil and Grease, Scum/Foam, Trash, and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the Total Phosphorus and Flocculant Masses impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Secondary Contact Recreation Use. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Blackstone River (MA51-03) from 2003-2013 at 9 stations. Samples were collected from the following stations/sample years from upstream to downstream: the upstream end of the AU at W2239 [~1000 ft downstream from 'Mill Brook' confluence with the Blackstone River, Worcester] from May-Oct 2011 (n=7), close to the upstream end at W0680 [Blackstone River Rd bridge, Worcester (prior to October 2002 at old Millbury St location ~350 ft downstream/S of current bridge, (see April 2001 orthophoto)] from 2007-2010 (historic n=3-7/yr) and 2011-2013 (current n=3-5/yr), a quarter of the way down the AU at W1240 [~60 ft upstream/N of Upper Blackstone WWTP (MA0102369) effluent channel confluence, Millbury] in 2003 and 2008 (n=2-7/yr), W1255 [downstream/S of Rt. 90 overpass, directly upstream of the Worcester Flood Diversion Channel, Millbury] from Apr-Nov 2008 (n=7), and W1256 [downstream/S of Rt. 90 overpass, directly downstream of the Worcester Flood Diversion Channel, Millbury] from Apr 2008 (n=1), a third of the way down at W0505 [McCracken Rd (at the old bridge site which became a butler bridge in the early 2000s), Millbury (~2300 ft downstream of Upper Blackstone WWTP (MA0102369) discharge)] in 2003 and 2008 (n=7-8/yr), halfway down the AU at W1763 [Riverlin St, Millbury] from Apr-Aug 2008 (n=6), three-quarters of the way down at W1017 [downstream/S of Singing Dam, Blackstone St, Sutton] in 2003 and 2008 (n=6/yr), close to the downstream end at W1241 [Blackstone River Canal, Pleasant St, Grafton] in 2003 and 2008 (n=2-6/yr). Since bacteria data from the historic IR window are all indicative of poor water quality conditions, only the analysis from the current IR window (2 stations) will be summarized here. The available *E. coli* data in the current IR window at W0680 are too limited to assess according to the 2024 CALM, though it should also be noted that samples at this station exceeded the 794 CFU/100ml STV in 2013 (n=1, max 1050 CFU), 2012 (n=3, max 1200 CFU), and 2011 (n=1 max 1300 CFU). Analysis of the current IR window single year moderate frequency *E. coli* dataset from W2239 indicated 100% of intervals had GMs >244 CFU/100ml and 7 samples exceeded the 794 CFU/100ml STV, which is indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0505	MassDEP	Water Quality	Blackstone River	[McCracken Road (at the old bridge site which became a butler bridge in the early 2000s), Millbury. (approximately 2300 feet downstream of Upper Blackstone WWTP (MA0102369) discharge)]	42.202922	-71.778069

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0680	MassDEP	Water Quality	Blackstone River	[Blackstone River Road bridge, Worcester (prior to October 2002 at old Millbury Street location approximately 350 feet downstream/south of current bridge, (see April 2001 orthophoto)]	42.227782	-71.787355
W1017	MassDEP	Water Quality	Blackstone River	[downstream/south of Singing Dam, Blackstone Street, Sutton]	42.180860	-71.730113
W1240	MassDEP	Water Quality	Blackstone River	[approximately 60 feet upstream/north of Upper Blackstone WWTP (MA0102369) effluent channel confluence, Millbury]	42.208643	-71.782108
W1241	MassDEP	Water Quality	Blackstone River	[Blackstone River Canal, Pleasant Street, Grafton]	42.182234	-71.704880
W1255	MassDEP	Water Quality	Blackstone River	[downstream/south of Route 90 overpass, directly upstream of the Worcester Flood Diversion Channel, Millbury]	42.206406	-71.780976
W1256	MassDEP	Water Quality	Blackstone River	[downstream/south of Route 90 overpass, directly downstream of the Worcester Flood Diversion Channel, Millbury]	42.205956	-71.780750
W1763	MassDEP	Water Quality	Blackstone River	[Riverlin Street, Millbury]	42.192895	-71.751823
W2239	MassDEP	Water Quality	Blackstone River	[approximately 1000 feet downstream from 'Mill Brook' confluence with the Blackstone River, Worcester]	42.231609	-71.790627

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

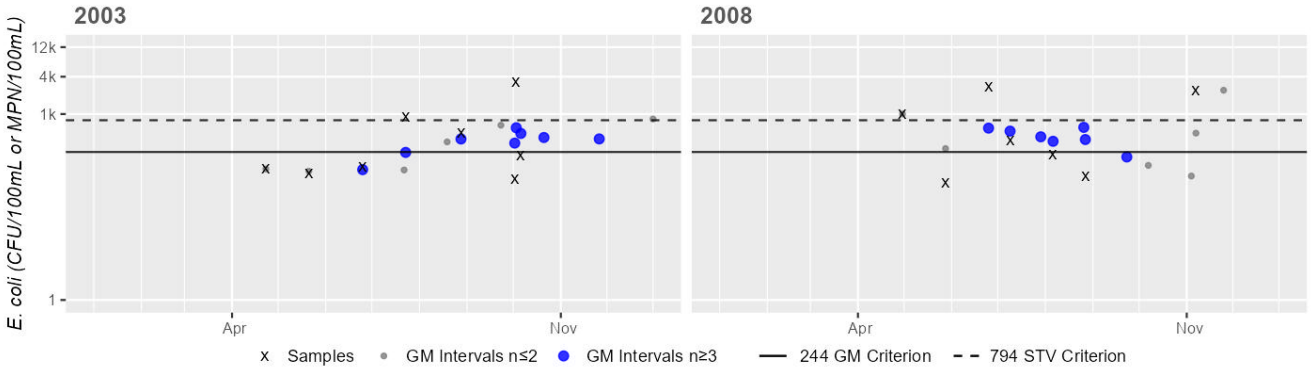
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0505	MassDEP	E. coli	04/23/03	10/06/03	8	90	3300	293
W0505	MassDEP	E. coli	04/29/08	11/06/08	7	77	2700	457
W0680	MassDEP	E. coli	07/25/07	11/14/07	3	517	2419	915
W0680	MassDEP	E. coli	03/05/08	11/06/08	7	488	2419	921
W0680	MassDEP	E. coli	02/04/09	11/18/09	6	326	2420	987
W0680	MassDEP	E. coli	02/25/10	10/27/10	3	261	2419	890
W0680	MassDEP	E. coli	03/30/11	11/09/11	5	248	1300	495
W0680	MassDEP	E. coli	02/28/12	11/06/12	5	365	1200	756
W0680	MassDEP	E. coli	01/30/13	05/21/13	3	205	1050	420
W1017	MassDEP	E. coli	04/23/03	10/02/03	6	45	560	143
W1017	MassDEP	E. coli	04/29/08	08/26/08	6	100	3100	323
W1240	MassDEP	E. coli	10/03/03	10/06/03	2	500	730	604
W1240	MassDEP	E. coli	04/29/08	11/06/08	7	210	2500	642
W1241	MassDEP	E. coli	10/03/03	10/06/03	2	210	260000	7389
W1241	MassDEP	E. coli	04/29/08	08/26/08	6	87	3100	304
W1255	MassDEP	E. coli	04/29/08	11/06/08	7	55	2419	392
W1256	MassDEP	E. coli	04/29/08	04/29/08	1	4400	4400	4400
W1763	MassDEP	E. coli	04/29/08	08/26/08	6	70	1700	287

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2239	MassDEP	E. coli	05/05/11	10/12/11	7	1120	2420	1890

Station MASSDEP_W0505 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	8
SeasGM	293
#GMI	8
#GMI Ex	6
%GMI Ex	75%
n>STV	2
%n>STV	25%

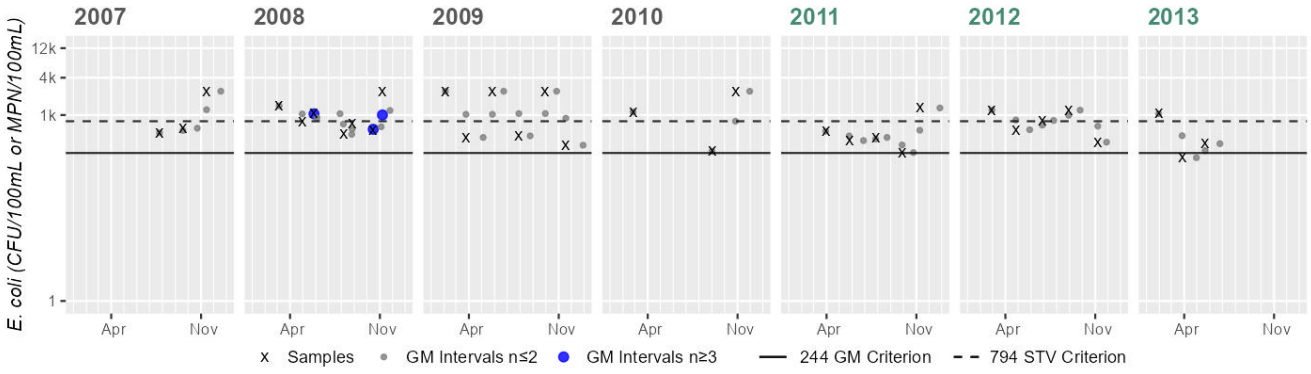
Variable*	Result
Samples	7
SeasGM	457
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	3
%n>STV	42%

Cumulative %GMI Exceedance
Historic (1997-2010)
80%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W0680 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	3
SeasGM	915
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	7
SeasGM	921
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	3
%n>STV	42%

Variable*	Result
Samples	6
SeasGM	987
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	3
%n>STV	50%

Variable*	Result
Samples	3
SeasGM	890
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	2
%n>STV	66%

Variable*	Result
Samples	5
SeasGM	495
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	20%

Variable*	Result
Samples	5
SeasGM	756
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	3
%n>STV	60%

Variable*	Result
Samples	3
SeasGM	420
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

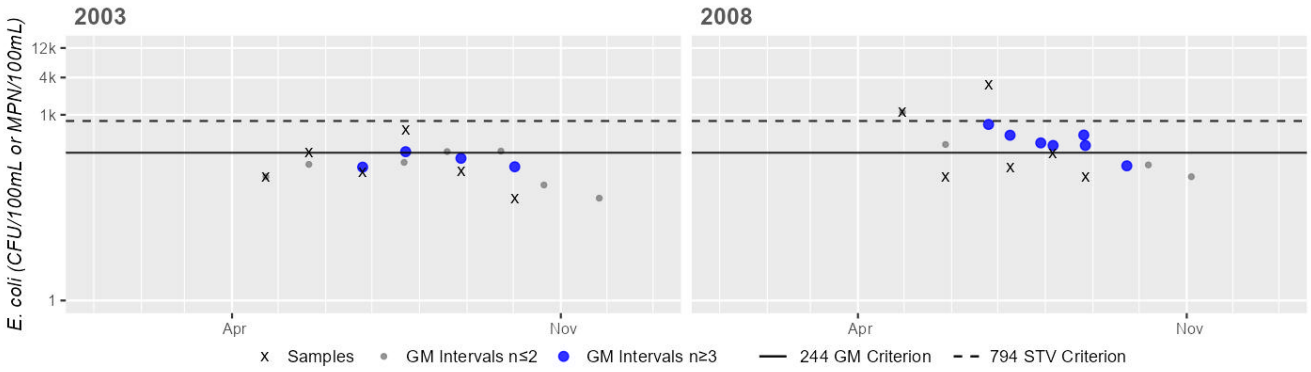
Cumulative %GMI Exceedance Historic (1997-2010)
100%

Cumulative %GMI Exceedance Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1017 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	143
#GMI	4
#GMI Ex	1
%GMI Ex	25%
n>STV	0
%n>STV	0%

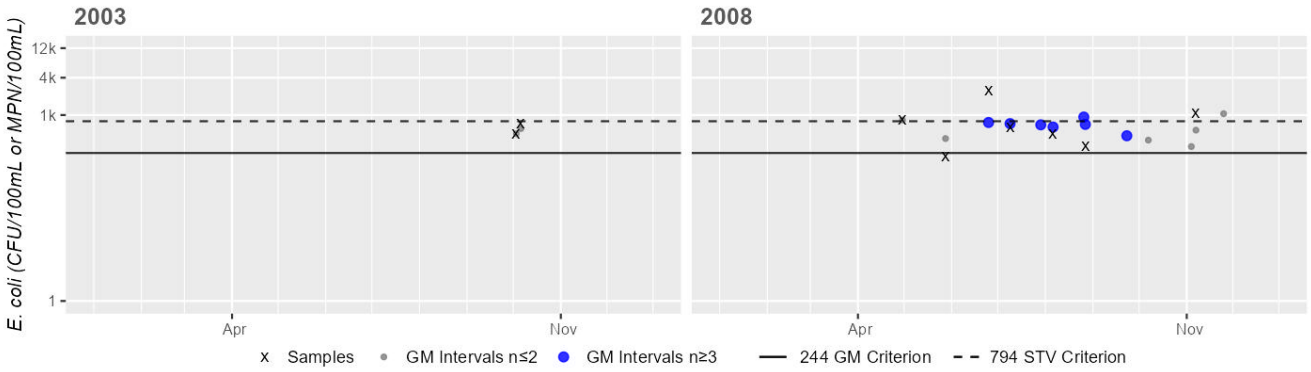
Variable*	Result
Samples	6
SeasGM	323
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance Historic (1997-2010)
63%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1240 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	2
SeasGM	604
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

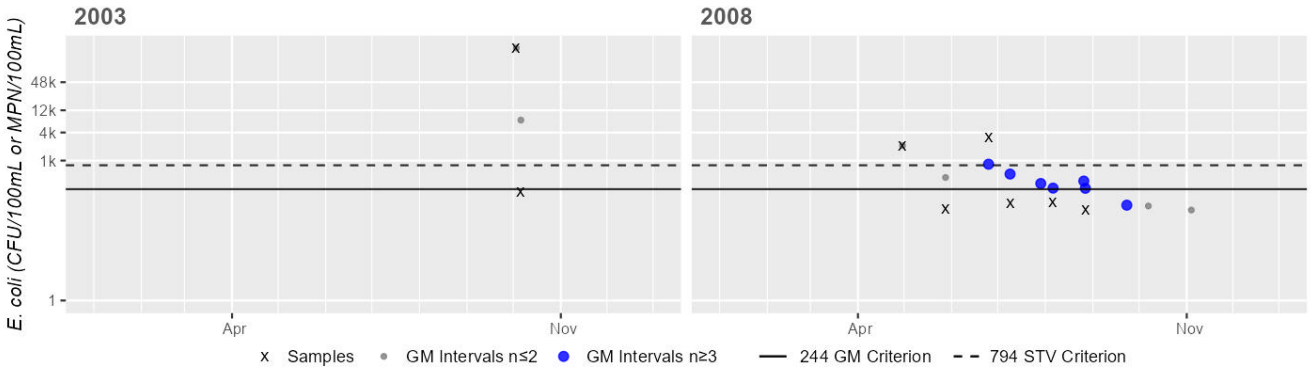
Variable*	Result
Samples	7
SeasGM	642
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	42%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1241 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	2
SeasGM	7389
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

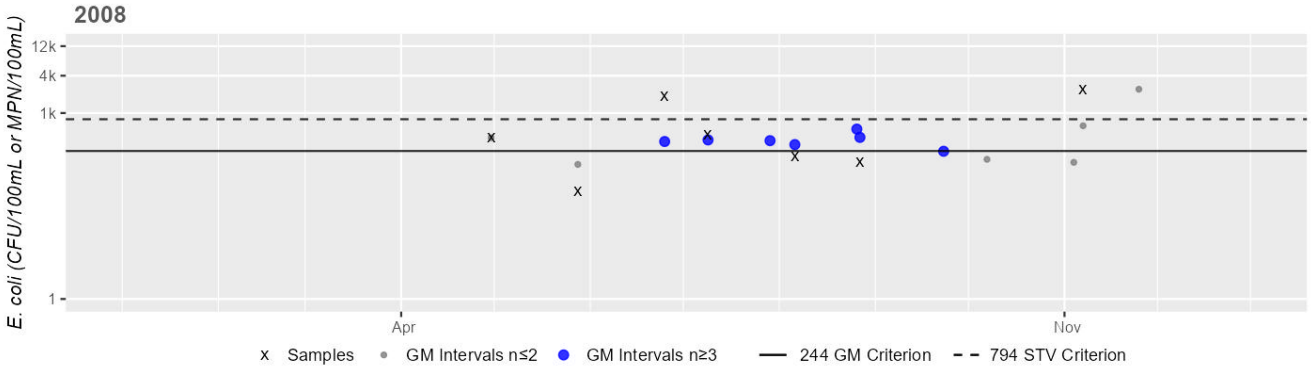
Variable*	Result
Samples	6
SeasGM	304
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1255 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



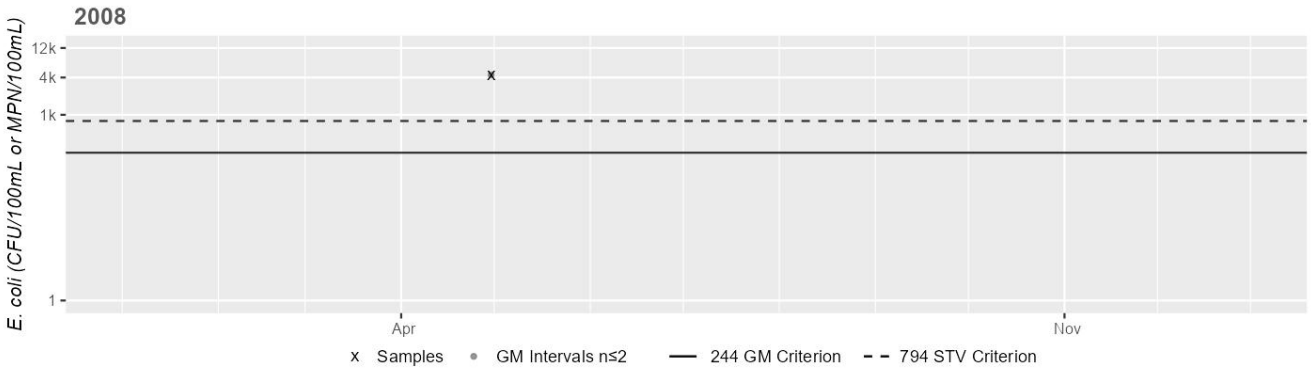
Variable*	Result
Samples	7
SeasGM	392
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	28%

Cumulative %GMI Exceedance
Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1256 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



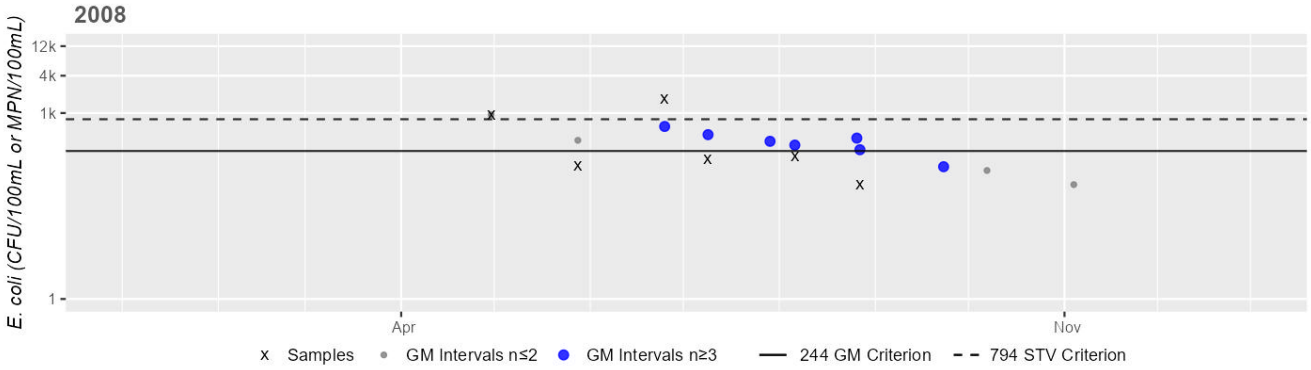
Variable*	Result
Samples	1
SeasGM	4400
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	100%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1763 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



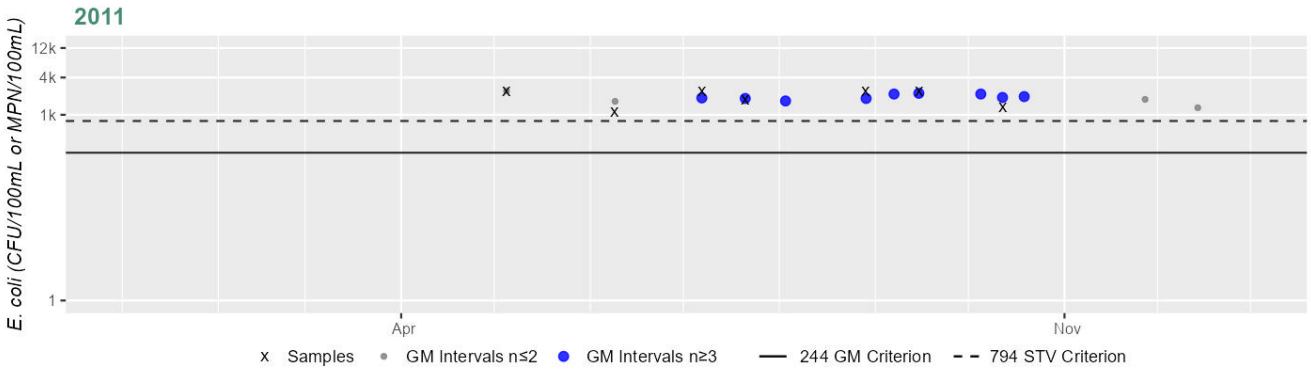
Variable*	Result
Samples	6
SeasGM	287
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2239 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	1890
#GMI	9
#GMI Ex	9
%GMI Ex	100%
n>STV	7
%n>STV	100%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Blackstone River (MA51-04)

Location:	From Fisherville Pond Dam (NATID: MA00577), Grafton to Rice City Pond Dam (NATID: MA00935), Uxbridge (through former 2008 segments: Riverdale Impoundment MA51136 and Rice City Pond MA51131).
AU Type:	RIVER
AU Size:	8.8 MILES
Classification/Qualifier:	B: WWF

Blackstone River (MA51-04)

Watershed Area: 146.99 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	146.93	4.91	54.57	2.11
Agriculture	2%	1%	1.2%	0.8%
Developed	33.7%	18.1%	23.3%	16.4%
Natural	56.6%	69.7%	61.1%	63.1%
Wetland	7.7%	11.3%	14.4%	19.7%
Impervious	16.9%	7.2%	11.4%	7.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
5	5	(Flow Regime Modification*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Removed
5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	(Water Chestnut*)	--	Unchanged
5	5	Algae	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Cadmium	--	Unchanged
5	5	Copper	--	Unchanged
5	5	DDT in Fish Tissue	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Fish Bioassessments	--	Unchanged
5	5	Lead	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
5	5	Odor	--	Unchanged
5	5	PCBs in Fish Tissue	--	Unchanged
5	5	PFAS in Fish Tissue	--	Added
5	5	Phosphorus, Total	--	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Flow Regime Modification*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
(Flow Regime Modification*)	Impacts from Hydrostructure Flow Regulation/Modification (Y)	X	--	--	--	--
(Flow Regime Modification*)	Loss of Riparian Habitat (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Impacts from Hydrostructure Flow Regulation/Modification (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Loss of Riparian Habitat (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (N)	X	--	--	--	--
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	X	X	X
Algae	Municipal Point Source Discharges (N)	X	--	X	X	X
Algae	Source Unknown (N)	X	--	X	X	X
Algae	Unspecified Urban Stormwater (N)	X	--	X	X	X
Algae	Upstream Source (N)	X	--	X	X	X
Benthic Macroinvertebrates	Channelization (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Contaminated Sediments (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Impacts from Hydrostructure Flow Regulation/Modification (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Loss of Riparian Habitat (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Municipal Point Source Discharges (N)	X	--	--	--	--
Cadmium	Contaminated Sediments (Y)	X	--	--	--	--
Cadmium	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Cadmium	Municipal Point Source Discharges (N)	X	--	--	--	--
Copper	Contaminated Sediments (Y)	X	--	--	--	--
Copper	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Copper	Municipal Point Source Discharges (N)	X	--	--	--	--
DDT in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Municipal Point Source Discharges (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fish Bioassessments	Contaminated Sediments (Y)	X	--	--	--	--
Fish Bioassessments	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Fish Bioassessments	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Fish Bioassessments	Loss of Riparian Habitat (Y)	X	--	--	--	--
Lead	Contaminated Sediments (Y)	X	--	--	--	--
Lead	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Lead	Municipal Point Source Discharges (N)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Unspecified Urban Stormwater (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Upstream Source (N)	X	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Odor	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Odor	Municipal Point Source Discharges (N)	--	--	X	X	X
Odor	Source Unknown (N)	--	--	X	X	X
PCBs in Fish Tissue	Source Unknown (N)	--	X	--	--	--
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Phosphorus, Total	Contaminated Sediments (Y)	X	--	--	--	--
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Phosphorus, Total	Municipal Point Source Discharges (N)	X	--	--	--	--
Phosphorus, Total	Unspecified Urban Stormwater (N)	X	--	--	--	--
Sedimentation/Siltation	Channelization (Y)	X	--	--	--	--
Sedimentation/Siltation	Impacts from Hydrostructure Flow Regulation/Modification (Y)	X	--	--	--	--
Sedimentation/Siltation	Loss of Riparian Habitat (Y)	X	--	--	--	--
Turbidity	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Turbidity	Municipal Point Source Discharges (N)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Non-Native Aquatic Plants	Clarification of listing cause	The original Non-Native Aquatic Plants impairment in this Blackstone River AU (MA51-04) was first listed in the 2016 reporting cycle based on field observations made in 2008 and 2011 at W2063 (Rice City pond) and the Riverdale Street area/old Riverdale impoundment (W1764) (MassDEP Undated 1). For the 2016 cycle the generic cause code "Non- Native Aquatic Plants" was added since the specific species code "Fanwort" was not available in ATTAINS at that time. Then in the 2018/20 cycle, it was noted that the reference to *Cabomba caroliniana* (Fanwort) in this AU was in error and needed to be removed, and the specific cause code "Water Chestnut" was added to the Aquatic Life Use to accurately reflect the data for this Blackstone River AU. The Non-Native Aquatic Plants cause is now represented by the existing Water Chestnut cause on the Aquatic Life Use, so the Non-Native Aquatic Plants impairment is being delisted at this time.
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Non-Native Aquatic Plants

See removal comment above.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary

The Fish Consumption Use for this Blackstone River AU (MA51-04) continues to be assessed as Not Supporting. The prior DDT in Fish Tissue and PCBs in Fish Tissue impairments are being carried forward and a new impairment is being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in this Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in the Blackstone River (referred to by MDPH as ''Blackstone River'') in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs and DDT associated with the Blackstone River (referred to by MDPH as Rice City Pond) as well as the existing site-specific fish consumption advisories for PCBs associated with the Blackstone River (referred to by MDPH as Riverdale Pond) in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
F0484	MassDEP	Fish Toxics	Blackstone River	[south/downstream from Church Street, Northbridge]	42.128940	-71.636738

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in this Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs and DDT associated with the Blackstone River (referred to by MDPH as Rice City Pond) in their January 2025 Freshwater Fish Consumption Advisory List. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs associated with the Blackstone River (referred to by MDPH as Riverdale Pond) in their January 2025 Freshwater Fish Consumption Advisory List. The site-specific DPH advisories are indicative of Fish Consumption Use impairments for PFAS in Fish Tissue, PCBs in Fish Tissue, and DDT in Fish Tissue for this Blackstone River AU (MA51-04).

MassDEP 2022 PFAS in Fish Tissue Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 6) (MA DPH 2023c)

[ng/g = ppb. All PFBA, PFBS, and HFPO-DA (Genx) concentrations <MDL. ND indicates that the PFAS analyte was not detected in any of the composite samples (i.e., it was <MDL). Means weighted by the number of fish in the contributing composites were

calculated for any PFAS analyte – waterbody – species combination where an analyte was detected in at least one sample; if a sample did not have the analyte detected, the concentration for that sample was set to ½*MDL for the purposes of calculating a mean. Data are highlighted red per the fish consumption advisory thresholds summarized in Table 4.2 of MDPH's 2023 Technical Support Document for the evaluation of PFAS in recreational waterbodies.]

[Species List: WP = white perch, YP = yellow perch]

Station Code	PFAS Study ID	Sample Date	Species	Mean PFHxS ng/g	Mean PFNA ng/g	Mean PFOA ng/g	Mean PFOS ng/g	Analytes with ≥ 1 Sample Qualified
F0484	40	09/13/2022	WP	ND	ND	ND	4.35	
F0484	40	09/13/2022	YP	ND	ND	ND	4.50	

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Blackstone River (MA51-04) continues to be assessed as Not Supporting with the Turbidity, Aquatic Plants (Macrophytes), Nutrient/Eutrophication biological indicators, Algae and Odor impairments being carried forward. Since the Total Phosphorus impairment was redundantly duplicated across multiple uses for this waterbody, the Total Phosphorus impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. The Non-Native Aquatic Plants impairment is being de-listed due to a clarification of the listing cause (see removal comment). The prior connection of this impairment with the non-native species "Fanwort" was in error and is replaced with "Water Chestnut", based on recorded observations of this non-native in 2008 and 2011 at W2063 (Rice City pond) and the Riverdale Street area/old Riverdale impoundment (W1764) (MassDEP Undated 1). However, since the "Water Chestnut" impairment would now be redundantly duplicated across multiple uses for this waterbody, it is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. MassDEP staff recorded aesthetics observations at two stations for this Blackstone River AU: the upstream end of the AU at Rt. 122A (below Fisherville Pond), Grafton (W1242 2020, n=2) and a little further downstream at USGS gage #01110500 near Sutton Street bridge, Northbridge (W0767 in 2011, 2012, 2013; n=3-6/yr). While there were no objectionable conditions (odors, deposits, growths, or turbidity) recorded during the limited site visits to station W1242, at W0767 there were some objectionable conditions recorded including regular observations of minor trash in 2011 and 2012, odor of treated effluent (n=2), and high turbidity (n=2) in 2011; odor of treated effluent (n=2), and high turbidity (n=1) in 2012; high turbidity (n=2) in 2013.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0767	MassDEP	Water Quality	Blackstone River	[at USGS gage #01110500 near Sutton Street bridge, Northbridge]	42.153873	-71.652040
W1242	MassDEP	Water Quality	Blackstone River	[Route 122A (below Fisherville Pond), Grafton]	42.177289	-71.687885

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0767	2011	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0767 on Blackstone River (MA51-04) during 5 site visits between Mar 2011 and Nov 2011. There were some objectionable conditions recorded, including high turbidity (n=2). Field staff also noted effluent odor (n=2) and objectionable deposits (n=2). These conditions are indicative of an Alert status.
W0767	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0767 on Blackstone River (MA51-04) during 5 site visits between Feb 2012 and Nov 2012. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted grey water color (n=2), effluent odor (n=2), moderate turbidity (n=3), high turbidity (n=1), and objectionable deposits (n=2).
W0767	2013	3	Aesthetic observations were made by MassDEP field sampling crews at Station W0767 on Blackstone River (MA51-04) during 3 site visits between Jan 2013 and May 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted an aesthetics impairment flag (n=1), grey or green water color (n=2) and high turbidity (n=1).
W1242	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W1242 on Blackstone River (MA51-04) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0767	2011	5	2	0
W0767	2012	5	3	0
W0767	2013	3	1	0
W1242	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0767	Blackstone River	2011	Aquatic Plant Density, Overall	None	2	5
W0767	Blackstone River	2011	Aquatic Plant Density, Overall	Unobservable	3	5
W0767	Blackstone River	2011	Color	Brownish	2	5
W0767	Blackstone River	2011	Color	None	3	5
W0767	Blackstone River	2011	Objectionable Deposits	Unobservable	3	5
W0767	Blackstone River	2011	Objectionable Deposits	Yes	2	5
W0767	Blackstone River	2011	Odor	Effluent (Treated)	2	5
W0767	Blackstone River	2011	Odor	None	3	5
W0767	Blackstone River	2011	Periphyton Density, Filamentous	Moderate	1	5
W0767	Blackstone River	2011	Periphyton Density, Filamentous	None	1	5
W0767	Blackstone River	2011	Periphyton Density, Filamentous	Unobservable	3	5
W0767	Blackstone River	2011	Periphyton Density, Film	None	2	5
W0767	Blackstone River	2011	Periphyton Density, Film	Unobservable	3	5
W0767	Blackstone River	2011	Scum	No	1	5
W0767	Blackstone River	2011	Scum	Yes	4	5
W0767	Blackstone River	2011	Turbidity	Highly Turbid	2	5
W0767	Blackstone River	2011	Turbidity	Slightly Turbid	3	5
W0767	Blackstone River	2012	Aquatic Plant Density, Overall	None	3	5
W0767	Blackstone River	2012	Aquatic Plant Density, Overall	Unobservable	2	5
W0767	Blackstone River	2012	Color	Brownish	2	5
W0767	Blackstone River	2012	Color	Greyish	2	5
W0767	Blackstone River	2012	Color	Light Yellow/Tan	1	5
W0767	Blackstone River	2012	Objectionable Deposits	Unobservable	3	5
W0767	Blackstone River	2012	Objectionable Deposits	Yes	2	5
W0767	Blackstone River	2012	Odor	Effluent (Treated)	2	5
W0767	Blackstone River	2012	Odor	Musty (Basement)	1	5
W0767	Blackstone River	2012	Odor	None	1	5
W0767	Blackstone River	2012	Odor	Other (Eutrophic)	1	5
W0767	Blackstone River	2012	Periphyton Density, Filamentous	Moderate	1	5
W0767	Blackstone River	2012	Periphyton Density, Filamentous	None	1	5
W0767	Blackstone River	2012	Periphyton Density, Filamentous	Sparse	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0767	Blackstone River	2012	Periphyton Density, Filamentous	Unobservable	2	5
W0767	Blackstone River	2012	Periphyton Density, Film	None	3	5
W0767	Blackstone River	2012	Periphyton Density, Film	Unobservable	2	5
W0767	Blackstone River	2012	Scum	No	1	5
W0767	Blackstone River	2012	Scum	Yes	4	5
W0767	Blackstone River	2012	Turbidity	Highly Turbid	1	5
W0767	Blackstone River	2012	Turbidity	Moderately Turbid	3	5
W0767	Blackstone River	2012	Turbidity	Slightly Turbid	1	5
W0767	Blackstone River	2013	Aesthetics Impaired?	NR	2	3
W0767	Blackstone River	2013	Aesthetics Impaired?	Yes	1	3
W0767	Blackstone River	2013	Aquatic Plant Density, Overall	None	1	3
W0767	Blackstone River	2013	Aquatic Plant Density, Overall	Unobservable	2	3
W0767	Blackstone River	2013	Color	Brownish	1	3
W0767	Blackstone River	2013	Color	Greenish	1	3
W0767	Blackstone River	2013	Color	Greyish	1	3
W0767	Blackstone River	2013	Objectionable Deposits	Unobservable	2	3
W0767	Blackstone River	2013	Objectionable Deposits	Yes	1	3
W0767	Blackstone River	2013	Odor	Musty (Basement)	1	3
W0767	Blackstone River	2013	Odor	None	2	3
W0767	Blackstone River	2013	Periphyton Density, Filamentous	None	1	3
W0767	Blackstone River	2013	Periphyton Density, Filamentous	Unobservable	2	3
W0767	Blackstone River	2013	Periphyton Density, Film	None	1	3
W0767	Blackstone River	2013	Periphyton Density, Film	Unobservable	2	3
W0767	Blackstone River	2013	Scum	Yes	3	3
W0767	Blackstone River	2013	Turbidity	Highly Turbid	1	3
W0767	Blackstone River	2013	Turbidity	Moderately Turbid	1	3
W0767	Blackstone River	2013	Turbidity	Slightly Turbid	1	3
W1242	Blackstone River	2020	Aesthetics Impaired?	No	2	2
W1242	Blackstone River	2020	Aquatic Plant Density, Overall	None	2	2
W1242	Blackstone River	2020	Color	Light Yellow/Tan	1	2
W1242	Blackstone River	2020	Color	None	1	2
W1242	Blackstone River	2020	Objectionable Deposits	No	2	2
W1242	Blackstone River	2020	Odor	Effluent (Treated)	1	2
W1242	Blackstone River	2020	Odor	None	1	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1242	Blackstone River	2020	Periphyton Density, Filamentous	None	1	2
W1242	Blackstone River	2020	Periphyton Density, Filamentous	Sparse	1	2
W1242	Blackstone River	2020	Periphyton Density, Film	None	2	2
W1242	Blackstone River	2020	Scum	No	2	2
W1242	Blackstone River	2020	Turbidity	Slightly Turbid	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for the Blackstone River (MA51-04) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli*) impairment is being carried forward. The prior Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological Indicators, Odor, and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the Non-Native Aquatic Plants and Total Phosphorus impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Primary Contact Recreation Use. Surface water sampling was conducted two-thirds of the way down Blackstone River (MA51-04) at station W3305 (PFAS Study ID 40) on 09/13/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value. Just a short distance further downstream MassDEP staff collected *E. coli* bacteria samples in the Blackstone River at W0767 [at USGS gage #01110500 near Sutton St bridge, Northbridge] from 2011-2013 (n=1-3/yr). Note that samples exceeded the 410 CFU/100ml STV in 2012 (n=2), and 2011 (n=1), but the *E. coli* data from W0767 are too limited according to the 2024 CALM to assess the Primary Contact Recreation Use.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0767	MassDEP	Water Quality	Blackstone River	[at USGS gage #01110500 near Sutton Street bridge, Northbridge]	42.153873	-71.652040

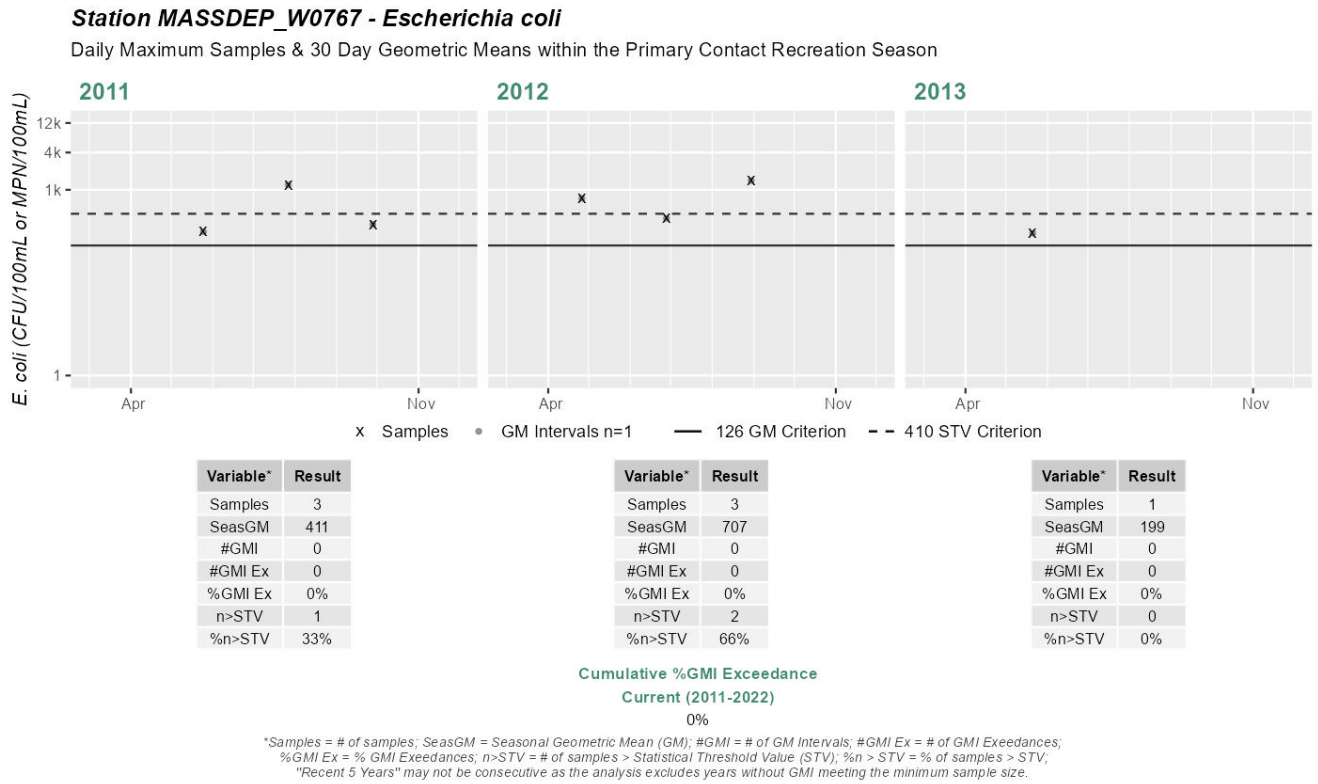
Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W3305	MassDEP	Water Quality	Blackstone River	[the default location representing co-located water/fish PFAS sampling, south/downstream from Church Street, Northbridge]	42.128940	-71.636738

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis) (MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0767	MassDEP	E. coli	05/25/11	09/28/11	3	210	1200	411
W0767	MassDEP	E. coli	04/25/12	08/29/12	3	345	1410	707
W0767	MassDEP	E. coli	05/21/13	05/21/13	1	199	199	198



Other Indicators

Summary Statement(s) for MassDEP 2022 PFAS in Water Column Data (MassDEP 2023) (MassDEP Undated 5)

Summary
Surface water sampling was conducted in Blackstone River (MA51-04) at station W3305 (PFAS Study ID 40) on 09/13/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value.

MassDEP 2022 PFAS in Water Column Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 5)

[HFPO-DA is also known as GenX; the ∑PFAS6 equals the sum of PFOA, PFOS, PFNA, PFHxS, PFDA, PFHpA (not all shown individually here); * indicates the ∑PFAS6 concentration was qualified since data for one or more individual PFAS6 analytes were qualified; b = blank contamination qualifier, d = qualifier indicating precision of field duplicates did not meet project data quality objectives; j = 'estimated' value qualifier; ## = censored data.]

Station Code	PFAS Study ID	Sample Date	PFOA ng/L	PFOS ng/L	PFNA ng/L	PFHxS ng/L	PFBA ng/L	PFBS ng/L	HFPO-DA ng/L	∑PFAS6 ng/L
W3305	40	09/13/2022	6.6	6.2	0.95j	3	6.2j	4.8	<1.9	21.4*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Blackstone River (MA51-04) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli*) impairment is being carried forward based on bacteria data not meeting the threshold at 6 stations in 2003 & 2008. The prior Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological Indicators, Odor, and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the Total Phosphorus and Non-Native Aquatic Plants impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Secondary Contact Recreation Use. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Blackstone River from 2003-2013 at 7 stations. Samples were collected from the following stations/sample years from upstream to downstream: the upstream end of the AU at W1242 [Rt. 122A (below Fisherville Pond), Grafton] in 2003 and 2008 (n=2-6/yr), also close to the upstream end at W1243 [Depot St, Grafton] in 2003 and 2008 (n=2-6/yr), almost halfway down at W0506 [Sutton St bridge, Northbridge] from Apr-Oct 2003 (n=8), and W0767 [at USGS gage #01110500 near Sutton St bridge, Northbridge] from 2007-2010 (historic n=3-6/yr) and 2011-2013 (current n=3-5/yr), halfway down at W1764 [just upstream of Riverdale Dam, near Riverdale St, Northbridge] from Apr-Aug 2008 (n=6), two-thirds of the way down at W1244 [Church St, Northbridge] in 2003 and 2008 (n=2-6/yr), close to the downstream end at W0670 [at sluice way E. Hartford Avenue, Uxbridge] from Apr 2003 (n=1). Analysis of the historic single year limited frequency *E. coli* dataset from W1242 indicated 85% of intervals had GMs >244 CFU/100ml, 2 samples exceeded the 794 CFU/100ml STV, and the overall GM was 314 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1243 indicated 71% of intervals had GMs >244 CFU/100ml, 2 samples exceeded the 794 CFU/100ml STV, and the overall GM was 330 CFU/100ml. Analysis of the historic single year moderate frequency *E. coli* dataset from W0506 indicated 75% of intervals had GMs >244 CFU/100ml and 3 samples exceeded the 794 CFU/100ml STV. Analysis of the historic single year limited frequency *E. coli* dataset from W0767 indicated 100% of intervals had GMs >244 CFU/100ml, 4 samples exceeded the 794 CFU/100ml STV, and the overall GM was 842 CFU/100ml. In the current IR window for this station it should also be noted that samples exceeded the 794 CFU/100ml STV in 2011 (n=2, max 2,419 CFU) and 2012 (n=2, max 1,410 CFU). Analysis of the historic single year limited frequency *E. coli* dataset from W1764 indicated 100% of intervals had GMs >244 CFU/100ml, 4 samples exceeded the 794 CFU/100ml STV, and the overall GM was 1343 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1244 indicated 100% of intervals had GMs >244 CFU/100ml, 4 samples exceeded the 794 CFU/100ml STV, and the overall GM was 1,726 CFU/100ml. *E. coli* data from station W0670 are too limited according to the 2024 CALM to assess the Secondary Contact Recreation Use. Historic *E. coli* data from W1242, W1243, W0506, W0767, W1764, and W1244 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0506	MassDEP	Water Quality	Blackstone River	[Sutton Street bridge, Northbridge]	42.154202	-71.652662

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0670	MassDEP	Water Quality	Blackstone River/Rice City Pond	[at sluice way East Hartford Avenue, Uxbridge]	42.098483	-71.622460
W0767	MassDEP	Water Quality	Blackstone River	[at USGS gage #01110500 near Sutton Street bridge, Northbridge]	42.153873	-71.652040
W1242	MassDEP	Water Quality	Blackstone River	[Route 122A (below Fisherville Pond), Grafton]	42.177289	-71.687885
W1243	MassDEP	Water Quality	Blackstone River	[Depot Street, Grafton]	42.173847	-71.680575
W1244	MassDEP	Water Quality	Blackstone River	[Church Street, Northbridge]	42.129650	-71.636453
W1764	MassDEP	Water Quality	Blackstone River	[just upstream of Riverdale Dam, near Riverdale Street, Northbridge]	42.139133	-71.639715

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

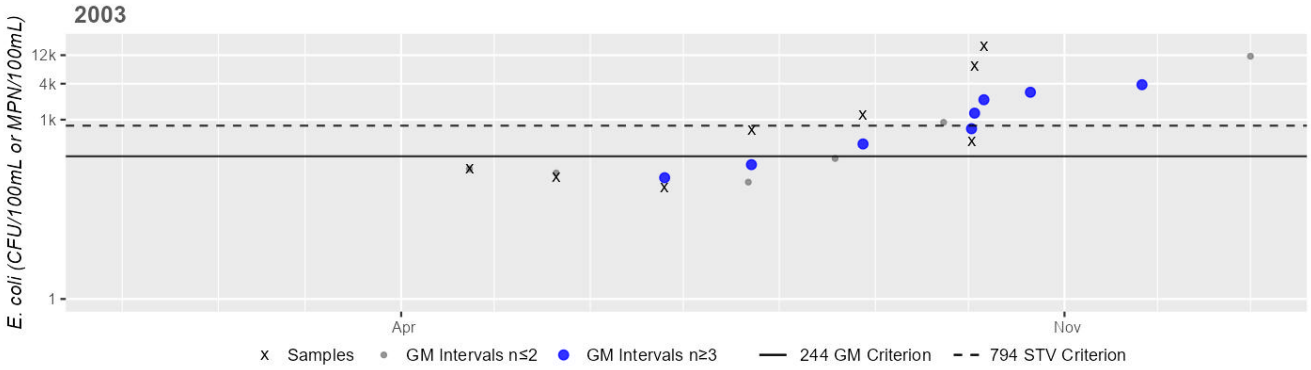
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0506	MassDEP	E. coli	04/23/03	10/06/03	8	74	17000	698
W0670	MassDEP	E. coli	04/23/03	04/23/03	1	190	190	190
W0767	MassDEP	E. coli	07/25/07	11/14/07	3	90	980	238
W0767	MassDEP	E. coli	03/05/08	10/15/08	6	108	2420	842
W0767	MassDEP	E. coli	02/04/09	11/18/09	6	129	2420	481
W0767	MassDEP	E. coli	02/25/10	10/27/10	3	178	2419	468
W0767	MassDEP	E. coli	03/30/11	11/09/11	5	210	2419	620
W0767	MassDEP	E. coli	02/28/12	11/06/12	5	161	1410	569
W0767	MassDEP	E. coli	01/30/13	05/21/13	3	199	461	268
W1242	MassDEP	E. coli	10/03/03	10/06/03	2	190	3e+05	7549
W1242	MassDEP	E. coli	04/29/08	08/26/08	6	70	3500	314
W1243	MassDEP	E. coli	10/03/03	10/06/03	2	180	3e+05	7348
W1243	MassDEP	E. coli	04/29/08	08/26/08	6	58	4100	330
W1244	MassDEP	E. coli	10/03/03	10/06/03	2	240	18000	2078
W1244	MassDEP	E. coli	04/29/08	08/26/08	6	200	9600	1726
W1764	MassDEP	E. coli	04/29/08	08/26/08	6	120	10000	1343

Station MASSDEP_W0506 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



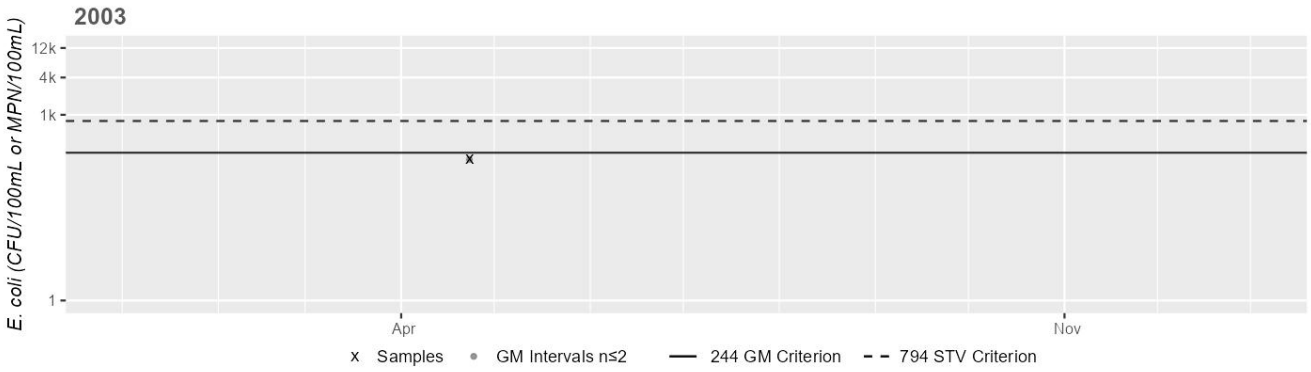
Variable*	Result
Samples	8
SeasGM	698
#GMI	8
#GMI Ex	6
%GMI Ex	75%
n>STV	3
%n>STV	37%

Cumulative %GMI Exceedance
Historic (1997-2010)
75%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W0670 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



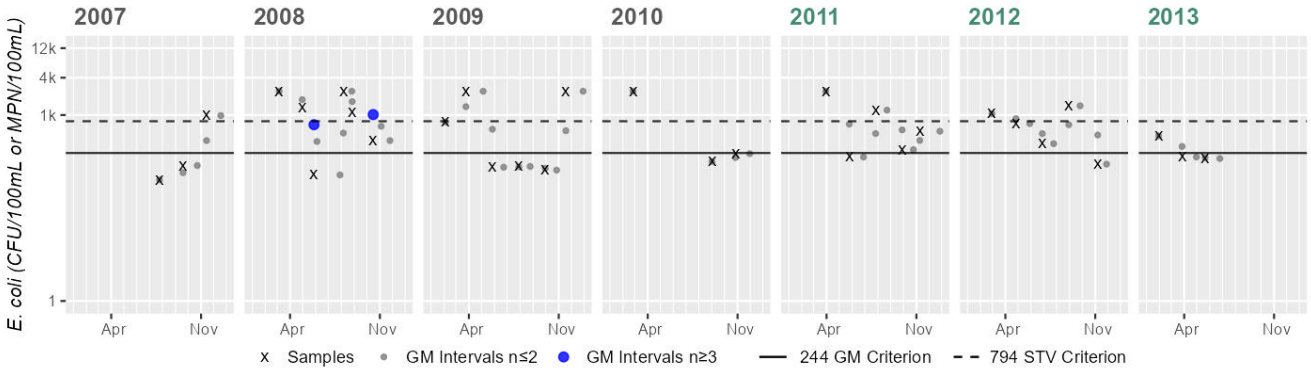
Variable*	Result
Samples	1
SeasGM	190
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W0767 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	3
SeasGM	238
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	6
SeasGM	842
#GMI	2
#GMI Ex	2
%GMI Ex	100%
n>STV	4
%n>STV	66%

Variable*	Result
Samples	6
SeasGM	481
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	2
%n>STV	33%

Variable*	Result
Samples	3
SeasGM	468
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	5
SeasGM	620
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	2
%n>STV	40%

Variable*	Result
Samples	5
SeasGM	569
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	2
%n>STV	40%

Variable*	Result
Samples	3
SeasGM	268
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

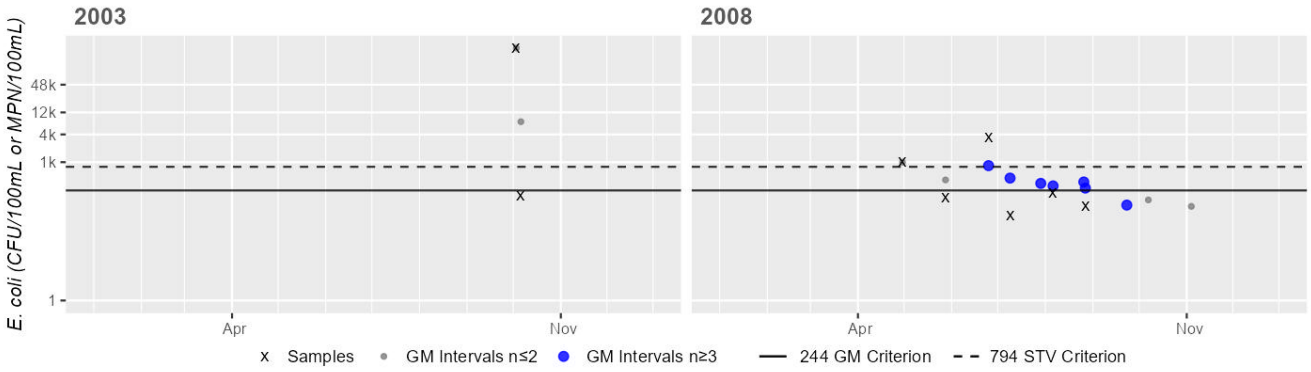
Cumulative %GMI Exceedance Historic (1997-2010)
100%

Cumulative %GMI Exceedance Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1242 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	2
SeasGM	7549
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

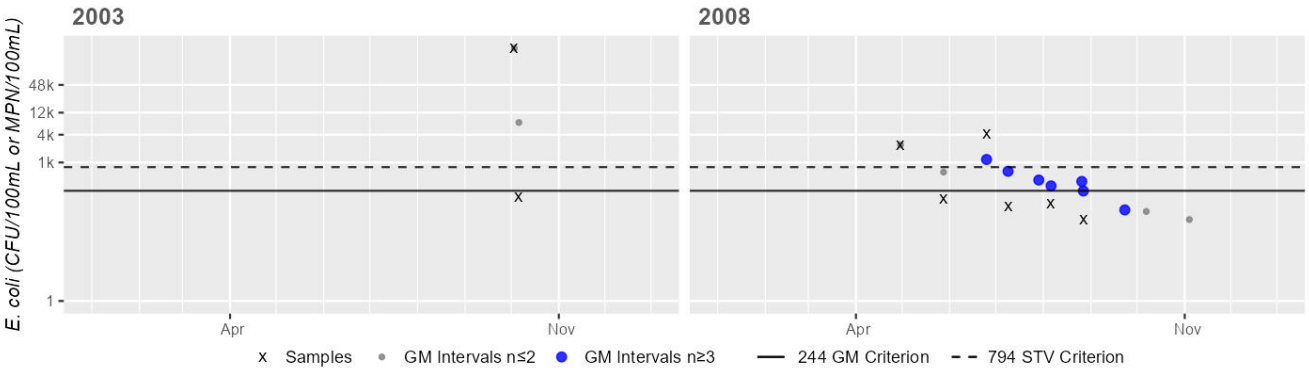
Variable*	Result
Samples	6
SeasGM	314
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1243 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	2
SeasGM	7348
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

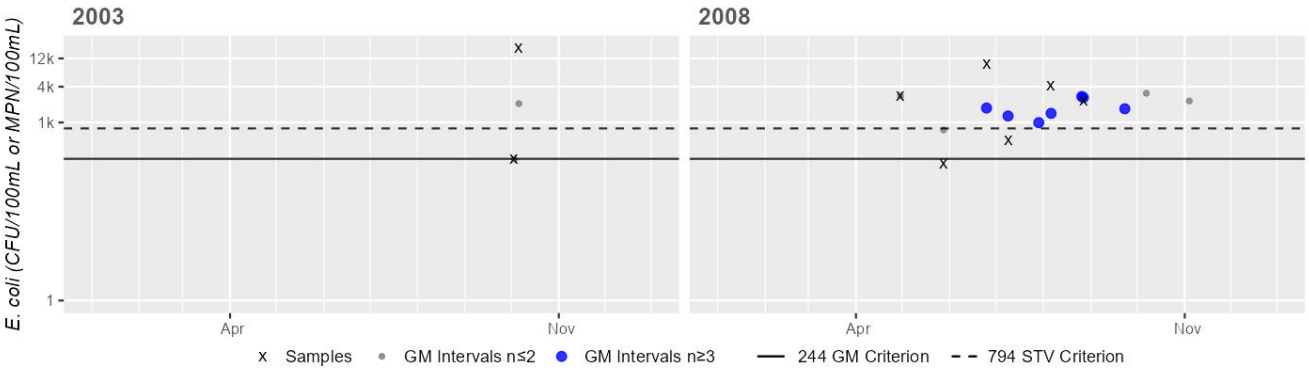
Variable*	Result
Samples	6
SeasGM	330
#GMI	7
#GMI Ex	5
%GMI Ex	71%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
71%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1244 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	2
SeasGM	2078
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

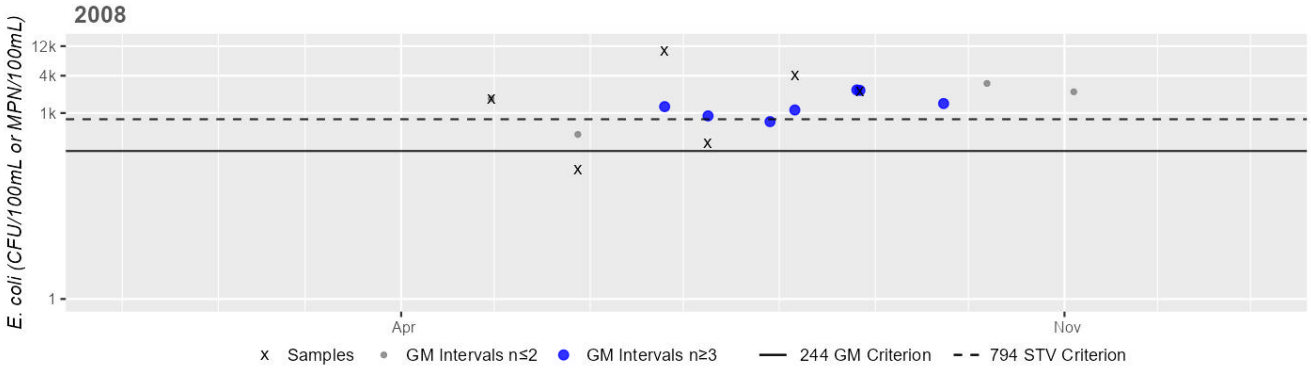
Variable*	Result
Samples	6
SeasGM	1726
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	4
%n>STV	66%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1764 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	1343
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	4
%n>STV	66%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Blackstone River (MA51-05)

Location:	From outlet Rice City Pond Dam (NATID: MA00935), Uxbridge to the most downstream railroad trestle crossing, Millville.
AU Type:	RIVER
AU Size:	9.1 MILES
Classification/Qualifier:	B: WWF

Blackstone River (MA51-05)

Watershed Area: 262.12 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	260.01	7.15	92.70	2.35
Agriculture	2.4%	2.9%	1.5%	2.1%
Developed	25.7%	23.5%	18.9%	17.2%
Natural	63.1%	67.1%	63.4%	68.7%
Wetland	8.9%	6.5%	16.2%	12%
Impervious	12%	10.4%	8.9%	8.1%

**Land cover analysis only includes watershed area within Massachusetts.*

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
5	5	(Flow Regime Modification*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Algae	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Cadmium	--	Unchanged
5	5	Copper	--	Unchanged
5	5	Enterococcus	R1_MA_2024_04P	Added
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Lead	--	Unchanged

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
5	5	Odor	--	Unchanged
5	5	PFAS in Fish Tissue	--	Added
5	5	Phosphorus, Total	--	Unchanged
5	5	Polychlorinated Biphenyls (PCBs)	--	Unchanged
5	5	Total Suspended Solids (TSS)	--	Unchanged
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Flow Regime Modification*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (N)	--	--	X	--	--
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Algae	Municipal Point Source Discharges (Y)	--	--	X	X	X
Algae	Source Unknown (N)	--	--	X	X	X
Benthic Macroinvertebrates	Municipal Point Source Discharges (Y)	X	--	--	--	--
Cadmium	Municipal Point Source Discharges (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Copper	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Copper	Municipal Point Source Discharges (Y)	X	--	--	--	--
Enterococcus	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Enterococcus	Municipal Point Source Discharges (Y)	--	--	--	X	--
Enterococcus	Source Unknown (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Municipal Point Source Discharges (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Lead	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Lead	Municipal Point Source Discharges (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (Y)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Unspecified Urban Stormwater (N)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Upstream Source (N)	X	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Odor	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Odor	Municipal Point Source Discharges (Y)	--	--	X	X	X
Odor	Source Unknown (N)	--	--	X	X	X
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Phosphorus, Total	Municipal Point Source Discharges (Y)	X	--	--	--	--
Phosphorus, Total	Unspecified Urban Stormwater (N)	X	--	--	--	--
Polychlorinated Biphenyls (PCBs)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Total Suspended Solids (TSS)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X	--	--	--	--
Turbidity	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Turbidity	Municipal Point Source Discharges (Y)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Recommendations

2024/26 Recommendations
2024 IR [NON-NATIVE PLANTS, LOW] The original Non-Native Aquatic Plants impairment in this Blackstone River AU (MA51-05) was first listed in the 2016 reporting cycle based on a non-MassDEP survey conducted in August 2015, due to observations of *"Cabomba caroliniana"*. In error this impairment was not added to the Aquatic Life Use in the 2018/20 Cycle. Additional monitoring is recommended to determine the extent of this impairment and confirm the identity of the Non-Native plant species. Consideration should be given to identifying an Alert for Fanwort on the Aquatic Life Use in the 2028 Cycle and reiterating the above recommendation, if additional data has not yet been collected for this Blackstone River AU.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for this Blackstone River AU (MA51-05) is assessed as Not Supporting with a new impairment being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in the next upstream Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in the next upstream Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for PFAS in Fish Tissue for this Blackstone River AU (MA51-05).

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Blackstone River (MA51-05) continues to be assessed as Not Supporting with the Turbidity, Aquatic Plants (Macrophytes), Non-Native Aquatic Plants, Nutrient/Eutrophication Biological Indicators, Algae and Odor impairments being carried forward. Since the Total Phosphorus impairment was redundantly duplicated across multiple uses for this waterbody, the Total Phosphorus impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. The impairment for Non-Native Aquatic Plants is associated with an observation of Fanwort (*Cabomba caroliniana*) in August 2015, additional monitoring is recommended to determine the extent of this impairment. MassDEP staff recorded aesthetics observations for two stations in Millville at the downstream end of this Blackstone River AU, at the railroad trestle nearest to Rt. 122, Millville (W0688 2013, n=1) and ~500 feet further downstream at USGS gage 01111230 (W1898 2011, 2012, 2013, n=4-6/yr). There were no objectionable conditions (odors, deposits, growths, or turbidity) recorded during the limited site visits to W0688; however at W1898 highly turbid waters were regularly observed during the field surveys i.e., in summer 2011 (n=2), 2012 (n=2), and 2013 (n=2) respectively, as well two observations of green or gray water color and one observation of eutrophic pond odor in 2012.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0688	MassDEP	Water Quality	Blackstone River	[railroad trestle nearest to Route 122, Millville]	42.022983	-71.572061
W1898	MassDEP	Water Quality	Blackstone River	[approximately 500 feet downstream from railroad trestle nearest to Route 122, Millville (at USGS gage 01111230 site)]	42.022719	-71.570541

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0688	2013	1	Aesthetic observations were made by MassDEP field sampling crews at Station W0688 on Blackstone River (MA51-05) during 1 site visit on Mar 27, 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted green water color (n=1). However, aesthetic observations are limited (n<3).
W1898	2011	5	Aesthetic observations were made by MassDEP field sampling crews at Station W1898 on Blackstone River (MA51-05) during 5 site visits between Mar 2011 and Nov 2011. There were some objectionable conditions recorded, including high turbidity (n=2). These conditions are indicative of an Alert status.
W1898	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W1898 on Blackstone River (MA51-05) during 5 site visits between Feb 2012 and Nov 2012. There were some objectionable conditions recorded, including high turbidity (n=2). Field staff also noted grey or green water color (n=2). These conditions are indicative of an Alert status.
W1898	2013	3	Aesthetic observations were made by MassDEP field sampling crews at Station W1898 on Blackstone River (MA51-05) during 3 site visits between May 2013 and Sep 2013. Field staff recorded the following objectionable conditions: an aesthetics impairment flag (n=3). Field staff also noted high turbidity (n=2). These observations are indicative of an Aesthetics Use impairment.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0688	2013	1	1	0
W1898	2011	5	2	2
W1898	2012	5	1	1
W1898	2013	3	0	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0688	Blackstone River	2013	Aesthetics Impaired?	NR	1	1
W0688	Blackstone River	2013	Aquatic Plant Density, Overall	None	1	1

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0688	Blackstone River	2013	Color	Greenish	1	1
W0688	Blackstone River	2013	Objectionable Deposits	No	1	1
W0688	Blackstone River	2013	Odor	None	1	1
W0688	Blackstone River	2013	Periphyton Density, Filamentous	NR	1	1
W0688	Blackstone River	2013	Periphyton Density, Film	Sparse	1	1
W0688	Blackstone River	2013	Scum	Yes	1	1
W0688	Blackstone River	2013	Turbidity	Moderately Turbid	1	1
W1898	Blackstone River	2011	Aquatic Plant Density, Overall	None	2	5
W1898	Blackstone River	2011	Aquatic Plant Density, Overall	Unobservable	3	5
W1898	Blackstone River	2011	Color	Brownish	3	5
W1898	Blackstone River	2011	Color	None	2	5
W1898	Blackstone River	2011	Objectionable Deposits	No	2	5
W1898	Blackstone River	2011	Objectionable Deposits	Unobservable	3	5
W1898	Blackstone River	2011	Odor	Musty (Basement)	1	5
W1898	Blackstone River	2011	Odor	None	4	5
W1898	Blackstone River	2011	Periphyton Density, Filamentous	Dense	1	5
W1898	Blackstone River	2011	Periphyton Density, Filamentous	None	1	5
W1898	Blackstone River	2011	Periphyton Density, Filamentous	Unobservable	3	5
W1898	Blackstone River	2011	Periphyton Density, Film	None	1	5
W1898	Blackstone River	2011	Periphyton Density, Film	Unobservable	3	5
W1898	Blackstone River	2011	Periphyton Density, Film	Very Dense	1	5
W1898	Blackstone River	2011	Scum	No	1	5
W1898	Blackstone River	2011	Scum	Yes	4	5
W1898	Blackstone River	2011	Turbidity	Highly Turbid	2	5
W1898	Blackstone River	2011	Turbidity	Moderately Turbid	2	5
W1898	Blackstone River	2011	Turbidity	None	1	5
W1898	Blackstone River	2012	Aquatic Plant Density, Overall	None	1	5
W1898	Blackstone River	2012	Aquatic Plant Density, Overall	Unobservable	4	5
W1898	Blackstone River	2012	Color	Brownish	2	5
W1898	Blackstone River	2012	Color	Greenish	1	5
W1898	Blackstone River	2012	Color	Greyish	1	5
W1898	Blackstone River	2012	Color	Light Yellow/Tan	1	5
W1898	Blackstone River	2012	Objectionable Deposits	No	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1898	Blackstone River	2012	Objectionable Deposits	Unobservable	4	5
W1898	Blackstone River	2012	Odor	Musty (Basement)	2	5
W1898	Blackstone River	2012	Odor	None	2	5
W1898	Blackstone River	2012	Odor	Other (Eutrophic)	1	5
W1898	Blackstone River	2012	Periphyton Density, Filamentous	Dense	1	5
W1898	Blackstone River	2012	Periphyton Density, Filamentous	Unobservable	4	5
W1898	Blackstone River	2012	Periphyton Density, Film	None	1	5
W1898	Blackstone River	2012	Periphyton Density, Film	Unobservable	4	5
W1898	Blackstone River	2012	Scum	No	2	5
W1898	Blackstone River	2012	Scum	Yes	3	5
W1898	Blackstone River	2012	Turbidity	Highly Turbid	2	5
W1898	Blackstone River	2012	Turbidity	Moderately Turbid	2	5
W1898	Blackstone River	2012	Turbidity	Unobservable	1	5
W1898	Blackstone River	2013	Aesthetics Impaired?	Yes	3	3
W1898	Blackstone River	2013	Aquatic Plant Density, Overall	Unobservable	3	3
W1898	Blackstone River	2013	Color	Brownish	2	3
W1898	Blackstone River	2013	Color	Light Yellow/Tan	1	3
W1898	Blackstone River	2013	Objectionable Deposits	Unobservable	3	3
W1898	Blackstone River	2013	Odor	Musty (Basement)	1	3
W1898	Blackstone River	2013	Odor	None	2	3
W1898	Blackstone River	2013	Periphyton Density, Filamentous	Unobservable	3	3
W1898	Blackstone River	2013	Periphyton Density, Film	Unobservable	3	3
W1898	Blackstone River	2013	Scum	Yes	3	3
W1898	Blackstone River	2013	Turbidity	Highly Turbid	2	3
W1898	Blackstone River	2013	Turbidity	Moderately Turbid	1	3

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for the Blackstone River (MA51-05) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2013. The prior Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological Indicators, Odor, and Turbidity impairments (from the Aesthetics Use) are being carried forward. An *Enterococcus* impairment is being added due to bacteria data not meeting the threshold at 1 station in 2011. The Non-Native Aquatic Plants impairment is being removed from this use and maintained under the Aesthetics Use. Since the Total Phosphorus impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use. MassDEP and USGS staff collected *E. coli* (EC) and *Enterococcus* (Ent) bacteria samples at the downstream end of this Blackstone River AU from 2011-2013 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: USGS-01111230 [Blackstone River at Millville] from 2011-2012 (Ent n=2-6/yr) and W1898 [~500 ft downstream from railroad trestle nearest to Rt. 122, Millville (at USGS gage 01111230 site)] from 2011-2013 (EC n=3/yr). Analysis of the single year limited frequency *Enterococcus* dataset from USGS-01111230 indicated 100% of intervals had GMs >35 CFU/100ml, no samples exceeded the 130 CFU/100ml STV, and the seasonal GM was 62 CFU/100ml. Analysis of the single year limited frequency *E. coli* dataset from W1898 indicated 100% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 141 CFU/100ml. Data from USGS-01111230 and W1898 are indicative of *Enterococcus* and *E. coli* impairments, respectively.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1898	MassDEP	Water Quality	Blackstone River	[approximately 500 feet downstream from railroad trestle nearest to Route 122, Millville (at USGS gage 01111230 site)]	42.022719	-71.570541
USGS-01111230	USGS Massachusetts Water Science Center	Water Quality	Blackstone River	Blackstone River At Millville, MA	42.022876	-71.572286

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5) (USGS 2024) (MassDEP Undated 3)

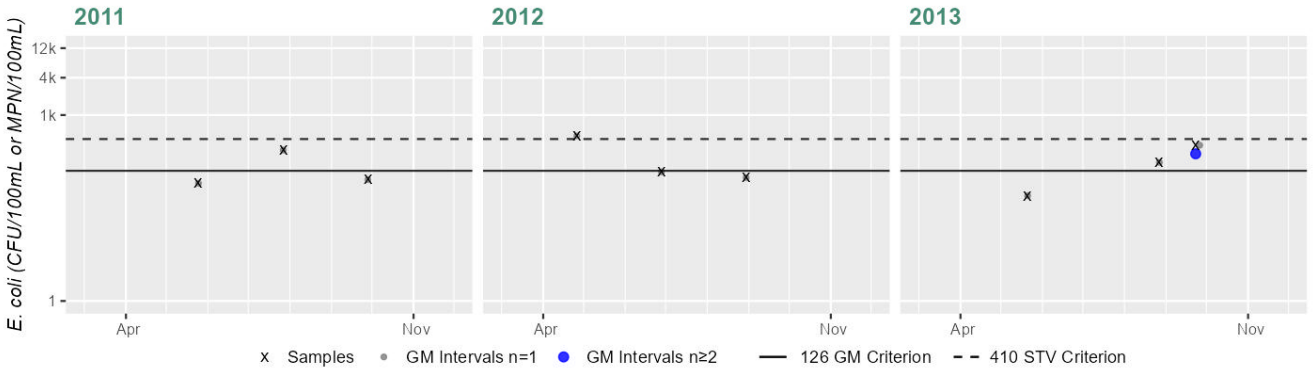
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1898	MassDEP	E. coli	05/25/11	09/28/11	3	79	272	125
W1898	MassDEP	E. coli	04/25/12	08/29/12	3	98	461	176
W1898	MassDEP	E. coli	05/21/13	09/23/13	3	50	326	141

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
USGS-01111230	USGS Massachusetts Water Science Center	Enterococcus	05/24/11	10/26/11	6	40	92	62
USGS-01111230	USGS Massachusetts Water Science Center	Enterococcus	05/23/12	09/26/12	2	27	94	50

Station MASSDEP_W1898 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



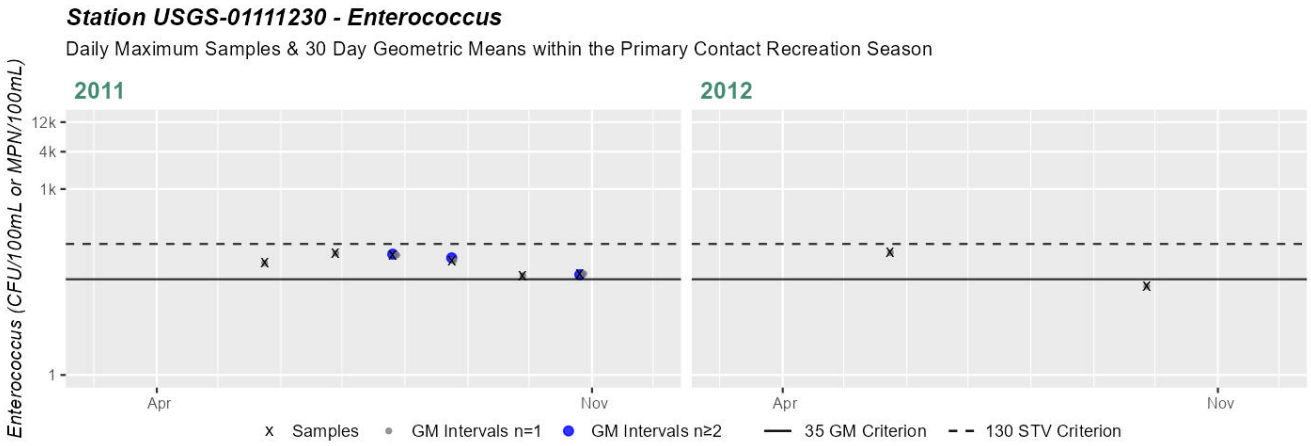
Variable*	Result
Samples	3
SeasGM	125
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	176
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	3
SeasGM	141
#GMI	1
#GMI Ex	1
%GMI Ex	100%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*



Variable*	Result
Samples	6
SeasGM	62
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	2
SeasGM	50
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Blackstone River (MA51-05) continues to be assessed as Not Supporting. The prior Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological Indicators, Odor, and Turbidity impairments (from the Aesthetics Use) are being carried forward. An *Escherichia coli (E. coli)* impairment is being added based on a re-evaluation of bacteria data not meeting the threshold at 3 stations in 2008. The Non-Native Aquatic Plants impairment is being removed from this use and maintained under the Aesthetics Use. Since the Total Phosphorus impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use. MassDEP and USGS staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Blackstone River (MA51-05) from 1997-2013 at 7 stations/combined stations. Samples were collected from the following stations/sample years from upstream to downstream: the upstream end of the AU at W1779 [downstream of Rice City Pond sluice gate outlet, Uxbridge (downstream side of spillway from canal)] from Apr-Aug 2008 (n=6), and W1245 [~160 ft downstream/S of Hartford Avenue East, Uxbridge] from Oct 2003 (n=2), a little further down at W1246 [Rt. 16 (Mendon St), Uxbridge] in 2003 and 2008 (n=1-6/yr), a third of the way down at W1765 [Rt. 122 (Millville Rd), Uxbridge] from Apr-Aug 2008 (n=6), close to the downstream end at W1066 [~260 ft upstream/W of Central St (above braid), Millville] from May-Oct 2003 (n=5), combined station W0688 & USGS-01111230 [railroad trestle nearest to Rt. 122, Millville & BLACKSTONE RIVER AT MILLVILLE] from 1997-2002 (historic n=3-5/yr) and Mar 2013 (current n=1), as well as W1898 [~500 ft downstream from railroad trestle nearest to Rt. 122, Millville (at USGS gage 01111230 site)] from 2007-2010 (historic n=2-6/yr) and 2011-2013 (current n=3-5/yr). While some bacteria data from the historic IR window are indicative of good water quality conditions, only the analysis from the current IR window and the analysis from the historic window that is indicative of poor conditions (5 stations total) will be summarized here: Analysis of the historic single year limited frequency *E. coli* dataset from W1779 indicated 100% of intervals had GMs >244 CFU/100ml, 3 samples exceeded the 794 CFU/100ml STV, and the overall GM was 861 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1246 indicated 100% of intervals had GMs >244 CFU/100ml, 3 samples exceeded the 794 CFU/100ml STV, and the overall GM was 616 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1765 indicated 85% of intervals had GMs >244 CFU/100ml, 2 samples exceeded the 794 CFU/100ml STV, and the overall GM was 377 CFU/100ml. *E. coli* data in the current IR window from W0688 & USGS-01111230 and W1898 are too limited according to the 2024 CALM to assess the Secondary Contact Recreation Use. Historic *E. coli* data from W1779, W1246, and W1765 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0688	MassDEP	Water Quality	Blackstone River	[railroad trestle nearest to Route 122, Millville]	42.022983	-71.572061
W1066	MassDEP	Water Quality	Blackstone River	[approximately 260 feet upstream/west of Central Street (above braid), Millville]	42.026756	-71.582382

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1245	MassDEP	Water Quality	Blackstone River	[approximately 160 feet downstream/south of Hartford Avenue East, Uxbridge]	42.097494	-71.622815
W1246	MassDEP	Water Quality	Blackstone River	[Route 16 (Mendon Street), Uxbridge]	42.079855	-71.619664
W1765	MassDEP	Water Quality	Blackstone River	[Route 122 (Millville Road), Uxbridge]	42.054957	-71.616300
W1779	MassDEP	Water Quality	Blackstone River	[downstream of Rice City Pond sluice gate outlet, Uxbridge (downstream side of spillway from canal)]	42.097755	-71.622565
W1898	MassDEP	Water Quality	Blackstone River	[approximately 500 feet downstream from railroad trestle nearest to Route 122, Millville (at USGS gage 01111230 site)]	42.022719	-71.570541
USGS-01111230	USGS Massachusetts Water Science Center	Water Quality	Blackstone River	Blackstone River At Millville, MA	42.022876	-71.572286

