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

Appendix 34
Shawsheen 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

December 2025

CN 625.0

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.

Acknowledgements

The 2024/2026 Integrated Report (IR) could not have been produced without the dedicated efforts of program staff and input from other Executive Office of Energy and Environmental Affairs (EEA) staff, EPA colleagues, and stakeholder groups. Many thanks to WPP staff who worked directly on the assessments and supporting tasks (e.g., GIS support, data reviews, data analyses, ATTAINS and reports), including Mason Saleeba, Jenny Peet, Jenny Sheppard, Kari Winfield, Stephanie Figary, Bob Smith, Tim Gardner, Anna Mayor, Shervon De Leon, Matt Reardon, Richard Chase, and Richard Carey. Many thanks to WPP field sampling crews, WPP interns, laboratory staff at the Wall Experiment Station, and external data providers who all played important roles in generating the water quality data used to inform decisions.

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 [].

Table of Contents

2024/26 Cycle Impairment Changes

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Ames Pond	MA83001	5	5	Mercury in Fish Tissue	--	Unchanged
Bakers Meadow Pond	MA83002	3	3	None	--	Unchanged
Ballardvale Impoundment	MA83011	5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
Ballardvale Impoundment	MA83011	5	5	(Fanwort*)	--	Unchanged
Ballardvale Impoundment	MA83011	5	5	(Fish Passage Barrier*)	--	Unchanged
Ballardvale Impoundment	MA83011	5	5	Mercury in Fish Tissue	--	Unchanged
Ballardvale Impoundment	MA83011	5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged
Content Brook	MA83-09	5	5	Benthic Macroinvertebrates	--	Unchanged
Content Brook	MA83-09	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Elm Brook	MA83-23	2	2	None	--	Unchanged
Elm Brook	MA83-24	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Elm Brook	MA83-24	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Elm Brook	MA83-24	5	5	Fecal Coliform	2587	Unchanged
Elm Brook	MA83-24	5	5	Sedimentation/Siltation	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Fawn Lake	MA83004	3	3	None	--	Unchanged
Fosters Pond	MA83005	5	5	(Fanwort*)	--	Unchanged
Fosters Pond	MA83005	5	5	Dissolved Oxygen	--	Unchanged
Fosters Pond	MA83005	5	5	Mercury in Fish Tissue	--	Unchanged
Gravel Pit Pond	MA83007	4c	4c	(Non-Native Aquatic Plants*)	--	Unchanged
Hussey Brook Pond	MA83008	3	3	None	--	Unchanged
Hussey Pond	MA83009	5	5	Algae	--	Unchanged
Kiln Brook	MA83-10	4a	4a	Fecal Coliform	2587	Unchanged
Long Meadow Brook	MA83-11	4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
Long Meadow Brook	MA83-11	4a	4a	Fecal Coliform	2587	Unchanged
Long Pond	MA83010	5	5	(Water Chestnut*)	--	Unchanged
Long Pond	MA83010	5	5	Algae	--	Unchanged
Long Pond	MA83010	5	5	Chlorophyll-a	--	Unchanged
Long Pond	MA83010	5	5	Dissolved Oxygen	--	Unchanged
Long Pond	MA83010	5	5	Phosphorus, Total	--	Unchanged
Long Pond	MA83010	5	5	Transparency / Clarity	--	Unchanged
Meadow Brook	MA83-12	2	2	None	--	Unchanged
Pomps Pond	MA83014	5	5	(Non-Native Aquatic Plants*)	--	Unchanged
Pomps Pond	MA83014	5	5	Mercury in Fish Tissue	--	Unchanged
Pond Street Pond	MA83021	3	3	None	--	Unchanged
Rabbit Pond	MA83015	5	5	Turbidity	--	Unchanged
Richardson Pond North	MA83020	3	3	None	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Rogers Brook	MA83-04	4a	4a	(Physical Substrate Habitat Alterations*)	--	Unchanged
Rogers Brook	MA83-04	4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
Rogers Brook	MA83-04	4a	4a	Fecal Coliform	2587	Unchanged
Round Pond	MA83018	3	3	None	--	Unchanged
Sandy Brook	MA83-13	4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
Sandy Brook	MA83-13	4a	4a	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-01	5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
Shawsheen River	MA83-01	5	5	Dissolved Oxygen	--	Unchanged
Shawsheen River	MA83-01	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Shawsheen River	MA83-01	5	5	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-01	5	5	Sedimentation/Siltation	--	Unchanged
Shawsheen River	MA83-08	5	5	Dissolved Oxygen	--	Unchanged
Shawsheen River	MA83-08	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Shawsheen River	MA83-08	5	5	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-08	5	5	Physical Substrate Habitat Alterations	--	Unchanged
Shawsheen River	MA83-17	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Shawsheen River	MA83-17	5	5	Dissolved Oxygen	--	Unchanged
Shawsheen River	MA83-17	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Shawsheen River	MA83-17	5	5	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-18	5	5	(Curly-leaf Pondweed*)	--	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Shawsheen River	MA83-18	5	5	Dissolved Oxygen	--	Unchanged
Shawsheen River	MA83-18	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Shawsheen River	MA83-18	5	5	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-18	5	5	Mercury in Fish Tissue	--	Added
Shawsheen River	MA83-19	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Shawsheen River	MA83-19	5	5	(Fish Passage Barrier*)	--	Unchanged
Shawsheen River	MA83-19	5	5	Benthic Macroinvertebrates	--	Unchanged
Shawsheen River	MA83-19	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Shawsheen River	MA83-19	5	5	Fecal Coliform	2587	Unchanged
Shawsheen River	MA83-19	5	5	Mercury in Fish Tissue	--	Added
Spring Brook	MA83-14	5	5	(Dewatering*)	--	Unchanged
Spring Brook	MA83-14	5	5	Escherichia Coli (E. Coli)	--	Unchanged
Strong Water Brook	MA83-07	4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
Strong Water Brook	MA83-07	4a	4a	Fecal Coliform	2587	Unchanged
Unnamed Tributary	MA83-15	5	5	(Dewatering*)	--	Unchanged
Unnamed Tributary	MA83-15	5	5	Chloride	--	Unchanged
Unnamed Tributary	MA83-15	5	5	Escherichia Coli (E. Coli)	2587	Unchanged
Unnamed Tributary	MA83-15	5	5	Fecal Coliform	2587	Unchanged

Waterbody	AU_ID	AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
Unnamed Tributary	MA83-16	3	3	None	--	Unchanged
Unnamed Tributary	MA83-20	5	5	Chloride	--	Unchanged
Unnamed Tributary	MA83-21	4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
Vine Brook	MA83-06	5	5	(Curly-leaf Pondweed*)	--	Unchanged
Vine Brook	MA83-06	5	5	Benthic Macroinvertebrates	--	Unchanged
Vine Brook	MA83-06	5	5	Chloride	--	Unchanged
Vine Brook	MA83-06	5	5	Dissolved Oxygen	--	Unchanged
Vine Brook	MA83-06	5	5	Escherichia Coli (E. Coli)	--	Unchanged
Vine Brook	MA83-06	5	5	Turbidity	--	Unchanged
Webb Brook	MA83-22	5	4a	Escherichia Coli (E. Coli)	R1_MA_2024_04	Changed

Ames Pond (MA83001)

Location:	Tewksbury.
AU Type:	FRESHWATER LAKE
AU Size:	76 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	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Fish Consumption Use for Ames Pond (MA83001) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. MA DPH included a site-specific advisory for Ames 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 Ames Pond (MA83001) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No bacteria data or other indicator data are available for Ames Pond (MA83001), 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 Ames Pond (MA83001) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed.

Bakers Meadow Pond (MA83002)

Location:	Andover.
AU Type:	FRESHWATER LAKE
AU Size:	21 ACRES
Classification/Qualifier:	B

No usable data were available for Bakers Meadow Pond (MA83002) 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

Ballardvale Impoundment (MA83011)

Location:	Andover (Lowell Junction Pond).
AU Type:	FRESHWATER LAKE
AU Size:	35 ACRES
Classification/Qualifier:	B: WWF

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)	--	Unchanged
5	5	(Fanwort*)	--	Unchanged
5	5	(Fish Passage Barrier*)	--	Unchanged
5	5	Mercury in Fish Tissue	--	Unchanged
5	5	Nutrient/Eutrophication Biological Indicators	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Aquatic Plants (Macrophytes)*)	Source Unknown (N)	X	--	X	X	X
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
(Fish Passage Barrier*)	Dam or Impoundment (Y)	X	--	--	--	--
Mercury in Fish Tissue	Source Unknown (N)	--	X	--	--	--
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	X	--	X	X	X

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
Fish toxics sampling has not been conducted in the Ballardvale Impoundment (MA83011) recently, so the Fish Consumption Use continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. MA DPH included a site-specific advisory for the Ballardvale Impoundment (referred to by MA DPH as ''Ballardvale Impoundment of Shawsheen River'' or ''Shawsheen River - See Ballardvale 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.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No new data are available to evaluate the Aesthetics Use for the Ballardvale Impoundment (MA83011), so the Aesthetics Use continues to be assessed as Not Supporting, with the non-pollutant Aquatic Plants (Macrophytes) impairment and pollutant Nutrient/Eutrophication Biological Indicators impairment being carried forward.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No new bacteria or other indicator data are available for the Ballardvale Impoundment (MA83011), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior non-pollutant Aquatic Plants (Macrophytes) impairment and pollutant Nutrient/Eutrophication Biological Indicators impairment (from the Aesthetics Use) are being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

No new bacteria or other indicator data are available for the Ballardvale Impoundment (MA83011), so the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior non-pollutant Aquatic Plants (Macrophytes) impairment and pollutant Nutrient/Eutrophication Biological Indicators impairment (from the Aesthetics Use) are being carried forward

Content Brook (MA83-09)

Location:	Headwaters, outlet Richardson Pond, Billerica, to confluence with Shawsheen River, Tewksbury.
AU Type:	RIVER
AU Size:	2.4 MILES
Classification/Qualifier:	B

Content Brook (MA83-09)

Watershed Area: 5.75 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	5.75	4.56	1.40	1.23
Agriculture	0%	0%	0%	0%
Developed	34.2%	32.1%	22.9%	18.2%
Natural	49.4%	49.9%	41.6%	43.3%
Wetland	16.3%	18%	35.5%	38.5%
Impervious	17.5%	15.9%	12.6%	8.7%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Benthic Macroinvertebrates	Source Unknown (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (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 in Content Brook (MA83-09), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Content Brook (MA83-09), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
Bacteria data have not been collected recently in Content Brook (MA83-09), 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 Content Brook (MA83-09) is assessed as Not Supporting. An Escherichia Coli (E. Coli) impairment is being added based on a re-evaluation of historical bacteria data (collected in 2005) not meeting the threshold at W0750. MassDEP staff collected *E. coli* bacteria samples in Content Brook (MA83-09) at W0750 [Beech St in Tewksbury] from May-Sep 2005 (n=5). Analysis of this historic limited frequency *E. coli* dataset indicated 100% of intervals had GMs >244 CFU/100mL and no samples exceeded the 794 CFU/100mL STV (the overall GM was 304 CFU/100mL). These data are indicative of an Escherichia Coli (E. Coli) impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0750	MassDEP	Water Quality	Content Brook	[Beech Street, Tewksbury]	42.579671	-71.218217

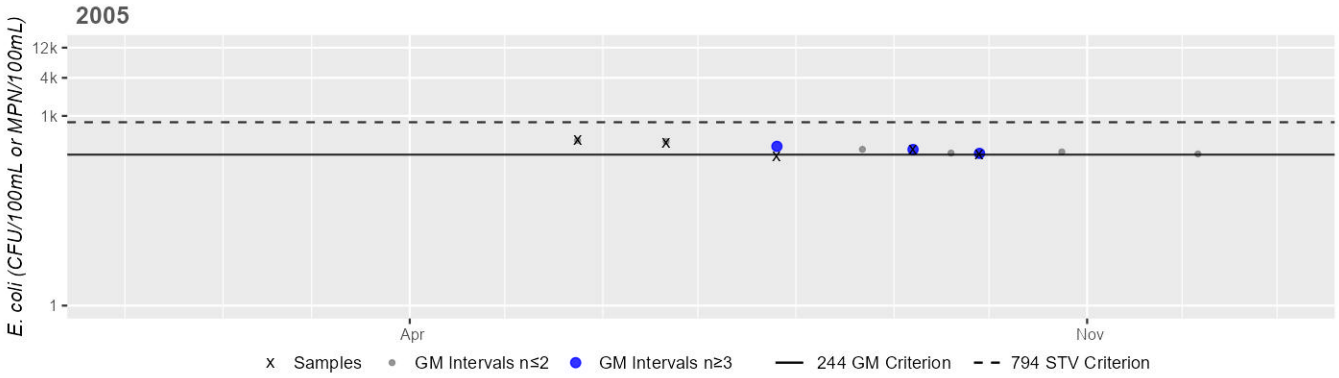
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0750	MassDEP	E. coli	05/24/05	09/28/05	5	230	410	304

Station MASSDEP_W0750 - Escherichia coli

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



Variable*	Result
Samples	5
SeasGM	304
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	0
%n>STV	0%

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.*

Elm Brook (MA83-23)

Location:	Headwaters, south of Route 2A, Lincoln to beginning of channelized portion southwest of Kendall Court, Bedford (formerly part of 2014 segment: Elm Brook MA83-05).
AU Type:	RIVER
AU Size:	2.7 MILES
Classification/Qualifier:	B

No usable data were available for Elm Brook (MA83-23) 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

Elm Brook (MA83-24)

Location:	From beginning of channelized portion southwest of Kendall Court, Bedford to confluence with Shawsheen River, Bedford (formerly part of 2014 segment: Elm Brook MA83-05).
AU Type:	RIVER
AU Size:	2.4 MILES
Classification/Qualifier:	B

Elm Brook (MA83-24)

Watershed Area: 6.17 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	6.17	5.17	1.42	1.11
Agriculture	2.4%	0.8%	1.2%	0.7%
Developed	32.4%	35.1%	14.1%	15%
Natural	36.9%	34.8%	30.1%	26.7%
Wetland	28.3%	29.3%	54.6%	57.6%
Impervious	15.6%	16.9%	8.1%	8.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Channelization (Y)	X	--	--	--	--

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)	Industrial/Commercial Site Stormwater Discharge (Permitted) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Industrial/Commercial Site Stormwater Discharge (Permitted) (N)	--	--	--	X	--
Fecal Coliform	Source Unknown (N)	--	--	--	X	--
Sedimentation/Siltation	Unspecified Urban Stormwater (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 in this Elm Brook AU (MA83-24), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary

No data are available to assess the status of the Aesthetics Use for this Elm Brook AU (MA83-24), 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 this Elm Brook AU (MA83-24) continues to be assessed as Not Supporting. The prior Fecal Coliform and Escherichia coli (E. coli) impairments are 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 this Elm Brook AU (MA83-24) continues to be assessed as Not Supporting. The prior Escherichia coli (E. coli) impairment is being carried forward based on historical bacteria data not meeting the threshold at MassDEP's W0099 station. MassDEP staff collected historical *E. coli* bacteria samples in this Elm Brook AU (MA83-24) at W0099 (Great Rd (Routes 4 & 225) in Bedford) from May-Sep 2005 (n=5). Analysis of this limited frequency dataset indicated 100% of intervals had GMs >244 CFU/100mL and 4 samples exceeded the 794 CFU/100mL STV (the overall GM was 1121 CFU/100mL). These data are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0099	MassDEP	Water Quality	Elm Brook	[Great Road (Routes 4 & 225), Bedford]	42.487027	-71.264004

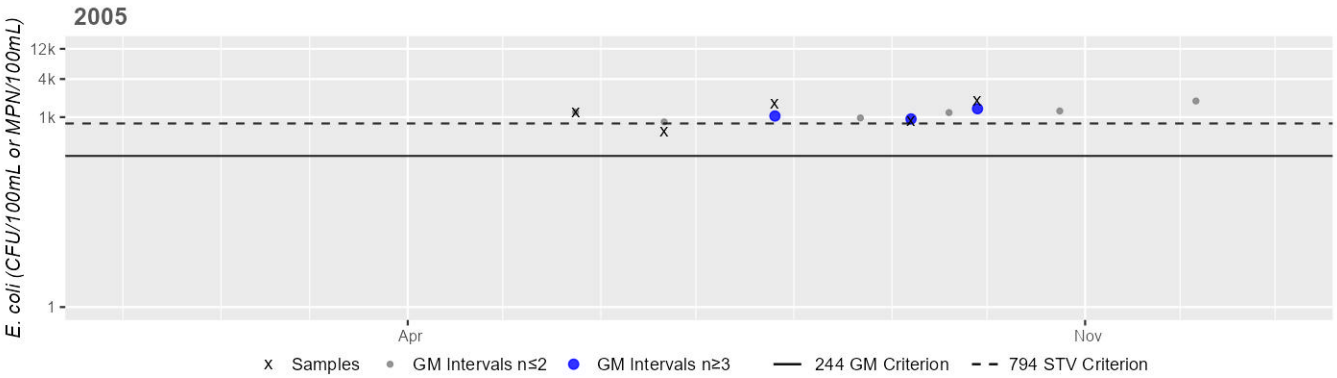
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0099	MassDEP	E. coli	05/24/05	09/28/05	5	590	1800	1121

Station MASSDEP_W0099 - Escherichia coli

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



Variable*	Result
Samples	5
SeasGM	1121
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	4
%n>STV	80%

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.*

Fawn Lake (MA83004)

Location:	Bedford.
AU Type:	FRESHWATER LAKE
AU Size:	12 ACRES
Classification/Qualifier:	B

No usable data were available for Fawn Lake (MA83004) 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

Fosters Pond (MA83005)

Location:	Andover/Wilmington.
AU Type:	FRESHWATER LAKE
AU Size:	109 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Mercury in Fish Tissue	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Mercury in Fish Tissue	Atmospheric Deposition (N)	--	X	--	--	--

Designated Use Attainment Decisions

Fish Consumption

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

Fish toxics sampling has not been conducted in Fosters Pond (MA83005) recently, so the Fish Consumption Use continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. MA DPH included a site-specific advisory for Fosters 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 to assess the status of the Aesthetics Use for Fosters Pond (MA83005), 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 Fosters Pond (MA83005) 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 Fosters Pond (MA83005) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed.

Gravel Pit Pond (MA83007)

Location:	Andover (Hussey Brook Pond East).
AU Type:	FRESHWATER LAKE
AU Size:	5 ACRES
Classification/Qualifier:	B

No usable data were available for Gravel Pit Pond (MA83007) 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	--	--	--	--

Hussey Brook Pond (MA83008)

Location:	Andover.
AU Type:	FRESHWATER LAKE
AU Size:	0.5 ACRES
Classification/Qualifier:	B

No usable data were available for Hussey Brook Pond (MA83008) 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

Hussey Pond (MA83009)

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

No usable data were available for Hussey Pond (MA83009) 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	Algae	--	Unchanged

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

Kiln Brook (MA83-10)

Location:	Outlet unnamed pond (in Pine Meadows Country Club), Lexington, to confluence with Shawsheen River, Bedford.
AU Type:	RIVER
AU Size:	1.5 MILES
Classification/Qualifier:	B

No usable data were available for Kiln Brook (MA83-10) 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	Fecal Coliform	2587	Unchanged

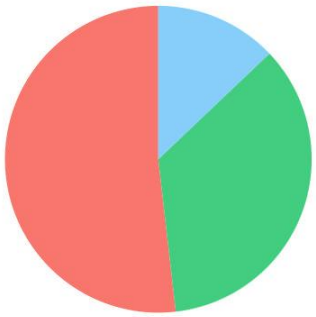
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--

Long Meadow Brook (MA83-11)

Location:	Wetland east of Lexington Street and north of Independence Drive, Burlington, to confluence with Vine Brook, Burlington.
AU Type:	RIVER
AU Size:	1.3 MILES
Classification/Qualifier:	B

Long Meadow Brook (MA83-11)

Watershed Area: 0.73 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	0.73	0.73	0.19	0.19
Agriculture	0%	0%	0%	0%
Developed	51.8%	51.8%	33.9%	33.9%
Natural	35.3%	35.3%	30.5%	30.5%
Wetland	12.9%	12.9%	35.6%	35.6%
Impervious	28.6%	28.6%	17%	17%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
4a	4a	Fecal Coliform	2587	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	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Fecal Coliform	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 in Long Meadow Brook (MA83-11), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Long Meadow Brook (MA83-11), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No new bacteria data are available for Long Meadow Brook (MA83-11), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are 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 Long Meadow Brook (MA83-11) continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) impairment is being carried forward based on 2005 bacteria data not meeting the threshold at W1390. MassDEP staff collected historical *E. coli* bacteria samples in the downstream quarter of Long Meadow Brook (MA83-11) at W1390 [S Bedford St in Burlington] from May-Jul 2005 (n=3). Analysis of this limited frequency *E. coli* dataset indicated 100% of intervals had GMs >244 CFU/100mL and 2 samples exceeded the 794 CFU/100mL STV (the overall GM was 1296 CFU/100mL). These historical data are indicative of an Escherichia Coli (E. Coli) impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1390	MassDEP	Water Quality	Long Meadow Brook	[South Bedford Street, Burlington]	42.489785	-71.208290

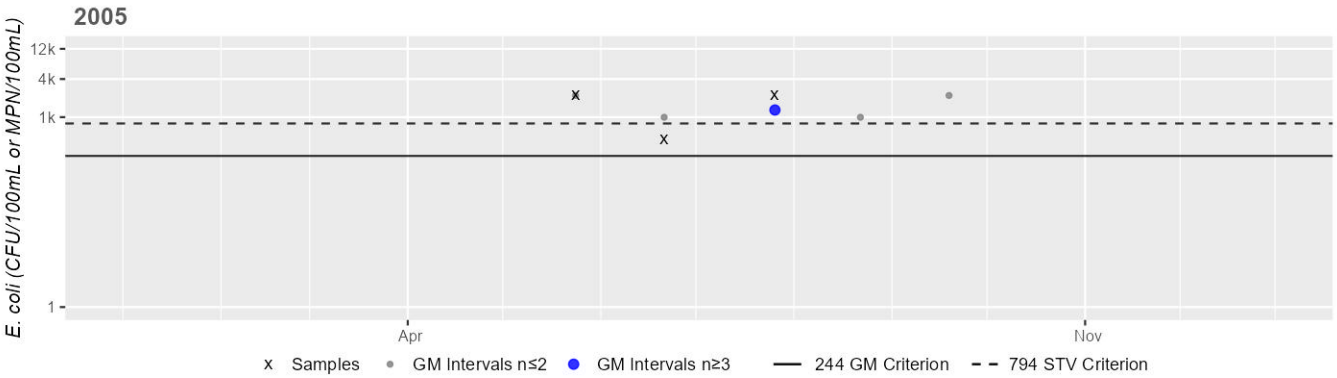
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W1390	MassDEP	E. coli	05/24/05	07/26/05	3	450	2200	1296

Station MASSDEP_W1390 - Escherichia coli

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



Variable*	Result
Samples	3
SeasGM	1296
#GMI	1
#GMI Ex	1
%GMI Ex	100%
n>STV	2
%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.*

Long Pond (MA83010)

Location:	Tewksbury.
AU Type:	FRESHWATER LAKE
AU Size:	44 ACRES
Classification/Qualifier:	B

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Water Chestnut*)	--	Unchanged
5	5	Algae	--	Unchanged
5	5	Chlorophyll-a	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Phosphorus, Total	--	Unchanged
5	5	Transparency / Clarity	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Algae	Source Unknown (N)	X	--	X	X	X
Chlorophyll-a	Source Unknown (N)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Phosphorus, Total	Source Unknown (N)	X	--	--	--	--
Transparency / Clarity	Source Unknown (N)	X	--	--	X	--

Recommendations

2024/26 Recommendations
REC: Based on data from the 2024/26 IR cycle, follow-up monitoring should be conducted in Long Pond (MA83010), to determine if Harmful Algal Blooms are impairing the Recreational and Aesthetics uses (an Alert has been identified). Monitoring should include observational data and collection of cyanobacteria cell count data, as well as continued reporting of blooms to MDPH. This is a high 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 in Long Pond (MA83010), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Aesthetics Use for Long Pond (MA83010) continues to be assessed as Not Supporting with the prior Algae impairment being carried forward. Since the Transparency / Clarity impairment was redundantly duplicated across multiple uses for this waterbody, the Transparency / Clarity impairment is being removed from the Aesthetics Use but will continue to be maintained under the Primary Contact Recreation Use. Since the Total Phosphorus impairment was redundantly duplicated across multiple uses for this waterbody, the Total Phosphorus impairment is also being removed from the Aesthetics Use but will continue to be maintained under the Aquatic Life Use. An Alert is being identified for Harmful Algal Blooms in this waterbody since C-HAB postings (blooms >15 days in duration) were reported to MDPH for 2022. During the period 2015 through 2022, C-HAB postings for Long Pond were reported to MDPH based on visual observations for 76 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 C-HABs in this waterbody 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 1)

C-HAB Summary Statement
During the period 2015 through 2022, C-HAB postings for Long Pond (MA83010) were reported to MDPH based on visual observations for 76 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 1)

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
Long Pond	Tewksbury								76

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	YES

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Long Pond (MA83010) continues to be assessed as Not Supporting. The prior Algae and Transparency / Clarity impairments (from the Aesthetics Use) are being carried forward. Since the "Phosphorus, Total" impairment is being removed from the Aesthetics Use this cycle, this impairment is also being removed from the Primary Contact Recreation Use. An Alert is being identified for Harmful Algal Blooms in this waterbody since C-HAB postings (blooms >15 days in duration) were reported to MDPH for 2022. During the period 2015 through 2022, C-HAB postings for Long Pond were reported to MDPH based on visual observations for 76 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 C-HABs in 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 Long Pond (MA83010) continues to be assessed as Not Supporting. The prior Algae impairment (from the Aesthetics Use) is being carried forward. Since the Transparency / Clarity impairment was redundantly duplicated across multiple uses for this waterbody, the Transparency / Clarity impairment is being removed from the Secondary Contact Recreation Use but will continue to be maintained under the Primary Contact Recreation 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. An Alert is being identified for Harmful Algal Blooms in this waterbody since C-HAB postings (blooms >15 days in duration) were reported to MDPH for 2022. During the period 2015 through 2022, C-HAB postings for Long Pond were reported to MDPH based on visual observations for 76 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 C-HABs in this waterbody and a recommendation for follow-up sampling will be made.

Meadow Brook (MA83-12)

Location:	Headwaters, outlet Ames Pond, Tewksbury, to confluence with Strong Water Brook, Tewksbury.
AU Type:	RIVER
AU Size:	1.7 MILES
Classification/Qualifier:	B

No usable data were available for Meadow Brook (MA83-12) 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

Pomps Pond (MA83014)

Location:	Andover.
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
5	5	(Non-Native Aquatic Plants*)	--	Unchanged
5	5	Mercury in Fish Tissue	--	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	--	--	--	--
Mercury in Fish Tissue	Atmospheric Deposition (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 Pomps Pond (MA83014) continues to be assessed as Not Supporting and the prior Mercury in Fish Tissue impairment is being carried forward. Fish toxics sampling was conducted in Pomps Pond (MA83014) at station F0380 in 2021 as part of the MassDEP Office of Research and Standards Mercury Initiative. MA DPH included a site-specific advisory for Pomps 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.

Fish Consumption Advisories

Summary of Fish Toxics Sampling and Resulting Fish Consumption Advisories (MA DPH 2025) (MassDEP Undated 5)

Summary Statement
Fish toxics sampling was conducted in Pomps Pond (MA83014) at station F0380 in 2021 as part of the MassDEP Office of Research and Standards Mercury Initiative. MA DPH retained the existing site-specific fish consumption advisories for Mercury associated with Pomps Pond in their January 2025 Freshwater Fish Consumption Advisory List. The site-specific DPH advisories are indicative of a Fish Consumption Use impairment for Mercury in Fish Tissue for Pomps Pond (MA83014).

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for Pomps Pond (MA83014) 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 Pomps Pond (MA83014) 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 Pomps Pond (MA83014) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed.

Pond Street Pond (MA83021)

Location:	Billerica (unnamed pond west of Pond Street).
AU Type:	FRESHWATER LAKE
AU Size:	4 ACRES
Classification/Qualifier:	B

No usable data were available for Pond Street Pond (MA83021) 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

Rabbit Pond (MA83015)

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

No usable data were available for Rabbit Pond (MA83015) 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	Turbidity	--	Unchanged

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

Richardson Pond North (MA83020)

Location:	Billerica/Tewksbury.
AU Type:	FRESHWATER LAKE
AU Size:	46 ACRES
Classification/Qualifier:	B

No usable data were available for Richardson Pond North (MA83020) 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

Rogers Brook (MA83-04)

Location:	From outlet of unnamed impoundment upstream of Morton Street, Andover (Prior to 1997 cycle listed as "Headwaters Billerica...") to confluence with Shawsheen River, Andover.
AU Type:	RIVER
AU Size:	1.3 MILES
Classification/Qualifier:	B

Rogers Brook (MA83-04)

Watershed Area: 1.45 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.45	1.45	0.34	0.34
Agriculture	0%	0%	0%	0%
Developed	39.1%	39.1%	39.6%	39.6%
Natural	52.6%	52.6%	55.9%	55.9%
Wetland	8.3%	8.3%	4.6%	4.6%
Impervious	22.5%	22.5%	26.1%	26.1%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	(Physical Substrate Habitat Alterations*)	--	Unchanged
4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
4a	4a	Fecal Coliform	2587	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Channelization (Y)	X	--	--	--	--

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	--
Escherichia Coli (E. Coli)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) (N)	--	--	--	X	--
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Illicit Connections/Hook-ups to Storm Sewers (N)	--	--	--	X	--
Fecal Coliform	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) (N)	--	--	--	X	--

Recommendations

2024/26 Recommendations
REC: Conduct follow-up sampling in the downstream portion of Rogers Brook (MA83-04) in the vicinity of W0989 to determine whether bacteria concentrations have improved or deteriorated, and whether an impairment of the Secondary Contact Recreation Use is warranted. 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 in Rogers Brook (MA83-04), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Rogers Brook (MA83-04), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria data are available for Rogers Brook (MA83-04), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	YES