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4) (USGS 2024) (MassDEP Undated 2)

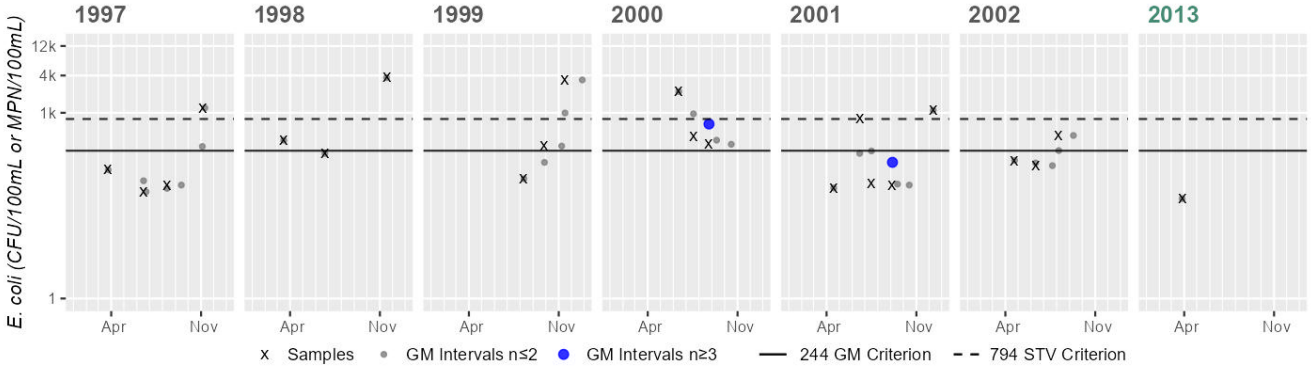
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0688	MassDEP	E. coli	03/27/13	03/27/13	1	41	41	41
W1066	MassDEP	E. coli	05/21/03	10/02/03	5	39	450	143
W1245	MassDEP	E. coli	10/03/03	10/06/03	2	190	3800	849
W1246	MassDEP	E. coli	10/06/03	10/06/03	1	3000	3000	2999
W1246	MassDEP	E. coli	04/29/08	08/26/08	6	55	12000	616
W1765	MassDEP	E. coli	04/29/08	08/26/08	6	52	9900	377
W1779	MassDEP	E. coli	04/29/08	08/26/08	6	70	9700	861
W1898	MassDEP	E. coli	07/25/07	11/14/07	3	30	299	95
W1898	MassDEP	E. coli	03/05/08	10/15/08	6	46	2419	234
W1898	MassDEP	E. coli	03/25/09	11/18/09	5	93	1200	212
W1898	MassDEP	E. coli	02/25/10	10/27/10	2	99	2419	489
W1898	MassDEP	E. coli	03/30/11	11/09/11	5	79	517	182
W1898	MassDEP	E. coli	02/28/12	11/06/12	5	45	461	132
W1898	MassDEP	E. coli	05/21/13	09/23/13	3	50	326	141
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	03/25/97	11/04/97	4	53	1200	150
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	03/17/98	11/17/98	3	220	3700	664

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	08/10/99	11/16/99	3	86	3400	439
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	06/13/00	08/24/00	3	310	2200	659
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	04/18/01	12/11/01	5	61	1100	192
USGS-01111230	USGS Massachusetts Water Science Center	E. coli	04/23/02	08/06/02	3	140	430	217

Station MASSDEP_W0688 & USGS-01111230 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	4
SeasGM	150
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	25%

Variable*	Result
Samples	3
SeasGM	664
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	3
SeasGM	439
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	3
SeasGM	659
#GMI	1
#GMI Ex	1
%GMI Ex	100%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	5
SeasGM	192
#GMI	1
#GMI Ex	0
%GMI Ex	0%
n>STV	2
%n>STV	40%

Variable*	Result
Samples	3
SeasGM	217
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

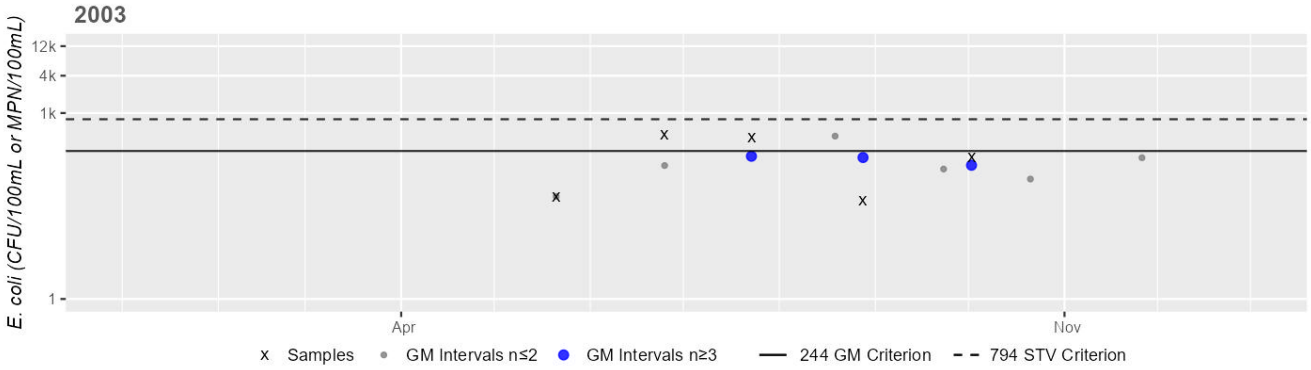
Variable*	Result
Samples	1
SeasGM	41
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance Historic (1997-2010)	Cumulative %GMI Exceedance Current (2011-2022)
50%	0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1066 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



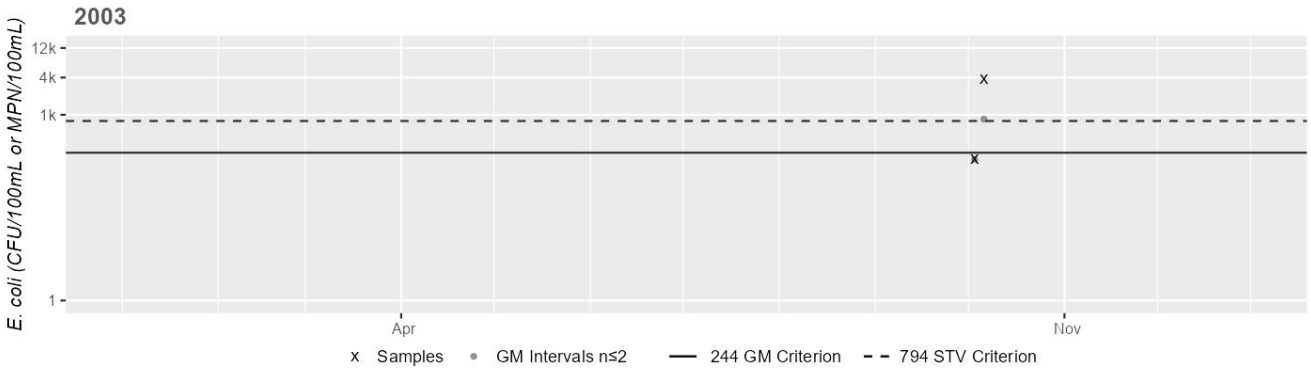
Variable*	Result
Samples	5
SeasGM	143
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1245 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



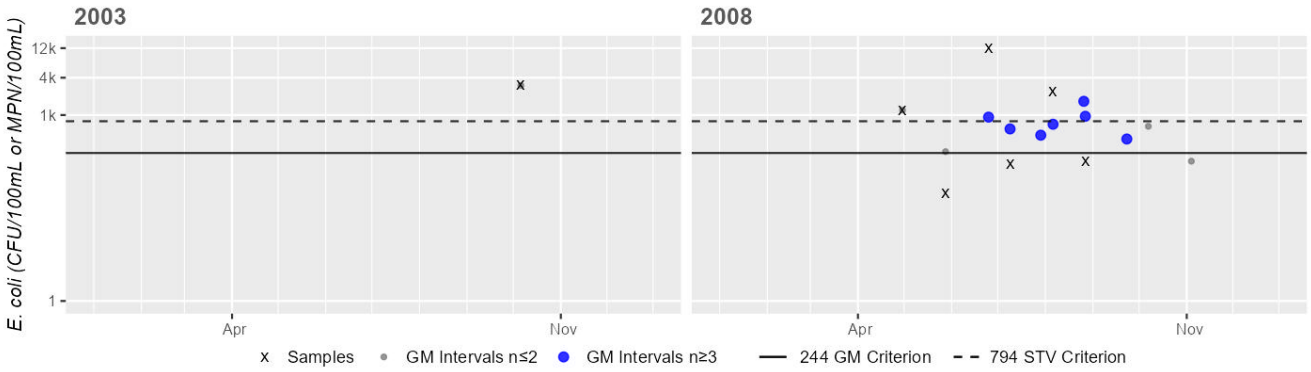
Variable*	Result
Samples	2
SeasGM	849
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1246 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	1
SeasGM	3000
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	100%

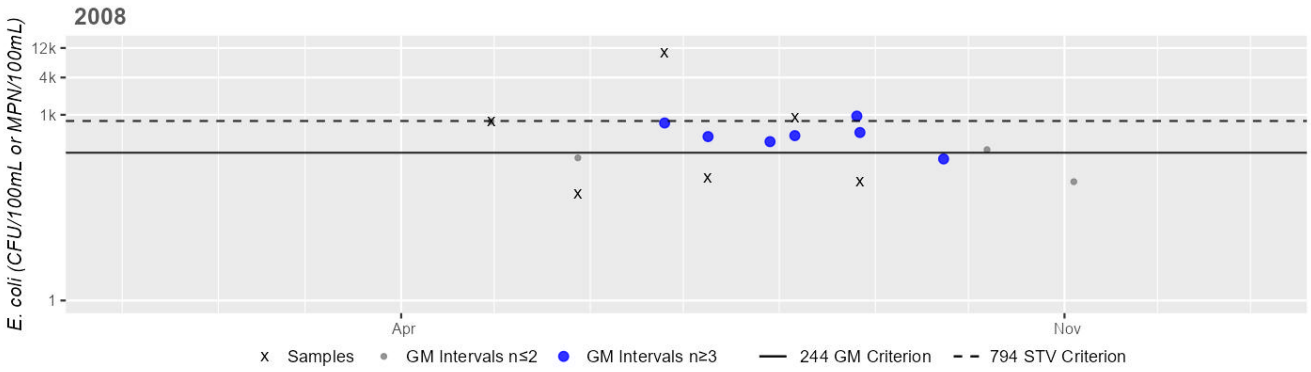
Variable*	Result
Samples	6
SeasGM	616
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1765 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



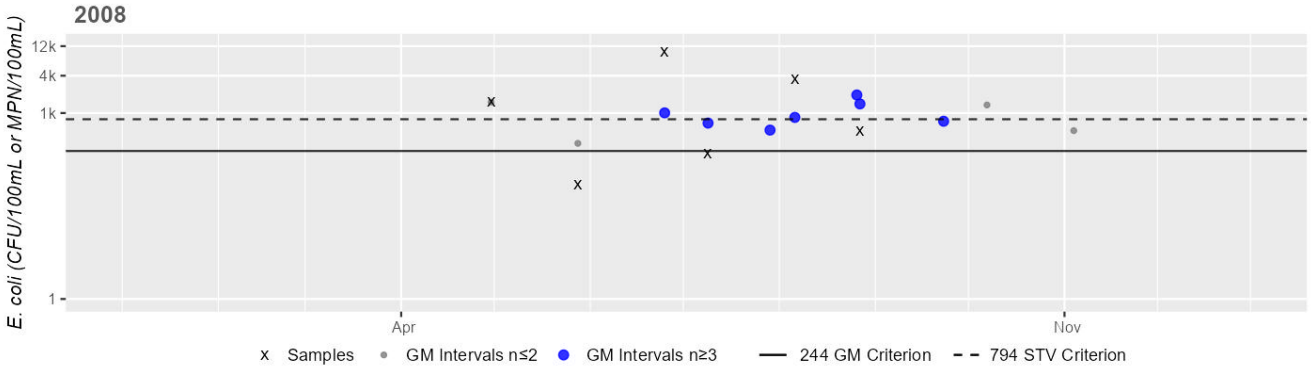
Variable*	Result
Samples	6
SeasGM	377
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1779 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



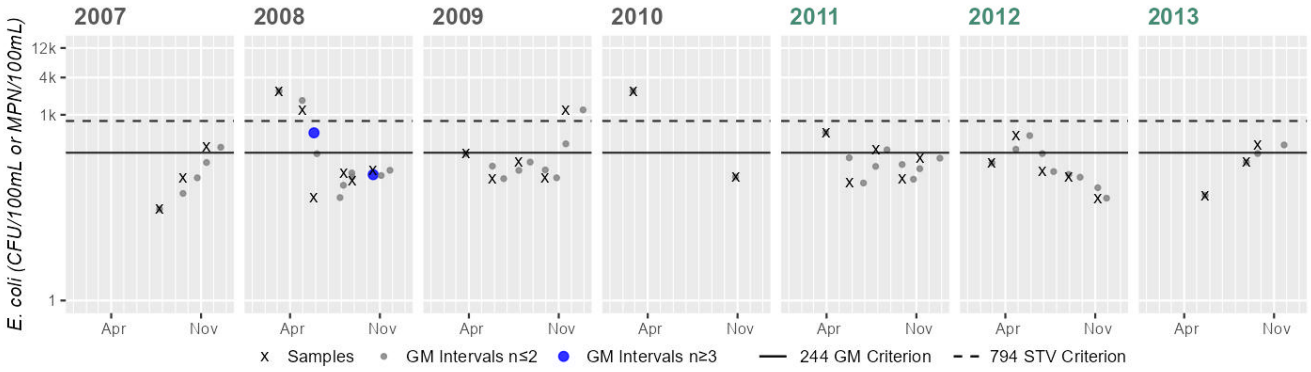
Variable*	Result
Samples	6
SeasGM	861
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1898 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	3
SeasGM	95
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	6
SeasGM	234
#GMI	2
#GMI Ex	1
%GMI Ex	50%
n>STV	2
%n>STV	33%

Variable*	Result
Samples	5
SeasGM	212
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	20%

Variable*	Result
Samples	2
SeasGM	489
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

Variable*	Result
Samples	5
SeasGM	182
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	132
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	141
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
50%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Blackstone River (MA51-06)

Location:	From the most downstream railroad trestle crossing, Millville to the Rhode Island border west of Route 122, Blackstone (mileage includes length of braid).
AU Type:	RIVER
AU Size:	3.8 MILES
Classification/Qualifier:	B: WWF

Blackstone River (MA51-06)

Watershed Area: 362.59 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	278.59	6.74	98.58	2.18
Agriculture	2.3%	2%	1.5%	3.4%
Developed	24.9%	22.4%	18.3%	15.9%
Natural	63.8%	68.3%	63.8%	65%
Wetland	9%	7.3%	16.4%	15.7%
Impervious	11.6%	9.1%	8.5%	6.9%

**Land cover analysis only includes watershed area within Massachusetts.*

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Flow Regime Modification*)	--	Unchanged
5	5	Cadmium	--	Unchanged
5	5	Copper	--	Unchanged
5	5	DDT in Fish Tissue	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Fish Bioassessments	--	Unchanged
5	5	Lead	--	Unchanged
5	5	PCBs in Fish Tissue	--	Unchanged
5	5	PFAS in Fish Tissue	--	Added
5	5	Phosphorus, Total	--	Unchanged
5	5	Total Suspended Solids (TSS)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Flow Regime Modification*)	Impacts from Hydrostructure Flow Regulation/Modification (Y)	X	--	--	--	--
Cadmium	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Cadmium	Municipal Point Source Discharges (Y)	X	--	--	--	--
Cadmium	Upstream Source (Y)	X	--	--	--	--
Copper	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Copper	Municipal Point Source Discharges (Y)	X	--	--	--	--
Copper	Upstream Source (Y)	X	--	--	--	--
DDT in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Municipal Point Source Discharges (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Upstream Source (Y)	--	--	--	X	X
Fish Bioassessments	Source Unknown (N)	X	--	--	--	--
Lead	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Lead	Municipal Point Source Discharges (Y)	X	--	--	--	--
Lead	Upstream Source (Y)	X	--	--	--	--
PCBs in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Phosphorus, Total	Municipal Point Source Discharges (Y)	X	--	--	--	--
Total Suspended Solids (TSS)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Total Suspended Solids (TSS)	Municipal Point Source Discharges (Y)	X	--	--	--	--
Total Suspended Solids (TSS)	Upstream Source (Y)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary

The Fish Consumption Use for this Blackstone River AU (MA51-06) continues to be assessed as Not Supporting. The prior PCBs in Fish Tissue and DDT in Fish Tissue impairments are being carried forward and a new impairment is being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in Blackstone River (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in the Blackstone River (referred to by MDPH as ''Blackstone River'') in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs and DDT associated with the Blackstone River (referred to by MDPH as Rolling Dam Impoundment) in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in an upstream Blackstone River AU (MA51-04) at station F0484 (PFAS Study ID 40) [south/downstream from Church Street, Northbridge] on 09/13/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for the Blackstone River in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs and DDT associated with the Blackstone River (referred to by MDPH as Rolling Dam Impoundment) in their January 2025 Freshwater Fish Consumption Advisory List. The site-specific DPH advisories are indicative of Fish Consumption Use impairments for PFAS in Fish Tissue, PCBs in Fish Tissue, and DDT in Fish Tissue for this Blackstone River AU (MA51-06).

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Blackstone River (MA51-06), so it is Not Assessed. The prior Alert identified for Total Phosphorus concentrations based on data collected at Rt. 122 crossing nearest Middle Street (W1766) and further downstream at Bridge Street/Canal Street in Blackstone (W1023) in 2008 is being removed from the Aesthetics Use (due to redundant duplication across multiple Uses); a discussion pertaining to the high phosphorus concentrations for this AU in 2008 is included in the Aquatic Life Use summary in the 2018/2020IR (MassDEP 2021).

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Blackstone River (MA51-06) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward. The prior Total Phosphorus Alert is being removed (from Aesthetics Use) and the impairment will be maintained under the Aquatic Life Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for the Blackstone River (MA51-06) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added based on a re-evaluation of bacteria data not meeting the threshold at 1 station in 2003 & 2008. The prior Total Phosphorus Alert is being removed (from Aesthetics Use) and the impairment will be maintained under the Aquatic Life Use. MassDEP staff collected *E. coli* bacteria samples in the Blackstone River from 2003-2008 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: about halfway down the AU at W1247 [~16 ft upstream/N of "Tupperware Dam" (W of Staples Lane), Blackstone] in Oct 2003 (n=2), and W1766 [the Rt. 122 crossing nearest Middle St, Blackstone] from Apr-Aug 2008 (n=6), three-quarters of the way down the AU at W1023 [Bridge St/Canal St (upstream of dam), Blackstone] in 2003 and 2008 (n=6/yr). The historic *E. coli* data at W1247 are too limited to assess according to the 2024 CALM, but it should be noted that samples exceeded the 794 CFU/100ml STV in 2003 (n=1). Analysis of the historic single year limited frequency *E. coli* dataset from W1766 indicated 42% of intervals had GMs >244 CFU/100ml, 1 sample exceeded the 794 CFU/100ml STV (5,400 CFU/100ml), and the overall GM was 182 CFU/100ml. Analysis of the historic multi-year limited frequency *E. coli* dataset from W1023 indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2003 and 2008, 25 & 71%), and while 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, cumulatively across years 54% of intervals had GMs >244 CFU/100ml. Historic *E. coli* data from W1247 are too limited according to the 2024 CALM to assess the Secondary Contact Recreation Use. Historic *E. coli* data from W1766 are inconclusive according to the 2024 CALM to assess the Secondary Contact Recreation Use because this single year, limited frequency dataset included both GMs below the threshold and STV exceedance of the threshold. Historic *E. coli* data from W1023 are indicative of *an E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1023	MassDEP	Water Quality	Blackstone River	[Bridge Street/Canal Street (upstream of dam), Blackstone]	42.016648	-71.538477
W1247	MassDEP	Water Quality	Blackstone River	[approximately 16 feet upstream/north of "Tupperware Dam" (west of Staples Lane), Blackstone]	42.015454	-71.553326
W1766	MassDEP	Water Quality	Blackstone River	[the Route 122 crossing nearest Middle Street, Blackstone]	42.016863	-71.545482

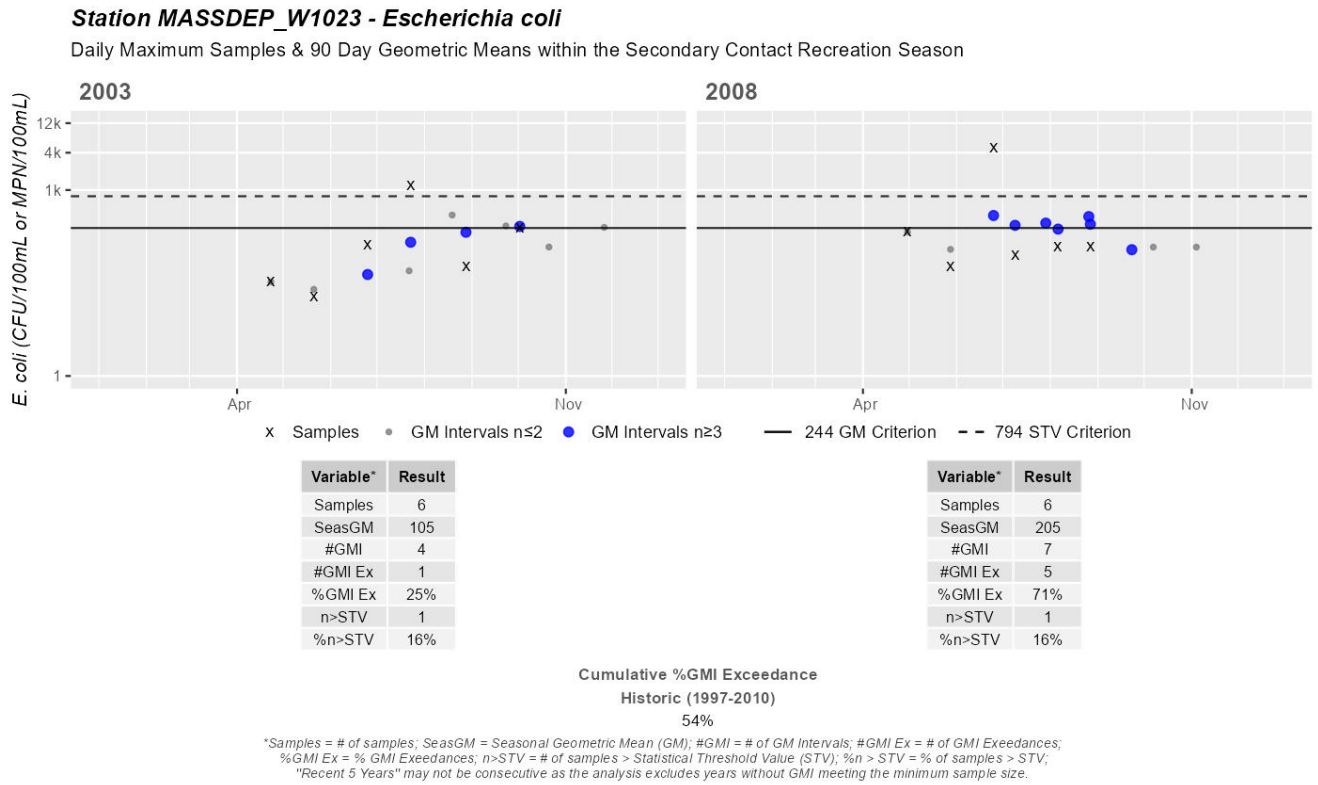
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

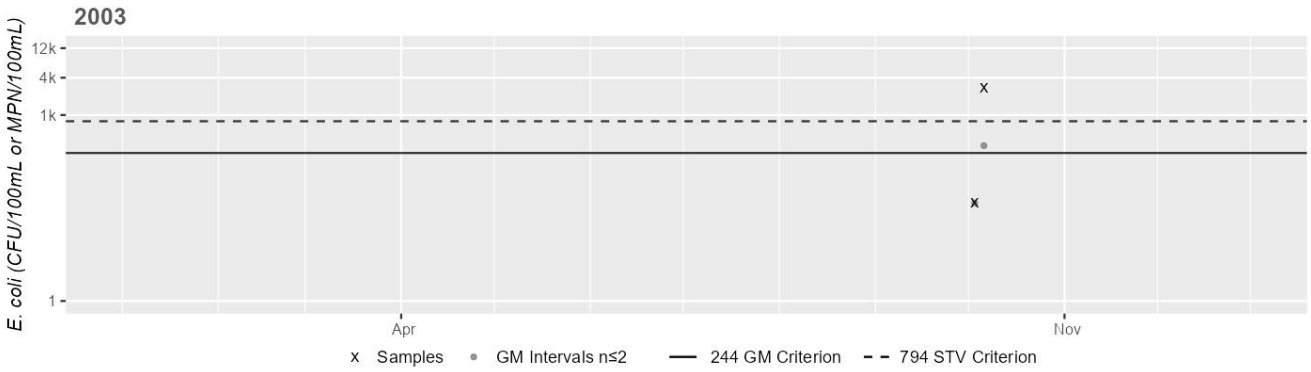
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1023	MassDEP	E. coli	04/23/03	10/02/03	6	19	1200	105
W1023	MassDEP	E. coli	04/29/08	08/26/08	6	58	4800	205
W1247	MassDEP	E. coli	10/03/03	10/06/03	2	38	2700	320
W1766	MassDEP	E. coli	04/29/08	08/26/08	6	29	5400	182



Station MASSDEP_W1247 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



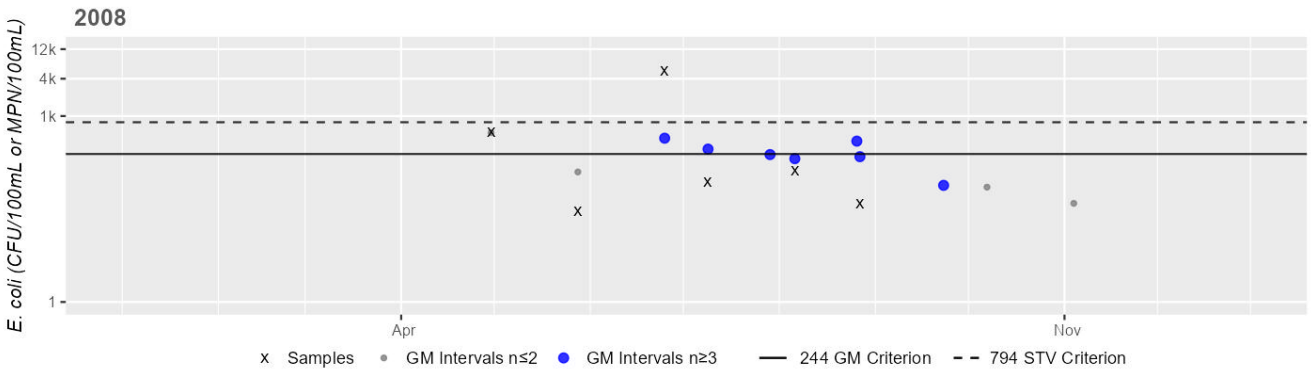
Variable*	Result
Samples	2
SeasGM	320
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1766 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	182
#GMI	7
#GMI Ex	3
%GMI Ex	42%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
42%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Brierly Pond (MA51010)

Location:	Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	18 ACRES
Classification/Qualifier:	B

No usable data were available for Brierly Pond (MA51010) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Agriculture (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Brooklawn Parkway Pond (MA51195)

Location:	Shrewsbury.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

No usable data were available for Brooklawn Parkway Pond (MA51195) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Burncoat Park Pond (MA51012)

Location:	Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	6 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	Nutrient/Eutrophication Biological Indicators	--	Added
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Burncoat Park Pond (MA51012) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that, in patches, 75-100% of the pond was covered with aquatic plants, including the non-rooted, floating species, *Wolffia* sp. and *Lemna minor* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show the pond with a slight green tinge over most of its area, which is likely consistent with the persistent presence of *Wolffia* and *Lemna* spp. (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted and Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the persistent presence of non-rooted, floating, aquatic macrophyte species (*Wolffia* and *Lemna* spp.). As a precaution, Aquatic Plants (Macrophytes) is being added again as a non-pollutant until new water quality/macrophyte surveys can be conducted.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51012** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Burncoat Park Pond** TYPE: **Lake/Pond**
CODE: **51012** SIZE: **5.00**(acres) CLASS: **B**

LATITUDE:
LONGITUDE: 0
Lake/Pond Name: Burncoat Park Pond, Worcester
Ecoregion Name: 0
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Hypereutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			5.00			
ALUS					5.00	
FISH CONSUMPTION					5.00	
PRIMARY CONTACT			5.00			
SECONDARY CONTACT		5.00				
Aesthetics					5.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	5.00	T
2500- Turbidity	5.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	5.00	M

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 22 JULY 1994 SYNOPTIC SURVEY INDICATES THAT 75% TO 100% OF THE POND WAS COVERED WITH PATCHES OF AQUATIC PLANTS. TURBIDITY THREATENS THE SECONDARY CONTACT USE OF THE ENTIRE POND AS THE POND WAS VERY TURBID. THE SECCHI DISK READING WAS LESS THAN 4 FEET. THERE WAS A GREEN SCUM (HYDROPHOBIC), OILY SHEEN IN AREAS, MUCH ORGANIC DEBRIS, TRASH ON BOTTOM, AND A LOW WATER LEVEL. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 7/29/94

9/13/94

Page 1 of 2

5/01/2

Lake/Pond Burncoat Park Pond **Date** 7/22/94

Town/City Worcester **Observers** R. Haynes, R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Along Randolph Rd (may be North Rd); No real access, across from All America Insurance

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
?

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
Very turbid, brown/green (<4'SD), green scum (hydrophobic), oily (pollen?) sheen in areas, much organic debris trash on bottom, undecomposed leaf litter, water low level. Very productive

Record of aquatic plant "species" observed (see note below):

Lemna minor, Wolffia, Typha latifolia, Potamogeton sp. (thin leaf)

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% in patches

Other notes (e.g., overt pollution, construction, and water uses:

305b - Hypereutrophic

1° Contact - 100% Partial Support

2° Contact - 100% Threatened

Cause - Turbidity - M! (Full acreage) Noxious plants - T (Full acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Burncoat Park Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Burncoat Park Pond, 9/12/2017 (Google Earth Pro Undated):



Recommendations

2024/26 Recommendations
2016IR [Algae, Low] Additional aesthetics monitoring should be conducted for Burncoat Park Pond (MA51012) in the middle of the pond at station {W2104} to determine if Algae is impairing the Aesthetics Use. Previously an Alert was identified for Algae based on one observation in the middle of the pond at W2104, by MassDEP staff in 2009. Fieldsheet notes indicated “very dense” algae, presenting as “green water with no visible clumps”. It should be noted that during this cycle (the 2024/26 cycle) a new impairment for Nutrient/Eutrophication Biological Indicators is being added based on the persistent presence of non-rooted, floating, aquatic macrophyte species (*Wolffia* and *Lemna* spp.). This is of low priority

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Burncoat Park Pond (MA51012) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Aesthetics Use for Burncoat Park Pond (MA51012) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The Turbidity impairment (originating from the 1996 303d list) is being carried forward and a Nutrient/Eutrophication Biological Indicators impairment is being added. The prior Alert identified for Algae based on one observation in the middle of the pond by MassDEP staff in 2009 will also be carried forward. As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Burncoat Park Pond (MA51012) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that, in patches, 75-100% of the pond was covered with aquatic plants, including the non-rooted, floating species, *Wolffia sp*. and *Lemna minor* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show the pond with a slight green tinge over most of its area, which is likely consistent with the persistent presence of *Wolffia* and *Lemna spp*. (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted and Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the persistent presence of non-rooted, floating, aquatic macrophyte species (*Wolffia and Lemna spp.*). As a precaution, Aquatic Plants (Macrophytes) is being added again as a non-pollutant until new water quality/macrophyte surveys can be conducted. No new data are available to evaluate the Aesthetics Use for Burncoat Park Pond.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Burncoat Park Pond (MA51012) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). The prior Algae Alert (for Aesthetics Use) is being removed and will be maintained under the Aesthetics Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Burncoat Park Pond (MA51012) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). The prior Algae Alert (for Aesthetics Use) is being removed and will be maintained under the Aesthetics Use.

Carpenter Reservoir (MA51015)

Location:	Northbridge.
AU Type:	FRESHWATER LAKE
AU Size:	79 ACRES
Classification/Qualifier:	B

No usable data were available for Carpenter Reservoir (MA51015) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Cedar Swamp Brook (MA51-33)

Location:	Headwaters, outlet Cedar Swamp, Uxbridge to mouth at confluence with Chockalog River, Douglas.
AU Type:	RIVER
AU Size:	0.6 MILES
Classification/Qualifier:	B

No usable data were available for Cedar Swamp Brook (MA51-33) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Fish Bioassessments	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Fish Bioassessments	Source Unknown (N)	X	--	--	--	--

Center Brook (MA51-34)

Location:	From outlet Mill Pond, Upton to mouth at confluence with West River, Upton.
AU Type:	RIVER
AU Size:	2.8 MILES
Classification/Qualifier:	B

Center Brook (MA51-34)

Watershed Area: 7.38 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	7.38	4.57	2.58	1.57
Agriculture	1.7%	1.8%	0.9%	0.2%
Developed	17.5%	24.1%	16.5%	23.8%
Natural	69.5%	64.2%	60.8%	55.9%
Wetland	11.3%	9.8%	21.9%	20.1%
Impervious	6.4%	8.7%	6.1%	8.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Temperature	Dam or Impoundment (Y)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Center Brook (MA51-34) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Center Brook (MA51-34), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Center Brook (MA51-34) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Center Brook (MA51-34) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples halfway down Center Brook at W0514 [Mendon St, Upton] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W0514 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 85 CFU/100ml. Historic data from W0514 meet 2024 CALM guidance. However since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0514	MassDEP	Water Quality	Center Brook	[Mendon Street, Upton]	42.160032	-71.605870

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

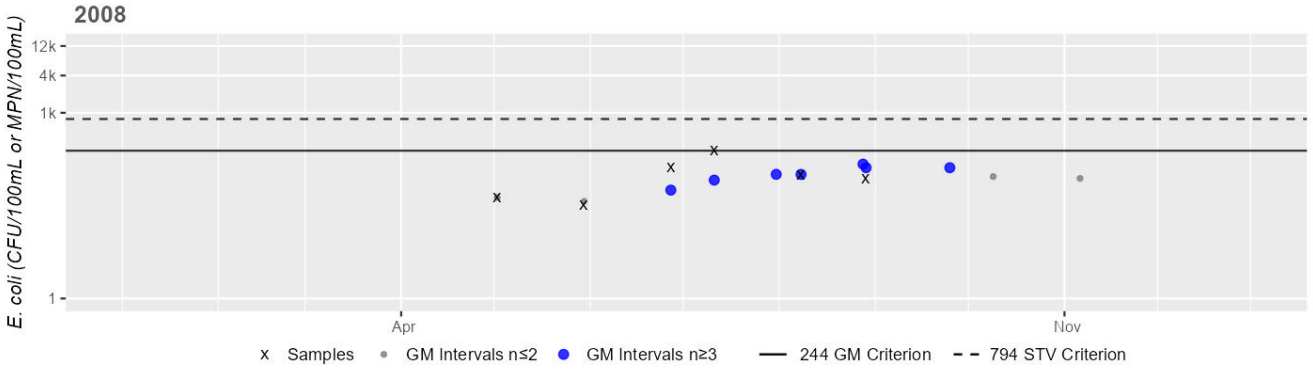
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0514	MassDEP	E. coli	05/01/08	08/28/08	6	32	250	85

Station MASSDEP_W0514 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	85
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Chase Pond (MA51017)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	B

No usable data were available for Chase Pond (MA51017) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Chockalog Pond (MA51018)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	B

No usable data were available for Chockalog Pond (MA51018) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Clark Reservoir (MA51022)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	30 ACRES
Classification/Qualifier:	B

No usable data were available for Clark Reservoir (MA51022) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

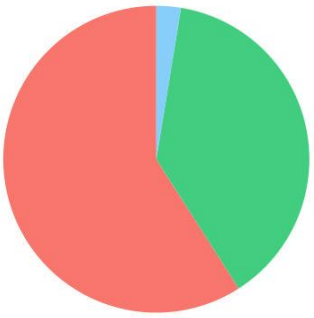
AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Coal Mine Brook (MA51-27)

Location:	Headwaters, perennial portion, west of Plantation Street, Worcester to mouth at inlet Lake Quinsigamond, Worcester.
AU Type:	RIVER
AU Size:	0.4 MILES
Classification/Qualifier:	B: CWF

Coal Mine Brook (MA51-27)

Watershed Area: 1.25 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.25	1.25	0.23	0.23
Agriculture	0%	0%	0%	0%
Developed	59.1%	59.1%	33.2%	33.2%
Natural	38.4%	38.4%	60.7%	60.7%
Wetland	2.6%	2.6%	6%	6%
Impervious	32%	32%	18.9%	18.9%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fish Kill(s)*)	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Fish Bioassessments	--	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fish Kill(s)*)	Construction Stormwater Discharge (Permitted) (N)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fish Kill(s)*)	Impervious Surface/Parking Lot Runoff (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fish Bioassessments	Construction Stormwater Discharge (Permitted) (N)	X	--	--	--	--
Fish Bioassessments	Impervious Surface/Parking Lot Runoff (N)	X	--	--	--	--
Sedimentation/Siltation	Construction Stormwater Discharge (Permitted) (N)	X	--	--	--	--
Sedimentation/Siltation	Impervious Surface/Parking Lot Runoff (N)	X	--	--	--	--
Temperature	Construction Stormwater Discharge (Permitted) (N)	X	--	--	--	--
Temperature	Impervious Surface/Parking Lot Runoff (N)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Coal Mine Brook (MA51-27) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Coal Mine Brook (MA51-27), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Coal Mine Brook (MA51-27) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2021 & 2022. Lake Quinsigamond Watershed Association (LQA) staff/volunteers collected *E. coli* bacteria samples two-thirds of the way down Coal Mine Brook at LQA_04_NB [Coal Mine Brook, Worcester] from 2021-2022 (n=8-10/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from LQA_04_NB indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >126 CFU/100ml (2021 and 2022, 100 & 100%), 2 yrs had ≥2 samples exceed the 410 CFU/100ml STV (2021 and 2022, n=5 & 5), and cumulatively across years 100% of intervals had GMs >126 CFU/100ml. *E. coli* data from LQA_04_NB are indicative of an *E. coli* impairment.

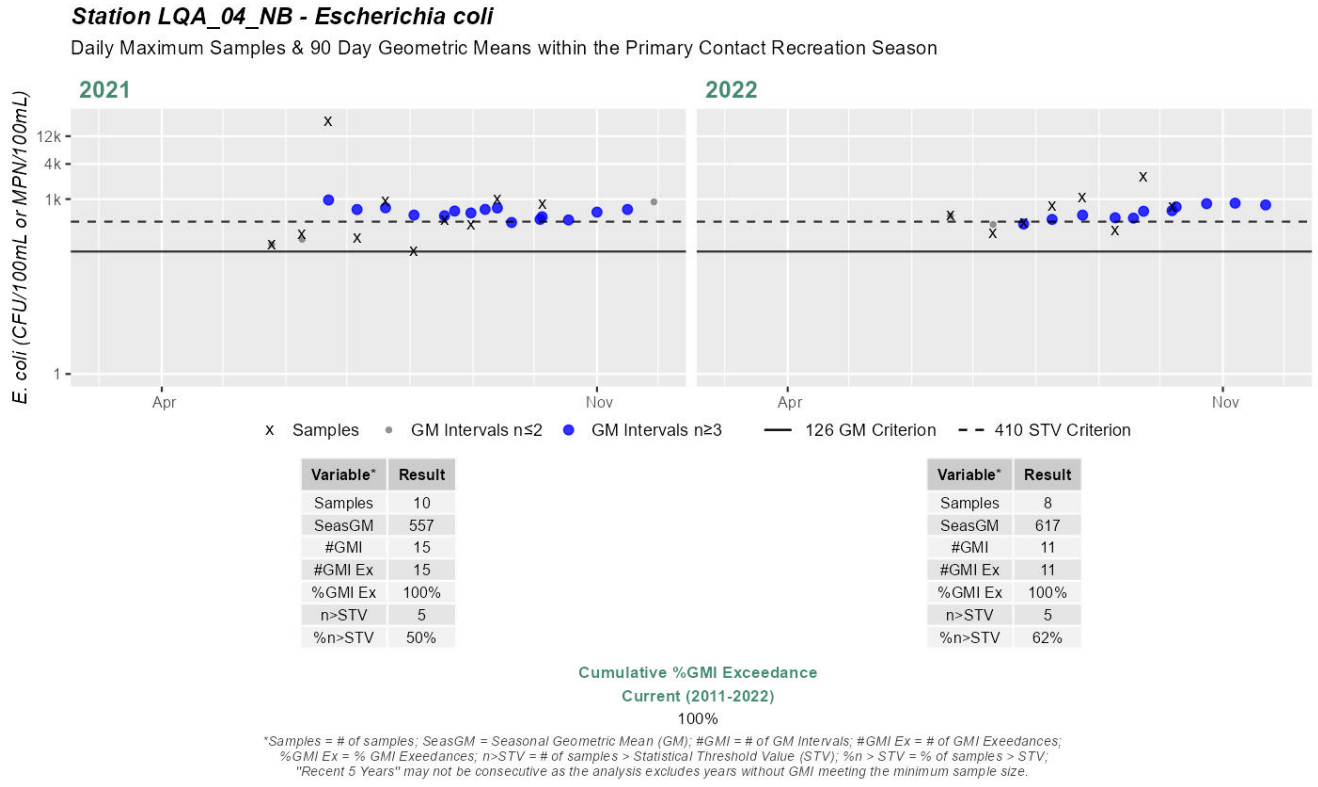
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
LQA_04_NB	Lake Quinsigamond Watershed Association	Water Quality	Coal Mine Brook	Coal Mine Brook, Worcester	42.290794	-71.760113

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(LQWA 2023) (MassDEP Undated 3)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
LQA_04_NB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	127	21720	557
LQA_04_NB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	260	2419	617



Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Coal Mine Brook (MA51-27) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added due to bacteria data not meeting the threshold at 1 station in 2021 & 2022. Lake Quinsigamond Watershed Association (LQA) and MassDEP staff/volunteers collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in Coal Mine Brook between 2008 & 2022 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: two-thirds of the way down at LQA_04_NB [Coal Mine Brook, Worcester] from 2021-2022 (n=8-10/yr), and close to the downstream end at W1282 [Lake Avenue North, Worcester] from May-Aug 2008 (historic n=6). Analysis of the multi-year moderate frequency *E. coli* dataset from LQA_04_NB indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2021 and 2022, 100 & 100%), 2 yrs had ≥2 samples exceed the 794 CFU/100ml STV (2021 and 2022, n=4 & 2), and cumulatively across years 100% of intervals had GMs >244 CFU/100ml. Data from LQA_04_NB are indicative of an *E. coli* impairment. It should be noted that data from W1282 in the historic IR window was also indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
LQA_04_NB	Lake Quinsigamond Watershed Association	Water Quality	Coal Mine Brook	Coal Mine Brook, Worcester	42.290794	-71.760113
W1282	MassDEP	Water Quality	Coal Mine Brook	[Lake Avenue North, Worcester]	42.290623	-71.758674

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

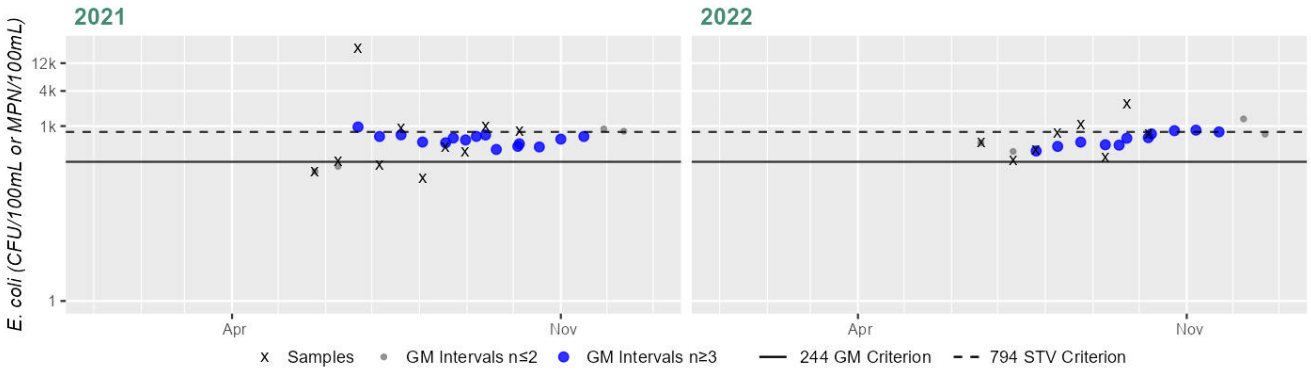
(LQWA 2023) (MassDEP Undated 2) (MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
LQA_04_NB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	127	21720	557
LQA_04_NB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	260	2419	617
W1282	MassDEP	E. coli	05/01/08	08/28/08	6	100	2000	343

Station LQA_04_NB - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	10
SeasGM	557
#GMI	15
#GMI Ex	15
%GMI Ex	100%
n>STV	4
%n>STV	40%

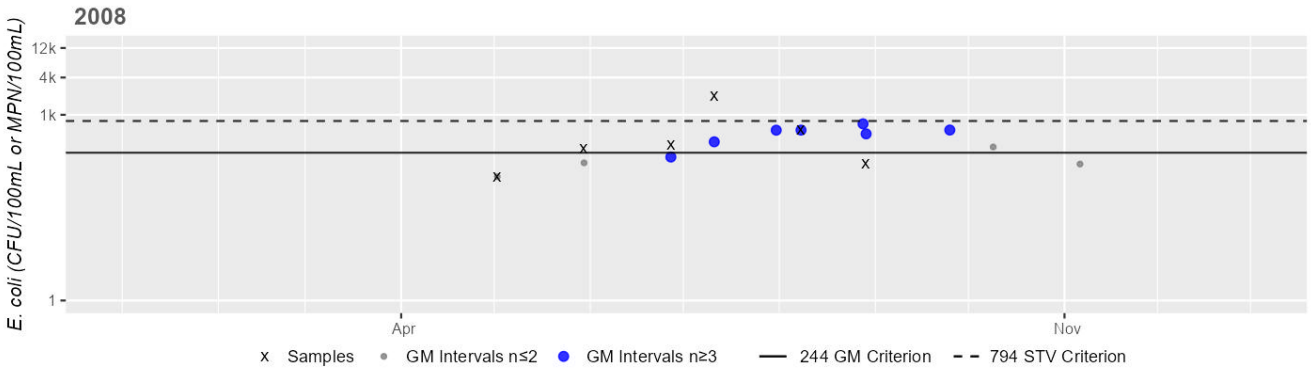
Variable*	Result
Samples	8
SeasGM	617
#GMI	11
#GMI Ex	11
%GMI Ex	100%
n>STV	2
%n>STV	25%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1282 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	343
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
85%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Coes Reservoir (MA51024)

Location:	Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	87 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
4c	5	(Water Chestnut*)	--	Unchanged
4c	5	Transparency / Clarity	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Transparency / Clarity	Source Unknown (N)	--	--	--	X	--

Recommendations

2024/26 Recommendations
2024IR [CYANOBACTERIA CELL COUNT, LOW] Follow-up monitoring should be conducted in Coes Reservoir (MA51024) to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH. This is of low priority.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Insufficient Information	No

2024/26 Use Attainment Summary
There is Insufficient Information to assess the Fish Consumption Use for Coes Reservoir (MA51024). Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Coes Reservoir (MA51024) at station F0060 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. However, no site-specific fish consumption advisory was issued by MDPH.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MassDEP Undated 6)

Summary Statement
Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Coes Reservoir (MA51024) at station F0060 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. No site-specific fish consumption advisory was issued by MDPH.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary

Too limited data are available to assess the Aesthetics Use for Coes Reservoir (MA51024) so it is assessed as having Insufficient Information. During the period 2015 through 2022, C-HAB postings for Coes Reservoir were reported to MDPH in 2022 based on visual observations for 8 days and based on cell count data for a bloom of unknown duration. No blooms were reported in other years. A recommendation for follow-up monitoring will be made. No additional data are available to evaluate the Aesthetics Use for Coes Reservoir.

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Coes Reservoir (MA51024) were reported to MDPH in 2022 based on visual observations for 8 days and based on cell count data for a bloom of unknown duration. No blooms were reported in other years. A recommendation for follow-up monitoring will be made.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Coes Reservoir	Worcester								8*

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Coes Reservoir (MA51024) is assessed as Not Supporting. A Transparency / Clarity impairment is being added due to Secchi depth data not meeting the threshold at 2 stations in 2021 & 2022. During the period 2015 through 2022, C-HAB postings for Coes Reservoir were reported to MDPH in 2022 based on visual observations for 8 days and based on cell count data for a bloom of unknown duration. No blooms were reported in other years. A recommendation for follow-up monitoring will be made. In Coes Reservoir the City of Worcester Lakes and Ponds Program (CWLPP) collected Secchi depth data at CWLPP_CR2 [42.252899, -71.842765, North Hole] (2021-2022) and CWLPP_CR3 (2021-2022). More than one Secchi depth measurement was less than the 1.2 m (4 ft) threshold at CWLPP_CR2 in 2021 (n=2/11, 1.07-3.51m) and 2022 (n=4/12, 0.91-2.36m) and CWLPP_CR3 in 2021 (n=3/12, 1.07-3.51m) and 2022 (n=4/12, 0.84-2.59m). The Secchi depth measurements are indicative of a Transparency / Clarity impairment. CWLPP staff/volunteers also collected *E. coli* bacteria samples in Coes Reservoir at CWLPP_CR3 [S Hole] from 2021-2022 (n=10-11/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_CR3 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >126 CFU/100ml, 0 yrs had ≥2 samples exceed the 410 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >126 CFU/100ml. *E. coli* data from CWLPP_CR3 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_CR3	City of Worcester Lakes and Ponds Program	Water Quality	Coes Reservoir	South Hole	42.250604	-71.839879

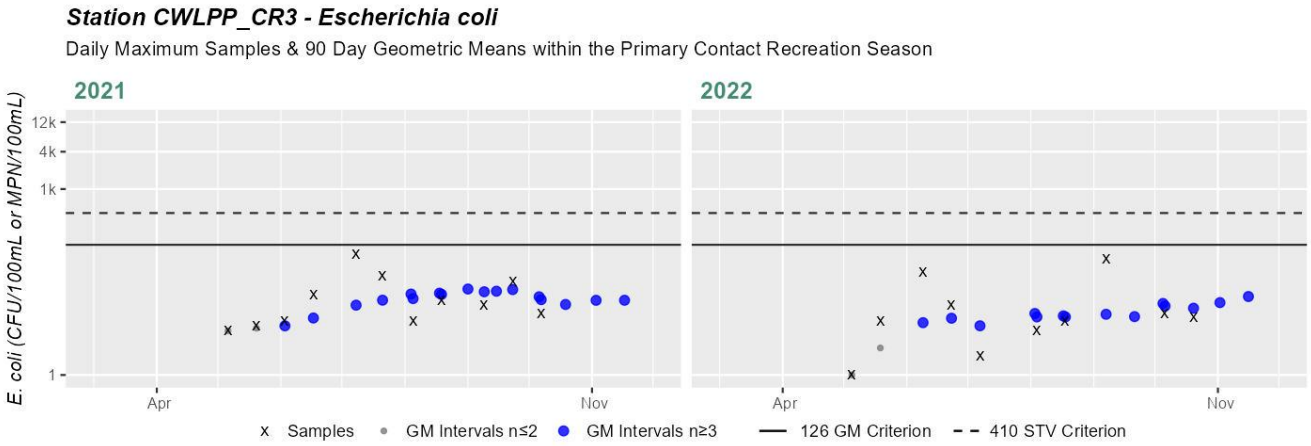
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(Worcester Lakes and Ponds 2023) (MassDEP Undated 3)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_CR3	City of Worcester Lakes and Ponds Program	E. coli	05/06/21	10/07/21	11	5	90	14
CWLPP_CR3	City of Worcester Lakes and Ponds Program	E. coli	05/05/22	10/20/22	10	1	74	8



Variable*	Result
Samples	11
SeasGM	14
#GMI	17
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	10
SeasGM	8
#GMI	14
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 3)

Data Year(s)	Summary
2021-2022	In Coes Reservoir (MA51024), CWLPP collected Secchi data at CWLPP_CR2 [42.252899, -71.842765, North Hole] (2021-2022) and CWLPP_CR3 (2021-2022). In 2021 at station CWLPP_CR2 (station depth=3.96 m) the Secchi depth measurements ranged from 1.07-3.51 m (n=11) with 2 measurements in Jul and Aug that were less than the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_CR2 (station depth=3.96 m) the Secchi depth measurements ranged from 0.91-2.36 m (n=12) with 4 measurements in Jul, Sep, and Oct that were less than the 1.2 m (4 ft) threshold. In 2021 at station CWLPP_CR3 (station depth=4.42 m) the Secchi depth measurements ranged from 1.07-3.51 m (n=12) with 3 measurements in Jul and Aug that were less than the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_CR3 (station depth=4.42 m) the Secchi depth measurements ranged from 0.84-2.59 m (n=12) with 4 measurements in Jul, Sep, and Oct that were less than the 1.2 m (4 ft) threshold. The Secchi depth measurements are indicative of a Transparency / Clarity impairment due to conditions at CWLPP_CR2 and CWLPP_CR3.

Secondary Contact Recreation

2024/26 Use Attainment	Alert

Fully Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Coes Reservoir (MA51024) is assessed as Fully Supporting. During the period 2015 through 2022, C-HAB postings for Coes Reservoir were reported to MDPH in 2022 based on visual observations for 8 days and based on cell count data for a bloom of unknown duration. No blooms were reported in other years. A recommendation for follow-up monitoring will be made. The City of Worcester Lakes and Ponds Program (CWLPP) staff/volunteers collected *E. coli* bacteria samples in Coes Reservoir at CWLPP_CR3 [South Hole] from 2021-2022 (n=10-13/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_CR3 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. *E. coli* data from CWLPP_CR3 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_CR3	City of Worcester Lakes and Ponds Program	Water Quality	Coes Reservoir	South Hole	42.250604	-71.839879

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

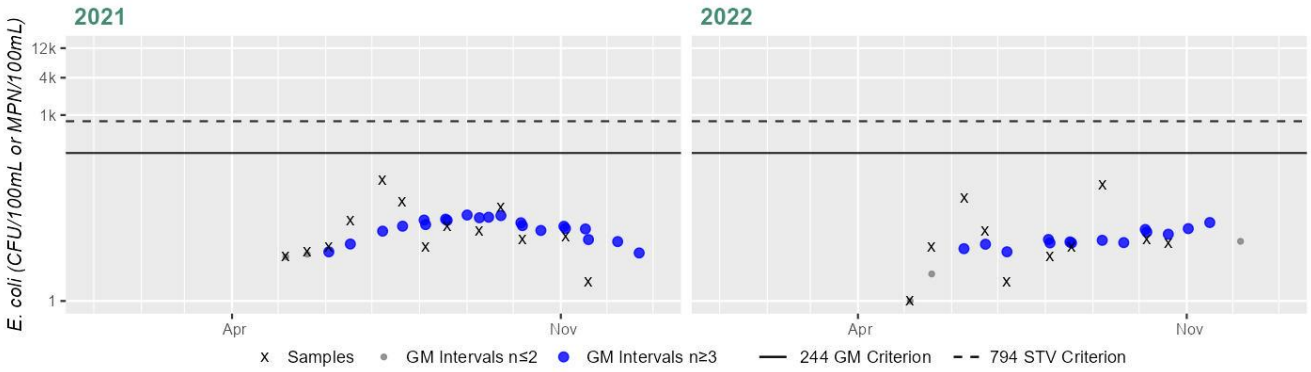
(Worcester Lakes and Ponds 2023) (MassDEP Undated 2)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_CR3	City of Worcester Lakes and Ponds Program	E. coli	05/06/21	11/19/21	13	2	90	12
CWLPP_CR3	City of Worcester Lakes and Ponds Program	E. coli	05/05/22	10/20/22	10	1	74	8

Station CWLPP_CR3 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	13
SeasGM	12
#GMI	21
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	10
SeasGM	8
#GMI	14
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Cold Spring Brook (MA51-42)

Location:	Headwaters, perennial portion north of Route 16, Uxbridge to mouth at inlet Rivulet Pond, Uxbridge.
AU Type:	RIVER
AU Size:	1.1 MILES
Classification/Qualifier:	B: CWF

Cold Spring Brook (MA51-42)

Watershed Area: 2.42 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.42	2.42	0.64	0.64
Agriculture	3.3%	3.3%	2.8%	2.8%
Developed	19.1%	19.1%	16.3%	16.3%
Natural	69.8%	69.8%	66.2%	66.2%
Wetland	7.8%	7.8%	14.8%	14.8%
Impervious	7.9%	7.9%	6.8%	6.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Cold Spring Brook (MA51-42) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Cold Spring Brook (MA51-42), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Cold Spring Brook (MA51-42) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Cold Spring Brook (MA51-42) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples halfway down Cold Spring Brook at W1768 [Hazel St, Uxbridge] from Apr-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1768 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 88 CFU/100ml. Historic *E. coli* data from W1768 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1768	MassDEP	Water Quality	Cold Spring Brook	[Hazel Street, Uxbridge]	42.078845	-71.650653

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

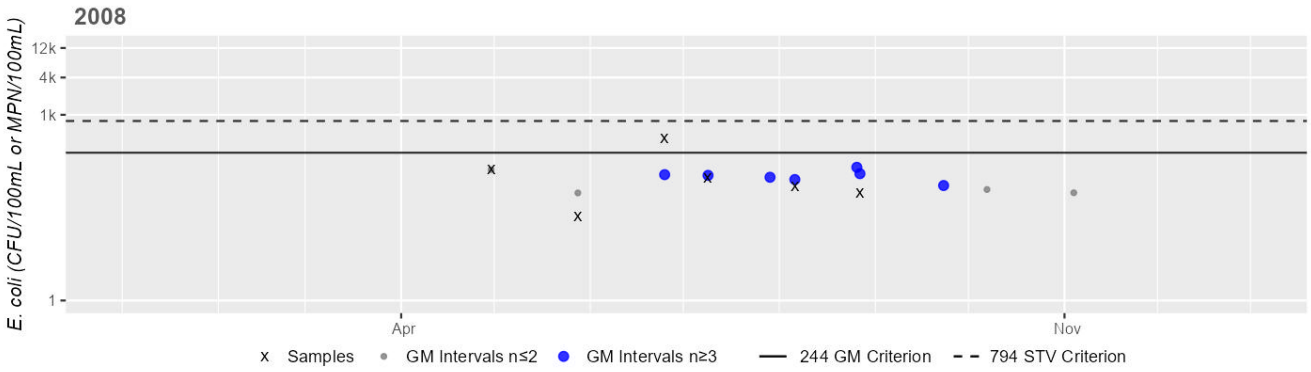
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1768	MassDEP	E. coli	04/29/08	08/26/08	6	23	420	88

Station MASSDEP_W1768 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	88
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Cold Spring Brook (MA51-56)

Location:	Headwaters outlet Cogan Pond, Sutton to mouth at confluence with the Blackstone River, Sutton (including the approximately 0.2 mile through former 2022 segment; Woodbury Pond MA51185).
AU Type:	RIVER
AU Size:	3 MILES
Classification/Qualifier:	B

Cold Spring Brook (MA51-56)

Watershed Area: 7.15 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	7.15	5.67	2.36	1.97
Agriculture	8.1%	7.4%	3.7%	2.8%
Developed	21.1%	22.5%	17.7%	19.4%
Natural	60.6%	60.8%	58.1%	57.9%
Wetland	10.3%	9.4%	20.4%	20%
Impervious	7%	7.4%	6%	6.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	4c	(Fanwort*)	--	Unchanged
--	4c	(Non-Native Aquatic Plants*)	--	Unchanged
--	4c	Aquatic Plants (Macrophytes)	--	Removed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Data and/or information lacking to determine WQ status; original basis for listing was incorrect	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Cold Spring Brook (MA51-56) includes the run-of-river impoundment, Woodbury Pond (formerly MA51185) that was first listed as impaired for Noxious Aquatic Plants in 1996, with this cause being remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). In 2024, the Woodbury Pond AU was merged with the riverine AU "Cold Spring Brook". The original impairment for Woodbury Pond was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with a 75-100% density of aquatic plants of all types, and that 80% of the pond's surface was covered with a thick scum of the non-rooted, floating species, *Wolffia*/*Lemna* spp. (MassDEP 1994, MassDEP 2002). While there is evidence to suggest that there is still a dense coverage of aquatic plants within the southern portion of the Woodbury Pond impoundment (Google Earth images from September 2019 show high amounts of plant coverage (~60-80% of the pond) (Google Earth Pro Undated)), at ~ 0.2 miles

2022 Removed Impairment	Removal Reason	Removal Comment
		in length, Woodbury Pond comprises <7% of the length of the Poor Farm Brook AU. As per the 2024 CALM since this impounded portion of the Cold Spring Brook "river" AU comprises <10% of the total AU river length, the Aquatic Plants (Macrophytes) impairment will not be transferred to the new river AU, because the impounded area is not considered to well represent the AU.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: MA51185 WATERSHED: Blackstone (51) (Printed 02/03/98)
NAME: Woodbury Pond TYPE: Lake/Pond
CODE: 51185 SIZE: 7.00(acres) CLASS: B

LATITUDE: 42.16361
LONGITUDE: 71.73056 (420949/714350)
Lake/Pond Name: Woodbury Pond, Sutton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				7.00		
ALUS			7.00			
FISH CONSUMPTION					7.00	
PRIMARY CONTACT				7.00		
SECONDARY CONTACT				7.00		
Aesthetics					7.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	7.00	M
2600- Exotic species	7.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	7.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 14 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% COVERAGE OF FLOATING, EMERGENT, OR SUBMERGENT PLANTS OVER THE ENTIRE POND. THERE WAS THICK DUCKWEED/MEAL SCUM ON OVER 80%. THE NON-NATIVE CABOMBA AND MYRIOPHYLLUM HETEROPHYLLUM WERE PRESENT. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

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1994 Synoptic Survey Field Sheet (MassDEP 1994):

5118

Lake/Pond Woodbury Pond **Date** 7/14/94

Town/City Sutton **Observers** G. DeCesare
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Along guardrail on Boston Rd. - No formal access

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
ROW ?

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Tea stain, slight turbidity, brownish surface covered w scum of duckweed/meal + algae

Record of aquatic plant "species" observed (see note below):

Cabomba, Myriophyllum heterophyllum, Myriophyllum sp (possibly different), Potamogeton (large floating leaf), Lemna minor, Wolffia, Nymphaea, Pontederia, Typha latifolia, Brasenia, filamentous algae

Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**

75-100% floating, emergent or submergent over entire pond - thick duckweed/mat scum over ~80%

Other notes (e.g., overt pollution, construction, and water uses:

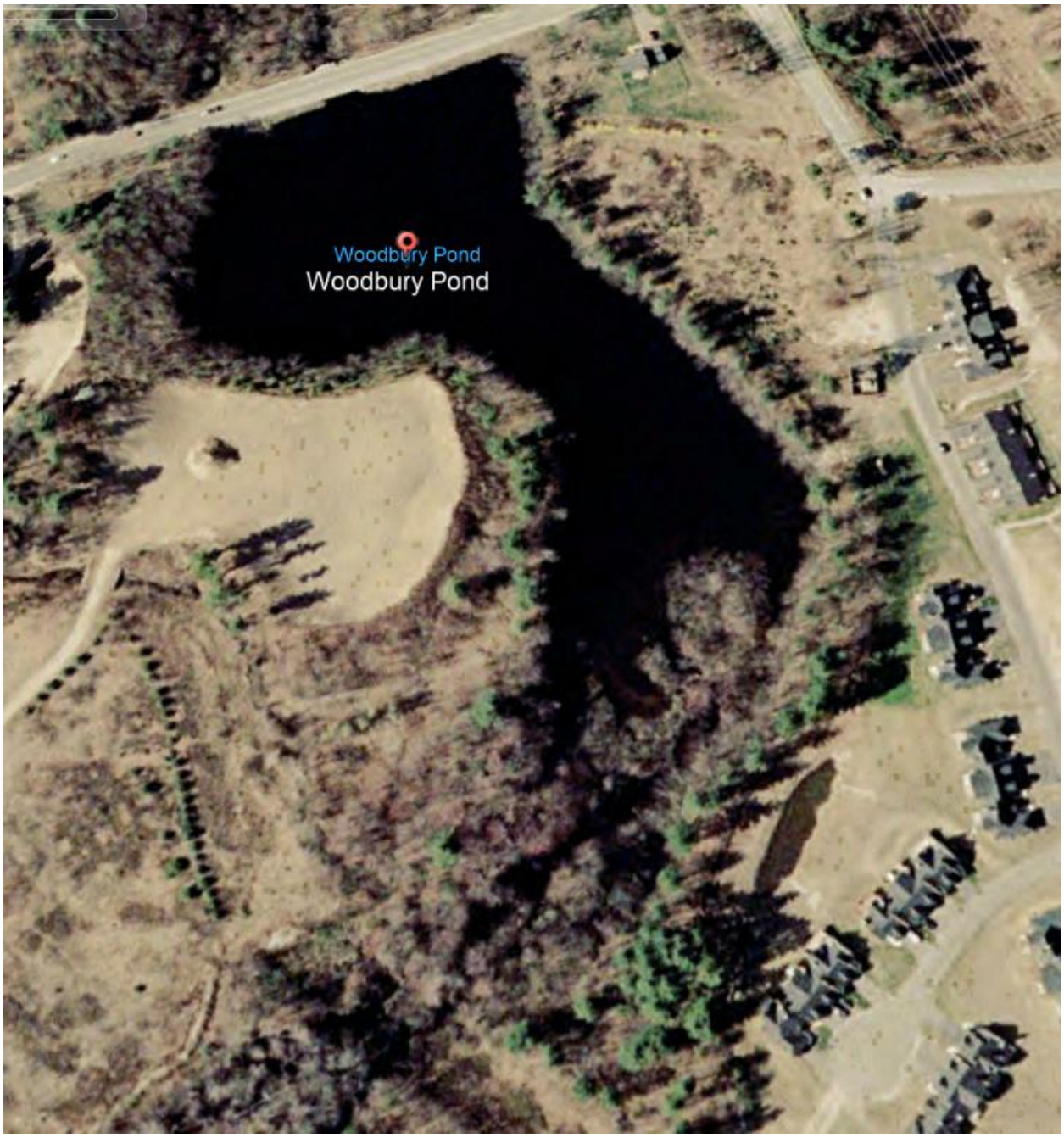
305b- Eutrophic

1° Contact } 100% Non-support
2° Contact }
Aq. Life → 100% Partial Support

Cause - Noxious plants - M (Full average), Exotic plants - M (Full average)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Woodbury Pond, 12/31/2000 (Google Earth Pro Undated):



Google Earth image of Woodbury Pond, 9/20/2019 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Cold Spring Brook (MA51-56) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert

Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Cold Spring Brook (MA51-56), so it is assessed as having Insufficient Information. The Alert for Aquatic Plants (Macrophytes) (based on observations made in 2009 just south of Boston Rd) is being removed. As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Cold Spring Brook (includes the run-of-river impoundment, Woodbury Pond (formerly MA51185) that was first listed as impaired for Noxious Aquatic Plants in 1996, with this cause being remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). In 2024, the Woodbury Pond AU was merged with the riverine AU "Cold Spring Brook". The original impairment for Woodbury Pond was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with a 75-100% density of aquatic plants of all types, and that 80% of the pond's surface was covered with a thick scum of the non-rooted, floating species, *Wolffia*/*Lemna* spp. (MassDEP 1994, MassDEP 2002). While there is evidence to suggest that there is still a dense coverage of aquatic plants within the southern portion of the Woodbury Pond impoundment (Google Earth images from September 2019 show high amounts of plant coverage (~60-80% of the pond) (Google Earth Pro Undated)), at ~ 0.2 miles in length, Woodbury Pond comprises <7% of the length of the Poor Farm Brook AU. As per the 2024 CALM since this impounded portion of the Cold Spring Brook "river" AU comprises <10% of the total AU river length, the Aquatic Plants (Macrophytes) impairment will not be transferred to the new river AU, because the impounded area is not considered to well represent the AU. Similarly the Alert identified for dense macrophytes at station W2100 in 2009 (being just south of Boston Rd), also falls within the Woodbury Pond impoundment and so this Alert will also be removed. MassDEP staff recorded aesthetics observations at the downstream end of Cold Spring Brook at Rt. 122A (Providence Road), Sutton (W2947) between Nov 2019 and Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2947	MassDEP	Water Quality	Cold Spring Brook	[Route 122A (Providence Road), Sutton]	42.175488	-71.728168

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2947	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2947 on Cold Spring Brook (MA51-56) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2947	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2947	Cold Spring Brook	2020	Aesthetics Impaired?	No	2	2
W2947	Cold Spring Brook	2020	Aquatic Plant Density, Overall	None	2	2
W2947	Cold Spring Brook	2020	Color	None	2	2
W2947	Cold Spring Brook	2020	Objectionable Deposits	No	1	2
W2947	Cold Spring Brook	2020	Objectionable Deposits	Yes	1	2
W2947	Cold Spring Brook	2020	Odor	None	2	2
W2947	Cold Spring Brook	2020	Periphyton Density, Filamentous	Moderate	1	2
W2947	Cold Spring Brook	2020	Periphyton Density, Filamentous	Sparse	1	2
W2947	Cold Spring Brook	2020	Periphyton Density, Film	None	2	2
W2947	Cold Spring Brook	2020	Scum	No	2	2
W2947	Cold Spring Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for the Cold Spring Brook (MA51-56) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. Since the Aquatic Plants (Macrophytes) impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use. Since the Alert for Aquatic Plants (Macrophytes) (based on observations made in 2009 just south of Boston Rd) is being removed from the Aesthetics Use, it is also being removed from the Recreation Uses.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for the Cold Spring Brook (MA51-56) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. Since the Aquatic Plants (Macrophytes) impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use. Since the Alert for Aquatic Plants (Macrophytes) (based on observations made in 2009 just south of Boston Rd) is being removed from the Aesthetics Use, it is also being removed from the Recreation Uses.

Cook Allen Brook (MA51-28)

Location:	Headwaters, outlet Reservoir No. 5, Sutton to mouth at inlet Whitins Pond, Northbridge (excluding approximately 0.2 mile through concurrent segment, Reservoir No. 4 MA51128).
AU Type:	RIVER
AU Size:	2 MILES
Classification/Qualifier:	B

No usable data were available for Cook Allen Brook (MA51-28) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Fish Bioassessments	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Fish Bioassessments	Water Diversions (N)	X	--	--	--	--

Crane Pond (MA51030)

Location:	Blackstone.
AU Type:	FRESHWATER LAKE
AU Size:	1 ACRES
Classification/Qualifier:	B

No usable data were available for Crane Pond (MA51030) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

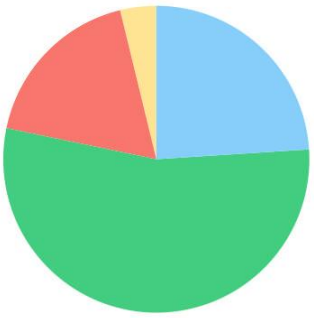
AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Cronin Brook (MA51-45)

Location:	Headwaters, perennial portion west of Potter Hill Road, Grafton to mouth at confluence with the Blackstone River, Grafton.
AU Type:	RIVER
AU Size:	2.6 MILES
Classification/Qualifier:	B

Cronin Brook (MA51-45)

Watershed Area: 2.90 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.90	2.90	0.97	0.97
Agriculture	3.8%	3.8%	2.7%	2.7%
Developed	17.9%	17.9%	9.3%	9.3%
Natural	54.3%	54.3%	46.9%	46.9%
Wetland	24%	24%	41.1%	41.1%
Impervious	5.8%	5.8%	2.8%	2.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--
Temperature	Source Unknown (N)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Cronin Brook (MA51-45) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Cronin Brook (MA51-45), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Cronin Brook (MA51-45) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Cronin Brook (MA51-45) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples close to the downstream end of Cronin Brook at W1769 [Follette St, Grafton] from Apr-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1769 indicated 71% of intervals had GMs >244 CFU/100ml, 1 sample exceeded the 794 CFU/100ml STV, and the overall GM was 268 CFU/100ml. Historic *E. coli* data from W1769 meet 2024 CALM guidance, however since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1769	MassDEP	Water Quality	Cronin Brook	[Follette Street, Grafton]	42.184981	-71.712063

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

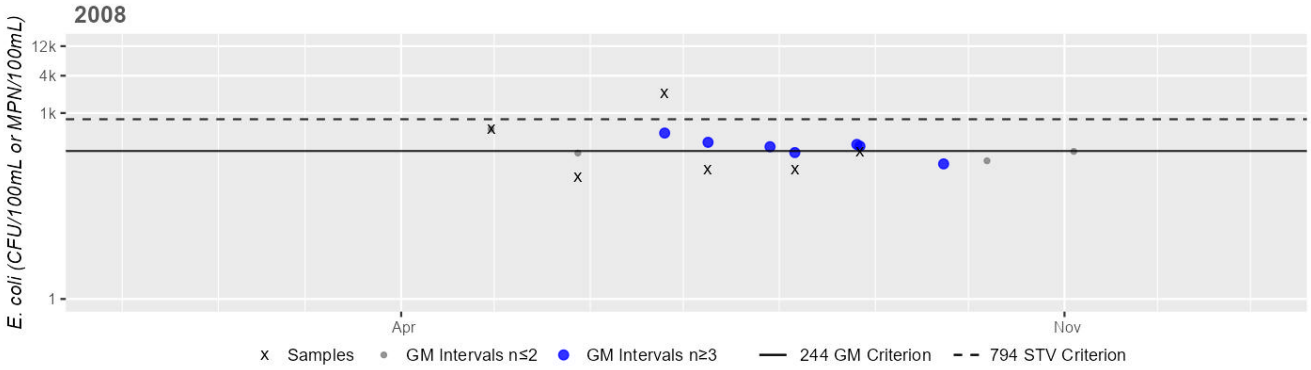
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1769	MassDEP	E. coli	04/29/08	08/26/08	6	93	2100	268

Station MASSDEP_W1769 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	268
#GMI	7
#GMI Ex	5
%GMI Ex	71%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
71%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Crystal Lake (MA51031)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	96 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Mercury in Fish Tissue	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Mercury in Fish Tissue	Atmospheric Deposition (N)	--	X	--	--	--
Mercury in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Crystal Lake (MA51031) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. DPH included a site-specific advisory for Crystal Lake (referred to by MDPH as ''Badluck Lake'') in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Crystal Lake (MA51031) is assessed as Fully Supporting. Aesthetic observations were made by MassDEP field sampling crews during the summer of 2017 at two stations in Douglas for this Crystal Lake AU; at the deep hole (W2676, MAP2L-134) n=3 and off Douglas State Forest trail at northwestern edge of pond (W2677, MAP2L-134S) n=5. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded at either station. During the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots and during the MAP2 macrophyte mapping survey (n=1) in Aug 2017, less than 25% (23.1%) of the waterbody was determined to have an aquatic macrophyte biovolume >50%.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2676	MassDEP	Water Quality	Crystal Lake	[index site, Douglas]	42.047546	-71.768211
W2677	MassDEP	Water Quality	Crystal Lake	[off Douglas State Forest trail at northwestern edge of pond, Douglas]	42.049236	-71.769312

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2676	2017	3	Aesthetic observations were made by MassDEP field sampling crews at Station W2676 (MAP2L-134) on Crystal Lake (MA51031) during 3 site visits between Jun 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During the MAP2 macrophyte mapping survey (n=1) in Aug 2017, less than 25% (23.1%) of the waterbody was determined to have an aquatic macrophyte biovolume >50%.
W2677	2017	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2677 (MAP2L-134S) on Crystal Lake (MA51031) during 5 site visits between May 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=2). During the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots.

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2676	Crystal Lake	2017	Aesthetics Impaired?	No	3	3
W2676	Crystal Lake	2017	Aquatic Plant Density, Overall	None	1	3
W2676	Crystal Lake	2017	Aquatic Plant Density, Overall	NR	2	3
W2676	Crystal Lake	2017	Aquatic Plant Density, Whole Lake	Unobservable	1	1
W2676	Crystal Lake	2017	Color	Brownish	1	3
W2676	Crystal Lake	2017	Color	Reddish	2	3
W2676	Crystal Lake	2017	Duckweed Density, Whole Lake	Unobservable	1	1
W2676	Crystal Lake	2017	Objectionable Deposits	No	3	3
W2676	Crystal Lake	2017	Odor	None	3	3
W2676	Crystal Lake	2017	Scum	No	3	3
W2676	Crystal Lake	2017	Turbidity	None	3	3
W2677	Crystal Lake	2017	Aesthetics Impaired?	No	5	5
W2677	Crystal Lake	2017	Color	Light Yellow/Tan	3	5
W2677	Crystal Lake	2017	Color	Reddish	1	5
W2677	Crystal Lake	2017	Color	Rusty	1	5
W2677	Crystal Lake	2017	Objectionable Deposits	No	3	5
W2677	Crystal Lake	2017	Objectionable Deposits	Yes	2	5
W2677	Crystal Lake	2017	Odor	None	5	5
W2677	Crystal Lake	2017	Scum	No	5	5
W2677	Crystal Lake	2017	Turbidity	None	2	5
W2677	Crystal Lake	2017	Turbidity	Slightly Turbid	3	5

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Crystal Lake (MA51031) is assessed as Fully Supporting. In Crystal Lake MassDEP staff collected Secchi depth and cyanobacteria cell count data at W2676 [MAP2L-134, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2677 [MAP2L-134S, Shoreline station off Douglas State Forest trail at northwestern edge of pond, Douglas] (2017). Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at W2676 in 2017 (n=3, 1.5-2.55m). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2677 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff also collected *E. coli* bacteria samples in Crystal Lake (MA51031) at shoreline station W2677 from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2677 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 10 CFU/100ml. *E. coli* data from W2677 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2676	MassDEP	Water Quality	Crystal Lake	[index site, Douglas]	42.047546	-71.768211
W2677	MassDEP	Water Quality	Crystal Lake	[off Douglas State Forest trail at northwestern edge of pond, Douglas]	42.049236	-71.769312

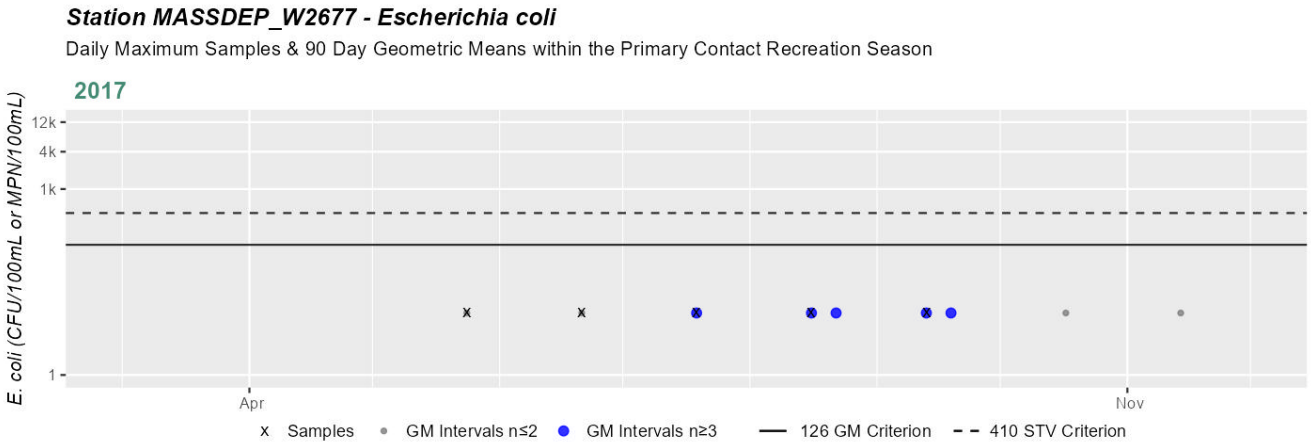
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2677	MassDEP	E. coli	05/24/17	09/13/17	5	10	10	10



Variable*	Result
Samples	5
SeasGM	10
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 8) (MassDEP Undated 5)

Data Year(s)	Summary
2017	In Crystal Lake (MA51031) in 2017, MassDEP collected Secchi and cyanobacteria cell count data at W2676 [MAP2L-134, Index-deep hole], and cyanobacteria cell count and cyanotoxin data at W2677 [MAP2L-134S, Shoreline]. At station W2676 (station depth=3.4 m) the Secchi depth measurements ranged from 1.5-2.55 m (n=3) indicating water clarity meeting the 1.2 m (4 ft) threshold. The cyanobacteria cell count did not exceed 70,000 cells/mL in any of the water samples (n=6). Analysis of microcystins and cylindrospermopsin samples from the shoreline station W2677 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L.