2024/26 Use Attainment Summary
No bacteria or other indicator data for Rogers Brook (MA83-04) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. Based on reevaluation of historical data collected in 2005 at W0989, an Alert is being identified and a recommendation will be made for follow-up sampling. MassDEP staff collected historical *E. coli* bacteria samples near the downstream end of Rogers Brook (MA83-04) at W0989 [~550 ft upstream of the confluence with the Shawsheen River in Andover] from May-Sep 2005 (n=5). Analysis of this limited frequency *E. coli* dataset indicated 67% of intervals had GMs >244 CFU/100mL, 1 sample exceeded the 794 CFU/100mL STV, and the overall GM was 434 CFU/100mL. Since these bacteria data were collected prior to the current IR window (2011-2022), they cannot be used to assess the Secondary Contact Recreation Use. An Alert is being identified since they are near the threshold for an impairment of the Secondary Contact Recreation Use per the 2024 CALM and a recommendation will be made for follow-up sampling.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0989	MassDEP	Water Quality	Rogers Brook	[approximately 550 feet upstream of confluence with Shawsheen River, Andover]	42.653950	-71.147490

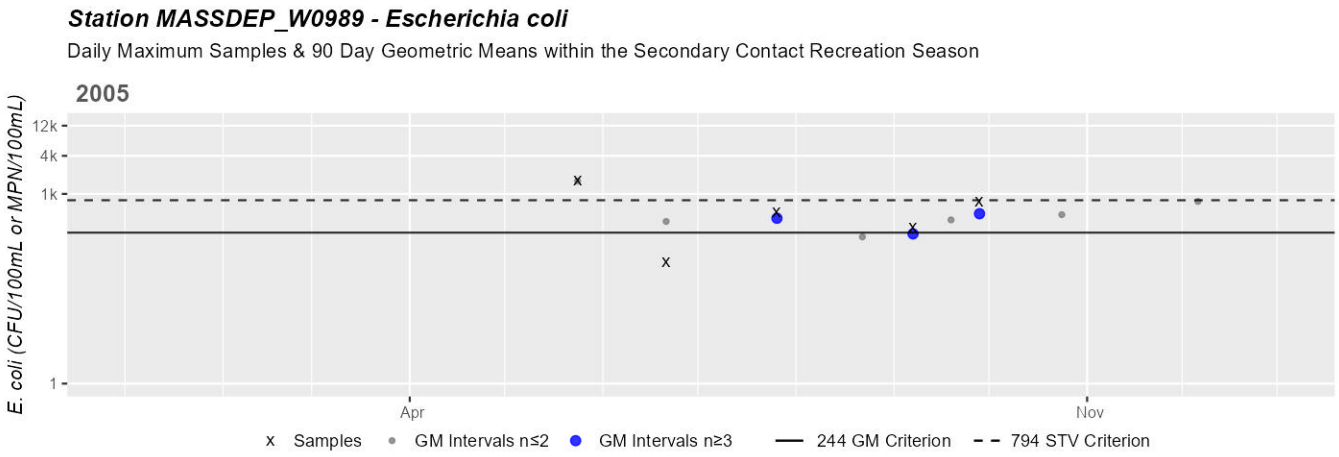
Bacteria Data

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

(MassDEP Undated 7) (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
W0989	MassDEP	E. coli	05/24/05	09/28/05	5	84	1600	434



Variable*	Result
Samples	5
SeasGM	434
#GMI	3
#GMI Ex	2
%GMI Ex	66%
n>STV	1
%n>STV	20%

Cumulative %GMI Exceedance
Historic (1997-2010)
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.*

Round Pond (MA83018)

Location:	Tewksbury.
AU Type:	FRESHWATER LAKE
AU Size:	25 ACRES
Classification/Qualifier:	B

No usable data were available for Round Pond (MA83018) 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

Sandy Brook (MA83-13)

Location:	Headwaters north of Bedford Street and east of Fairfax Street, Burlington to confluence with Vine Brook, Burlington.
AU Type:	RIVER
AU Size:	1.2 MILES
Classification/Qualifier:	B

Sandy Brook (MA83-13)

Watershed Area: 1.20 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.20	1.20	0.15	0.15
Agriculture	0%	0%	0%	0%
Developed	47.7%	47.7%	19.2%	19.2%
Natural	40.8%	40.8%	31%	31%
Wetland	11.5%	11.5%	49.8%	49.8%
Impervious	25.1%	25.1%	9.5%	9.5%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
4a	4a	Fecal Coliform	2587	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	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (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 in Sandy Brook (MA83-13), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Sandy Brook (MA83-13), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No new bacteria data have been collected in Sandy Brook (MA83-13), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are being carried forward.

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

Since bacteria data of sufficient frequency have not been collected in the current IR window (2011-2022), the Secondary Contact Recreation Use for Sandy Brook (MA83-13) continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) impairment is being carried forward based on historical (collected in 2005) bacteria data not meeting the threshold at W1391.
MyRWA staff/volunteers collected one *E. coli* sample in Sandy Brook at MyRWA_SAB01 [no description submitted by MyRWA; 42.497800, -71.217030] in Nov 2011 during the current IR window. While the one sample exceeded the 794 CFU/100mL STV (at 2400 CFU/100mL), the data are too limited to assess per the 2024 CALM. Historically, MassDEP staff collected *E. coli* samples in the brook at W1391 [Sandy Brook Rd in Burlington] from May-Sep 2005 (n=5). Analysis of this limited frequency *E. coli* dataset from W1391 indicated 100% of intervals had GMs >244 CFU/100mL and 2 samples exceeded the 794 CFU/100mL STV (the overall GM was 680 CFU/100mL). These data are indicative of an Escherichia Coli (E. Coli) impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1391	MassDEP	Water Quality	Sandy Brook	[Sandy Brook Road, Burlington]	42.497427	-71.212542
MyRWA_SAB01	Mystic River Watershed Association	Water Quality	Sandy Brook	None submitted by MYRWA	42.497800	-71.217030

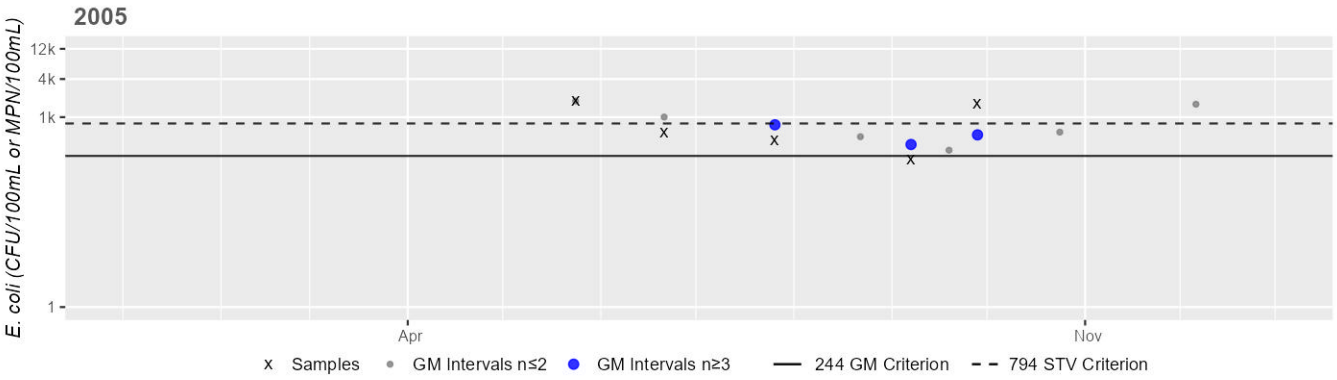
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (MassDEP Undated 3) (MyRWA 2019) (MassDEP Undated 1)
[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
W1391	MassDEP	E. coli	05/24/05	09/28/05	5	210	1800	680
MyRWA_SAB01	Mystic River Watershed Association	E. coli	11/10/11	11/10/11	1	2400	2400	2400

Station MASSDEP_W1391 - Escherichia coli

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



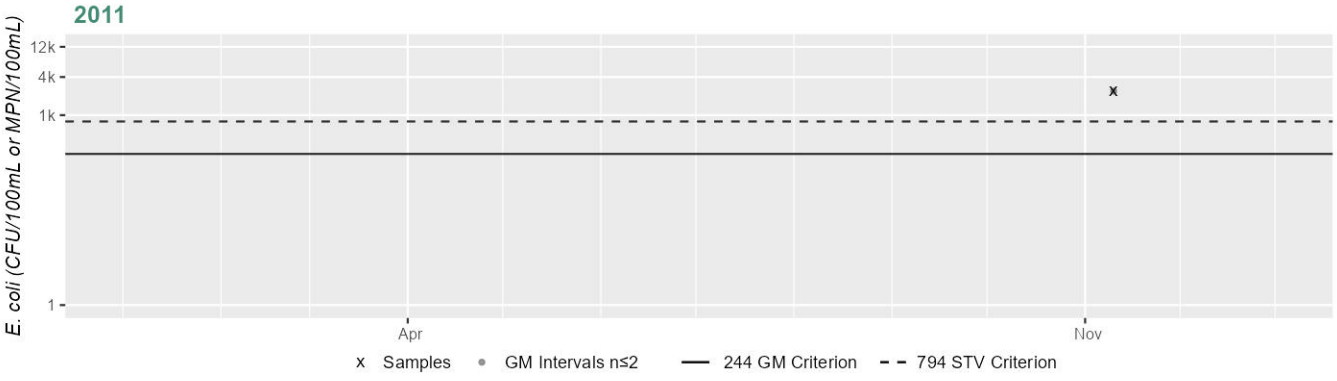
Variable*	Result
Samples	5
SeasGM	680
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	2
%n>STV	40%

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 MyRWA_SAB01 - Escherichia coli

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



Variable*	Result
Samples	1
SeasGM	2400
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	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.*

Shawsheen River (MA83-01)

Location:	Summer Street (historically listed as Maguire Road), Bedford to confluence with Spring Brook, Bedford.
AU Type:	RIVER
AU Size:	1.6 MILES
Classification/Qualifier:	B: TWS, WWF

No usable data were available for Shawsheen River (MA83-01) 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	(Physical Substrate Habitat Alterations*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged
5	5	Sedimentation/Siltation	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Physical Substrate Habitat Alterations*)	Source Unknown (N)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Dissolved Oxygen	Unspecified Urban Stormwater (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Sedimentation/Siltation	Source Unknown (N)	X	--	--	--	--

Shawsheen River (MA83-08)

Location:	Headwater, north of Folly Pond and North Great Road, Lincoln to Summer Street, Bedford.
AU Type:	RIVER
AU Size:	2.1 MILES
Classification/Qualifier:	B: TWS, WWF

Shawsheen River (MA83-08)

Watershed Area: 6.54 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	6.54	6.54	1.29	1.29
Agriculture	0.1%	0.1%	0%	0%
Developed	50.8%	50.8%	40%	40%
Natural	38%	38%	30.5%	30.5%
Wetland	11%	11%	29.5%	29.5%
Impervious	28.8%	28.8%	20.3%	20.3%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Dissolved Oxygen	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged
5	5	Physical Substrate Habitat Alterations	--	Unchanged

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

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Industrial/Commercial Site Stormwater Discharge (Permitted) (N)	--	--	--	X	X
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Industrial/Commercial Site Stormwater Discharge (Permitted) (N)	--	--	--	X	--
Fecal Coliform	Source Unknown (N)	--	--	--	X	--
Physical Substrate Habitat Alterations	Channelization (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 in this Shawsheen River AU (MA83-08), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for this Shawsheen River AU (MA83-08), 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 this Shawsheen River AU (MA83-08) continues to be assessed as Not Supporting. The prior Fecal Coliform and Escherichia coli (E. coli) impairments are 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 this Shawsheen River AU (MA83-08) is assessed as Not Supporting. An Escherichia coli (E. coli) impairment is being added based on a re-evaluation of historical bacteria data collected at USGS-01100568 and MassDEP's W0093 station. MassDEP and USGS staff collected historical *E. coli* bacteria samples in this Shawsheen River AU (MA83-08) from 1997-2005 at 2 stations in Bedford. Samples were collected from the following stations/sample years from upstream to downstream: USGS-01100568 (Shawsheen River at Hanscom Field) in 1997-2000 (n=2-4/yr) and near the downstream end of the AU at W0093 (Summer St) from May-Sep 2005 (n=5). The USGS dataset only contained sufficient amounts of data to assess according to the 2024 CALM in 1997 (n=4) and 1999 (n=3). Analysis of this multi-year limited frequency *E. coli* data indicated >20% of the GMs were >244 CFU/100mL in both years (1997 = 33%; 1999 = 100%) and cumulatively across years 50% of intervals had GMs >244 CFU/100mL- this data indicates poor water quality conditions. Additionally, ≥2 samples (n=3) exceeded the 794 CFU/100mL STV in 1999. Analysis of DEP's single year limited frequency *E. coli* dataset from W0093 revealed that 100% of intervals had GMs >244 CFU/100mL, 1 sample exceeded the 794 CFU/100mL STV, and the overall GM was 258 CFU/100mL, again suggesting poor water quality. The bacteria data from both USGS-01100568 and W0093 are indicative of an *E. coli* impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0093	MassDEP	Water Quality	Shawsheen River	[Summer Street, Bedford]	42.473716	-71.263893
USGS-01100568	USGS Massachusetts Water Science Center	Water Quality	Shawsheen River	Shawsheen River at Hanscom Field Near Bedford, MA	42.467039	-71.272280

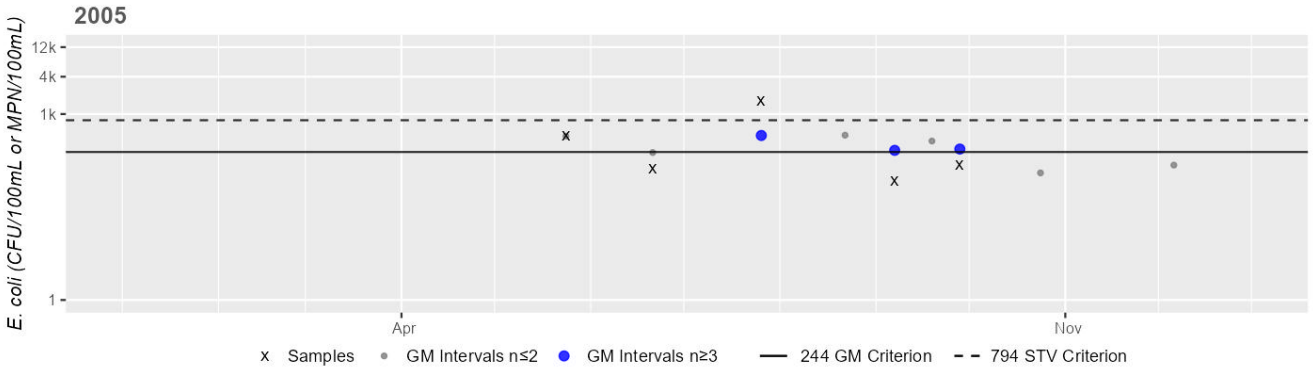
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (MassDEP Undated 3) (USGS 2024) (MassDEP Undated 1)
[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
W0093	MassDEP	E. coli	05/24/05	09/28/05	5	84	1600	258
USGS-01100568	USGS Massachusetts Water Science Center	E. coli	06/27/97	08/28/97	4	80	300	190
USGS-01100568	USGS Massachusetts Water Science Center	E. coli	04/29/98	09/09/98	3	40	110	60
USGS-01100568	USGS Massachusetts Water Science Center	E. coli	09/11/99	09/25/99	3	1600	6900	4134
USGS-01100568	USGS Massachusetts Water Science Center	E. coli	06/28/00	08/21/00	2	190	8200	1248

Station MASSDEP_W0093 - Escherichia coli

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



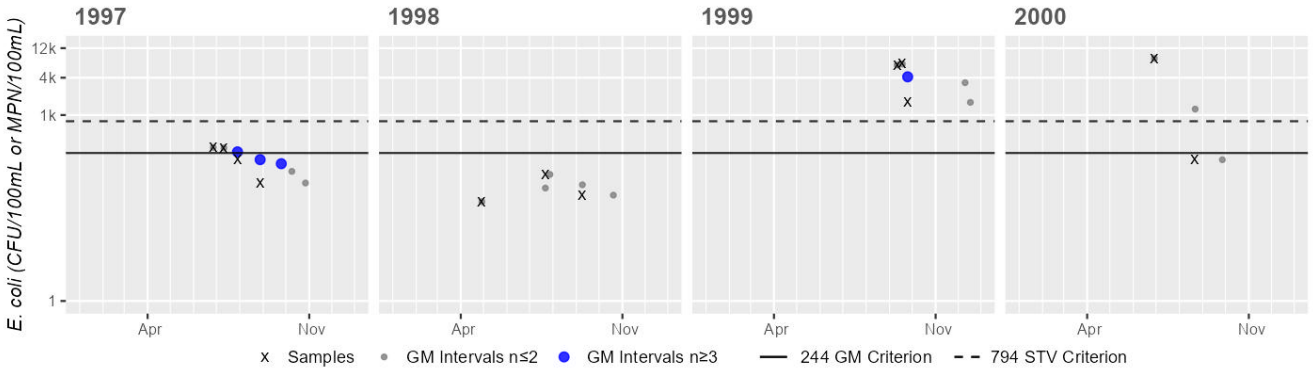
Variable*	Result
Samples	5
SeasGM	258
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	1
%n>STV	20%

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 USGS-01100568 - Escherichia coli

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



Variable*	Result
Samples	4
SeasGM	190
#GMI	3
#GMI Ex	1
%GMI Ex	33%
n>STV	0
%n>STV	0%

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

Variable*	Result
Samples	3
SeasGM	4134
#GMI	1
#GMI Ex	1
%GMI Ex	100%
n>STV	3
%n>STV	100%

Variable*	Result
Samples	2
SeasGM	1248
#GMI	0
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	50%

Cumulative %GMI Exceedance
Historic (1997-2010)
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.*

Shawsheen River (MA83-17)

Location:	Confluence with Spring Brook, Bedford to the Burlington Water Department's surface water intake, Billerica. (formerly part of 2002 segment: Shawsheen River MA83-02).
AU Type:	RIVER
AU Size:	5.7 MILES
Classification/Qualifier:	B: TWS, WWF

Shawsheen River (MA83-17)

Watershed Area: 34.79 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	34.79	9.20	8.02	1.83
Agriculture	0.6%	0.3%	0.2%	0.1%
Developed	41.5%	42.1%	27.7%	25.5%
Natural	43.1%	46.4%	37.2%	44.2%
Wetland	14.8%	11.2%	34.9%	30.2%
Impervious	23.3%	22.6%	15.6%	12.6%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Curly-leaf Pondweed*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--

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
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (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 in this Shawsheen River AU (MA83-17), so the Fish Consumption Use 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 this Shawsheen River AU (MA83-17) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No recent bacteria data have been collected in this Shawsheen River AU (MA83-17), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are 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 this Shawsheen River AU (MA83-17) is assessed as Not Supporting. An Escherichia Coli (E. Coli) impairment is being added based on a re-evaluation of historical bacteria data (collected in 2010) not meeting the threshold at W2149. No data are available from the current IR window (2011-2022). MassDEP staff collected historical *E. coli* bacteria samples in this Shawsheen River AU (MA83-17) from 2005-2010 at 2 stations. Samples were collected from the following stations/sample years from upstream to downstream: in the middle of the AU at W2149 [~350 ft upstream of Middlesex Turnpike in Bedford] from May-Sep 2010 (n=6) and farther downstream at W0091 [Rt. 3A in Billerica] from May-Sep 2005 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2149 indicated 83% of intervals had GMs >244 CFU/100mL and 2 samples exceeded the 794 CFU/100mL STV (the overall GM was 489 CFU/100mL); these data are indicative of poor water quality. Analysis of the single year limited frequency *E. coli* dataset from W0091 indicated 66% of intervals had GMs >244 CFU/100mL, 1 sample exceeded the 794 CFU/100mL STV, and the overall GM was 476 CFU/100mL; while these data do not meet impairment thresholds per the 2024 CALM, they are borderline.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0091	MassDEP	Water Quality	Shawsheen River	[Route 3A, Billerica]	42.534419	-71.233573
W2149	MassDEP	Water Quality	Shawsheen River	[approximately 350 feet upstream of Middlesex Turnpike, Bedford]	42.517079	-71.244712

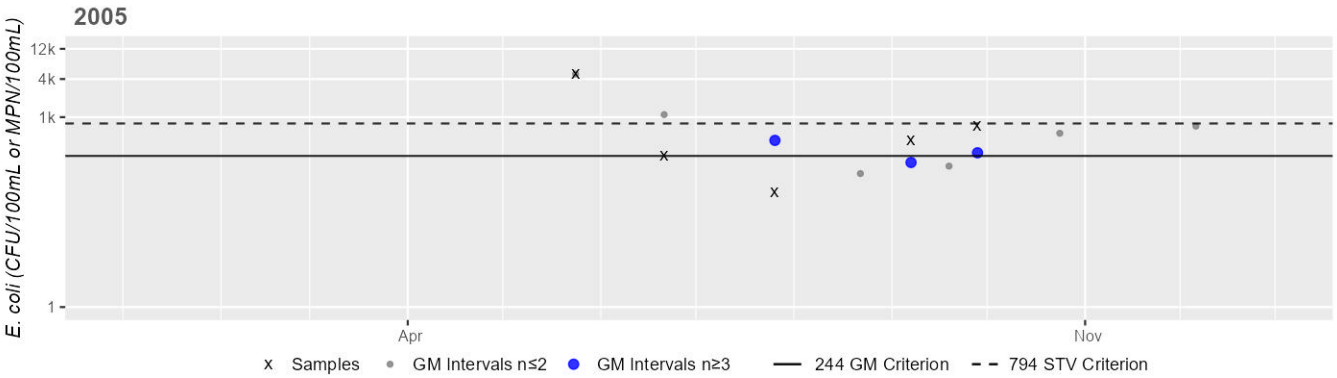
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0091	MassDEP	E. coli	05/24/05	09/28/05	5	66	4800	476
W2149	MassDEP	E. coli	05/18/10	09/29/10	6	120	2100	489

Station MASSDEP_W0091 - Escherichia coli

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



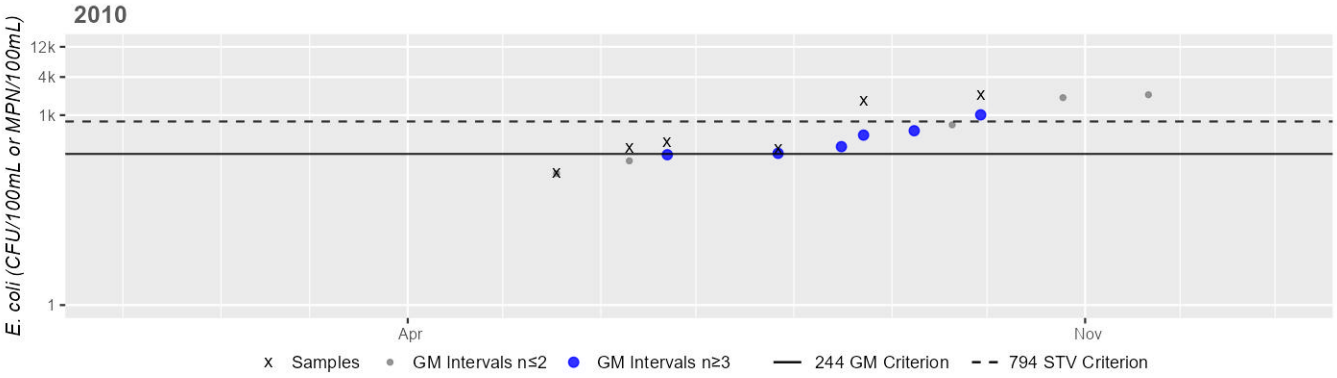
Variable*	Result
Samples	5
SeasGM	476
#GMI	3
#GMI Ex	2
%GMI Ex	66%
n>STV	1
%n>STV	20%

Cumulative %GMI Exceedance
Historic (1997-2010)
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.*

Station MASSDEP_W2149 - Escherichia coli

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



Variable*	Result
Samples	6
SeasGM	489
#GMI	6
#GMI Ex	5
%GMI Ex	83%
n>STV	2
%n>STV	33%

Cumulative %GMI Exceedance
Historic (1997-2010)
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.*

Shawsheen River (MA83-18)

Location:	Burlington Water Department's surface water intake, Billerica to the inlet of Ballardvale Impoundment, Andover (formerly part of 2002 segment: Shawsheen River MA83-02) (since 2016 cycle: excludes Ballardvale Impoundment, pond segment MA83011).
AU Type:	RIVER
AU Size:	9.5 MILES
Classification/Qualifier:	B: WWF

Shawsheen River (MA83-18)

Watershed Area: 64.69 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	64.69	13.09	16.29	3.89
Agriculture	1%	2.2%	0.8%	1.9%
Developed	37.5%	28.9%	24.3%	18.3%
Natural	45.2%	51%	41.1%	48.9%
Wetland	16.3%	17.8%	33.8%	31%
Impervious	20.6%	16.2%	13.2%	9.2%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged
5	5	Mercury 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	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Source Unknown (N)	--	--	--	X	--
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 this Shawsheen River AU (MA83-18) is assessed as Not Supporting with a new impairment being added for Mercury in Fish Tissue. Based on recent geographic analysis of MA DPH's historical mercury advisory for the Ballardvale Impoundment, the existing advisory for mercury is being applied to the Shawsheen River in Andover, which includes this MA83-18 AU. 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. The likely source of Mercury, although not confirmed, is atmospheric deposition.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available, so the Aesthetics Use for this Shawsheen River AU (MA83-18) is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria data have been collected recently in this Shawsheen River AU (MA83-18), so the Primary Contact Recreation Use continues to be assessed as Not Supporting with the prior Escherichia Coli (E. Coli) and Fecal Coliform impairments being carried forward. Surface water sampling was conducted by the USGS on this Shawsheen River AU (MA83-18) at station USGS-011006065 at Bridge Street near Tewksbury, MA on three dates during September 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 (however, this station was not associated with a WWTF). 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).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
USGS-011006065	USGS Massachusetts Water Science Center	Water Quality	Shawsheen River	SHAWSHEEN RIVER AT BRIDGE STREET NR TEWKSBURY, MA; no WWTF	42.595000	-71.195000

Other Indicators

Summary Statement(s) for USGS 2020 PFAS in Water Column Data (Savoie and Argue 2023) (MassDEP Undated 2)

Summary
Surface water sampling was conducted by the USGS on the Shawsheen River (MA83-18) at station USGS-011006065 at Bridge Street near Tewksbury, MA on three dates during September 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 (however, this station was not associated with a WWTF). 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 2)

[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-011006065	9/2/2020	15.2	E55.3	2.06	25.7	11.8	6.9	108.2*
USGS-011006065	9/25/2020	13.1	E24.7	E1.31	E14.2	9.68	5.83	60.8*
USGS-011006065	10/26/2020	10.7	18.2	E1.06	13.5	11.5	5.33	49.2*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary

No bacteria or other indicator data for this Shawsheen River AU (MA83-18) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected historical *E. coli* bacteria samples in this Shawsheen River AU (MA83-18) from 2005-2010 at 5 stations. Samples were collected from the following stations/sample years from upstream to downstream: W0089 [at USGS flow gaging station #01100600 near Rt. 129, Billerica/Wilmington] from May-Sep 2005 (n=5), W2147 [~550 ft downstream of Salem Rd (Rt. 129), Wilmington/Billerica] from May-Sep 2010 (n=6), W1392 [Mill St, Tewksbury] from May-Sep 2005 (n=5), W2144 [~50 ft downstream of Mill St, Tewksbury] from May-Sep 2010 (n=6), W2148 [~2600 ft downstream of Rt. 93, Andover] from May-Sep 2010 (n=6). Analysis of these historical, single year, limited frequency datasets indicated there were no exceedances among samples from the two stations sampled in 2005 (W0089 & W1392), while among the stations sampled in 2010 (W2147, W2144 & W2148), 33-50% of intervals had GMs >244 CFU/100mL and 0-1 sample exceeded the 794 CFU/100mL STV. Overall GMs among all stations ranged from 99-254 CFU/100mL. As a whole, the historical *E. coli* data are indicative of adequate water quality, but since they were collected prior to the current IR window, they cannot be used to assess the Secondary Contact Recreation Use.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0089	MassDEP	Water Quality	Shawsheen River	[at USGS flow gaging station #01100600 near Route 129, Billerica/Wilmington]	42.568154	-71.215175
W1392	MassDEP	Water Quality	Shawsheen River	[Mill Street, Tewksbury]	42.599663	-71.193061
W2144	MassDEP	Water Quality	Shawsheen River	[approximately 50 feet downstream of Mill Street, Tewksbury]	42.599846	-71.193067
W2147	MassDEP	Water Quality	Shawsheen River	[approximately 550 feet downstream of Salem Road (Route 129), Wilmington/Billerica]	42.569453	-71.215268
W2148	MassDEP	Water Quality	Shawsheen River	[approximately 2600 feet downstream of Route 93, Andover]	42.617047	-71.167895

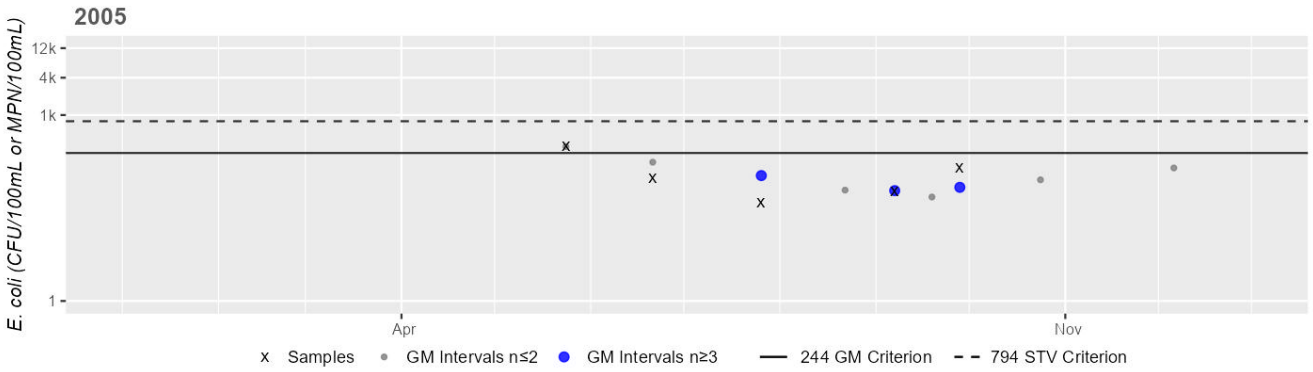
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0089	MassDEP	E. coli	05/24/05	09/28/05	5	39	310	99
W1392	MassDEP	E. coli	05/24/05	09/28/05	5	97	300	156
W2144	MassDEP	E. coli	05/18/10	09/29/10	6	60	580	225
W2147	MassDEP	E. coli	05/18/10	09/29/10	6	67	1700	254
W2148	MassDEP	E. coli	05/18/10	09/29/10	6	50	450	204