MassDEP Cyanobacteria Cell Count Data Collected at Lakes and Impoundments (2016-2018) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Waterbody	Station Type	Data Year	Sample Count	Count >70,000 cells/mL	Exceedance Date(s)
W2676	Crystal Lake	Index	2017	3	0	NA
W2677	Crystal Lake	Shoreline	2017	3	0	NA

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Crystal Lake (MA51031) is assessed as Fully Supporting. In Crystal Lake (MA51031), MassDEP collected cyanobacteria cell count data at W2676 [MAP2L-134, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2677 [MAP2L-134S, Shoreline station off Douglas State Forest trail at northwestern edge of pond, Douglas] (2017). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2677 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff collected *E. coli* bacteria samples in Crystal Lake at shoreline station W2677 from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2677 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 10 CFU/100ml. *E. coli* data from W2677 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2677	MassDEP	Water Quality	Crystal Lake	[off Douglas State Forest trail at northwestern edge of pond, Douglas]	42.049236	-71.769312

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

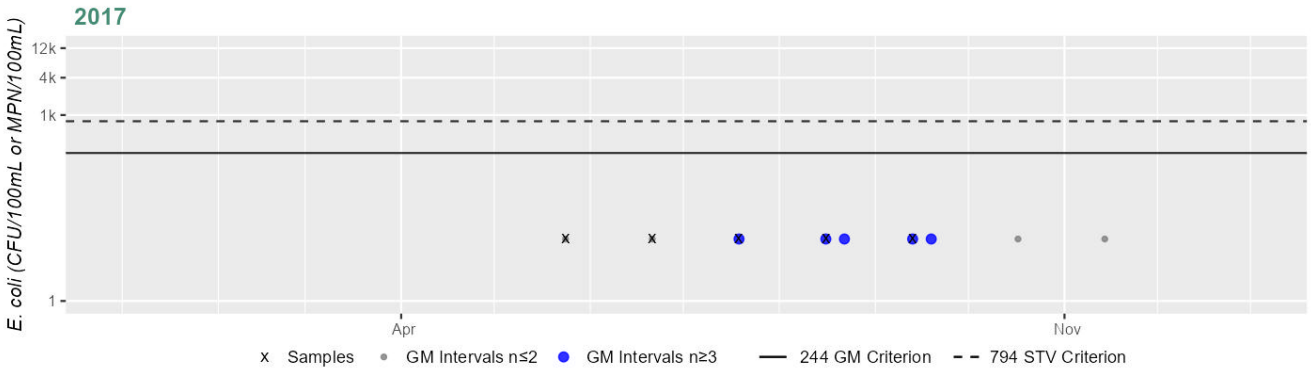
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2677	MassDEP	E. coli	05/24/17	09/13/17	5	10	10	10

Station MASSDEP_W2677 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	10
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Dark Brook (MA51-16)

Location:	Headwaters, outlet Eddy Pond, Auburn to mouth at confluence with Kettle Brook, Auburn (through former 2008 segment: Auburn Pond MA51004).
AU Type:	RIVER
AU Size:	2.5 MILES
Classification/Qualifier:	B

Dark Brook (MA51-16)

Watershed Area: 11.38 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	11.38	6.04	4.45	2.34
Agriculture	4.7%	2.2%	2.7%	1%
Developed	27%	39.8%	22.1%	32.2%
Natural	58.5%	49.2%	57%	49.1%
Wetland	9.8%	8.7%	18.2%	17.6%
Impervious	12%	19.7%	10.2%	16.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Chloride	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Source Unknown (N)	X	--	--	--	--
Chloride	Highway/Road/Bridge Runoff (Non-construction Related) (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Dark Brook (MA51-16) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Dark Brook (MA51-16), so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station for this Dark Brook AU, ~430 feet upstream of Brotherton Way, Auburn (W2949) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2949	MassDEP	Water Quality	Dark Brook	[east of Southbridge Street approximately 430 feet upstream of Brotherton Way, Auburn (downstream of access ramp nearest the Auburn Mall parking garage)]	42.203229	-71.837454

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2949	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2949 on Dark Brook (MA51-16) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2949	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2949	Dark Brook	2020	Aesthetics Impaired?	No	2	2
W2949	Dark Brook	2020	Aquatic Plant Density, Overall	Sparse	2	2
W2949	Dark Brook	2020	Color	None	2	2
W2949	Dark Brook	2020	Objectionable Deposits	No	1	2
W2949	Dark Brook	2020	Objectionable Deposits	Yes	1	2
W2949	Dark Brook	2020	Odor	None	2	2
W2949	Dark Brook	2020	Periphyton Density, Filamentous	None	2	2
W2949	Dark Brook	2020	Periphyton Density, Film	None	2	2
W2949	Dark Brook	2020	Scum	No	2	2
W2949	Dark Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Dark Brook (MA51-16) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Dark Brook (MA51-16) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added based on a re-evaluation of bacteria data not meeting the threshold at 1 station in 2003 & 2008. MassDEP staff collected *E. coli* bacteria samples halfway down Dark Brook at W0504 [Rt. 12, Auburn] in 2003 and 2008 (n=6/yr). Analysis of the historic multi-year limited frequency *E. coli* dataset from W0504 indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2003 and 2008, 75 & 100%), and while only 1 yr had ≥2 samples exceed the 794 CFU/100ml STV (2008, n=2), cumulatively across years 90% of intervals had GMs >244 CFU/100ml. Historic data from W0504 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0504	MassDEP	Water Quality	Dark Brook	[Route 12, Auburn]	42.205781	-71.834691

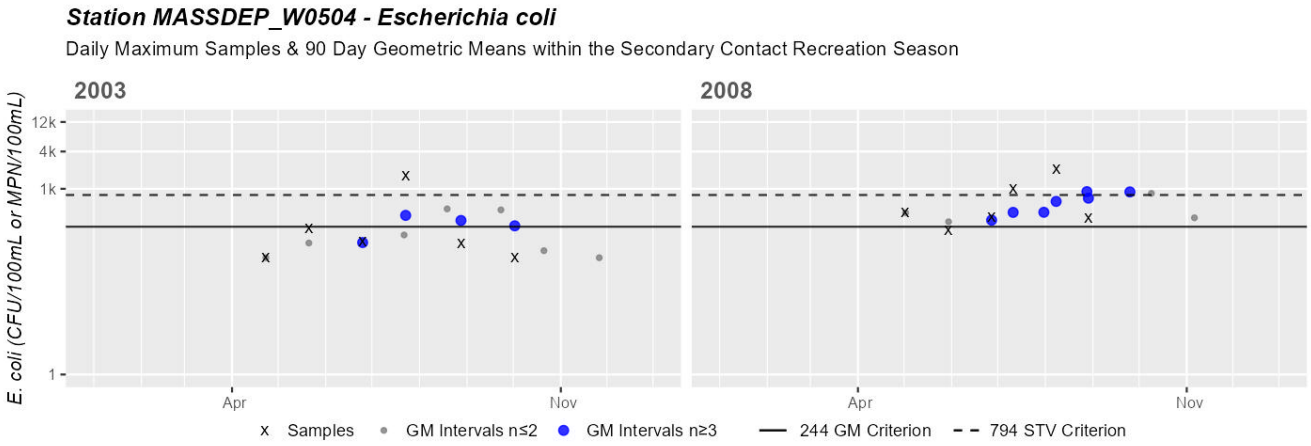
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0504	MassDEP	E. coli	04/23/03	10/02/03	6	77	1600	184
W0504	MassDEP	E. coli	05/01/08	08/28/08	6	210	2100	526



Variable*	Result
Samples	6
SeasGM	184
#GMI	4
#GMI Ex	3
%GMI Ex	75%
n>STV	1
%n>STV	16%

Variable*	Result
Samples	6
SeasGM	526
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
90%

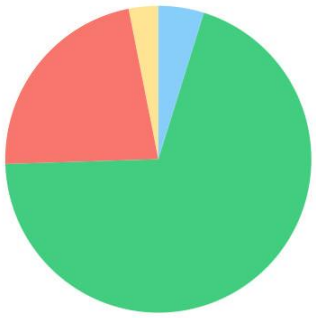
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Dark Brook (MA51-49)

Location:	Headwaters, outlet Dark Brook Reservoir, Auburn to mouth at inlet Stoneville Pond (east of Wallace Avenue), Auburn.
AU Type:	RIVER
AU Size:	1.3 MILES
Classification/Qualifier:	B

Dark Brook (MA51-49)

Watershed Area: 3.11 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	3.10	2.97	1.41	1.41
Agriculture	3.1%	2%	0.1%	0.1%
Developed	22.4%	22.9%	18.7%	18.7%
Natural	69.7%	70.2%	75.2%	75.2%
Wetland	4.8%	4.8%	6%	6%
Impervious	10.3%	10.6%	9.6%	9.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Dark Brook (MA51-49) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Dark Brook (MA51-49) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at two stations in Auburn for this Dark Brook AU from up to downstream as follows; a third of the way down at ~620 feet upstream from Inwood Road (W2181 2011, n=6) and halfway down at Berlin Street (W1776) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded at either site.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1776	MassDEP	Water Quality	Dark Brook	[Berlin Street, Auburn]	42.206707	-71.852815
W2181	MassDEP	Water Quality	Dark Brook	[approximately 620 feet upstream from Inwood Road, Auburn]	42.202911	-71.856173

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W1776	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W1776 on Dark Brook (MA51-49) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).
W2181	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2181 on Dark Brook (MA51-49) during 6 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W1776	2020	2	2	0

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2181	2011	6	5	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1776	Dark Brook	2020	Aesthetics Impaired?	No	2	2
W1776	Dark Brook	2020	Aquatic Plant Density, Overall	None	2	2
W1776	Dark Brook	2020	Color	None	2	2
W1776	Dark Brook	2020	Objectionable Deposits	No	2	2
W1776	Dark Brook	2020	Odor	None	2	2
W1776	Dark Brook	2020	Periphyton Density, Filamentous	None	2	2
W1776	Dark Brook	2020	Periphyton Density, Film	None	2	2
W1776	Dark Brook	2020	Scum	No	2	2
W1776	Dark Brook	2020	Turbidity	None	2	2
W2181	Dark Brook	2011	Aquatic Plant Density, Overall	None	5	6
W2181	Dark Brook	2011	Aquatic Plant Density, Overall	Unobservable	1	6
W2181	Dark Brook	2011	Color	Light Yellow/Tan	1	6
W2181	Dark Brook	2011	Color	None	4	6
W2181	Dark Brook	2011	Color	NR	1	6
W2181	Dark Brook	2011	Objectionable Deposits	No	4	6
W2181	Dark Brook	2011	Objectionable Deposits	Unobservable	1	6
W2181	Dark Brook	2011	Objectionable Deposits	Yes	1	6
W2181	Dark Brook	2011	Odor	Musty (Basement)	1	6
W2181	Dark Brook	2011	Odor	None	5	6
W2181	Dark Brook	2011	Periphyton Density, Filamentous	None	5	6
W2181	Dark Brook	2011	Periphyton Density, Filamentous	Unobservable	1	6
W2181	Dark Brook	2011	Periphyton Density, Film	None	4	6
W2181	Dark Brook	2011	Periphyton Density, Film	Sparse	1	6
W2181	Dark Brook	2011	Periphyton Density, Film	Unobservable	1	6
W2181	Dark Brook	2011	Scum	No	4	6
W2181	Dark Brook	2011	Scum	Yes	2	6
W2181	Dark Brook	2011	Turbidity	None	6	6

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Dark Brook (MA51-49) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples a third of the way down the Dark Brook AU at W2181 [~620 ft upstream from Inwood Rd, Auburn] from May-Oct 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2181 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 52 CFU/100ml. *E. coli* data from W2181 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2181	MassDEP	Water Quality	Dark Brook	[approximately 620 feet upstream from Inwood Road, Auburn]	42.202911	-71.856173

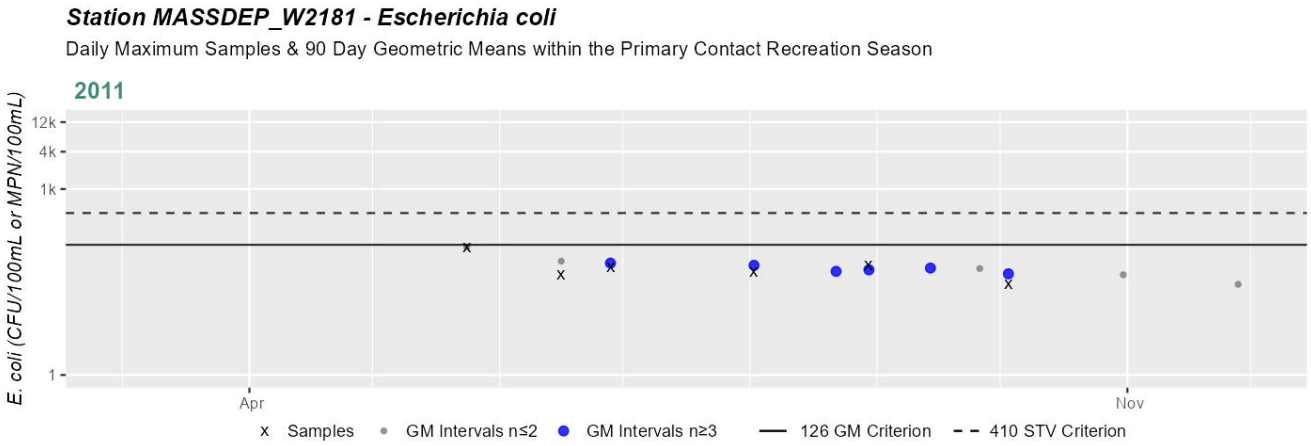
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2181	MassDEP	E. coli	05/24/11	10/03/11	6	29	115	52



Variable*	Result
Samples	6
SeasGM	52
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Dark Brook (MA51-49) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples a third of the way down at the Dark Brook AU at W2181 [~620 ft upstream from Inwood Rd, Auburn] from May-Oct 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2181 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 52 CFU/100ml. *E. coli* data from W2181 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2181	MassDEP	Water Quality	Dark Brook	[approximately 620 feet upstream from Inwood Road, Auburn]	42.202911	-71.856173

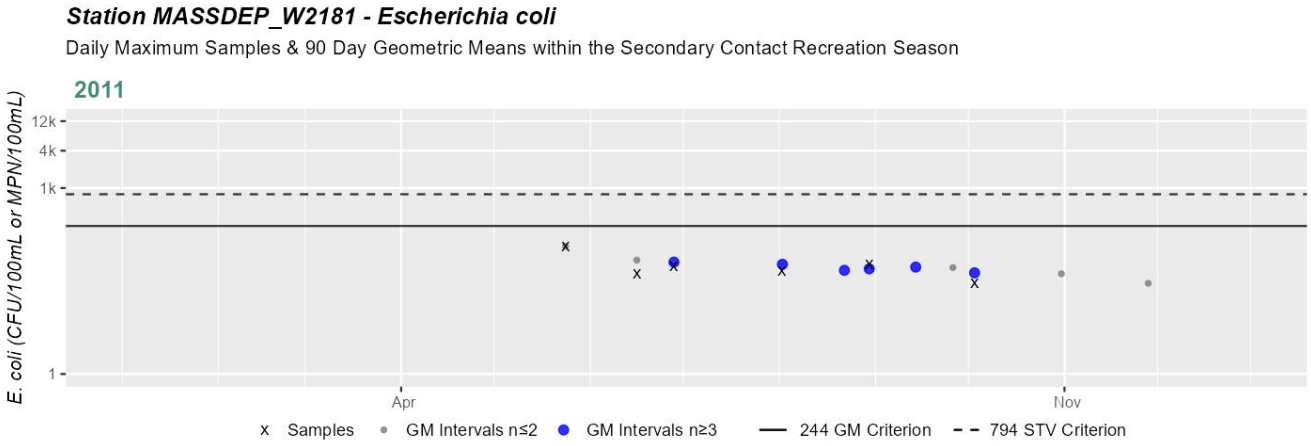
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2181	MassDEP	E. coli	05/24/11	10/03/11	6	29	115	52



Variable*	Result
Samples	6
SeasGM	52
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Dark Brook Pond (MA51034)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	18 ACRES
Classification/Qualifier:	B

No usable data were available for Dark Brook Pond (MA51034) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Dark Brook Reservoir (MA51035)

Location:	[South Basin] Auburn.
AU Type:	FRESHWATER LAKE
AU Size:	58 ACRES
Classification/Qualifier:	B

No usable data were available for Dark Brook Reservoir (MA51035) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Brittle Naiad, Najas Minor*)	--	Unchanged
4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Brittle Naiad, Najas Minor*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Dark Brook Reservoir (MA51036)

Location:	[North Basin] Auburn.
AU Type:	FRESHWATER LAKE
AU Size:	171 ACRES
Classification/Qualifier:	B

No usable data were available for Dark Brook Reservoir (MA51036) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Doctors Pond (MA51194)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	1 ACRES
Classification/Qualifier:	B

No usable data were available for Doctors Pond (MA51194) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Dorothy Pond (MA51039)

Location:	Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	133 ACRES
Classification/Qualifier:	B

No usable data were available for Dorothy Pond (MA51039) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Brittle Naiad, Najas Minor*)	--	Unchanged
4a	4a	(Curly-leaf Pondweed*)	--	Unchanged
4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
4a	4a	Turbidity	379	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Brittle Naiad, Najas Minor*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Turbidity	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Turbidity	Rural (Residential Areas) (Y)	--	--	X	X	X

Dudley Pond (MA51041)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	8 ACRES
Classification/Qualifier:	B

No usable data were available for Dudley Pond (MA51041) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Eddy Pond (MA51043)

Location:	Auburn.
AU Type:	FRESHWATER LAKE
AU Size:	103 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	(Non-Native Aquatic Plants*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	2382	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Eddy Pond (MA51043) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Eddy Pond (MA51043) continues to be assessed as Not Supporting with the Nutrient/Eutrophication Biological Indicators and Aquatic Plants (Macrophytes) impairments being carried forward. Since the Non-Native Aquatic Plants impairment was redundantly duplicated across multiple uses for this waterbody, the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. No new data are available to evaluate the Aesthetics Use for this Eddy Pond AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Eddy Pond (MA51043) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Aquatic Plants (Macrophytes) and Nutrient/Eutrophication Biological Indicators impairments (from the Aesthetics Use) are being carried forward. Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Eddy Pond (MA51043) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior Aquatic Plants (Macrophytes) and Nutrient/Eutrophication Biological Indicators impairments (from the Aesthetics Use) are being carried forward. Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Emerson Brook (MA51-29)

Location:	Headwaters, outlet Lee Pond, Uxbridge to mouth at confluence with the Blackstone River, Uxbridge.
AU Type:	RIVER
AU Size:	1.9 MILES
Classification/Qualifier:	B

Emerson Brook (MA51-29)

Watershed Area: 7.73 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	7.73	4.68	2.25	1.39
Agriculture	1.1%	1.4%	1.2%	1.3%
Developed	12.8%	13%	9.1%	9.5%
Natural	76.7%	78.9%	72.9%	76.1%
Wetland	9.3%	6.7%	16.9%	13.1%
Impervious	4.2%	4.6%	3.2%	3.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Emerson Brook (MA51-29) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Emmerson Brook (MA51-29) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station halfway down Emerson Brook ~200 feet upstream of the Rt. 146 southbound off-ramp to Chocolog Road, Uxbridge (W2284 in 2012-2013, n=5/yr and 2014-2016, n=4/yr). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted minor trash deposits on four occasions in 2013 and three occasions in 2014.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2284	MassDEP	Water Quality	Emerson Brook	[approximately 200 feet upstream of the Route 146 southbound off-ramp to Chocolog Road, Uxbridge]	42.046385	-71.630154

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2284	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2284 on Emerson Brook (MA51-29) during 5 site visits between May 2012 and Oct 2012. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2284	2013	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2284 on Emerson Brook (MA51-29) during 5 site visits between May 2013 and Sep 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=4).
W2284	2014	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2284 on Emerson Brook (MA51-29) during 4 site visits between May 2014 and Aug 2014. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=3).
W2284	2015	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2284 on Emerson Brook (MA51-29) during 4 site visits between May 2015 and Aug 2015. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2284	2016	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2284 on Emerson Brook (MA51-29) during 4 site visits between May 2016 and Aug 2016. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2284	2012	5	5	0
W2284	2013	5	5	0
W2284	2014	4	4	0
W2284	2015	4	4	0
W2284	2016	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2284	Emerson Brook	2012	Aquatic Plant Density, Overall	None	4	5
W2284	Emerson Brook	2012	Aquatic Plant Density, Overall	NR	1	5
W2284	Emerson Brook	2012	Color	Light Yellow/Tan	4	5
W2284	Emerson Brook	2012	Color	None	1	5
W2284	Emerson Brook	2012	Objectionable Deposits	No	3	5
W2284	Emerson Brook	2012	Objectionable Deposits	NR	1	5
W2284	Emerson Brook	2012	Objectionable Deposits	Yes	1	5
W2284	Emerson Brook	2012	Odor	Musty (Basement)	1	5
W2284	Emerson Brook	2012	Odor	None	4	5
W2284	Emerson Brook	2012	Periphyton Density, Filamentous	Moderate	1	5
W2284	Emerson Brook	2012	Periphyton Density, Filamentous	None	3	5
W2284	Emerson Brook	2012	Periphyton Density, Filamentous	Sparse	1	5
W2284	Emerson Brook	2012	Periphyton Density, Film	None	5	5
W2284	Emerson Brook	2012	Scum	No	3	5
W2284	Emerson Brook	2012	Scum	NR	1	5
W2284	Emerson Brook	2012	Scum	Yes	1	5
W2284	Emerson Brook	2012	Turbidity	None	5	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2284	Emerson Brook	2013	Aesthetics Impaired?	No	5	5
W2284	Emerson Brook	2013	Aquatic Plant Density, Overall	None	5	5
W2284	Emerson Brook	2013	Color	Light Yellow/Tan	4	5
W2284	Emerson Brook	2013	Color	Reddish	1	5
W2284	Emerson Brook	2013	Objectionable Deposits	No	1	5
W2284	Emerson Brook	2013	Objectionable Deposits	Yes	4	5
W2284	Emerson Brook	2013	Odor	None	5	5
W2284	Emerson Brook	2013	Periphyton Density, Filamentous	None	4	5
W2284	Emerson Brook	2013	Periphyton Density, Filamentous	NR	1	5
W2284	Emerson Brook	2013	Periphyton Density, Film	None	1	5
W2284	Emerson Brook	2013	Periphyton Density, Film	Sparse	4	5
W2284	Emerson Brook	2013	Scum	No	3	5
W2284	Emerson Brook	2013	Scum	Yes	2	5
W2284	Emerson Brook	2013	Turbidity	None	5	5
W2284	Emerson Brook	2014	Aesthetics Impaired?	No	4	4
W2284	Emerson Brook	2014	Aquatic Plant Density, Overall	None	3	4
W2284	Emerson Brook	2014	Aquatic Plant Density, Overall	NR	1	4
W2284	Emerson Brook	2014	Color	Light Yellow/Tan	1	4
W2284	Emerson Brook	2014	Color	None	3	4
W2284	Emerson Brook	2014	Objectionable Deposits	No	1	4
W2284	Emerson Brook	2014	Objectionable Deposits	Yes	3	4
W2284	Emerson Brook	2014	Odor	None	4	4
W2284	Emerson Brook	2014	Periphyton Density, Filamentous	None	4	4
W2284	Emerson Brook	2014	Periphyton Density, Film	None	3	4
W2284	Emerson Brook	2014	Periphyton Density, Film	Sparse	1	4
W2284	Emerson Brook	2014	Scum	No	3	4
W2284	Emerson Brook	2014	Scum	Yes	1	4
W2284	Emerson Brook	2014	Turbidity	None	4	4
W2284	Emerson Brook	2015	Aesthetics Impaired?	No	3	4
W2284	Emerson Brook	2015	Aesthetics Impaired?	NR	1	4
W2284	Emerson Brook	2015	Aquatic Plant Density, Overall	None	3	4
W2284	Emerson Brook	2015	Aquatic Plant Density, Overall	Sparse	1	4
W2284	Emerson Brook	2015	Color	Light Yellow/Tan	3	4
W2284	Emerson Brook	2015	Color	None	1	4
W2284	Emerson Brook	2015	Objectionable Deposits	No	3	4
W2284	Emerson Brook	2015	Objectionable Deposits	Yes	1	4
W2284	Emerson Brook	2015	Odor	None	4	4

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2284	Emerson Brook	2015	Periphyton Density, Filamentous	None	4	4
W2284	Emerson Brook	2015	Periphyton Density, Film	None	3	4
W2284	Emerson Brook	2015	Periphyton Density, Film	Sparse	1	4
W2284	Emerson Brook	2015	Scum	No	3	4
W2284	Emerson Brook	2015	Scum	NR	1	4
W2284	Emerson Brook	2015	Turbidity	None	3	4
W2284	Emerson Brook	2015	Turbidity	Slightly Turbid	1	4
W2284	Emerson Brook	2016	Aesthetics Impaired?	No	4	4
W2284	Emerson Brook	2016	Aquatic Plant Density, Overall	None	4	4
W2284	Emerson Brook	2016	Color	Light Yellow/Tan	4	4
W2284	Emerson Brook	2016	Objectionable Deposits	No	4	4
W2284	Emerson Brook	2016	Odor	None	4	4
W2284	Emerson Brook	2016	Periphyton Density, Filamentous	Moderate	1	4
W2284	Emerson Brook	2016	Periphyton Density, Filamentous	None	3	4
W2284	Emerson Brook	2016	Periphyton Density, Film	Moderate	1	4
W2284	Emerson Brook	2016	Periphyton Density, Film	None	2	4
W2284	Emerson Brook	2016	Periphyton Density, Film	Sparse	1	4
W2284	Emerson Brook	2016	Scum	No	4	4
W2284	Emerson Brook	2016	Turbidity	None	4	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Emerson Brook (MA51-29) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary

No bacteria data are available to assess the Secondary Contact Recreation Use for Emerson Brook (MA51-29) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down Emerson Brook at W1755 [Rt. 146A (Quaker Highway), Uxbridge] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1755 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 60 CFU/100ml. Historic *E. coli* data from W1755 meet 2024 CALM guidance, however since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1755	MassDEP	Water Quality	Emerson Brook	[Route 146A (Quaker Highway), Uxbridge]	42.044838	-71.621947

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

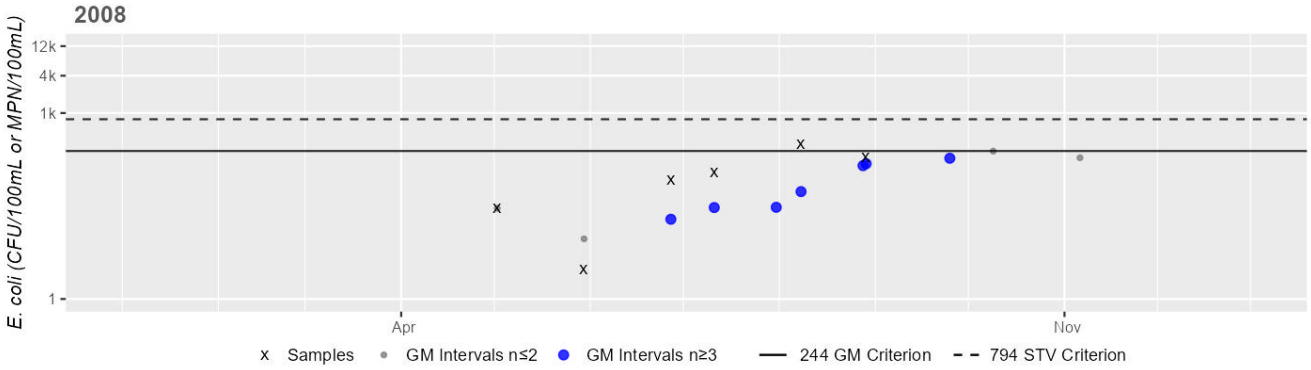
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1755	MassDEP	E. coli	05/01/08	08/28/08	6	3	310	60

Station MASSDEP_W1755 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	60
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Fish Pond (MA51047)

Location:	Northbridge.
AU Type:	FRESHWATER LAKE
AU Size:	8 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Fish Pond (MA51047) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with 75-100% of either floating, submerged, or emergent aquatic plants. Although many rooted species were identified, notes also indicated there was a scum of the non-rooted *Lemna*/*Wolffia spp*. "over parts of pond" (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and September 2019 show dense plant coverage over more than 25% of the pond (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of two non-rooted, floating, aquatic macrophyte species (*Lemna* and *Wolffia* spp.) in

2022 Removed Impairment	Removal Reason	Removal Comment
		the pond. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51047** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Fish Pond** TYPE: **Lake/Pond**
CODE: **51047** SIZE: **8.00**(acres) CLASS: **B**

LATITUDE: **42.12167**
LONGITUDE: **71.69028** (420718/714125)
Lake/Pond Name: Fish Pond(Prentice Pond), Northbridge
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				8.00		
ALUS			8.00			
FISH CONSUMPTION					8.00	
PRIMARY CONTACT				8.00		
SECONDARY CONTACT				8.00		
Aesthetics					8.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	8.00	M
2600- Exotic species	8.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	8.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category =>Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category => M E NA

Media/Pollutants Assessed (Toxics Monitoring =>N)
-

"New" Toxics Monitoring => YES or NO

Comments:
1996:
A 14 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% COVERAGE OF EITHER FLOATING, EMERGENT, OR SUBMERGENT PLANTS OVER THE ENTIRE POND. THE NON-NATIVE CABOMBA AND MYRIOPHYLLUM HETEROPHYLLUM WERE PRESENT. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

9/20/94

Entered 7/25/94

51047

Page 1 of 2

Lake/Pond Fish Pond **Date** 7/14/94

Town/City Northbridge **Observers** G. De Cesare
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Dirt vehicle path off No. Main St. directly across from St.

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Whitinsville Water

Posted signs (re aquatic plants, fish advisories, access, etc.):
No Trespassing Whitinsville Water

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Heavy Brown/Green turbidity - Scum of duckweed/meal over parts of pond, highly productive.

Page 2 of 2

Record of aquatic plant "species" observed (see note below):
Nymphaea, Pontederia, Nuphar, sparganium, Iris., Peltandra
Potamogeton sp. (floating leaf), Cabomba, Myriophyllum
heterophyllum (thick stems),

Observed aquatic plant density (at observation site and across lake or pond, if practicable):
75-100% either floating, emergent or submergent over entire pond.

Other notes (e.g., overt pollution, construction, and water uses:
305b – Eutrophic
1° Contact } 100% Non-support
2° Contact }
Aq. Life – 100% Partial Support [50% acreage]
Cause – Exotic plants-M; Noxious plants-M [50% acreage]

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Fish Pond, 12/31/2000 (Google Earth Pro Undated):



Google Earth image of Fish Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Fish Pond, 9/20/2019 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Fish Pond (MA51047) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Fish Pond (MA51047) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators impairment is being added. As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Fish Pond (MA51047) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with 75-100% of either floating, submerged, or emergent aquatic plants. Although many rooted species were identified, notes also indicated there was a scum of the non-rooted *Lemna/Wolffia spp*. "over parts of pond" (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and September 2019 show dense plant coverage over more than 25% of the pond (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of two non-rooted, floating, aquatic macrophyte species *(Lemna* and *Wolffia spp*.) in the pond. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for this Fish Pond AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Fish Pond (MA51047) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Fish Pond (MA51047) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Flint Pond (MA51050)

Location:	[North Basin] Shrewsbury.
AU Type:	FRESHWATER LAKE
AU Size:	93 ACRES
Classification/Qualifier:	B

No usable data were available for Flint Pond (MA51050) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
4a	4a	(Fanwort*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	444	Unchanged
4a	4a	Turbidity	444	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X
Turbidity	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Turbidity	Rural (Residential Areas) (Y)	--	--	X	X	X

Flint Pond (MA51188)

Location:	[South Basin] Shrewsbury/Grafton/Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	173 ACRES
Classification/Qualifier:	B

No usable data were available for Flint Pond (MA51188) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
4a	4a	(Fanwort*)	--	Unchanged
4a	4a	(Non-Native Aquatic Plants*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	444	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (N)	--	--	X	X	X
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (N)	--	--	X	X	X

Fox Brook (MA51-39)

Location:	Headwaters, perennial portion, northeast of Thayer Street, Millville to mouth at confluence with the Blackstone River, Blackstone (excluding approximately 0.1 mile through existing segment: Crane Pond MA51030).
AU Type:	RIVER
AU Size:	3.4 MILES
Classification/Qualifier:	B

Fox Brook (MA51-39)

Watershed Area: 4.44 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	4.44	3.68	1.38	1.16
Agriculture	2.3%	2.7%	3.9%	4.7%
Developed	16.1%	17.2%	11.7%	11.8%
Natural	72.6%	71.8%	65.8%	64.7%
Wetland	9.1%	8.3%	18.5%	18.8%
Impervious	5.8%	6.3%	4.2%	4.1%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Fox Brook (MA51-39) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Fox Brook (MA51-39), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Fox Brook (MA51-39) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Fox Brook (MA51-39) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2008. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Fox Brook at W1762 [Rt. 122 (Main St), Blackstone] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1762 indicated 100% of intervals had GMs >244 CFU/100ml, 3 samples exceeded the 794 CFU/100ml STV, and the overall GM was 1029 CFU/100ml. Historic data from W1762 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1762	MassDEP	Water Quality	Fox Brook	[Route 122 (Main Street), Blackstone]	42.019398	-71.534405

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

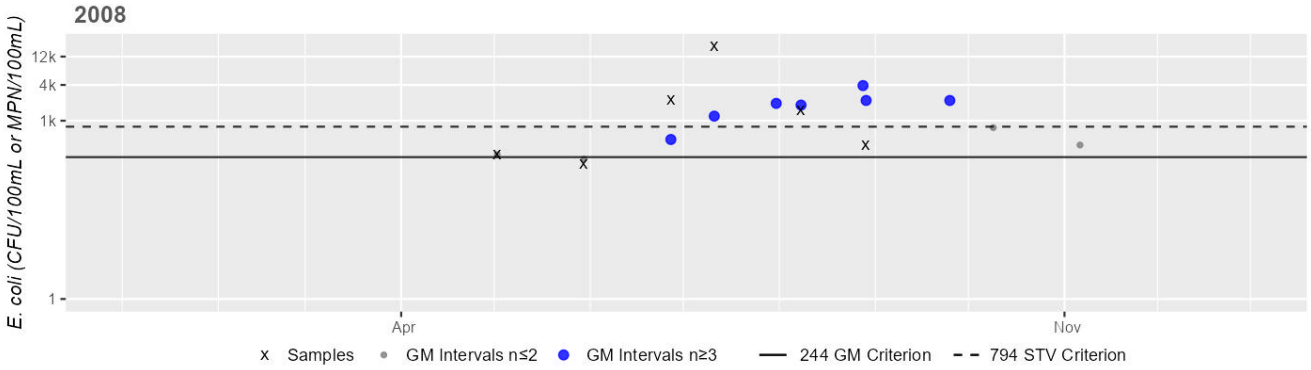
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1762	MassDEP	E. coli	05/01/08	08/28/08	6	190	18000	1029

Station MASSDEP_W1762 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	1029
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Girard Pond (MA51053)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

No usable data were available for Girard Pond (MA51053) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Green Hill Pond (MA51056)

Location:	Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	29 ACRES
Classification/Qualifier:	B

No usable data were available for Green Hill Pond (MA51056) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Turbidity	498	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Turbidity	Golf Courses (Y)	--	--	X	X	X

Greene Brook (MA51-30)

Location:	Headwaters, perennial portion, north of Linden Street, Douglas to mouth at confluence with Chockalog River, Douglas.
AU Type:	RIVER
AU Size:	1.6 MILES
Classification/Qualifier:	B

No usable data were available for Greene Brook (MA51-30) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Hales Pond (MA51057)

Location:	Wrentham.
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Hales Pond (MA51057) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Hathaway Pond (MA51059)

Location:	Millbury/Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	8 ACRES
Classification/Qualifier:	B

No usable data were available for Hathaway Pond (MA51059) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Hayes Pond (MA51060)

Location:	Grafton.
AU Type:	FRESHWATER LAKE
AU Size:	5 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Fanwort*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Hayes Pond (MA51060) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that floating leaf plants were at 75-100% density in patches over roughly half of the pond and that submerged plants were very dense over most of the pond. Additionally, the non-rooted, floating species, *Ceratophyllum* sp., was dominant among the submerged plants (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show dense plant coverage in more than 25% of the pond (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Ceratophyllum* sp.). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51060** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Hayes Pond** TYPE: **Lake/Pond**
CODE: **51060** SIZE: **6.00**(acres) CLASS: **B**

LATITUDE: **42.23333**
LONGITUDE: **71.70417** (421400/714215)
Lake/Pond Name: Hayes Pond, Grafton
Ecoregion Name: 0
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Hypereutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			3.00	3.00		
ALUS		6.00				
FISH CONSUMPTION			~~6.00~~		6.00	
PRIMARY CONTACT			3.00	3.00		
SECONDARY CONTACT			3.00	3.00		
Aesthetics					6.00	

Nonattainment Causes

Code	Size	Magnitude
2200 - Noxious aquatic plants	6.00	M
2600 - Exotic species	6.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000 - SOURCE UNKNOWN	6.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25 - Ecological/habitat surveys (Qualitative/Quantitative)
R35 - Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 28 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WERE FLOATING LEAF PLANTS WITH 75% TO 100% DENSITY IN PATCHES OVER ABOUT HALF OF THE POND. SUBMERGED WERE VERY DENSE OVER MOST OF THE POND. THE NON-NATIVE CABOMBA THREATENS THE AQUATIC LIFE OVER THE FULL ACREAGE OF THE POND. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 7/25/94

9/13/94

Page 1 of 2

S1060

Lake/Pond Hayes Pond **Date** 7/28/94

Town/City Grafton (Blackstone River) **Observers** R. Haynes, R. McVoy

Location/type of access (be specific, e.g., public boat ramp at ~~East St. at footbr~~ West cove area off Simpson Street):
From Cemetery Property; foot path access (Pine Grove)

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Cemetery; Private(?)

Posted signs (re aquatic plants, fish advisories, access, etc.):
N

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
- Scum on surface; sl. tea stain; sl. turbidity,
- undecomposed leaf ~~lit~~ litter on bottom
very productive!

Record of aquatic plant "species" observed (see note below):

Nuphar, Ceratophyllum demersum, Potamogeton Robbinsii Cabomba, Peltandra, Typha latifolia, Pontederia, Lythrum Salicaria, Filamentous green algae mats

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

Floating leaf plants + algae mats 75-100% in patches over ~ 1/2 of pond - submerged (particularly ceratophyllum + algae) very dense over most of pond.

Other notes (e.g., overt pollution, construction, and water uses:

305b - Hypereutrophic

1° Contact - 50% Non-support; 50% Partial

2° Contact - 50% Non-support; 50% Partial

Aquatic Life - 100% Partial Support (full average)

Causes - Noxious Plants - M (full average), Exotic Species - M (full average)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Hayes Pond, 12/31/2000 (Google Earth Pro Undated):



Google Earth image of Hayes Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Hayes Pond, 9/12/2017 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Hayes Pond (MA51060) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Hayes Pond (MA51060) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators impairment is being added. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Hayes Pond (MA51060) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that floating leaf plants were at 75-100% density in patches over roughly half of the pond and that submerged plants were very dense over most of the pond. Additionally, the non-rooted, floating species, *Ceratophyllum sp.,* was dominant among the submerged plants (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show dense plant coverage in more than 25% of the pond (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Ceratophyllum sp*.). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for Hayes Pond.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Hayes Pond (MA51060) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Hayes Pond (MA51060) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is also being added (from the Aesthetics Use).

Holden Reservoir 1 (MA51063)

Location:	Holden.
AU Type:	FRESHWATER LAKE
AU Size:	129 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Holden Reservoir 1 (MA51063) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Holden Reservoir 2 (MA51064)

Location:	Holden.
AU Type:	FRESHWATER LAKE
AU Size:	51 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Holden Reservoir 2 (MA51064) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Houghton Pond (MA51067)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

No usable data were available for Houghton Pond (MA51067) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Howe Pond (MA51069)

Location:	Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Howe Pond (MA51069) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Howe Reservoirs (MA51070)

Location:	[East Basin] Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Dewatering*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Source Unknown (N)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Howe Reservoirs (MA51070) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to evaluate the Aesthetics Use of Howe Reservoirs (MA51070), so it is assessed as having Insufficient Information. Since the Dewatering impairment was redundantly duplicated across multiple uses for this waterbody, the Dewatering impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Howe Reservoirs (MA51070), so it is assessed as having Insufficient Information. Since the Dewatering impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Howe Reservoirs (MA51070), so it is assessed as having Insufficient Information. Since the Dewatering impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Howe Reservoirs (MA51071)

Location:	[West Basin] Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	7 ACRES
Classification/Qualifier:	B

No usable data were available for Howe Reservoirs (MA51071) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	550	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Golf Courses (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Golf Courses (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X

Hunt Pond (MA51072)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

No usable data were available for Hunt Pond (MA51072) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Indian Lake (MA51073)

Location:	Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	187 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
4a	4a	Dissolved Oxygen	2323	Unchanged
4a	4a	Harmful Algal Blooms	2323	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	2323	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Dissolved Oxygen	Internal Nutrient Recycling (Y)	X	--	--	--	--
Dissolved Oxygen	Rural (Residential Areas) (Y)	X	--	--	--	--
Harmful Algal Blooms	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Harmful Algal Blooms	Internal Nutrient Recycling (Y)	X	--	X	X	X
Harmful Algal Blooms	Rural (Residential Areas) (Y)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Insufficient Information	No

2024/26 Use Attainment Summary
There is Insufficient Information to assess the Fish Consumption Use for Indian Lake (MA51073). Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Indian Lake (MA51073) at station F0340 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. However, no site-specific fish consumption advisory was issued by MDPH.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MassDEP Undated 6)

Summary Statement
Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Indian Lake (MA51073) at station F0340 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. No site-specific fish consumption advisory was issued by MDPH.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Indian Lake (MA51073) continues to be assessed as Not Supporting with the Harmful Algal Blooms impairment being carried forward, since extended C-HAB postings were reported to MDPH in 2018. The prior Nutrient/Eutrophication Biological Indicators impairment is also being carried forward. MassDEP staff recorded aesthetics observations at one station for this Indian Lake AU at the northern edge of the lake at Shore Park beach, Worcester (W2933) during 1 site visit on Jul 13, 2018. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During the period 2015 through 2022, C-HAB postings for Indian Lake were reported to MDPH based on cell count data, for 21 days in 2018 and no blooms were reported in other years. Since an extended bloom (>20 days in duration) based on cell count data was reported in a recent year this is reflective of the existing Harmful Algal Blooms impairment for Indian Lake.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2933	MassDEP	Water Quality	Indian Lake	[northern edge of pond at Shore Park beach, Worcester]	42.302605	-71.812759

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2933	2018	1	Aesthetic observations were made by MassDEP field sampling crews at Station W2933 on Indian Lake (MA51073) during 1 site visit on Jul 13, 2018. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2933	Indian Lake	2018	Aesthetics Impaired?	No	1	1
W2933	Indian Lake	2018	Color	Light Yellow/Tan	1	1

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2933	Indian Lake	2018	Objectionable Deposits	Yes	1	1
W2933	Indian Lake	2018	Odor	None	1	1
W2933	Indian Lake	2018	Scum	No	1	1
W2933	Indian Lake	2018	Turbidity	Moderately Turbid	1	1

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Indian Lake (MA51073) were reported to MDPH based on cell count data for 21 days in 2018. No blooms were reported in other years. Since extended blooms (>20 days in duration) based on cell count data were reported in a recent year, the Aesthetics Use and Primary/Secondary Contact Recreational Uses continue to be assessed as Not Supporting.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Indian Lake	Worcester				21				

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Indian Lake (MA51073) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms impairment is being carried forward based on the occurrence of C-HAB postings extending >20 days in a yr. The prior Nutrient/Eutrophication Biological Indicators impairment (from the Aesthetics Use) is also being carried forward. During the period 2015 through 2022, C-HAB postings for Indian Lake were reported to MDPH based on cell count data for 21 days in 2018. No blooms were reported in other years. Since extended blooms (>20 days in duration) based on cell count data were reported in a recent year, the C-HAB data continues to be indicative of a Harmful Algal Bloom impairment. In Indian Lake the City of Worcester Lakes and Ponds Program (CWLPP) collected Secchi depth data at CWLPP_IL2 (2021-2022). Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at CWLPP_IL2 in 2021 (n=12, 1.22-2.59m) and 2022 (n=12, 1.3-2.44m). CWLPP staff/volunteers also collected *E. coli* bacteria samples in Indian Lake at CWLPP_IL2 [North Hole] from May-Oct 2021 (n=6). Analysis of the single year limited frequency *E. coli* dataset from CWLPP_IL2 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 10 CFU/100ml. *E. coli* data from CWLPP_IL2 meet 2024 CALM guidance.

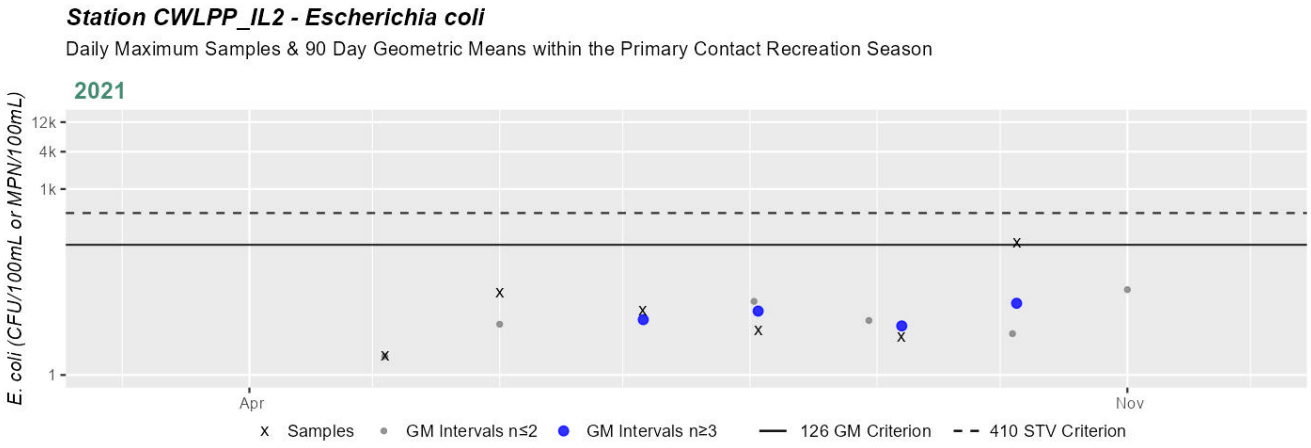
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_IL2	City of Worcester Lakes and Ponds Program	Water Quality	Indian Lake	North Hole	42.299856	-71.810228

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(Worcester Lakes and Ponds 2023) (MassDEP Undated 3)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_IL2	City of Worcester Lakes and Ponds Program	E. coli	05/04/21	10/05/21	6	2	137	10



Variable*	Result
Samples	6
SeasGM	10
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 3)

Data Year(s)	Summary
2021-2022	In Indian Lake (MA51073), CWLPP collected Secchi data at CWLPP_IL2 (2021-2022). In 2021 at station CWLPP_IL2 (station depth=5.49 m) the Secchi depth measurements ranged from 1.22-2.59 m (n=12) indicating water clarity meeting the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_IL2 (station depth=5.49 m) the Secchi depth measurements ranged from 1.3-2.44 m (n=12) indicating water clarity meeting the 1.2 m (4 ft) threshold.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Indian Lake (MA51073) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms impairment is being carried forward based on the occurrence of C-HAB postings extending >20 days in a yr. The prior Nutrient/Eutrophication Biological Indicators impairment (from the Aesthetics Use) is being carried forward. During the period 2015 through 2022, C-HAB postings for Indian Lake were reported to MDPH based on cell count data for 21 days in 2018. No blooms were reported in other years. Since extended blooms (>20 days in duration) based on cell count data were reported in a recent year, the C-HAB data continues to be indicative of a Harmful Algal Bloom impairment. City of Worcester Lakes and Ponds Program (CWLPP) staff/volunteers collected *E. coli* bacteria samples in Indian Lake at CWLPP_IL2 [North Hole] from May-Nov 2021 (n=7). Analysis of the single year moderate frequency *E. coli* dataset from CWLPP_IL2 indicated 0% of intervals had GMs >244 CFU/100ml and no samples exceeded the 794 CFU/100ml STV. *E. coli* data from CWLPP_IL2 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_IL2	City of Worcester Lakes and Ponds Program	Water Quality	Indian Lake	North Hole	42.299856	-71.810228

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

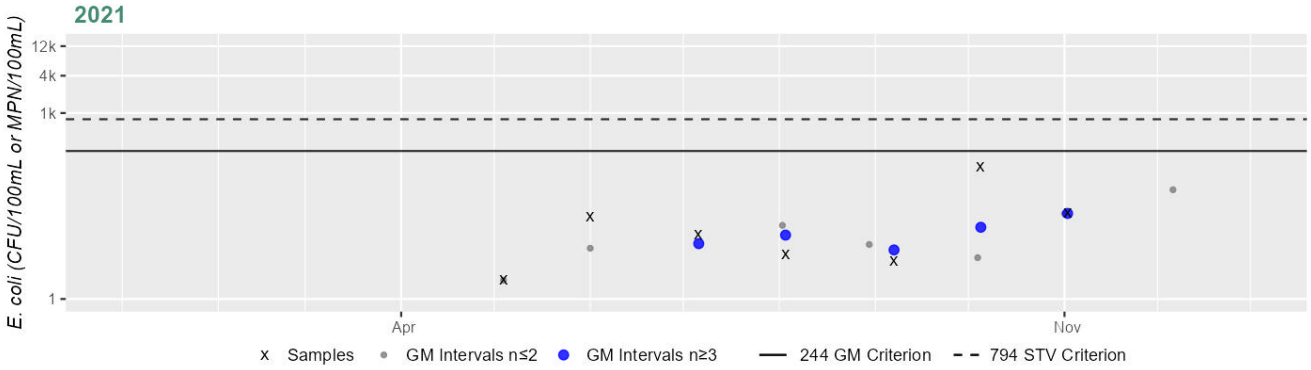
(Worcester Lakes and Ponds 2023) (MassDEP Undated 2)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_IL2	City of Worcester Lakes and Ponds Program	E. coli	05/04/21	11/02/21	7	2	137	11

Station CWLPP_IL2 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	11
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Ironstone Reservoir (MA51074)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	28 ACRES
Classification/Qualifier:	B

No usable data were available for Ironstone Reservoir (MA51074) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Jenks Reservoir (MA51075)

Location:	Bellingham.
AU Type:	FRESHWATER LAKE
AU Size:	26 ACRES
Classification/Qualifier:	B

No usable data were available for Jenks Reservoir (MA51075) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Joels Pond (MA51076)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	B

No usable data were available for Joels Pond (MA51076) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Joes Rock Pond (MA51077)

Location:	Wrentham.
AU Type:	FRESHWATER LAKE
AU Size:	12 ACRES
Classification/Qualifier:	B

No usable data were available for Joes Rock Pond (MA51077) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Jordan Pond (MA51078)

Location:	Shrewsbury.
AU Type:	FRESHWATER LAKE
AU Size:	18 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Harmful Algal Blooms	2385	Unchanged
4a	4a	Turbidity	2385	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Harmful Algal Blooms	Commercial Districts (Shopping/Office Complexes) (Y)	--	--	X	X	X
Harmful Algal Blooms	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Harmful Algal Blooms	Rural (Residential Areas) (Y)	--	--	X	X	X
Turbidity	Commercial Districts (Shopping/Office Complexes) (Y)	--	--	X	X	X
Turbidity	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Turbidity	Rural (Residential Areas) (Y)	--	--	X	X	X

Recommendations

2024/26 Recommendations
2024 IR [CYANOBACTERIA CELL COUNT, MEDIUM] Follow-up monitoring should be conducted in Jordan Pond (MA51078) to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH. This is of medium priority;

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Jordan Pond (MA51078) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Jordan Pond (MA51078) continues to be assessed as Not Supporting with the Turbidity impairment (originating from the 1996 303d list) and the Harmful Algal Blooms impairment both being carried forward. Since the existing Harmful Algal Blooms impairment for Jordan Pond was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data. No new data are available to evaluate the Aesthetics Use for this Jordan Pond AU.

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
Since the existing Harmful Algal Blooms impairment for Jordan Pond (MA51078) was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Jordan Pond (MA51078) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the existing Harmful Algal Blooms impairment for Jordan Pond was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

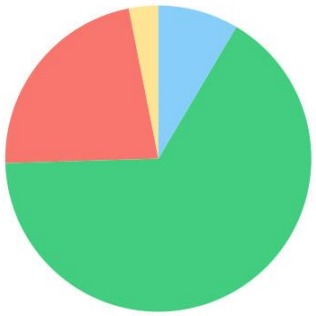
2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Jordan Pond (MA51078) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the existing Harmful Algal Blooms impairment for Jordan Pond was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Kettle Brook (MA51-01)

Location:	Outlet Kettle Brook Reservoir #1, Leicester to inlet Leesville Pond, Auburn (as of 2010 excluding the approximately 0.4 miles through segment; Waite Pond MA51170) (through former 2008 segments: City Pond MA51021, Smiths Pond MA51156, and Stoneville Pond MA51160).
AU Type:	RIVER
AU Size:	7 MILES
Classification/Qualifier:	B: WWF

Kettle Brook (MA51-01)

Watershed Area: 30.34 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	30.32	11.85	14.38	5.16
Agriculture	3.1%	0.4%	2.1%	0.2%
Developed	22.4%	32.7%	16.7%	26.3%
Natural	66%	60.4%	67.5%	61.5%
Wetland	8.5%	6.5%	13.8%	12.1%
Impervious	9.6%	15.8%	7.5%	13.1%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Dewatering*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Fecal Coliform	R1_MA_2024_04	Changed
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Dam or Impoundment (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Dam or Impoundment (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Source Unknown (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	--
Fecal Coliform	Source Unknown (N)	--	--	--	X	--
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Unspecified Urban Stormwater (Y)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

2022 Removed Impairment	Removal Reason	Removal Comment
Fecal Coliform	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Kettle Brook (MA51-01) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Kettle Brook (MA51-01) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at three stations throughout this Kettle Brook AU during summer 2011, from up to downstream as follows; in the upstream half of the AU at Auburn St, Leicester (W0511, n=8), in the middle of the AU ~425 feet upstream of Stafford St, Worcester (W2208, n=6) and in the lower half of the AU at Rockland Road, Auburn (W2236, n=8). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP field sampling crews during the surveys.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0511	MassDEP	Water Quality	Kettle Brook	[Auburn Street, Leicester]	42.239825	-71.879764
W2208	MassDEP	Water Quality	Kettle Brook	[approximately 425 feet upstream of Stafford Street, Worcester]	42.233594	-71.855751
W2236	MassDEP	Water Quality	Kettle Brook	[Rockland Road, Auburn]	42.215553	-71.838612

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0511	2011	8	Aesthetic observations were made by MassDEP field sampling crews at Station W0511 on Kettle Brook (MA51-01) during 8 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2208	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2208 on Kettle Brook (MA51-01) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2236	2011	8	Aesthetic observations were made by MassDEP field sampling crews at Station W2236 on Kettle Brook (MA51-01) during 8 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0511	2011	8	7	0
W2208	2011	6	6	0
W2236	2011	8	7	1

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0511	Kettle Brook	2011	Aquatic Plant Density, Overall	None	7	8
W0511	Kettle Brook	2011	Aquatic Plant Density, Overall	Unobservable	1	8
W0511	Kettle Brook	2011	Color	Light Yellow/Tan	4	8
W0511	Kettle Brook	2011	Color	None	4	8
W0511	Kettle Brook	2011	Objectionable Deposits	No	7	8
W0511	Kettle Brook	2011	Objectionable Deposits	Unobservable	1	8
W0511	Kettle Brook	2011	Odor	None	8	8

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0511	Kettle Brook	2011	Periphyton Density, Filamentous	Moderate	1	8
W0511	Kettle Brook	2011	Periphyton Density, Filamentous	None	5	8
W0511	Kettle Brook	2011	Periphyton Density, Filamentous	Sparse	1	8
W0511	Kettle Brook	2011	Periphyton Density, Filamentous	Unobservable	1	8
W0511	Kettle Brook	2011	Periphyton Density, Film	Moderate	1	8
W0511	Kettle Brook	2011	Periphyton Density, Film	None	4	8
W0511	Kettle Brook	2011	Periphyton Density, Film	NR	1	8
W0511	Kettle Brook	2011	Periphyton Density, Film	Sparse	1	8
W0511	Kettle Brook	2011	Periphyton Density, Film	Unobservable	1	8
W0511	Kettle Brook	2011	Scum	No	5	8
W0511	Kettle Brook	2011	Scum	Yes	3	8
W0511	Kettle Brook	2011	Turbidity	None	7	8
W0511	Kettle Brook	2011	Turbidity	Slightly Turbid	1	8
W2208	Kettle Brook	2011	Aquatic Plant Density, Overall	None	6	6
W2208	Kettle Brook	2011	Color	Light Yellow/Tan	2	6
W2208	Kettle Brook	2011	Color	None	4	6
W2208	Kettle Brook	2011	Objectionable Deposits	No	6	6
W2208	Kettle Brook	2011	Odor	None	6	6
W2208	Kettle Brook	2011	Periphyton Density, Filamentous	None	6	6
W2208	Kettle Brook	2011	Periphyton Density, Film	None	3	6
W2208	Kettle Brook	2011	Periphyton Density, Film	Sparse	3	6
W2208	Kettle Brook	2011	Scum	No	6	6
W2208	Kettle Brook	2011	Turbidity	None	4	6
W2208	Kettle Brook	2011	Turbidity	Slightly Turbid	2	6
W2236	Kettle Brook	2011	Aquatic Plant Density, Overall	None	6	8
W2236	Kettle Brook	2011	Aquatic Plant Density, Overall	Sparse	1	8
W2236	Kettle Brook	2011	Aquatic Plant Density, Overall	Unobservable	1	8
W2236	Kettle Brook	2011	Color	Light Yellow/Tan	3	8
W2236	Kettle Brook	2011	Color	None	5	8
W2236	Kettle Brook	2011	Objectionable Deposits	No	4	8
W2236	Kettle Brook	2011	Objectionable Deposits	NR	1	8
W2236	Kettle Brook	2011	Objectionable Deposits	Unobservable	1	8

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2236	Kettle Brook	2011	Objectionable Deposits	Yes	2	8
W2236	Kettle Brook	2011	Odor	Musty (Basement)	2	8
W2236	Kettle Brook	2011	Odor	None	6	8
W2236	Kettle Brook	2011	Periphyton Density, Filamentous	Moderate	1	8
W2236	Kettle Brook	2011	Periphyton Density, Filamentous	None	6	8
W2236	Kettle Brook	2011	Periphyton Density, Filamentous	Unobservable	1	8
W2236	Kettle Brook	2011	Periphyton Density, Film	Dense	1	8
W2236	Kettle Brook	2011	Periphyton Density, Film	None	5	8
W2236	Kettle Brook	2011	Periphyton Density, Film	Sparse	1	8
W2236	Kettle Brook	2011	Periphyton Density, Film	Unobservable	1	8
W2236	Kettle Brook	2011	Scum	No	3	8
W2236	Kettle Brook	2011	Scum	Yes	5	8
W2236	Kettle Brook	2011	Turbidity	Moderately Turbid	1	8
W2236	Kettle Brook	2011	Turbidity	None	5	8
W2236	Kettle Brook	2011	Turbidity	Slightly Turbid	2	8

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Kettle Brook (MA51-01) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2011. The prior Fecal Coliform impairment is also being carried forward. MassDEP staff collected *E. coli* bacteria samples in Kettle Brook in 2011 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: a quarter of the way down at W0511 [Auburn St, Leicester] from May-Oct 2011 (n=7), halfway down at W2208 [~425 ft upstream of Stafford St, Worcester] from May-Sep 2011 (n=6), and three-quarters of the way down at W2236 [Rockland Rd, Auburn] from May-Oct 2011 (n=7). Analysis of the single year moderate frequency *E. coli* dataset from W0511 indicated 44% of intervals had GMs >126 CFU/100ml and 1 sample exceeded the 410 CFU/100ml STV. Analysis of the single year limited frequency *E. coli* dataset from W2208 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 60 CFU/100ml. Analysis of the single year moderate frequency *E. coli* dataset from W2236 indicated 100% of intervals had GMs >126 CFU/100ml and 1 sample exceeded the 410 CFU/100ml STV. While *E. coli* data from W0511 and W2208 meet 2024 CALM guidance, *E. coli* data from W2236 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0511	MassDEP	Water Quality	Kettle Brook	[Auburn Street, Leicester]	42.239825	-71.879764
W2208	MassDEP	Water Quality	Kettle Brook	[approximately 425 feet upstream of Stafford Street, Worcester]	42.233594	-71.855751
W2236	MassDEP	Water Quality	Kettle Brook	[Rockland Road, Auburn]	42.215553	-71.838612

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

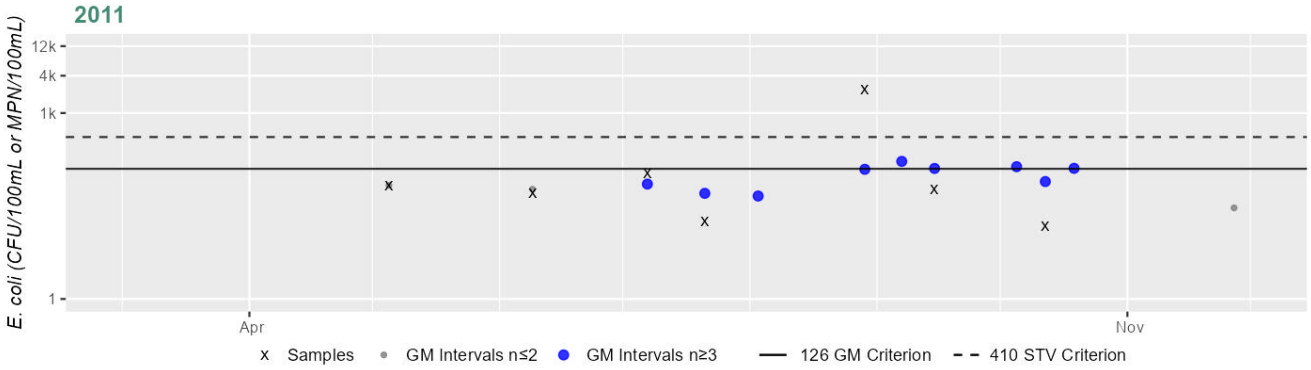
(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0511	MassDEP	E. coli	05/05/11	10/12/11	7	15	2419	75
W2208	MassDEP	E. coli	05/17/11	09/26/11	6	6	261	60
W2236	MassDEP	E. coli	05/05/11	10/12/11	7	114	2419	238

Station MASSDEP_W0511 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



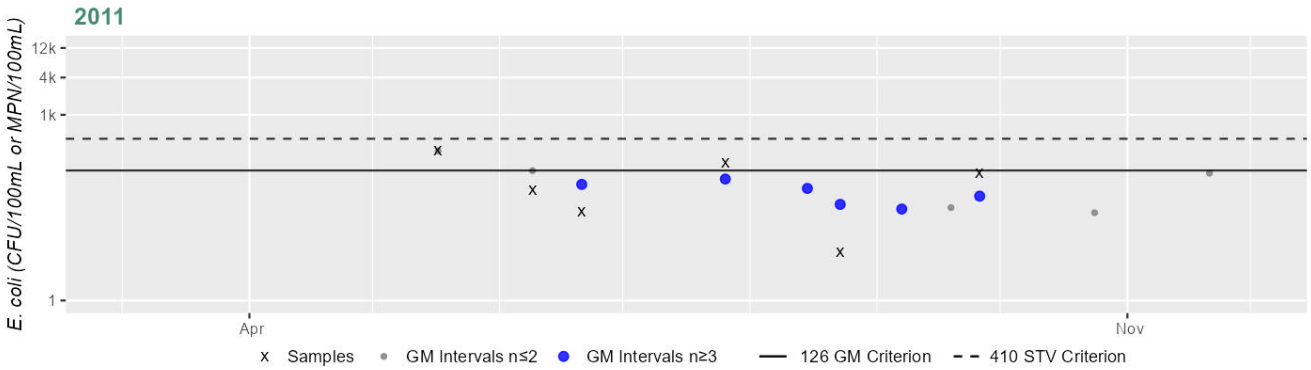
Variable*	Result
Samples	7
SeasGM	75
#GMI	9
#GMI Ex	4
%GMI Ex	44%
n>STV	1
%n>STV	14%

Cumulative %GMI Exceedance
Current (2011-2022)
44%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2208 - Escherichia coli

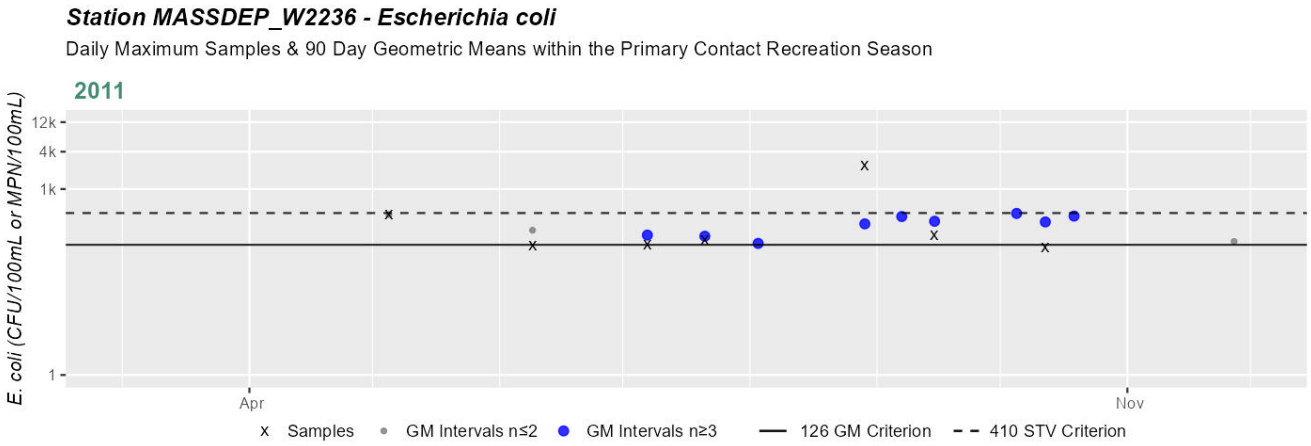
Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	60
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*



Variable*	Result
Samples	7
SeasGM	238
#GMI	9
#GMI Ex	9
%GMI Ex	100%
n>STV	1
%n>STV	14%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Kettle Brook (MA51-01) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added based on a re-evaluation of bacteria data not meeting the threshold at 1 station in 2011. MassDEP staff collected *E. coli* bacteria samples in Kettle Brook in 2011 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: a quarter of the way down at W0511 [Auburn St, Leicester] from May-Oct 2011 (n=7), halfway down at W2208 [~425 ft upstream of Stafford St, Worcester] from May-Sep 2011 (n=6), and three-quarters of the way down at W2236 [Rockland Rd, Auburn] from May-Oct 2011 (n=7). Analysis of the single year moderate frequency *E. coli* dataset from W0511 indicated 0% of intervals had GMs >244 CFU/100ml and 1 sample exceeded the 794 CFU/100ml STV. Analysis of the single year limited frequency *E. coli* dataset from W2208 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 60 CFU/100ml. Analysis of the single year moderate frequency *E. coli* dataset from W2236 indicated 66% of intervals had GMs >244 CFU/100ml and 1 sample exceeded the 794 CFU/100ml STV. While *E. coli* data from W0511 and W2208 meet 2024 CALM guidance, *E. coli* data from W2236 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0511	MassDEP	Water Quality	Kettle Brook	[Auburn Street, Leicester]	42.239825	-71.879764
W2208	MassDEP	Water Quality	Kettle Brook	[approximately 425 feet upstream of Stafford Street, Worcester]	42.233594	-71.855751
W2236	MassDEP	Water Quality	Kettle Brook	[Rockland Road, Auburn]	42.215553	-71.838612

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

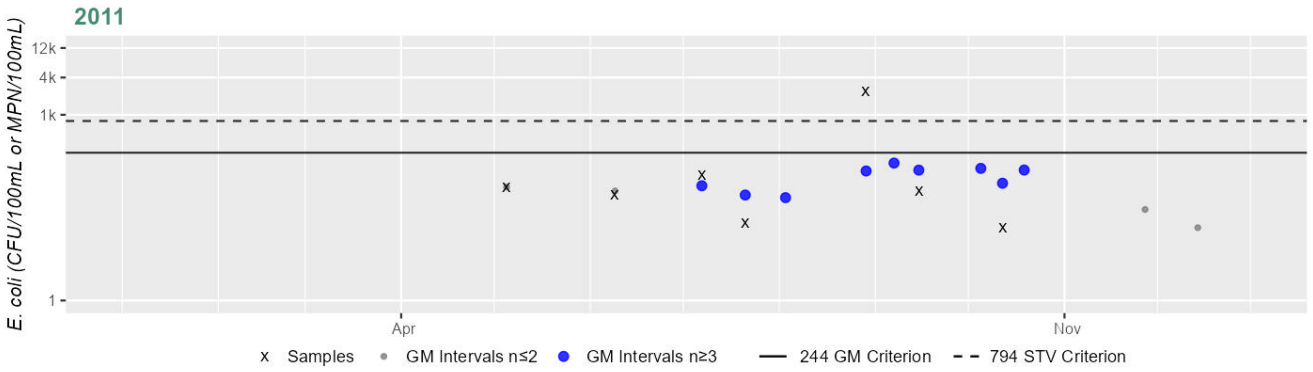
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0511	MassDEP	E. coli	05/05/11	10/12/11	7	15	2419	75
W2208	MassDEP	E. coli	05/17/11	09/26/11	6	6	261	60
W2236	MassDEP	E. coli	05/05/11	10/12/11	7	114	2419	238

Station MASSDEP_W0511 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	75
#GMI	9
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	14%

Cumulative %GMI Exceedance

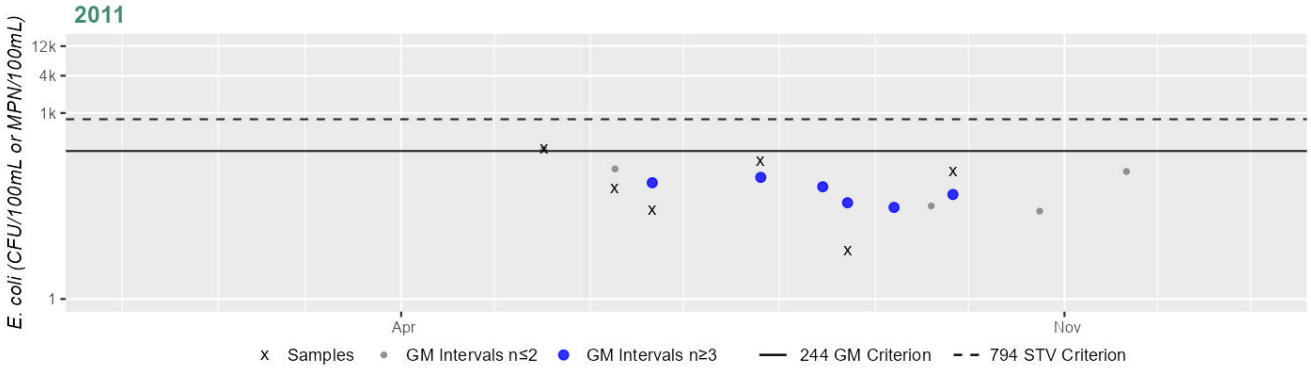
Current (2011-2022)

0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2208 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



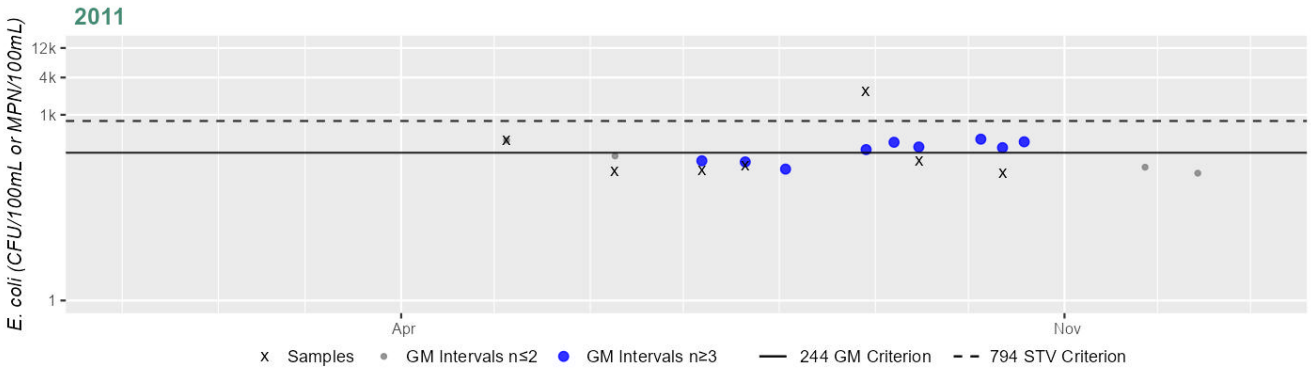
Variable*	Result
Samples	6
SeasGM	60
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2236 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	238
#GMI	9
#GMI Ex	6
%GMI Ex	66%
n>STV	1
%n>STV	14%

Cumulative %GMI Exceedance
Current (2011-2022)
66%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Kettle Brook (MA51-19)

Location:	Outlet Kettle Brook Reservoir #4, Paxton, to inlet Kettle Brook Reservoir #1, Leicester (as of 2010 excluding approximately 0.8 mile through segment Kettle Brook Reservoir #3 MA51081 and approximately 0.5 mile through segment Kettle Brook Reservoir #2 MA51080).
AU Type:	RIVER
AU Size:	1.9 MILES
Classification/Qualifier:	A: PWS, ORW

Kettle Brook (MA51-19)

Watershed Area: 3.89 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	3.89	3.00	2.60	2.00
Agriculture	4.4%	4.6%	4.2%	4.5%
Developed	9.7%	7.9%	7.8%	6.4%
Natural	76.6%	79.8%	75.6%	79.2%
Wetland	9.3%	7.7%	12.4%	9.9%
Impervious	3.8%	3.2%	3%	2.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Kettle Brook (MA51-19) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Kettle Brook (MA51-19) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Kettle Brook (MA51-19) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Kettle Brook (MA51-19) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples close to the downstream end of Kettle Brook at W0510 [Earle St (recreational access Rd E off Manville St), Leicester] from Apr-Oct 2003 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W0510 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 16 CFU/100ml. Historic *E. coli* data from W0510 meet 2024 CALM guidance, however since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0510	MassDEP	Water Quality	Kettle Brook	[Earle Street (recreational access road east off Manville Street), Leicester]	42.263739	-71.897552

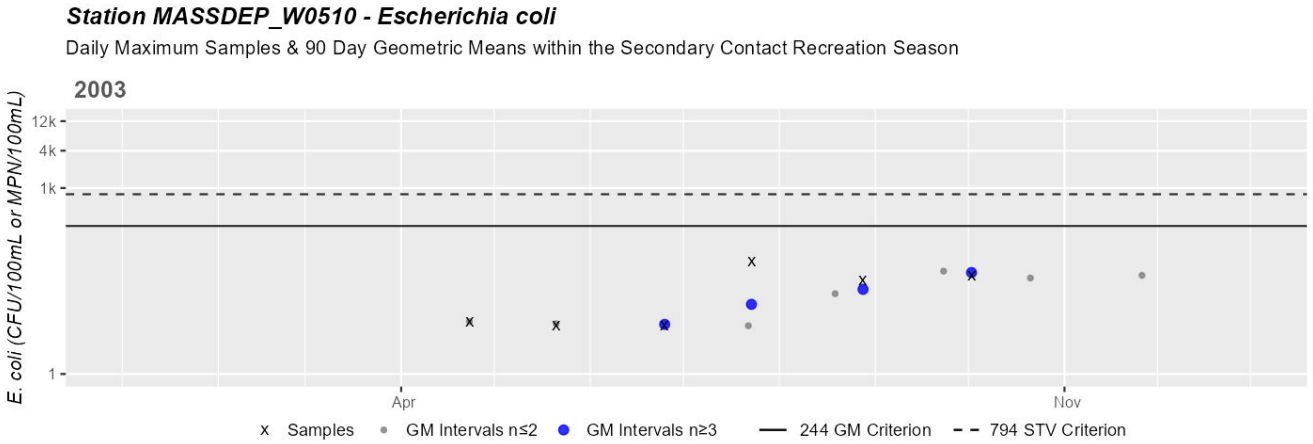
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0510	MassDEP	E. coli	04/23/03	10/02/03	6	6	65	16



Variable*	Result
Samples	6
SeasGM	16
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Kettle Brook Reservoir No. 1 (MA51079)

Location:	Leicester.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	A: PWS, ORW

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Kettle Brook Reservoir No. 1 (MA51079) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Kettle Brook Reservoir No. 1 (MA51079) is assessed as Fully Supporting. MassDEP staff recorded aesthetics observations as part of the MAP2 lake monitoring project, at two stations in Leicester during the summer of 2017, for this Kettle Brook Reservoir No. 1 AU, at the deep hole (W2666, MAP2L-126 n=3) and at the southeastern end of the reservoir, west of Mulberry Street (W2667, MAP2L-126S- n=5). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded at either site. During the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots. During the MAP2 macrophyte mapping survey (n=1) in Jul 2017 only 19.5% of the reservoir area that could be surveyed, but this had an aquatic macrophyte biovolume >50%. Field staff noted that the upper northern portion of the AU was not surveyed due to the shallow depths and mudflats (due to drawdown).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2666	MassDEP	Water Quality	Kettle Brook Reservoir No. 1	[index site, Leicester]	42.258551	-71.891664
W2667	MassDEP	Water Quality	Kettle Brook Reservoir No. 1	[southeastern end of lake west of Mulberry Street, Leicester]	42.257222	-71.890567

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2666	2017	3	Aesthetic observations were made by MassDEP field sampling crews at Station W2666 (MAP2L-126) on Kettle Brook Reservoir No. 1 (MA51079) during 3 site visits between Jun 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted green water color (n=1). During the MAP2 macrophyte mapping survey (n=1) in Jul 2017, greater than 25% (39%) of the waterbody was determined to have an aquatic macrophyte biovolume >50%. The observations from the MAP2 survey are indicative of an Aesthetics Use impairment.
W2667	2017	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2667 (MAP2L-126S) on Kettle Brook Reservoir No. 1 (MA51079) during 5 site visits between May 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots.