Station MASSDEP_W0089 - Escherichia coli

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



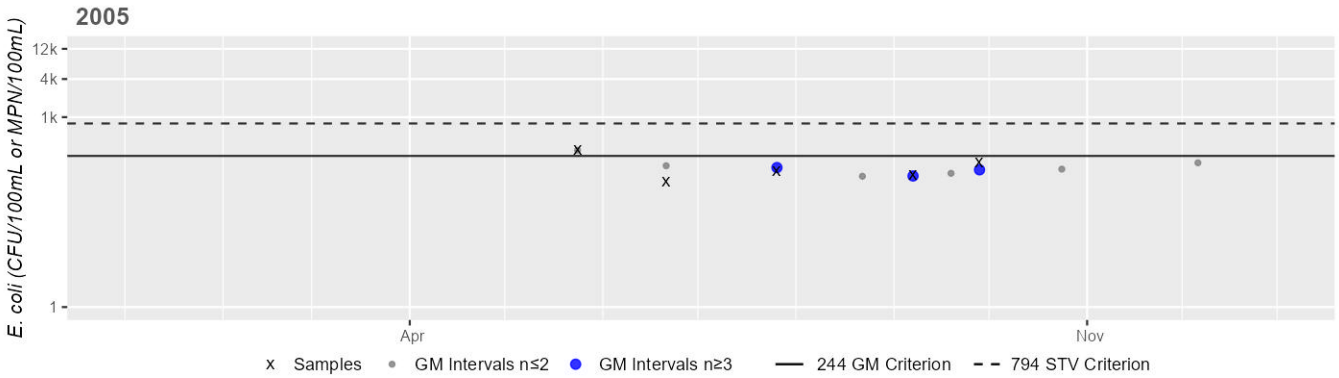
Variable*	Result
Samples	5
SeasGM	99
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W1392 - Escherichia coli

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



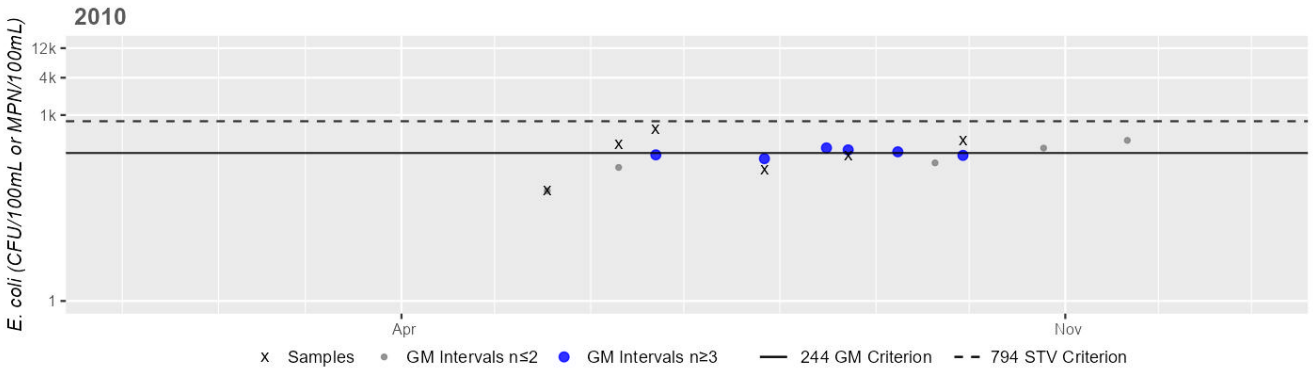
Variable*	Result
Samples	5
SeasGM	156
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W2144 - Escherichia coli

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



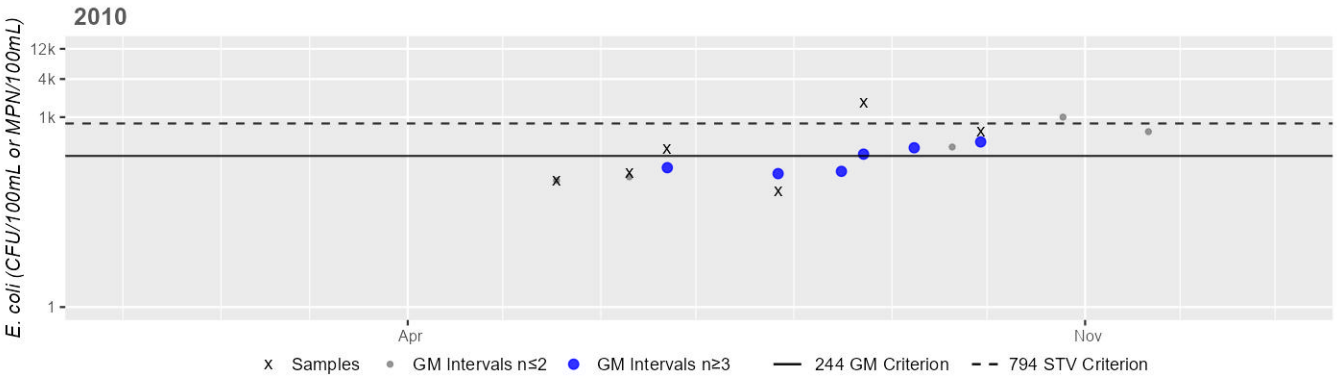
Variable*	Result
Samples	6
SeasGM	225
#GMI	6
#GMI Ex	3
%GMI Ex	50%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
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 MASSDEP_W2147 - Escherichia coli

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



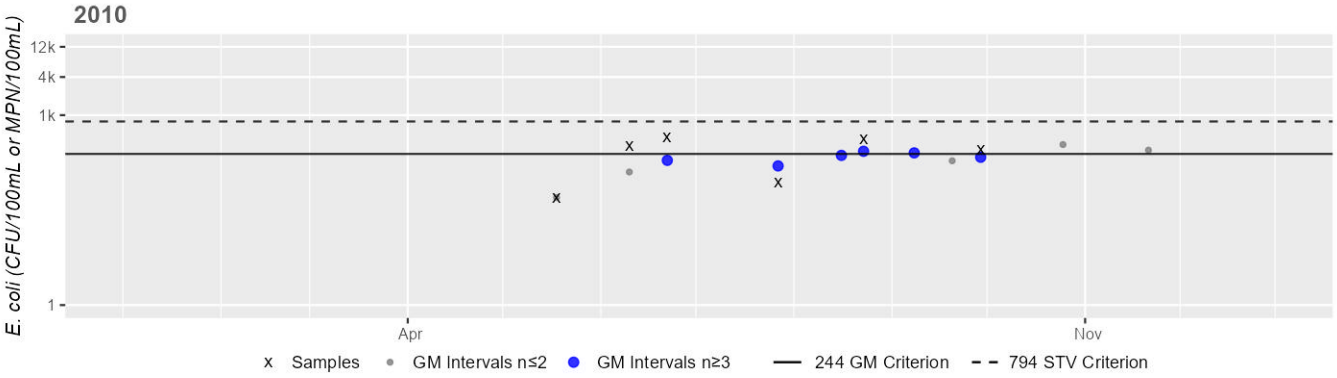
Variable*	Result
Samples	6
SeasGM	254
#GMI	6
#GMI Ex	3
%GMI Ex	50%
n>STV	1
%n>STV	16%

Cumulative %GMI Exceedance
Historic (1997-2010)
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 MASSDEP_W2148 - Escherichia coli

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



Variable*	Result
Samples	6
SeasGM	204
#GMI	6
#GMI Ex	2
%GMI Ex	33%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
33%

**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.*

Shawsheen River (MA83-19)

Location:	Outlet of Ballardvale Impoundment, Andover to the confluence with the Merrimack River, Lawrence. (formerly part of 2002 segment: Shawsheen River MA83-02 and all of 2002 segment: Shawsheen River MA83-03).
AU Type:	RIVER
AU Size:	8.2 MILES
Classification/Qualifier:	B: WWF

Shawsheen River (MA83-19)

Watershed Area: 77.60 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	77.60	6.74	19.78	1.52
Agriculture	1%	1.4%	0.8%	0%
Developed	38%	48.3%	25.1%	34.5%
Natural	46.1%	42.9%	42.9%	42%
Wetland	14.9%	7.5%	31.3%	23.5%
Impervious	21.1%	29.8%	13.8%	19.9%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	(Fish Passage Barrier*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged
5	5	Mercury 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	--	--	--	--
(Fish Passage Barrier*)	Dam or Impoundment (Y)	X	--	--	--	--
Benthic Macroinvertebrates	Source Unknown (N)	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)	Source Unknown (N)	--	--	--	X	X
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Fecal Coliform	Illicit Connections/Hook-ups to Storm Sewers (N)	--	--	--	X	--
Fecal Coliform	Source Unknown (N)	--	--	--	X	--
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 this Shawsheen River AU (MA83-19) is assessed as Not Supporting with a new impairment being added for Mercury in Fish Tissue. Based on recent geographic analysis of MA DPH's historical mercury advisory for the Ballardvale Impoundment, the existing advisory for mercury is being applied to the Shawsheen River in Andover, which includes this MA83-19 AU. 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. The likely source of Mercury, although not confirmed, is atmospheric deposition.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for this Shawsheen River AU (MA83-19) is assessed as Fully Supporting based on the observations of MassDEP field sampling staff during summer 2015 at W2538 and W2523.
MassDEP staff recorded aesthetics observations at two stations on this Shawsheen River AU during summer 2015; in the middle of the AU ~1900 ft upstream/north of Central Street in Andover (W2538, n=5) and close to the downstream end of the AU ~1300 ft downstream/west of the Rt. 495 crossing nearest the Mass Ave ramp to Rt. 495 southbound in Lawrence (W2523, n=5). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted minor trash on three occasions at W2523.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2523	MassDEP	Water Quality	Shawsheen River	[approximately 1300 feet downstream/west of Route 495 crossing nearest the Massachusetts Avenue ramp to Route 495 southbound, Lawrence]	42.697117	-71.143995
W2538	MassDEP	Water Quality	Shawsheen River	[approximately 1900 feet upstream/north of Central Street, Andover]	42.652195	-71.150971

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 4)
[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2523	2015	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2523 on Shawsheen River (MA83-19) during 5 site visits between May 2015 and Sep 2015. There were generally no persistent objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted objectionable deposits (n=3).

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2538	2015	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2538 on Shawsheen River (MA83-19) during 5 site visits between May 2015 and Sep 2015. 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 7) (MassDEP Undated 4)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2523	2015	5	4	0
W2538	2015	5	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2523	Shawsheen River	2015	Aesthetics Impaired?	No	5	5
W2523	Shawsheen River	2015	Aquatic Plant Density, Overall	None	4	5
W2523	Shawsheen River	2015	Aquatic Plant Density, Overall	Unobservable	1	5
W2523	Shawsheen River	2015	Color	Light Yellow/Tan	4	5
W2523	Shawsheen River	2015	Color	None	1	5
W2523	Shawsheen River	2015	Objectionable Deposits	No	2	5
W2523	Shawsheen River	2015	Objectionable Deposits	Yes	3	5
W2523	Shawsheen River	2015	Odor	None	5	5
W2523	Shawsheen River	2015	Periphyton Density, Filamentous	None	2	5
W2523	Shawsheen River	2015	Periphyton Density, Filamentous	NR	1	5
W2523	Shawsheen River	2015	Periphyton Density, Filamentous	Sparse	1	5
W2523	Shawsheen River	2015	Periphyton Density, Filamentous	Unobservable	1	5
W2523	Shawsheen River	2015	Periphyton Density, Film	Moderate	1	5
W2523	Shawsheen River	2015	Periphyton Density, Film	None	3	5
W2523	Shawsheen River	2015	Periphyton Density, Film	Unobservable	1	5
W2523	Shawsheen River	2015	Scum	No	4	5
W2523	Shawsheen River	2015	Scum	Yes	1	5
W2523	Shawsheen River	2015	Turbidity	Slightly Turbid	5	5
W2538	Shawsheen River	2015	Aesthetics Impaired?	No	5	5
W2538	Shawsheen River	2015	Aquatic Plant Density, Overall	Dense	1	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2538	Shawsheen River	2015	Aquatic Plant Density, Overall	Moderate	2	5
W2538	Shawsheen River	2015	Aquatic Plant Density, Overall	None	1	5
W2538	Shawsheen River	2015	Aquatic Plant Density, Overall	Unobservable	1	5
W2538	Shawsheen River	2015	Color	Light Yellow/Tan	3	5
W2538	Shawsheen River	2015	Color	None	2	5
W2538	Shawsheen River	2015	Objectionable Deposits	No	4	5
W2538	Shawsheen River	2015	Objectionable Deposits	Unobservable	1	5
W2538	Shawsheen River	2015	Odor	None	5	5
W2538	Shawsheen River	2015	Periphyton Density, Filamentous	Moderate	1	5
W2538	Shawsheen River	2015	Periphyton Density, Filamentous	None	1	5
W2538	Shawsheen River	2015	Periphyton Density, Filamentous	Sparse	2	5
W2538	Shawsheen River	2015	Periphyton Density, Filamentous	Unobservable	1	5
W2538	Shawsheen River	2015	Periphyton Density, Film	Moderate	1	5
W2538	Shawsheen River	2015	Periphyton Density, Film	None	2	5
W2538	Shawsheen River	2015	Periphyton Density, Film	NR	1	5
W2538	Shawsheen River	2015	Periphyton Density, Film	Unobservable	1	5
W2538	Shawsheen River	2015	Scum	No	4	5
W2538	Shawsheen River	2015	Scum	Yes	1	5
W2538	Shawsheen River	2015	Turbidity	Moderately Turbid	1	5
W2538	Shawsheen River	2015	Turbidity	None	4	5

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Primary Contact Recreation Use for this Shawsheen River AU (MA83-19) 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 DEP stations W2538 and W2523 during summer 2015. The prior Fecal Coliform impairment is also being carried forward. MassDEP and USGS staff collected *E. coli* bacteria samples in this Shawsheen River AU (MA83-19) from 2015-2022 at 3 stations. Samples were collected from the following stations/sample years from upstream to downstream: DEP's W2538 [~1900 ft upstream/N of Central St, Andover] from May-Sep 2015 (n=5), USGS-01100627 [Shawsheen River at Balmoral St, Andover] in 2021 & 2022 (n= 7 & 4/yr, respectively), and near the downstream end of the AU at DEP's W2523 [~1300 ft downstream/W of Rt. 495 crossing nearest the Mass Ave ramp to Rt. 495 southbound, Lawrence] from May-Sep 2015 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2538 indicated 100% of intervals had GMs >126 CFU/100mL, and 1 sample exceeded the 410 CFU/100mL STV (the seasonal GM was 279 CFU/100mL). Analysis of the multi-year moderate/limited frequency *E. coli* dataset from USGS-01100627 indicated that only 2021 was a year with exceedances- >20% (83%) of intervals had GMs >126 CFU/100mL and 3 samples exceeded the 410 CFU/100mL STV. There were no GM or STV exceedances in 2022. Cumulatively across years, 62% of intervals had GMs >126 CFU/100mL. Analysis of the single year limited frequency *E. coli* dataset from W2523 indicated 100% of intervals had GMs >126 CFU/100mL and 1 sample exceeded the 410 CFU/100mL STV (the seasonal GM was 381 CFU/100mL). *E. coli* data from USGS-01100627 do not meet thresholds for a use impairment, however *E. coli* data from both W2538 and W2523 are indicative of an Escherichia Coli (E. Coli) impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2523	MassDEP	Water Quality	Shawsheen River	[approximately 1300 feet downstream/west of Route 495 crossing nearest the Massachusetts Avenue ramp to Route 495 southbound, Lawrence]	42.697117	-71.143995
W2538	MassDEP	Water Quality	Shawsheen River	[approximately 1900 feet upstream/north of Central Street, Andover]	42.652195	-71.150971
USGS-01100627	USGS Massachusetts Water Science Center	Water Quality	Shawsheen River	Shawsheen River at Balmoral Street at Andover, MA	42.671481	-71.149224