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2666	Kettle Brook Reservoir No. 1	2017	Aesthetics Impaired?	No	3	3
W2666	Kettle Brook Reservoir No. 1	2017	Aquatic Plant Density, Overall	None	1	3
W2666	Kettle Brook Reservoir No. 1	2017	Aquatic Plant Density, Overall	NR	1	3
W2666	Kettle Brook Reservoir No. 1	2017	Aquatic Plant Density, Overall	Unobservable	1	3
W2666	Kettle Brook Reservoir No. 1	2017	Aquatic Plant Density, Whole Lake	Unobservable	2	2
W2666	Kettle Brook Reservoir No. 1	2017	Color	Greenish	1	3
W2666	Kettle Brook Reservoir No. 1	2017	Color	Light Yellow/Tan	2	3
W2666	Kettle Brook Reservoir No. 1	2017	Duckweed Density, Whole Lake	None	1	2
W2666	Kettle Brook Reservoir No. 1	2017	Duckweed Density, Whole Lake	Unobservable	1	2
W2666	Kettle Brook Reservoir No. 1	2017	Objectionable Deposits	No	3	3
W2666	Kettle Brook Reservoir No. 1	2017	Odor	None	3	3
W2666	Kettle Brook Reservoir No. 1	2017	Scum	No	3	3
W2666	Kettle Brook Reservoir No. 1	2017	Turbidity	None	2	3
W2666	Kettle Brook Reservoir No. 1	2017	Turbidity	Slightly Turbid	1	3
W2667	Kettle Brook Reservoir No. 1	2017	Aesthetics Impaired?	No	5	5
W2667	Kettle Brook Reservoir No. 1	2017	Color	Light Yellow/Tan	1	5
W2667	Kettle Brook Reservoir No. 1	2017	Color	None	4	5
W2667	Kettle Brook Reservoir No. 1	2017	Objectionable Deposits	No	5	5
W2667	Kettle Brook Reservoir No. 1	2017	Odor	None	4	5
W2667	Kettle Brook Reservoir No. 1	2017	Odor	NR	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2667	Kettle Brook Reservoir No. 1	2017	Scum	No	5	5
W2667	Kettle Brook Reservoir No. 1	2017	Turbidity	None	4	5
W2667	Kettle Brook Reservoir No. 1	2017	Turbidity	Slightly Turbid	1	5

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Kettle Brook Reservoir No. 1 (MA51079) is assessed as Fully Supporting. In Kettle Brook Reservoir No. 1 (MA51079), MassDEP collected Secchi depth and cyanobacteria cell count data at W2666 [MAP2L-126, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2667 [MAP2L-126S, Shoreline] (2017). Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at W2666 in 2017 (n=3, 2.38-3.1m). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2667 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff also collected *E. coli* bacteria samples in Kettle Brook Reservoir No. 1 (MA51079) at W2667 [southeastern end of lake W of Mulberry St, Leicester] from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2667 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 13 CFU/100ml. *E. coli* data from W2667 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2666	MassDEP	Water Quality	Kettle Brook Reservoir No. 1	[index site, Leicester]	42.258551	-71.891664
W2667	MassDEP	Water Quality	Kettle Brook Reservoir No. 1	[southeastern end of lake west of Mulberry Street, Leicester]	42.257222	-71.890567

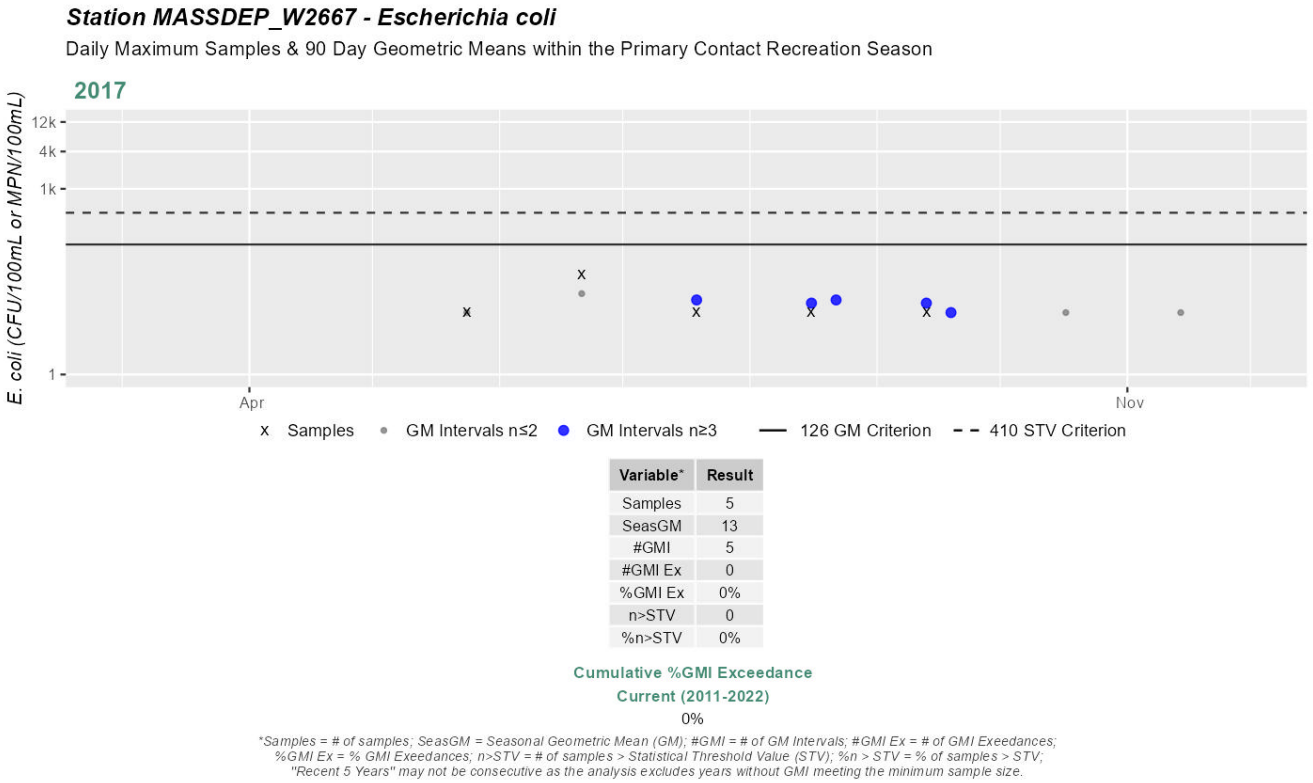
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2667	MassDEP	E. coli	05/24/17	09/13/17	5	10	41	13



Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data

(MassDEP Undated 8) (MassDEP Undated 5)

Data Year(s)	Summary
2017	In Kettle Brook Reservoir No. 1 (MA51079) in 2017, MassDEP collected Secchi and cyanobacteria cell count data at W2666 [MAP2L-126, Index-deep hole], and cyanobacteria cell count and cyanotoxin data at W2667 [MAP2L-126S, Shoreline]. At station W2666 (station depth=3.5 m) the Secchi depth measurements ranged from 2.38-3.1 m (n=3) indicating water clarity meeting the 1.2 m (4 ft) threshold. The cyanobacteria cell count did not exceed 70,000 cells/mL in any of the water samples (n=6). Analysis of microcystins and cylindrospermopsin samples from the shoreline station W2667 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L.

MassDEP Cyanobacteria Cell Count Data Collected at Lakes and Impoundments (2016-2018) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Waterbody	Station Type	Data Year	Sample Count	Count >70,000 cells/mL	Exceedance Date(s)
W2666	Kettle Brook Reservoir No. 1	Index	2017	3	0	NA
W2667	Kettle Brook Reservoir No. 1	Shoreline	2017	3	0	NA

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Kettle Brook Reservoir No. 1 (MA51079) is assessed as Fully Supporting. In Kettle Brook Reservoir No. 1, MassDEP collected cyanobacteria cell count data at W2666 [MAP2L-126, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2667 [MAP2L-126S, Shoreline at southeastern end of lake W of Mulberry St, Leicester] (2017). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2667 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff also collected *E. coli* bacteria samples in Kettle Brook Reservoir No. 1 at shoreline station W2667 from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2667 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 13 CFU/100ml. *E. coli* data from W2667 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2667	MassDEP	Water Quality	Kettle Brook Reservoir No. 1	[southeastern end of lake west of Mulberry Street, Leicester]	42.257222	-71.890567

Bacteria Data

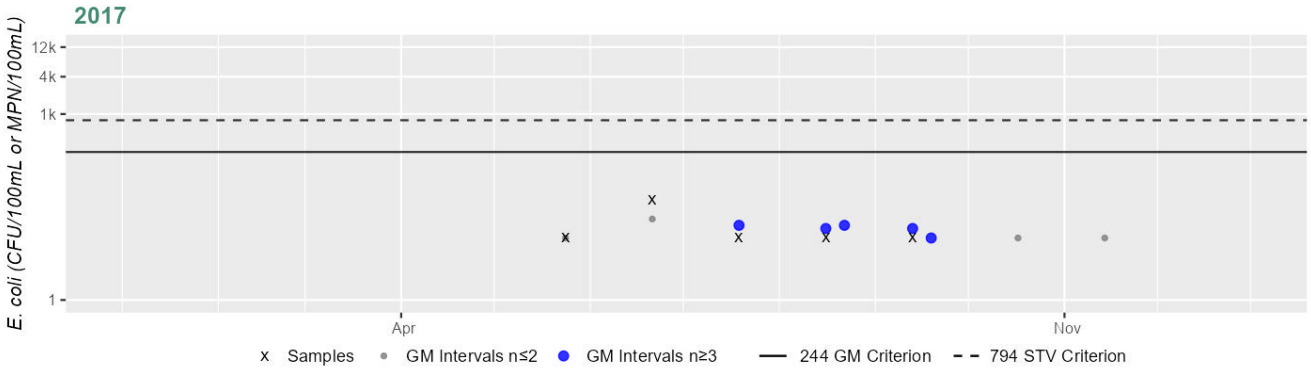
Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis) (MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2667	MassDEP	E. coli	05/24/17	09/13/17	5	10	41	13

Station MASSDEP_W2667 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	13
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Kettle Brook Reservoir No. 2 (MA51080)

Location:	Leicester.
AU Type:	FRESHWATER LAKE
AU Size:	29 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Kettle Brook Reservoir No. 2 (MA51080) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Kettle Brook Reservoir No. 3 (MA51081)

Location:	Paxton/Leicester.
AU Type:	FRESHWATER LAKE
AU Size:	36 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Kettle Brook Reservoir No. 3 (MA51081) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Kettle Brook Reservoir No. 4 (MA51082)

Location:	Paxton.
AU Type:	FRESHWATER LAKE
AU Size:	114 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Kettle Brook Reservoir No. 4 (MA51082) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Lake Hiawatha (MA51062)

Location:	Bellingham/Blackstone.
AU Type:	FRESHWATER LAKE
AU Size:	58 ACRES
Classification/Qualifier:	B

No usable data were available for Lake Hiawatha (MA51062) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Lake Quinsigamond (MA51125)

Location:	Shrewsbury/Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	474 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	(Water Chestnut*)	--	Unchanged
5	5	Algae	644	Unchanged
5	5	Dissolved Oxygen	644	Unchanged
5	5	Enterococcus	--	Unchanged
5	5	Escherichia Coli (E. Coli)	--	Added
5	5	PFAS in Fish Tissue	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Enterococcus	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	--
Enterococcus	Source Unknown (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Lake Quinsigamond (MA51125) is assessed as Not Supporting with a new impairment being added for PFAS in Fish Tissue. Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Lake Quinsigamond (MA51125) at station F0030 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring; no advisory was issued by MDPH in relation to this sampling. Additionally, fish toxics sampling was conducted at Lake Quinsigamond (MA51125) in Worcester/Shrewsbury as part of a June 2022 MDPH study assessing 40 PFAS analytes in fish tissue samples collected from lakes and ponds in state parks. DPH issued a site-specific advisory for PFAS in Lake Quinsigamond (referred to by MDPH as ''Quinsigamond, Lake'') in their February 2023 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MassDEP Undated 6) (MA DPH 2025) (MA DPH 2023b)

Summary Statement
Fish toxics sampling for PCB and organochlorine pesticides, and metals (mercury, arsenic, cadmium and selenium) was performed by MassDEP WPP biologists in Lake Quinsigamond (MA51125) at station F0030 in 2019 at the recommendation of the Interagency Committee on Freshwater Fish Toxics Monitoring and Assessment in response to a public request for monitoring. Additionally, fish toxics sampling was conducted at Lake Quinsigamond (MA51125) in Worcester/Shrewsbury as part of a June 2022 MDPH study assessing 40 PFAS analytes in fish tissue samples collected from lakes and ponds in state parks. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for Lake Quinsigamond (referred to by MDPH as Quinsigamond, Lake) in their February 2023 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for PFAS in Fish Tissue for Lake Quinsigamond (MA51125).

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary

Too limited data are available to assess the Aesthetics Use for Lake Quinsigamond (MA51125) so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station for this Lake Quinsigamond AU, at the western edge of lake (north of Route 9), off dock at Regatta Point State Park (community sailing), Worcester (W2932) during 1 site visit in July 2018. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During the period 2015 through 2022, C-HAB postings for Lake Quinsigamond were reported to MDPH by DCR for 2 days in 2022 and no blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2932	MassDEP	Water Quality	Lake Quinsigamond	[western edge of lake (north of Route 9), off dock at Regatta Point State Park (community sailing), Worcester]	42.276540	-71.757456

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2932	2018	1	Aesthetic observations were made by MassDEP field sampling crews at Station W2932 on Lake Quinsigamond (MA51125) during 1 site visit on Jul 13, 2018. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2932	Lake Quinsigamond	2018	Aesthetics Impaired?	No	1	1
W2932	Lake Quinsigamond	2018	Color	Brownish	1	1
W2932	Lake Quinsigamond	2018	Objectionable Deposits	No	1	1
W2932	Lake Quinsigamond	2018	Odor	None	1	1

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2932	Lake Quinsigamond	2018	Scum	No	1	1
W2932	Lake Quinsigamond	2018	Turbidity	Slightly Turbid	1	1

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Lake Quinsigamond (MA51125) were reported to MDPH by DCR for 2 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Lake Quinsigamond	Shrewsbury/Worcester								2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Lake Quinsigamond (MA51125) continues to be assessed as Not Supporting. The prior *Enterococcus* impairment is being carried forward based on DPH Beach Closures data not meeting the threshold at Lake Quinsigamond-Regatta Point Beach (DCR) [Beach ID: 4916]. An *Escherichia coli (E. coli)* impairment is being added due to bacteria data not meeting the threshold at 2 stations in 2021. Surface water sampling was conducted at Lake Park Beach and Regatta Point Beach on Lake Quinsigamond in Shrewsbury/Worcester as part of a May 2022 MDPH study assessing 40 PFAS analytes in surface water and fish tissue samples collected from waterbodies in state parks. The average concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value (maximum average 4.3 ng/L PFOA). Lake Quinsigamond has 2 beaches with DPH Beach Closure data: Lake Quinsigamond-Regatta Point (DCR) [Beach ID: 4916] and Lake Quinsigamond-Lake Park (DCR) [Beach ID: 4915] beaches in Worcester. Beaches were posted for >10% of the swimming season at Lake Quinsigamond-Regatta Point Beach (DCR) in 2018 (74%), 2020 (40%), 2021 (34%), and 2022 (34%) indicating an *Enterococcus* impairment. During the period 2015 through 2022, C-HAB postings for Lake Quinsigamond were reported to MDPH by DCR for 2 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. The City of Worcester Lakes and Ponds Program (CWLPP) collected Secchi depth data at CWLPP_LQ5 (2021-2022) and CWLPP_LQ6 [42.26965, -71.753731, South Hole] (2021-2022). Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at CWLPP_LQ5 in 2021 (n=11, 1.98-3.51m) and 2022 (n=12, 2.06-4.88m) and CWLPP_LQ6 in 2021 (n=11, 2.13-3.66m) and 2022 (n=12, 2.13-5.18m). CWLPP and Lake Quinsigamond Watershed Association (LQA) staff/volunteers collected *E. coli* bacteria samples in Lake Quinsigamond from 2021-2022 at 5 stations. Samples were collected from the following stations/sample years: CWLPP_LQ5 [N Hole] from 2021-2022 (n=11-12/yr), LQA_07_NB [N Basin Mid-point, Shrewsbury] from 2021-2022 (n=8-10/yr), LQA_05_NB_21 [Billings Brook, Shrewsbury] from May-Oct 2021 (n=10), LQA_10_SB_21 [Fitzgerald Brook, Worcester] from May-Oct 2021 (n=10) and LQA_12_SB [S Basin Mid-point, Shrewsbury] from 2021-2022 (n=8-10/yr). Analysis of the single year moderate frequency *E. coli* dataset from LQA_05_NB_21 indicated 50% of intervals had GMs >126 CFU/100ml and 3 samples exceeded the 410 CFU/100ml STV. Analysis of the single year moderate frequency *E. coli* dataset from LQA_10_SB_21 indicated 87% of intervals had GMs >126 CFU/100ml and 5 samples exceeded the 410 CFU/100ml STV. While *E. coli* data from CWLPP_LQ5, LQA_07_NB, and LQA_12_SB meet 2024 CALM guidance, *E. coli* data from LQA_05_NB_21 and LQA_10_SB_21 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	Water Quality	Lake Quinsigamond	North Hole	42.289021	-71.756035

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
LQA_05_NB_21	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	Billings Brook, Shrewsbury	42.282675	-71.754262
LQA_07_NB	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	North Basin Mid-point, Shrewsbury	42.287830	-71.756864
LQA_10_SB_21	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	Fitzgerald Brook, Worcester	42.266835	-71.754539
LQA_12_SB	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	South Basin Mid-point, Shrewsbury	42.253264	-71.745226

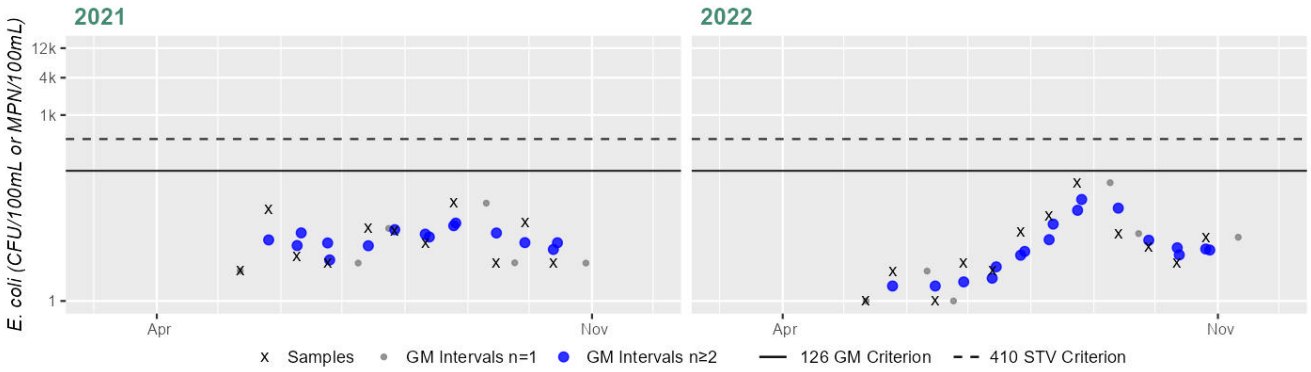
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis)
(Worcester Lakes and Ponds 2023) (MassDEP Undated 3) (LQWA 2023) (MassDEP Undated 3)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	E. coli	05/12/21	10/13/21	11	3	37	9
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	E. coli	05/12/22	10/26/22	12	1	80	6
LQA_05_NB_21	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	8	2178	138
LQA_07_NB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	2	101	11
LQA_07_NB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	2	58	16
LQA_10_SB_21	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	58	3192	378
LQA_12_SB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	1	150	13
LQA_12_SB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	4	54	12

Station CWLPP_LQ5 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	11
SeasGM	9
#GMI	15
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

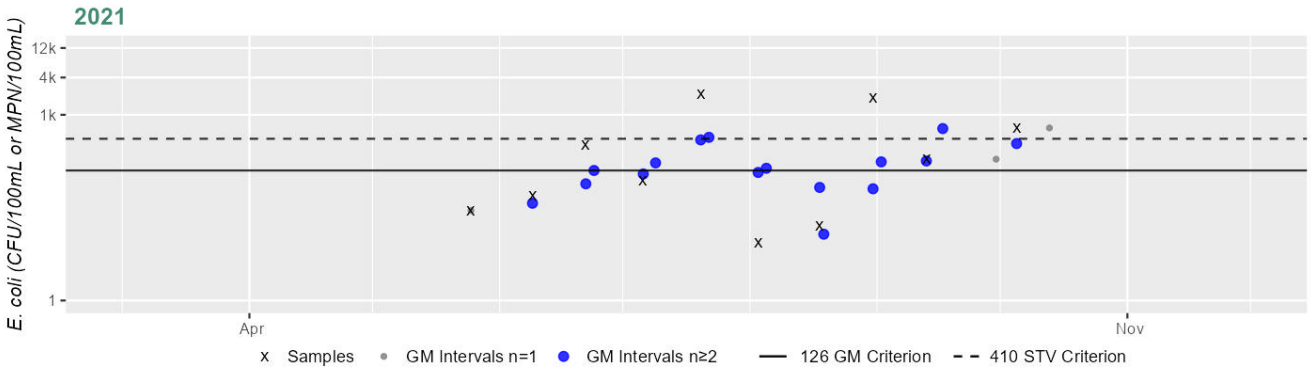
Variable*	Result
Samples	12
SeasGM	6
#GMI	17
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_05_NB_21 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



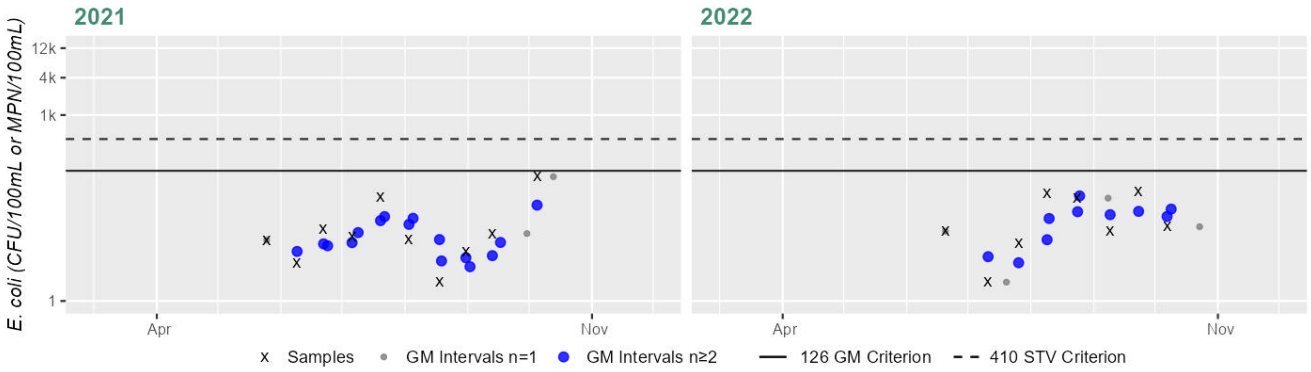
Variable*	Result
Samples	10
SeasGM	138
#GMI	16
#GMI Ex	8
%GMI Ex	50%
n>STV	3
%n>STV	30%

Cumulative %GMI Exceedance
Current (2011-2022)
50%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_07_NB - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	10
SeasGM	11
#GMI	16
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

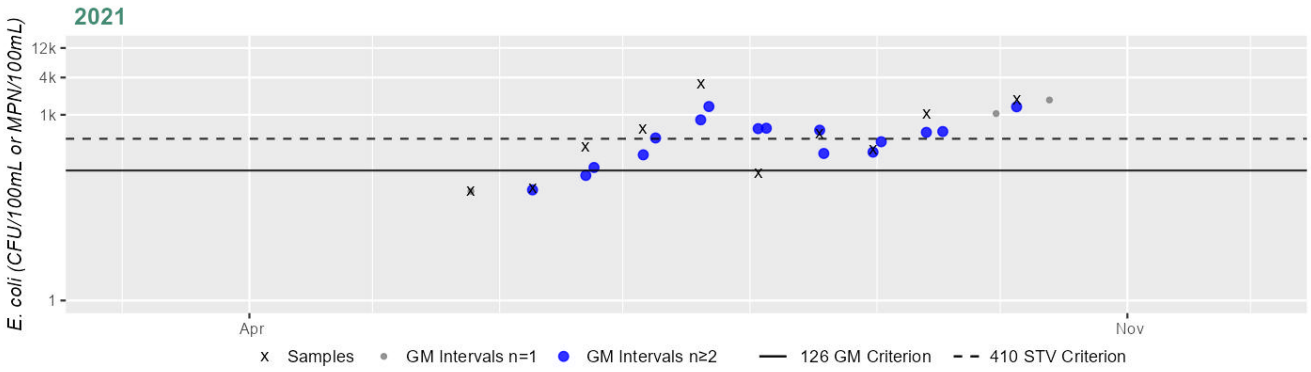
Variable*	Result
Samples	8
SeasGM	16
#GMI	10
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_10_SB_21 - Escherichia coli

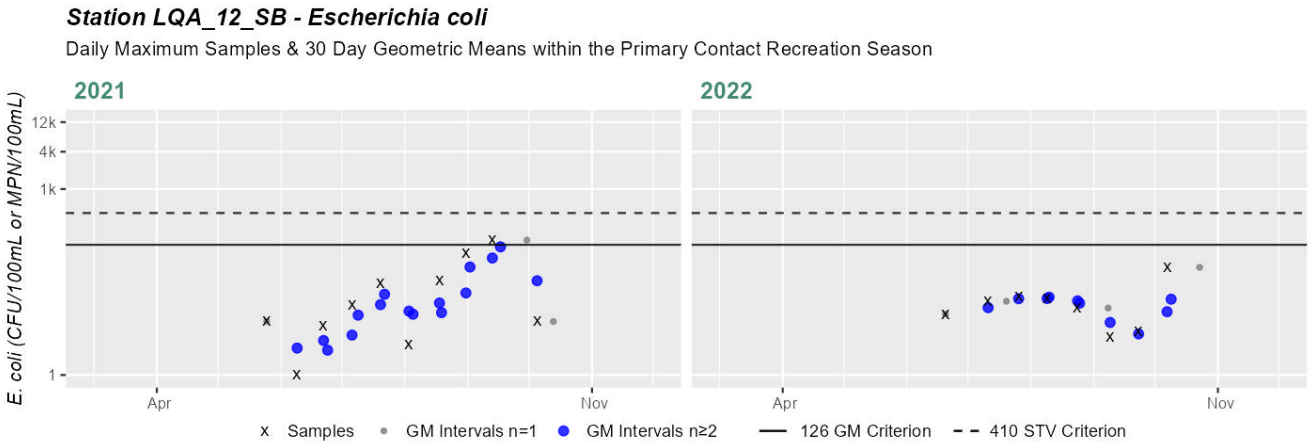
Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	10
SeasGM	378
#GMI	16
#GMI Ex	14
%GMI Ex	87%
n>STV	5
%n>STV	50%

Cumulative %GMI Exceedance
Current (2011-2022)
87%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*



Variable*	Result
Samples	10
SeasGM	13
#GMI	16
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	8
SeasGM	12
#GMI	10
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Beach Postings

MDPH Beach Posting Data Summary (% Bathing Season Posted 2014-2022) (Bailey, Logan Feb. 2, 2021) (Bailey Sept. 10, 2023) (MassDEP Undated 3)

Beach ID	Beach Name/ Town	Left Border (Lat., Long.)	Right Border (Lat., Long.)	2014	2015	2016	2017	2018	2019	2020	2021	2022	# years >10%
4915	Lake Quinsigamond-Lake Park Beach (DCR)/ Worcester	42.25968, -71.75160	42.25931, -71.75160	6%	0%	0%	17%	57%	0%	8%	4%	0%	2
4916	Lake Quinsigamond-Regatta Point Beach (DCR)/ Worcester	42.27652, -71.75760	42.27740, -71.75740	11%	2%	9%	28%	74%	2%	40%	34%	34%	6

Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 3)

Data Year(s)	Summary
2021-2022	In Lake Quinsigamond (MA51125), CWLPP collected Secchi data at CWLPP_LQ5 (2021-2022) and CWLPP_LQ6 [42.26965, -71.753731, South Hole] (2021-2022). In 2021 at station CWLPP_LQ5 (station depth=23.93 m) the Secchi depth measurements ranged from 1.98-3.51 m (n=11) indicating water clarity meeting the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_LQ5 (station depth=23.16 m) the Secchi depth measurements ranged from 2.06-4.88 m (n=12) indicating water clarity meeting the 1.2 m (4 ft) threshold. In 2021 at station CWLPP_LQ6 (station depth=22.25 m) the Secchi depth measurements ranged from 2.13-3.66 m (n=11) indicating water clarity meeting the 1.2 m (4 ft) threshold. In 2022 at station CWLPP_LQ6 (station depth=22.55 m) the Secchi depth measurements ranged from 2.13-5.18 m (n=12) indicating water clarity meeting the 1.2 m (4 ft) threshold.

Summary of MDPH 2021 and 2022 PFAS in Water Column Data
Data Sources: (MA DPH 2023a, MA DPH 2023b)

Surface water sampling was conducted at Lake Park Beach and Regatta Point Beach on Lake Quinsigamond (MA51125) in Shrewsbury/Worcester as part of a May 2022 MDPH study assessing 40 PFAS analytes in surface water and fish tissue samples collected from waterbodies in state parks. The average concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value (maximum average 4.3 ng/L PFOA).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Lake Quinsigamond (MA51125) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added due to bacteria data not meeting the threshold at 1 station in 2021. Lake Quinsigamond has 2 beaches with DPH Beach Closure data: Lake Quinsigamond-Regatta Point (DCR) [Beach ID: 4916] and Lake Quinsigamond-Lake Park (DCR) [Beach ID: 4915] beaches in Worcester. Available DPH Beach Closure data cannot be used to positively assess the Secondary Contact Recreation Use since beaches were posted for >10% of the swimming season: Lake Quinsigamond-Regatta Point Beach (DCR) in 2018, 2020, 2021, and 2022. During the period 2015 through 2022, C-HAB postings for Lake Quinsigamond were reported to MDPH by DCR for 2 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. City of Worcester Lakes and Ponds Program (CWLPP) and Lake Quinsigamond Watershed Association (LQA) staff/volunteers collected *E. coli* bacteria samples in Lake Quinsigamond from 2021-2022 at 5 stations. Samples were collected from the following stations/sample years: CWLPP_LQ5 [N Hole] from 2021-2022 (n=12/yr), LQA_07_NB [N Basin Mid-point, Shrewsbury] from 2021-2022 (n=8-10/yr), LQA_05_NB_21 [Billings Brook, Shrewsbury] from May-Oct 2021 (n=10), LQA_10_SB_21 [Fitzgerald Brook, Worcester] from May-Oct 2021 (n=10) and LQA_12_SB [S Basin Mid-point, Shrewsbury] from 2021-2022 (n=8-10/yr). Analysis of the single year moderate frequency *E. coli* dataset from LQA_10_SB_21 indicated 86% of intervals had GMs >244 CFU/100ml and 3 samples exceeded the 794 CFU/100ml STV. Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_LQ5 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. Analysis of the single year moderate frequency *E. coli* dataset from LQA_05_NB_21 indicated 13% of intervals had GMs >244 CFU/100ml and 2 samples exceeded the 794 CFU/100ml STV. Analysis of the multi-year moderate frequency *E. coli* dataset from LQA_07_NB indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. Analysis of the multi-year moderate frequency *E. coli* dataset from LQA_12_SB indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. While *E. coli* data from CWLPP_LQ5, LQA_05_NB_21, LQA_07_NB, and LQA_12_SB meet 2024 CALM guidance, *E. coli* data from LQA_10_SB_21 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	Water Quality	Lake Quinsigamond	North Hole	42.289021	-71.756035

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
LQA_05_NB_21	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	Billings Brook, Shrewsbury	42.282675	-71.754262
LQA_07_NB	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	North Basin Mid-point, Shrewsbury	42.287830	-71.756864
LQA_10_SB_21	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	Fitzgerald Brook, Worcester	42.266835	-71.754539
LQA_12_SB	Lake Quinsigamond Watershed Association	Water Quality	Lake Quinsigamond	South Basin Mid-point, Shrewsbury	42.253264	-71.745226

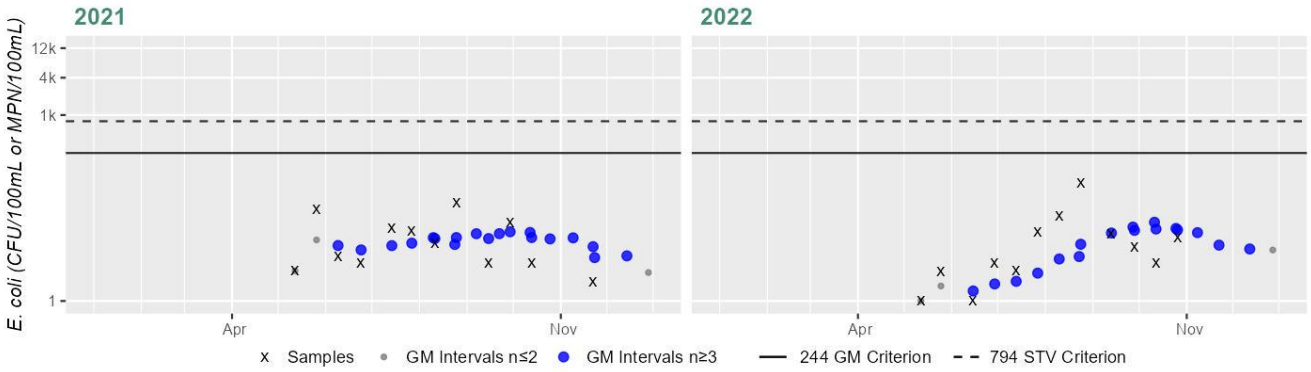
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(Worcester Lakes and Ponds 2023) (MassDEP Undated 2) (LQWA 2023) (MassDEP Undated 2)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	E. coli	05/12/21	11/22/21	12	2	37	8
CWLPP_LQ5	City of Worcester Lakes and Ponds Program	E. coli	05/12/22	10/26/22	12	1	80	6
LQA_05_NB_21	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	8	2178	138
LQA_07_NB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	2	101	11
LQA_07_NB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	2	58	16
LQA_10_SB_21	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	58	3192	378
LQA_12_SB	Lake Quinsigamond Association	E. coli	05/25/21	10/05/21	10	1	150	13
LQA_12_SB	Lake Quinsigamond Association	E. coli	06/20/22	10/07/22	8	4	54	12

Station CWLPP_LQ5 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	12
SeasGM	8
#GMI	19
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

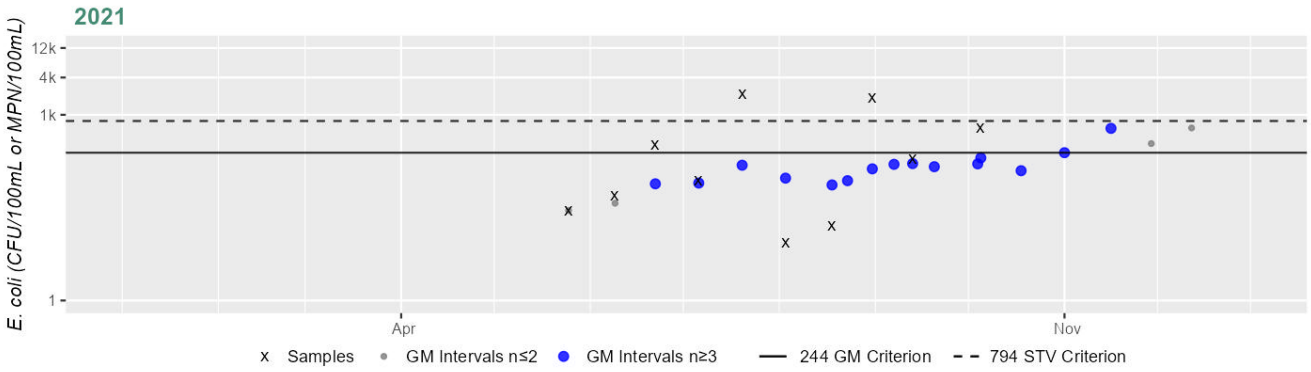
Variable*	Result
Samples	12
SeasGM	6
#GMI	17
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_05_NB_21 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



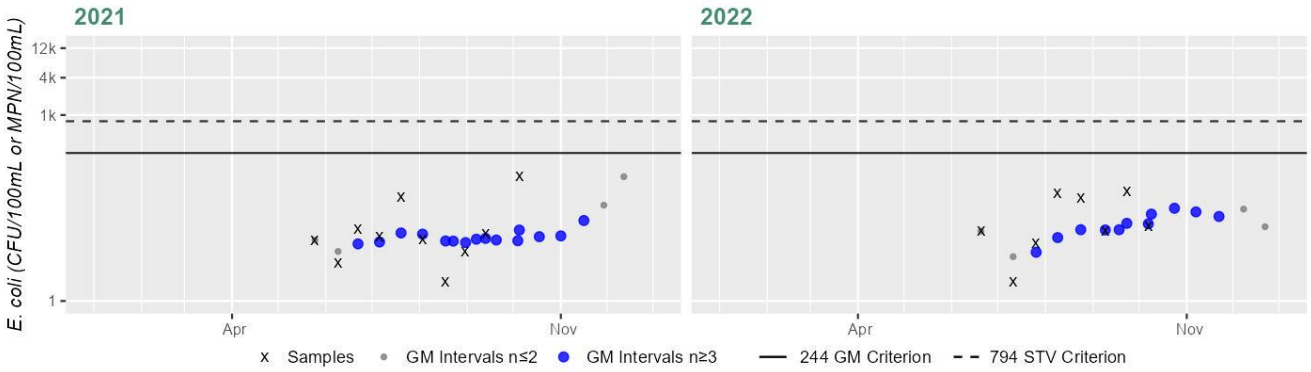
Variable*	Result
Samples	10
SeasGM	138
#GMI	15
#GMI Ex	2
%GMI Ex	13%
n>STV	2
%n>STV	20%

Cumulative %GMI Exceedance
Current (2011-2022)
13%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_07_NB - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	10
SeasGM	11
#GMI	15
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

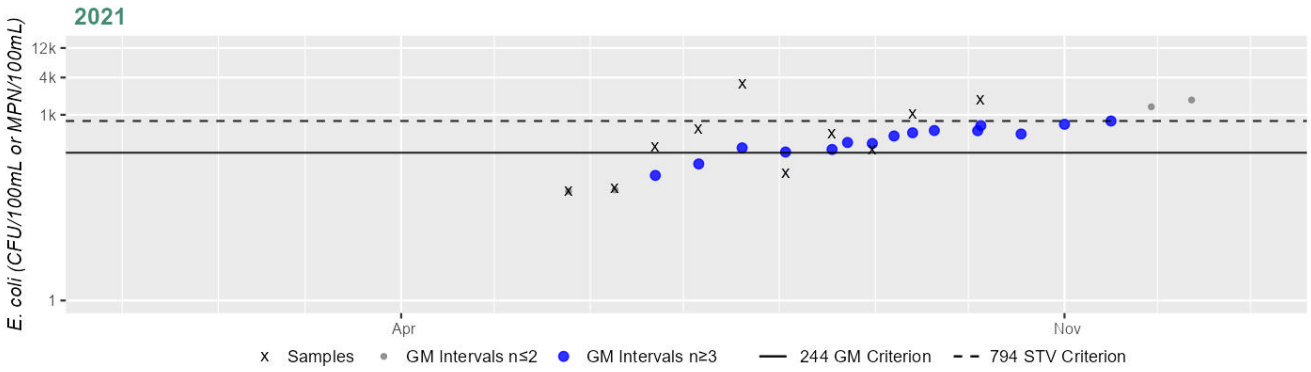
Variable*	Result
Samples	8
SeasGM	16
#GMI	11
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_10_SB_21 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



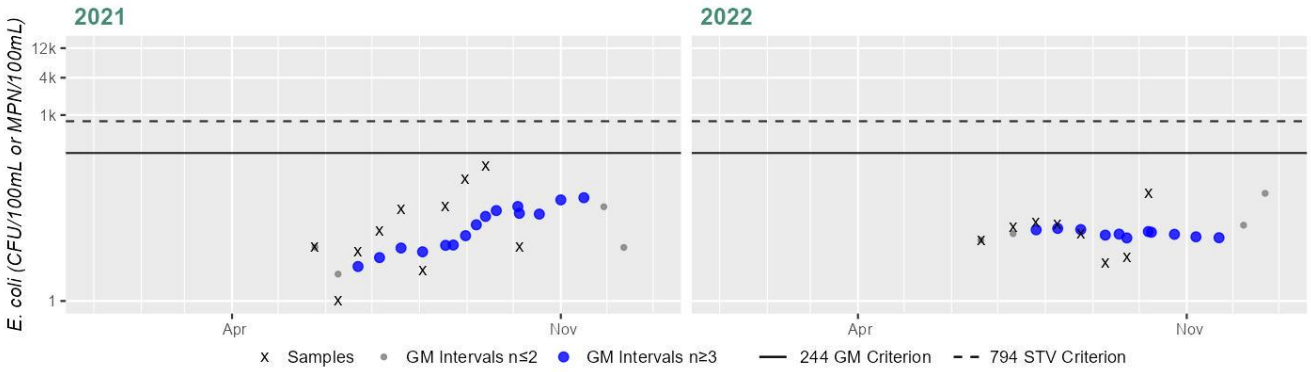
Variable*	Result
Samples	10
SeasGM	378
#GMI	15
#GMI Ex	13
%GMI Ex	86%
n>STV	3
%n>STV	30%

Cumulative %GMI Exceedance
Current (2011-2022)
86%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station LQA_12_SB - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	10
SeasGM	13
#GMI	15
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	8
SeasGM	12
#GMI	11
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance

Current (2011-2022)

0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Lake Ripple (MA51135)

Location:	Grafton.
AU Type:	FRESHWATER LAKE
AU Size:	47 ACRES
Classification/Qualifier:	B: WWF (impoundment on river designated B/WWF)

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Fanwort*)	--	Unchanged
5	5	(Water Chestnut*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added
5	5	PFAS in Fish Tissue	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	--	--
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document (MassDEP 2025), the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Lake Ripple (MA51135) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that roughly 25% of the west cove area had dense growths (75-100% coverage) of aquatic plants. Non-rooted floating species were present, but not dominant including *Wolffia*, *Lemna*, and *Ceratophyllum* spp. (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show increasing amounts of plant coverage in all the cove areas (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51135** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Lake Ripple** TYPE: **Lake/Pond**
CODE: **51135** SIZE: **63.00**(acres) CLASS: **B**

LATITUDE:
LONGITUDE: (421235/714155)
Lake/Pond Name: Lake Ripple, Grafton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: xxxx
Acidity Effects: xxxx

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT		53.00	10.00			
ALUS					63.00	
FISH CONSUMPTION					63.00	
PRIMARY CONTACT		53.00	10.00			
SECONDARY CONTACT	53.00		10.00			
Aesthetics					63.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	10.00	M
2500- Turbidity	63.00	T

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	10.00	M

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)

"New" Toxics Monitoring = > YES or NO

Comments:
HISTORICALLY SUSPENDED SOLIDS REDUCE TRANSPARENCY TO BELOW THE SAFETY CRITERIA (4 FT. SECCHI DISK) AND VERY DENSE GROWTHS OF AQUATIC MACROPHYTES (PRIMARILY MYRIOPHYLLUM HETEROPHYLLUM AND CABOMBA CAROLINIANA) COVER THE POND. NO CURRENT DATA AVAILABLE TO MAKE ASSESSMENTS.

1996:
DURING A 19 JULY 1994 SYNOPTIC SURVEY ABOUT 25% OF THE WEST COVE AREA WAS NOTED TO HAVE DENSE GROWTHS OF AQUATIC MACROPHYTES. THE TURBIDITY WAS ALSO NOTED TO BE HIGH THREATENING TO EXCEED THE BATHING CRITERIA.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 7/29/94 Entered as BS 11/18/94

E1137

Lake/Pond Lake Ripple **Date** 7/19/94

Town/City Grafton **Observers** R. Haynes, R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Parking lot of Lake Ripple Restaurant on Rt. 140

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Private (L. Ripple Restaurant)

Posted signs (re aquatic plants, fish advisories, access, etc.):
"Parking for Lake Ripple Restaurant Only. Removal at owner's Expense"

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Some tea stain, turbid, much filamentous algae mats, much leaf/organic debris on bottom, oily sheen in places of quite water; much trash in water & on shore
Very productive.

Record of aquatic plant "species" observed (see note below):

Peltandra, Typha latifolia, Lythrum Salicaria, Nymphaea, Ceratophyllum demersum, P. Robbinsii, filamentous green algae, Lemna, Wolffia, Spirodela, Pontederia

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% (P. Robbinsii + algae) ~ 25% of cove area

Other notes (e.g., overt pollution, construction, and water uses:

Fountain (aerator?) in front of restaurant.

3056 - Eutrophic
1° Contact - 10 acres - Part. Support - 53 acres - Threatened
2° contact - 10 " - " " - 53 " - Full Support

Causes - Turbidity T - Noxious plants - ## (10 acres)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Lake Ripple, 12/31/2000 (Google Earth Pro Undated):



Google Earth image of Lake Ripple, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Lake Ripple, 9/12/2017 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Lake Ripple (MA51135) is assessed as Not Supporting with a new impairment being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in Lake Ripple (MA51135) at station F0476 (PFAS Study ID 20) [on Quinsigamond River in impoundment (Lake Ripple) of Lake Ripple Dam (NAT ID: MA00579), Grafton] on 10/03/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in Lake Ripple (referred to by MDPH as ''Ripple, Lake'') in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
F0476	MassDEP	Fish Toxics	Quinsigamond River/Lake Ripple	[on Quinsigamond River in impoundment (Lake Ripple) of Lake Ripple Dam (NAT ID: MA00579), Grafton]	42.213514	-71.698116

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in Lake Ripple (MA51135) at station F0476 (PFAS Study ID 20) [on Quinsigamond River in impoundment (Lake Ripple) of Lake Ripple Dam (NAT ID: MA00579), Grafton] on 10/03/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for Lake Ripple (referred to by MDPH as Ripple, Lake) in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for PFAS in Fish Tissue for Lake Ripple (MA51135).

MassDEP 2022 PFAS in Fish Tissue Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 6) (MA DPH 2023c)

[ng/g = ppb. All PFBA, PFBS, and HFPO-DA (Genx) concentrations <MDL. ND indicates that the PFAS analyte was not detected in any of the composite samples (i.e., it was <MDL). Means weighted by the number of fish in the contributing composites were calculated for any PFAS analyte – waterbody – species combination where an analyte was detected in at least one sample; if a sample did not have the analyte detected, the concentration for that sample was set to ½*MDL for the purposes of calculating a

mean. Data are highlighted red per the fish consumption advisory thresholds summarized in Table 4.2 of MDPH's 2023 Technical Support Document for the evaluation of PFAS in recreational waterbodies.]

[Species List: B = bluegill, BC = black crappie, LMB = largemouth bass]

Station Code	PFAS Study ID	Sample Date	Species	Mean PFHxS ng/g	Mean PFNA ng/g	Mean PFOA ng/g	Mean PFOS ng/g	Analytes with ≥ 1 Sample Qualified
F0476	20	10/03/2022	B	ND	ND	ND	12.50	
F0476	20	10/03/2022	BC	ND	0.49	ND	40.00	PFNA
F0476	20	10/03/2022	LMB	ND	ND	ND	34.00	

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Lake Ripple (MA51135) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators impairment being added. Since the Water Chestnut and Fanwort impairments were redundantly duplicated across multiple uses for this waterbody, the Water Chestnut and Fanwort impairments are being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. As described in detail in the 2024 CALM guidance document (MassDEP 2025), the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Lake Ripple (MA51135) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that roughly 25% of the west cove area had dense growths (75-100% coverage) of aquatic plants, including the non-rooted, floating species, *Wolffia, Lemna,* and *Ceratophyllum spp.* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show increasing amounts of plant coverage in all the cove areas (Google Earth Pro Undated). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for this Lake Ripple AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Lake Ripple (MA51135) continues to be assessed as Not Supporting.
The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. Since the Fanwort and Water Chestnut impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Primary Contact Recreation Use.
Surface water sampling was conducted in Lake Ripple at station W3282 (PFAS Study ID 20) on 10/03/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W3282	MassDEP	Water Quality	Quinsigamond River/Lake Ripple	[the default location representing co-located water/fish PFAS sampling, on Quinsigamond River in Lake Ripple impoundment, Grafton]	42.213514	-71.698116

Other Indicators

Summary Statement(s) for MassDEP 2022 PFAS in Water Column Data (MassDEP 2023) (MassDEP Undated 5)

Summary
Surface water sampling was conducted in Lake Ripple (MA51135) at station W3282 (PFAS Study ID 20) on 10/03/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value.

MassDEP 2022 PFAS in Water Column Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 5)

[HFPO-DA is also known as GenX; the ∑PFAS6 equals the sum of PFOA, PFOS, PFNA, PFHxS, PFDA, PFHpA (not all shown individually here); * indicates the ∑PFAS6 concentration was qualified since data for one or more individual PFAS6 analytes were qualified; b = blank contamination qualifier, d = qualifier indicating precision of field duplicates did not meet project data quality objectives; j = 'estimated' value qualifier; ## = censored data.]

Station Code	PFAS Study ID	Sample Date	PFOA ng/L	PFOS ng/L	PFNA ng/L	PFHxS ng/L	PFBA ng/L	PFBS ng/L	HFPO-DA ng/L	∑PFAS6 ng/L
W3282	20	10/03/2022	7	<0.51	0.74j	3.7	3.9j	5.2	<2	15.6*

Secondary Contact Recreation

2024/26 Use Attainment	Alert

Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Lake Ripple (MA51135) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. Since the Fanwort and Water Chestnut impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Secondary Contact Recreation Use.

Laurel Brook (MA51-23)

Location:	Headwaters, perennial portion, north of Yew Street, Douglas to mouth at confluence with Scadden Brook near the outlet of Sawmill Pond, Uxbridge (through former 2008 segment: Bazely Pond MA51008).
AU Type:	RIVER
AU Size:	3.3 MILES
Classification/Qualifier:	B

No usable data were available for Laurel Brook (MA51-23) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Leesville Pond (MA51087)

Location:	Auburn/Worcester.
AU Type:	FRESHWATER LAKE
AU Size:	34 ACRES
Classification/Qualifier:	B: WWF

No usable data were available for Leesville Pond (MA51087) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Fanwort*)	--	Unchanged
4a	4a	Dissolved Oxygen	671	Unchanged
4a	4a	Phosphorus, Total	671	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Dam or Impoundment (Y)	X	--	--	--	--
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Dissolved Oxygen	Internal Nutrient Recycling (Y)	X	--	--	--	--
Phosphorus, Total	Dam or Impoundment (Y)	X	--	--	--	--
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Phosphorus, Total	Internal Nutrient Recycling (Y)	X	--	--	--	--

Lynde Brook Reservoir (MA51090)

Location:	Leicester.
AU Type:	FRESHWATER LAKE
AU Size:	130 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Lynde Brook Reservoir (MA51090) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Manchaug Pond (MA51091)

Location:	Douglas/Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	364 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Mercury in Fish Tissue	42392	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Mercury in Fish Tissue	Atmospheric Deposition (Y)	--	X	--	--	--
Mercury in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Manchaug Pond (MA51091) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. DPH included a site-specific advisory for Manchaug Pond in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Manchaug Pond (MA51091) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Manchaug Pond (MA51091) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Manchaug Pond (MA51091) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed.

Marble Pond (MA51093)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	8 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Marble Pond (MA51093) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with aquatic plants at a 75-100% density; these included the non-rooted, floating species, *Wolffia*, *Lemna*, and *Utricularia* spp. (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show high amounts of plant coverage (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of several non-rooted, floating, aquatic macrophyte species. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID:	**MA51093**	WATERSHED:	**Blackstone** (51)	(Printed 02/03/98)	
NAME:	**Marble Pond**	TYPE:	**Lake/Pond**		
CODE:	**51093**	SIZE:	**11.00**(acres)	CLASS:	**B**

LATITUDE: **42.16556**
LONGITUDE: **71.74361** (420956/714437)
Lake/Pond Name: Marble Pond, Sutton
Ecoregion Name: ()
Description:

Assessment Date:	9609	**Begin Sampling:**	9407	**303(d) List?:**	Yes
Cycle:	96	**End Sampling:**	9407	**Pathogens Only?:**	No

Lake Specific Information

Lake size greater than 10 acres?:	Yes
Significantly Publicly Owned:	xxxx
Trophic Status:	Eutrophic
Trophic Trend:	Unknown
Acidity/Toxics Trend:	Unknown
Acidity Effects:	Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				11.00		
ALUS			11.00			
FISH CONSUMPTION					11.00	
PRIMARY CONTACT				11.00		
SECONDARY CONTACT				11.00		
Aesthetics					11.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	11.00	M
2600- Exotic species	11.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	11.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 14 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THE AQUATIC PLANT DENSITY WAS 75% TO 100% FLOATING (INCLUDING DUCKWEED) AND SUBMERGENT OVER THE ENTIRE POND. THE NON-NATIVE MYRIOPHYLLUM HETEROPHYLLUM WAS PRESENT AND WAS A CAUSE OF THE USE IMPAIRMENT OF AQUATIC LIFE, PRIMARY CONTACT, AND SECONDARY CONTACT. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 9/21/94

9/21/94

Page 1 of 2

51093

Lake/Pond Marble Pond Date 7/14/94

Town/City Sutton Observers G. De Cesare
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
At outlet on Marble Rd.
No formal access

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
? Probably private

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
U. Turbid w/ brown scum on surface; silty (dark brown)

Record of aquatic plant "species" observed (see note below):

Utricularia, Myriophyllum heterophyllum, Brasenia, Nymphaea, Lemna minor, Wolffia, Sparganium, Lythrum salicaria, filamentous algae, Pontederia, Scirpus

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% floating [mil. duckweed] + submergent over entire pond

Other notes (e.g., overt pollution, construction, and water uses:

305b - Eutrophic

1° Contact } 100% Non-support
2° Contact }
Ag. Life - 100% Partial support (full acreage)

Causes - Noxious plants M; Exotic plants - M [full acreage]

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Marble Pond, 5/6/2015, shows outline of pond (Google Earth Pro Undated):



Google Earth image of Marble Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Marble Pond, 9/12/2017 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Marble Pond (MA51093) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Marble Pond (MA51093) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators impairment is being added. As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Marble Pond was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with aquatic plants at a 75-100% density; these included the non-rooted, floating species, *Wolffia, Lemna,* and *Utricularia spp.* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016, and September 2017 show high amounts of plant coverage (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of several non-rooted, floating, aquatic macrophyte species. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for Marble Pond.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Marble Pond (MA51093) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Marble Pond (MA51093) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Martin Street Pond (MA51095)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	3 ACRES
Classification/Qualifier:	B

No usable data were available for Martin Street Pond (MA51095) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Merrill Pond No. 3 (MA51098)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	13 ACRES
Classification/Qualifier:	B

No usable data were available for Merrill Pond No. 3 (MA51098) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Merrill Pond No. 4 (MA51099)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	20 ACRES
Classification/Qualifier:	B

No usable data were available for Merrill Pond No. 4 (MA51099) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

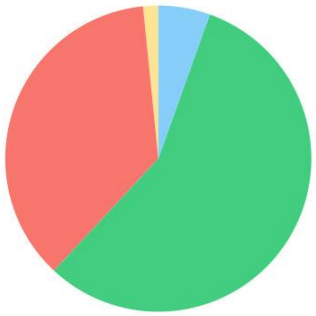
AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Middle River (MA51-02)

Location:	Headwaters, outlet Coes Pond, Worcester to confluence with the unnamed tributary locally known as "Mill Brook" (downstream of the railroad spur bridge west of Tobias Boland Way), Worcester (through former 2000 segment: Middle River Pond MA51101) (prior to 2000 this segment did not include river between Coes and Curtis ponds).
AU Type:	RIVER
AU Size:	3.4 MILES
Classification/Qualifier:	B: WWF

Middle River (MA51-02)

Watershed Area: 63.05 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	63.03	13.13	24.56	3.37
Agriculture	1.6%	0.2%	1.3%	0%
Developed	36.5%	68.1%	23.6%	51.7%
Natural	56.5%	28.9%	64.4%	38.9%
Wetland	5.5%	2.9%	10.6%	9.4%
Impervious	20.4%	44.6%	12.6%	31.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Debris*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
5	5	Trash	--	Unchanged

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Debris*)	Unspecified Urban Stormwater (Y)	--	--	X	X	X
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Channelization (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Dam or Impoundment (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Dam or Impoundment (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Unspecified Urban Stormwater (Y)	--	--	--	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Trash	Unspecified Urban Stormwater (Y)	--	--	X	X	X
Turbidity	Unspecified Urban Stormwater (Y)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Middle River (MA51-02) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Middle River (MA51-02) continues to be assessed as Not Supporting, with the Debris, Trash and Turbidity impairments being carried forward. MassDEP staff recorded aesthetics observations for Middle River during summer 2011 at two stations in Worcester, from up to downstream as follows; in roughly the middle of the AU ~1200 feet downstream from Fremont St, adjacent to the Hope and St. Johns cemeteries as part of the MAP2 monitoring project (W2203/MAP2-050, n=6), as well as close to the downstream end of the AU at an unnamed exit road at rear of "Walmart complex" off Rt. 146 (W2237, n=8). Trash was noted on numerous occasions at both stations (n=5 and n=7 times respectively), as were highly turbid waters once at each station.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2203	MassDEP	Water Quality	Middle River	[approximately 1200 feet downstream from Fremont Street, Worcester]	42.239095	-71.825842

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2237	MassDEP	Water Quality	Middle River	[unnamed exit road at rear of "Walmart complex" off Route 146, Worcester]	42.233613	-71.793216

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2203	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2203 on Middle River (MA51-02) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=5) and abundant trash (n=1). During a probe deployment, field staff noted high turbidity (n=1).
W2237	2011	8	Aesthetic observations were made by MassDEP field sampling crews at Station W2237 on Middle River (MA51-02) during 8 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted grey water color (n=1), high turbidity (n=1), and objectionable deposits (n=7).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2203	2011	6	6	1
W2237	2011	8	3	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2203	Middle River	2011	Aquatic Plant Density, Overall	None	5	6
W2203	Middle River	2011	Aquatic Plant Density, Overall	Sparse	1	6
W2203	Middle River	2011	Color	Light Yellow/Tan	4	6
W2203	Middle River	2011	Color	None	2	6
W2203	Middle River	2011	Objectionable Deposits	No	1	6
W2203	Middle River	2011	Objectionable Deposits	Yes	5	6

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2203	Middle River	2011	Odor	Musty (Basement)	3	6
W2203	Middle River	2011	Odor	None	2	6
W2203	Middle River	2011	Odor	Rotting Vegetables	1	6
W2203	Middle River	2011	Periphyton Density, Filamentous	None	5	6
W2203	Middle River	2011	Periphyton Density, Filamentous	Sparse	1	6
W2203	Middle River	2011	Periphyton Density, Film	Dense	1	6
W2203	Middle River	2011	Periphyton Density, Film	Moderate	2	6
W2203	Middle River	2011	Periphyton Density, Film	NR	1	6
W2203	Middle River	2011	Periphyton Density, Film	Sparse	2	6
W2203	Middle River	2011	Scum	No	5	6
W2203	Middle River	2011	Scum	Yes	1	6
W2203	Middle River	2011	Turbidity	Moderately Turbid	1	6
W2203	Middle River	2011	Turbidity	Slightly Turbid	5	6
W2237	Middle River	2011	Aquatic Plant Density, Overall	None	4	8
W2237	Middle River	2011	Aquatic Plant Density, Overall	Unobservable	4	8
W2237	Middle River	2011	Color	Greyish	1	8
W2237	Middle River	2011	Color	Light Yellow/Tan	5	8
W2237	Middle River	2011	Color	None	2	8
W2237	Middle River	2011	Objectionable Deposits	Unobservable	1	8
W2237	Middle River	2011	Objectionable Deposits	Yes	7	8
W2237	Middle River	2011	Odor	Musty (Basement)	2	8
W2237	Middle River	2011	Odor	None	4	8
W2237	Middle River	2011	Odor	NR	2	8
W2237	Middle River	2011	Periphyton Density, Filamentous	None	3	8
W2237	Middle River	2011	Periphyton Density, Filamentous	Unobservable	5	8
W2237	Middle River	2011	Periphyton Density, Film	None	3	8
W2237	Middle River	2011	Periphyton Density, Film	Unobservable	5	8
W2237	Middle River	2011	Scum	No	4	8
W2237	Middle River	2011	Scum	Yes	4	8
W2237	Middle River	2011	Turbidity	Highly Turbid	1	8
W2237	Middle River	2011	Turbidity	Moderately Turbid	1	8
W2237	Middle River	2011	Turbidity	None	1	8
W2237	Middle River	2011	Turbidity	Slightly Turbid	5	8

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for the Middle River (MA51-02) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 2 stations in 2011. The prior Debris, Trash, and Turbidity impairments (from the Aesthetics Use) are being carried forward. MassDEP staff collected *E. coli* bacteria samples in the Middle River in 2011 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: a third of the way down the AU at W2203 [~1200 ft downstream from Fremont St, Worcester] from May-Sep 2011 (n=6), the downstream end of the AU at W2237 [unnamed exit Rd at rear of "Walmart complex" off Rt. 146, Worcester] from May-Oct 2011 (n=7). Analysis of the single year limited frequency *E. coli* dataset from W2203 indicated 100% of intervals had GMs >126 CFU/100ml, 4 samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 658 CFU/100ml. Analysis of the single year moderate frequency *E. coli* dataset from W2237 indicated 100% of intervals had GMs >126 CFU/100ml and 4 samples exceeded the 410 CFU/100ml STV. *E. coli* data from W2203 and W2237 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2203	MassDEP	Water Quality	Middle River	[approximately 1200 feet downstream from Fremont Street, Worcester]	42.239095	-71.825842
W2237	MassDEP	Water Quality	Middle River	[unnamed exit road at rear of "Walmart complex" off Route 146, Worcester]	42.233613	-71.793216

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

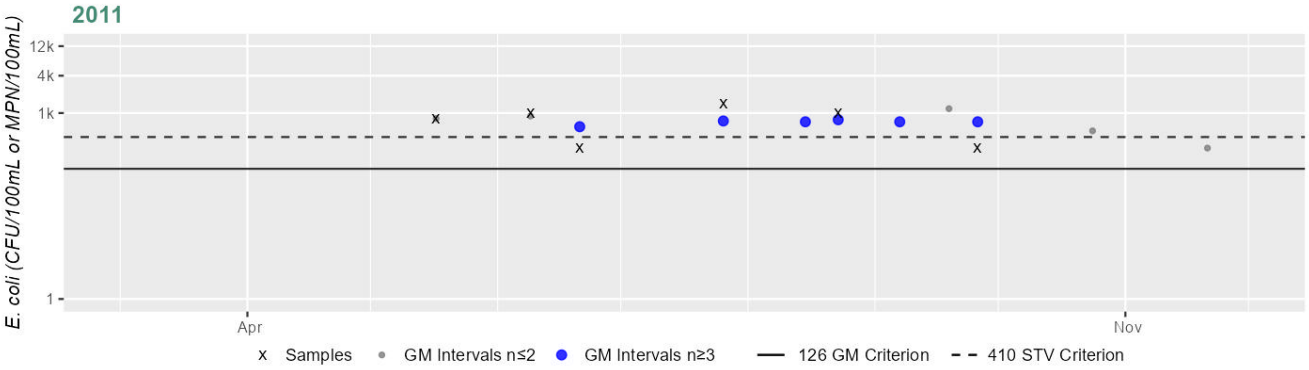
(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2203	MassDEP	E. coli	05/17/11	09/26/11	6	272	1410	658
W2237	MassDEP	E. coli	05/05/11	10/12/11	7	132	921	423

Station MASSDEP_W2203 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



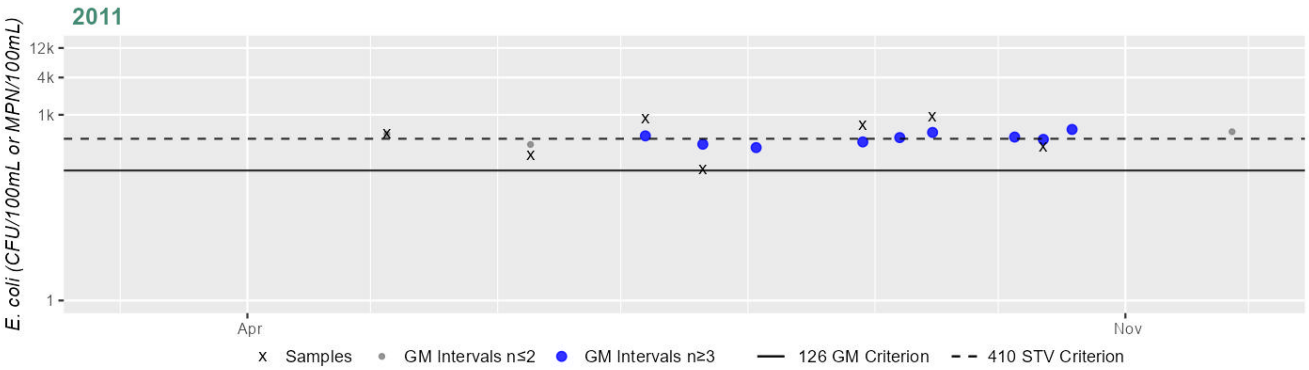
Variable*	Result
Samples	6
SeasGM	658
#GMI	6
#GMI Ex	6
%GMI Ex	100%
n>STV	4
%n>STV	66%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2237 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	423
#GMI	9
#GMI Ex	9
%GMI Ex	100%
n>STV	4
%n>STV	57%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for the Middle River (MA51-02) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 2 stations in 2011. The prior Debris, Trash, and Turbidity impairments (from the Aesthetics Use) are being carried forward. MassDEP staff collected *E. coli* bacteria samples in the Middle River in 2011 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: a third of the way down the AU at W2203 [~1200 ft downstream from Fremont St, Worcester] from May-Sep 2011 (n=6), and the downstream end at W2237 [unnamed exit Rd at rear of "Walmart complex" off Rt. 146, Worcester] from May-Oct 2011 (n=7). Analysis of the single year limited frequency *E. coli* dataset from W2203 indicated 100% of intervals had GMs >126 CFU/100ml, 4 samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 658 CFU/100ml. Analysis of the single year moderate frequency *E. coli* dataset from W2237 indicated 100% of intervals had GMs >126 CFU/100ml and 4 samples exceeded the 410 CFU/100ml STV. *E. coli* data from W2203 and W2237 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0502	MassDEP	Water Quality	Middle River	[Millbury Street, Worcester]	42.236558	-71.796679
W2203	MassDEP	Water Quality	Middle River	[approximately 1200 feet downstream from Fremont Street, Worcester]	42.239095	-71.825842
W2237	MassDEP	Water Quality	Middle River	[unnamed exit road at rear of "Walmart complex" off Route 146, Worcester]	42.233613	-71.793216

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

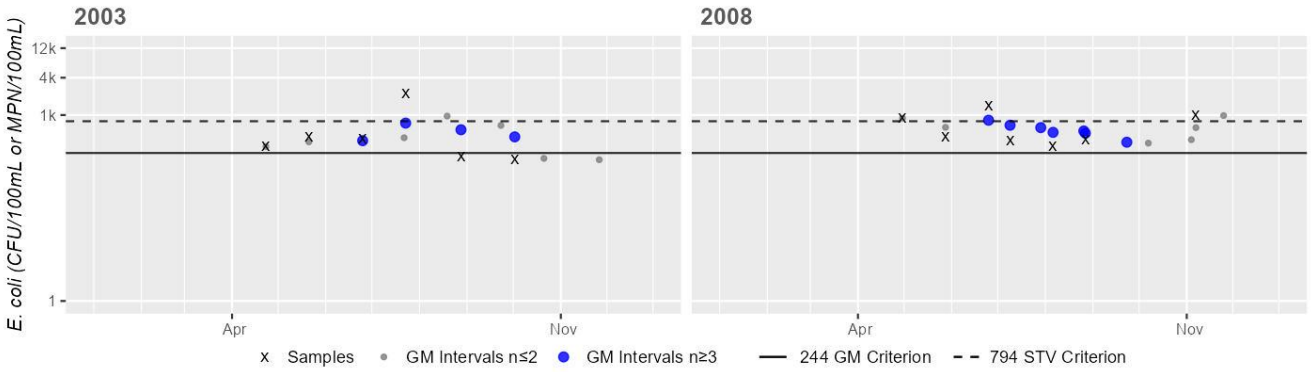
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0502	MassDEP	E. coli	04/23/03	10/02/03	6	190	2200	413
W0502	MassDEP	E. coli	04/29/08	11/06/08	7	310	1400	595
W2203	MassDEP	E. coli	05/17/11	09/26/11	6	272	1410	658
W2237	MassDEP	E. coli	05/05/11	10/12/11	7	132	921	423

Station MASSDEP_W0502 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	413
#GMI	4
#GMI Ex	4
%GMI Ex	100%
n>STV	1
%n>STV	16%

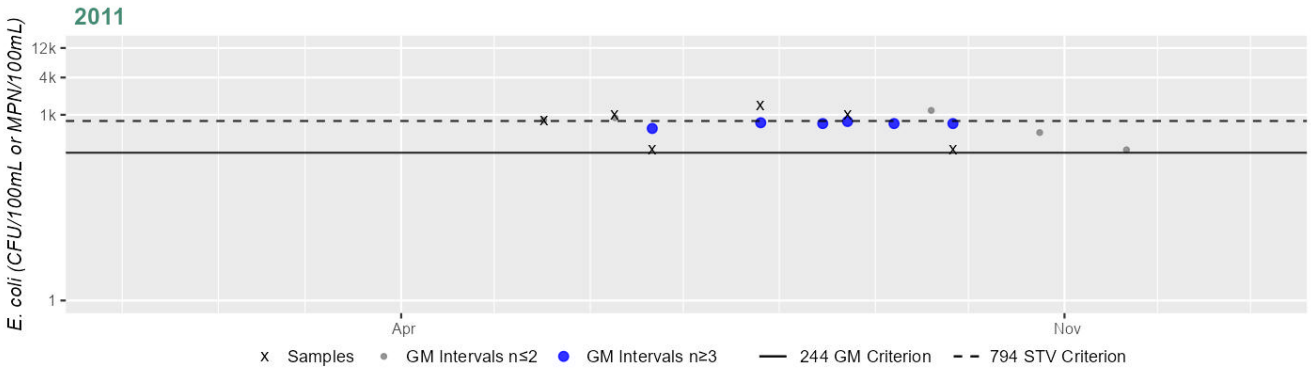
Variable*	Result
Samples	7
SeasGM	595
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	42%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2203 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



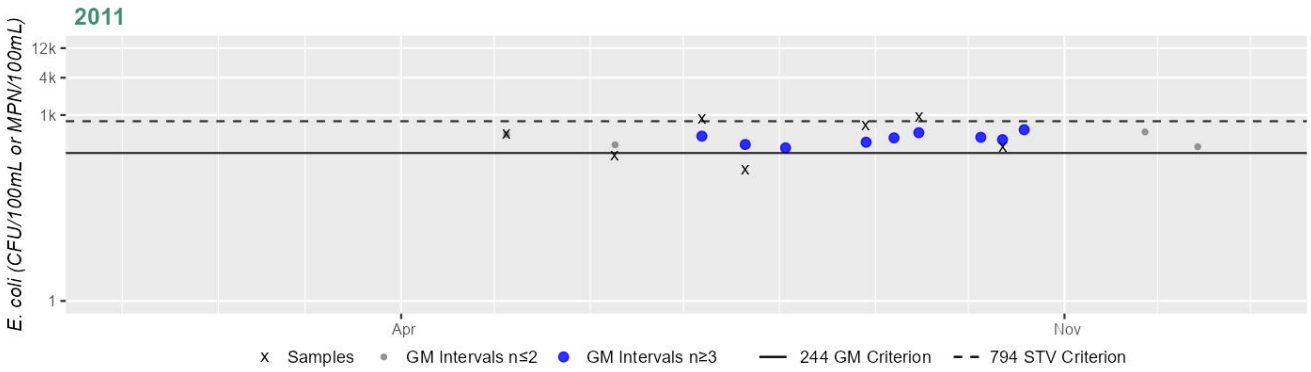
Variable*	Result
Samples	6
SeasGM	658
#GMI	6
#GMI Ex	6
%GMI Ex	100%
n>STV	4
%n>STV	66%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2237 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	7
SeasGM	423
#GMI	9
#GMI Ex	9
%GMI Ex	100%
n>STV	2
%n>STV	28%

Cumulative %GMI Exceedance

Current (2011-2022)

100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Mill Pond (MA51104)

Location:	Upton.
AU Type:	FRESHWATER LAKE
AU Size:	10 ACRES
Classification/Qualifier:	B

No usable data were available for Mill Pond (MA51104) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

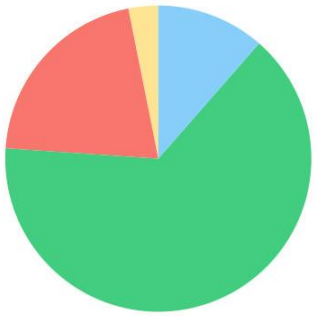
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Mill River (MA51-35)

Location:	Headwaters, outlet North Pond, Milford/Upton to Mendon/Blackstone corporate boundary (through former 2008 segments: Fiske Millpond MA51049, Mill Pond (formerly known as Milford Street Pond) MA51102, Hopedale Pond MA51065 and Spindleville Pond MA51158) (formerly part of 2010 segment: Mill River MA51-10).
AU Type:	RIVER
AU Size:	11.8 MILES
Classification/Qualifier:	B: WWF

Mill River (MA51-35)

Watershed Area: 24.46 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	24.46	9.33	7.87	2.94
Agriculture	3.1%	5.2%	1.8%	3.9%
Developed	20.8%	15.8%	15.3%	11.1%
Natural	64.6%	64.7%	59.8%	55.3%
Wetland	11.4%	14.3%	23.2%	29.7%
Impervious	8.7%	5.1%	6.8%	3.5%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Metals	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added
5	5	PCBs in Fish Tissue	--	Unchanged
5	5	PFAS in Fish Tissue	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Metals	Source Unknown (N)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X
PCBs in Fish Tissue	Source Unknown (N)	--	X	--	--	--
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. The Mill River (MA51-35) includes several run-of-river impoundments (formerly their own AUs) that were first listed for Noxious Aquatic Plants (NAP) in 1996- these include, from upstream to downstream, Fiske Millpond (formerly MA51049), Mill Pond (formerly MA51102), Hopedale Pond (formerly MA51065), and

2022 Removed Impairment	Removal Reason	Removal Comment
		Spindleville Pond (formerly MA51158). In 2010, these pond AUs were merged with the Mill River (MA51-35) AU, and the NAP impairment was remapped as Aquatic Plants (Macrophytes) and applied to the river AU (MassDEP 2024). The original pond impairments were based on synoptic surveys conducted by MassDEP staff in July 1994 in which dense coverage (75-100%) of aquatic macrophytes was observed on roughly 84-100% of 3 of the 4 ponds (Fiske Millpond had dense coverage on 10-20% of its area). Non-rooted, floating species at the ponds included *Utricularia* sp. at multiple ponds, *Ceratophyllum* sp. at Fiske Millpond and Spindleville Pond, and *Wolffia*/*Lemna* spp. at Spindleville Pond (MassDEP 1994, MassDEP 2002). All the ponds have Google Earth images from at least one year from 2013 or later in which it appears there are high amounts of plant coverage, and portions of the river also have high plant coverage from time to time (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species in the run-of-river impoundments of this Mill River AU (MA51-35). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since ~25% of the length of the river (the impounded and slow-moving reaches) were covered with aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet for Fiske Millpond (formerly MA51049) (MassDEP 2002):

WBID: **MA51049** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Fiske Millpond** TYPE: **Lake/Pond**
CODE: **51049** SIZE: **16.00**(acres) CLASS: **B**

LATITUDE: **42.16583**
LONGITUDE: **71.56389** (420957/713350)
Lake/Pond Name: Fiske MillPond, Upton/Milford
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			13.00	3.00		
ALUS			16.00			
FISH CONSUMPTION					16.00	
PRIMARY CONTACT		13.00		3.00		
SECONDARY CONTACT		13.00		3.00		
Aesthetics					16.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	3.00	H
2600- Exotic species	16.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	16.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category =>Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New"Assessment Category=> M E NA

Media/Pollutants Assessed (Toxics Monitoring =>N)
-

"New" Toxics Monitoring => YES or NO

Comments:
1996:
SYNOPTIC SURVEY ON 13 JULY 1994 INDICATED VERY DENSE COVER OF FLOATING LEAF PLANTS ALONG MUCH OF THE SHORE ON THE UPPER END OF THE POND (@ 10-20% OF THE AREA). THE LOWER END OF THE POND HAD BEEN TREATED FOR CERATOPHYLLUM SP. EARLIER. MYRIOPHYLLUM HETEROPHYLLUM WAS OBSERVED IN THE POND, THREATENING THE ENTIRE POND.

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1996 WBS Coding Sheet for Mill Pond (formerly MA51102; also called Milford Street Pond) (MassDEP 2002):

WBID: MA51102 WATERSHED: Blackstone(51) (Printed 05/13/96)
NAME: Milford Street Pond TYPE: Lake/Pond
CODE: 51102 SIZE: 17.00(acres)
CLASS: B
ORW?: Yes or No
Water Supply?: Yes or No

LATITUDE:
LONGITUDE: 0
Lake/Pond Name: Milford Street Pond, Hopedale/Milford
Ecoregion Name: 0
Description:

Assessment Date: 9407 **Begin Sampling:** 9407 **Water Quality Limited?:** YES or NO
Cycle: 96 **End Sampling:** 9407 **303(d) List?:** YES or NO

Lake Specific Information
Significantly Publicly Owned: Y
Trophic Status: E
Trophic Trend:
Acidity/Toxics Trend:
Acidity Effects:

1996
Significantly Publicly Owned: Y or N
Trophic Status: O M E H D U
Trophic Trend: I S D U
Acidity/Toxics Trend: I S D U
Acidity Effects: I V N U

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				17.00		
ALUS					17.00	
FISH CONSUMPTION					17.00	
PRIMARY CONTACT				17.00		
SECONDARY CONTACT				17.00		
Aesthetics					17.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	17.00	H

1996

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	17.00	H

1996

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Evaluated)

1996 Assessment Category = > M E NA

R 35

Media/Pollutants Assessed (Toxics Monitoring = > N)

1996 Toxics Monitoring = > YES or NO

Comments:
1996 - A 13 JULY 1994 SYNOPTIC SURVEY INDICATES THAT ALMOST 100% DENSITY OVER ENTIRE POND, ONLY SMALL PATCHES OF OPEN WATER WHERE CHANNEL OF FLOWING WATER OCCURS. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

E: RSM 10/28/96

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1996 WBS Coding Sheet for Hopedale Pond (formerly MA51065) (MassDEP 2002):

WBID: **MA51065** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Hopedale Pond** TYPE: **Lake/Pond**
CODE: **51065** SIZE: **95.00**(acres) CLASS: **B**

LATITUDE: **42.13333**
LONGITUDE: **71.54528** (420800/713243)
Lake/Pond Name: Hopedale Pond, Hopedale
Ecoregion Name: (59) Northeastern Coastal Zone
Description:

Assessment Date: 9609 **Begin Sampling:** 9107 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			95.00			
ALUS			95.00			
FISH CONSUMPTION					95.00	
PRIMARY CONTACT		15.00	80.00			
SECONDARY CONTACT		15.00	80.00			
Aesthetics		95.00				

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	80.00	M
2600- Exotic species	95.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	95.00	M

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category =>Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New"Assessment Category=> M E NA

Media/Pollutants Assessed (Toxics Monitoring =>N)

"New" Toxics Monitoring => YES or NO

Comments:
VERY DENSE GROWTHS OF AQUATIC MACROPHYTES (PRIMARILY CABOMBA CAROLINIANA AND NYMPHYAEA ODORATA) COVER ALL BUT THE DEEPER PORTIONS OF THE SOUTHEASTERN PART OF THE POND AND MODERATE OXYGEN DEPLETION WAS NOTED IN THE HYPOLIMNION.

1996:
A 13 July 1994 synoptic survey indicated virtually the same conditions with knowledge that the lower part of the pond had been chemically treated earlier in the year. Cabomba caroliniana and Myriophyllum heterophyllum observed.