Bacteria Data

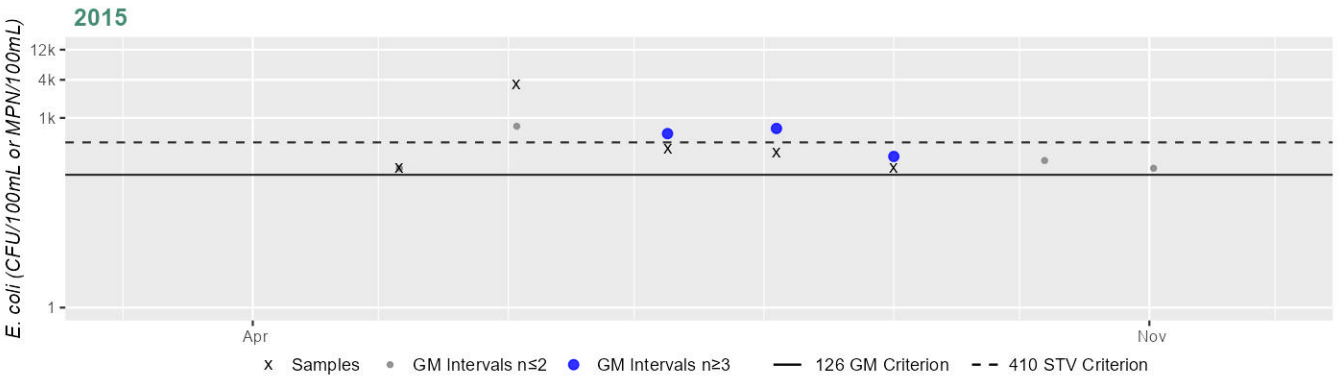
Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (MassDEP Undated 4) (USGS 2024) (MassDEP Undated 2)
[Result units are CFU/100mL or MPN/100mL]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2523	MassDEP	E. coli	05/06/15	09/01/15	5	160	3400	381
W2538	MassDEP	E. coli	05/06/15	09/01/15	5	95	2600	279

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
USGS-01100627	USGS Massachusetts Water Science Center	E. coli	04/05/21	10/13/21	7	35	10000	401
USGS-01100627	USGS Massachusetts Water Science Center	E. coli	04/05/22	07/05/22	4	46	190	90

Station MASSDEP_W2523 - Escherichia coli

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



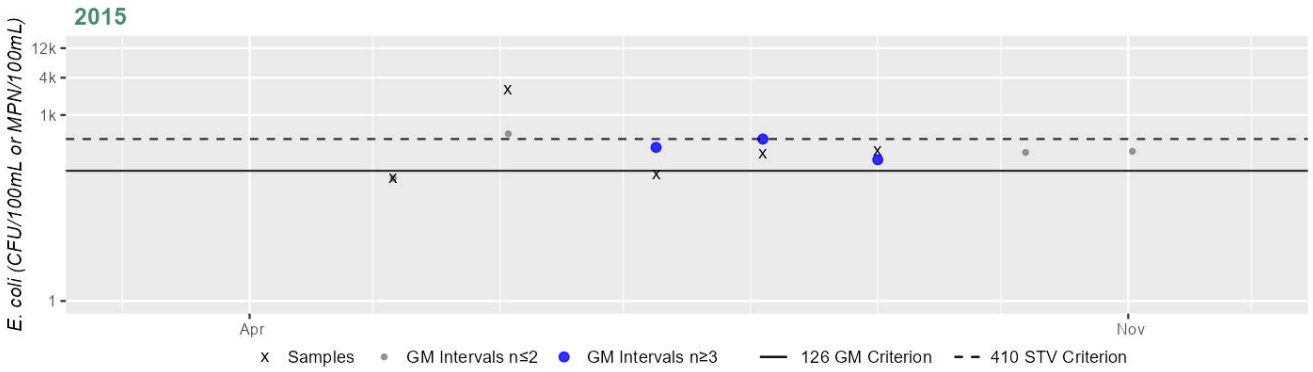
Variable*	Result
Samples	5
SeasGM	381
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	1
%n>STV	20%

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_W2538 - Escherichia coli

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



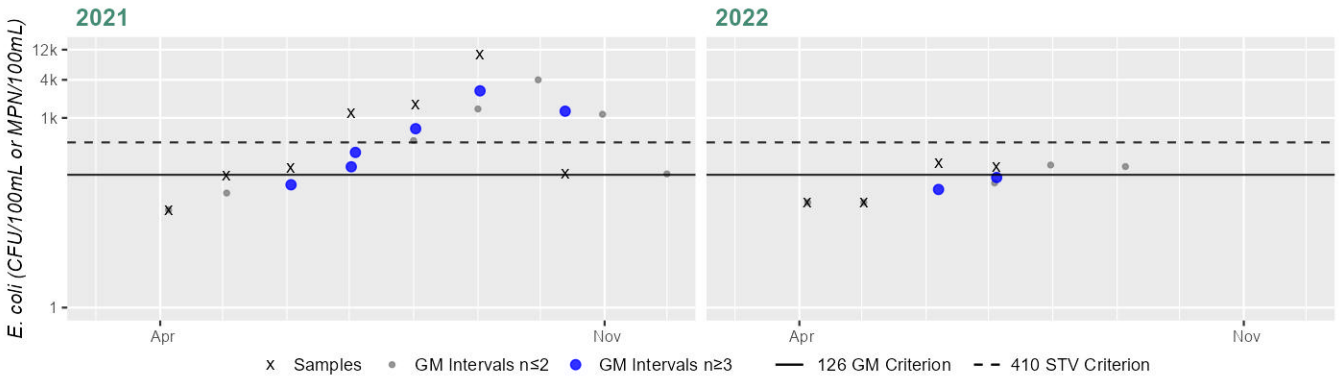
Variable*	Result
Samples	5
SeasGM	279
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	1
%n>STV	20%

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 USGS-01100627 - Escherichia coli

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



Variable*	Result
Samples	7
SeasGM	401
#GMI	6
#GMI Ex	5
%GMI Ex	83%
n>STV	3
%n>STV	42%

Variable*	Result
Samples	4
SeasGM	90
#GMI	2
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
62%

**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 this Shawsheen River AU (MA83-19) is assessed as Not Supporting. An Escherichia Coli (E. Coli) impairment is being added based on a re-evaluation of bacteria data collected in 2015 at W2523 not meeting the threshold. MassDEP and USGS staff collected *E. coli* bacteria samples in both the historic (1997-2010) & the current IR window (2011-2022) in this Shawsheen River AU (MA83-19) from 2005-2022 at 6 stations. Samples were collected from the following stations/sample years from upstream to downstream (stations with an * were visited during the current IR window and will be discussed in more detail): in the middle of the AU DEP's W0086 [Central St, Andover] from May-Sep 2005 (n=5), DEP's W2538* [~1900 ft upstream/N of Central St, Andover] from May-Sep 2015 (n=5), USGS-01100627* [Shawsheen River at Balmoral St, Andover] in 2021 & 2022 (n= 9 & 7/yr, respectively), and DEP's W2146 [~2800 ft downstream of Winthrop Avenue (Rt. 114), Lawrence] from May-Oct 2010 (n=6), and near the downstream end of the AU at DEP's W2523* [~1300 ft downstream/W of Rt. 495 crossing nearest the Mass Ave ramp to Rt. 495 southbound, Lawrence] from May-Sep 2015 (n=5) and DEP's W0082 [Loring St, Lawrence] from May-Sep 2005 (n=5). Analysis of the single year limited frequency *E. coli* dataset from W2538 indicated 66% of intervals had GMs >244 CFU/100mL and 1 sample exceeded the 794 CFU/100mL STV (the overall GM was 279 CFU/100mL). Analysis of the multi-year moderate frequency *E. coli* dataset from USGS-01100627 indicated that only 2021 was a year with exceedances- >20% (62%) of the GMs were >244 CFU/100mL and 4 samples exceeded the 794 CFU/100mL STV. There were no GM or STV exceedances in 2022. Cumulatively across years, 31% of intervals had GMs >126 CFU/100mL. Analysis of the single year limited frequency *E. coli* dataset from W2523 indicated 100% of intervals had GMs >244 CFU/100mL and 1 sample exceeded the 794 CFU/100ml STV (the overall GM was 381 CFU/100mL). Of the three stations with data from the current IR window, the *E. coli* data from W2523 in the downstream part of the AU are indicative of an Escherichia Coli (E. Coli) impairment. The historic data from the other three stations (W0086, W2146, W0082) showed a similar pattern, with the downstream two (W2146, W0082) of the three historic stations having data indicative of poor water quality conditions. However, since these data were collected prior to the current IR window, they are not being used as the basis for the assessment of the Secondary Contact Recreation Use of this Shawsheen River AU (MA83-19).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0082	MassDEP	Water Quality	Shawsheen River	[Loring Street, Lawrence]	42.698973	-71.144786
W0086	MassDEP	Water Quality	Shawsheen River	[Central Street, Andover]	42.647446	-71.150803

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2146	MassDEP	Water Quality	Shawsheen River	[approximately 2800 feet downstream of Winthrop Avenue (Route 114), Lawrence]	42.687934	-71.138651
W2523	MassDEP	Water Quality	Shawsheen River	[approximately 1300 feet downstream/west of Route 495 crossing nearest the Massachusetts Avenue ramp to Route 495 southbound, Lawrence]	42.697117	-71.143995
W2538	MassDEP	Water Quality	Shawsheen River	[approximately 1900 feet upstream/north of Central Street, Andover]	42.652195	-71.150971
USGS-01100627	USGS Massachusetts Water Science Center	Water Quality	Shawsheen River	Shawsheen River at Balmoral Street at Andover, MA	42.671481	-71.149224

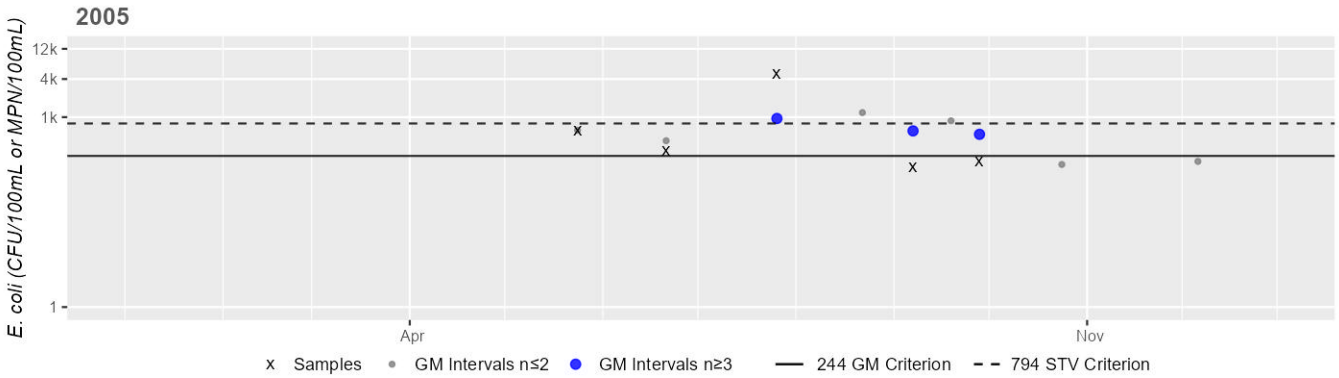
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (MassDEP Undated 3) (USGS 2024) (MassDEP Undated 1)
[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
W0082	MassDEP	E. coli	05/24/05	09/28/05	5	160	4800	487
W0086	MassDEP	E. coli	05/24/05	09/28/05	5	45	230	88
W2146	MassDEP	E. coli	05/25/10	10/05/10	6	140	670	230
W2523	MassDEP	E. coli	05/06/15	09/01/15	5	160	3400	381
W2538	MassDEP	E. coli	05/06/15	09/01/15	5	95	2600	279
USGS-01100627	USGS Massachusetts Water Science Center	E. coli	04/05/21	12/13/21	9	35	10000	377
USGS-01100627	USGS Massachusetts Water Science Center	E. coli	01/25/22	07/05/22	7	46	220	102

Station MASSDEP_W0082 - Escherichia coli

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



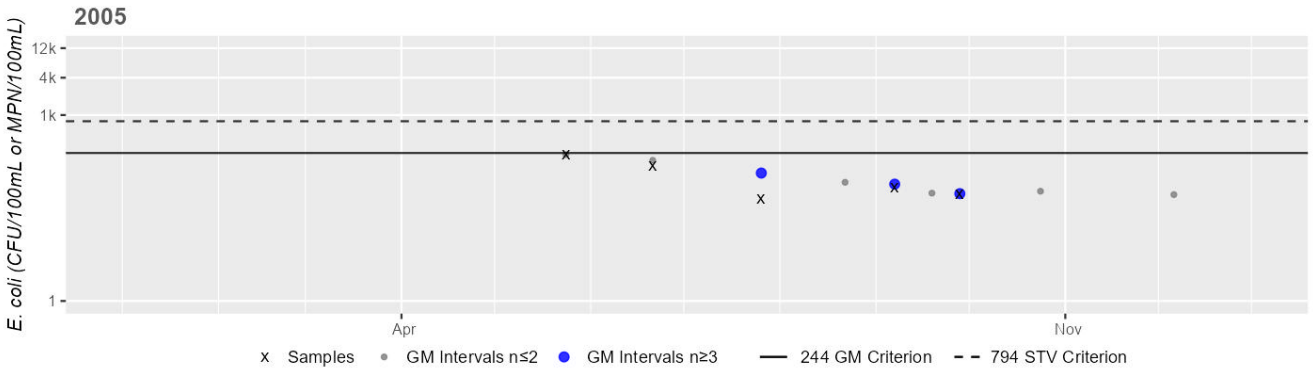
Variable*	Result
Samples	5
SeasGM	487
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	1
%n>STV	20%

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_W0086 - Escherichia coli

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



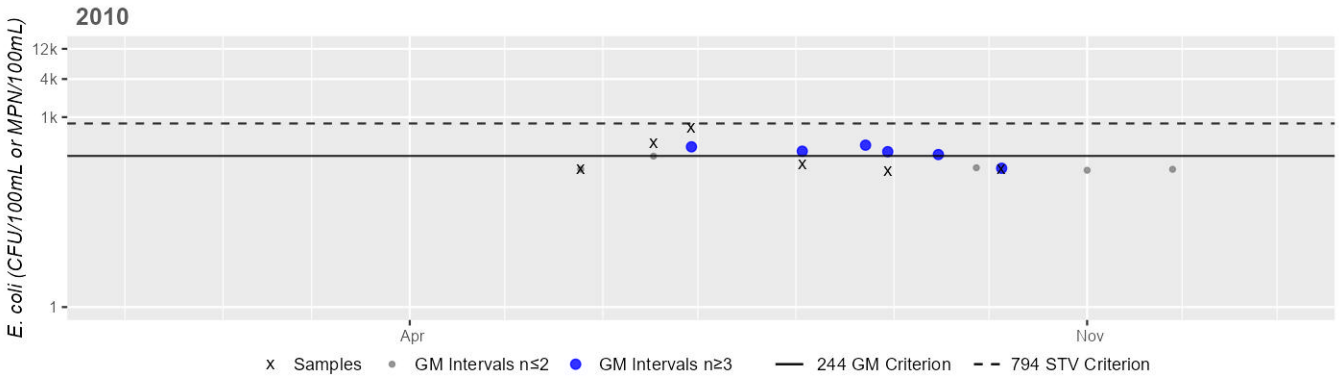
Variable*	Result
Samples	5
SeasGM	88
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W2146 - Escherichia coli

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



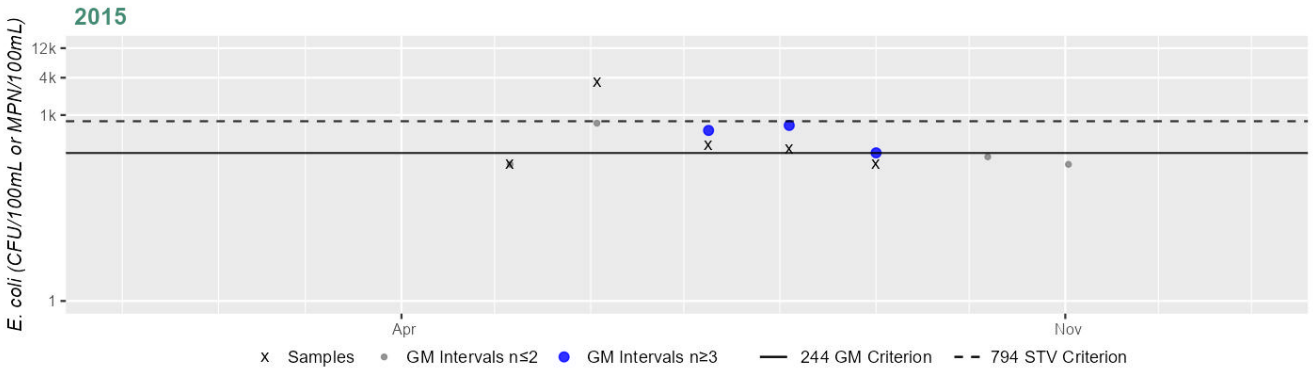
Variable*	Result
Samples	6
SeasGM	230
#GMI	6
#GMI Ex	5
%GMI Ex	83%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Historic (1997-2010)
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.*

Station MASSDEP_W2523 - Escherichia coli

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



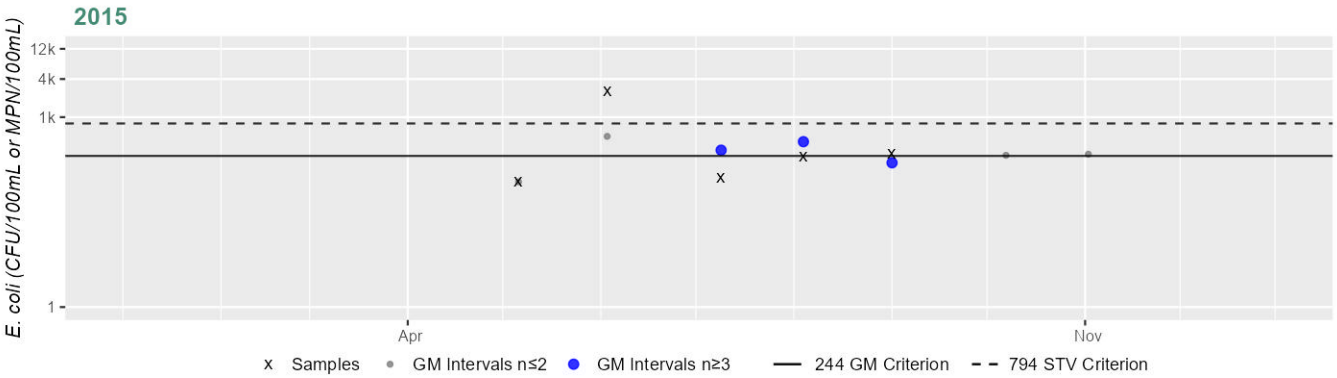
Variable*	Result
Samples	5
SeasGM	381
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	1
%n>STV	20%

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_W2538 - Escherichia coli

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



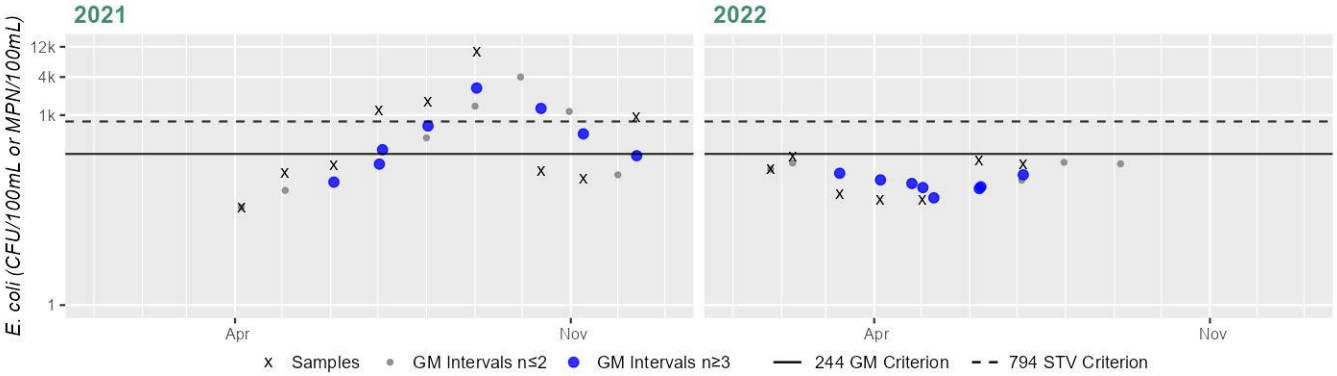
Variable*	Result
Samples	5
SeasGM	279
#GMI	3
#GMI Ex	2
%GMI Ex	66%
n>STV	1
%n>STV	20%

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.*

Station USGS-01100627 - Escherichia coli

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



Variable*	Result
Samples	9
SeasGM	377
#GMI	8
#GMI Ex	5
%GMI Ex	62%
n>STV	4
%n>STV	44%

Variable*	Result
Samples	7
SeasGM	102
#GMI	8
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

Cumulative %GMI Exceedance
Current (2011-2022)
31%

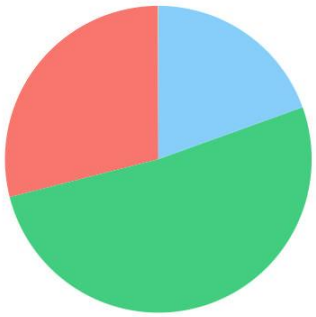
**Samples = # of samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = # of GM Intervals; #GMI Ex = # of GMI Exeedances; %GMI Ex = % GMI Exeedances; n>STV = # of samples > Statistical Threshold Value (STV); %n > STV = % of samples > STV; "Recent 5 Years" may not be consecutive as the analysis excludes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

Spring Brook (MA83-14)

Location:	Headwaters, wetland northeast of Route 3 Billerica, to confluence with Shawsheen River, Bedford.
AU Type:	RIVER
AU Size:	2.6 MILES
Classification/Qualifier:	B

Spring Brook (MA83-14)

Watershed Area: 2.31 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	2.31	2.31	0.63	0.63
Agriculture	0.1%	0.1%	0%	0%
Developed	28.9%	28.9%	13.9%	13.9%
Natural	51.5%	51.5%	46.1%	46.1%
Wetland	19.5%	19.5%	40%	40%
Impervious	15%	15%	4.3%	4.3%

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

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Baseflow Depletion from Groundwater Withdrawals (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

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 in Spring Brook (MA83-14), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Fully Supporting	NO

2024/26 Use Attainment Summary
The Aesthetics Use of Spring Brook (MA83-14) is assessed as Fully Supporting based on the observations of MassDEP field sampling staff during summer 2015. MassDEP staff recorded aesthetics observations at one station on Spring Brook, approximately 250 feet upstream of the mouth of the brook (and the confluence with the Shawsheen River) in Bedford (W2535) during summer 2015 (n=4). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2535	MassDEP	Water Quality	Spring Brook	[approximately 250 feet upstream of mouth at confluence with Shawsheen River, Bedford]	42.494062	-71.255983

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 4)
[Note: scums of natural origins (e.g. pollen blankets or natural foams) are excluded.]

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2535	2015	4	Aesthetic observations were made by MassDEP field sampling crews at Station W2535 on Spring Brook (MA83-14) during 4 site visits between May 2015 and Jul 2015. 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 7) (MassDEP Undated 4)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2535	2015	4	4	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2535	Spring Brook	2015	Aesthetics Impaired?	No	4	4
W2535	Spring Brook	2015	Aquatic Plant Density, Overall	None	3	4
W2535	Spring Brook	2015	Aquatic Plant Density, Overall	Sparse	1	4
W2535	Spring Brook	2015	Color	Light Yellow/Tan	2	4
W2535	Spring Brook	2015	Color	None	1	4
W2535	Spring Brook	2015	Color	Reddish	1	4
W2535	Spring Brook	2015	Objectionable Deposits	No	4	4
W2535	Spring Brook	2015	Odor	None	4	4
W2535	Spring Brook	2015	Periphyton Density, Filamentous	None	3	4
W2535	Spring Brook	2015	Periphyton Density, Filamentous	Sparse	1	4
W2535	Spring Brook	2015	Periphyton Density, Film	None	4	4
W2535	Spring Brook	2015	Scum	No	3	4
W2535	Spring Brook	2015	Scum	Yes	1	4
W2535	Spring Brook	2015	Turbidity	None	3	4
W2535	Spring Brook	2015	Turbidity	Slightly Turbid	1	4

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Spring Brook (MA83-14) 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 W2535 in 2015. MassDEP staff collected *E. coli* bacteria samples in Spring Brook (MA83-14) at W2535 (~250 ft upstream of the mouth of the brook and the confluence with the Shawsheen River in Bedford) from May-Jul 2015 (n=4). Analysis of this limited frequency *E. coli* dataset indicated 100% of intervals had GMs >126 CFU/100mL and 2 samples exceeded the 410 CFU/100mL STV (the seasonal GM was 531 CFU/100mL). *E. coli* data from W2535 are indicative of an Escherichia Coli (E. Coli) impairment.

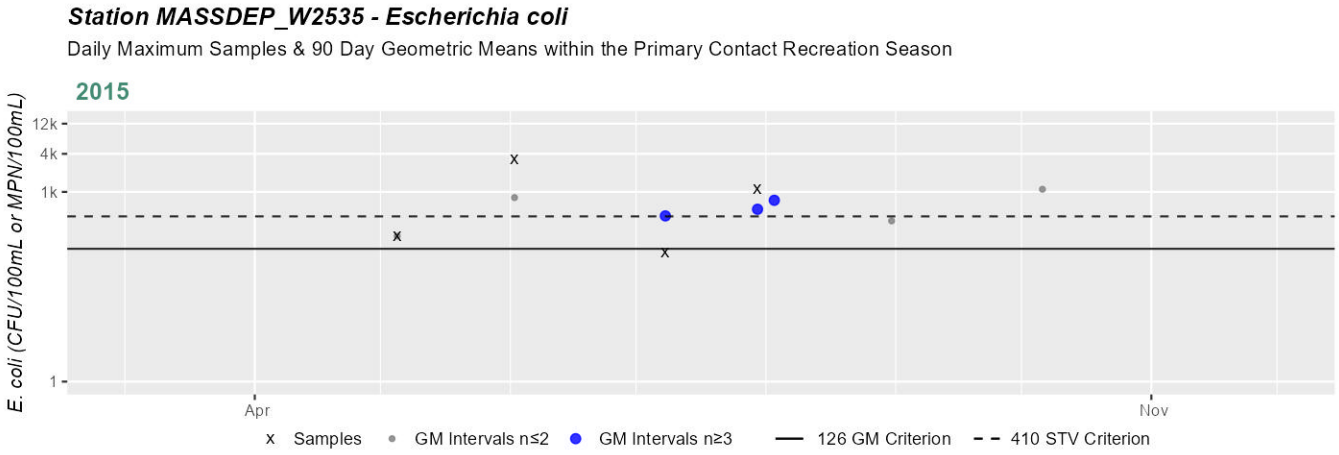
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2535	MassDEP	Water Quality	Spring Brook	[approximately 250 feet upstream of mouth at confluence with Shawsheen River, Bedford]	42.494062	-71.255983

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W2535	MassDEP	E. coli	05/05/15	07/30/15	4	110	3300	531



Variable*	Result
Samples	4
SeasGM	531
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	2
%n>STV	50%

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 Spring Brook (MA83-14) 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 W2535 in 2015.
MassDEP staff collected *E. coli* bacteria samples in Spring Brook (MA83-14) at W2535 (~250 ft upstream of the mouth of the brook and the confluence with the Shawsheen River in Bedford) from May-Jul 2015 (n=4). Analysis of this limited frequency *E. coli* dataset indicated 100% of intervals had GMs >244 CFU/100mL and 2 samples exceeded the 794 CFU/100mL STV. These data are indicative of an Escherichia Coli (E. Coli) impairment. DEP staff also collected historical *E. coli* data a short distance upstream from May-Sep 2005 (n=5) at W0185 (Rt. 62 in Bedford) which were indicative of good water quality conditions, but since they were not collected in the current IR window (2011-2022), they ultimately cannot be used to assess the Secondary Contact Recreation Use of Spring Brook.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0185	MassDEP	Water Quality	Spring Brook	[Route 62, Bedford]	42.494808	-71.257876
W2535	MassDEP	Water Quality	Spring Brook	[approximately 250 feet upstream of mouth at confluence with Shawsheen River, Bedford]	42.494062	-71.255983

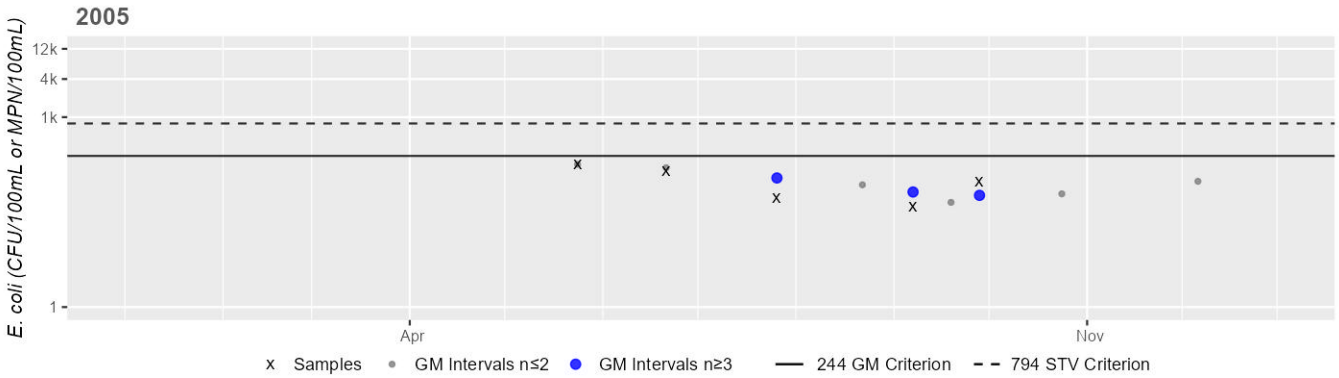
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0185	MassDEP	E. coli	05/24/05	09/28/05	5	39	180	86
W2535	MassDEP	E. coli	05/05/15	07/30/15	4	110	3300	531