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1996 WBS Coding Sheet for Spindleville Pond (formerly MA51158) (MassDEP 2002):

WBID: **MA51158** WATERSHED: **Blackstone (51)** (Printed 02/03/98)
NAME: **Spindleville Pond** TYPE: **Lake/Pond**
CODE: **51158** SIZE: **12.00**(acres) CLASS: **B**

LATITUDE: **42.11528**
LONGITUDE: **71.53056** (420655/713150)
Lake/Pond Name: Spindleville Pond, Hopedale
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Hypereutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				12.00		
ALUS					12.00	
FISH CONSUMPTION				12.00		
PRIMARY CONTACT				12.00		
SECONDARY CONTACT				12.00		
Aesthetics					12.00	

Nonattainment Causes

Code	Size	Magnitude
0300- Priority organics	12.00	M
0301- (PCB's)	12.00	M
2200- Noxious aquatic plants	12.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	12.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
R35- Primary Producer Surveys

"New"Assessment Category= > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 13 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% COVERAGE OVER MOST OF THE POND BECAUSE OF DUCKWEED AND WATER MEAL AND ALGAE. THE SUBMERGED VEGETATION WAS ALSO VERY DENSE. PCBs in the Mill River were the cause of the non-supporting fish consumption criteria. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet for Fiske Millpond (MassDEP 1994):

Entered 7/21/94 Complete WDS 10/26/94

S1049

Lake/Pond Fiske Mill Pond **Date** 7/13/94

Town/City Upton / Milford **Observers** R. Haynes, R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):

(1) Corner of Pond St + Fiske Mill Rd. - at outlet - small
- Unpaved turnout - informal
- Electric motors only, or canoes

(2) About ½ way up west shore - turn out area

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

(1+2) Nipmuc Rod + Gun Club - upper end of lake private owned

Posted signs (re aquatic plants, fish advisories, access, etc.):

- "Nipmuc Club Members Only.
- Posting down Pond st - Chemical treatment by AcT, Inc

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):

(1) Much organic, leaf debris on bottom, Brown turbidity evident
Dam, flashboards leaking freely

(2) Very turbid; brown; silty organic bottom

Record of aquatic plant "species" observed (see note below):

(1) Several boulders sticking out of water, Nymphaea, Pontederia Peltandra, Lythrum Salicaria, Isoetes, Utricularia sp.

(2) Pontederia, Nymphaea, Myriophyllum heterophyllum (one piece floating along shore), Utricularia sp, Lythrum Salicaria

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

(1) Patchy in lower 1/3

(2) Floating leared in 75-100% cover patches along north of shore in upper end of lake (~10-20% total)

Other notes (e.g., overt pollution, construction, and water uses:

Treated ~ lower 1/3 of pond for Ceratophyllum in early June (ACT, Inc)

3056 - Eutrophic

1° Contact - 3 acres - Non-support : 13 acres - Threatened
2° Contact - 3 acres - Non-support 13 acres - Threatened
Aq. Life - 16 acres - Partial support
Cause - Noxious plants - M 13 acres Exotic plants - M 16 acres

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Mill Pond (aka Milford St Pond) (MassDEP 1994):

Entered 7/21/94

9/27/94

Page 1 of 2

Lake/Pond 51102 Mill Pond (Milford St. Pond) Date 7/13/94

Town/City Milford/Hopedale/Upton Observers R. Haynes
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Informal, unpaved turnout area at dam on Milford St (Rt. 140)

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Uncertain

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Little stain, V. slight turbidity; heavily organic on bottom
Good flow over dam

Record of aquatic plant "species" observed (see note below):

Utricularia vulgaris, Pontederia, sparganium, Typha latifolia
Nymphaea, Moss, Utricularia purpurea,
Polygonum, Peltandra

Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**

Almost 100% over entire pond, only small patches of open water where channel of flowing water occurs

Other notes (e.g., overt pollution, construction, and water uses:

305b - Eutrophic

1° Contact } 100% Non-support
2° Contact }

Causes - Noxious plants - H (Full acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Hopedale Pond (MassDEP 1994):

Entered 7/21/94 Entered WBS 10/26/94

51065

Page 1 of 2

Lake/Pond Hopedale Pond Date 7/13/94

Town/City Hopedale Observers R. McVoy, R. Haynes

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):

(1) Path (vehicle) but gated at north western end of pond - Long walk in (few 100 yds), but could launch boats informally if open

(2) At dam, walk across park.

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

(1) Hopedale, Park Commission

Posted signs (re aquatic plants, fish advisories, access, etc.):

(1) - "Parklands Closed 9pm - No Trespassing - Gates Will Be Locked Police Take Notice

- "Parklands, No Hunting"
- "Hopedale Parklands (list of restrictions) - 13

(2) No parking, Fire Apparatus Only

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):

(1) Not stained, V. slight turbidity - mucky organic bottom

(2) slight stain; slight turbidity

Productive pond.

Record of aquatic plant "species" observed (see note below):

(1) Cabomba, Najas sp. (in drag), Utricularia sp., Sparganium, Pontederia, Sagittaria, Nymphaea, Nuphar, Eleocharis, Decodon, Utricularia purpurea. – Potamogeton sp. (thin leaf – from bridge), Typha latifolia, Utricularia vulgaris (v. nigre), Potamogeton epihydrus (bridge)

(2) Cabomba, Nymphaea, Typha latifolia, Myriophyllum (Floating Against dam) heterophyllum + Myriophyllum sp. (possibly different) – Utricularia vulgaris; Utricularia sp., Potamogeton sp. (thin leaved), Brasenia Peltandra, Cephalanthus, mats of filamentous algae

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

(1) 75-100% covered entire upper end; occasional open water, but submerged forms ~~are~~ v. dense

(2) 75-100% submerged at dam – patches of floating leafed on shores

Other notes (e.g., overt pollution, construction, and water uses:

Lower part treated
3056 – Eutrophic

1° Contact – 50 acres – Non-support : 45 acres – Threatened
2° Contact – 50 acres – " " : 45 " – "
Ag. Life – 95 acres Partial Support
Cause – Noxious plants – M; Exotic plants – M

Refer to previous Assessment

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Spindleville Pond (MassDEP 1994):

LAKE/POND: Spindleville Pond SIZE (acres): 12 PALIS NO. 51158

TOWN/CITY: Hopedale USGS TOPO. SHEET: Blackstone

DATE: 13 July 94 WATERSHED: Blackstone OBSERVERS: R. Haynes/R. McVoy

ACCESS – Location [describe each observation site and assign sequential numbers (1, 2, 3, etc.) to use in subsequent records; be specific in descriptions (e.g., public boat ramp at west cove area off Simpson St., etc.)]

Site (1) At outlet on Mill Street

Site (2)

Site (3)

ACCESS – Type (for multiple observation sites use numbers in boxes that apply)

Formal Boat Ramp ☐☐☐ and/or Beach ☐☐☐ Informal Boat Ramp ☐☐☐ and/or Beach ☐☐☐

Park ☐☐☐ Conservation Area ☐☐☐ Right-of-Way: Road [1]☐☐ Other ☐☐☐

Other (describe): [1] No formal access

☐

☐

ACCESS – Ownership (for multiple observation sites use numbers in boxes that apply)

Public [1]☐☐ Private ☐☐☐ Uncertain [1]☐☐

Names of Owners [1] Road +/or dam owner(?) No. & Street Name ☐

☐ No. & Street Name ☐

☐ No. & Street Name ☐

SIGN POSTINGS –

☐☐☐ Warning: Stop Aquatic Plant Spread [1]☐☐ Fishing Advisory or Ban On pole downstream from pond.

☐☐☐ Public Access without Restrictions ☐☐☐ Public Access with Restrictions

Describe any restrictions (or other notes) [1] "WARNING - As of May 1, 1990. Do Not Eat Any Fish in these Waterways ☐ due to possible contamination per order of the Board of Health - For ☐ Further Information Please call: Hopedale Board of Health - 478-2140

WATER/LAKE QUALITY OBSERVATIONS –

Turbidity: ☐☐☐ Slight ☐☐☐ Moderate [1]☐☐ Excessive

Diss. Organics: ☐☐☐ Slight ☐☐☐ Moderate ☐☐☐ Dark

Algal Bloom: ☐☐☐ Slight ☐☐☐ Moderate ☐☐☐ Dense

Transparency: [1]☐☐ <1.2 m.(4 ft.) ☐☐☐ >1.2 m. (4 ft.)
[1]☐☐ Estimated visually
☐☐☐ Measured w/ Secchi Disk ☐_____meters
☐_____meters
☐_____meters

Bottom Type: ☐☐☐ Undecomposed matter ☐☐☐ Muck/silt ☐☐☐ Sand ☐☐☐ Gravel ☐☐☐ Cobble ☐☐☐ Boulders

☐☐☐ Vegetation Other ☐ ☐ ☐

Other Observations: ☐

☐

☐

AESTHETICALLY OBJECTIONABLE – Substances attributable to wastewater or other discharges (point or nonpoint) that:

☐☐☐ Settle to form objectionable deposits

Describe:

[1]☐☐ Produce objectionable (odor) color, taste, or (turbidity)

Describe: Septic odor; murky greyish turbidity

[1]☐☐ Float as debris, scum or other matter to form a nuisance

Describe: Covered with duckweed

[1]☐☐ Produce undesirable nuisance species of aquatic life

Describe: Covered with duckweed

RECORD OF AQUATIC PLANT "SPECIES" OBSERVED –

NON-NATIVE WETLANDS SPECIES PRESENT: ☑☐☐ *Lythrum Salicaria* ☐☐☐ *Phragmites* sp.

NON-NATIVE AQUATIC SPECIES PRESENT: ☐☐☐ *Butomus umbellatus* ☐☐☐ *Cabomba caroliniana* ☐☐☐ *Egeria densa*

☐☐☐ *Eichornia crassipes* ☐☐☐ *Hydrilla verticillata* ☐☐☐ *Hydrocharis morsus-ranae* ☐☐☐ *Marsilea quadrifolia*

☐☐☐ *Myriophyllum aquaticum* ☐☐☐ *Myriophyllum heterophyllum* ☐☐☐ *Myriophyllum spicatum*

☐☐☐ *M.* sp. (*M. heterophyllum* requiring further confirmation when flowering heads are evident) _____

☐☐☐ *Najas minor* ☐☐☐ *Nelumbo lutea* ☐☐☐ *Nymphoides peltata* ☐☐☐ *Potamogeton crispus* ☐☐☐ *Trapa natans*

NATIVE SPECIES POPULATIONS:

Emergent Plants	Floating Leaf Plants	Submergent Plants
☑☐☐ Typha latifolia	☑☐☐ Lemna minor	☑☐☐ Elodea
☐☐☐	☑☐☐ Wolffia	☑☐☐ Ceratophyllum echinatum
☐☐☐	☐☐☐	☑☐☐ filamentous algae
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
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☐☐☐	☐☐☐	☐☐☐

AQUATIC PLANT DENSITY –

Percent of suface area (at observation site) with dense (50 - 75 %) aquatic plant cover ☐ ____ % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent] present ☐ _____ ☐ _____ ☐ _____

Percent of surface area (observation site) with very dense (75 - 100 %) plant cover ☑ ~100 % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent) present ☑ F, S ☐ _____ ☐ _____

Percent of entire lake surface covered with dense or very dense aquatic plants ~100 % Forms F, S

Describe locations of dense and/or very dense plant beds Very dense vegetation over most of pond because of duckweed, water meal, and algae; submerged (Elodea) vegetation also very dense

Loss of open water habitat over entire lake (estimated): ☐ >90 - 100 % ☐ >60 - 90 % ☐ >25 - 60 % ☐ ≤ 25 %

ASSESSMENTS –

TROPHIC STATUS ESTIMATE: ☐ Oligotrophic ☐ Mesotrophic ☐ Eutrophic ☑ Hypereutrophic ☐ Dystrophic ☐ Undetermined

305(b) USE IMPAIRMENT ASSESSMENTS (Acres):

USES	Full Support	Threatened	Partial Support	Non-support	Not Assessed	Not Attainable
Aquatic Life					12.0	
Fish Consumption				12.0		
Primary Contact				12.0		
Secondary Contact				12.0		
Aesthetics				12.0		

CAUSES: ☑ Noxious plants (2200) – Size 12.0 acres / Magnitude M ☐ Exotic plants (2600) – Size _____ acres / Magnitude ____
☐ Turbidity (2500) – Size _____ acres / Magnitude ____ ☐ Flow alteration (1500) – Size _____ acres / Magnitude ____
☐ Metals (0500) ☐ Hg (0501) – Size _____ acres / Magnitude ____ ☐ Siltation (1100) – Size _____ acres / Magnitude ____
☑ Unknown toxics (0100) – Size 12.0 acres / Magnitude M ☐ _____ ( ) – Size _____ acres / Magnitude ____

SOURCES: Describe any obvious sources of impairment Treatment plant upstream

Google Earth image of Fiske Millpond, 8/24/2013 (Google Earth Pro Undated):



Google Earth image of Mill River between Fiske Millpond and Mill Pond (aka Milford Street Pond), 9/27/2014 (Google Earth Pro Undated):


9/2014
Imagery Date: 9/27/2014 42°09'32.44" N 71°33'41.46" W

Google Earth image of Mill Pond (aka Milford Street Pond), 8/24/2013 (Google Earth Pro Undated):



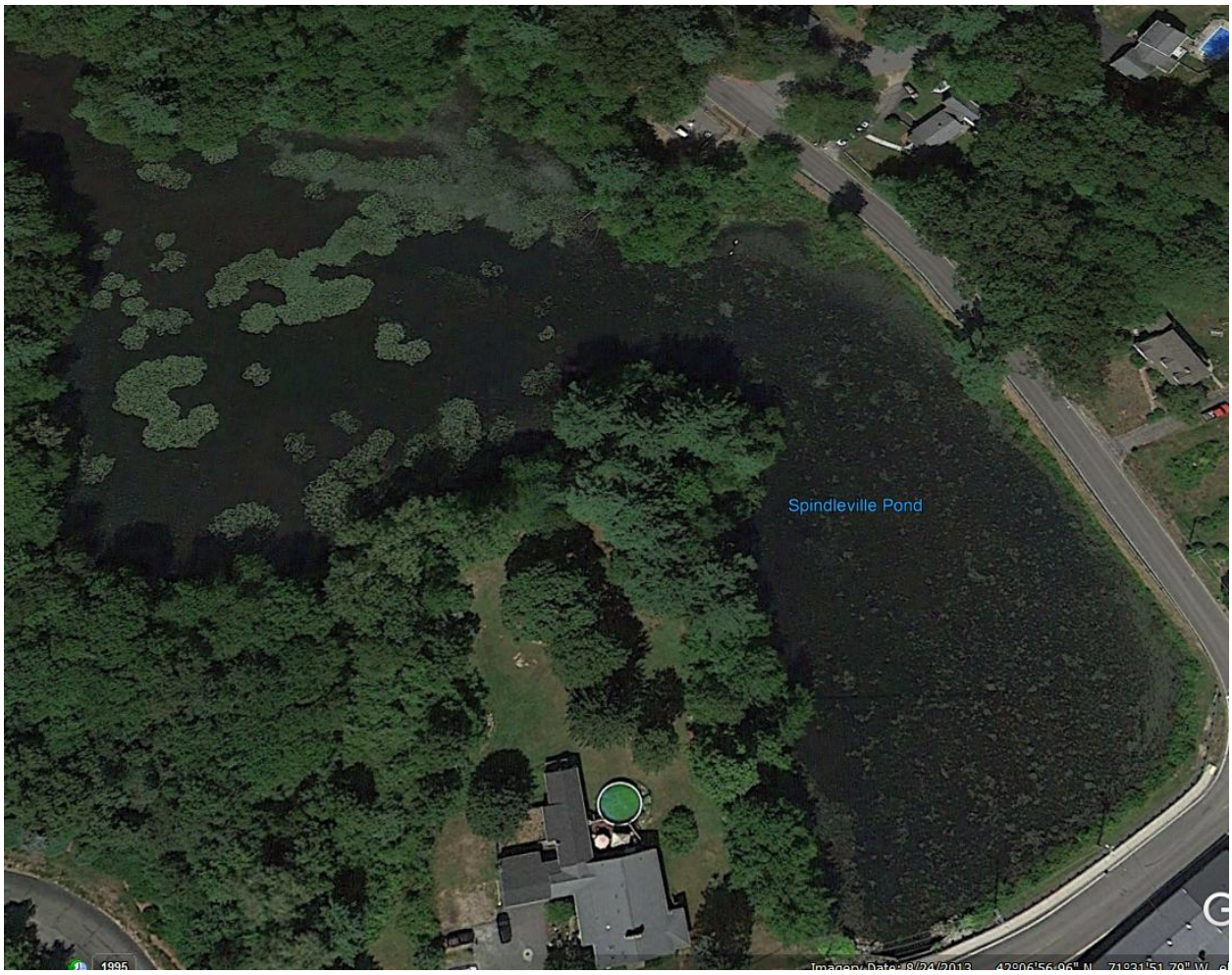
Google Earth image of Mill River between Mill Pond (upper left corner) and the upper part of Hopedale Pond, 8/24/2013 (Google Earth Pro Undated):



Google Earth image of Hopedale Pond, 8/24/2013 (Google Earth Pro Undated):



Google Earth image of Spindleville Pond, 8/24/2013 (Google Earth Pro Undated):



Recommendations

2024/26 Recommendations
2024IR [HARMFUL ALGAL BLOOMS, MEDIUM] Follow-up monitoring should be conducted in Mill River (MA51-35) roughly halfway down the AU, just upstream of Mill Street in Hopedale at "Spindleville Pond", to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for this Mill River AU (MA51-35) continues to be assessed as Not Supporting. The prior PCBs in Fish Tissue impairment is being carried forward and a new impairment is being added for PFAS in Fish Tissue. Fish toxics sampling was conducted in the Hopedale Pond impoundment of this Mill River AU (MA51-35) at station F0315 (PFAS Study ID 14) on 11/08/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. MDPH issued a site-specific advisory for PFAS in the Mill River (referred to by MDPH as ''Hopedale Pond'') in their May 2024 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. MDPH also retained the existing site-specific PCBs advisory for the Mill River in the January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
F0315	MassDEP	Fish Toxics	Mill River/Hopedale Pond	[on Mill River in impoundment (Hopedale Pond) of Hopedale Pond Dam (NAT ID: MA00624), Hopedale]	42.138248	-71.550526

Fish Tissue Data

Summary of Fish Tissue Data and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP 2023) (MassDEP Undated 6)

Summary
Fish toxics sampling was conducted in the Hopedale Pond impoundment of this Mill River AU (MA51-35) at station F0315 (PFAS Study ID 14) on 11/08/2022 as part of a MassDEP-funded project evaluating 40 PFAS analytes in selected fresh waters. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for the Mill River (referred to by MDPH as Hopedale Pond) in their May 2024 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. Additionally, MDPH retained the existing site-specific fish consumption advisories for PCBs associated with the Mill River in their January 2025 Freshwater Fish Consumption Advisory List. The site-specific DPH advisories are indicative of Fish Consumption Use impairments for PFAS in Fish Tissue and PCBs in Fish Tissue for this Mill River AU (MA51-35).

MassDEP 2022 PFAS in Fish Tissue Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 6) (MA DPH 2023c)

[ng/g = ppb. All PFBA, PFBS, and HFPO-DA (Genx) concentrations <MDL. ND indicates that the PFAS analyte was not detected in any of the composite samples (i.e., it was <MDL). Means weighted by the number of fish in the contributing composites were calculated for any PFAS analyte – waterbody – species combination where an analyte was detected in at least one sample; if a sample did not have the analyte detected, the concentration for that sample was set to ½*MDL for the purposes of calculating a mean. Data are highlighted red per the fish consumption advisory thresholds summarized in Table 4.2 of MDPH's 2023 Technical Support Document for the evaluation of PFAS in recreational waterbodies.]
[Species List: B = bluegill, BC = black crappie, YP = yellow perch]

Station Code	PFAS Study ID	Sample Date	Species	Mean PFHxS ng/g	Mean PFNA ng/g	Mean PFOA ng/g	Mean PFOS ng/g	Analytes with ≥ 1 Sample Qualified
F0315	14	11/08/2022	B	ND	ND	ND	3.05	
F0315	14	11/08/2022	BC	ND	0.15	ND	6.70	PFNA
F0315	14	11/08/2022	YP	ND	ND	ND	3.80	

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary

The Aesthetics Use for Mill River (MA51-35) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (from the 2012 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators being added. An Alert is being identified for Harmful Algal Blooms in this waterbody since C-HAB postings (blooms of >15 days in duration) were reported to MDPH for 2022. As described in detail in the 2024 CALM guidance document, the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. The Mill River (MA51-35) includes several run-of-river impoundments (formerly their own AUs) that were first listed for Noxious Aquatic Plants (NAP) in 1996- these include, from upstream to downstream, Fiske Millpond (formerly MA51049), Mill Pond (formerly MA51102), Hopedale Pond (formerly MA51065), and Spindleville Pond (formerly MA51158). In 2010, these pond AUs were merged with the Mill River (MA51-35) AU, and the NAP impairment was remapped as Aquatic Plants (Macrophytes) and applied to the river AU (MassDEP 2024). The original pond impairments were based on synoptic surveys conducted by MassDEP staff in July 1994 in which dense coverage (75-100%) of aquatic macrophytes was observed on roughly 84-100% of 3 of the 4 ponds (Fiske Millpond had dense coverage on 10-20% of its area). Non-rooted, floating species at the ponds included *Utricularia* sp. at multiple ponds, *Ceratophyllum* sp. at Fiske Millpond and Spindleville Pond, and *Wolffia*/*Lemna* spp. at Spindleville Pond (MassDEP 1994, MassDEP 2002). All the ponds have Google Earth images from at least one year from 2013 or later in which it appears there are high amounts of plant coverage, and portions of the river also have high plant coverage from time to time (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species in the run-of-river impoundments of this Mill River AU. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since ~25% of the length of the river (the impounded and slow-moving reaches) were covered with aquatic macrophytes in recent years. During the period 2015 through 2022, C-HAB postings for Mill River (MDPH name Spindleville Pond) (which falls within the Mill River assessment unit) were reported to MDPH based on visual observations for 45 days in 2022 and no blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, an Alert is being identified for Harmful Algal Blooms and a recommendation for follow-up sampling will be made.

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Mill River (MDPH name Spindleville Pond) (MA51-35) were reported to MDPH based on visual observations for 45 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, an Alert is being identified for C-HABs in this waterbody and a recommendation for follow-up sampling will be made.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Mill River (MDPH name Spindleville Pond)	Hopedale								45

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for the Mill River (MA51-35) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). An Alert is being identified for Harmful Algal Blooms and additional sampling is recommended for this AU. Surface water sampling was conducted roughly a third of the way down this Mill River AU, within the impoundment known as "Hopedale Pond" (formerly MA51065) at station W3275 (PFAS Study ID 14) on 09/01/2022 and 11/08/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value on both dates. During the period 2015 through 2022, C-HAB postings for Mill River (MDPH name Spindleville Pond) were reported to MDPH based on visual observations for 45 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W3275	MassDEP	Water Quality	Mill River/Hopedale Pond	[the default location representing co-located water/fish PFAS sampling, on Mill River in Hopedale Pond impoundment, Hopedale]	42.138248	-71.550526

Other Indicators

Summary Statement(s) for MassDEP 2022 PFAS in Water Column Data (MassDEP 2023) (MassDEP Undated 5)

Summary
Surface water sampling was conducted in Hopedale Pond (MA51-35) at station W3275 (PFAS Study ID 14) on 09/01/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value.
Surface water sampling was conducted in Hopedale Pond (MA51-35) at station W3275 (PFAS Study ID 14) on 11/08/2022 as part of a 2022 MassDEP funded project with ERG evaluating 40 PFAS analytes in selected fresh waters. The concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value.

MassDEP 2022 PFAS in Water Column Data for Massachusetts Surface Waters (MassDEP 2023) (MassDEP Undated 5)

[HFPO-DA is also known as GenX; the ∑PFAS6 equals the sum of PFOA, PFOS, PFNA, PFHxS, PFDA, PFHpA (not all shown individually here); * indicates the ∑PFAS6 concentration was qualified since data for one or more individual PFAS6 analytes were qualified; b = blank contamination qualifier, d = qualifier indicating precision of field duplicates did not meet project data quality objectives; j = 'estimated' value qualifier; ## = censored data.]

Station Code	PFAS Study ID	Sample Date	PFOA ng/L	PFOS ng/L	PFNA ng/L	PFHxS ng/L	PFBA ng/L	PFBS ng/L	HFPO-DA ng/L	∑PFAS6 ng/L
W3275	14	09/01/2022	7.2	<0.51	1.1j	1.6j	4.9j	3.7	<2	13.8*
W3275	14	11/08/2022	10	2.6j	0.98j	1.5j	4.7j	4.9	<2	21.2*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Mill River (MA51-35) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). An Alert is being identified for Harmful Algal Blooms and additional sampling is recommended for this AU. During the period 2015 through 2022, C-HAB postings for Mill River (MDPH name Spindleville Pond) were reported to MDPH based on visual observations for 45 days in 2022. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made. MassDEP staff collected *E. coli* bacteria samples halfway down the Mill River at W1021 [Rt. 16 (Mendon St), Hopedale] from Apr-Oct 2003 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1021 indicated 25% of intervals had GMs >244 CFU/100ml, 1 sample exceeded the 794 CFU/100ml STV (2000 CFU), and the overall GM was 115 CFU/100ml. Historic *E. coli* data from W1021 are inconclusive according to the 2024 CALM to assess the Secondary Contact Recreation Use because this single year, limited frequency dataset included both GMs below the threshold and STV exceedance of the threshold. Additionally, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1021	MassDEP	Water Quality	Mill River	[Route 16 (Mendon Street), Hopedale]	42.124598	-71.538901

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

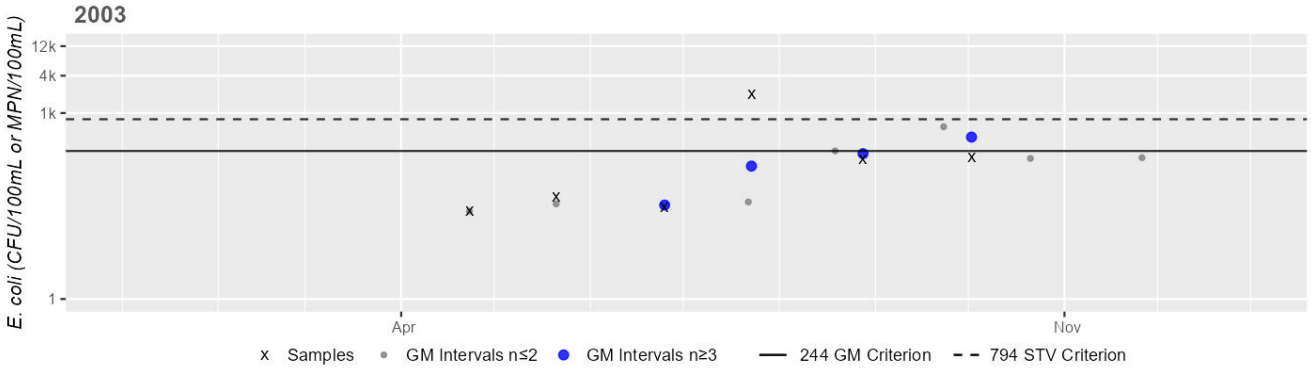
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1021	MassDEP	E. coli	04/23/03	10/02/03	6	26	2000	115

Station MASSDEP_W1021 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	115
#GMI	4
#GMI Ex	1
%GMI Ex	25%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
25%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Mill River (MA51-36)

Location:	From Mendon/Blackstone corporate boundary to 1000 feet upstream of the Rhode Island border, Blackstone (through former 2008 segment: Harris Pond MA51058) (formerly part of 2010 segment: Mill River MA51-10) (the lower 1000 feet represents "All Interstate surface waters that are public water supply in Rhode Island from 1000 feet upstream of the State Line" which are designated as Class A/PWS/ORW in 314CMR4.00, January 2007).
AU Type:	RIVER
AU Size:	4.1 MILES
Classification/Qualifier:	B: TWS, WWF

Mill River (MA51-36)

Watershed Area: 33.66 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	33.66	6.49	10.72	2.20
Agriculture	2.7%	1.8%	1.6%	1.4%
Developed	21%	26.3%	15.5%	18.8%
Natural	65.6%	64.4%	61.7%	67%
Wetland	10.7%	7.6%	21.2%	12.9%
Impervious	8.2%	8.4%	6.5%	6.6%

**Land cover analysis only includes watershed area within Massachusetts.*

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	4a	(Fanwort*)	--	Unchanged
5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Mill River (MA51-36) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Mill River (MA51-36), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Mill River (MA51-36) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Mill River (MA51-36) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples in the Mill River from 2003-2008 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: halfway down the AU at W0508 [Summer St, Blackstone] in 2003 and 2008 (n=6/yr), and just downstream of the AU at W1771 [~700 ft upstream of E School St, Woonsocket, Rhode Island] from Apr-Aug 2008 (n=6). Analysis of the historic multi-year limited frequency *E. coli* dataset from W0508 indicated 1 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2003, 75%), 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 27% of intervals had GMs >244 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1771 indicated 57% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 202 CFU/100ml. Historic *E. coli* data from W0508 and W1771 meet 2024 CALM guidance. Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0508	MassDEP	Water Quality	Mill River	[Summer Street, Blackstone]	42.040754	-71.515689
W1771	MassDEP	Water Quality	Mill River	[approximately 700 feet upstream of East School Street, Woonsocket, Rhode Island]	42.012385	-71.510359

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

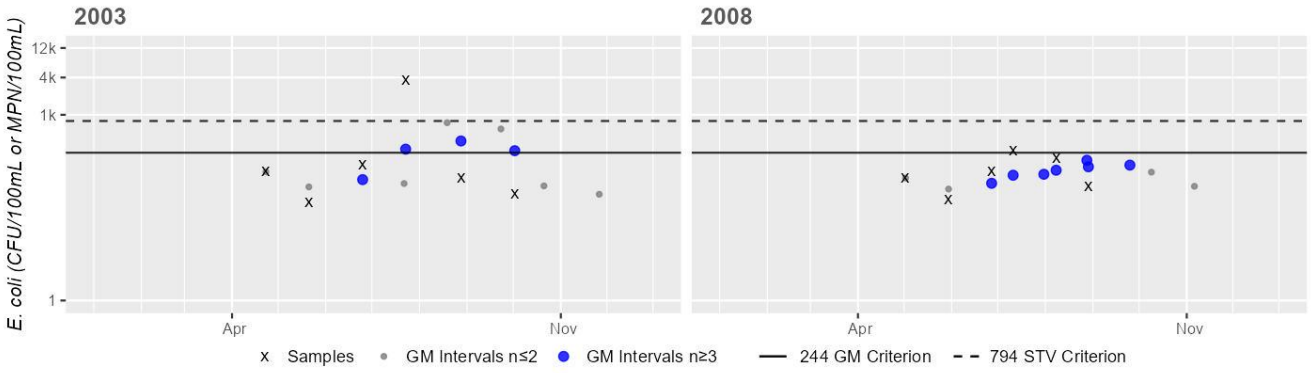
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0508	MassDEP	E. coli	04/23/03	10/02/03	6	39	3600	153
W0508	MassDEP	E. coli	05/01/08	08/28/08	6	42	260	109
W1771	MassDEP	E. coli	04/29/08	08/26/08	6	33	760	202

Station MASSDEP_W0508 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	153
#GMI	4
#GMI Ex	3
%GMI Ex	75%
n>STV	1
%n>STV	16%

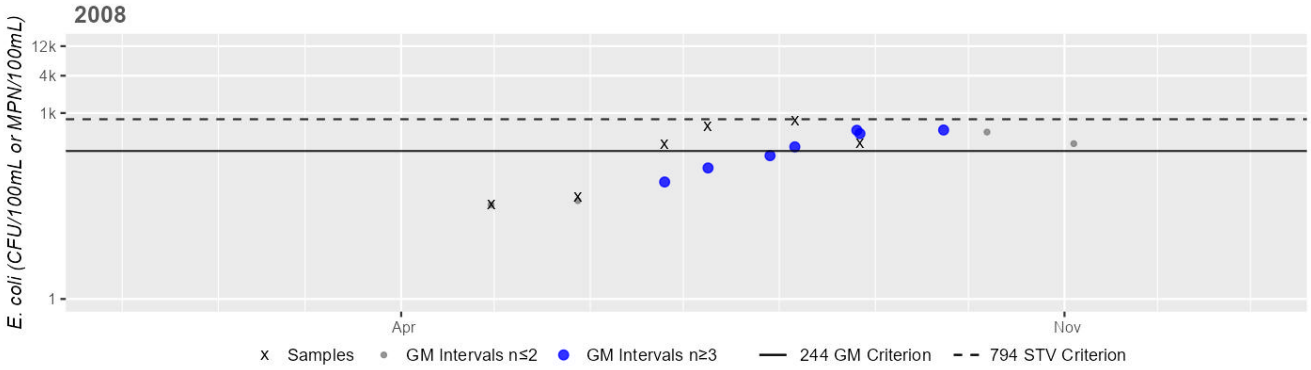
Variable*	Result
Samples	6
SeasGM	109
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
27%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1771 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	202
#GMI	7
#GMI Ex	4
%GMI Ex	57%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
57%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Miscoe Brook (MA51-21)

Location:	Headwaters, perennial portion, east of Adams Road, Grafton to mouth at inlet Silver Lake, Grafton (through former 2008 segment: Cider Millpond MA51019).
AU Type:	RIVER
AU Size:	1.9 MILES
Classification/Qualifier:	B

No usable data were available for Miscoe Brook (MA51-21) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Miscoe Brook (MA51-37)

Location:	Headwaters, perennial portion, from the Mendon/Upton/Northbridge corporate boundaries to mouth at confluence with Taft Pond Brook, Northbridge/Upton.
AU Type:	RIVER
AU Size:	0.7 MILES
Classification/Qualifier:	B

No usable data were available for Miscoe Brook (MA51-37) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Miscoe Lake (MA51106)

Location:	Wrentham (size indicates portion in Massachusetts) (entire portion in MA is from 1000 feet upstream of the state line, these interstate surface waters are public water supply in Rhode Island and designated in MA as Class A/PWS/ORW).
AU Type:	FRESHWATER LAKE
AU Size:	5 ACRES
Classification/Qualifier:	A: PWS, ORW (Tributary)

No usable data were available for Miscoe Lake (MA51106) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged

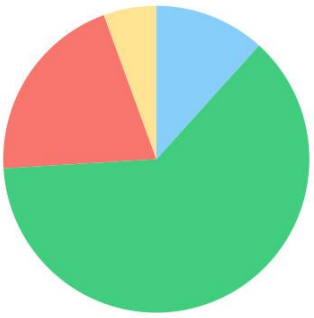
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Muddy Brook (MA51-40)

Location:	Headwaters, outlet small unnamed pond north of Nipmuc Regional High School, Mendon to mouth at confluence with Mill River, Mendon.
AU Type:	RIVER
AU Size:	5.1 MILES
Classification/Qualifier:	B

Muddy Brook (MA51-40)

Watershed Area: 6.23 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	6.23	5.50	2.01	1.83
Agriculture	5.6%	5.3%	1.6%	1.5%
Developed	20.4%	20.9%	14.1%	13.9%
Natural	62.3%	61.5%	58.9%	58.5%
Wetland	11.7%	12.3%	25.4%	26%
Impervious	6.2%	6.3%	4.2%	4.3%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Muddy Brook (MA51-40) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Muddy Brook (MA51-40), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Muddy Brook (MA51-40) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior *Escherichia coli* (*E. coli*) impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert

Not Assessed	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Muddy Brook (MA51-40) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Muddy Brook at W1760 [Bellingham Rd, Mendon] from May-Aug 2008 (n=6). Historic *E. coli* data from W1760 are inconclusive according to the 2024 CALM to assess the Secondary Contact Recreation Use because this single year, limited frequency dataset included both GMs below the threshold (163 CFU/100ml) and an STV exceedance of the threshold (2,400 CFU/100ml). Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1760	MassDEP	Water Quality	Muddy Brook	[Bellingham Road, Mendon]	42.093268	-71.519196

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

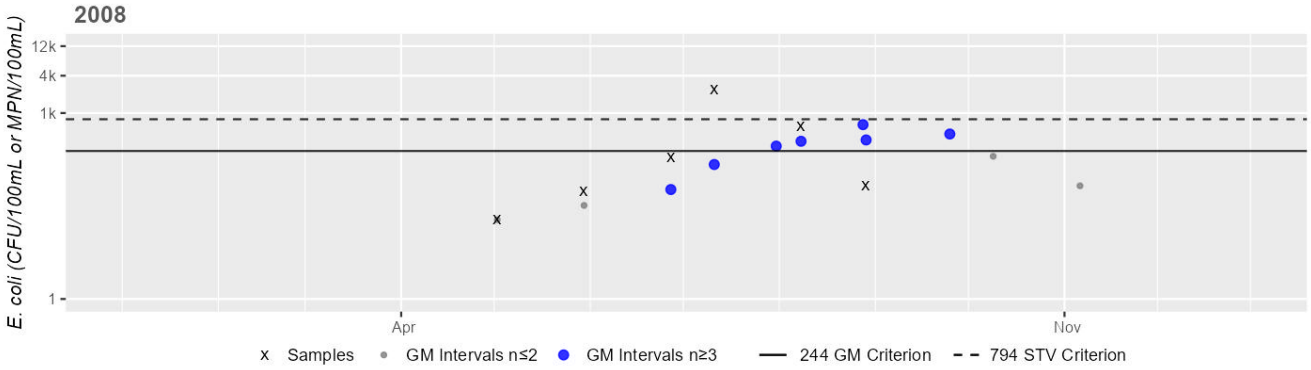
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1760	MassDEP	E. coli	05/01/08	08/28/08	6	19	2400	163

Station MASSDEP_W1760 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	163
#GMI	7
#GMI Ex	5
%GMI Ex	71%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
71%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Mumford River (MA51-13)

Location:	Headwaters, outlet Tuckers Pond, Sutton to Douglas WWTP discharge (NPDES: MA0101095), Douglas.
AU Type:	RIVER
AU Size:	4.2 MILES
Classification/Qualifier:	B: WWF, HQW

Mumford River (MA51-13)

Watershed Area: 29.71 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	29.71	10.99	10.65	3.42
Agriculture	3.5%	1.5%	2.1%	0.8%
Developed	9.8%	14.6%	8.2%	13.2%
Natural	77%	73.2%	73.6%	67.9%
Wetland	9.7%	10.6%	16%	18.1%
Impervious	3.4%	5.3%	3.3%	5.4%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Mumford River (MA51-13) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for this Mumford River AU (MA51-13) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station for Mumford River, ~2580 feet downstream from Main Street, Sutton (W2182 2011, n=6). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted dense/very dense aquatic plants (n=3).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2182	MassDEP	Water Quality	Mumford River	[approximately 2580 feet downstream from Main Street, Sutton]	42.093107	-71.737090

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2182	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2182 on Mumford River (MA51-13) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted dense/very dense aquatic plants (n=3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2182	2011	6	5	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2182	Mumford River	2011	Aquatic Plant Density, Overall	Dense	3	6
W2182	Mumford River	2011	Aquatic Plant Density, Overall	Moderate	2	6
W2182	Mumford River	2011	Aquatic Plant Density, Overall	Sparse	1	6
W2182	Mumford River	2011	Color	Light Yellow/Tan	2	6
W2182	Mumford River	2011	Color	None	4	6
W2182	Mumford River	2011	Objectionable Deposits	No	6	6
W2182	Mumford River	2011	Odor	None	6	6
W2182	Mumford River	2011	Periphyton Density, Filamentous	Moderate	4	6
W2182	Mumford River	2011	Periphyton Density, Filamentous	None	1	6
W2182	Mumford River	2011	Periphyton Density, Filamentous	Unobservable	1	6
W2182	Mumford River	2011	Periphyton Density, Film	None	5	6
W2182	Mumford River	2011	Periphyton Density, Film	Unobservable	1	6
W2182	Mumford River	2011	Scum	No	6	6
W2182	Mumford River	2011	Turbidity	None	6	6

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for the Mumford River (MA51-13) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples a quarter of the way down this Mumford River AU at W2182 [~2580 ft downstream from Main St, Sutton] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2182 indicated 66% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 115 CFU/100ml. *E. coli* data from W2182 meet 2024 CALM guidance and the prior Alert is being removed.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2182	MassDEP	Water Quality	Mumford River	[approximately 2580 feet downstream from Main Street, Sutton]	42.093107	-71.737090

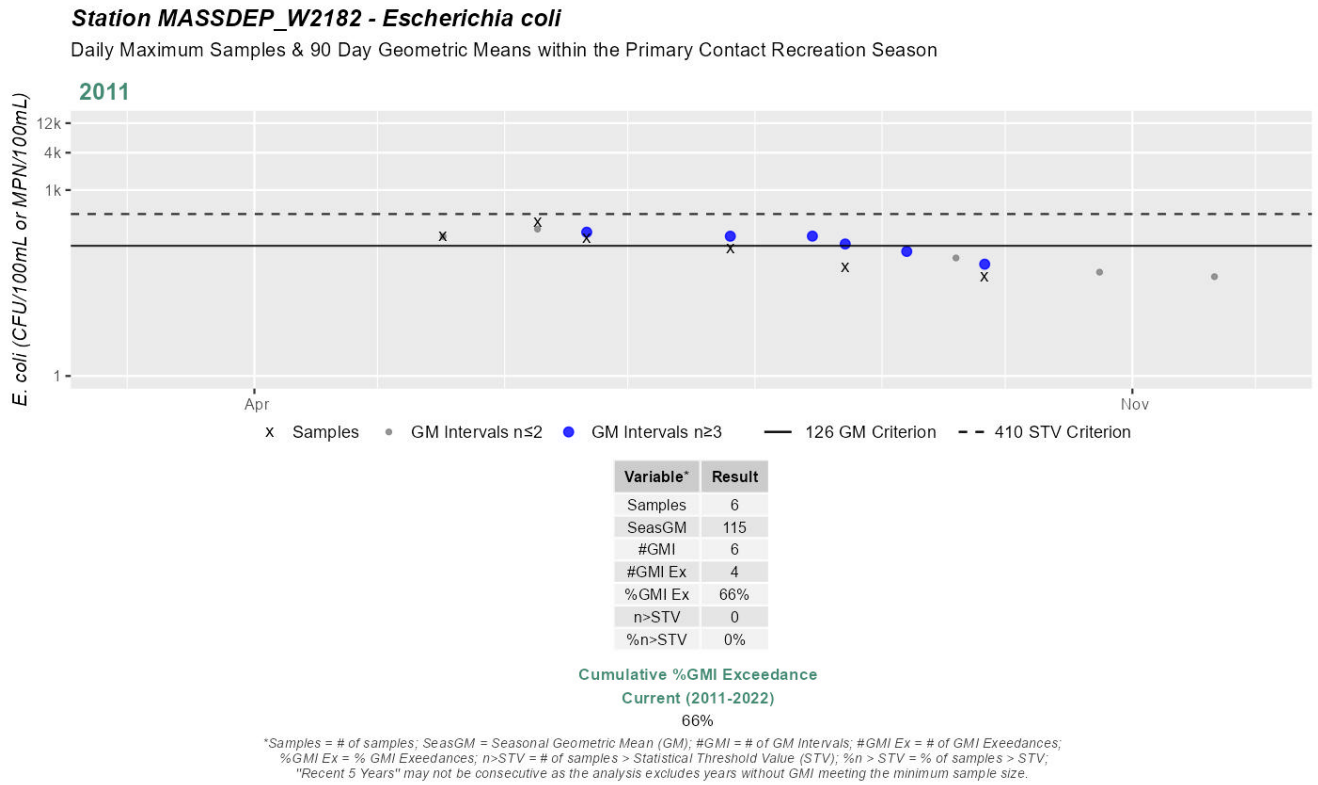
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2182	MassDEP	E. coli	05/17/11	09/26/11	6	40	308	115



Variable*	Result
Samples	6
SeasGM	115
#GMI	6
#GMI Ex	4
%GMI Ex	66%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
66%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Mumford River (MA51-13) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Mumford River from 2003-2011 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: a quarter of the way down the AU at W2182 [~2580 ft downstream from Main St, Sutton] from May-Sep 2011 (n=6), and three-quarters of the way down at W1062 [Manchaug St, Douglas] from Apr-Oct 2003 (n=6). Since bacteria data from the historic IR window at W1062 are indicative of generally good water quality conditions, only the analysis from the current IR window at W2182 will be summarized here: Analysis of the single year limited frequency *E. coli* dataset from W2182 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 115 CFU/100ml. *E. coli* data from W2182 meet 2024 CALM guidance and the prior Alert is being removed.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1062	MassDEP	Water Quality	Mumford River	[Manchaug Street, Douglas]	42.076652	-71.724758
W2182	MassDEP	Water Quality	Mumford River	[approximately 2580 feet downstream from Main Street, Sutton]	42.093107	-71.737090

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

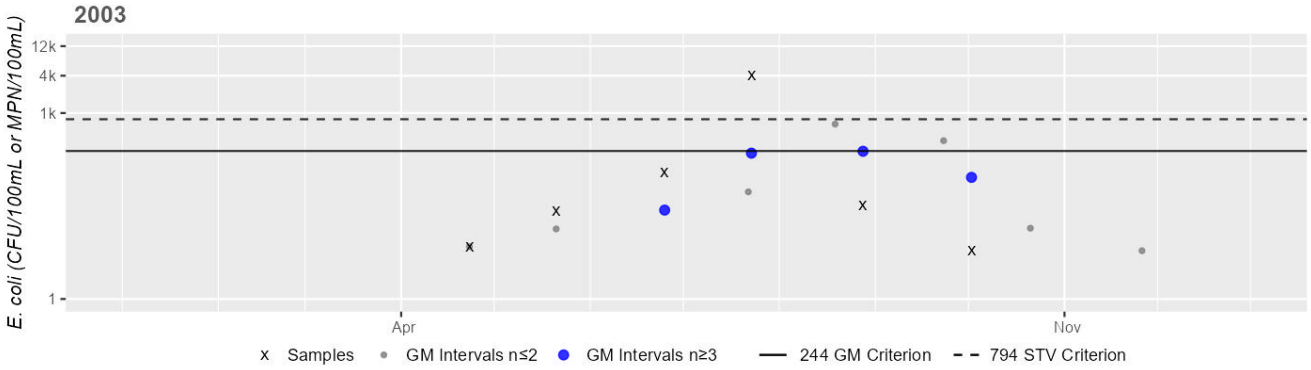
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1062	MassDEP	E. coli	04/23/03	10/02/03	6	6	4000	49
W2182	MassDEP	E. coli	05/17/11	09/26/11	6	40	308	115

Station MASSDEP_W1062 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



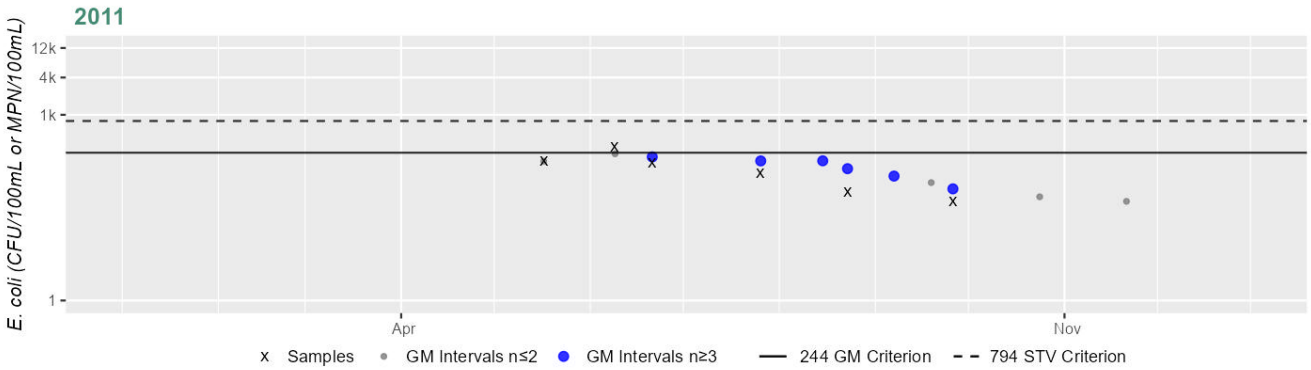
Variable*	Result
Samples	6
SeasGM	49
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2182 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	115
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Mumford River (MA51-14)

Location:	From Douglas WWTP discharge (NPDES: MA0101095), Douglas to mouth at confluence with Blackstone River, Uxbridge (through former 2008 segments: Gilboa Pond MA51052, Lackey Pond MA51083, Meadow Pond MA51193, Linwood Pond MA51088, Whitin Pond MA51178, and Caprons Pond MA51014).
AU Type:	RIVER
AU Size:	9.4 MILES
Classification/Qualifier:	B: WWF

Mumford River (MA51-14)

Watershed Area: 56.20 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	56.20	7.12	19.45	2.32
Agriculture	3.6%	3.5%	1.9%	1%
Developed	14.8%	27.6%	12.6%	27.1%
Natural	72.4%	62%	69.7%	59.1%
Wetland	9.2%	7%	15.9%	12.7%
Impervious	5.6%	11.8%	5.3%	12.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	(Water Chestnut*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. A large percentage of the Mumford River (MA51-14) is comprised of run-of-river impoundments (formerly their own AUs) including, from upstream to downstream, Gilboa Pond (formerly MA51052), Lackey Pond (formerly MA51083), Meadow Pond (formerly MA51193), Linwood Pond (formerly MA51088), Whitin Pond (formerly MA51178), and Caprons Pond (MA51014). Several of these ponds (Gilboa, Meadow, and Whitin ponds) were first listed as

2022 Removed Impairment	Removal Reason	Removal Comment
		impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle, when all the ponds were merged with the Mumford River (MA51-14) AU (MassDEP 2024). The original pond impairments were based on synoptic surveys conducted by MassDEP staff in July 1994, in which dense coverage (75-100%) of aquatic macrophytes was observed on roughly 20-50% of the surface area of the ponds. A combination of the non-rooted, floating species, *Wolffia*/*Lemna*/*Utricularia* spp. and/or filamentous algae was observed at all the ponds, including those not impaired in 1996 (MassDEP 1994, MassDEP 2002). Google Earth images from 2016 to 2019 show high amounts of plant coverage (>25% - ~100%) in at least one year for all six of the ponds (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species and/or filamentous algae in all the run-of-river impoundments of the Mumford River (MA51-14). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since the lengths of the pond sections with recently observed dense vegetative coverage comprise, in total, roughly 28% of the length of the river AU.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet for Gilboa Pond (formerly MA51052) (MassDEP 2002):

WBID: MA51052 WATERSHED: Blackstone (51) (Printed 07/31/00)
NAME: Gilboa Pond TYPE: Lake/Pond
CODE: 51052 SIZE: 21.00(acres) CLASS: B

LATITUDE: 42.08139
LONGITUDE: 71.70278 (420453/714210)
Lake/Pond Name: Gilboa Pond, Douglas
Ecoregion Name: ()
Description:

Assessment Date: 9912 Begin Sampling: 9407
Cycle: 99 End Sampling: 9407

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			14.00	7.00		
ALUS			21.00			
FISH CONSUMPTION					21.00	
PRIMARY CONTACT		14.00		7.00		
SECONDARY CONTACT		14.00		7.00		
Aesthetics					21.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	7.00	M
2500- Turbidity	~~14.00~~	~~T~~
2600- Exotic species	21.00	M

"New"

Code	Size	Magnitude
2200	7.0	M
2600	21.0	M

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	21.00	H

"New"

Code	Size	Magnitude
~~9000~~	21.0	H

Assessment Type
(Assessment Category = >Evaluated)
ACO-Carryover (Change from Monitored to Evaluated only)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

B05, B10, R15, R20

Media/Pollutants Assessed (Toxics Monitoring = >N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A JULY 1994 SYNOPTIC SURVEY INDICATES THAT EMERGENTS/FLOATING HAD BETWEEN 75% AND 100% DENSITY OVER ABOUT ONE THIRD OF THE POND. SUBMERGED (MAINLY MYRIOPHYLLUM) WERE DENSE, BUT PATCHY THROUGHOUT THE POND. THE NON-NATIVE MYRIOPHYLLUM HETEROPHYLLUM WAS PRESENT AND THREATENS TO IMPAIR THE USE OVER APPROXIMATELY 14 ACRES OF THE POND. TURBIDITY IS ALSO A THREAT TO 14 ACRES OF THE POND. THE LOWER PART WAS LESS TURBID AND HAD LESS SCUM. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1996 WBS Coding Sheet for Lackey Pond (formerly MA51083) (MassDEP 2002):

WBID: MA51083 WATERSHED: Blackstone (51) (Printed 02/03/98)
NAME: Lackey Pond TYPE: Lake/Pond
CODE: 51083 SIZE: 117.00(acres) CLASS: B

LATITUDE:
LONGITUDE: (420540/714123)
Lake/Pond Name: Lackey Pond, Uxbridge/Sutton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** No
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Unknown
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT	67.00					50.00
ALUS					67.00	50.00
FISH CONSUMPTION					117.00 67.0	50.0
PRIMARY CONTACT					67.00	50.00
SECONDARY CONTACT	67.00					50.00
Aesthetics					117.00 67.0	50.0

Nonattainment Causes

Code	Size	Magnitude
1500- Flow alteration	50.00	H

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	50.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
R35- Primary Producer Surveys

"New"Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
HISTORICALLY VERY HIGH TOTAL PHOSPHORUS LEVELS AND ALGAL "BLOOMS" REDUCE TRANSPARENCY BELOW THE SAFETY CRITERIA (4 FT. SECCHI DISK).

1996:
A SYNOPTIC SURVEY CONDUCTED ON 13 JULY 1994 INDICATED THAT THE DAM WAS IN SUCH A STATE OF DISREPAIR THAT AROUND 40% OF THE LAKE AREA HAD BEEN REDUCED. OTHERWISE, NO CURRENT DATA AVAILABLE TO MAKE ADDITIONAL ASSESSMENTS.

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1996 WBS Coding Sheet for Meadow Pond (formerly MA51193) (MassDEP 2002):

WBID: MA51193 | WATERSHED: Blackstone(51) | (Printed 05/13/96)
NAME: Meadow Pond | TYPE: Lake/Pond
CODE: 51193 | SIZE: 45.00(acres) | CLASS: B
ORW?: Yes or No
Water Supply?: Yes or No

LATITUDE: 42.10917
LONGITUDE: 71.68333 | 0
Lake/Pond Name: ,
Ecoregion Name: ()
Description:

Assessment Date: 9407 9609 | Begin Sampling: 9407 | Water Quality Limited?: YES or NO
Cycle: 96 | End Sampling: 9407 | 303(d) List?: YES or NO

Lake Specific Information

Significantly Publicly Owned:	Y
Trophic Status:	E
Trophic Trend:	
Acidity/Toxics Trend:	
Acidity Effects:	

1996

Significantly Publicly Owned:	Y or N
Trophic Status:	O M E H D U
Trophic Trend:	I S D U
Acidity/Toxics Trend:	I S D U
Acidity Effects:	I V N U

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			9.00 ~~45.0~~		~~36.00~~	
ALUS			45.0		~~45.00~~	
FISH CONSUMPTION					45.00	
PRIMARY CONTACT			9.00		36.00	
SECONDARY CONTACT	45.00					
Aesthetics					45.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	9.00	H

1996

Code	Size	Magnitude
2200	9.00	M
2600	45.00	M

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	9.00	H

1996

Code	Size	Magnitude
9000	45.0	M

Assessment Type
(Assessment Category =>Evaluated)

1996 Assessment Category => M E NA

B25 | R35

Media/Pollutants Assessed (Toxics Monitoring =>N)

1996 Toxics Monitoring => YES or NO

Comments:

1996- A 13 JULY 1994 SYNOPTIC SURVEY INDICATED VERY DENSE EMERGENT MACROPHYTE GROWTHS AND DUCKWEED AROUND THE SHORELINE. NO OTHER DATA AVAILABLE TO MAKE ASSESSMENTS.

A Calcomba caroliniana present.

E: RSM
10/29/96

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1996 WBS Coding Sheet for Linwood Pond (formerly MA51088) (MassDEP 2002):

WBID: **MA51088** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Linwood Pond** TYPE: **Lake/Pond**
CODE: **51088** SIZE: **61.00**(acres) CLASS: **B**

LATITUDE: **42.10167**
LONGITUDE: **71.65250** (420606/713909)
Lake/Pond Name: Linwood Pond, Northbridge
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			61.00			
ALUS			61.00			
FISH CONSUMPTION					61.00	
PRIMARY CONTACT		61.00				
SECONDARY CONTACT		61.00				
Aesthetics					61.00	

Nonattainment Causes

Code	Size	Magnitude
2500- Turbidity	61.00	T
2600- Exotic species	61.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	61.00	M

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New"Assessment Category= > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)
-

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 13 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WERE ONLY OCCASIONAL PATCHES OF EMERGENTS IN PROTECTED COVES. THERE WAS VERY DENSE SUBMERGED OVER MOST OF POND AND EMERGENT, FLOATING LEAVED AND ALGAE FILLING IN ACROSS THE POND (APPROXIMATELY 10% OF THE POND). THE NON-NATIVE CABOMBA WAS PRESENT AND REPRESENTED ONE THREAT TO THE USE OF THE POND. THE OTHER MAIN THREAT TO THE USE OF THE POND WAS THE TURBIDITY. THERE WAS A SLIGHT SURFACE "SCUM" AND THERE WAS A SILTY ORGANIC BOTTOM ON SAND AND GRAVEL. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

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1996 WBS Coding Sheet for Whitin Pond (formerly MA51178) (MassDEP 2002):

WBID: **MA51178** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Whitin Pond** TYPE: **Lake/Pond**
CODE: **51178** SIZE: **23.00**(acres) CLASS: **B**

LATITUDE: **42.09333**
LONGITUDE: **71.64056** (420536/713826)
Lake/Pond Name: Whitin Pond, Uxbridge
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			23.00			
ALUS			23.00			
FISH CONSUMPTION					23.00	
PRIMARY CONTACT		13.00	10.00			
SECONDARY CONTACT		13.00	10.00			
Aesthetics					23.00	

Nonattainment Causes

Code	Size	Magnitude
2600- Exotic species	23.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	23.00	M

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 12 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% DENSITY OF SUBMERGED PLANTS AT THE OBSERVATION SITE OVER AT LEAST 25% TO 50% OF THE POND. THE NON-NATIVE CABOMBA AND POSSIBLE NON-NATIVE MYRIOPHYLLUM (POSSIBLY HETEROPHYLLUM) WERE PRESENT. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

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1996 WBS Coding Sheet for Caprons Pond (MA51014) (MassDEP 2002):

WBID: **MA51014** WATERSHED: **Blackstone (51)** (Printed 02/03/98)
NAME: **Caprons Pond** TYPE: **Lake/Pond**
CODE: **51014** SIZE: **15.00**(acres) CLASS: **B**

LATITUDE: **42.07917**
LONGITUDE: **71.62917** | (420445/713745)
Lake/Pond Name: Caprons Pond, Uxbridge
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			10.00	5.00		
ALUS			15.00			
FISH CONSUMPTION					15.00	
PRIMARY CONTACT		10.00		5.00		
SECONDARY CONTACT		10.00		5.00		
Aesthetics					15.00	

Nonattainment Causes

Code	Size	Magnitude
2600- Exotic species	15.00	H

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	15.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 12 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% COVERAGE OF AQUATIC PLANTS. MOST OF THE LOWER PART OF THE POND WAS COVERED BY SUBMERGED PLANTS. THE POSSIBLE NON-NATIVE CABOMBA AND MYRIOPHYLLUM (POSSIBLY HETEROPHYLLUM) THREATEN 10 ACRES OF THE POND AND CONTRIBUTE TO THE NON-SUPPORT OF 5 ACRES OF THE POND WITH RESPECT TO AQUATIC LIFE, PRIMARY CONTACT, AND SECONDARY CONTACT. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

Page 293

1994 Synoptic Survey Field Sheet for Gilboa Pond (MassDEP 1994):

Entered 9/25/94

9/20/94

5705 V

Page 1 of 2

Lake/Pond Gilboa Pond Date 7/14/94

Town/City Douglas Observers G. DeCesare
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Grassed walkway along Douglas Rd. across from Guilford of Maine

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Private (?)

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
Turbid brown/green; scum + duckweed at surface; lower part less turbid and less scum

Record of aquatic plant "species" observed (see note below):

Myriophyllum heterophyllum, Elodea, Lemna minor, Utricularia sp., Peltandra, Pontederia, Sagittaria, Sparganium, filamentous algae, Carex, moss (submerged), Polygonum

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

Emergents/floating (mel leckweed) 75-100% over ~1/3 of pond.
Submerged (mainly Myriophyllum) ~~pc~~ dense, but patchy throughout pond

Other notes (e.g., overt pollution, construction, and water uses:

305b - Eutrophic
1° Contact - 7 acres - Non-Support - 14 acres Threatened
2° Contact - 7 acres - " " - 14 acres "
Aq. Life - 21 acres - Partial Support

Cause - Noxious plants - M (7 acres); Exotic plants M (21 acres), Turbidity - ? (14 acres)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Lackey Pond (MassDEP 1994):

Entered 7/21/94
Facsimiled WBS 10/26/94
51083

Page 1 of 2

Lake/Pond Lackey Pond Date 7/13/94

Town/City ~~Douglas~~ Uxbridge/Sutton Observers R. Haynes
R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
① Lackey Dam - Douglas Rd

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

Posted signs (re aquatic plants, fish advisories, access, etc.):
No Trespassing - Whitin Machine Works

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Turbid, brown

Record of aquatic plant "species" observed (see note below):

Lythrum Salicaria, Typha latifolia, Peltandra, Pontederia, Eleocharis, filamentous green algae, Lemna, Wolffia.

Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**

Sparse

Other notes (e.g., overt pollution, construction, and water uses:

Dam ~~was~~ is in disrepair, leaking severely. Pond very low because of poor dam.

305b -
1° Contact - 50 acres - Non-attainment ; 67 acres - Not accessed
2° Contact - 50 " " " ; 67 acres - Fully support
Aq. Life 50 " " " 67 acres Not accessed
Cause - Flow alteration - H

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Meadow Pond (MassDEP 1994):

Entered 4/21/94
Entered WBS 11/31/94
51193

Need Area

Page 1 of 2

Lake/Pond Meadow Pond Date 7/13/94

Town/City Northbridge/Sutton Observers R. Haynes
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):

① ~~Along~~ Douglas Rd just east of Lachey Dam

② below Lachey Dam.

③ Along Douglas Rd, across from Castle Hill Rd., treater dam

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

?

Posted signs (re aquatic plants, fish advisories, access, etc.):

None

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):

① Turbid brown/green, w/ duckweed/water meal scum, silty bottom over sand + gravel, also leaf/litter. Productive

② Turbid, brown; silty bottom

③ same; debris on bottom

Record of aquatic plant "species" observed (see note below):

(1) Pontederia, Sparganium, Typha latifolia, Peltandra, Lemna minor, Wolffia, Potamogeton epihydrus. - nothing in drags

(2) ~~abbr~~ same as above

(3) Pontederia, Peltandra, Nuphar, Nymphaea, Brasenia Cabomba (few sprigs floating on shore + in drag)

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

(1) 75-100% duckweed/mat hugging shoreline (5-10' out) - ~20% pond - emergents around shore - ~~5%~~

(2) Same

(3) moderate along shore, sparse in drags

Other notes (e.g., overt pollution, construction, and water uses:

305 b - Eutrophic

1° Contact - 20% (9 acres) Partial support - 80% (36 acres) Not accessed

2° Contact - 100% Fully support

ALUS - 45 ac Partial Support

Cause - Noxious plants - M (20% of 9 acres average) Exotic Pl. - 45 ac M

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Linwood Pond (MassDEP 1994):

Entered 7/21/94

9/27/94

Page 1 of 2

51088

Lake/Pond Linwood Pond **Date** 7/13/94

Town/City Northbridge **Observers** R. Haynes
R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):

① Along road (Linwood Ave) across from The Victorian (restaurant)
No formal ~~access~~ access

② across road to NE - pond separated by box culvert only

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

?

Posted signs (re aquatic plants, fish advisories, access, etc.):

None

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):

① Turbid + slight surface 'scum'/fish., silty, organic bottom on sand + gravel

② Heavy turbidity (brown/green), some duckweed/water meal on surface

Record of aquatic plant "species" observed (see note below):

(1) Pontederia, Wolffia, Cabomba (species washed up & sparsely in one drag), Potamogeton sp (thin leaf) (1 drag), Peltandra

(2) Cabomba, filamentous algae, Peltandra, Nymphaea, Lemna, Wolffia, Sparganium, Myriophyllum sp (diminutive), ~~[illegible]~~ Typha latifolia, Potamogeton ~~[illegible]~~ epihydrus

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

(1) Only occasional patches of emergents in protected coves.

(2) Very dense submerged over most ~~[illegible]~~ Emergent + floating leaved + algae filling in across the pond (~ 10% of pond)

Other notes (e.g., overt pollution, construction, and water uses:

Pond apparently split by road

3056 - Eutrophic

1° Contact - 61 acres - Threatened

2° contact - 61 acres - Threatened

Aq. Life - 61 acres - Partial support (Full acreage)

Causes - Exotic plants - M; Turbidity - T (Full acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Whitin Pond (MassDEP 1994):

Entered 9/21/94

9/29/94

51178

Page 1 of 2

Lake/Pond Whitin Pond **Date** 7/12/94

Town/City Uxbridge **Observers** R. Haynes
R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Clapp Mill Property on W. Hartford Ave - near outlet of pond.

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Town(?) Historical or Private?

Posted signs (re aquatic plants, fish advisories, access, etc.):
"Clapp Mill"

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):
Slightly grey/green turbidity -, ~~slight stain~~

Record of aquatic plant "species" observed (see note below):

Peltandra, Nymphaea, Potamogeton sp. (thin leaved)
Myriophyllum sp (heterophyllum?), Cabomba, Najas flexilis
Filamentous algae

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% (submerged) at observation site
over 25-50% of pond at least.

Other notes (e.g., overt pollution, construction, and water uses:

3055- Eutrophic
1° Contact - 10 acres - Partial support - 73 acres - Threatened
2° Contact - 10 acre - Partial Support - 13 acres Threatened
Ag. Life - 23 acres - Partial Support - 3

Cause - Exotic plants - M (full acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

1994 Synoptic Survey Field Sheet for Caprons Pond (MassDEP 1994):

9/22/94

entered 7/21/94

Page 1 of 2

51014

Lake/Pond Caprons Pond **Date** 7/12/94

Town/City Uxbridge **Observers** R. Haynes, R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
National Park Service Park at outlet - Closed -

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Nat. Park Services ?

Posted signs (re aquatic plants, fish advisories, access, etc.):
Blackstone Heritage State Park" on Gate

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
slight turbidity - silty on plants, 1+ tea stain (grey/green)

Record of aquatic plant "species" observed (see note below):

Peltandra, Sparganium, P. epihydrus, Myriophyllum sp (heterophyllum?), Potamogeton sp (thin leaved), Pontederia, Nymphaea, Elodea, Cabomba, filamentous algae

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% - most of lower part of pond (submerged)

Other notes (e.g., overt pollution, construction, and water uses:

305b - Eutrophic

1° Contact - 5 acres - Non-support - 10 acres - Threatened

2° Contact - 5 acres - " " - 10 " - "

Aq. Life - 15 acres - Partial support 10 " Putting up

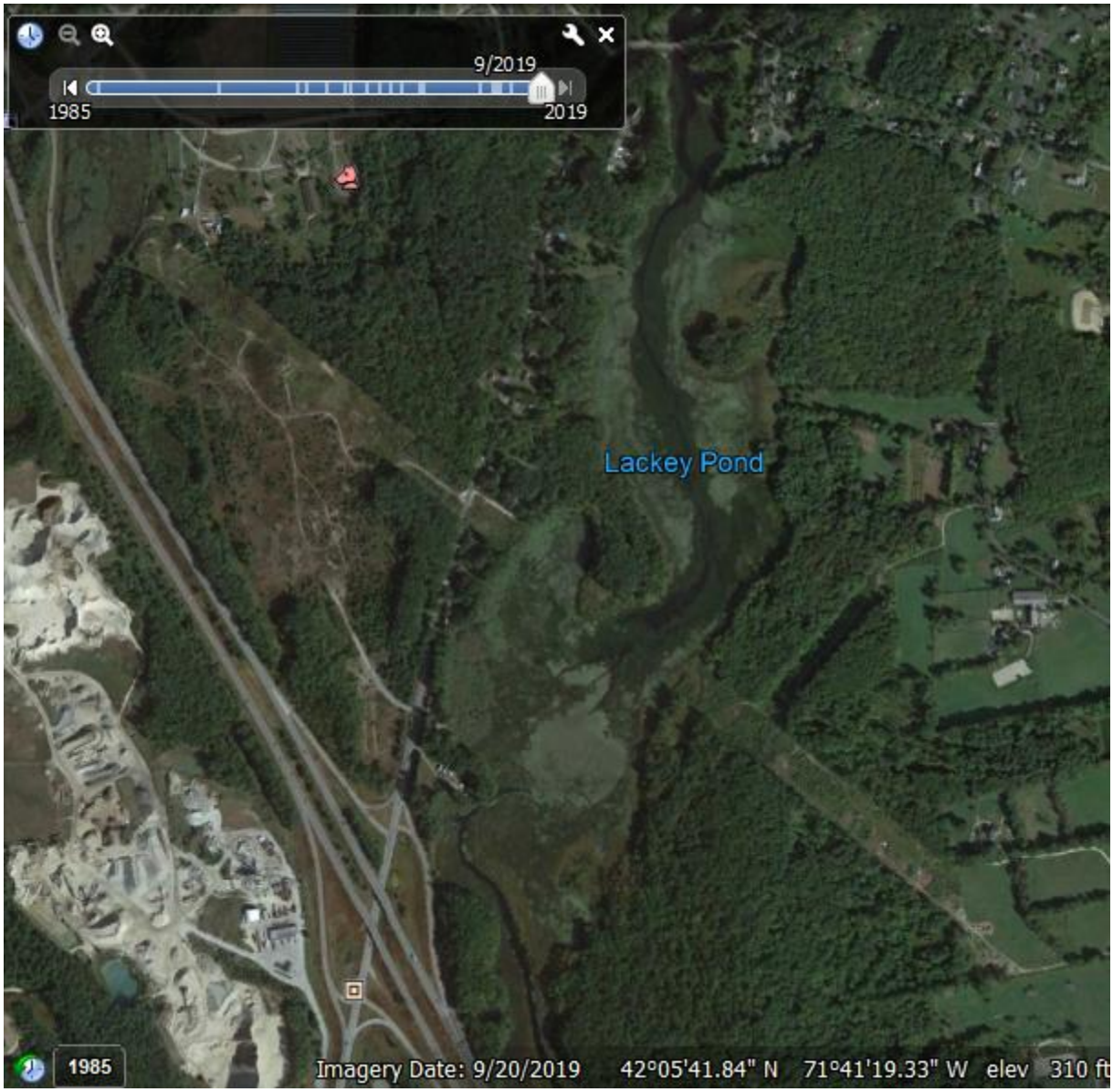
Causes - Exotic plants - M [10 acres]; Exotics - 5 acres M; ~~Exotics M (10 acres)~~ cm

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

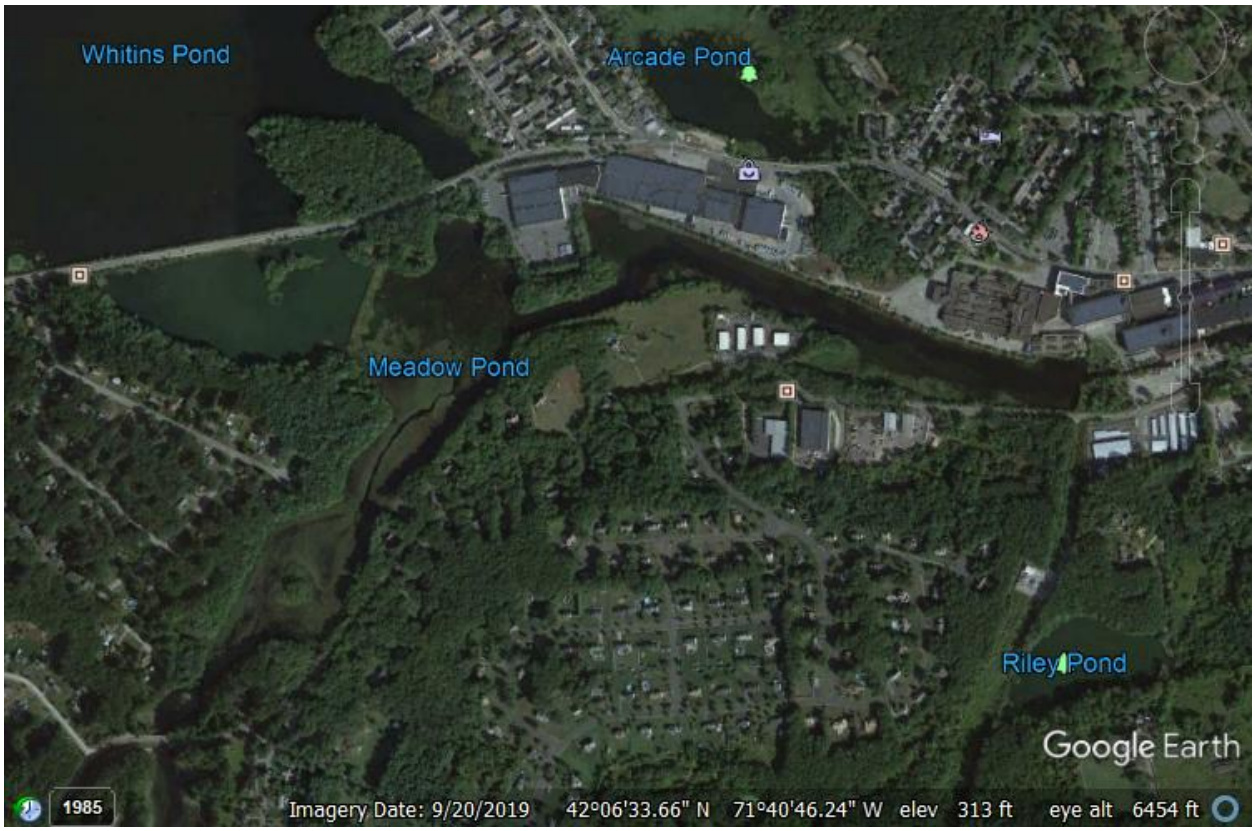
Google Earth image of Gilboa Pond, 8/23/2016 (Google Earth Pro Undated):



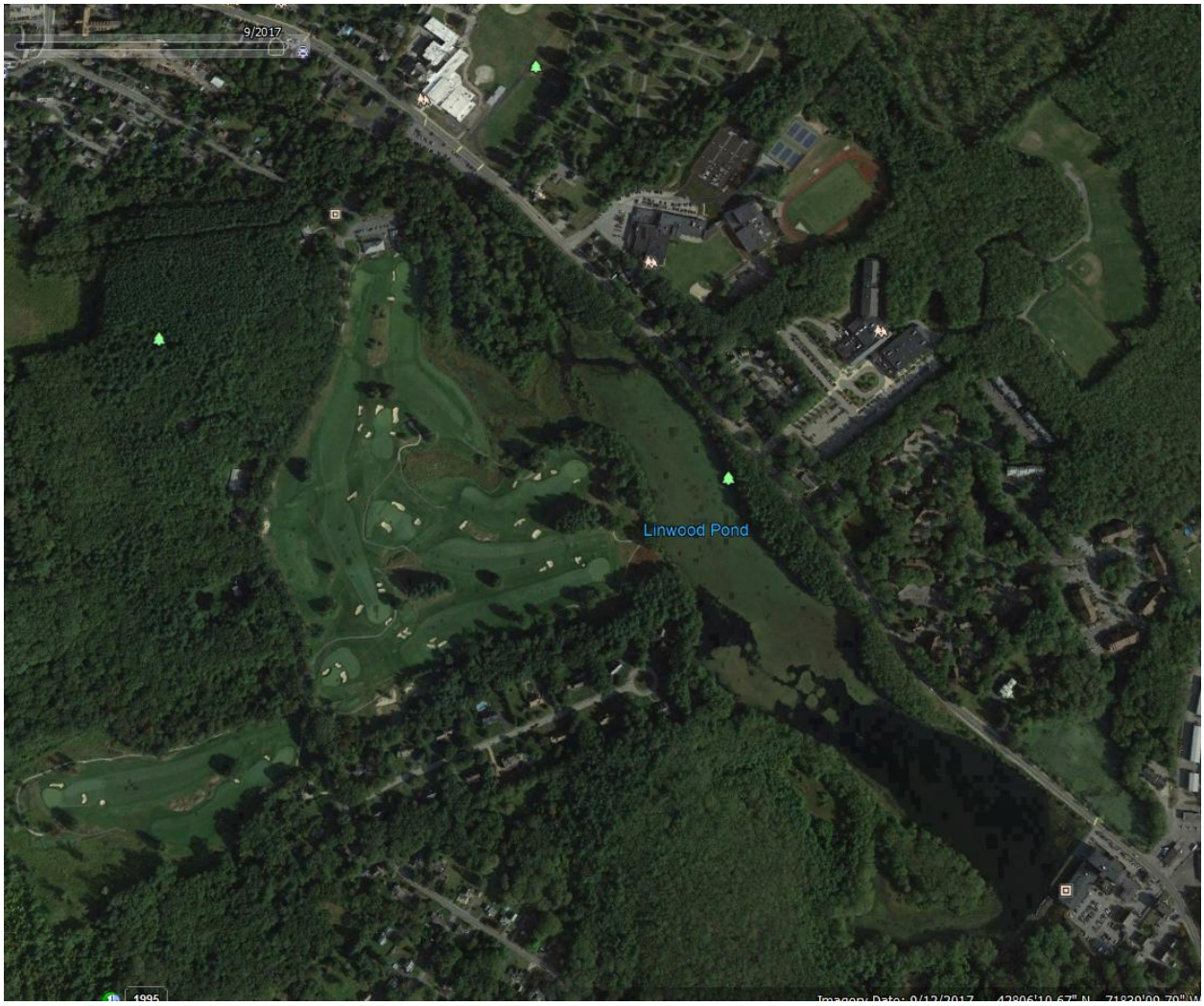
Google Earth image of Lackey Pond, 9/20/2019 (Google Earth Pro Undated):



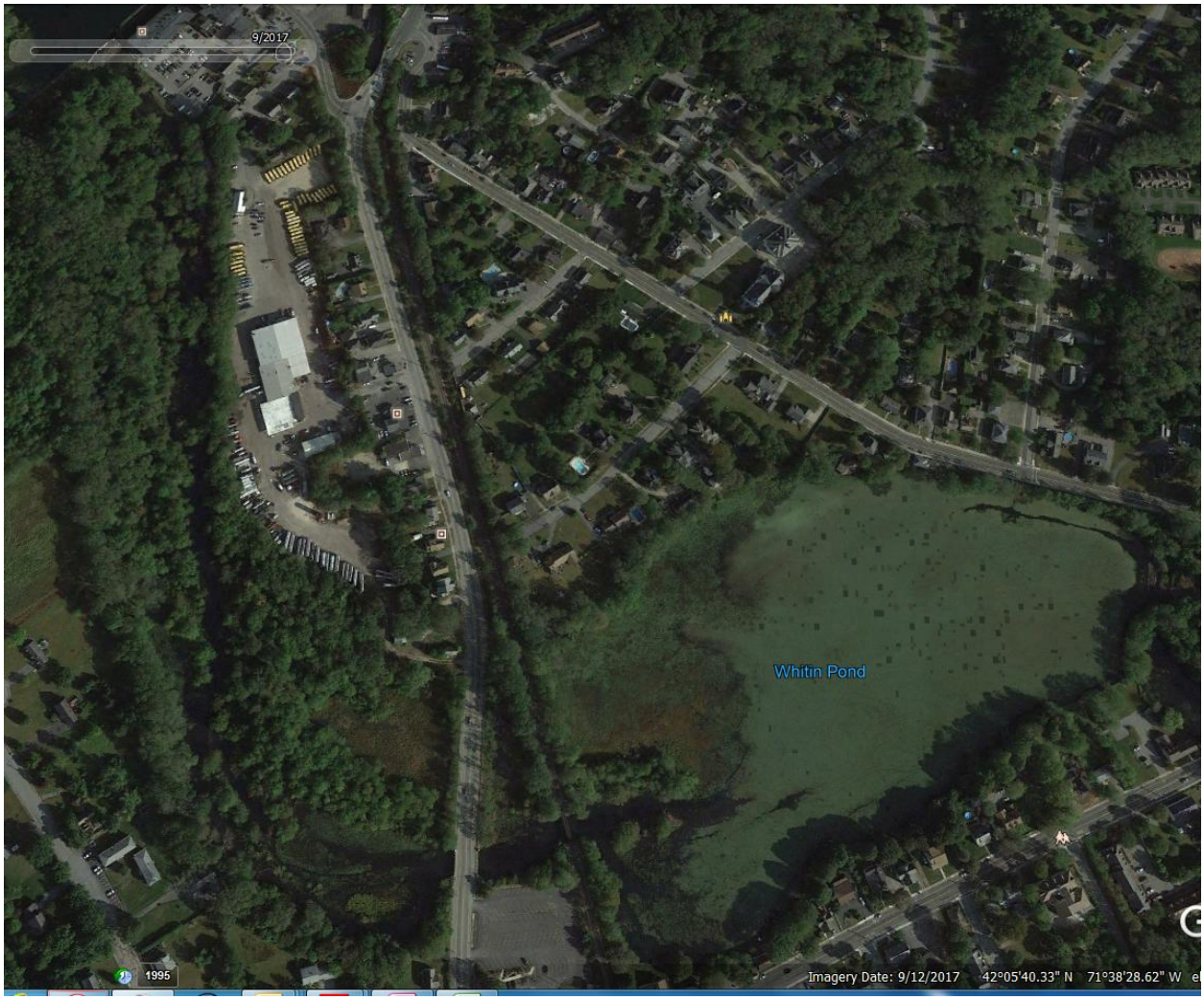
Google Earth image of Meadow Pond, 9/20/2019 (Google Earth Pro Undated):



Google Earth image of Linwood Pond, 9/12/2017 (Google Earth Pro Undated):



Google Earth image of Whitin Pond, 9/12/2017 (Google Earth Pro Undated):



Google Earth image of Caprons Pond, 9/12/2017 (Google Earth Pro Undated):


017
Caprons Pond
Imagery Date: 9/12/2017

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Mumford River (MA51-14) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Mumford River (MA51-14) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a Nutrient/Eutrophication Biological Indicators isbeing added. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. A large percentage of the Mumford River (MA51-14) is comprised of run-of-river impoundments (formerly their own AUs) including, from upstream to downstream, Gilboa Pond (formerly MA51052), Lackey Pond (formerly MA51083), Meadow Pond (formerly MA51193), Linwood Pond (formerly MA51088), Whitin Pond (formerly MA51178), and Caprons Pond (MA51014). Several of these ponds (Gilboa, Meadow, and Whitin ponds) were first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle, when all the ponds were merged with the Mumford River (MA51-14) AU (MassDEP 2024). The original pond impairments were based on synoptic surveys conducted by MassDEP staff in July 1994, in which dense coverage (75-100%) of aquatic macrophytes was observed on roughly 20-50% of the surface area of the ponds. A combination of the non-rooted, floating species, *Wolffia/Lemna/Utricularia spp.* and/or filamentous algae was observed at all the ponds, including those not impaired in 1996 (MassDEP 1994, MassDEP 2002). Google Earth images from 2016 to 2019 show high amounts of plant coverage (>25% - ~100%) in at least one year for all six of the ponds (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species and/or filamentous algae in all the run-of-river impoundments of the Mumford River (MA51-14). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since the lengths of the pond sections with recently observed dense vegetative coverage comprise, in total, roughly 28% of the length of the river AU. No new data are available to evaluate the Aesthetics Use for this Mumford River AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Mumford River (MA51-14) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for the Mumford River (MA51-14) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). MassDEP staff collected *E. coli* bacteria samples in the Mumford River from 2003-2008 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: close to the upstream end of the AU at W1025 [S of Gilboa St, ~500 ft downstream of Gilboa Pond, just downstream of MA0001538 diffuser pipes, Douglas] in 2003 and 2008 (n=5-6/yr), and close to the downstream end of the AU at W1020 [Mendon St (Rt. 16), downstream of Capron Pond, Uxbridge] from Apr-Oct 2003 (n=5). Analysis of the historic multi-year limited frequency *E. coli* dataset from W1025 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1020 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 92 CFU/100ml. Historic *E. coli* data from W1025 and W1020 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1020	MassDEP	Water Quality	Mumford River	[Mendon Street (Route 16), downstream of Capron Pond, Uxbridge]	42.076656	-71.628412

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1025	MassDEP	Water Quality	Mumford River	[south of Gilboa Street, approximately 500 feet downstream of Gilboa Pond, [just downstream of MA0001538 diffuser pipes], Douglas]	42.084393	-71.696997

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

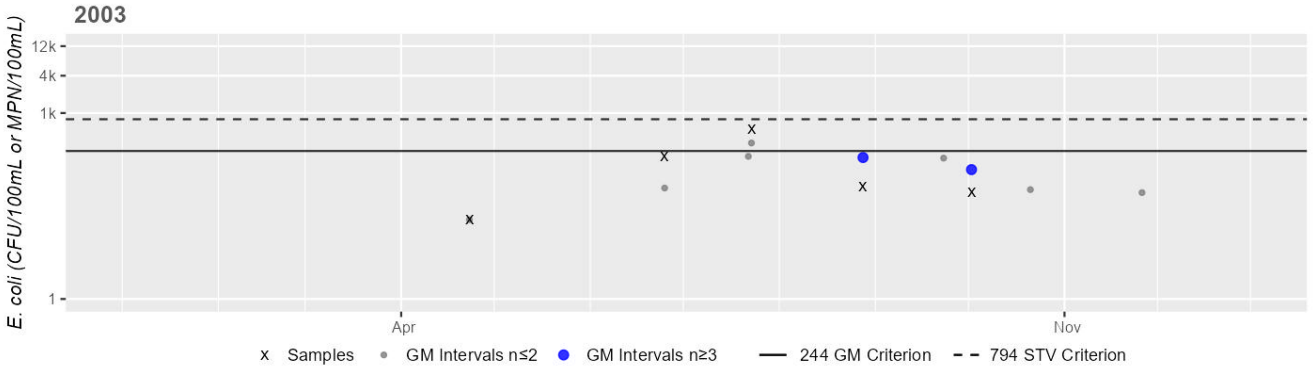
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1020	MassDEP	E. coli	04/23/03	10/02/03	5	19	540	92
W1025	MassDEP	E. coli	04/23/03	10/02/03	5	39	1000	114
W1025	MassDEP	E. coli	04/29/08	08/26/08	6	3	420	44

Station MASSDEP_W1020 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



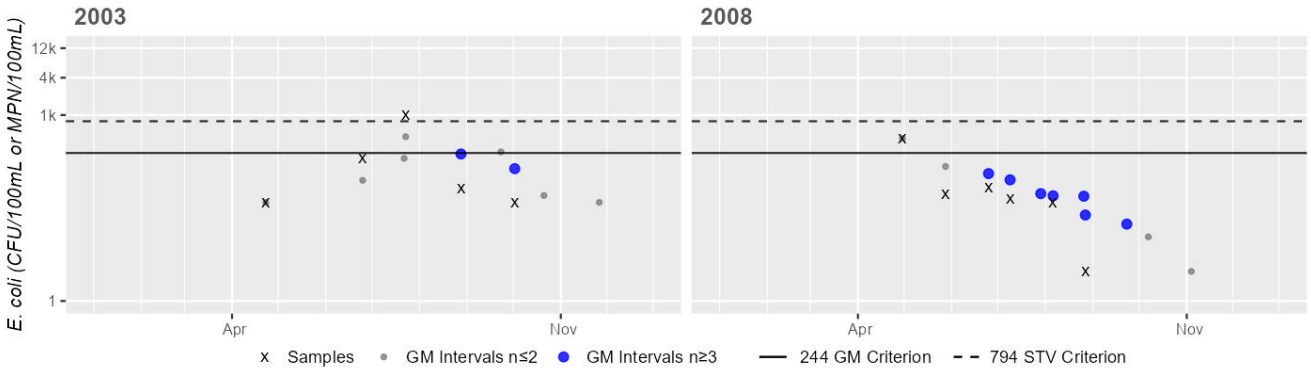
Variable*	Result
Samples	5
SeasGM	92
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1025 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	114
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	20%

Variable*	Result
Samples	6
SeasGM	44
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Newton Pond (MA51110)

Location:	Shrewsbury/Boylston.
AU Type:	FRESHWATER LAKE
AU Size:	54 ACRES
Classification/Qualifier:	B

No usable data were available for Newton Pond (MA51110) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Nipmuck Pond (MA51111)

Location:	Mendon.
AU Type:	FRESHWATER LAKE
AU Size:	85 ACRES
Classification/Qualifier:	B

No usable data were available for Nipmuck Pond (MA51111) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

North Pond (MA51112)

Location:	Hopkinton/Milford.
AU Type:	FRESHWATER LAKE
AU Size:	231 ACRES
Classification/Qualifier:	B

No usable data were available for North Pond (MA51112) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Brittle Naiad, Najas Minor*)	--	Unchanged
4c	4c	(Fanwort*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Brittle Naiad, Najas Minor*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Number 1 Pond (MA51114)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	9 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	Nutrient/Eutrophication Biological Indicators	--	Added
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Number 1 Pond (MA51114) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that floating leaf plants covered 100% of some of the coves at the northwest end of the pond (20% of the pond's total area) and that an algal bloom was evident. Additionally, the non-rooted, floating, macrophyte, *Utricularia* sp., was observed (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 show the entire pond with a green sheen, likely indicative of an algal bloom, though this is unconfirmed (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted as a pollutant and Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Utricularia* sp.) and a 1994 algal bloom.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51114** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Number 1 Pond** TYPE: **Lake/Pond**
CODE: **51114** SIZE: **10.00**(acres) CLASS: **B**

LATITUDE: **42.11528**
LONGITUDE: **71.80278** (420655/714810)
Lake/Pond Name: Number 1 Pond, Sutton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: Yes
Significantly Publicly Owned: xxxx
Trophic Status: Eutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			8.00	2.00		
ALUS					10.00	
FISH CONSUMPTION					10.00	
PRIMARY CONTACT			8.00	2.00		
SECONDARY CONTACT		8.00		2.00		
Aesthetics					10.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	2.00	M
2500- Turbidity	8.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	10.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = >Monitored)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = >N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 6 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THE AQUATIC PLANT DENSITY WAS SPARSE AT THE SURFACE. THERE WERE COVES WITH 100% COVERAGE CONSISTING OF FLOATING LEAF PLANTS AT THE NORTHWEST END OF THE POND. TURBIDITY WAS A CAUSE OF THE USE IMPAIRMENT OVER 8 ACRES OF THE POND. THERE WAS AN ALGAL BLOOM EVIDENT AND THE SECCHI DISK READING WAS LESS THAN 4 FEET. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 9/29/94

9/14/94

Page 1 of 2

5/11/14

Lake/Pond No. 1 Pond Date 7-6-94

Town/City Sutton Observers DeCesare
Haynes

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):

East end of pond @ outlet @ Town Farm Road

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):

Public Road

Posted signs (re aquatic plants, fish advisories, access, etc.):

None Observed

Water quality observations (clarity, dissolved organic staining, blooms, *et cetera*):

Algal bloom evident
Green-brown color
Secchi < 4 feet

Record of aquatic plant "species" observed (see note below):

Nuphar
Potamogeton (thin-leaved)
Myriophyllum (likely not heterophyllum)
Utricularia

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

Sparse @ Surface
Cores with 100% coverage @ NW end of Pond - floating leaf plants

Other notes (e.g., overt pollution, construction, and water uses:

305b - Eutrophic
1° Contact - 2 acres Non-support ; 8 acres - Partial Support
2° Contact 2 acres " " ; 8 acres - Threatened

Cause - Turbidity - M (8 acres), Noxious Plants - M (2 acres)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Number 1 Pond, 7/28/2007 (Google Earth Pro Undated):



Google Earth image of Number 1 Pond, 8/23/2016; note that the nearby Stump Pond was black in color on the same date (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Number 1 Pond (MA51114) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Number 1 Pond (MA51114) continues to be assessed as as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The Turbidity impairment (originating from the 1996 303d list) is being carried forward and a Nutrient/Eutrophication Biological Indicators impairment being added. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Number 1 Pond (MA51114) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that floating leaf plants covered 100% of some of the coves at the northwest end of the pond (20% of the pond's total area) and that an algal bloom was evident. Additionally, the non-rooted, floating, macrophyte, *Utricularia sp.,* was observed (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 show the entire pond with a green sheen, likely indicative of an algal bloom, though this is unconfirmed (Google Earth Pro Undated). Aquatic Plants (Macrophytes) is being delisted as a pollutant and Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Utricularia sp.)* and a 1994 algal bloom. No new data are available to evaluate the Aesthetics Use for this Marble Pond AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Number 1 Pond (MA51114) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Number 1 Pond (MA51114) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use).

Number 2 Pond (MA51115)

Location:	Sutton/Oxford.
AU Type:	FRESHWATER LAKE
AU Size:	9 ACRES
Classification/Qualifier:	B

No usable data were available for Number 2 Pond (MA51115) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Peabody Pond (MA51119)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	6 ACRES
Classification/Qualifier:	B

No usable data were available for Peabody Pond (MA51119) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

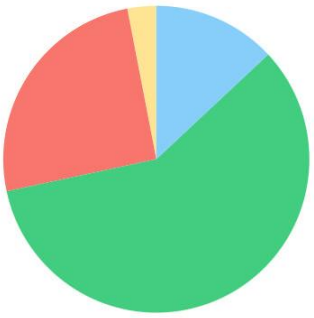
AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Peters River (MA51-18)

Location:	Headwaters, outlet Silver Lake, Bellingham to Rhode Island border east of Route 126, Bellingham.
AU Type:	RIVER
AU Size:	4 MILES
Classification/Qualifier:	B

Peters River (MA51-18)

Watershed Area: 11.95 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area* (square miles)	10.20	6.77	2.68	1.77
Agriculture	3%	2.2%	2%	1.7%
Developed	25.3%	28.5%	19.4%	22.2%
Natural	58.6%	55%	53%	47.5%
Wetland	13%	14.2%	25.7%	28.6%
Impervious	9.5%	10.4%	6.9%	7.5%

**Land cover analysis only includes watershed area within Massachusetts.*

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Sanitary Sewer Overflows (Collection System Failures) (Y)	--	--	--	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Upstream/Downstream Source (Y)	--	--	--	X	X
Temperature	Dam or Impoundment (Y)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Recommendations

2024/26 Recommendations
2016 IR [TRASH, LOW] Additional monitoring is recommended for Peters River (MA51-18) due to objectionable deposits (trash) being observed at station {W2192} in 2011.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Peters River (MA51-18) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	YES

2024/26 Use Attainment Summary
The Aesthetics Use for Peters River (MA51-18) continues to be assessed as Fully Supporting. The Alert identified for objectionable deposits (trash) observed at one station in 2011 is being carried forward. MassDEP staff recorded aesthetics observations at one station for Peters River, ~1300 feet upstream from Wrentham Road, Bellingham (W2192 2011, n=6). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted minor trash deposits on five occasions.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2192	MassDEP	Water Quality	Peters River	[approximately 1300 feet upstream from Wrentham Road, Bellingham]	42.027552	-71.483014

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2192	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2192 on Peters River (MA51-18) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=5).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2192	2011	6	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2192	Peters River	2011	Aquatic Plant Density, Overall	None	5	6
W2192	Peters River	2011	Aquatic Plant Density, Overall	Unobservable	1	6

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2192	Peters River	2011	Color	Light Yellow/Tan	4	6
W2192	Peters River	2011	Color	None	2	6
W2192	Peters River	2011	Objectionable Deposits	No	1	6
W2192	Peters River	2011	Objectionable Deposits	Yes	5	6
W2192	Peters River	2011	Odor	None	6	6
W2192	Peters River	2011	Periphyton Density, Filamentous	None	4	6
W2192	Peters River	2011	Periphyton Density, Filamentous	Unobservable	2	6
W2192	Peters River	2011	Periphyton Density, Film	None	4	6
W2192	Peters River	2011	Periphyton Density, Film	Unobservable	2	6
W2192	Peters River	2011	Scum	No	6	6
W2192	Peters River	2011	Turbidity	None	5	6
W2192	Peters River	2011	Turbidity	Slightly Turbid	1	6

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for the Peters River (MA51-18) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2011. The prior Trash Alert (from Aesthetics Use) is being removed from the Primary Contact Recreation Use but will be maintained under the Aesthetics Use. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down Peters River at W2192 [~1300 ft upstream from Wrentham Rd, Bellingham] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2192 indicated 100% of intervals had GMs >126 CFU/100ml, 2 samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 242 CFU/100ml. *E. coli* data from W2192 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2192	MassDEP	Water Quality	Peters River	[approximately 1300 feet upstream from Wrentham Road, Bellingham]	42.027552	-71.483014

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

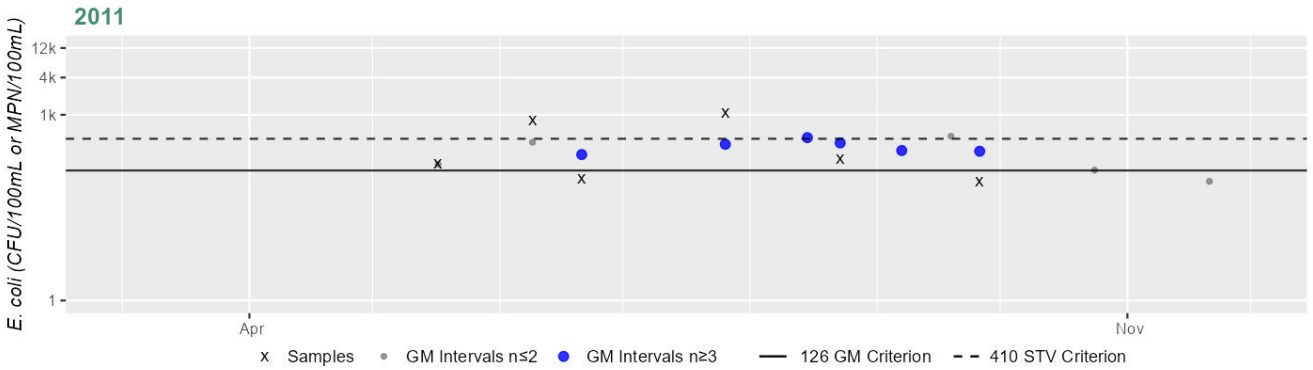
(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2192	MassDEP	E. coli	05/17/11	09/26/11	6	84	1050	242

Station MASSDEP_W2192 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	242
#GMI	6
#GMI Ex	6
%GMI Ex	100%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance

Current (2011-2022)

100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for the Peters River (MA51-18) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on bacteria data not meeting the threshold at 1 station in 2011. The prior Trash Alert (from Aesthetics Use) is being removed from the Secondary Contact Recreation Use but will be maintained under the Aesthetics Use. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Peters River from 2003-2011 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: roughly three-quarters of the way down the AU at W2192 [~1300 ft upstream from Wrentham Rd, Bellingham] from May-Sep 2011 (n=6) and W1022 [Paine St, Bellingham] in 2003 and 2008 (n=6/yr), then just downstream of the AU at W1772 [Rt. 114, Woonsocket, Rhode Island] from Apr-Aug 2008 (n=6). Since bacteria data from the historic IR window are all indicative of poor water quality conditions, only the analysis from the current IR window (1 station) will be summarized here: Analysis of the single year limited frequency *E. coli* dataset from W2192 indicated 83% of intervals had GMs >244 CFU/100ml, 2 samples exceeded the 794 CFU/100ml STV, and the overall GM was 242 CFU/100ml. *E. coli* data from W2192 are indicative of an *E. coli* impairment

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1022	MassDEP	Water Quality	Peters River	[Paine Street, Bellingham]	42.024149	-71.487402
W1772	MassDEP	Water Quality	Peters River	[Route 114, Woonsocket, Rhode Island]	42.015503	-71.493045
W2192	MassDEP	Water Quality	Peters River	[approximately 1300 feet upstream from Wrentham Road, Bellingham]	42.027552	-71.483014

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

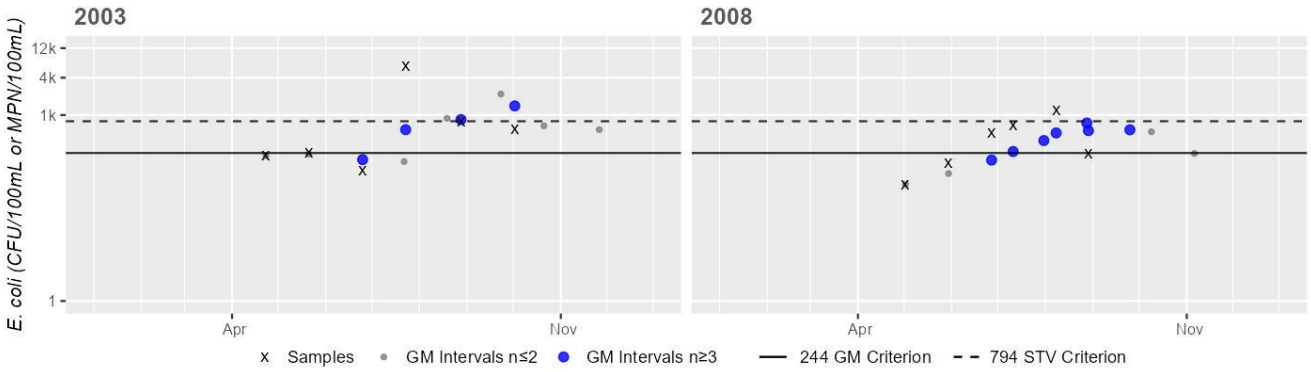
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1022	MassDEP	E. coli	04/23/03	10/02/03	6	126	6200	517
W1022	MassDEP	E. coli	05/01/08	08/28/08	6	76	1200	329
W1772	MassDEP	E. coli	04/29/08	08/26/08	6	450	910	685
W2192	MassDEP	E. coli	05/17/11	09/26/11	6	84	1050	242

Station MASSDEP_W1022 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	517
#GMI	4
#GMI Ex	3
%GMI Ex	75%
n>STV	1
%n>STV	16%

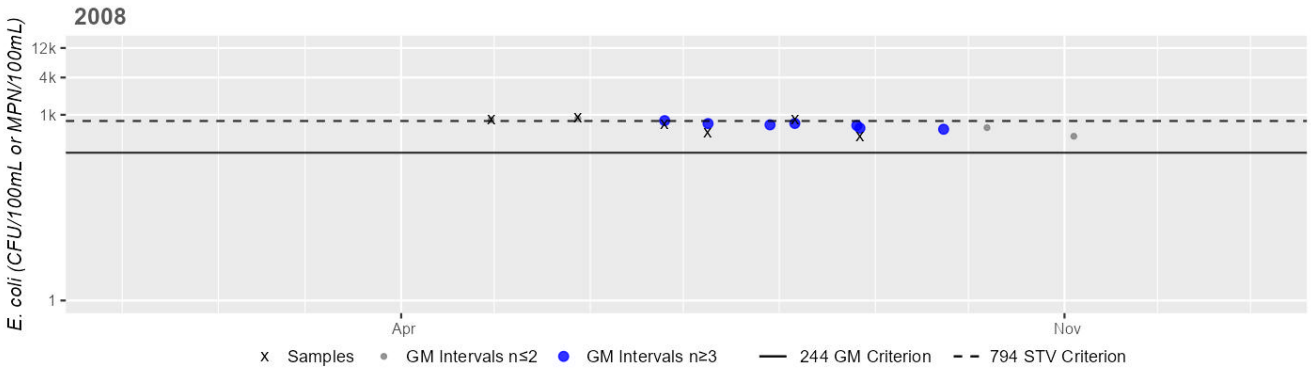
Variable*	Result
Samples	6
SeasGM	329
#GMI	7
#GMI Ex	6
%GMI Ex	85%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
81%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1772 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



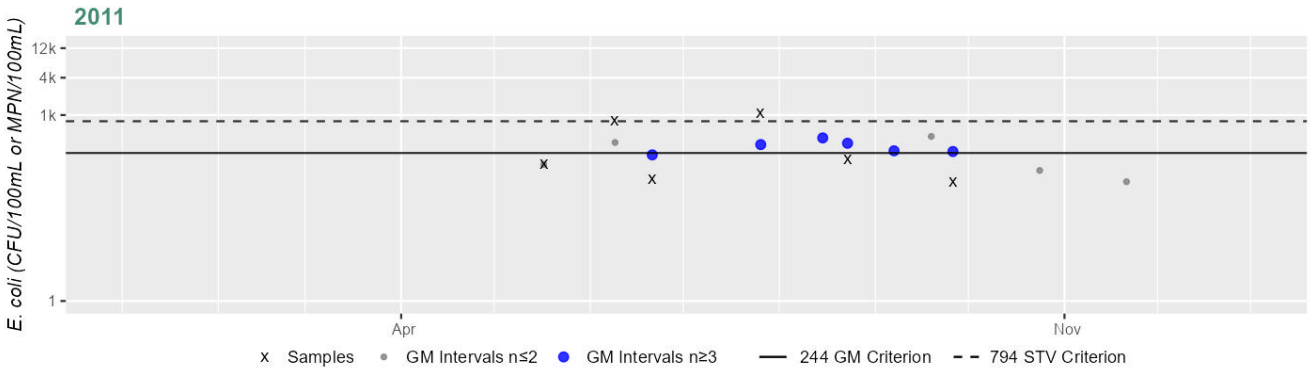
Variable*	Result
Samples	6
SeasGM	685
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	3
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2192 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	242
#GMI	6
#GMI Ex	5
%GMI Ex	83%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Current (2011-2022)
83%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Pondville Pond (MA51120)

Location:	Auburn/Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	36 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Added
4a	4a	(Fanwort*)	--	Unchanged
4a	4a	Algae	938	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Algae	Agriculture (Y)	--	--	X	X	X
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Algae	Rural (Residential Areas) (Y)	--	--	X	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Pondville Pond (MA51120) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Pondville Pond (MA51120) continues to be assessed as Not Supporting with the Algae impairment being carried forward. Since the Fanwort (*Cabomba Caroliniana*) impairment was redundantly duplicated across multiple uses for this waterbody, the Fanwort impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. Since MassDEP staff noted about one-third of the pond to be covered with emergent and floating plants, with very dense submergents throughout the remainder of the pond (including Fanwort) during an August 1994 synoptic survey (MassDEP 1994) and Google Earth images July 2008 through September 2019 (Google Earth Pro Undated) show extensive cover of macrophyte growth in the upper reach of the pond fed by Ramshorn Brook (>25% coverage), an Aquatic Plants (Macrophytes) non-pollutant impairment is being added in the place of the Fanwort impairment at this time. No new data are available to evaluate the Aesthetics Use for Pondville Pond.

Aesthetic Observations

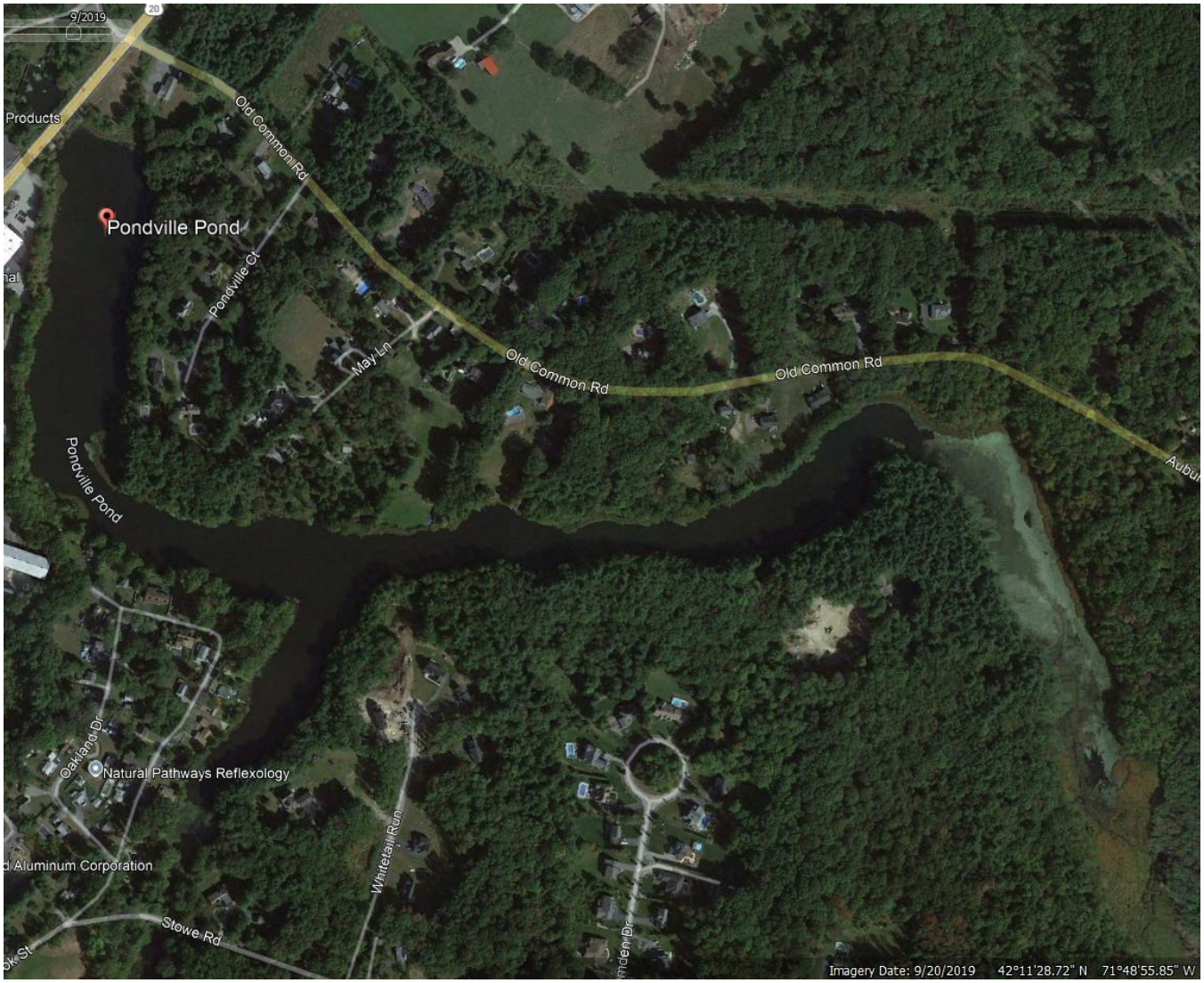
Pondville Pond (MA51120) Google Earth Imagery: Pond Outline (March 2025) Followed by Imagery from July 2008 and September 2019 Showing Dense/Very Dense Vegetation Covering >25% of the Pond's Surface (Google Earth Pro Undated)


3/2025
Old Common Rd
Pondville Pond
Pondville Cir
Mey Ln
Old Common Rd
Old Common Rd
Pondville Pond
Natural Pathways Reflexology
Steel and Aluminum Corporation
Whitetail Run
Stowe Rd
Brook St
Image © 2025 Airbus
Imagery Date: 3/21/2025 42°11'28.72" N 71°48'55.85" W

March 2025


7/2008
Mill Terrace
Old Common Rd
Pondville Pond
Pondville Ct
May Ln
Old Common Rd
Old Common Rd
Auburn Rd
Pondville Pond
Oakland Dr
Natural Pathways Reflexology
Whitetail Run
Image USDA/FPAC/GEO
Stowe Rd
Imagery Date: 7/2/2008 42°11'42.06" N 71°49'30.52" W elev

July 2008



September 2019

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Pondville Pond (MA51120) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Algae impairment (from the Aesthetics Use) is being carried forward. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Fanwort impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

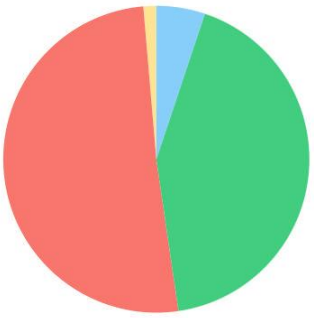
2024/26 Use Attainment Summary
No bacteria or other indicator data for Pondville Pond (MA51120) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior Algae impairment (from the Aesthetics Use) is being carried forward. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Fanwort impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Poor Farm Brook (MA51-17)

Location:	Headwaters, West Boylston to the inlet of Shirley Street Pond, Shrewsbury (through former 2008 segment: City Farm Pond MA51020).
AU Type:	RIVER
AU Size:	3.6 MILES
Classification/Qualifier:	B

Poor Farm Brook (MA51-17)

Watershed Area: 3.88 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	3.88	3.85	1.29	1.29
Agriculture	1.4%	1.4%	1.4%	1.4%
Developed	51%	51%	36.8%	36.8%
Natural	42.5%	42.5%	47.6%	47.6%
Wetland	5.1%	5.1%	14.3%	14.3%
Impervious	25.1%	25.1%	17.6%	17.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Dewatering*)	--	Unchanged
5	5	Aquatic Plants (Macrophytes)	--	Removed
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Source Unknown (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Temperature	Baseflow Depletion from Groundwater Withdrawals (Y)	X	--	--	--	--
Temperature	Golf Courses (N)	X	--	--	--	--
Temperature	Highway/Road/Bridge Runoff (Non-construction Related) (N)	X	--	--	--	--
Temperature	Impervious Surface/Parking Lot Runoff (N)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Data and/or information lacking to determine WQ status; original basis for listing was incorrect	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Poor Farm Brook (MA51-17) includes the run-of-river impoundment, City Farm Pond (formerly MA51020) that was first listed as impaired for Noxious Aquatic Plants in 1996. In 2010, the pond AU was merged with the Poor Farm Brook (MA51-17) AU, and the NAP impairment was remapped to Aquatic Plants (Macrophytes) and applied to the river AU (MassDEP 2024). The original pond impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that half of the pond was being encroached on by the wetland species, *Typha* and *Lythrum* spp. (the non-rooted *Lemna minor* was also observed in the pond) (MassDEP 1994, MassDEP 2002). Poor Farm Brook was surveyed by MassDEP staff on 6 dates during summer 2008 (W1753 - Rt.70, Shrewsbury) (just upstream of the City Farm Pond area) and there were no reports of

2022 Removed Impairment	Removal Reason	Removal Comment
		excessive filamentous algae or aquatic macrophytes (MassDEP Undated 7). MassDEP staff also recorded aesthetics observations at one station even further upstream of Clear Pond, ~50 feet upstream/west of Northeast Cutoff, Worcester (W2945) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, however too limited data are available to assess the Aesthetics Use. City Farm Pond comprises <3% of the length of the Poor Farm Brook AU, since this impounded portion of the Poor Farm Brook "river" AU comprises <10% of the total AU river length, the Aquatic Plants (Macrophytes) impairment should be delisted because the impounded area is not considered to well represent the AU.
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Aquatic Plants (Macrophytes)

Poor Farm Brook (W1753 - Route 70, Shrewsbury) reports of filamentous algae during summer 2008 (MassDEP Undated 8):

UNIQUE_ID	DATE	Year	Filamentous Algae*	Overall Aquatic Plant Density
W1753	01-May-08	2008	NR	None
W1753	29-May-08	2008	NR	None
W1753	26-Jun-08	2008	NR	None
W1753	10-Jul-08	2008	NR	None
W1753	07-Aug-08	2008	NR	None
W1753	28-Aug-08	2008	S	None

* NR = not reported; S = sparse

1996 WBS Coding Sheet for City Farm Pond (formerly MA51020) (MassDEP 2002):

WBID: MA51020 WATERSHED: Blackstone(51) (Printed 05/13/96)
NAME: City Farm Pond TYPE: Lake/Pond
CODE: 51020 SIZE: 2.00(acres) CLASS: B
ORW?: Yes or No
Water Supply?: Yes or No

LATITUDE: 42.30278
LONGITUDE: 71.76250 (421810/714545)
Lake/Pond Name: City Farm Pond, Shrewsbury
Ecoregion Name: ()
Description:

Assessment Date: 9407 9609 Begin Sampling: 9407 Water Quality Limited?: YES or NO
Cycle: 96 End Sampling: 9407 303(d) List?: YES or NO

Lake Specific Information		1996	
Significantly Publicly Owned:	N	Significantly Publicly Owned:	Y or N
Trophic Status:	E	Trophic Status:	O M E H D U
Trophic Trend:		Trophic Trend:	I S D U
Acidity/Toxics Trend:		Acidity/Toxics Trend:	I S D U
Acidity Effects:		Acidity Effects:	I V N U

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			1.00			1.00
ALUS					2.00	
FISH CONSUMPTION					2.00	
PRIMARY CONTACT			1.00			1.00
SECONDARY CONTACT		1.00				1.00
Aesthetics					2.00	

Nonattainment Causes			1996		
Code	Size	Magnitude	Code	Size	Magnitude
1100- Siltation	1.00	M	1100	1.0	H
2200- Noxious aquatic plants	1.00	M	2200	1.0	M

Nonattainment Sources			1996		
Code	Size	Magnitude	Code	Size	Magnitude
9000- SOURCE UNKNOWN	1.00	M	9000	2.0	M

Assessment Type (Assessment Category = > Evaluated) | 1996 Assessment Category = > M E NA
R3?

Media/Pollutants Assessed (Toxics Monitoring = > N) | 1996 Toxics Monitoring = > YES or NO

Comments:
1996 A 22 JULY 1994 SYNOPTIC SURVEY INDICATES THAT TYPHA AND LYTHRUM ARE ENCROACHING ALL AROUND THE SHORE AND APPROXIMATELY HALF IS FILLED IN. SILTATION WAS ALSO A CAUSE OVER ABOUT 1 ACRE OF THE POND. THE WATER WAS VERY TURBID AND HAD A SECCHI DISK READING OF LESS THAN 4 FEET. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

E. RSM 10/28/96

1994 Synoptic Survey Field Sheet for City Farm Pond (MassDEP 1994):

Entered 7/22/94

9/13/94

Page 1 of 2

$1020

Lake/Pond City Farm Pond **Date** 7/22/94

Town/City Shrewsbury **Observers** R. Haynes
R. Hull

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Off Plantation St. through woods across from Shell Station on corner Rt. 70.

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
? Private

Posted signs (re aquatic plants, fish advisories, access, etc.):
None

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
Very turbid, brown (tea) - very shallow; oozy mucky brown bottom
Trash (shopping carts) abundant

Record of aquatic plant "species" observed (see note below):

Typha latifolia, Lythrum Salicaria, Lemna minor, Sagittaria
Nothing in drags.

Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**

Typha, Lythrum encroaching all around shore (~ 1/2 ft wide in)

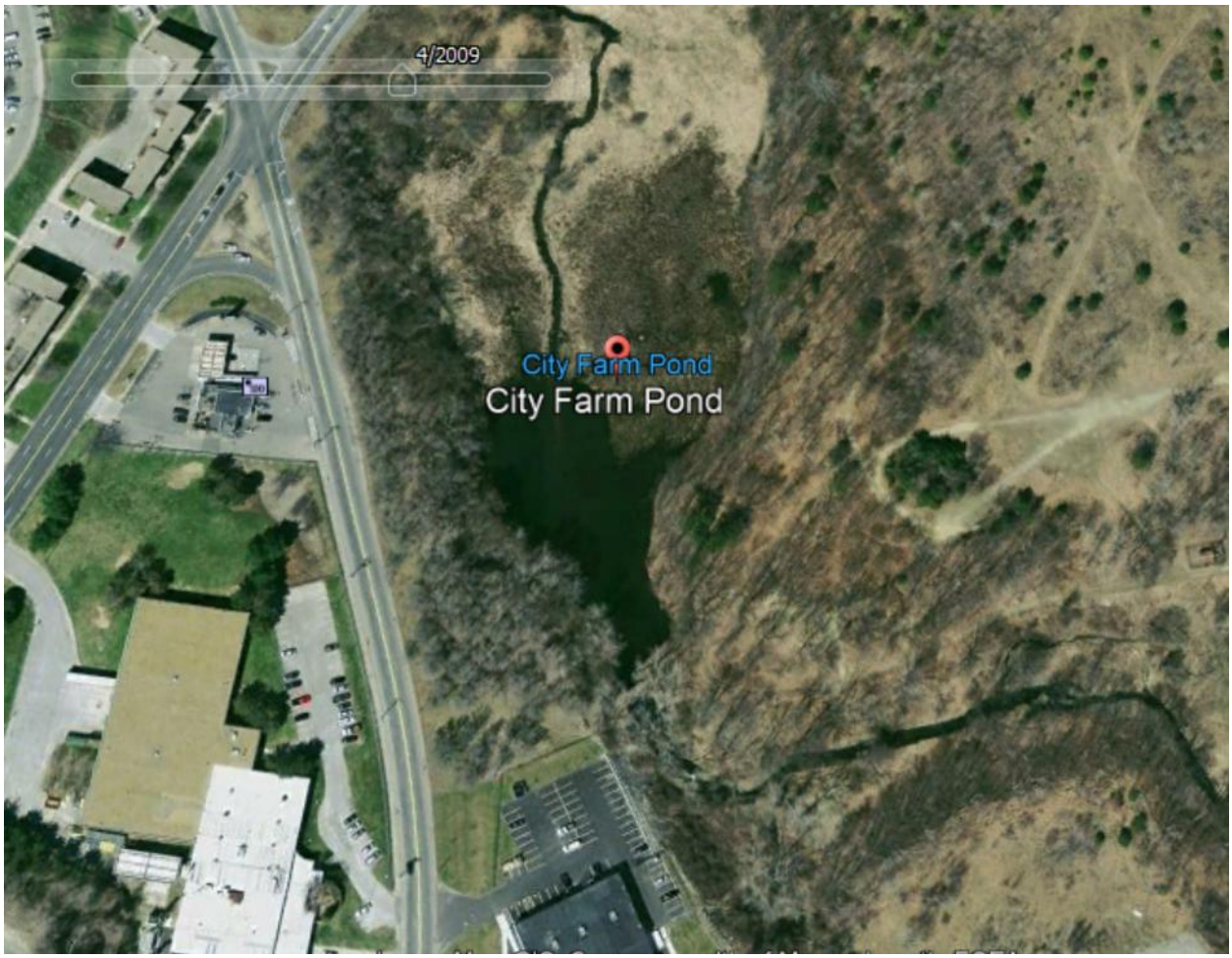
Other notes (e.g., overt pollution, construction, and water uses:

3056 - Eutrophic
1° Contact - 1 acre. - Not attainable ; 1 acre - Part. Support
2° Contact - 1 acre - Not attainable ; 1 acre - Threatened

Cause - Siltation - M (1 acre), Noxious plants - M (1 acre)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of City Farm Pond, 3/30/2009 (Google Earth Pro Undated):



Google Earth image of City Farm Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of City Farm Pond, 8/22/2019 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Poor Farm Brook (MA51-17) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Poor Farm Brook (MA51-17) is assessed as Insufficient Information, with the prior Aquatic Plants (Macrophytes) impairment being removed. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Poor Farm Brook (MA51-17) includes the run-of-river impoundment, City Farm Pond (formerly MA51020) that was first listed as impaired for Noxious Aquatic Plants in 1996. In 2010, the pond AU was merged with the Poor Farm Brook (MA51-17) AU, and the NAP impairment was remapped to Aquatic Plants (Macrophytes) and applied to the river AU (MassDEP 2024). The original pond impairment was based on a July 1994 synoptic survey conducted by MassDEP staff during which it was noted that half of the pond was being encroached on by the wetland species, *Typha* and *Lythrum spp.* (the non-rooted *Lemna minor* was also observed in the pond) (MassDEP 1994, MassDEP 2002). Poor Farm Brook was surveyed by MassDEP staff on 6 dates during summer 2008 (W1753 - Rt.70, Shrewsbury) (just upstream of the City Farm Pond area) and there were no reports of excessive filamentous algae or aquatic macrophytes (MassDEP Undated 7). MassDEP staff also recorded aesthetics observations at one station even further upstream of Clear Pond, ~50 feet upstream/west of Northeast Cutoff, Worcester (W2945) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, however too limited data are available to assess the Aesthetics Use. City Farm Pond comprises <3% of the length of the Poor Farm Brook AU, since this impounded portion of the Poor Farm Brook "river" AU comprises <10% of the total AU river length, the Aquatic Plants (Macrophytes) impairment should be delisted because the impounded area is not considered to well represent the AU.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2945	MassDEP	Water Quality	Poor Farm Brook	[approximately 50 feet upstream/west of Northeast Cutoff, Worcester]	42.306471	-71.765808

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2945	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2945 on Poor Farm Brook (MA51-17) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2945	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2945	Poor Farm Brook	2020	Aesthetics Impaired?	No	2	2
W2945	Poor Farm Brook	2020	Aquatic Plant Density, Overall	None	2	2
W2945	Poor Farm Brook	2020	Color	None	2	2
W2945	Poor Farm Brook	2020	Objectionable Deposits	No	1	2
W2945	Poor Farm Brook	2020	Objectionable Deposits	Yes	1	2
W2945	Poor Farm Brook	2020	Odor	None	2	2
W2945	Poor Farm Brook	2020	Periphyton Density, Filamentous	Moderate	1	2
W2945	Poor Farm Brook	2020	Periphyton Density, Filamentous	None	1	2
W2945	Poor Farm Brook	2020	Periphyton Density, Film	None	1	2
W2945	Poor Farm Brook	2020	Periphyton Density, Film	NR	1	2
W2945	Poor Farm Brook	2020	Scum	No	2	2
W2945	Poor Farm Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Poor Farm Brook (MA51-17) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli*) impairment is being carried forward and the prior Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Poor Farm Brook (MA51-17) is assessed as Insufficient Information, with the prior Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) being removed. MassDEP staff collected *E. coli* bacteria samples close to the downstream end of Poor Farm Brook at W1753 [Rt. 70, Shrewsbury] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1753 indicated 71% of intervals had GMs >244 CFU/100ml, 1 sample exceeded the 794 CFU/100ml STV (2,100 CFU), and the overall GM was 190 CFU/100ml. Historic *E. coli* data from W1753 are inconclusive according to the 2024 CALM to assess the Secondary Contact Recreation Use because this single year, limited frequency dataset included both GMs below the threshold and STV exceedance of the threshold. Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1753	MassDEP	Water Quality	Poor Farm Brook	[Route 70, Shrewsbury]	42.303777	-71.762617

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

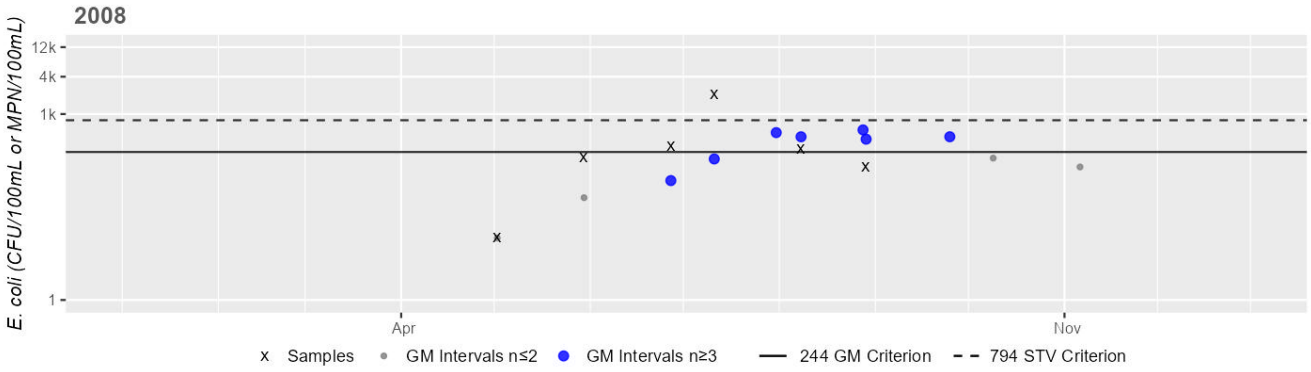
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1753	MassDEP	E. coli	05/01/08	08/28/08	6	10	2100	190

Station MASSDEP_W1753 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	190
#GMI	7
#GMI Ex	5
%GMI Ex	71%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
71%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Pout Pond (MA51121)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	9 ACRES
Classification/Qualifier:	B

No usable data were available for Pout Pond (MA51121) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Pout Pond (MA51122)

Location:	Boylston.
AU Type:	FRESHWATER LAKE
AU Size:	14 ACRES
Classification/Qualifier:	B

No usable data were available for Pout Pond (MA51122) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Pratt Pond (MA51123)

Location:	Upton.
AU Type:	FRESHWATER LAKE
AU Size:	40 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Recommendations

2024/26 Recommendations
2024 IR [HARMFUL ALGAL BLOOMS, MEDIUM] Follow-up monitoring should be conducted in Pratt Pond (MA51123) to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Pratt Pond (MA51123) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	YES

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Pratt Pond (MA51123), so it is assessed as having Insufficient Information, however an Alert is being identified for Harmful Algal Blooms in this waterbody since C-HAB postings (blooms of >15 days in duration) were reported to MDPH for 2017. MassDEP staff recorded aesthetics observations at one station for this Pratt Pond AU at the eastern edge of pond at Kiwanis Beach Park beach, Upton (W2930) between Aug and Sep 2017 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted goose fecal matter along the shoreline during both site visits, identifying the site as aesthetically impaired for this reason in September. During the period 2015 through 2022, C-HAB postings for Pratt Pond were reported to MDPH based on visual observations for 22 days in 2017 and no blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, an Alert is being identified for Harmful Algal Blooms and a recommendation for follow-up sampling will be made.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2930	MassDEP	Water Quality	Pratt Pond	[eastern edge of pond at Kiwanis Beach Park beach, Upton]	42.182269	-71.597249

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2930	2017	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2930 on Pratt Pond (MA51123) during 2 site visits between Aug 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted an aesthetics impairment flag (n=1) and objectionable deposits (n=2). However, aesthetic observations are limited (n<3).

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2930	Pratt Pond	2017	Aesthetics Impaired?	No	1	2
W2930	Pratt Pond	2017	Aesthetics Impaired?	Yes	1	2
W2930	Pratt Pond	2017	Color	Reddish	2	2
W2930	Pratt Pond	2017	Objectionable Deposits	Yes	2	2
W2930	Pratt Pond	2017	Odor	None	2	2
W2930	Pratt Pond	2017	Scum	No	2	2
W2930	Pratt Pond	2017	Turbidity	None	2	2

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Pratt Pond (MA51123) were reported to MDPH based on visual observations for 22 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, an Alert is being identified for C-HABs in this waterbody and a recommendation for follow-up sampling will be made.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Pratt Pond	Upton			22					

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	YES

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Pratt Pond (MA51123) and available other indicators and aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. An Alert is being identified for Harmful Algal Blooms and additional sampling is recommended for this AU. During the period 2015 through 2022, C-HAB postings for Pratt Pond (MA51123) were reported to MDPH based on visual observations for 22 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	YES

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Pratt Pond (MA51123) and available other indicators and aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. An Alert is being identified for Harmful Algal Blooms and additional sampling is recommended for this AU. During the period 2015 through 2022, C-HAB postings for Pratt Pond (MA51123) were reported to MDPH based on visual observations for 22 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made.

Pratts Pond (MA51124)

Location:	Grafton.
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Pratts Pond (MA51124) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Quinsigamond River (MA51-09)

Location:	Headwaters, outlet Flint Pond, Grafton to confluence with the Blackstone River in Fisherville Pond, Grafton (excluding approximately 0.5 mile through existing segment: Lake Ripple MA51135) (through former 2008 segments: Hovey Pond MA51068 and a portion of Fisherville Pond MA51048).
AU Type:	RIVER
AU Size:	5.2 MILES
Classification/Qualifier:	B: WWF

Quinsigamond River (MA51-09)

Watershed Area: 37.79 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	37.79	5.44	12.47	1.51
Agriculture	1.3%	4.2%	0.6%	2%
Developed	38.6%	29.7%	26.4%	22.6%
Natural	50.8%	56%	54.4%	56.9%
Wetland	9.3%	10.1%	18.6%	18.5%
Impervious	18.7%	11%	12.7%	9%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Source Unknown (N)	X	--	--	--	--

Recommendations

2024/26 Recommendations
2024 IR [TRASH, LOW] Additional Aesthetics monitoring is recommended at {W0689} to track the observed trash at the site.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Quinsigamond River (MA51-09) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	YES

2024/26 Use Attainment Summary
The Aesthetics Use for Quinsigamond River (MA51-09) continues to be assessed as Fully Supporting based on the general lack of any objectionable conditions documented by MassDEP staff during the summers of 2011, 2012, 2013 and 2020. However, an Alert is being identified due to the trash observed at the abandoned Bridge Street bridge in 2011. MassDEP staff recorded aesthetics observations for two stations on this Quinsigamond River AU from upstream to downstream as follows; in the upstream half of the AU at the abandoned Bridge Street bridge west of Rt. 140, Grafton (W0689 2011, n=6; 2012, n=5 & 2013, n=3) and in the downstream half of the AU at Brigham Hill Road, Grafton (W2188 2011, n=9 & 2020, n=2). There were generally no noted objectionable conditions (odors, growths, or turbidity) recorded by MassDEP field sampling crews during the surveys. However, observations of minor to moderate amounts of trash were observed at W0689 on four occasions during 2011.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0689	MassDEP	Water Quality	Quinsigamond River	[abandoned Bridge Street bridge west of Route 140, Grafton]	42.230538	-71.708092
W2188	MassDEP	Water Quality	Quinsigamond River	[Brigham Hill Road, Grafton]	42.208366	-71.697570

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0689	2011	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0689 on Quinsigamond River (MA51-09) during 5 site visits between Mar 2011 and Nov 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=4).
W0689	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0689 on Quinsigamond River (MA51-09) during 5 site visits between Feb 2012 and Nov 2012. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0689	2013	3	Aesthetic observations were made by MassDEP field sampling crews at Station W0689 on Quinsigamond River (MA51-09) during 3 site visits between Jan 2013 and May 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted an aesthetics impairment flag (n=1).
W2188	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2188 on Quinsigamond River (MA51-09) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted high turbidity (n=1).
W2188	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2188 on Quinsigamond River (MA51-09) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0689	2011	5	4	0
W0689	2012	5	2	0
W0689	2013	3	2	0
W2188	2011	6	4	1
W2188	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0689	Quinsigamond River	2011	Aquatic Plant Density, Overall	None	1	5
W0689	Quinsigamond River	2011	Aquatic Plant Density, Overall	Sparse	3	5
W0689	Quinsigamond River	2011	Aquatic Plant Density, Overall	Unobservable	1	5
W0689	Quinsigamond River	2011	Color	None	3	5
W0689	Quinsigamond River	2011	Color	Reddish	2	5
W0689	Quinsigamond River	2011	Objectionable Deposits	Unobservable	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0689	Quinsigamond River	2011	Objectionable Deposits	Yes	4	5
W0689	Quinsigamond River	2011	Odor	None	4	5
W0689	Quinsigamond River	2011	Odor	Other (Eutrophic)	1	5
W0689	Quinsigamond River	2011	Periphyton Density, Filamentous	Moderate	2	5
W0689	Quinsigamond River	2011	Periphyton Density, Filamentous	None	2	5
W0689	Quinsigamond River	2011	Periphyton Density, Filamentous	Unobservable	1	5
W0689	Quinsigamond River	2011	Periphyton Density, Film	None	4	5
W0689	Quinsigamond River	2011	Periphyton Density, Film	Unobservable	1	5
W0689	Quinsigamond River	2011	Scum	No	1	5
W0689	Quinsigamond River	2011	Scum	Yes	4	5
W0689	Quinsigamond River	2011	Turbidity	None	5	5
W0689	Quinsigamond River	2012	Aquatic Plant Density, Overall	None	1	5
W0689	Quinsigamond River	2012	Aquatic Plant Density, Overall	Sparse	1	5
W0689	Quinsigamond River	2012	Aquatic Plant Density, Overall	Unobservable	3	5
W0689	Quinsigamond River	2012	Color	Brownish	1	5
W0689	Quinsigamond River	2012	Color	Light Yellow/Tan	1	5
W0689	Quinsigamond River	2012	Color	None	3	5
W0689	Quinsigamond River	2012	Objectionable Deposits	Unobservable	4	5
W0689	Quinsigamond River	2012	Objectionable Deposits	Yes	1	5
W0689	Quinsigamond River	2012	Odor	Fishy	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0689	Quinsigamond River	2012	Odor	Musty (Basement)	1	5
W0689	Quinsigamond River	2012	Odor	None	3	5
W0689	Quinsigamond River	2012	Periphyton Density, Filamentous	None	2	5
W0689	Quinsigamond River	2012	Periphyton Density, Filamentous	Unobservable	3	5
W0689	Quinsigamond River	2012	Periphyton Density, Film	None	2	5
W0689	Quinsigamond River	2012	Periphyton Density, Film	Unobservable	3	5
W0689	Quinsigamond River	2012	Scum	No	2	5
W0689	Quinsigamond River	2012	Scum	Yes	3	5
W0689	Quinsigamond River	2012	Turbidity	None	2	5
W0689	Quinsigamond River	2012	Turbidity	Slightly Turbid	1	5
W0689	Quinsigamond River	2012	Turbidity	Unobservable	2	5
W0689	Quinsigamond River	2013	Aesthetics Impaired?	NR	2	3
W0689	Quinsigamond River	2013	Aesthetics Impaired?	Yes	1	3
W0689	Quinsigamond River	2013	Aquatic Plant Density, Overall	None	2	3
W0689	Quinsigamond River	2013	Aquatic Plant Density, Overall	Unobservable	1	3
W0689	Quinsigamond River	2013	Color	Light Yellow/Tan	1	3
W0689	Quinsigamond River	2013	Color	None	2	3
W0689	Quinsigamond River	2013	Objectionable Deposits	Unobservable	2	3
W0689	Quinsigamond River	2013	Objectionable Deposits	Yes	1	3
W0689	Quinsigamond River	2013	Odor	Musty (Basement)	1	3

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0689	Quinsigamond River	2013	Odor	None	2	3
W0689	Quinsigamond River	2013	Periphyton Density, Filamentous	None	2	3
W0689	Quinsigamond River	2013	Periphyton Density, Filamentous	Unobservable	1	3
W0689	Quinsigamond River	2013	Periphyton Density, Film	None	2	3
W0689	Quinsigamond River	2013	Periphyton Density, Film	Unobservable	1	3
W0689	Quinsigamond River	2013	Scum	No	1	3
W0689	Quinsigamond River	2013	Scum	Yes	2	3
W0689	Quinsigamond River	2013	Turbidity	None	2	3
W0689	Quinsigamond River	2013	Turbidity	Slightly Turbid	1	3
W2188	Quinsigamond River	2011	Aquatic Plant Density, Overall	None	3	6
W2188	Quinsigamond River	2011	Aquatic Plant Density, Overall	Sparse	3	6
W2188	Quinsigamond River	2011	Color	Brownish	1	6
W2188	Quinsigamond River	2011	Color	Light Yellow/Tan	2	6
W2188	Quinsigamond River	2011	Color	None	3	6
W2188	Quinsigamond River	2011	Objectionable Deposits	No	4	6
W2188	Quinsigamond River	2011	Objectionable Deposits	Unobservable	1	6
W2188	Quinsigamond River	2011	Objectionable Deposits	Yes	1	6
W2188	Quinsigamond River	2011	Odor	Effluent (Treated)	1	6
W2188	Quinsigamond River	2011	Odor	Musty (Basement)	1	6
W2188	Quinsigamond River	2011	Odor	None	3	6

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2188	Quinsigamond River	2011	Odor	NR	1	6
W2188	Quinsigamond River	2011	Periphyton Density, Filamentous	Moderate	1	6
W2188	Quinsigamond River	2011	Periphyton Density, Filamentous	None	2	6
W2188	Quinsigamond River	2011	Periphyton Density, Filamentous	Sparse	1	6
W2188	Quinsigamond River	2011	Periphyton Density, Filamentous	Unobservable	2	6
W2188	Quinsigamond River	2011	Periphyton Density, Film	Dense	1	6
W2188	Quinsigamond River	2011	Periphyton Density, Film	None	3	6
W2188	Quinsigamond River	2011	Periphyton Density, Film	Unobservable	2	6
W2188	Quinsigamond River	2011	Scum	No	2	6
W2188	Quinsigamond River	2011	Scum	Yes	4	6
W2188	Quinsigamond River	2011	Turbidity	Highly Turbid	1	6
W2188	Quinsigamond River	2011	Turbidity	Moderately Turbid	1	6
W2188	Quinsigamond River	2011	Turbidity	None	4	6
W2188	Quinsigamond River	2020	Aesthetics Impaired?	No	2	2
W2188	Quinsigamond River	2020	Aquatic Plant Density, Overall	None	2	2
W2188	Quinsigamond River	2020	Color	None	2	2
W2188	Quinsigamond River	2020	Objectionable Deposits	No	2	2
W2188	Quinsigamond River	2020	Odor	None	2	2
W2188	Quinsigamond River	2020	Periphyton Density, Filamentous	None	2	2
W2188	Quinsigamond River	2020	Periphyton Density, Film	None	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2188	Quinsigamond River	2020	Scum	No	2	2
W2188	Quinsigamond River	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for the Quinsigamond River (MA51-09) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples in the Quinsigamond River from 2011-2013 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: roughly a quarter of the way down the AU at W0689 [abandoned Bridge St bridge W of Rt. 140, Grafton] from 2011-2013 (n=1-3/yr) and just over half way down at W2188 [Brigham Hill Rd, Grafton] from May-Sep 2011 (n=6). The available *E. coli* data at W0689 are too limited to assess according to the 2024 CALM. Analysis of the single year limited frequency *E. coli* dataset from W2188 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 19 CFU/100ml. *E. coli* data from W2188 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0689	MassDEP	Water Quality	Quinsigamond River	[abandoned Bridge Street bridge west of Route 140, Grafton]	42.230538	-71.708092
W2188	MassDEP	Water Quality	Quinsigamond River	[Brigham Hill Road, Grafton]	42.208366	-71.697570

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

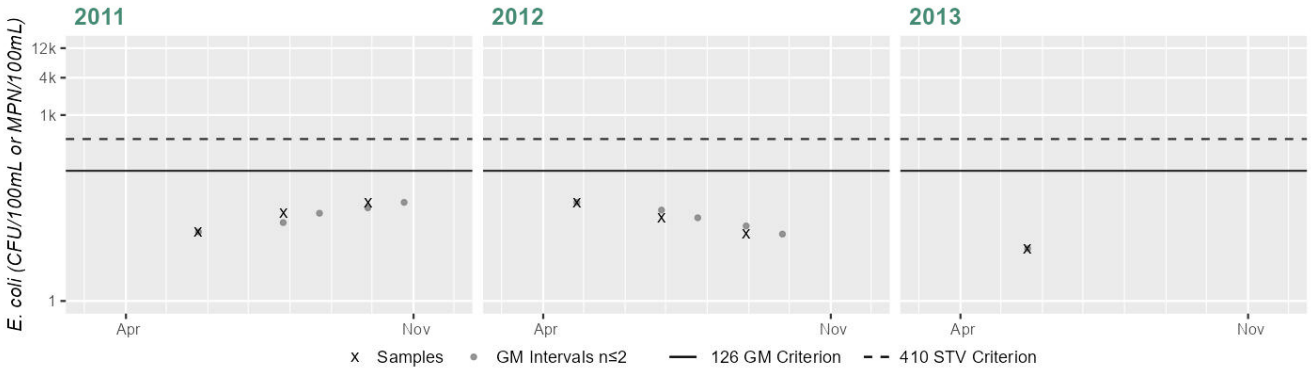
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0689	MassDEP	E. coli	05/25/11	09/28/11	3	13	39	23

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0689	MassDEP	E. coli	04/25/12	08/29/12	3	12	39	21
W0689	MassDEP	E. coli	05/21/13	05/21/13	1	7	7	6
W2188	MassDEP	E. coli	05/17/11	09/26/11	6	2	66	19

Station MASSDEP_W0689 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Primary Contact Recreation Season



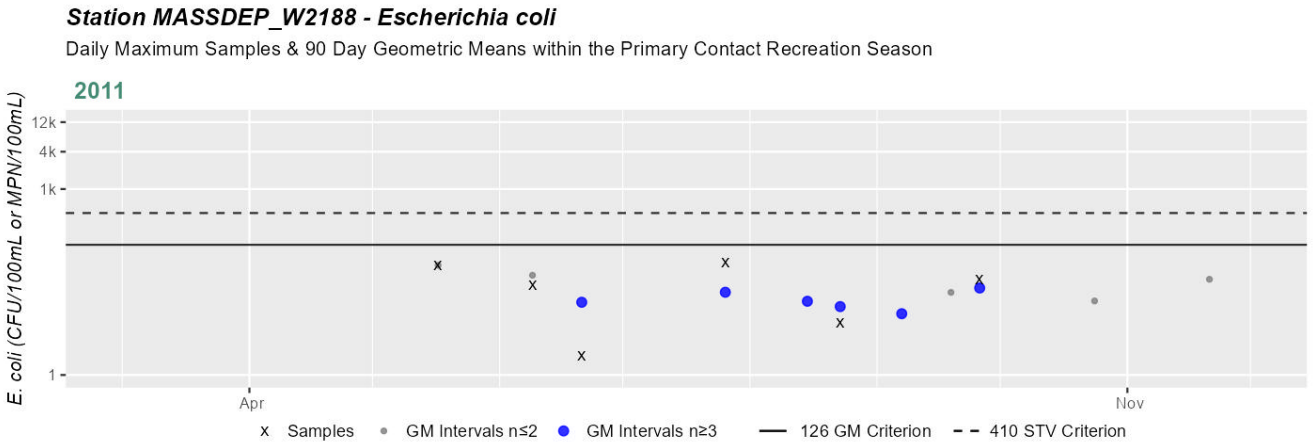
Variable*	Result
Samples	3
SeasGM	23
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	21
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	1
SeasGM	7
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*



Variable*	Result
Samples	6
SeasGM	19
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for the Quinsigamond River (MA51-09) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the Quinsigamond River from 2003-2013 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: roughly a quarter of the way down the AU at W0689 [abandoned Bridge St bridge W of Rt. 140, Grafton] from 2007-2010 (historic n=3-6/yr) and 2011-2013 (current n=3-5/yr), just over half way down at W2188 [Brigham Hill Rd, Grafton] from May-Sep 2011 (n=6), three-quarters of the way down at W1018 [Pleasant St, Grafton] in 2003 and 2008 (n=6/yr). The available *E. coli* data at W0689 are too limited to assess according to the 2024 CALM. Analysis of the single year limited frequency *E. coli* dataset from W2188 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 19 CFU/100ml. *E. coli* data from W2188 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0689	MassDEP	Water Quality	Quinsigamond River	[abandoned Bridge Street bridge west of Route 140, Grafton]	42.230538	-71.708092
W1018	MassDEP	Water Quality	Quinsigamond River	[Pleasant Street, Grafton]	42.199100	-71.693965
W2188	MassDEP	Water Quality	Quinsigamond River	[Brigham Hill Road, Grafton]	42.208366	-71.697570

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

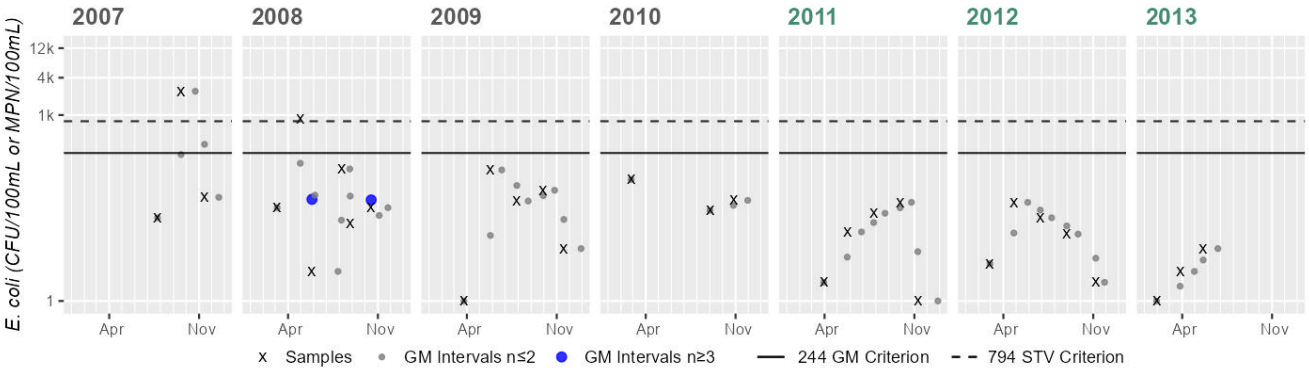
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0689	MassDEP	E. coli	07/25/07	11/14/07	3	22	2419	135
W0689	MassDEP	E. coli	03/05/08	10/15/08	6	3	866	43
W0689	MassDEP	E. coli	03/25/09	11/18/09	5	1	130	18
W0689	MassDEP	E. coli	02/25/10	10/27/10	3	29	91	48
W0689	MassDEP	E. coli	03/30/11	11/09/11	5	1	39	7
W0689	MassDEP	E. coli	02/28/12	11/06/12	5	2	39	9
W0689	MassDEP	E. coli	01/30/13	05/21/13	3	1	7	2
W1018	MassDEP	E. coli	04/23/03	10/02/03	6	6	130	26
W1018	MassDEP	E. coli	04/29/08	08/26/08	6	26	540	66
W2188	MassDEP	E. coli	05/17/11	09/26/11	6	2	66	19

Station MASSDEP_W0689 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	3
SeasGM	135
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	33%

Variable*	Result
Samples	6
SeasGM	43
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	16%

Variable*	Result
Samples	5
SeasGM	18
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	48
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	7
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	9
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	2
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

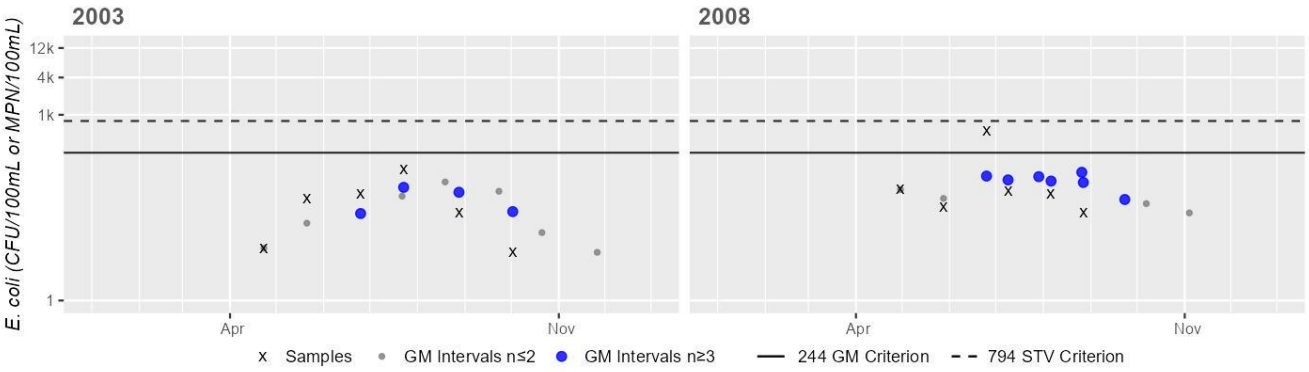
Cumulative %GMI Exceedance
Historic (1997-2010)
0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1018 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	26
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

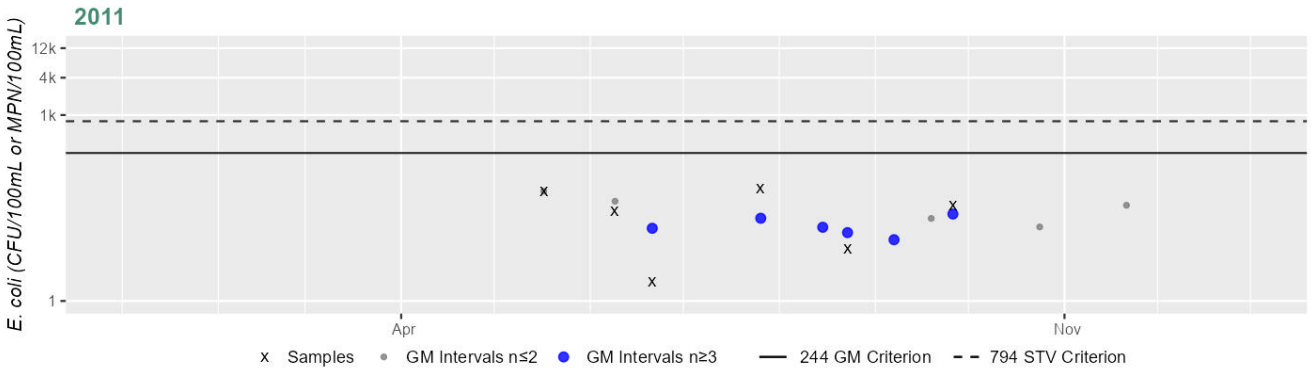
Variable*	Result
Samples	6
SeasGM	66
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2188 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	19
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Ramshorn Pond (MA51126)

Location:	Sutton/Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	131 ACRES
Classification/Qualifier:	B

No usable data were available for Ramshorn Pond (MA51126) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Reservoir No. 4 (MA51128)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	10 ACRES
Classification/Qualifier:	B

No usable data were available for Reservoir No. 4 (MA51128) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Reservoir No. 6 (MA51130)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	14 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Mercury in Fish Tissue	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Mercury in Fish Tissue	Atmospheric Deposition (N)	--	X	--	--	--
Mercury in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Reservoir No. 6 (MA51130) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. DPH included a site-specific advisory for Reservoir No. 6 (referred to by MDPH as ''Reservoir #6'') in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Reservoir No. 6 (MA51130) is assessed as Fully Supporting. MassDEP staff recorded aesthetics observations as part of the MAP2 lake monitoring project at two stations in Sutton during the summer of 2017 for Reservoir No. 6: at the deep hole (W2694, MAP2L-150 n=3) and at the eastern edge of the reservoir, near the Reservoir #6 Dam (NAT ID: MA00899) (W2695, MAP2L-150S n=5). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded at either station. During the MAP2 macrophyte mapping survey (n=1) in Aug 2017, less than 25% (2.8%) of the waterbody was determined to have an aquatic macrophyte biovolume >50% and during the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2694	MassDEP	Water Quality	Reservoir No. 6	[index site, Sutton]	42.114563	-71.742276
W2695	MassDEP	Water Quality	Reservoir No. 6	[eastern edge of pond, near the Reservoir #6 Dam (NAT ID: MA00899), Sutton]	42.114395	-71.740670

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2694	2017	3	Aesthetic observations were made by MassDEP field sampling crews at Station W2694 (MAP2L-150) on Reservoir No. 6 (MA51130) during 3 site visits between Jun 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted green water color (n=1). During the MAP2 macrophyte mapping survey (n=1) in Aug 2017, less than 25% (2.8%) of the waterbody was determined to have an aquatic macrophyte biovolume >50%.
W2695	2017	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2695 (MAP2L-150S) on Reservoir No. 6 (MA51130) during 5 site visits between May 2017 and Sep 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During the MAP2 littoral survey (n=1), duckweed was not noted in any of the 10 shoreline plots.

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2694	Reservoir No. 6	2017	Aesthetics Impaired?	No	3	3
W2694	Reservoir No. 6	2017	Aquatic Plant Density, Overall	None	1	3
W2694	Reservoir No. 6	2017	Aquatic Plant Density, Overall	NR	2	3
W2694	Reservoir No. 6	2017	Aquatic Plant Density, Whole Lake	Unobservable	1	1
W2694	Reservoir No. 6	2017	Color	Greenish	1	3
W2694	Reservoir No. 6	2017	Color	None	2	3
W2694	Reservoir No. 6	2017	Duckweed Density, Whole Lake	Unobservable	1	1
W2694	Reservoir No. 6	2017	Objectionable Deposits	No	3	3
W2694	Reservoir No. 6	2017	Odor	None	3	3
W2694	Reservoir No. 6	2017	Scum	No	3	3
W2694	Reservoir No. 6	2017	Turbidity	None	2	3
W2694	Reservoir No. 6	2017	Turbidity	Slightly Turbid	1	3
W2695	Reservoir No. 6	2017	Aesthetics Impaired?	No	5	5
W2695	Reservoir No. 6	2017	Color	None	5	5
W2695	Reservoir No. 6	2017	Objectionable Deposits	No	4	5
W2695	Reservoir No. 6	2017	Objectionable Deposits	Yes	1	5
W2695	Reservoir No. 6	2017	Odor	None	5	5
W2695	Reservoir No. 6	2017	Scum	No	5	5
W2695	Reservoir No. 6	2017	Turbidity	None	5	5

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Reservoir No. 6 (MA51130) is assessed as Fully Supporting. In Reservoir No. 6 MassDEP staff collected Secchi depth and cyanobacteria cell count data at W2694 [MAP2L-150, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2695 [MAP2L-150S, Shoreline at eastern edge of pond, near the Reservoir #6 Dam (T ID: MA00899), Sutton] (2017). Secchi depth data indicated water clarity meeting the 1.2m (4ft) threshold at W2694 in 2017 (n=3, 3.6-4m). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2695 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff also collected *E. coli* bacteria samples in Reservoir No. 6 at shoreline station W2695 from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2695 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 10 CFU/100ml. *E. coli* data from W2695 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2694	MassDEP	Water Quality	Reservoir No. 6	[index site, Sutton]	42.114563	-71.742276
W2695	MassDEP	Water Quality	Reservoir No. 6	[eastern edge of pond, near the Reservoir #6 Dam (NAT ID: MA00899), Sutton]	42.114395	-71.740670

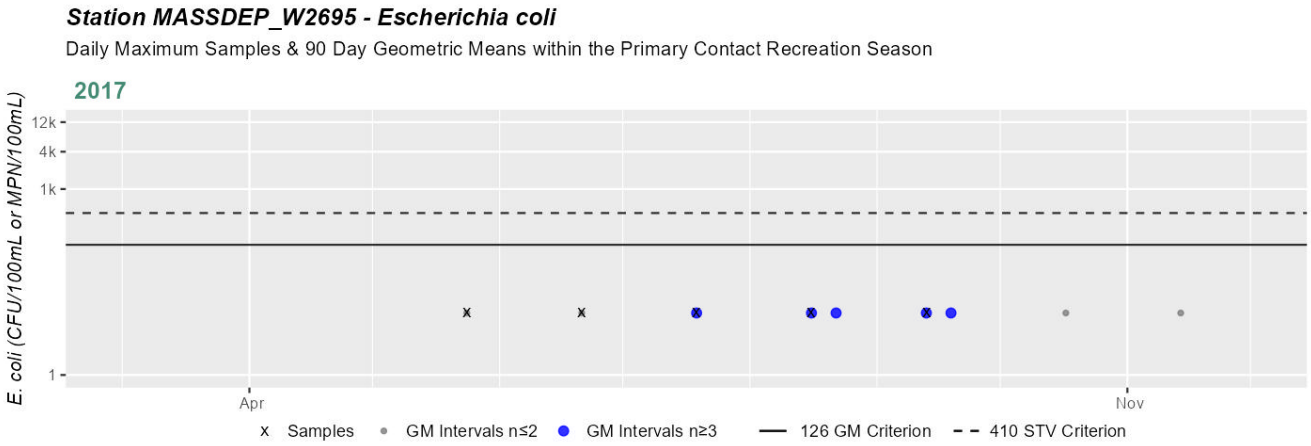
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2695	MassDEP	E. coli	05/24/17	09/13/17	5	10	10	10



Variable*	Result
Samples	5
SeasGM	10
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Other Indicators

Summary Statement for 2011-2022 Cyanobacteria Cell Count and Cyanotoxin Data, and Secchi Depth Data (MassDEP Undated 8) (MassDEP Undated 5)

Data Year(s)	Summary
2017	In Reservoir No. 6 (MA51130) in 2017, MassDEP collected Secchi and cyanobacteria cell count data at W2694 [MAP2L-150, Index-deep hole], and cyanobacteria cell count and cyanotoxin data at W2695 [MAP2L-150S, Shoreline]. At station W2694 (station depth=3.95 m) the Secchi depth measurements ranged from 3.6-4 m (n=3) indicating water clarity meeting the 1.2 m (4 ft) threshold. The cyanobacteria cell count did not exceed 70,000 cells/mL in any of the water samples (n=6). Analysis of microcystins and cylindrospermopsin samples from the shoreline station W2695 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L.

MassDEP Cyanobacteria Cell Count Data Collected at Lakes and Impoundments (2016-2018) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Waterbody	Station Type	Data Year	Sample Count	Count >70,000 cells/mL	Exceedance Date(s)
W2694	Reservoir No. 6	Index	2017	3	0	NA
W2695	Reservoir No. 6	Shoreline	2017	3	0	NA

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Reservoir No. 6 (MA51130) is assessed as Fully Supporting. In Reservoir No. 6 MassDEP staff collected cyanobacteria cell count data at W2694 [MAP2L-150, Index-deep hole] (2017) and cyanobacteria cell count and cyanotoxins data at W2695 [MAP2L-150S, Shoreline at eastern edge of pond, near the Reservoir #6 Dam (T ID: MA00899), Sutton] (2017). The cyanobacteria cell count did not exceed 70,000 cells/ml in any of the water samples in 2017 (n=6). Analysis of microcystins and cylindrospermopsin samples from W2695 in 2017 (n=6) indicated that the cyanotoxin concentrations did not exceed their respective thresholds of 8 µg/L and 15 µg/L. MassDEP staff also collected *E. coli* bacteria samples in Reservoir No. 6 at shoreline station W2695 from May-Sep 2017 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2695 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 10 CFU/100ml. *E. coli* data from W2695 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2695	MassDEP	Water Quality	Reservoir No. 6	[eastern edge of pond, near the Reservoir #6 Dam (NAT ID: MA00899), Sutton]	42.114395	-71.740670

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

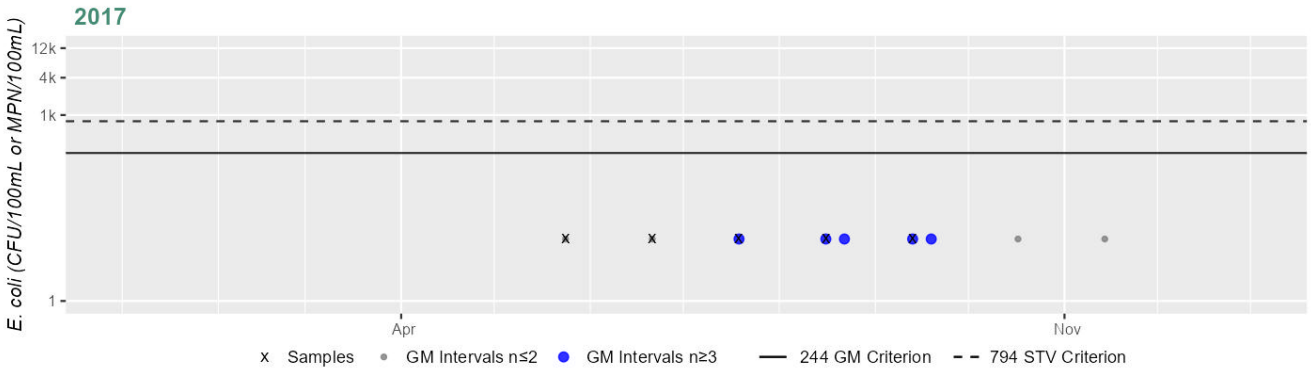
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2695	MassDEP	E. coli	05/24/17	09/13/17	5	10	10	10

Station MASSDEP_W2695 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	10
#GMI	5
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Riley Pond (MA51134)

Location:	Northbridge.
AU Type:	FRESHWATER LAKE
AU Size:	7 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Turbidity	Source Unknown (N)	--	--	X	X	X

Recommendations

2024/26 Recommendations
2014 IR [CYANOBACTERIA CELL COUNT, MEDIUM] Follow-up monitoring should be conducted in Riley Pond (MA51134) to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary

Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Riley Pond (MA51134) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Aesthetics Use for Riley Pond (MA51134) continues to be assessed as Not Supporting, with the Turbidity impairment carried forward from the 1996 303d List. The prior Alert identified for Harmful Algal Blooms in this waterbody is also being carried forward since C-HAB postings (blooms of >15 days in duration) were reported to MDPH for 2017. MassDEP staff recorded aesthetics observations at one station for Riley Pond from the dam at the eastern edge of pond, west of Castle Hill Rd, Northbridge (W2931) during 1 site visit in October, 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted green water color, algal mat scums, trash and a sewage odor, also identifying the site as "aesthetically impaired" that day. During the period 2015 through 2022, C-HAB postings for Riley Pond were reported to MDPH based on visual observations for 79 days in 2017 and no blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, this data is still indicative of an Alert status for Harmful Algal Blooms in Riley Pond and a recommendation for follow-up sampling will be made.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2931	MassDEP	Water Quality	Riley Pond	[from dam at eastern edge of pond, west of Castle Hill Road, Northbridge]	42.104343	-71.668953

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2931	2017	1	Aesthetic observations were made by MassDEP field sampling crews at Station W2931 on Riley Pond (MA51134) during 1 site visit on Oct 13, 2017. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted an aesthetics impairment flag (n=1) and green water color (n=1). However, aesthetic observations are limited (n<3).

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2931	Riley Pond	2017	Aesthetics Impaired?	Yes	1	1
W2931	Riley Pond	2017	Color	Greenish	1	1
W2931	Riley Pond	2017	Objectionable Deposits	Yes	1	1
W2931	Riley Pond	2017	Odor	Raw sewage	1	1
W2931	Riley Pond	2017	Scum	Yes	1	1
W2931	Riley Pond	2017	Turbidity	Moderately Turbid	1	1

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Riley Pond (MA51134) were reported to MDPH based on visual observations for 79 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, an Alert is being identified for C-HABs in this waterbody and a recommendation for follow-up sampling will be made.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2022) Provided by MDPH (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

[* indicates a C-HAB posting of unknown duration]

DEP Waterbody (DPH Waterbody)	DPH Town	Posting Days 2015	Posting Days 2016	Posting Days 2017	Posting Days 2018	Posting Days 2019	Posting Days 2020	Posting Days 2021	Posting Days 2022
Riley Pond	Northbridge			79					

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Riley Pond (MA51134) continues to be assessed as Not Supporting. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. The prior Alert identified for Harmful Algal Blooms in this waterbody is also being carried forward since C-HAB postings (blooms of >15 days in duration) were reported to MDPH for 2017 and additional sampling is recommended for this AU. During the period 2015 through 2022, C-HAB postings for Riley Pond were reported to MDPH based on visual observations for 79 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Riley Pond (MA51134) continues to be assessed as Not Supporting. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. The prior Alert identified for Harmful Algal Blooms in this waterbody is also being carried forward since C-HAB postings (blooms of >15 days in duration) were reported to MDPH for 2017 and additional sampling is recommended for this AU. During the period 2015 through 2022, C-HAB postings for Riley Pond were reported to MDPH based on visual observations for 79 days in 2017. No blooms were reported in other years. Since no extended blooms (>20 days in duration) based on cell count data were reported in recent years, an impairment decision will not be made at this time based on C-HAB postings. However, a Harmful Algal Blooms Alert is being identified for this waterbody and a recommendation for follow-up sampling will be made.

Riverlin Street Pond (MA51137)

Location:	Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	2 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Aquatic Plants (Macrophytes)*)	--	Added
4c	4c	(Curly-leaf Pondweed*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Riverlin Street Pond (MA51137) is Not Assessed.

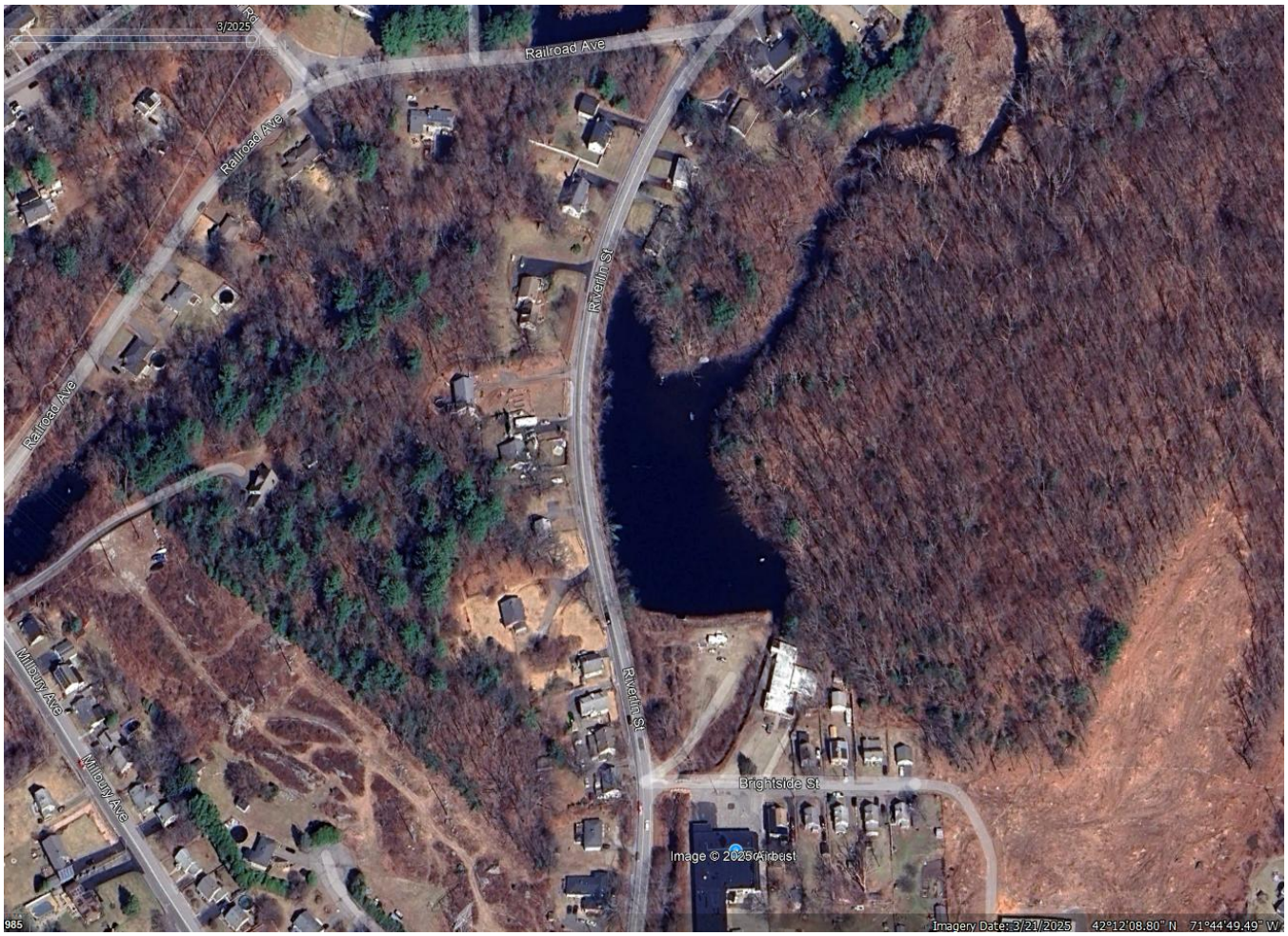
Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

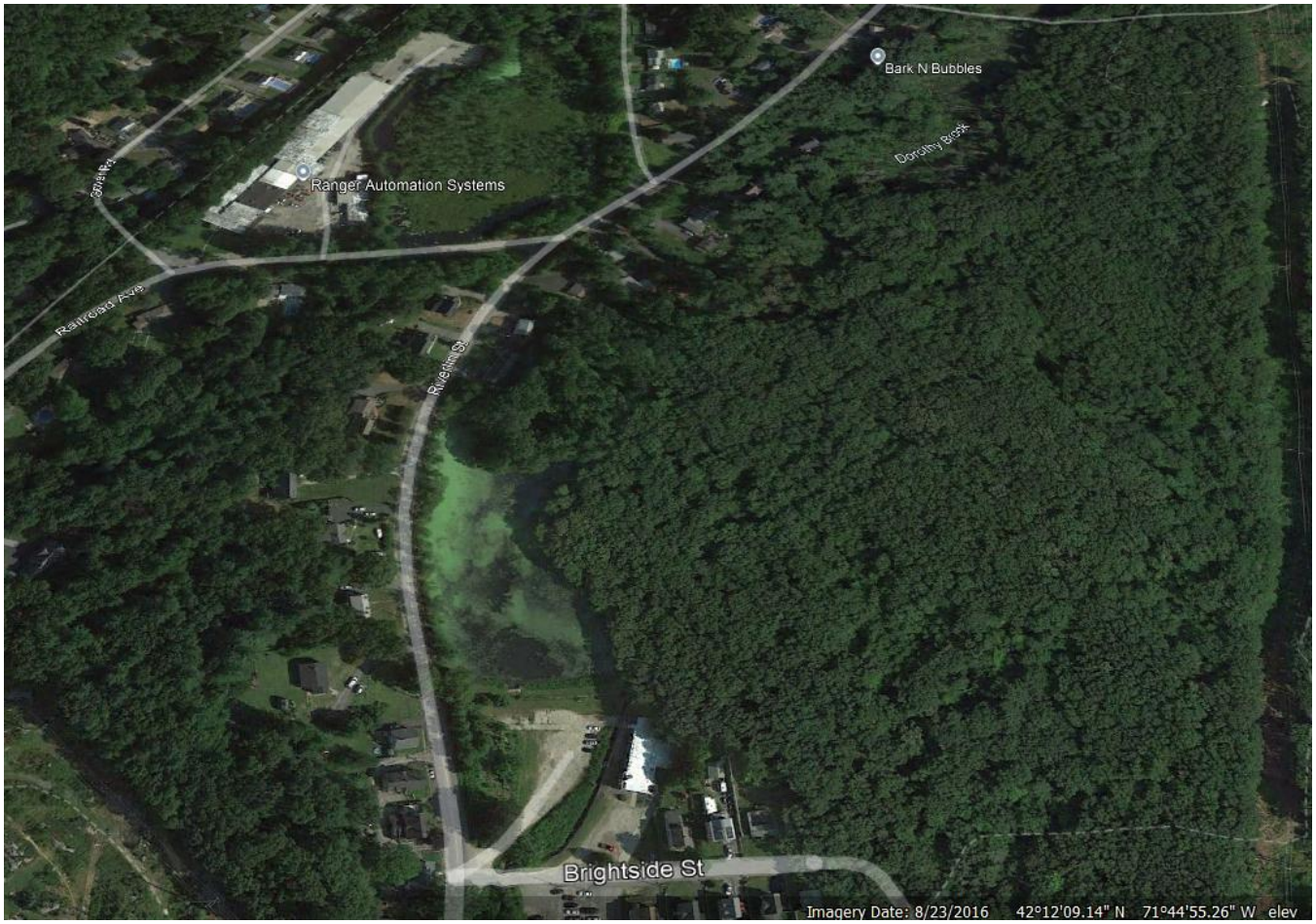
2024/26 Use Attainment Summary
The Aesthetics Use for Riverlin Street Pond (MA51137) continues to be assessed as Not Supporting. Since the Non-Native Aquatic Plants impairment was redundantly duplicated across multiple uses for this waterbody, the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. Since MassDEP staff noted floating/emergent vegetation was 75-100% dense over about half the pond and submerged vegetation was 75-100% dense over most of the pond (with the non-native aquatic macrophyte *Myriophyllum heterophyllum* dominating) during a July 1994 synoptic survey (MassDEP 1994), and Google Earth images August 2016 through August 2019 Surface (Google Earth Pro Undated) show this pond is very filled in with submergent and emergent vegetation, an Aquatic Plants (Macrophytes) non-pollutant impairment is being added in the place of the Non-Native Aquatic Plants impairments at this time. No new data are available to evaluate the Aesthetics Use for Riverlin Street Pond.

Aesthetic Observations

Riverlin Street Pond (MA51137) Google Earth Imagery: Pond Outline (March 2025) Followed by Imagery from July 2003 and August 2019 Showing Dense/Very Dense Vegetation Covering >25% of the Pond's Surface (Google Earth Pro Undated)


3/2025
Railroad Ave
Railroad Ave
Railroad Ave
R Vedjin St
R Vedjin St
Willbury Ave
Willbury Ave
Brightside St
Image © 2026 Airbust
985
Imagery Date: 3/21/2025 42°12'08.80" N 71°44'49.49" W

March 2025


Bark N Bubbles
Ranger Automation Systems
Brightside St
Imagery Date: 8/23/2016 42°12'09.14" N 71°44'55.26" W elev

August 2016



August 2019

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Riverlin Street Pond (MA51137) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for the Riverlin Street Pond (MA51137) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Rivulet Pond (MA51138)

Location:	Uxbridge.
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Rivulet Pond (MA51138) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Rock Meadow Brook (MA51-58)

Location:	Outlet of Long Meadow wetland, north of Hartford Avenue East, Mendon to mouth at inlet of West River Pond, impoundment of West River (backwater area), Uxbridge.
AU Type:	RIVER
AU Size:	1.8 MILES
Classification/Qualifier:	B

No usable data were available for Rock Meadow Brook (MA51-58) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	3	None	--	Unchanged

Round Top Brook (MA51-55)

Location:	Headwaters outlet Chase Pond, Douglas to MA/RI border.
AU Type:	RIVER
AU Size:	0.6 MILES
Classification/Qualifier:	B

Round Top Brook (MA51-55)

Watershed Area: 2.49 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.49	2.49	0.71	0.71
Agriculture	1.8%	1.8%	0.3%	0.3%
Developed	14%	14%	6.2%	6.2%
Natural	73.8%	73.8%	69.9%	69.9%
Wetland	10.4%	10.4%	23.5%	23.5%
Impervious	4.4%	4.4%	1.9%	1.9%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Round Top Brook (MA51-55) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Round Top Brook (MA51-55) is assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station for this Round Top Brook AU ~1400 feet downstream/south from the confluence of Tinkerville Brook, Burrillville, Rhode Island (W2413 in 2013-2016, n=4-5/yr). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2413	MassDEP	Water Quality	Round Top Brook	[approximately 1400 feet downstream/south from the confluence of Tinkerville Brook, Burrillville, Rhode Island (approximately 1600 feet from MA/RI border)]	42.007920	-71.705060

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2413	2013	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2413 on Round Top Brook (MA51-55) during 5 site visits between May 2013 and Sep 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2413	2014	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2413 on Round Top Brook (MA51-55) during 4 site visits between May 2014 and Aug 2014. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2413	2015	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2413 on Round Top Brook (MA51-55) during 4 site visits between May 2015 and Aug 2015. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2413	2016	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2413 on Round Top Brook (MA51-55) during 4 site visits between May 2016 and Aug 2016. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2413	2019	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2413 on Round Top Brook (MA51-55) during 4 site visits between Jun 2019 and Sep 2019. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2413	2013	5	4	0
W2413	2014	4	4	1
W2413	2015	4	4	0
W2413	2016	4	4	0
W2413	2019	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2413	Round Top Brook	2013	Aesthetics Impaired?	No	5	5
W2413	Round Top Brook	2013	Aquatic Plant Density, Overall	None	4	5
W2413	Round Top Brook	2013	Aquatic Plant Density, Overall	NR	1	5
W2413	Round Top Brook	2013	Color	Light Yellow/Tan	2	5
W2413	Round Top Brook	2013	Color	None	2	5
W2413	Round Top Brook	2013	Color	NR	1	5
W2413	Round Top Brook	2013	Objectionable Deposits	No	4	5
W2413	Round Top Brook	2013	Objectionable Deposits	NR	1	5
W2413	Round Top Brook	2013	Odor	None	4	5
W2413	Round Top Brook	2013	Odor	NR	1	5
W2413	Round Top Brook	2013	Periphyton Density, Filamentous	None	4	5
W2413	Round Top Brook	2013	Periphyton Density, Filamentous	NR	1	5
W2413	Round Top Brook	2013	Periphyton Density, Film	None	4	5
W2413	Round Top Brook	2013	Periphyton Density, Film	NR	1	5
W2413	Round Top Brook	2013	Scum	No	4	5
W2413	Round Top Brook	2013	Scum	NR	1	5
W2413	Round Top Brook	2013	Turbidity	None	4	5
W2413	Round Top Brook	2013	Turbidity	NR	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2413	Round Top Brook	2014	Aesthetics Impaired?	No	4	4
W2413	Round Top Brook	2014	Aquatic Plant Density, Overall	None	4	4
W2413	Round Top Brook	2014	Color	None	4	4
W2413	Round Top Brook	2014	Objectionable Deposits	No	3	4
W2413	Round Top Brook	2014	Objectionable Deposits	Yes	1	4
W2413	Round Top Brook	2014	Odor	None	4	4
W2413	Round Top Brook	2014	Periphyton Density, Filamentous	None	4	4
W2413	Round Top Brook	2014	Periphyton Density, Film	Moderate	1	4
W2413	Round Top Brook	2014	Periphyton Density, Film	None	1	4
W2413	Round Top Brook	2014	Periphyton Density, Film	Sparse	1	4
W2413	Round Top Brook	2014	Periphyton Density, Film	Very Dense	1	4
W2413	Round Top Brook	2014	Scum	No	4	4
W2413	Round Top Brook	2014	Turbidity	None	4	4
W2413	Round Top Brook	2015	Aesthetics Impaired?	No	4	4
W2413	Round Top Brook	2015	Aquatic Plant Density, Overall	None	2	4
W2413	Round Top Brook	2015	Aquatic Plant Density, Overall	Sparse	2	4
W2413	Round Top Brook	2015	Color	Light Yellow/Tan	2	4
W2413	Round Top Brook	2015	Color	None	1	4
W2413	Round Top Brook	2015	Color	Reddish	1	4
W2413	Round Top Brook	2015	Objectionable Deposits	No	4	4
W2413	Round Top Brook	2015	Odor	None	4	4
W2413	Round Top Brook	2015	Periphyton Density, Filamentous	None	4	4
W2413	Round Top Brook	2015	Periphyton Density, Film	None	3	4
W2413	Round Top Brook	2015	Periphyton Density, Film	Sparse	1	4
W2413	Round Top Brook	2015	Scum	No	4	4
W2413	Round Top Brook	2015	Turbidity	None	4	4
W2413	Round Top Brook	2016	Aesthetics Impaired?	No	4	4
W2413	Round Top Brook	2016	Aquatic Plant Density, Overall	None	4	4
W2413	Round Top Brook	2016	Color	Brownish	1	4
W2413	Round Top Brook	2016	Color	Light Yellow/Tan	2	4
W2413	Round Top Brook	2016	Color	NR	1	4
W2413	Round Top Brook	2016	Objectionable Deposits	No	4	4
W2413	Round Top Brook	2016	Odor	None	4	4
W2413	Round Top Brook	2016	Periphyton Density, Filamentous	None	4	4
W2413	Round Top Brook	2016	Periphyton Density, Film	None	2	4
W2413	Round Top Brook	2016	Periphyton Density, Film	Sparse	2	4
W2413	Round Top Brook	2016	Scum	No	4	4
W2413	Round Top Brook	2016	Turbidity	None	4	4

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2413	Round Top Brook	2019	Aesthetics Impaired?	No	4	4
W2413	Round Top Brook	2019	Aquatic Plant Density, Overall	None	4	4
W2413	Round Top Brook	2019	Color	Light Yellow/Tan	4	4
W2413	Round Top Brook	2019	Objectionable Deposits	No	4	4
W2413	Round Top Brook	2019	Odor	Musty (Basement)	1	4
W2413	Round Top Brook	2019	Odor	None	3	4
W2413	Round Top Brook	2019	Periphyton Density, Filamentous	None	4	4
W2413	Round Top Brook	2019	Periphyton Density, Film	None	3	4
W2413	Round Top Brook	2019	Periphyton Density, Film	Sparse	1	4
W2413	Round Top Brook	2019	Scum	No	4	4
W2413	Round Top Brook	2019	Turbidity	None	3	4
W2413	Round Top Brook	2019	Turbidity	Slightly Turbid	1	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Round Top Brook (MA51-55) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

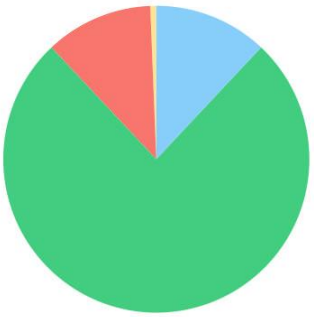
2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Round Top Brook (MA51-55) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Scadden Brook (MA51-24)

Location:	Headwaters, perennial portion, north of Davis Street, Douglas to mouth at inlet Lee Pond, Uxbridge (through former 2008 segment: Lee Reservoir MA51086).
AU Type:	RIVER
AU Size:	2.4 MILES
Classification/Qualifier:	B

Scadden Brook (MA51-24)

Watershed Area: 4.66 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	4.66	4.66	1.39	1.39
Agriculture	0.6%	0.6%	0.6%	0.6%
Developed	11.4%	11.4%	6.4%	6.4%
Natural	76%	76%	72.1%	72.1%
Wetland	12%	12%	20.9%	20.9%
Impervious	3.6%	3.6%	2%	2%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Scadden Brook (MA51-24) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for this Scadden Brook AU (MA51-24) is assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station for Scadden Brook at the downstream end of the AU ~425 feet upstream of mouth at inlet of Lee Pond, Uxbridge (W2905 2019, n=4). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2905	MassDEP	Water Quality	Scadden Brook	[approximately 425 feet upstream of mouth at inlet of Lee Pond, Uxbridge]	42.045293	-71.652012

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2905	2019	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2905 on Scadden Brook (MA51-24) during 4 site visits between Jun 2019 and Sep 2019. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2905	2019	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2905	Scadden Brook	2019	Aesthetics Impaired?	No	4	4

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2905	Scadden Brook	2019	Aquatic Plant Density, Overall	Moderate	1	4
W2905	Scadden Brook	2019	Aquatic Plant Density, Overall	Sparse	3	4
W2905	Scadden Brook	2019	Color	Light Yellow/Tan	1	4
W2905	Scadden Brook	2019	Color	None	2	4
W2905	Scadden Brook	2019	Color	Reddish	1	4
W2905	Scadden Brook	2019	Objectionable Deposits	No	4	4
W2905	Scadden Brook	2019	Odor	None	4	4
W2905	Scadden Brook	2019	Periphyton Density, Filamentous	None	3	4
W2905	Scadden Brook	2019	Periphyton Density, Filamentous	Sparse	1	4
W2905	Scadden Brook	2019	Periphyton Density, Film	None	4	4
W2905	Scadden Brook	2019	Scum	No	4	4
W2905	Scadden Brook	2019	Turbidity	None	2	4
W2905	Scadden Brook	2019	Turbidity	Slightly Turbid	2	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Scadden Brook (MA51-24) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Scadden Brook (MA51-24) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Schoolhouse Pond (MA51144)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	7 ACRES
Classification/Qualifier:	B

No usable data were available for Schoolhouse Pond (MA51144) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Scott Brook (MA51-53)

Location:	Headwaters west of Reservoir Street, Holden to mouth at inlet Holden Reservoir 1, Holden.
AU Type:	RIVER
AU Size:	0.8 MILES
Classification/Qualifier:	A: PWS, ORW, CWF (Tributary)

No usable data were available for Scott Brook (MA51-53) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Sewall Brook (MA51-44)

Location:	Headwaters, west of Baypath Drive, Boylston to inlet Sewall Pond, Boylston.
AU Type:	RIVER
AU Size:	2.8 MILES
Classification/Qualifier:	B

Sewall Brook (MA51-44)

Watershed Area: 1.75 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.75	1.75	0.64	0.64
Agriculture	0%	0%	0%	0%
Developed	24.8%	24.8%	22.7%	22.7%
Natural	58.1%	58.1%	46.5%	46.5%
Wetland	17.1%	17.1%	30.7%	30.7%
Impervious	7.9%	7.9%	6.5%	6.5%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Temperature	Golf Courses (N)	X	--	--	--	--
Temperature	Highway/Road/Bridge Runoff (Non-construction Related) (N)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Sewall Brook (MA51-44) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Sewall Brook (MA51-44), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Sewall Brook (MA51-44) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Sewall Brook (MA51-44) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Sewall Brook at W1761 [Sewall St, Boylston] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1761 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 78 CFU/100ml. Historic *E. coli* data from W1761 meet 2024 CALM guidance. Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1761	MassDEP	Water Quality	Sewall Brook	[Sewall Street, Boylston]	42.324998	-71.740886

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

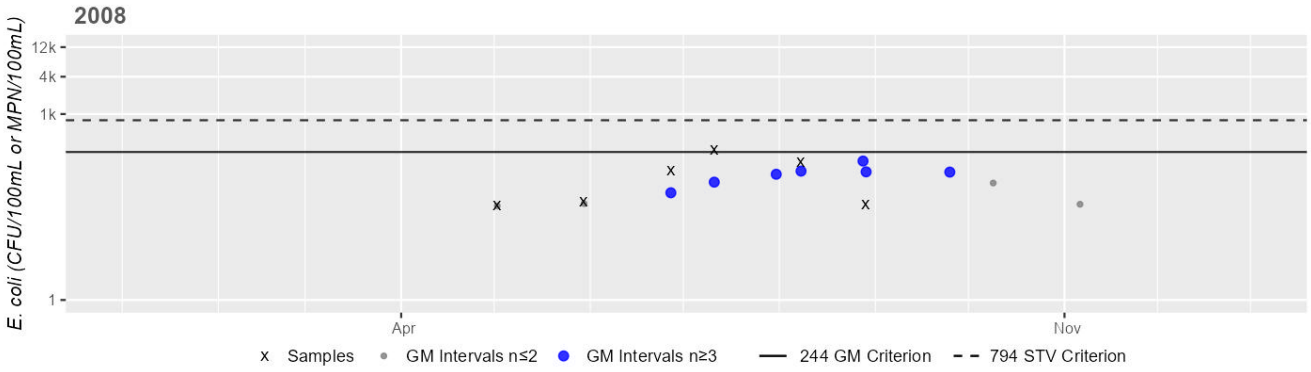
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1761	MassDEP	E. coli	05/01/08	08/28/08	6	33	260	78

Station MASSDEP_W1761 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	78
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Sewall Pond (MA51191)

Location:	Boylston.
AU Type:	FRESHWATER LAKE
AU Size:	13 ACRES
Classification/Qualifier:	B

No usable data were available for Sewall Pond (MA51191) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Shirley Street Pond (MA51196)

Location:	Shrewsbury.
AU Type:	FRESHWATER LAKE
AU Size:	19 ACRES
Classification/Qualifier:	B

No usable data were available for Shirley Street Pond (MA51196) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	(Water Chestnut*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	2392	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Agriculture (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Commercial Districts (Shopping/Office Complexes) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Sand/Gravel/Rock Mining or Quarries (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Agriculture (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Commercial Districts (Shopping/Office Complexes) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Sand/Gravel/Rock Mining or Quarries (Y)	--	--	X	X	X

Sibley Reservoir (MA51148)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	25 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Dewatering*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Source Unknown (N)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Sibley Reservoir (MA51148) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to evaluate the Aesthetics Use of Sibley Reservoir (MA51148), so it is assessed as having Insufficient Information. Since the Dewatering impairment was redundantly duplicated across multiple uses for this waterbody, the Dewatering impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Sibley Reservoir (MA51148), so it is assessed as having Insufficient Information. Since the Dewatering impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Sibley Reservoir (MA51148), so it is assessed as having Insufficient Information. Since the Dewatering impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Silver Hill Pond (MA51149)

Location:	Milford.
AU Type:	FRESHWATER LAKE
AU Size:	6 ACRES
Classification/Qualifier:	B

No usable data were available for Silver Hill Pond (MA51149) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Silver Lake (MA51150)

Location:	Bellingham.
AU Type:	FRESHWATER LAKE
AU Size:	42 ACRES
Classification/Qualifier:	B

No usable data were available for Silver Lake (MA51150) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (N)	X	--	--	--	--

Silver Lake (MA51151)

Location:	Grafton.
AU Type:	FRESHWATER LAKE
AU Size:	25 ACRES
Classification/Qualifier:	B

No usable data were available for Silver Lake (MA51151) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Water Chestnut*)	--	Unchanged

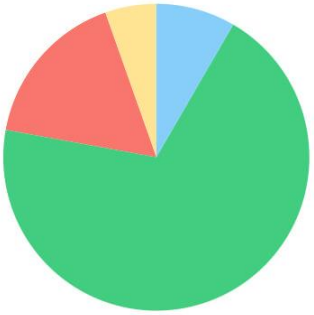
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Singletary Brook (MA51-31)

Location:	Headwaters, outlet Singletary Pond, Millbury to mouth at confluence with the Blackstone River, Millbury (excluding approximately 0.4 miles through existing segment: Brierly Pond MA51010).
AU Type:	RIVER
AU Size:	1.5 MILES
Classification/Qualifier:	B

Singletary Brook (MA51-31)

Watershed Area: 5.78 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	5.78	3.94	2.85	2.07
Agriculture	5.4%	3%	1.8%	1.8%
Developed	16.7%	19.6%	13.6%	15.2%
Natural	69.5%	70%	73.2%	72.9%
Wetland	8.4%	7.4%	11.4%	10.1%
Impervious	6.3%	7.5%	5.9%	6.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Singletary Brook (MA51-31) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Singletary Brook (MA51-31), so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station for this Singletary Brook AU at Sycamore Street, Millbury (W1767) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1767	MassDEP	Water Quality	Singletary Brook	[Sycamore Street, Millbury]	42.182777	-71.766046

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W1767	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W1767 on Singletary Brook (MA51-31) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W1767	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1767	Singletary Brook	2020	Aesthetics Impaired?	No	2	2
W1767	Singletary Brook	2020	Aquatic Plant Density, Overall	None	2	2
W1767	Singletary Brook	2020	Color	None	2	2
W1767	Singletary Brook	2020	Objectionable Deposits	No	2	2
W1767	Singletary Brook	2020	Odor	None	2	2
W1767	Singletary Brook	2020	Periphyton Density, Filamentous	None	2	2
W1767	Singletary Brook	2020	Periphyton Density, Film	None	2	2
W1767	Singletary Brook	2020	Scum	No	2	2
W1767	Singletary Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Singletary Brook (MA51-31) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Singletary Brook (MA51-31) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down Singletary Brook at W1767 [Sycamore St, Millbury] from Apr-Aug 2008 (n=6). Analysis of this historic single year limited frequency *E. coli* dataset from W1767 indicated 57% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 178 CFU/100ml. Historic *E. coli* data from W1767 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1767	MassDEP	Water Quality	Singletary Brook	[Sycamore Street, Millbury]	42.182777	-71.766046

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

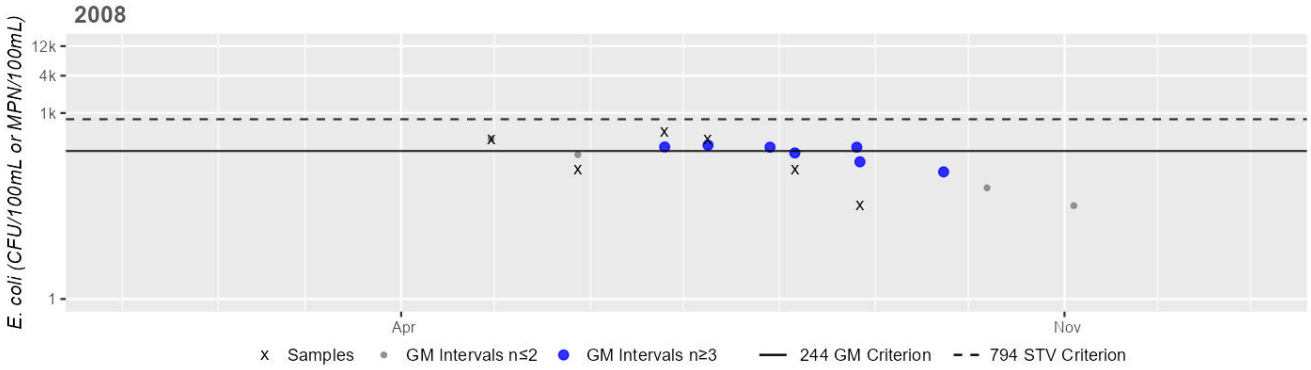
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1767	MassDEP	E. coli	04/29/08	08/26/08	6	32	500	178

Station MASSDEP_W1767 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	178
#GMI	7
#GMI Ex	4
%GMI Ex	57%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
57%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Singletary Pond (MA51152)

Location:	Sutton/Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	341 ACRES
Classification/Qualifier:	B

No usable data were available for Singletary Pond (MA51152) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Slaughterhouse Pond (MA51153)

Location:	Millbury/Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	10 ACRES
Classification/Qualifier:	B

No usable data were available for Slaughterhouse Pond (MA51153) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Southwick Pond (MA51157)

Location:	Leicester/Paxton.
AU Type:	FRESHWATER LAKE
AU Size:	43 ACRES
Classification/Qualifier:	A: PWS, ORW (Tributary)

No usable data were available for Southwick Pond (MA51157) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Aquatic Plants (Macrophytes)*)	--	Unchanged
4a	4a	Nutrient/Eutrophication Biological Indicators	2390	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Agriculture (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X
(Aquatic Plants (Macrophytes)*)	Rural (Residential Areas) (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Agriculture (Y)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	--	--	X	X	X

Spring Brook (MA51-25)

Location:	Headwaters, perennial portion, north of Lovell Street, Mendon to mouth at confluence with Muddy Brook, Mendon.
AU Type:	RIVER
AU Size:	1.9 MILES
Classification/Qualifier:	B

No usable data were available for Spring Brook (MA51-25) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Steamburg Brook (MA51-59)

Location:	Headwaters, perennial portion north of Whitins Road, Sutton to mouth at inlet of Whitins Pond, Northbridge.
AU Type:	RIVER
AU Size:	1.3 MILES
Classification/Qualifier:	B

No usable data were available for Steamburg Brook (MA51-59) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	3	None	--	Unchanged

Stevens Pond (MA51159)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	85 ACRES
Classification/Qualifier:	B

No usable data were available for Stevens Pond (MA51159) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Stoneville Reservoir (MA51161)

Location:	Auburn.
AU Type:	FRESHWATER LAKE
AU Size:	60 ACRES
Classification/Qualifier:	B

No usable data were available for Stoneville Reservoir (MA51161) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Stump Pond (MA51162)

Location:	Oxford.
AU Type:	FRESHWATER LAKE
AU Size:	20 ACRES
Classification/Qualifier:	B

No usable data were available for Stump Pond (MA51162) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Sutton Falls (MA51163)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Harmful Algal Blooms	--	Unchanged
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Harmful Algal Blooms	Source Unknown (N)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Recommendations

2024/26 Recommendations
2024 IR [CYANOBACTERIA CELL COUNT, MEDIUM] Follow-up monitoring should be conducted in Sutton Falls (MA51163) to determine if Harmful Algal Blooms may be impairing the Recreational and Aesthetic uses. Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of algal blooms to MDPH.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert

Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Sutton Falls (MA51163) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Sutton Falls (MA51163) continues to be assessed as Not Supporting with the Turbidity impairment (originating from the 1996 303d list) and the Harmful Algal Blooms impairment both being carried forward. Since the existing Harmful Algal Blooms impairment for Sutton Falls was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data. No new data are available to evaluate the Aesthetics Use for this Sutton Falls AU.

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2022 MDPH Data (Bailey, Logan April 26, 2023) (MassDEP Undated 2)

C-HAB Summary Statement
Since the existing Harmful Algal Blooms impairment for Sutton Falls (MA51163) was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Sutton Falls (MA51163) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the existing Harmful Algal Blooms impairment for Sutton Falls was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Sutton Falls (MA51163) continues to be assessed as Not Supporting. The prior Harmful Algal Blooms and Turbidity impairments (from the Aesthetics Use) are being carried forward. Since the existing Harmful Algal Blooms impairment for Sutton Falls was based on visual observations, a recommendation is being made to confirm the impairment with cyanobacteria cell count data.

Swans Pond (MA51164)

Location:	Sutton/Northbridge.
AU Type:	FRESHWATER LAKE
AU Size:	32 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Aquatic Plants (Macrophytes)*)	--	Added
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary

Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Swans Pond (MA51164) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Swans Pond (MA51164) continues to be assessed as Not Supporting. Since the Non-Native Aquatic Plants impairment was redundantly duplicated across multiple uses for this waterbody, the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. Since MassDEP staff noted coverage of Aquatic Plants to be "100% over the entire pond" (including "very dense" *Myriophyllum Heterophyllum*) during a July 1994 synoptic survey (MassDEP 1994) and Google Earth images August 2016 through September 2019 (Google Earth Pro Undated) show this pond is very filled in with submergent and emergent vegetation (>25% coverage), an Aquatic Plants (Macrophytes) non-pollutant impairment is being added in the place of the Non-Native Aquatic Plants impairment at this time. No new data are available to evaluate the Aesthetics Use for this Swans Pond AU.

Aesthetic Observations

Swans Pond (MA51164) Google Earth Imagery: Pond Outline (April 2016) Followed by Imagery from August 2016 and September 2019 Showing Dense/Very Dense Vegetation Covering >25% of the Pond's Surface (Google Earth Pro Undated)


4/2016
West End Creamery
Purgatory Rd
Swans Pond
Purgatory Brook
1985
Imagery Date: 4/26/2016 42°07'34.28" N 71°41'40.70" W elev

April 2016


8/2016
West End Creamery
Purgatory Rd
Swans Pond
Purgatory Brook
1985
Imagery Date: 8/23/2016 42°07'23.50" N 71°41'57.85" W elev

August 2016



September 2019

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Swans Pond (MA51164) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Swans Pond (MA51164) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. An Aquatic Plants (Macrophytes) impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use.

Taft Pond (MA51165)

Location:	Upton.
AU Type:	FRESHWATER LAKE
AU Size:	11 ACRES
Classification/Qualifier:	B

No usable data were available for Taft Pond (MA51165) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Taft Pond Brook (MA51-26)

Location:	Headwaters, outlet Taft Pond, Upton to mouth at confluence with West River, Northbridge.
AU Type:	RIVER
AU Size:	1.2 MILES
Classification/Qualifier:	B

Taft Pond Brook (MA51-26)

Watershed Area: 2.39 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.39	2.39	0.76	0.76
Agriculture	0.9%	0.9%	0%	0%
Developed	11.2%	11.2%	8.3%	8.3%
Natural	80.5%	80.5%	74.5%	74.5%
Wetland	7.4%	7.4%	17.1%	17.1%
Impervious	3.7%	3.7%	3.4%	3.4%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Taft Pond Brook (MA51-26) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for Taft Pond Brook (MA51-26), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Taft Pond Brook (MA51-26) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Taft Pond Brook (MA51-26) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples three-quarters of the way down Taft Pond Brook at W1428 [~50 ft downstream from the unnamed dirt Rd W off the southern end of S St, Upton] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1428 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 58 CFU/100ml. Historic *E. coli* data from W1428 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1428	MassDEP	Water Quality	Taft Pond Brook	[approximately 50 feet downstream from the unnamed dirt road west off the southern end of South Street, Upton]	42.127658	-71.603654

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

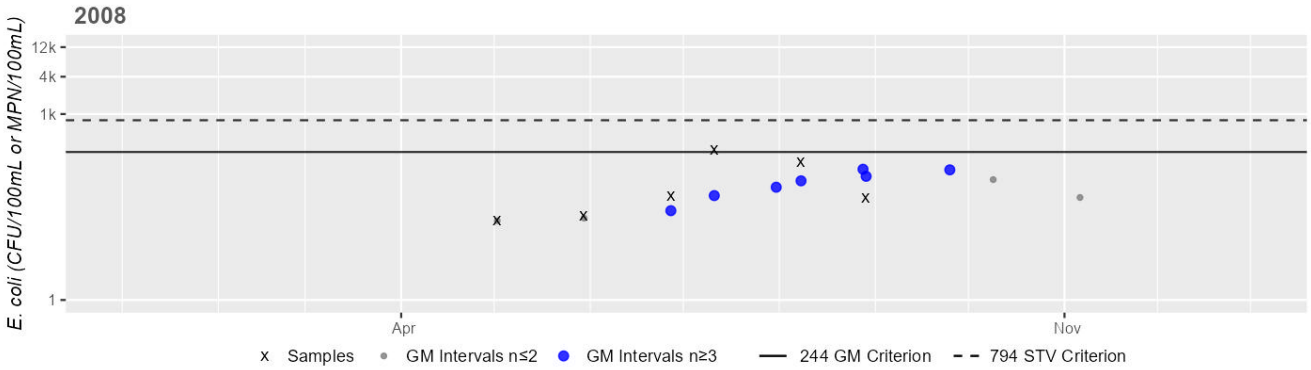
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1428	MassDEP	E. coli	05/01/08	08/28/08	6	19	260	58

Station MASSDEP_W1428 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	58
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

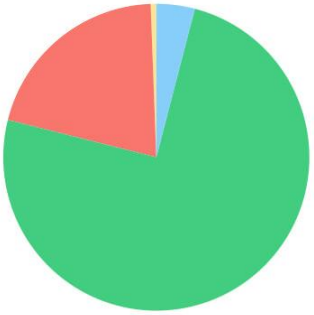
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Tatnuck Brook (MA51-15)

Location:	From outlet Holden Reservoir #2, Holden to inlet Coes Reservoir, Worcester (through former 2008 segments: Cook Pond MA51027 and Patch Reservoir MA51118).
AU Type:	RIVER
AU Size:	3.3 MILES
Classification/Qualifier:	B

Tatnuck Brook (MA51-15)

Watershed Area: 10.76 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	10.76	5.70	4.53	1.94
Agriculture	0.6%	0%	0.5%	0%
Developed	20.5%	33.6%	11.8%	20.6%
Natural	74.9%	62.3%	80.2%	72.1%
Wetland	4.1%	4%	7.4%	7.3%
Impervious	10.3%	17.2%	5.8%	10.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)	--	Unchanged
5	5	(Flow Regime Modification*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed
5	5	Sedimentation/Siltation	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Flow Regime Modification*)	Source Unknown (N)	X	--	--	--	--
Benthic Macroinvertebrates	Unspecified Urban Stormwater (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--
Sedimentation/Siltation	Unspecified Urban Stormwater (Y)	X	--	--	--	--

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Tatnuck Brook (MA51-15) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert

Insufficient Information	NO

2024/26 Use Attainment Summary

Too limited data are available to assess the Aesthetics Use for Tatnuck Brook (MA51-15), so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station for this Tatnuck Brook AU, upstream at June Street, Worcester (W1426) between Nov 2019 and Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1426	MassDEP	Water Quality	Tatnuck Brook	[unnamed tributary to Coes Reservoir, locally considered part of Tatnuck Brook, upstream at June Street, Worcester]	42.262301	-71.848227

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W1426	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W1426 on Tatnuck Brook (MA51-15) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W1426	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1426	Tatnuck Brook	2020	Aesthetics Impaired?	No	2	2
W1426	Tatnuck Brook	2020	Aquatic Plant Density, Overall	None	2	2
W1426	Tatnuck Brook	2020	Color	None	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1426	Tatnuck Brook	2020	Objectionable Deposits	No	2	2
W1426	Tatnuck Brook	2020	Odor	None	2	2
W1426	Tatnuck Brook	2020	Periphyton Density, Filamentous	Moderate	1	2
W1426	Tatnuck Brook	2020	Periphyton Density, Filamentous	None	1	2
W1426	Tatnuck Brook	2020	Periphyton Density, Film	None	2	2
W1426	Tatnuck Brook	2020	Scum	No	1	2
W1426	Tatnuck Brook	2020	Scum	Yes	1	2
W1426	Tatnuck Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Tatnuck Brook (MA51-15) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Tatnuck Brook (MA51-15) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples in Tatnuck Brook (MA51-15) at W1426 [unnamed tributary to Coes Reservoir, locally considered part of Tatnuck Brook, upstream at June St, Worcester] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1426 indicated 42% of intervals had GMs >244 CFU/100ml, 1 sample exceeded the 794 CFU/100ml STV (2,300 CFU/100ml), and the overall GM was 128 CFU/100ml. Historic *E. coli* data from W1426 are inconclusive according to the 2024 CALM to assess the Secondary Contact Recreation Use because this single year, limited frequency dataset included both GMs below the threshold and STV exceedance of the threshold. Since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1426	MassDEP	Water Quality	Tatnuck Brook	[unnamed tributary to Coes Reservoir, locally considered part of Tatnuck Brook, upstream at June Street, Worcester]	42.262301	-71.848227

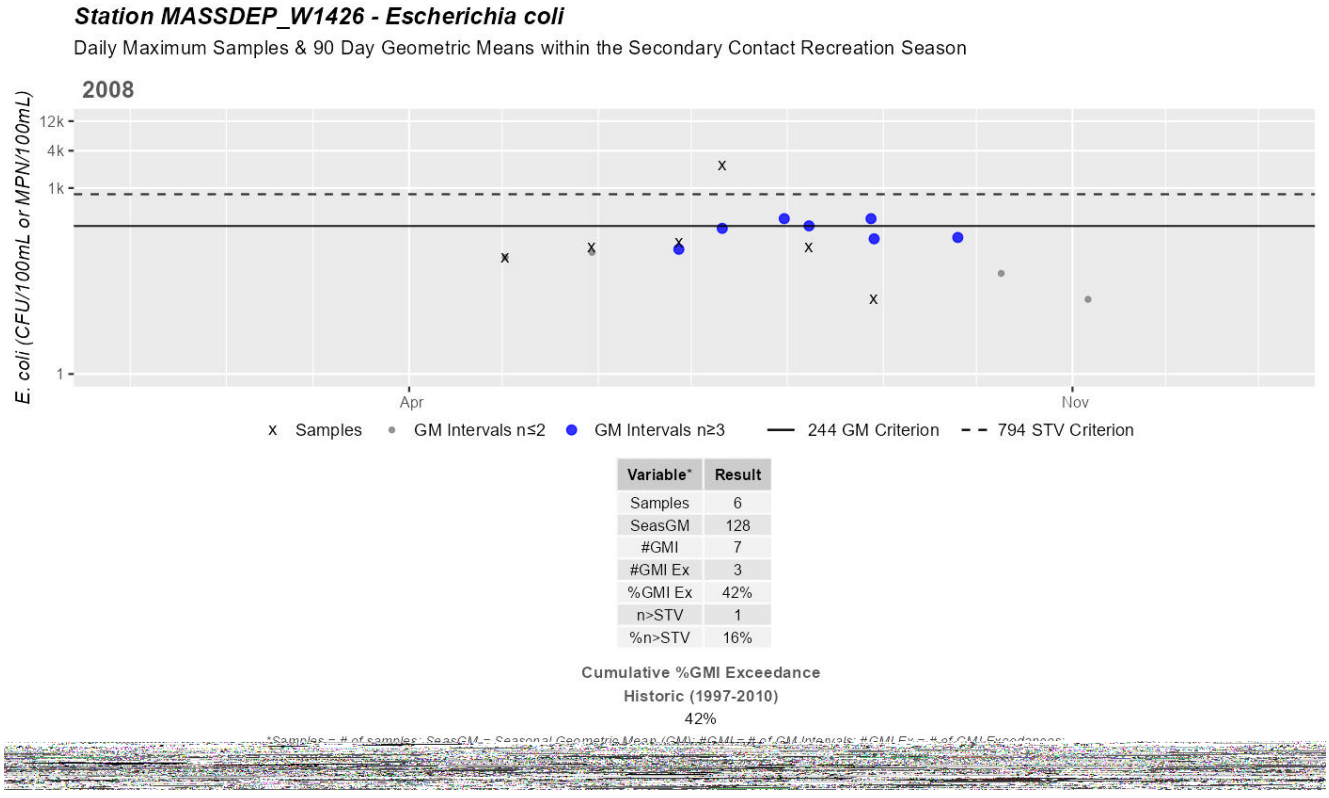
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1426	MassDEP	E. coli	05/01/08	08/28/08	6	16	2300	128



AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Oil and Grease	--	Unchanged
5	5	Other Organics	--	Unchanged
5	5	Scum/Foam	--	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged
5	5	Trash	--	Unchanged
5	5	Turbidity	2319	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Debris*)	Illegal Dumps or Other Inappropriate Waste Disposal (N)	--	--	X	X	X
(Debris*)	Unspecified Urban Stormwater (N)	--	--	X	X	X
(Physical Substrate Habitat Alterations*)	Channelization (Y)	X	--	--	--	--
(Physical Substrate Habitat Alterations*)	Habitat Modification - other than Hydromodification (Y)	X	--	--	--	--
Ammonia, Un-ionized	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Ammonia, Un-ionized	Illicit Connections/Hook-ups to Storm Sewers (Y)	X	--	--	--	--
Ammonia, Un-ionized	Industrial Point Source Discharge (Y)	X	--	--	--	--
Chloride	Deicing (Storage/Application) (N)	X	--	--	--	--
Chloride	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Combined Sewer Overflows (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	--	X	X
Escherichia Coli (E. Coli)	Unspecified Urban Stormwater (N)	--	--	--	X	X
Fecal Coliform	Combined Sewer Overflows (Y)	--	--	--	X	X
Fecal Coliform	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	--	X	X
Fecal Coliform	Unspecified Urban Stormwater (N)	--	--	--	X	X
Metals	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Metals	Illicit Connections/Hook-ups to Storm Sewers (Y)	X	--	--	--	--
Metals	Industrial Point Source Discharge (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Illicit Connections/Hook-ups to Storm Sewers (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Industrial Point Source Discharge (Y)	X	--	--	--	--
Odor	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	X	X	X
Odor	Unspecified Urban Stormwater (N)	--	--	X	X	X
Oil and Grease	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	X	X	X

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Oil and Grease	Unspecified Urban Stormwater (N)	--	--	X	X	X
Other Organics	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Other Organics	Illicit Connections/Hook-ups to Storm Sewers (Y)	X	--	--	--	--
Other Organics	Industrial Point Source Discharge (Y)	X	--	--	--	--
Scum/Foam	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	X	X	X
Scum/Foam	Unspecified Urban Stormwater (N)	--	--	X	X	X
Sedimentation/Siltation	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Sedimentation/Siltation	Industrial Point Source Discharge (Y)	X	--	--	--	--
Trash	Illegal Dumps or Other Inappropriate Waste Disposal (N)	--	--	X	X	X
Trash	Unspecified Urban Stormwater (N)	--	--	X	X	X
Turbidity	Illicit Connections/Hook-ups to Storm Sewers (Y)	--	--	X	X	X
Turbidity	Unspecified Urban Stormwater (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Flocculant Masses	Data and/or information lacking to determine WQ status; original basis for listing was incorrect	The ADB impairment "Foam/Flocs/Scum/Oil Slicks" was previously applied to Blackstone River (MA51-08) during the 2010 reporting cycle. The impairment was based on field observations by MassDEP staff in the middle of the AU/Salisbury Pond during summer 1998, when frequent oily sheens were noted at the "inlet and outlet of the pond". Then also at W2062 (~240 feet downstream from where east and west pipes emerge from underground/the inlet to Salisbury Pond) during summer 2008 when foam and oily sheens were noted on numerous occasions; and at W2238 (the downstream end/mouth of the tributary) during summer 2011 when oily sheens were again noted on numerous occasions. The "Foam/Flocs/Scum/Oil Slicks" impairment code was subsequently divided into more specific codes and applied automatically to this AU for the final 2016 reporting cycle submittal to EPA's new ATTAINS database. Since there was no mention of "Flocculant Masses" in the field observations, this impairment is being removed (the impairments for "Scum/foam" and "Oil and Grease" are being carried forward).
Escherichia Coli (E. Coli)	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)
Fecal Coliform	TMDL approved or established by EPA (4a)	Impairment covered under TMDL: Massachusetts Statewide TMDL for Pathogen-Impaired Waterbodies (Report CN 515.1, approved 2/13/2024, ATTAINS Action ID: R1_MA_2024_04)

Flocculant Masses

Please see the removal comment above.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-08) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for this Unnamed Tributary AU (MA51-08) continues to be assessed as Not Supporting with the Scum/Foam, Oil and Grease, Odor, Debris, Turbidity, and Trash impairments being carried forward. The Flocculant Masses impairment is being removed (see supporting information for removed impairments). MassDEP staff recorded aesthetics observations for one station in Worcester at the downstream end of this Unnamed Tributary AU locally known as “Mill Brook”, at the mouth of the tributary just before its discharge to the Blackstone River (W2238 2011, n=7). Objectionable conditions observed include high turbidity (n=5), scums i.e., oily sheens (n=5), an odor of petroleum or raw sewage (n=5), and grey color (n=4). There were generally no noted objectionable growths or deposits.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2238	MassDEP	Water Quality	Unnamed Tributary	[at mouth (location after 2007 river reconfiguration) of unnamed tributary to the Blackstone River locally known as 'Mill Brook', Worcester]	42.233469	-71.793021

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2238	2011	7	Aesthetic observations were made by MassDEP field sampling crews at Station W2238 on Unnamed Tributary (MA51-08) during 7 site visits between Jun 2011 and Oct 2011. Field staff recorded the following objectionable conditions: high turbidity (n=3). Other objectionable conditions included grey water color (n=4) and petroleum or sewage odor (n=5). Field staff also noted moderate turbidity (n=3) and unnatural scums (n=5). These observations are indicative of an Aesthetics Use impairment.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2238	2011	7	2	1

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2238	Unnamed Tributary	2011	Aquatic Plant Density, Overall	None	3	7
W2238	Unnamed Tributary	2011	Aquatic Plant Density, Overall	Unobservable	4	7
W2238	Unnamed Tributary	2011	Color	Greyish	4	7
W2238	Unnamed Tributary	2011	Color	None	2	7
W2238	Unnamed Tributary	2011	Color	NR	1	7
W2238	Unnamed Tributary	2011	Objectionable Deposits	No	3	7
W2238	Unnamed Tributary	2011	Objectionable Deposits	NR	1	7
W2238	Unnamed Tributary	2011	Objectionable Deposits	Unobservable	2	7
W2238	Unnamed Tributary	2011	Objectionable Deposits	Yes	1	7
W2238	Unnamed Tributary	2011	Odor	None	1	7
W2238	Unnamed Tributary	2011	Odor	Other (Chemical/Industrial)	1	7

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2238	Unnamed Tributary	2011	Odor	Petroleum	3	7
W2238	Unnamed Tributary	2011	Odor	Raw sewage	2	7
W2238	Unnamed Tributary	2011	Periphyton Density, Filamentous	None	2	7
W2238	Unnamed Tributary	2011	Periphyton Density, Filamentous	Unobservable	5	7
W2238	Unnamed Tributary	2011	Periphyton Density, Film	Dense	1	7
W2238	Unnamed Tributary	2011	Periphyton Density, Film	None	1	7
W2238	Unnamed Tributary	2011	Periphyton Density, Film	Unobservable	5	7
W2238	Unnamed Tributary	2011	Scum	No	1	7
W2238	Unnamed Tributary	2011	Scum	Yes	6	7
W2238	Unnamed Tributary	2011	Turbidity	Highly Turbid	3	7
W2238	Unnamed Tributary	2011	Turbidity	Moderately Turbid	3	7
W2238	Unnamed Tributary	2011	Turbidity	Slightly Turbid	1	7

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Unnamed Tributary (MA51-08) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on a presumptive impairment due to the presence of CSOs and bacteria data not meeting the threshold at 1 station in 2011. The prior Fecal Coliform impairment is being carried forward and the prior Debris, Odor, Oil And Grease, Scum/Foam, Trash, and Turbidity impairments (from the Aesthetics Use) are also being carried forward. Since the Flocculant Masses impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Unnamed Tributary (MA51-08) at W2238 [at mouth (location after 2007 river reconfiguration) of unnamed tributary to the Blackstone River locally known as 'Mill Brook', Worcester] from Jun-Oct 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2238 indicated 100% of intervals had GMs >126 CFU/100ml, 6 samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 3070 CFU/100ml. *E. coli* data from W2238 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2238	MassDEP	Water Quality	Unnamed Tributary	[at mouth (location after 2007 river reconfiguration) of unnamed tributary to the Blackstone River locally known as 'Mill Brook', Worcester]	42.233469	-71.793021

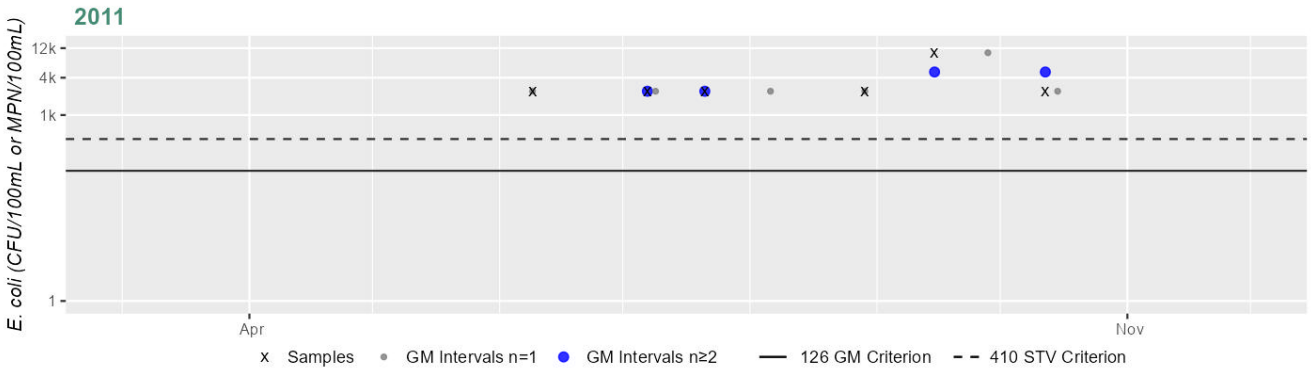
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis)
(MassDEP Undated 8) (MassDEP Undated 5)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2238	MassDEP	E. coli	06/09/11	10/12/11	6	2419	10110	3070

Station MASSDEP_W2238 - Escherichia coli

Daily Maximum Samples & 30 Day Geometric Means within the Primary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	3070
#GMI	4
#GMI Ex	4
%GMI Ex	100%
n>STV	6
%n>STV	100%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Unnamed Tributary (MA51-08) continues to be assessed as Not Supporting. The prior *Escherichia coli (E. coli)* impairment is being carried forward based on a presumptive impairment decision due to the presence of CSOs and bacteria data not meeting the threshold at 1 station in 2011. The prior Fecal Coliform impairment is being carried forward and the prior Debris, Odor, Oil And Grease, Scum/Foam, Trash, and Turbidity impairments (from the Aesthetics Use) are also being carried forward. Since the Flocculant Masses impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in Unnamed Tributary (MA51-08) from 2008-2011 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: a third of the way down the AU at W2062 [Culverted water locally called Mill Brook, (tributary to Blackstone River thru Salisbury Pond), ~240 ft downstream from where E and W pipes emerge from underground (Tire Warehouse, 195 Grove St, Worcester)] from May-Aug 2008 (n=6), and the downstream end of the AU at W2238 [at mouth (location after 2007 river reconfiguration) of unnamed tributary to the Blackstone River locally known as 'Mill Brook', Worcester] from Jun-Oct 2011 (n=6). Since bacteria data from the historic IR window are indicative of poor water quality conditions, only the analysis from the current IR window (1 station) will be summarized here: Analysis of the single year limited frequency *E. coli* dataset from W2238 indicated 100% of intervals had GMs >244 CFU/100ml, 6 samples exceeded the 794 CFU/100ml STV, and the overall GM was 3070 CFU/100ml. *E. coli* data from W2238 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2062	MassDEP	Water Quality	Unnamed Tributary	[Culverted water locally called Mill Brook, (tributary to Blackstone River thru Salisbury Pond), approximately 240 feet downstream from where east and west pipes emerge from underground (Tire Warehouse, 195 Grove Street, Worcester)]	42.278767	-71.805432
W2238	MassDEP	Water Quality	Unnamed Tributary	[at mouth (location after 2007 river reconfiguration) of unnamed tributary to the Blackstone River locally known as 'Mill Brook', Worcester]	42.233469	-71.793021

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

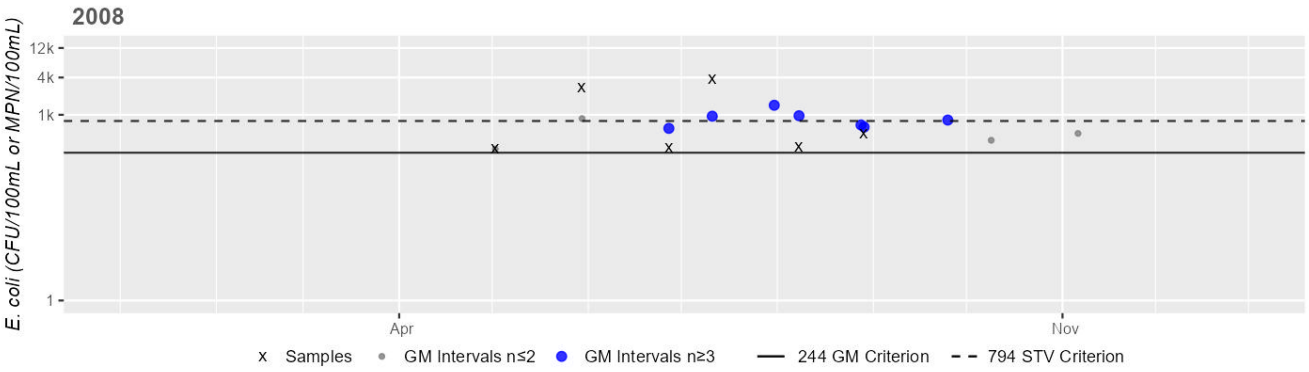
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2062	MassDEP	E. coli	05/01/08	08/28/08	6	280	3700	703
W2238	MassDEP	E. coli	06/09/11	10/12/11	6	2419	10110	3070

Station MASSDEP_W2062 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



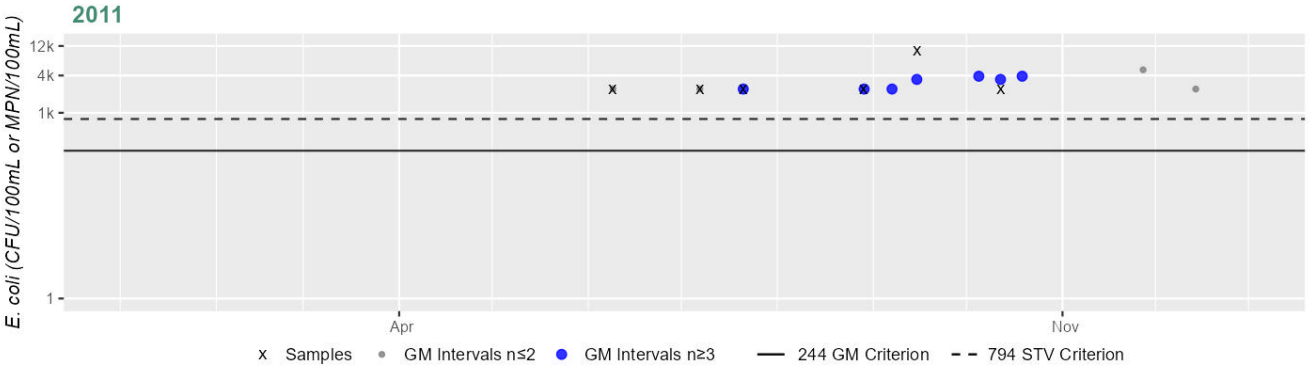
Variable*	Result
Samples	6
SeasGM	703
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
100%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W2238 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	3070
#GMI	7
#GMI Ex	7
%GMI Ex	100%
n>STV	6
%n>STV	100%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

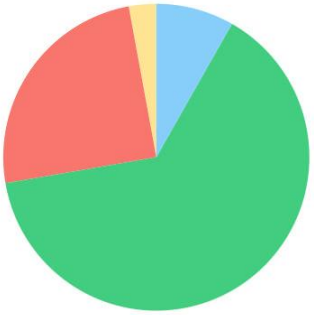
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Unnamed Tributary (MA51-20)

Location:	From the outlet of Leesville Pond, Worcester to the confluence with Middle River, Worcester (through former 2008 segments: Curtis Ponds [South Basin] MA51033 and [North Basin] MA51032).
AU Type:	RIVER
AU Size:	1.4 MILES
Classification/Qualifier:	B: WWF

Unnamed Tributary (MA51-20)

Watershed Area: 32.58 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	32.56	11.64	15.20	5.13
Agriculture	2.9%	0.1%	2%	0.2%
Developed	24.8%	35.9%	18.1%	25.8%
Natural	64.1%	57.8%	66.4%	62.8%
Wetland	8.2%	6.1%	13.6%	11.2%
Impervious	10.8%	16.8%	8.2%	12.4%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Debris*)	--	Unchanged
5	5	(Dewatering*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged
5	5	Trash	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Debris*)	Illegal Dumps or Other Inappropriate Waste Disposal (Y)	--	--	X	X	X
(Debris*)	Unspecified Urban Stormwater (N)	--	--	X	X	X
(Dewatering*)	Dam or Impoundment (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Agriculture (Y)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Rural (Residential Areas) (Y)	X	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Unspecified Urban Stormwater (N)	X	--	X	X	X
Sedimentation/Siltation	Agriculture (Y)	X	--	--	--	--
Sedimentation/Siltation	Discharges from Municipal Separate Storm Sewer Systems (MS4) (Y)	X	--	--	--	--
Sedimentation/Siltation	Rural (Residential Areas) (Y)	X	--	--	--	--
Trash	Illegal Dumps or Other Inappropriate Waste Disposal (Y)	--	--	X	X	X
Trash	Unspecified Urban Stormwater (N)	--	--	X	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-20) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Unnamed Tributary (MA51-20) continues to be assessed as Not Supporting, with the Nutrient/Eutrophication Biological Indicators, Debris and Trash impairments being carried forward. MassDEP staff recorded aesthetics observations at one station for this Unnamed Tributary AU, the outlet from Leesville Pond @ Webster Street, Worcester (W0501 2011, n=8). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. Although there were no objectionable conditions recorded at this site, it is located at the uppermost end of the AU. There are too limited data to delist the impairments of Trash and Debris through and downstream from the Curtis Pond impoundments.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0501	MassDEP	Water Quality	Unnamed Tributary	[Webster Street, Worcester. (Outlet Leesville Pond, inlet Curtis Pond, tributary to Middle River.)]	42.231659	-71.834256

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0501	2011	8	Aesthetic observations were made by MassDEP field sampling crews at Station W0501 on Unnamed Tributary (MA51-20) during 8 site visits between May 2011 and Oct 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0501	2011	8	6	1

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0501	Unnamed Tributary	2011	Aquatic Plant Density, Overall	None	5	8
W0501	Unnamed Tributary	2011	Aquatic Plant Density, Overall	Sparse	1	8
W0501	Unnamed Tributary	2011	Aquatic Plant Density, Overall	Unobservable	2	8
W0501	Unnamed Tributary	2011	Color	Light Yellow/Tan	5	8
W0501	Unnamed Tributary	2011	Color	None	3	8
W0501	Unnamed Tributary	2011	Objectionable Deposits	No	4	8
W0501	Unnamed Tributary	2011	Objectionable Deposits	Unobservable	1	8
W0501	Unnamed Tributary	2011	Objectionable Deposits	Yes	3	8
W0501	Unnamed Tributary	2011	Odor	Fishy	1	8
W0501	Unnamed Tributary	2011	Odor	None	4	8
W0501	Unnamed Tributary	2011	Odor	NR	1	8
W0501	Unnamed Tributary	2011	Odor	Other (Eutrophic)	2	8
W0501	Unnamed Tributary	2011	Periphyton Density, Filamentous	None	5	8
W0501	Unnamed Tributary	2011	Periphyton Density, Filamentous	Sparse	1	8
W0501	Unnamed Tributary	2011	Periphyton Density, Filamentous	Unobservable	2	8
W0501	Unnamed Tributary	2011	Periphyton Density, Film	Moderate	1	8

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0501	Unnamed Tributary	2011	Periphyton Density, Film	None	4	8
W0501	Unnamed Tributary	2011	Periphyton Density, Film	Unobservable	2	8
W0501	Unnamed Tributary	2011	Periphyton Density, Film	Very Dense	1	8
W0501	Unnamed Tributary	2011	Scum	No	2	8
W0501	Unnamed Tributary	2011	Scum	Yes	6	8
W0501	Unnamed Tributary	2011	Turbidity	Moderately Turbid	1	8
W0501	Unnamed Tributary	2011	Turbidity	None	2	8
W0501	Unnamed Tributary	2011	Turbidity	Slightly Turbid	5	8

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Unnamed Tributary (MA51-20) continues to be assessed as Not Supporting. The prior Debris, Nutrient/Eutrophication Biological Indicators, and Trash impairments (from the Aesthetics Use) are being carried forward. MassDEP staff collected *E. coli* bacteria samples at the upstream end of Unnamed Tributary (MA51-20) at W0501 [Webster St, Worcester. (Outlet Leesville Pond, inlet Curtis Pond, tributary to Middle River)] from May-Oct 2011 (n=7). Analysis of the single year moderate frequency *E. coli* dataset from W0501 indicated 0% of intervals had GMs >126 CFU/100ml and no samples exceeded the 410 CFU/100ml STV. *E. coli* data from W0501 meet 2024 CALM guidance.

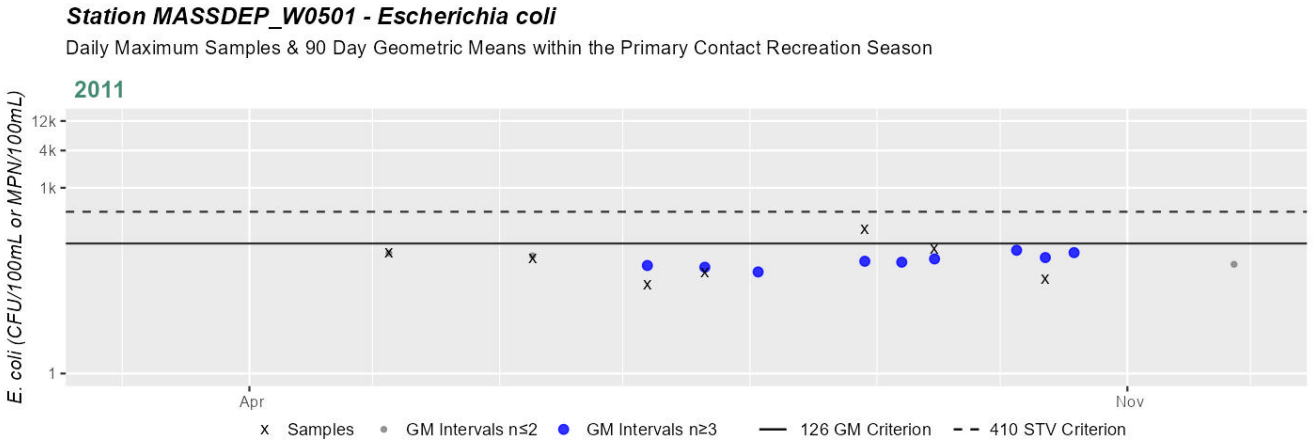
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0501	MassDEP	Water Quality	Unnamed Tributary	[Webster Street, Worcester. (Outlet Leesville Pond, inlet Curtis Pond, tributary to Middle River.)]	42.231659	-71.834256

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(MassDEP Undated 8) (MassDEP Undated 5)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0501	MassDEP	E. coli	05/05/11	10/12/11	7	27	214	65



Variable*	Result
Samples	7
SeasGM	65
#GMI	9
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Unnamed Tributary (MA51-20) continues to be assessed as Not Supporting. The prior Debris, Nutrient/Eutrophication Biological Indicators, and Trash impairments (from the Aesthetics Use) are being carried forward. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) at the upstream end of Unnamed Tributary (MA51-20) at W0501 [Webster St, Worcester. (Outlet Leesville Pond, inlet Curtis Pond, tributary to Middle River.)] from Apr-Aug 2003 (historic n=5) and May-Oct 2011 (current n=7). Analysis of the single year moderate frequency *E. coli* dataset from W0501 indicated 0% of intervals had GMs >244 CFU/100ml and no samples exceeded the 794 CFU/100ml STV. *E. coli* data from W0501 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0501	MassDEP	Water Quality	Unnamed Tributary	[Webster Street, Worcester. (Outlet Leesville Pond, inlet Curtis Pond, tributary to Middle River.)]	42.231659	-71.834256

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

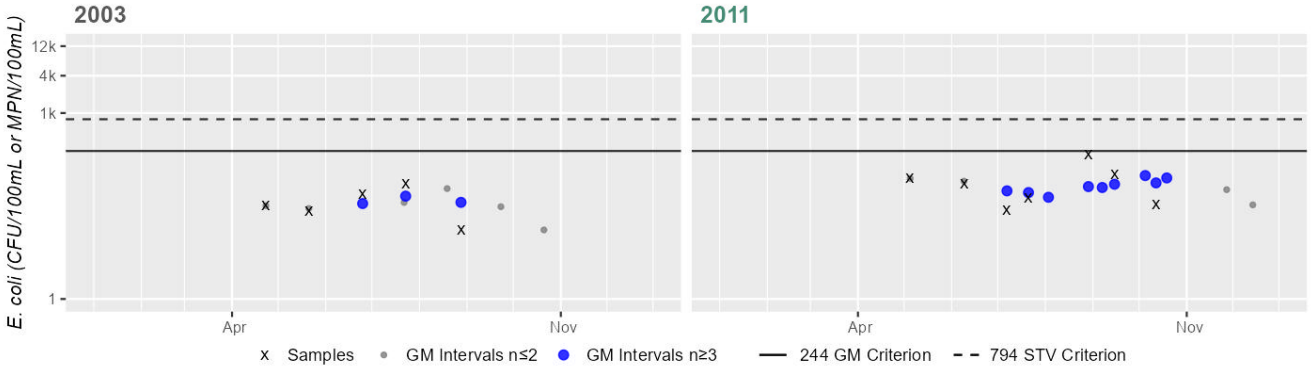
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0501	MassDEP	E. coli	04/23/03	08/28/03	5	13	73	33
W0501	MassDEP	E. coli	05/05/11	10/12/11	7	27	214	65

Station MASSDEP_W0501 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	5
SeasGM	33
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	7
SeasGM	65
#GMI	9
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance Historic (1997-2010)
0%

Cumulative %GMI Exceedance Current (2011-2022)
0%

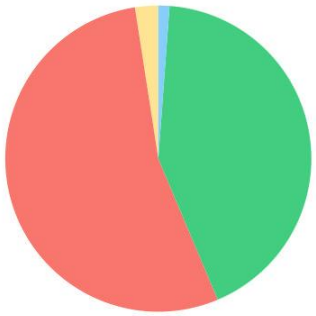
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Unnamed Tributary (MA51-38)

Location:	Unnamed tributary to Dark Brook, from perennial portion near the Route 90, 290EB, 395SB, 12NB interchange, Auburn to mouth at confluence with the Dark Brook south of Water Street, Auburn (sections culverted).
AU Type:	RIVER
AU Size:	0.8 MILES
Classification/Qualifier:	B

Unnamed Tributary (MA51-38)

Watershed Area: 0.68 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	0.68	0.68	0.21	0.21
Agriculture	2.4%	2.4%	0%	0%
Developed	53.9%	53.9%	59.4%	59.4%
Natural	42.5%	42.5%	38.3%	38.3%
Wetland	1.2%	1.2%	2.3%	2.3%
Impervious	29.9%	29.9%	32.2%	32.2%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Chloride	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Chloride	Highway/Road/Bridge Runoff (Non-construction Related) (Y)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-38) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for this Unnamed Tributary (MA51-38), so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station two-thirds of the way down this Unnamed Tributary AU at Sharon Avenue, Auburn (W2950) between Nov 2019 & Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, although during a probe deployment field staff once noted high turbidity.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2950	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary to the Dark Brook that outlets Eddy Pond, Sharon Avenue, Auburn]	42.190261	-71.845826

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2950	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2950 on Unnamed Tributary (MA51-38) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. During a probe deployment, field staff noted high turbidity (n=1). However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2950	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2950	Unnamed Tributary	2020	Aesthetics Impaired?	No	2	2
W2950	Unnamed Tributary	2020	Aquatic Plant Density, Overall	None	2	2
W2950	Unnamed Tributary	2020	Color	None	2	2
W2950	Unnamed Tributary	2020	Objectionable Deposits	No	2	2
W2950	Unnamed Tributary	2020	Odor	None	2	2
W2950	Unnamed Tributary	2020	Periphyton Density, Filamentous	None	2	2
W2950	Unnamed Tributary	2020	Periphyton Density, Film	None	2	2
W2950	Unnamed Tributary	2020	Scum	No	2	2
W2950	Unnamed Tributary	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Unnamed Tributary (MA51-38) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Unnamed Tributary (MA51-38) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Unnamed Tributary (MA51-46)

Location:	Unnamed Tributary eventually to Tatnuck Brook, headwaters, perennial portion, east of Bailey Road, Holden to mouth at confluence with unnamed tributary to Tatnuck Brook, Holden.
AU Type:	RIVER
AU Size:	0.3 MILES
Classification/Qualifier:	A: PWS, ORW (Tributary)

Unnamed Tributary (MA51-46)

Watershed Area: 0.41 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	0.41	0.41	0.26	0.26
Agriculture	2%	2%	1.3%	1.3%
Developed	21.2%	21.2%	19.8%	19.8%
Natural	65.8%	65.8%	62.9%	62.9%
Wetland	10.9%	10.9%	16%	16%
Impervious	8.4%	8.4%	7.4%	7.4%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-46) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for this Unnamed Tributary AU (MA51-46) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station for this Unnamed Tributary AU ~175 feet upstream from Chapin Road, Holden (W2185 2011, n=6). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2185	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary eventually to Tatnuck Brook, approximately 175 feet upstream from Chapin Road, Holden]	42.326580	-71.865372

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2185	2011	6	Aesthetic observations were made by MassDEP field sampling crews at Station W2185 on Unnamed Tributary (MA51-46) during 6 site visits between May 2011 and Sep 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2185	2011	6	6	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2185	Unnamed Tributary	2011	Aquatic Plant Density, Overall	None	6	6
W2185	Unnamed Tributary	2011	Color	Light Yellow/Tan	2	6
W2185	Unnamed Tributary	2011	Color	None	4	6
W2185	Unnamed Tributary	2011	Objectionable Deposits	No	6	6
W2185	Unnamed Tributary	2011	Odor	None	6	6
W2185	Unnamed Tributary	2011	Periphyton Density, Filamentous	None	6	6
W2185	Unnamed Tributary	2011	Periphyton Density, Film	None	6	6
W2185	Unnamed Tributary	2011	Scum	No	6	6
W2185	Unnamed Tributary	2011	Turbidity	None	5	6
W2185	Unnamed Tributary	2011	Turbidity	Slightly Turbid	1	6

Primary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Unnamed Tributary (MA51-46) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples halfway down Unnamed Tributary (MA51-46) at W2185 [unnamed tributary eventually to Tatnuck Brook, ~175 ft upstream from Chapin Rd, Holden] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2185 indicated 0% of intervals had GMs >126 CFU/100ml, no samples exceeded the 410 CFU/100ml STV, and the seasonal GM was 14 CFU/100ml. *E. coli* data from W2185 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2185	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary eventually to Tatnuck Brook, approximately 175 feet upstream from Chapin Road, Holden]	42.326580	-71.865372

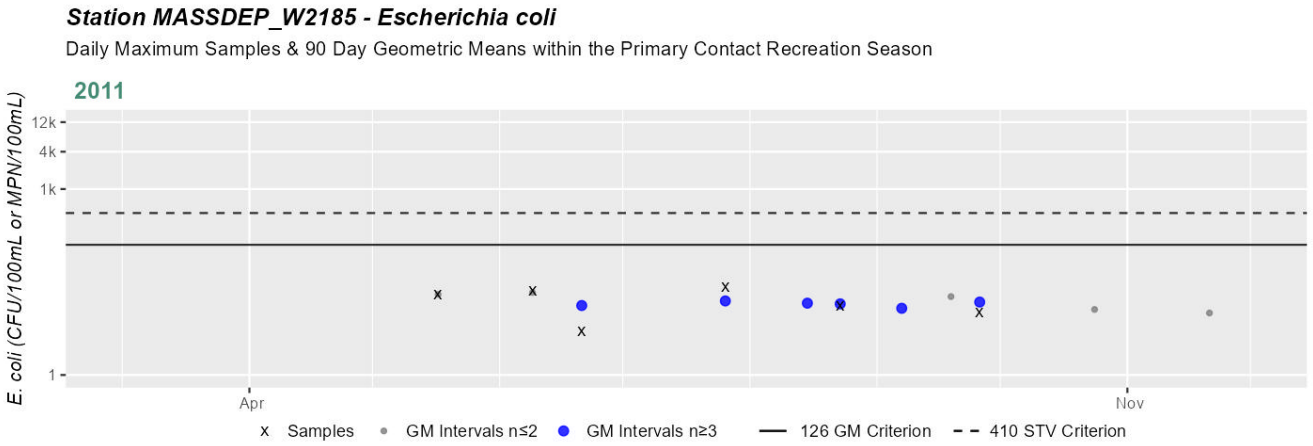
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2185	MassDEP	E. coli	05/17/11	09/26/11	6	5	26	14



Variable*	Result
Samples	6
SeasGM	14
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Unnamed Tributary (MA51-46) continues to be assessed as Fully Supporting. MassDEP staff collected *E. coli* bacteria samples halfway down Unnamed Tributary (MA51-46) at W2185 [unnamed tributary eventually to Tatnuck Brook, ~175 ft upstream from Chapin Rd, Holden] from May-Sep 2011 (n=6). Analysis of the single year limited frequency *E. coli* dataset from W2185 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 14 CFU/100ml. *E. coli* data from W2185 meet 2024 CALM guidance.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2185	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary eventually to Tatnuck Brook, approximately 175 feet upstream from Chapin Road, Holden]	42.326580	-71.865372

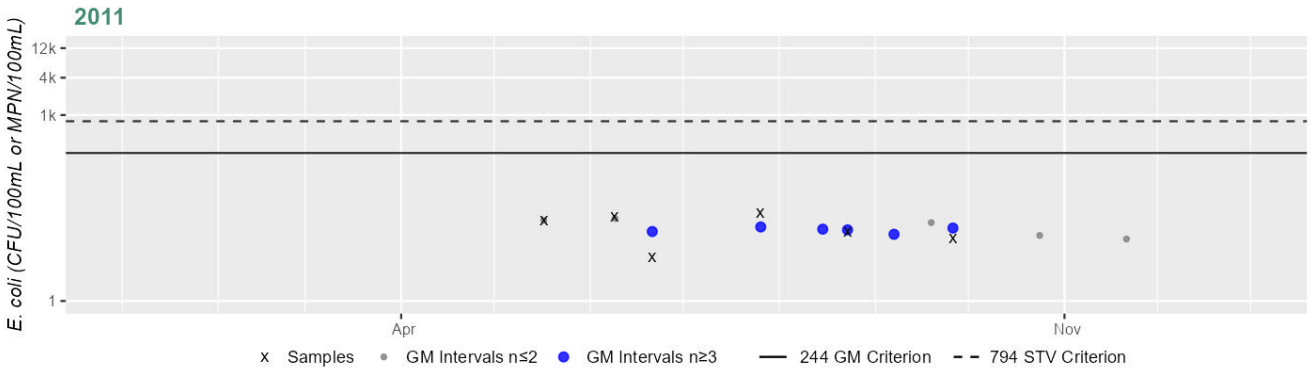
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 8) (MassDEP Undated 4)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2185	MassDEP	E. coli	05/17/11	09/26/11	6	5	26	14

Station MASSDEP_W2185 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	14
#GMI	6
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Unnamed Tributary (MA51-51)

Location:	Unnamed tributary to Wallis Pond, headwaters south of Webster Street (Route 16), Douglas to mouth at inlet of Wallis Pond, Douglas.
AU Type:	RIVER
AU Size:	1.8 MILES
Classification/Qualifier:	B

No usable data were available for Unnamed Tributary (MA51-51) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Unnamed Tributary (MA51-52)

Location:	Unnamed tributary to Manchaug Pond, headwaters west of Oak Street, Douglas to mouth at inlet of southwestern lobe of Manchaug Pond, Douglas.
AU Type:	RIVER
AU Size:	0.6 MILES
Classification/Qualifier:	B

No usable data were available for Unnamed Tributary (MA51-52) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

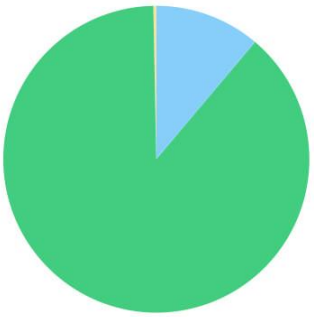
AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Unnamed Tributary (MA51-54)

Location:	Unnamed tributary to Whitin Reservoir, headwaters east of Grassy Pond, Douglas to mouth at inlet Whitin Reservoir, Douglas.
AU Type:	RIVER
AU Size:	2.3 MILES
Classification/Qualifier:	B

Unnamed Tributary (MA51-54)

Watershed Area: 2.80 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.80	2.80	1.00	1.00
Agriculture	0.3%	0.3%	0%	0%
Developed	0%	0%	0%	0%
Natural	88.5%	88.5%	77.8%	77.8%
Wetland	11.2%	11.2%	22.2%	22.2%
Impervious	0%	0%	0%	0%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-54) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Unnamed Tributary (MA51-54) is assessed as Fully Supporting based on MassDEP staff observations in 2011 and 2019. MassDEP staff recorded aesthetics observations at two stations in Douglas for this Unnamed Tributary AU from up to downstream as follows: upstream at "Ridge Trail" in the Douglas State Forest (W2904 2019, n=4) and ~975 feet downstream from the "Ridge Trail" (W2224 2011, n=3). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded at either station.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2224	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary to Whitin Reservoir approximately 975 feet downstream from the "Ridge Trail" in the Douglas State Forest, Douglas]	42.074711	-71.791513
W2904	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary to Whitin Reservoir, upstream at "Ridge Trail" in the Douglas State Forest, Douglas]	42.074931	-71.795071

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2224	2011	3	Aesthetic observations were made by MassDEP field sampling crews at Station W2224 on Unnamed Tributary (MA51-54) during 3 site visits between Jun 2011 and Aug 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W2904	2019	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2904 on Unnamed Tributary (MA51-54) during 4 site visits between Jun 2019 and Sep 2019. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2224	2011	3	3	0

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2904	2019	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2224	Unnamed Tributary	2011	Aquatic Plant Density, Overall	None	3	3
W2224	Unnamed Tributary	2011	Color	Light Yellow/Tan	1	3
W2224	Unnamed Tributary	2011	Color	None	2	3
W2224	Unnamed Tributary	2011	Objectionable Deposits	No	3	3
W2224	Unnamed Tributary	2011	Odor	None	3	3
W2224	Unnamed Tributary	2011	Periphyton Density, Filamentous	None	3	3
W2224	Unnamed Tributary	2011	Periphyton Density, Film	None	3	3
W2224	Unnamed Tributary	2011	Scum	No	3	3
W2224	Unnamed Tributary	2011	Turbidity	None	3	3
W2904	Unnamed Tributary	2019	Aesthetics Impaired?	No	4	4
W2904	Unnamed Tributary	2019	Aquatic Plant Density, Overall	None	4	4
W2904	Unnamed Tributary	2019	Color	Light Yellow/Tan	2	4
W2904	Unnamed Tributary	2019	Color	None	2	4
W2904	Unnamed Tributary	2019	Objectionable Deposits	No	4	4
W2904	Unnamed Tributary	2019	Odor	None	4	4
W2904	Unnamed Tributary	2019	Periphyton Density, Filamentous	None	4	4
W2904	Unnamed Tributary	2019	Periphyton Density, Film	None	3	4

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2904	Unnamed Tributary	2019	Periphyton Density, Film	Sparse	1	4
W2904	Unnamed Tributary	2019	Scum	No	4	4
W2904	Unnamed Tributary	2019	Turbidity	None	2	4
W2904	Unnamed Tributary	2019	Turbidity	Slightly Turbid	2	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Unnamed Tributary (MA51-54) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

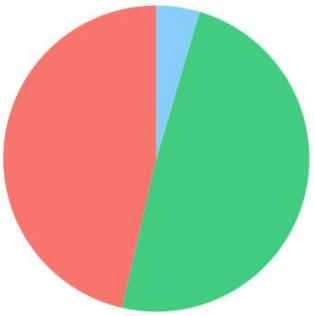
2024/26 Use Attainment Summary
No bacteria data are available to assess the Secondary Contact Recreation Use for Unnamed Tributary (MA51-54) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Unnamed Tributary (MA51-60)

Location:	Unnamed tributary to Indian Lake (locally 'Ararat Brook') perennial portion west of Holden Street, Holden to mouth at inlet of northwestern lobe of Indian Lake, Worcester (approximately 1170 feet (0.22 mile) culverted near mouth).
AU Type:	RIVER
AU Size:	1.5 MILES
Classification/Qualifier:	B

Unnamed Tributary (MA51-60)

Watershed Area: 1.70 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.70	1.70	0.66	0.66
Agriculture	0%	0%	0%	0%
Developed	46.4%	46.4%	38.3%	38.3%
Natural	49%	49%	52.8%	52.8%
Wetland	4.6%	4.6%	9%	9%
Impervious	23.4%	23.4%	18%	18%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	5	Escherichia Coli (E. Coli)	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Unnamed Tributary (MA51-60) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Unnamed Tributary (MA51-60), so it is assessed as having Insufficient Information. MassDEP staff recorded aesthetics observations at one station three-quarters of the way down this Unnamed Tributary AU at Holden Street, Worcester (W2948) between Nov 2019 and Sep 2020 (n=2). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2948	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary to Indian Lake, Holden Street, Worcester]	42.307983	-71.819431

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2948	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2948 on Unnamed Tributary (MA51-60) during 2 site visits between Nov 2019 and Sep 2020. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2948	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2948	Unnamed Tributary	2020	Aesthetics Impaired?	No	2	2
W2948	Unnamed Tributary	2020	Aquatic Plant Density, Overall	None	2	2
W2948	Unnamed Tributary	2020	Color	Light Yellow/Tan	1	2
W2948	Unnamed Tributary	2020	Color	None	1	2
W2948	Unnamed Tributary	2020	Objectionable Deposits	No	2	2
W2948	Unnamed Tributary	2020	Odor	None	2	2
W2948	Unnamed Tributary	2020	Periphyton Density, Filamentous	None	1	2
W2948	Unnamed Tributary	2020	Periphyton Density, Filamentous	Sparse	1	2
W2948	Unnamed Tributary	2020	Periphyton Density, Film	None	2	2
W2948	Unnamed Tributary	2020	Scum	No	2	2
W2948	Unnamed Tributary	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for Unnamed Tributary (MA51-60) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added due to bacteria data not meeting the threshold at 1 station in 2021-2022. City of Worcester Lakes and Ponds Program (CWLPP) staff/volunteers collected *E. coli* bacteria samples at the downstream end of Unnamed Tributary (MA51-60), at CWLPP_IL1 [Ararat Brook] from 2021-2022 (n=10-12/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_IL1 indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >126 CFU/100ml (2021 and 2022, 100 & 100%), 2 yrs had ≥2 samples exceed the 410 CFU/100ml STV (2021 and 2022, n=5 & 4), and cumulatively across years 100% of intervals had GMs >126 CFU/100ml. *E. coli* data from CWLPP_IL1 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_IL1	City of Worcester Lakes and Ponds Program	Water Quality	Indian Lake	Ararat Brook	42.304556	-71.816602

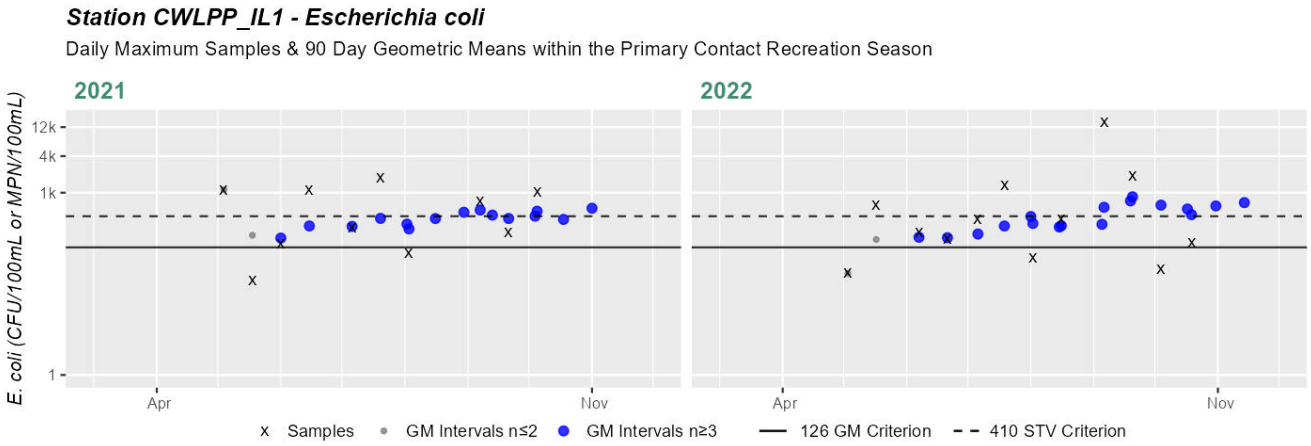
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)

(Worcester Lakes and Ponds 2023) (MassDEP Undated 3)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_IL1	City of Worcester Lakes and Ponds Program	E. coli	05/04/21	10/05/21	10	35	1732	371
CWLPP_IL1	City of Worcester Lakes and Ponds Program	E. coli	05/03/22	10/19/22	12	47	14497	351



Variable*	Result
Samples	10
SeasGM	371
#GMI	15
#GMI Ex	15
%GMI Ex	100%
n>STV	5
%n>STV	50%

Variable*	Result
Samples	12
SeasGM	351
#GMI	18
#GMI Ex	18
%GMI Ex	100%
n>STV	4
%n>STV	33%

Cumulative %GMI Exceedance
Current (2011-2022)
100%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Unnamed Tributary (MA51-60) is assessed as Not Supporting. An *Escherichia coli (E. coli)* impairment is being added due to bacteria data not meeting the threshold at 1 station in 2021-2022. City of Worcester Lakes and Ponds Program (CWLPP) staff/volunteers collected *E. coli* bacteria samples at the downstream end of Unnamed Tributary (MA51-60), at CWLPP_IL1 [Ararat Brook] from 2021-2022 (n=12/yr). Analysis of the multi-year moderate frequency *E. coli* dataset from CWLPP_IL1 indicated 2 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml (2021 and 2022, 78 & 83%), 2 yrs had ≥2 samples exceed the 794 CFU/100ml STV (2021 and 2022, n=4 & 3), and cumulatively across years 81% of intervals had GMs >244 CFU/100ml. *E. coli* data from CWLPP_IL1 are indicative of an *E. coli* impairment.

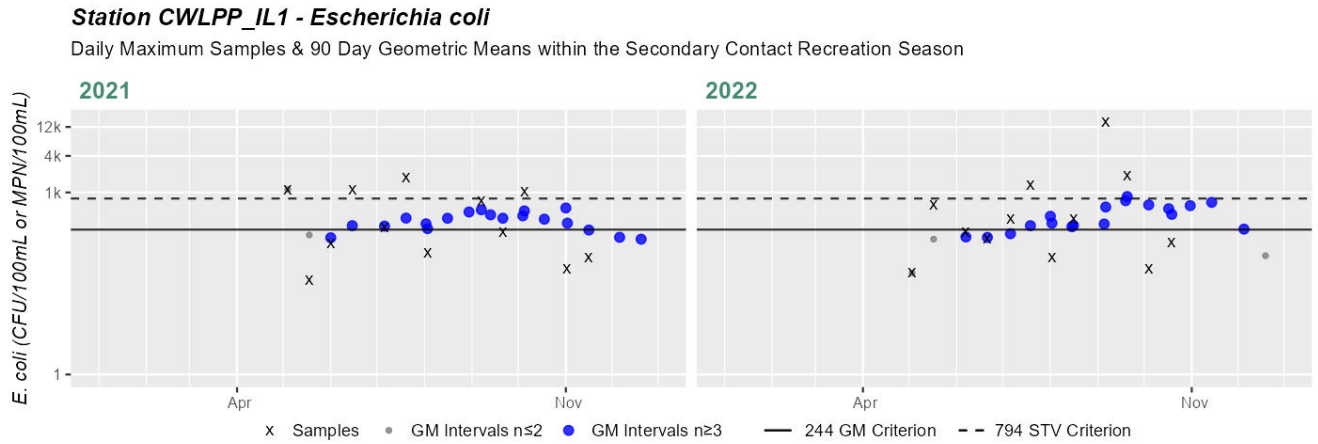
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
CWLPP_IL1	City of Worcester Lakes and Ponds Program	Water Quality	Indian Lake	Ararat Brook	42.304556	-71.816602

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(Worcester Lakes and Ponds 2023) (MassDEP Undated 2)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
CWLPP_IL1	City of Worcester Lakes and Ponds Program	E. coli	05/04/21	11/16/21	12	35	1732	280
CWLPP_IL1	City of Worcester Lakes and Ponds Program	E. coli	05/03/22	10/19/22	12	47	14497	351



Variable*	Result
Samples	12
SeasGM	280
#GMI	19
#GMI Ex	15
%GMI Ex	78%
n>STV	4
%n>STV	33%

Variable*	Result
Samples	12
SeasGM	351
#GMI	18
#GMI Ex	15
%GMI Ex	83%
n>STV	3
%n>STV	25%

Cumulative %GMI Exceedance
Current (2011-2022)
81%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Waite Pond (MA51170)

Location:	Leicester.
AU Type:	FRESHWATER LAKE
AU Size:	49 ACRES
Classification/Qualifier:	B: WWF (impoundment on river designated B/WWF)

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Mercury in Fish Tissue	33880	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Mercury in Fish Tissue	Atmospheric Deposition (Y)	--	X	--	--	--
Mercury in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary
The Fish Consumption Use for Waite Pond (MA51170) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. DPH included a site-specific advisory for Waite Pond in their January 2025 Freshwater Fish Consumption Advisory List. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Waite Pond (MA51170) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Waite Pond (MA51170) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Waite Pond (MA51170) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed.

Wallum Lake (MA51172)

Location:	Douglas (size indicates portion in Massachusetts excluding approximately 30 acres; these 30 acres represent "All Interstate surface waters that are public water supply in Rhode Island from 1000 feet upstream of the State Line" which are designated as Class A/PWS/ORW in 314CMR4.00, January 2007).
AU Type:	FRESHWATER LAKE
AU Size:	109 ACRES
Classification/Qualifier:	B: TWS

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	5	PFAS in Fish Tissue	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
PFAS in Fish Tissue	Source Unknown (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	No

2024/26 Use Attainment Summary

The Fish Consumption Use for Wallum Lake (MA51172) is assessed as Not Supporting with a new impairment being added for PFAS in Fish Tissue. Fish toxics sampling was conducted at Wallum Lake in Douglas as part of a June 2022 MDPH study assessing 40 PFAS analytes in fish tissue samples collected from lakes and ponds in state parks. DPH issued a site-specific advisory for PFAS in Wallum Lake in their February 2023 Freshwater Fish Consumption Advisory List and retained it in the January 2025 list. The public should refer to the most recent DPH Freshwater Fish Consumption Advisory List for the most up to date meal advice for sensitive and general populations. No source of PFAS has been identified at this time.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MA DPH 2025) (MA DPH 2023b)

Summary Statement
Fish toxics sampling was conducted at Wallum Lake (MA51172) in Douglas as part of a June 2022 MDPH study assessing 40 PFAS analytes in fish tissue samples collected from lakes and ponds in state parks. Because of elevated PFAS measured in fish filets, MDPH issued site-specific fish consumption advisories for Wallum Lake in their February 2023 Freshwater Fish Consumption Advisory List and retained them in the January 2025 list. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for PFAS in Fish Tissue for Wallum Lake (MA51172).

Aesthetic

2024/26 Use Attainment	**Alert**
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Wallum Lake (MA51172) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	**Alert**
Fully Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Wallum Lake (MA51172) continues to be assessed as Fully Supporting. Surface water sampling was conducted at Wallum Lake Beach on Wallum Lake in Douglas as part of a May 2022 MDPH study assessing 40 PFAS analytes in surface water and fish tissue samples collected from waterbodies in state parks. The average concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value (maximum average 0.74 ng/L PFOA). Wallum Lake has a beach with DPH Beach Closure data: Wallum Lake (DCR) [Beach ID: 4620] beach in Douglas. The beach was rarely, if at all, posted for swimming from 2018-2022.

Beach Postings

MDPH Beach Posting Data Summary (% Bathing Season Posted 2014-2022) (Bailey, Logan Feb. 2, 2021) (Bailey Sept. 10, 2023) (MassDEP Undated 3)

Beach ID	Beach Name/ Town	Left Border (Lat., Long.)	Right Border (Lat., Long.)	2014	2015	2016	2017	2018	2019	2020	2021	2022	# years >10%
4620	Wallum Lake (DCR)/ Douglas	42.01966, -71.76900	42.02051, -71.76830	0%	0%	0%	0%	6%	9%	2%	0%	4%	0

Other Indicators

Summary of MDPH 2021 and 2022 PFAS in Water Column Data

Data Sources: (MA DPH 2023a, MA DPH 2023b)

Surface water sampling was conducted at Wallum Lake Beach on Wallum Lake (MA51172) in Douglas as part of a May 2022 MDPH study assessing 40 PFAS analytes in surface water and fish tissue samples collected from waterbodies in state parks. The average concentrations of the seven analytes with individual toxicity criteria (PFOA, PFOS, PFNA, PFHxS, PFBA, PFBS, HFPO-DA/GenX) were all less than the 90 ng/L (ppt) recreational screening value (maximum average 0.74 ng/L PFOA).

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Secondary Contact Recreation Use for Wallum Lake (MA51172) continues to be assessed as Fully Supporting. Wallum Lake has a beach with DPH Beach Closure data: Wallum Lake (DCR) [Beach ID: 4620] beach in Douglas. The beach was rarely, if at all, posted for swimming from 2018-2022.

Warren Brook (MA51-47)

Location:	Headwaters, west of North Street, Upton to mouth at confluence with West River, Upton.
AU Type:	RIVER
AU Size:	3.6 MILES
Classification/Qualifier:	B: CWF

Warren Brook (MA51-47)

Watershed Area: 4.79 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	4.79	4.17	1.49	1.24
Agriculture	1.4%	1.5%	2.3%	2.5%
Developed	9.8%	10.1%	10.5%	10.6%
Natural	79.3%	78.7%	67.3%	65.4%
Wetland	9.5%	9.7%	20%	21.4%
Impervious	3.4%	3.4%	3.7%	3.4%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Warren Brook (MA51-47) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use for Warren Brook (MA51-47) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station two-thirds of the way down this Warren Brook AU ~1200 feet south/downstream of Fowler Street crossing nearest Orchard Street, Upton (W2906 2019, n=4). There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2906	MassDEP	Water Quality	Warren Brook	[approximately 1200 feet south/downstream of Fowler Street crossing nearest Orchard Street, Upton (the northern most crossing)]	42.187955	-71.627208

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2906	2019	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2906 on Warren Brook (MA51-47) during 4 site visits between Jun 2019 and Sep 2019. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2906	2019	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2906	Warren Brook	2019	Aesthetics Impaired?	No	4	4
W2906	Warren Brook	2019	Aquatic Plant Density, Overall	Moderate	2	4
W2906	Warren Brook	2019	Aquatic Plant Density, Overall	Sparse	2	4
W2906	Warren Brook	2019	Color	Brownish	1	4
W2906	Warren Brook	2019	Color	Light Yellow/Tan	1	4
W2906	Warren Brook	2019	Color	None	1	4
W2906	Warren Brook	2019	Color	Reddish	1	4
W2906	Warren Brook	2019	Objectionable Deposits	No	4	4
W2906	Warren Brook	2019	Odor	None	4	4
W2906	Warren Brook	2019	Periphyton Density, Filamentous	None	4	4
W2906	Warren Brook	2019	Periphyton Density, Film	None	4	4
W2906	Warren Brook	2019	Scum	No	4	4
W2906	Warren Brook	2019	Turbidity	None	2	4
W2906	Warren Brook	2019	Turbidity	Slightly Turbid	2	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Warren Brook (MA51-47) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary

No bacteria data are available to assess the Secondary Contact Recreation Use for Warren Brook (MA51-47) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples at the downstream end of Warren Brook at W1439 [Rt. 140, Upton] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1439 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 35 CFU/100ml. Historic *E. coli* data from W1439 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1439	MassDEP	Water Quality	Warren Brook	[Route 140, Upton]	42.172682	-71.627929

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

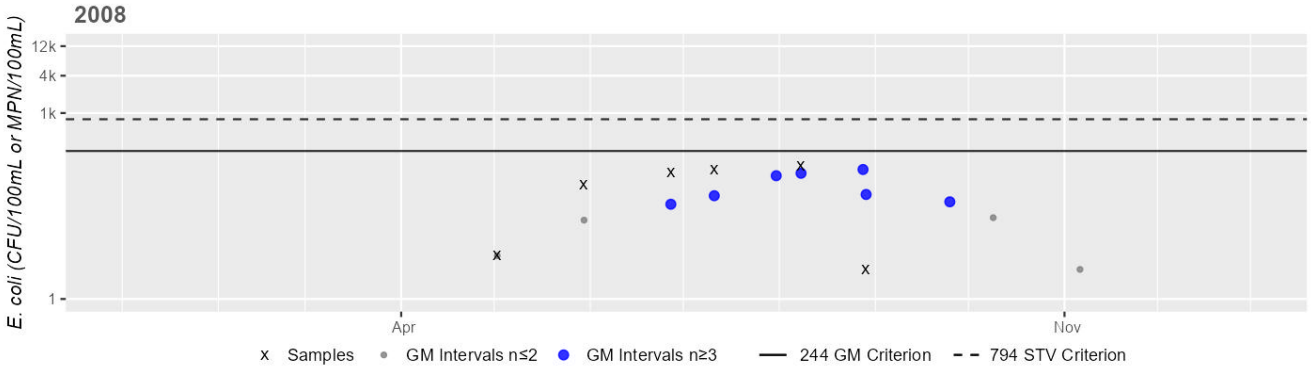
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1439	MassDEP	E. coli	05/01/08	08/28/08	6	3	140	35

Station MASSDEP_W1439 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	35
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

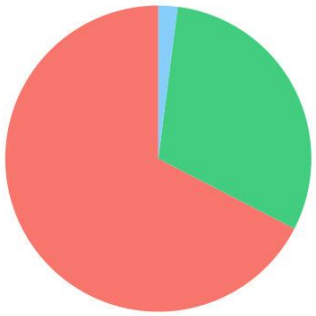
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Weasel Brook (MA51-61)

Location:	Headwaters, perennial portion east of Malden Street, Worcester to mouth at confluence with unnamed tributary (locally "Mill Brook"), between West Boylston Street and West Boylston Drive, Worcester (five culverted portions totaling approximately 5100 feet (0.96 mile)).
AU Type:	RIVER
AU Size:	2.3 MILES
Classification/Qualifier:	B: WWF, HQW

Weasel Brook (MA51-61)

Watershed Area: 2.56 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.56	2.56	0.75	0.75
Agriculture	0%	0%	0%	0%
Developed	67.4%	67.4%	58.1%	58.1%
Natural	30.5%	30.5%	36.7%	36.7%
Wetland	2%	2%	5.2%	5.2%
Impervious	40.6%	40.6%	38.7%	38.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
--	3	None	--	Unchanged

Recommendations

2024/26 Recommendations
2024 IR [TRASH, LOW] Additional aesthetics monitoring is recommended for Weasel Brook (MA51-61) at {W2944} where in trash was observed in Nov 2019 and Sep 2020 (n=2) to determine if the condition is persistent.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Weasel Brook (MA51-61) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Insufficient Information	YES

2024/26 Use Attainment Summary
Too limited data are available to assess the Aesthetics Use for Weasel Brook (MA51-61), so it is assessed as having Insufficient Information. However, an Alert is being identified due to the trash observed at the daylighted portion of the brook south of Brooks Street in 2019 and 2020. MassDEP staff recorded aesthetics observations at one station two-thirds of the way down Weasel Brook at the daylighted portion of the brook south of Brooks Street, Worcester (W2944) in Nov 2019 and Sep 2020 (n=2). While objectionable deposits (trash) were noted during both site visits, (with staff identifying the station as aesthetically impaired in both cases), too limited data are available to assess the Aesthetics Use.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2944	MassDEP	Water Quality	Weasel Brook	[daylighted portion of brook south of Brooks Street, Worcester]	42.307934	-71.800082

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2944	2020	2	Aesthetic observations were made by MassDEP field sampling crews at Station W2944 on Weasel Brook (MA51-61) during 2 site visits between Nov 2019 and Sep 2020. There were some objectionable conditions recorded, including an aesthetics impairment flag (n=2). Field staff also noted objectionable deposits (n=2). These conditions are indicative of an Alert status. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2944	2020	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2944	Weasel Brook	2020	Aesthetics Impaired?	Yes	2	2
W2944	Weasel Brook	2020	Aquatic Plant Density, Overall	None	2	2
W2944	Weasel Brook	2020	Color	None	2	2
W2944	Weasel Brook	2020	Objectionable Deposits	Yes	2	2
W2944	Weasel Brook	2020	Odor	None	2	2
W2944	Weasel Brook	2020	Periphyton Density, Filamentous	Moderate	1	2
W2944	Weasel Brook	2020	Periphyton Density, Filamentous	None	1	2
W2944	Weasel Brook	2020	Periphyton Density, Film	None	1	2
W2944	Weasel Brook	2020	Periphyton Density, Film	NR	1	2
W2944	Weasel Brook	2020	Scum	No	2	2
W2944	Weasel Brook	2020	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
No bacteria data are available to assess the Primary Contact Recreation Use for Weasel Brook (MA51-61) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary

No bacteria data are available to assess the Secondary Contact Recreation Use for Weasel Brook (MA51-61) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information.

Wellman Brook (MA51-50)

Location:	Headwaters, outlet unnamed pond east of Martin Road, Douglas to mouth at inlet of Gilboa Pond (an impoundment of the Mumford River), Douglas.
AU Type:	RIVER
AU Size:	0.9 MILES
Classification/Qualifier:	B

No usable data were available for Wellman Brook (MA51-50) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Welsh Pond (MA51176)

Location:	Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	8 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Welsh Pond (MA51176) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with a 75-100% density of floating or emergent aquatic plants, including the non-rooted, floating species, *Ceratophyllum echinatum* and *Utricularia* sp. Additionally, thick mats of filamentous green algae were observed (MassDEP 1994, MassDEP 2002). Google Earth images from September 2017 and September 2019 show high amounts of plant coverage (~50-100%) (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species, as well as dense filamentous algal mats observed in 1994. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51176** WATERSHED: **Blackstone** (51) (Printed 02/03/98)
NAME: **Welsh Pond** TYPE: **Lake/Pond**
CODE: **51176** SIZE: **8.00**(acres) CLASS: **B**

LATITUDE: **42.15000**
LONGITUDE: **71.79167** (420900/714730)
Lake/Pond Name: Welsh Pond (Merrill Pond No. 7), Sutton
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Hypereutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				8.00		
ALUS			8.00			
FISH CONSUMPTION					8.00	
PRIMARY CONTACT				8.00		
SECONDARY CONTACT				8.00		
Aesthetics					8.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	8.00	M
2600- Exotic species	8.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	8.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 14 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THE AQUATIC PLANT DENSITY WAS 75% TO 100% FLOATING OR EMERGENTS OVER THE ENTIRE POND. THE NON-NATIVE MYRIOPHYLLUM HETEROPHYLLUM WAS PRESENT AND WAS A CAUSE OF THE USE IMPAIRMENT TO THE AQUATIC LIFE, PRIMARY CONTACT, AND SECONDARY CONTACT CRITERIA. NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

1994 Synoptic Survey Field Sheet (MassDEP 1994):

Finished 7/21/94

9/29/94

Page 1 of 2

S1176

Lake/Pond Welsh Pd. Date 7/14/94

Town/City Sutton Observers G. DeCesare
R. McVoy

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Poor road access over guardrail along west Sutton Rd.

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
DFWELE - Merrill P State Res.

Posted signs (re aquatic plants, fish advisories, access, etc.):
~~Fish~~ & wildlife Mgt Area
DFWELE

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
Little open water to observe.
Filamentous green algal mats.
Very Productive.

Record of aquatic plant "species" observed (see note below):
Pontederia, Lythrum Salicaria, Nuphar, Nymphaea
Filamentous green algae (thick mats w/ bubbles in them)
Sparganium, Sagittaria, Utricularia, Myriophyllum sp.
(small), M. heterophyllum, Ceratophyllum echinatum (w/
fruits), Ludwigia

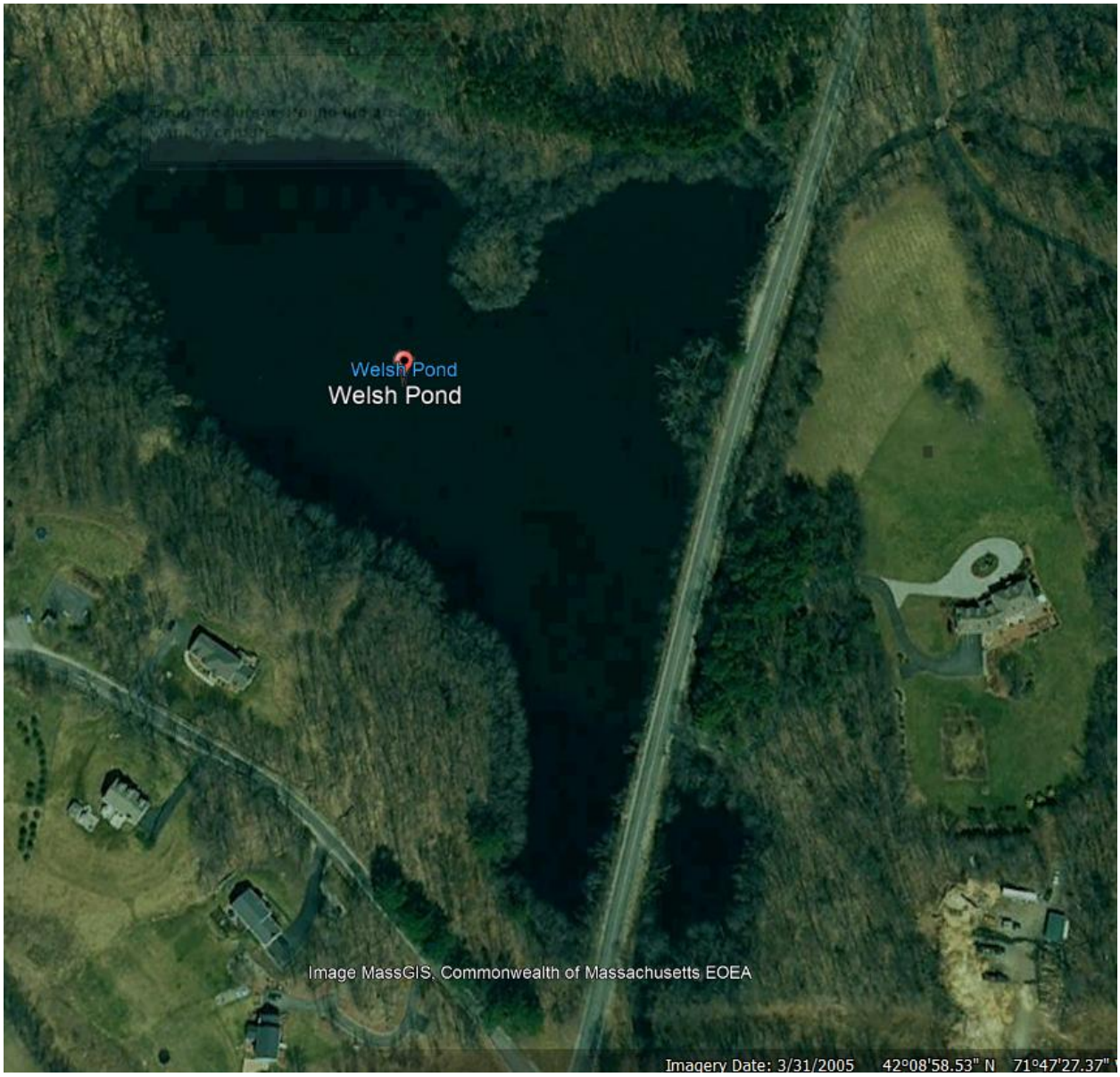
Observed aquatic plant density **(at observation site and across lake or pond, if practicable):**
75-100% Floating or emergent
over entire pond

Other notes (e.g., overt pollution, construction, and water uses:
Water level looks low; much shore exposed

305b - Hypereutrophic
1° Contact - } 100% Non-support
2° Contact - }
Aquatic Life - 100% Partially Support
Cause - Noxious plants - M (Full acreage) Exotic plants - M (Full acreage)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

Google Earth image of Welsh Pond, 3/31/2005 (Google Earth Pro Undated):



Google Earth image of Welsh Pond, 9/12/2017 (Google Earth Pro Undated):



Google Earth image of Welsh Pond, 9/20/2019 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Welsh Pond (MA51176) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Welsh Pond (MA51176) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment (originating from the 1996 303d list) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. In addition a new impairment for Nutrient/Eutrophication Biological Indicators is being added. The Alert for Aquatic Plants (Macrophytes) (based on observations made in 2009 at the pond outlet) is being removed in light of the impairment for the same issue. Since the Non-Native Aquatic Plants impairment was redundantly duplicated across multiple uses for this waterbody, the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Welsh Pond (MA51176) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that the entire pond was covered with a 75-100% density of floating or emergent aquatic plants, including the non-rooted, floating species, *Ceratophyllum echinatum* and *Utricularia sp*. Additionally, thick mats of filamentous green algae were observed (MassDEP 1994, MassDEP 2002). Google Earth images from September 2017 and September 2019 show high amounts of plant coverage (~50-100%) (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species, as well as dense filamentous algal mats observed in 1994. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for Welsh Pond.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Welsh Pond (MA51176) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use. The prior Alert for Aquatic Plants (Macrophytes) is being removed because an Aquatic Plants (Macrophytes) impairment is listed for this AU.

Secondary Contact Recreation

2024/26 Use Attainment	Alert

Not Supporting	NO

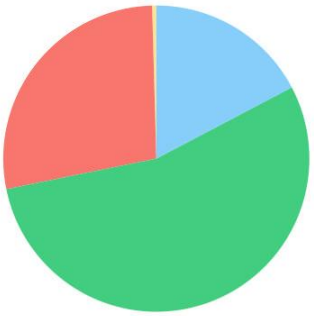
2024/26 Use Attainment Summary
No bacteria or other indicator data for Welsh Pond (MA51176) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). Since the Non-Native Aquatic Plants impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Secondary Contact Recreation Use. The prior Alert for Aquatic Plants (Macrophytes) is being removed because an Aquatic Plants (Macrophytes) impairment is listed for this AU.

West Brook (MA51-43)

Location:	Headwaters, perennial portion west of Route 290 and north of Gulf Street, Shrewsbury to culvert entrance between Baker and Elmo avenues, Shrewsbury (isolated Quinsigamond River tributary) (through former 2014 segment: Mill Pond MA51105).
AU Type:	RIVER
AU Size:	3.2 MILES
Classification/Qualifier:	B

West Brook (MA51-43)

Watershed Area: 2.82 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.82	2.70	0.89	0.89
Agriculture	0.4%	0.5%	0%	0%
Developed	27.8%	27.8%	20.8%	20.8%
Natural	54.5%	53.8%	44.5%	44.5%
Wetland	17.3%	17.9%	34.7%	34.7%
Impervious	12.4%	12.2%	8.9%	8.9%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None	--	Unchanged

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for West Brook (MA51-43) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for West Brook (MA51-43), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for West Brook (MA51-43) are available, so the Primary Contact Recreation Use is Not Assessed.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for West Brook (MA51-43) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected *E. coli* bacteria samples at the downstream end of West Brook at W1758 [Sadler Avenue, Shrewsbury] from May-Aug 2008 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1758 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 101 CFU/100ml. Historic *E. coli* data from W1758 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1758	MassDEP	Water Quality	West Brook	[Sadler Avenue, Shrewsbury]	42.280293	-71.746204

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

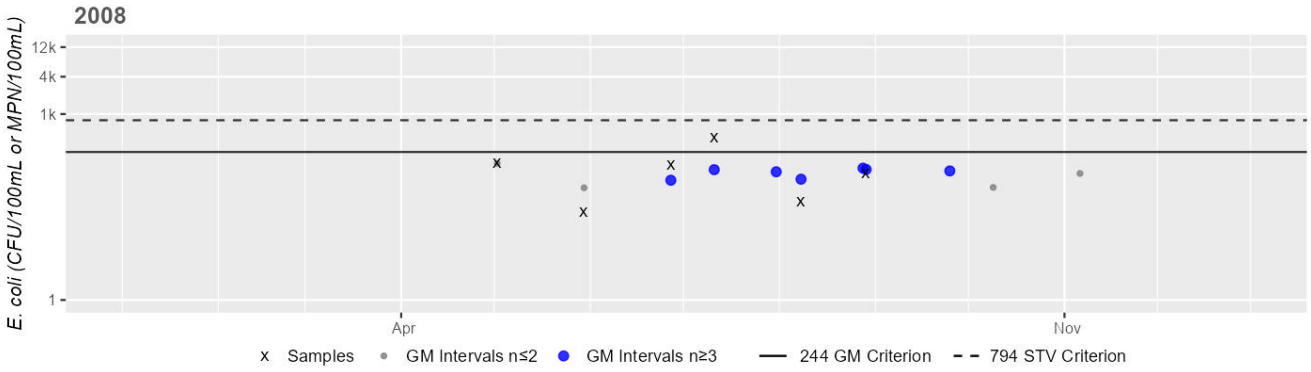
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1758	MassDEP	E. coli	05/01/08	08/28/08	6	26	410	101

Station MASSDEP_W1758 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	101
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

West River (MA51-11)

Location:	Headwaters, outlet Silver Lake, Grafton to Upton WWTP discharge (NPDES: MA0100196), Upton (through former 2008 segment: Lake Wildwood MA51181).
AU Type:	RIVER
AU Size:	3.7 MILES
Classification/Qualifier:	B: CWF, HQW

West River (MA51-11)

Watershed Area: 14.37 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	14.37	7.99	4.60	2.65
Agriculture	3.3%	2.1%	3.9%	2%
Developed	14.1%	16%	14.3%	19.1%
Natural	71.4%	74.3%	60.7%	61.8%
Wetland	11.2%	7.6%	21.1%	17.1%
Impervious	5%	5.8%	5.3%	6.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Lack of a Coldwater Assemblage	--	Unchanged
5	5	Temperature	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Lack of a Coldwater Assemblage	Source Unknown (N)	X	--	--	--	--
Temperature	Dam or Impoundment (Y)	X	--	--	--	--

Recommendations

2024/26 Recommendations
2016 IR [E. COLI, MEDIUM] An Alert status is identified for the Primary Contact Recreational Use for West River (MA51-11) due to slightly elevated bacteria counts during both wet and dry weather (in 2003 & 2005) at stations {W1073} and {W0513}, as well as an isolated area affected by animal sources i.e. a 100 meter segment of the river just above the Glen Avenue bridge {W0513} with abutting properties (horse manure storage just uphill from the river with at least two horses and one landowner with a dog kennel directly abutting the river). Additional monitoring for bacteria should be conducted in these areas; 2016 IR [FIELD OBSERVATIONS, MEDIUM] An Alert status is also identified for the Primary and Secondary Contact Recreational and Aesthetics Uses for West River (MA51-11) based on the occasional observation of oily sheens, light trash, milky conditions and odors by local watershed advocates. These observations were made at two sites in 2004, 2005 and 2006: at Glen Avenue in Upton, near WPP station {W0513}, light trash; infrequent odors (fishy, swampy), dark brown or milky colors, and foam were reported; and at the West River site on Hartford Avenue in Upton, near WPP station {W1073}, common observations included a brown/milky water column, light to medium density of trash, and odors (earthy, sewage, oily, fishy), also oily sheens were noted on two events. Additional aesthetics observations should be conducted in these areas.

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for West River (MA51-11) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	YES

2024/26 Use Attainment Summary
There are no data available to assess the status of the Aesthetics Use for West River (MA51-11), so it is Not Assessed. The Alert identified for occasional observations of oily sheens, light trash, milky conditions and odors by local watershed advocates (at Glen Hills Ave and Hartford Ave, Upton in 2004, 2005 and 2006) is being carried forward (MassDEP 2010).

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	YES

2024/26 Use Attainment Summary
No bacteria or other indicator data for the West River (MA51-11) are available, so the Primary Contact Recreation Use is Not Assessed. The prior *E. coli* Alert is being carried forward. The prior Alert for oily sheens, light trash, milky conditions and odors by local watershed advocates (from Aesthetics Use) is being removed but will be maintained under the Aesthetics Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for the West River (MA51-11) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. The prior Alert for oily sheens, light trash, milky conditions and odors by local watershed advocates (from Aesthetics Use) is being removed but will be maintained under the Aesthetics Use. MassDEP staff collected *E. coli* bacteria samples in the West River (MA51-11) from 2003-2008 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: a quarter of the way down the AU at W1759 [Moroney Rd, Grafton] from May-Aug 2008 (n=6), two-thirds of the way down at W1432 [between Glen Avenue and Williams St (below dilapidated dam), Upton] from May-Aug 2008 (n=6), and close to the downstream end at W1073 [Hartford Avenue South, Upton] from Apr-Oct 2003 (n=6). Analysis of the historic single year limited frequency *E. coli* dataset from W1759 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 109 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1432 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 91 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1073 indicated 25% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 80 CFU/100ml. Historic *E. coli* data from W1759, W1432, and W1073 meet 2024 CALM guidance. However, since these data were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed using bacteria data.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1073	MassDEP	Water Quality	West River	[Hartford Avenue South, Upton]	42.167091	-71.627411
W1432	MassDEP	Water Quality	West River	[between Glen Avenue and Williams Street (below dilapidated dam), Upton]	42.173062	-71.629748
W1759	MassDEP	Water Quality	West River	[Moroney Road, Grafton]	42.181156	-71.647938

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

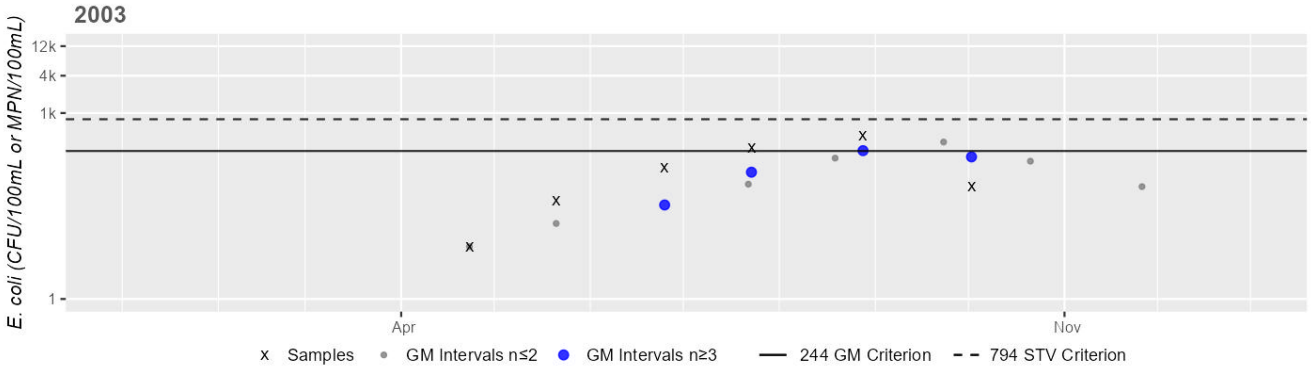
(MassDEP Undated 8) (MassDEP Undated 4)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1073	MassDEP	E. coli	04/23/03	10/02/03	6	7	430	80
W1432	MassDEP	E. coli	05/01/08	08/28/08	6	16	470	91
W1759	MassDEP	E. coli	05/01/08	08/28/08	6	26	660	109

Station MASSDEP_W1073 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



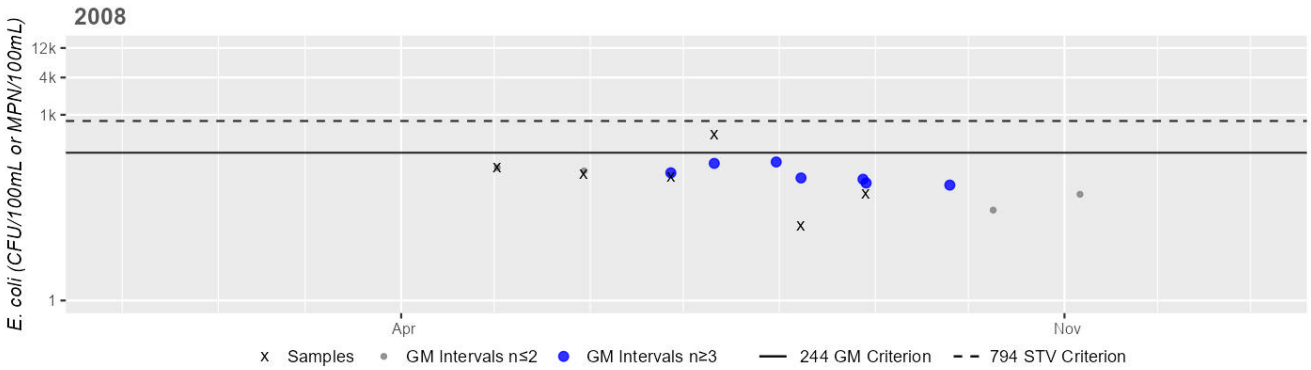
Variable*	Result
Samples	6
SeasGM	80
#GMI	4
#GMI Ex	1
%GMI Ex	25%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
25%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1432 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



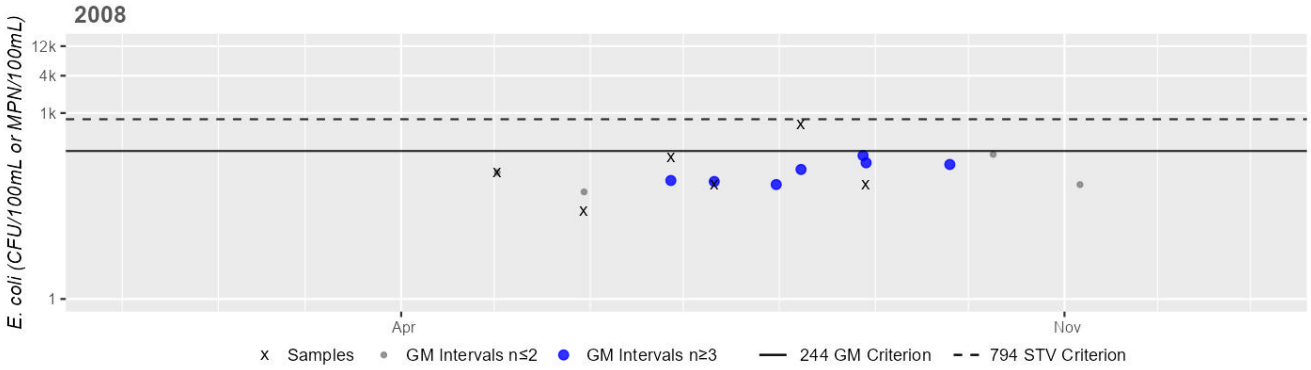
Variable*	Result
Samples	6
SeasGM	91
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1759 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	109
#GMI	7
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

West River (MA51-12)

Location:	From Upton WWTP discharge (NPDES: MA0100196), Upton to mouth at confluence with the Blackstone River, Uxbridge (through former 2008 segments: Harrington Pool MA51197 and West River Pond MA51177).
AU Type:	RIVER
AU Size:	9.4 MILES
Classification/Qualifier:	B: WWF

West River (MA51-12)

Watershed Area: 37.00 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	37.00	7.35	12.41	2.75
Agriculture	2.2%	1.5%	1.9%	0.9%
Developed	14.5%	15.3%	12.7%	10.8%
Natural	70.6%	68.5%	61.8%	65.3%
Wetland	12.7%	14.7%	23.7%	23.1%
Impervious	5.2%	5.2%	4.8%	4.1%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	(Water Chestnut*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for West River (MA51-12) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for West River (MA51-12) continues to be assessed as Fully Supporting. MassDEP staff recorded aesthetics observations at one station two-thirds of the way down this West River AU, at Hartford Avenue East, Uxbridge (W0515 2011, n=6; 2012, n=5 and in 2013, n=3). With the exception of the dense and very dense plant growth which continues to be observed at this site (n=5 overall) no objectionable conditions (odors, deposits, or turbidity) were recorded by MassDEP field sampling crews during the surveys. The macrophyte growth was comprised primarily of emergent wetland plants as well as some submergents at the sampling location which is considered to be natural given the meandering wetland nature of the stream. Of concern was the noted presence of the invasive macrophyte *Potamogeton Crispus* during one site visit in 2013.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0515	MassDEP	Water Quality	West River	[Hartford Avenue East, Uxbridge]	42.100361	-71.601117

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 5)

[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0515	2011	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0515 on West River (MA51-12) during 5 site visits between Mar 2011 and Nov 2011. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded.
W0515	2012	5	Aesthetic observations were made by MassDEP field sampling crews at Station W0515 on West River (MA51-12) during 5 site visits between Feb 2012 and Nov 2012. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted dense/very dense aquatic plants (n=2).
W0515	2013	2	Aesthetic observations were made by MassDEP field sampling crews at Station W0515 on West River (MA51-12) during 2 site visits between Mar 2013 and May 2013. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded. However, aesthetic observations are limited (n<3).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2020) (MassDEP Undated 8) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0515	2011	5	4	0

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0515	2012	5	5	0
W0515	2013	2	2	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 8)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0515	West River	2011	Aquatic Plant Density, Overall	Moderate	1	5
W0515	West River	2011	Aquatic Plant Density, Overall	Sparse	2	5
W0515	West River	2011	Aquatic Plant Density, Overall	Unobservable	1	5
W0515	West River	2011	Aquatic Plant Density, Overall	Very Dense	1	5
W0515	West River	2011	Color	None	2	5
W0515	West River	2011	Color	Reddish	3	5
W0515	West River	2011	Objectionable Deposits	No	4	5
W0515	West River	2011	Objectionable Deposits	Unobservable	1	5
W0515	West River	2011	Odor	None	5	5
W0515	West River	2011	Periphyton Density, Filamentous	None	3	5
W0515	West River	2011	Periphyton Density, Filamentous	Sparse	1	5
W0515	West River	2011	Periphyton Density, Filamentous	Unobservable	1	5
W0515	West River	2011	Periphyton Density, Film	Moderate	1	5
W0515	West River	2011	Periphyton Density, Film	None	3	5
W0515	West River	2011	Periphyton Density, Film	Unobservable	1	5
W0515	West River	2011	Scum	No	5	5
W0515	West River	2011	Turbidity	None	4	5
W0515	West River	2011	Turbidity	Slightly Turbid	1	5
W0515	West River	2012	Aquatic Plant Density, Overall	Dense	1	5
W0515	West River	2012	Aquatic Plant Density, Overall	Sparse	3	5
W0515	West River	2012	Aquatic Plant Density, Overall	Very Dense	1	5
W0515	West River	2012	Color	None	2	5
W0515	West River	2012	Color	Reddish	3	5
W0515	West River	2012	Objectionable Deposits	No	4	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0515	West River	2012	Objectionable Deposits	Unobservable	1	5
W0515	West River	2012	Odor	None	5	5
W0515	West River	2012	Periphyton Density, Filamentous	None	4	5
W0515	West River	2012	Periphyton Density, Filamentous	Sparse	1	5
W0515	West River	2012	Periphyton Density, Film	Moderate	1	5
W0515	West River	2012	Periphyton Density, Film	None	4	5
W0515	West River	2012	Scum	No	5	5
W0515	West River	2012	Turbidity	None	4	5
W0515	West River	2012	Turbidity	Slightly Turbid	1	5
W0515	West River	2013	Aesthetics Impaired?	No	1	2
W0515	West River	2013	Aesthetics Impaired?	NR	1	2
W0515	West River	2013	Aquatic Plant Density, Overall	Dense	1	2
W0515	West River	2013	Aquatic Plant Density, Overall	Sparse	1	2
W0515	West River	2013	Color	None	2	2
W0515	West River	2013	Objectionable Deposits	No	1	2
W0515	West River	2013	Objectionable Deposits	Yes	1	2
W0515	West River	2013	Odor	None	2	2
W0515	West River	2013	Periphyton Density, Filamentous	None	2	2
W0515	West River	2013	Periphyton Density, Film	None	2	2
W0515	West River	2013	Scum	No	2	2
W0515	West River	2013	Turbidity	None	2	2

Primary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited bacteria data are available to assess the Primary Contact Recreation Use for the West River (MA51-12) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples two-thirds of the way down the West River at W0515 [Hartford Avenue East, Uxbridge] from 2011-2013 (n=1-3/yr). *E. coli* data from W0515 are too limited according to the 2024 CALM to assess the Primary Contact Recreation Use.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0515	MassDEP	Water Quality	West River	[Hartford Avenue East, Uxbridge]	42.100361	-71.601117

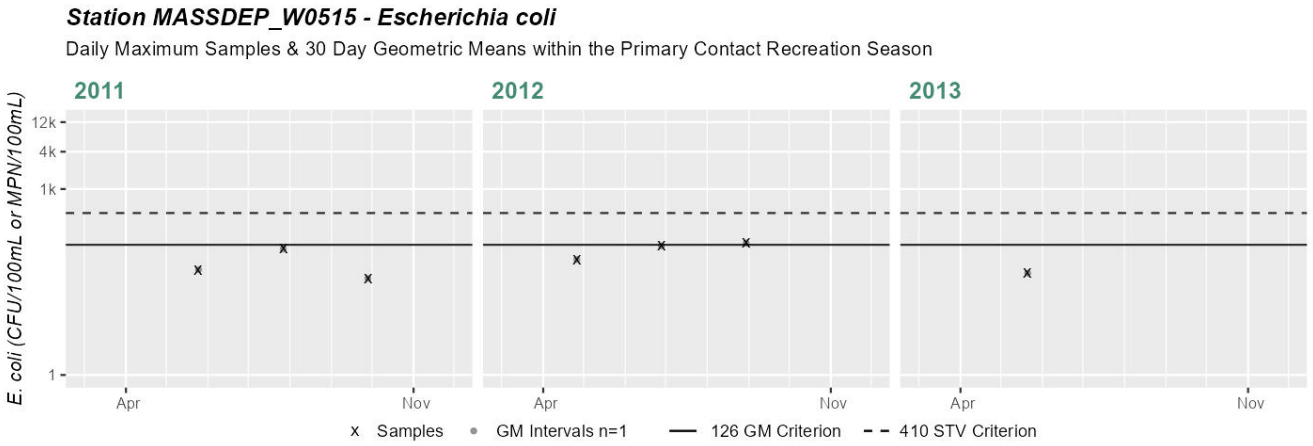
Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (30-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 5)

[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0515	MassDEP	E. coli	05/25/11	09/28/11	3	36	108	57
W0515	MassDEP	E. coli	04/25/12	08/29/12	3	73	135	106
W0515	MassDEP	E. coli	05/21/13	05/21/13	1	44	44	43



Variable*	Result
Samples	3
SeasGM	57
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	106
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	1
SeasGM	44
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

*Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Insufficient Information	NO

2024/26 Use Attainment Summary
Too limited bacteria data are available to assess the Secondary Contact Recreation Use for the West River (MA51-12) and available aesthetics observations for this AU did not result in any impairment, so it is assessed as having Insufficient Information. MassDEP staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in the West River from 2003-2013 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: two-thirds of the way down at W0515 [Hartford Avenue East, Uxbridge] in 2003 and 2007-2010 (historic n=3-6/yr) and 2011-2013 (current n=2-5/yr), and the downstream end at W1019 [Hecla St, Uxbridge] from Apr-Oct 2003 (n=6). Analysis of the historic multi-year limited frequency *E. coli* dataset from W0515 indicated 0 out of 2 sufficient data yrs had intervals where >20% of the GMs were >244 CFU/100ml, 0 yrs had ≥2 samples exceed the 794 CFU/100ml STV, and cumulatively across years 0% of intervals had GMs >244 CFU/100ml. Analysis of the historic single year limited frequency *E. coli* dataset from W1019 indicated 0% of intervals had GMs >244 CFU/100ml, no samples exceeded the 794 CFU/100ml STV, and the overall GM was 55 CFU/100ml. *E. coli* data in the current IR window from W0515 are too limited according to the 2024 CALM to assess the Secondary Contact Recreation Use. Historic *E. coli* data from W0515 and W1019 meet 2024 CALM guidance. While the historic bacteria concentrations meet 2024 CALM guidance, too limited bacteria data from the current IR window (2011-2022) are available to assess the Secondary Contact Recreation Use.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0515	MassDEP	Water Quality	West River	[Hartford Avenue East, Uxbridge]	42.100361	-71.601117
W1019	MassDEP	Water Quality	West River	[Hecla Street, Uxbridge]	42.070717	-71.608721

Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)

(MassDEP Undated 8) (MassDEP Undated 4)

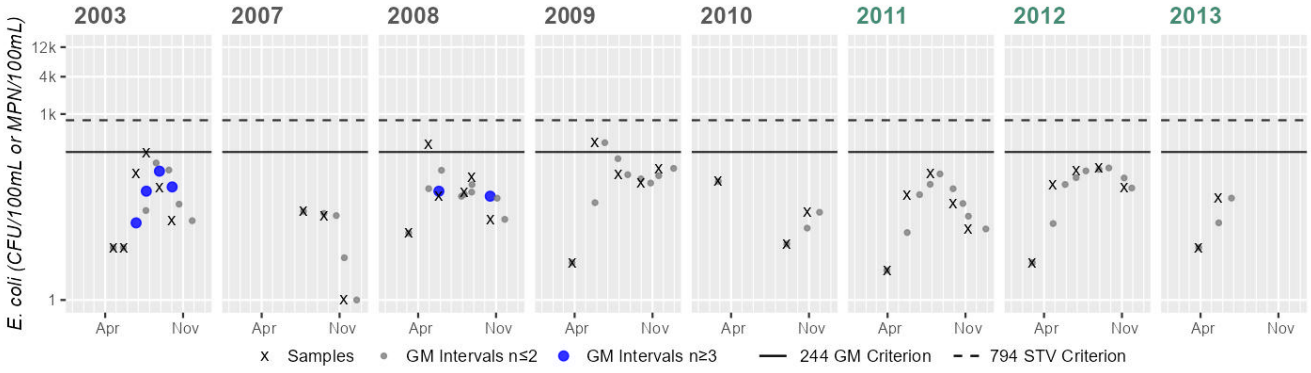
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0515	MassDEP	E. coli	04/23/03	10/02/03	6	7	240	34
W0515	MassDEP	E. coli	07/25/07	11/14/07	3	1	27	8
W0515	MassDEP	E. coli	03/05/08	10/15/08	6	12	326	51
W0515	MassDEP	E. coli	03/25/09	11/18/09	5	4	345	68
W0515	MassDEP	E. coli	02/25/10	10/27/10	3	8	82	25
W0515	MassDEP	E. coli	03/30/11	11/09/11	5	3	108	24
W0515	MassDEP	E. coli	02/28/12	11/06/12	5	4	135	49

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0515	MassDEP	E. coli	03/27/13	05/21/13	2	7	44	17
W1019	MassDEP	E. coli	04/23/03	10/02/03	6	13	400	55

Station MASSDEP_W0515 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	34
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	8
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	6
SeasGM	51
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	68
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	3
SeasGM	25
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	24
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	5
SeasGM	49
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Variable*	Result
Samples	2
SeasGM	17
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

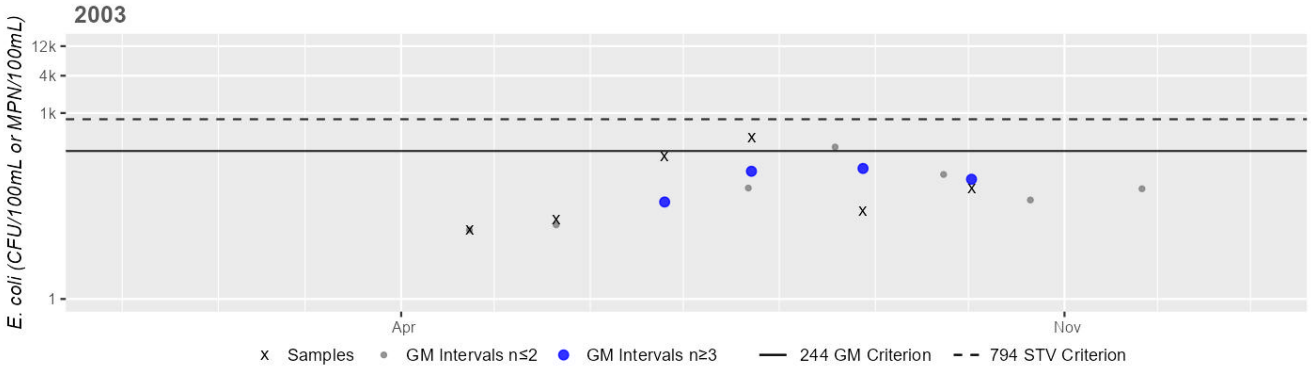
Cumulative %GMI Exceedance
Historic (1997-2010)
0%

Cumulative %GMI Exceedance
Current (2011-2022)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Station MASSDEP_W1019 - Escherichia coli

Daily Maximum Samples & 90 Day Geometric Means within the Secondary Contact Recreation Season



Variable*	Result
Samples	6
SeasGM	55
#GMI	4
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
0%

**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes years without GMI meeting the minimum sample size.*

Whitin Reservoir (MA51179)

Location:	Douglas.
AU Type:	FRESHWATER LAKE
AU Size:	342 ACRES
Classification/Qualifier:	B

No usable data were available for Whitin Reservoir (MA51179) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Whitins Pond (MA51180)

Location:	Northbridge/Sutton.
AU Type:	FRESHWATER LAKE
AU Size:	163 ACRES
Classification/Qualifier:	B

No usable data were available for Whitins Pond (MA51180) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Fanwort*)	--	Unchanged
4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
4c	4c	(Non-Native Fish/Shellfish/Zooplankton*)	--	Unchanged
4c	4c	(Water Chestnut*)	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Non-Native Fish/Shellfish/Zooplankton*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Windle Pond (MA51184)

Location:	Grafton/Shrewsbury.
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Windle Pond (MA51184) for the 2024/26 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None	--	Unchanged

Woolshop Pond (MA51186)

Location:	Millbury.
AU Type:	FRESHWATER LAKE
AU Size:	5 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Changed
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Added
5	5	Turbidity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	--	--	X	X	X
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	X	X	X
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	--	--	X	X	X
Turbidity	Source Unknown (N)	--	--	X	X	X

Supporting Information for Removed Impairments

2022 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Woolshop Pond (MA51186) was first listed as impaired for Noxious Aquatic Plants in 1996 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that roughly 75% of the pond was covered with a 75-100% density of aquatic plants, including the non-rooted, floating species, *Lemna*/*Wolffia* spp. and *Ceratophyllum echinatum* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and August 2019 show high amounts of plant coverage (~≥75% of the pond) (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: **MA51186** WATERSHED: **Blackstone (51)** (Printed 02/03/98)
NAME: **Woolshop Pond** TYPE: **Lake/Pond**
CODE: **51186** SIZE: **8.00**(acres) CLASS: **B**

LATITUDE: **42.19528**
LONGITUDE: **71.74889** (421143/714456)
Lake/Pond Name: Woolshop Pond, Millbury
Ecoregion Name: ()
Description:

Assessment Date: 9609 **Begin Sampling:** 9407 **303(d) List?:** Yes
Cycle: 96 **End Sampling:** 9407 **Pathogens Only?:** No

Lake Specific Information
Lake size greater than 10 acres?: No
Significantly Publicly Owned: xxxx
Trophic Status: Hypereutrophic
Trophic Trend: Unknown
Acidity/Toxics Trend: Unknown
Acidity Effects: Unknown

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT			2.00	6.00		
ALUS			8.00			
FISH CONSUMPTION					8.00	
PRIMARY CONTACT			2.00	6.00		
SECONDARY CONTACT			2.00	6.00		
Aesthetics					8.00	

Nonattainment Causes

Code	Size	Magnitude
2200- Noxious aquatic plants	6.00	M
2500- Turbidity	2.00	M
2600- Exotic species	8.00	M

"New"

Code	Size	Magnitude

Nonattainment Sources

Code	Size	Magnitude
9000- SOURCE UNKNOWN	8.00	H

"New"

Code	Size	Magnitude

Assessment Type
(Assessment Category = > Monitored)
B25- Ecological/habitat surveys (Qualitative/Quantitative)
R35- Primary Producer Surveys

"New" Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > N)

"New" Toxics Monitoring = > YES or NO

Comments:
1996:
A 19 JULY 1994 SYNOPTIC SURVEY INDICATES THAT THERE WAS 75% TO 100% COVERAGE AROUND SHORE (APPROXIMATELY ONE HALF OF THE POND). THE UPPER END OF THE POND (APPROXIMATELY ONE THIRD) WAS COVERED COMPLETELY. THE POSSIBLE NON-NATIVE MYRIOPHYLLUM (POSSIBLY HETEROPHYLLUM) POSES A THREAT TO THE AQUATIC LIFE IN ABOUT TWO ACRES OF THE POND. TURBIDITY WAS ALSO A CAUSE OF THE USE IMPAIRMENTS OVER TWO ACRES OF THE POND. THE SECCHI DISK READING WAS LESS THAN 4 FEET. THERE WAS ALSO A SLIGHT ODOR (POSSIBLY SEPTIC). NO OTHER DATA WAS AVAILABLE TO MAKE ASSESSMENTS.

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1994 Synoptic Survey Field Sheet (MassDEP 1994):

Entered 7/29/94

9/15/94

Page 1 of 2

S1186

Lake/Pond Woolshop Pond **Date** 7/19/94

Town/City Millbury **Observers** R. Haynes
R. McVay

Location/type of access (be specific, e.g., public boat ramp at west cove area off Simpson Street):
Informal off Belleville Lane off Grafton St. (across from #12)

Ownership of Location/Access (specify public or private, name of owner(s), and any use restrictions):
Road ROW?

Posted signs (re aquatic plants, fish advisories, access, etc.):
No

Water quality observations (clarity, dissolved organic staining, blooms, et cetera):
<4' SD
V. Turbid (brown) duckweed/meal scum; hyst. odor (? septic)
very productive
Translucent orangey at outlet; iron bacteria floc downstream; black on rocks

Record of aquatic plant "species" observed (see note below):

Peltandra, Nuphar, Nymphaea, Brasenia, Pontederia
Lemna minor Wolffia parvula, Lythrum Salicaria,
Sparganium, Ceratophyllum echinatum, Myriophyllum sp
(heterophyllum poss), Potamogeton crispus
Freshwater sponges, bryozoan downstream, Potamogeton
pulcher? ampl. foliosus), Sagittaria

Observed aquatic plant density (at observation site and across lake or pond, if practicable):

75-100% cover around shore [~1/2 pond]; upper end (~1/3) pond
entirely, latter it gets worse

Other notes (e.g., overt pollution, construction, and water uses:

305 b - Hypereutrophic
1° Contact - 6 acres Non-support; 2 acres Part. Support
2° Contact - 6 acres " " ; 2 acres Part. Support
Ag. Life - 8 acres Partial Support; 2 acres

Cause - Noxious Plants - M (6 acres), Turbidity M (2 acres), Exotic plants M (8 acres)

Note: record suspect *M. heterophyllum* plants that may require confirmation once emergent flowering stalks are evident.

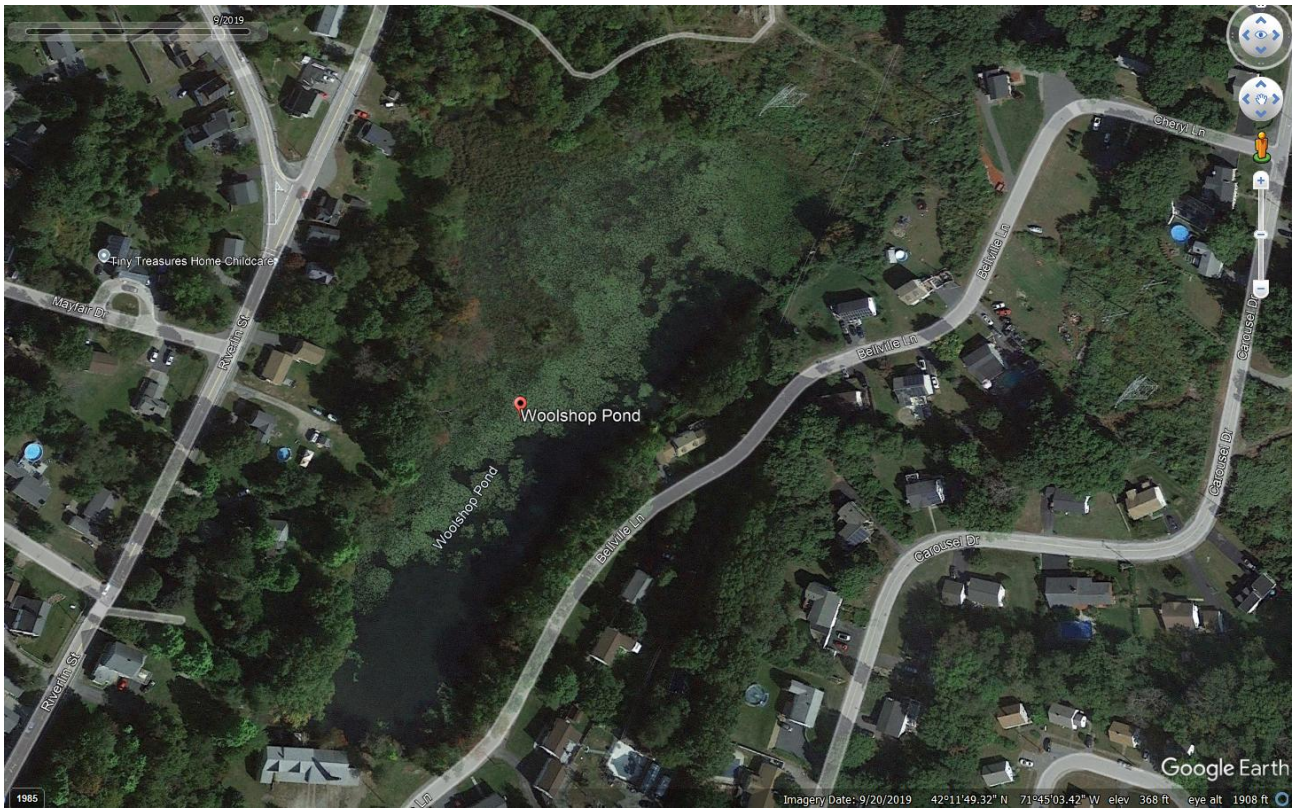
Google Earth image of Woolshop Pond, 3/31/2005 (Google Earth Pro Undated):



Google Earth image of Woolshop Pond, 8/23/2016 (Google Earth Pro Undated):



Google Earth image of Woolshop Pond, 8/20/2019 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Assessed	No

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted recently, so the Fish Consumption Use for Woolshop Pond (MA51186) is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Woolshop Pond (MA51186) continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants Macrophytes impairment is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The Turbidity impairment is being carried forward. Since the Curly-Leaf Pondweed, Eurasian Water Milfoil and *Myriophyllum Spicatum* impairments were redundantly duplicated across multiple uses for this waterbody, the Curly-Leaf Pondweed, Eurasian Water Milfoil and *Myriophyllum Spicatum* impairments are being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. As described in detail in the 2024 CALM guidance document the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Woolshop Pond (MA51186) was first listed as impaired for Noxious Aquatic Plants in 1996, and this cause was remapped to Aquatic Plants (Macrophytes) during the 2010 IR cycle (MassDEP 2024). The original impairment was based on a July 1994 synoptic survey conducted by MassDEP staff in which it was noted that roughly 75% of the pond was covered with a 75-100% density of aquatic plants, including the non-rooted, floating species, *Lemna/Wolffia spp.* and *Ceratophyllum echinatum* (MassDEP 1994, MassDEP 2002). Google Earth images from August 2016 and August 2019 show high amounts of plant coverage (~≥75% of the pond) (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in aquatic macrophytes in recent years. No new data are available to evaluate the Aesthetics Use for this Woolshop Pond AU.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria or other indicator data for Woolshop Pond (MA51186) are available, so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). Since the Curly-Leaf Pondweed and Eurasian Water Milfoil (*Myriophyllum spicatum*) impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Primary Contact Recreation Use.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for Woolshop Pond (MA51186) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior pollutant Aquatic Plants (Macrophytes) impairment (from the Aesthetics Use) is being removed and replaced with a non-pollutant Aquatic Plants (Macrophytes) impairment. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward. A Nutrient/Eutrophication Biological Indicators impairment is being added (from the Aesthetics Use). Since the Curly-Leaf Pondweed and Eurasian Water Milfoil (*Myriophyllum spicatum)* impairments are being removed from the Aesthetics Use this cycle, these impairments are also being removed from the Secondary Contact Recreation Use.

Data Sources

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