Station MASSDEP_W0185 - Escherichia coli

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



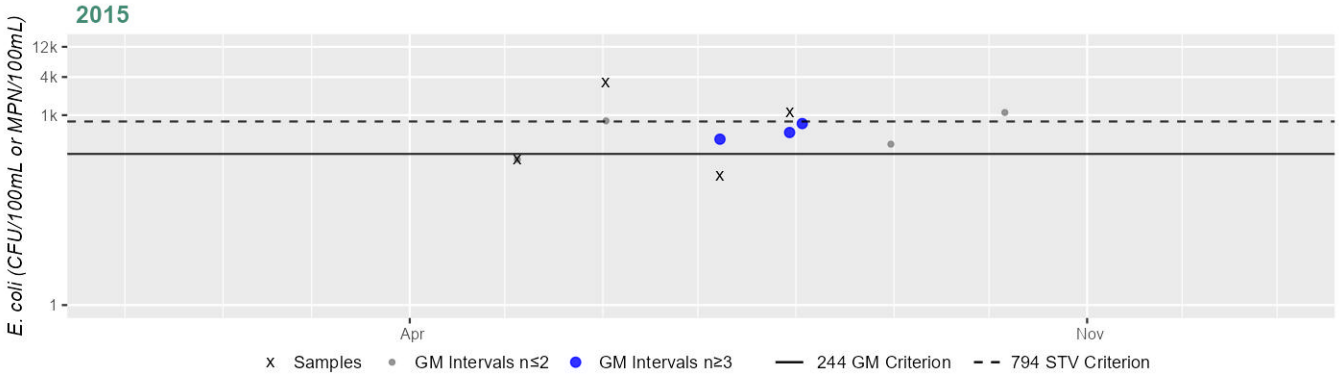
Variable*	Result
Samples	5
SeasGM	86
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W2535 - Escherichia coli

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



Variable*	Result
Samples	4
SeasGM	531
#GMI	3
#GMI Ex	3
%GMI Ex	100%
n>STV	2
%n>STV	50%

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.*

Strong Water Brook (MA83-07)

Location:	Headwaters northeast of Long Pond, Tewksbury to confluence with Shawsheen River, Tewksbury.
AU Type:	RIVER
AU Size:	4.9 MILES
Classification/Qualifier:	B

Strong Water Brook (MA83-07)

Watershed Area: 9.88 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	9.88	7.41	3.12	2.32
Agriculture	3.8%	5.1%	3.4%	4.6%
Developed	34%	33.9%	23.4%	21.7%
Natural	43.5%	40.9%	42.8%	39.3%
Wetland	18.7%	20.1%	30.4%	34.4%
Impervious	17.6%	17.8%	11.2%	9.8%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged
4a	4a	Fecal Coliform	2587	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	--
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (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 in Strong Water Brook (MA83-07), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Strong Water Brook (MA83-07), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No bacteria data are available for Strong Water Brook (MA83-07), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are 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 Strong Water Brook (MA83-07) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected historical *E. coli* bacteria samples near the downstream end of Strong Water Brook (MA83-07) at W0097 [Shawsheen St in Tewksbury] from May-Sep 2005 (n=5). Analysis of this limited frequency *E. coli* dataset indicated no intervals had GMs >244 CFU/100mL and no samples exceeded the 794 CFU/100mL STV (the overall GM was 132 CFU/100mL). These data are indicative of good water quality conditions, however since they were collected prior to the current IR window, the Secondary Contact Recreation Use cannot be positively assessed.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0097	MassDEP	Water Quality	Strong Water Brook	[Shawsheen Street, Tewksbury]	42.595773	-71.196084

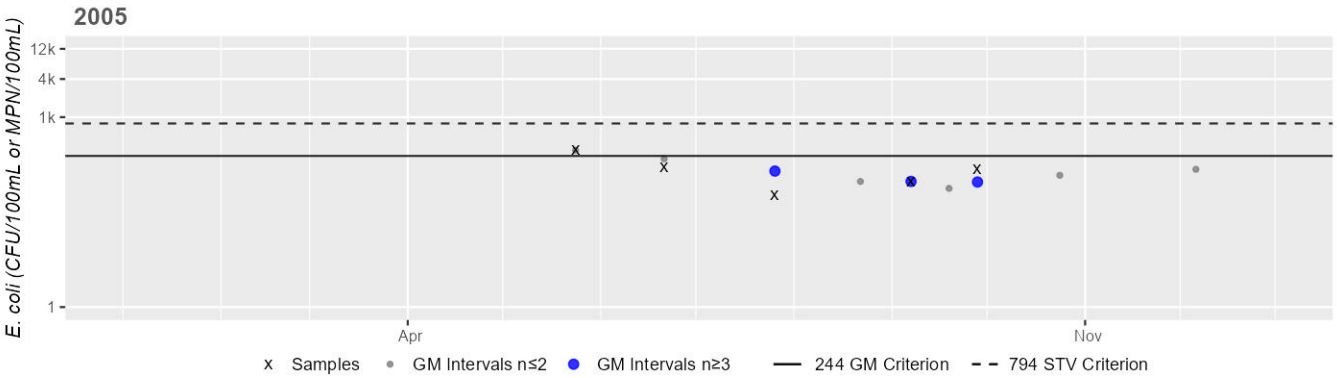
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0097	MassDEP	E. coli	05/24/05	09/28/05	5	58	300	132

Station MASSDEP_W0097 - Escherichia coli

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



Variable*	Result
Samples	5
SeasGM	132
#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.*

Unnamed Tributary (MA83-15)

Location:	Unnamed tributary to Meadow Brook, also known as "Pinnacle Brook" - from small wetland east of Route 93, Andover, to confluence with Meadow Brook, Tewksbury (includes intermittent portion).
AU Type:	RIVER
AU Size:	2.1 MILES
Classification/Qualifier:	B

Unnamed Tributary (MA83-15)

Watershed Area: 1.93 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	1.93	1.93	0.73	0.73
Agriculture	2.1%	2.1%	1.1%	1.1%
Developed	33.1%	33.1%	23.2%	23.2%
Natural	49.6%	49.6%	43.1%	43.1%
Wetland	15.2%	15.2%	32.6%	32.6%
Impervious	17.2%	17.2%	9.3%	9.3%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Dewatering*)	--	Unchanged
5	5	Chloride	--	Unchanged
5	5	Escherichia Coli (E. Coli)	2587	Unchanged
5	5	Fecal Coliform	2587	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
(Dewatering*)	Baseflow Depletion from Groundwater Withdrawals (N)	X	--	--	--	--

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Chloride	Highway/Road/Bridge Runoff (Non-construction Related) (Y)	X	--	--	--	--
Escherichia Coli (E. Coli)	Agriculture (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--
Fecal Coliform	Agriculture (N)	--	--	--	X	--
Fecal Coliform	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 in this Unnamed Tributary AU (MA83-15), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for this Unnamed Tributary AU (MA83-15), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

Bacteria data have not been collected recently in this Unnamed Tributary AU (MA83-15), so the Primary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) and Fecal Coliform impairments are 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 this Unnamed Tributary AU (MA83-15) are available in the current IR window (2011-2022), so the Secondary Contact Recreation Use is Not Assessed. MassDEP staff collected historical *E. coli* bacteria samples in this Unnamed Tributary AU (MA83-15) from 2005-2010 at 2 stations in Tewksbury in the downstream half of the brook. Samples were collected from the following stations/sample years from upstream to downstream: W1393 [unnamed tributary to Meadow Brook locally known as Pinnacle Brook, at Pinnacle St] from May-Sep 2005 (n=5) and W2143 [unnamed tributary locally known as 'Pinnacle Brook', ~130 ft downstream of Bligh St] from May-Sep 2010 (n=4). Analysis of the single year limited frequency *E. coli* dataset from W1393 indicated no intervals had GMs >244 CFU/100mL, no samples exceeded the 794 CFU/100mL STV, and the overall GM was 162 CFU/100mL. Analysis of the single year limited frequency *E. coli* dataset from W2143 indicated no intervals had GMs >244 CFU/100mL, 1 sample exceeded the 794 CFU/100mL STV, and the overall GM was 287 CFU/100mL. Historical data from both stations were indicative of good water quality conditions, however since they were collected prior to the current IR window (2011-2022) the Secondary Contact Recreation Use cannot be positively assessed.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1393	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary to Meadow Brook locally known as Pinnacle Brook, Pinnacle Street, Tewksbury]	42.628878	-71.199400
W2143	MassDEP	Water Quality	Unnamed Tributary	[unnamed tributary locally known as 'Pinnacle Brook', approximately 130 feet downstream of Bligh Street, Tewksbury]	42.628034	-71.201548

Bacteria Data

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

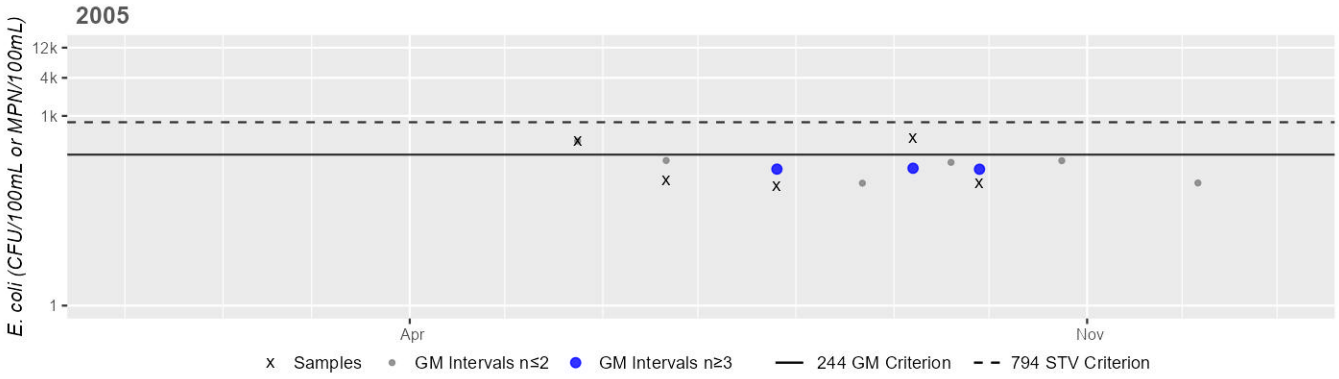
(MassDEP Undated 7) (MassDEP Undated 3)

[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
W1393	MassDEP	E. coli	05/24/05	09/28/05	5	77	440	162
W2143	MassDEP	E. coli	05/18/10	09/29/10	4	80	1700	287

Station MASSDEP_W1393 - Escherichia coli

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



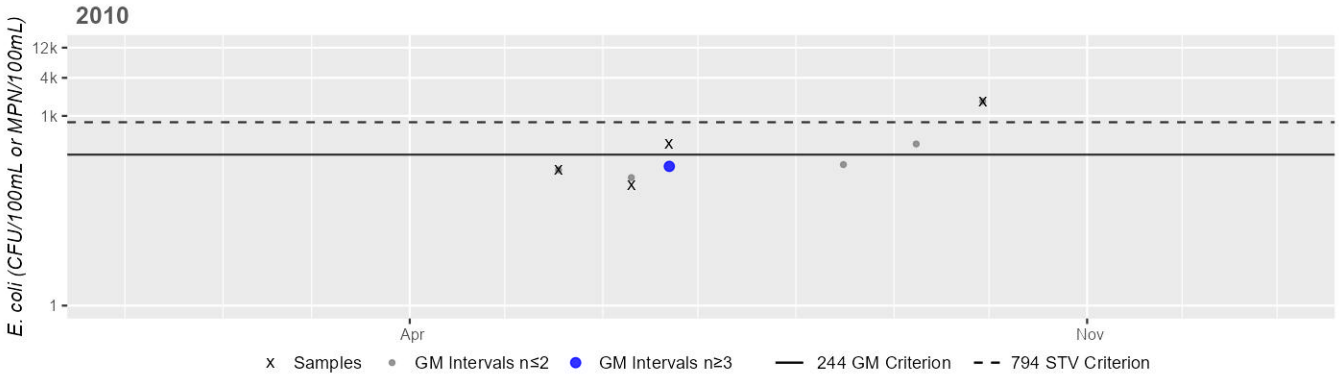
Variable*	Result
Samples	5
SeasGM	162
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W2143 - Escherichia coli

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



Variable*	Result
Samples	4
SeasGM	287
#GMI	1
#GMI Ex	0
%GMI Ex	0%
n>STV	1
%n>STV	25%

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.*

Unnamed Tributary (MA83-16)

Location:	Unnamed tributary to Shawsheen River also known as "Fosters Brook" - outlet Fosters Pond, Andover through River Street Pond to confluence with Shawsheen River at Lowell Junction Pond, Andover.
AU Type:	RIVER
AU Size:	1 MILES
Classification/Qualifier:	B

No usable data were available for Unnamed Tributary (MA83-16) 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

Unnamed Tributary (MA83-20)

Location:	Unnamed intermittent tributary to the Shawsheen River, from Dascomb Road, Andover to confluence with Shawsheen River, Tewksbury.
AU Type:	RIVER
AU Size:	0.9 MILES
Classification/Qualifier:	B

No usable data were available for Unnamed Tributary (MA83-20) 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	Chloride	--	Unchanged

Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Chloride	Highway/Road/Bridge Runoff (Non-construction Related) (Y)	X	--	--	--	--

Unnamed Tributary (MA83-21)

Location:	Unnamed intermittent tributary to the Shawsheen River locally known as 'Sutton Brook', from headwaters north of Research Drive, Wilmington to confluence with the Shawsheen River, Tewksbury.
AU Type:	RIVER
AU Size:	3 MILES
Classification/Qualifier:	B

No usable data were available for Unnamed Tributary (MA83-21) 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
4a	4a	Escherichia Coli (E. Coli)	2587	Unchanged

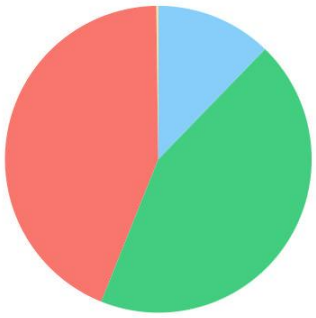
Impairment	Source (Confirmed Y/N)	ALU	FC	AES	PCR	SCR
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--

Vine Brook (MA83-06)

Location:	Headwaters (southeast of Granny Hill) near Grant Street, Lexington to confluence with Shawsheen River, Bedford (through former 2014 segment: Butterfield Pond MA83003).
AU Type:	RIVER
AU Size:	6.8 MILES
Classification/Qualifier:	B

Vine Brook (MA83-06)

Watershed Area: 9.79 square miles



Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	9.79	6.07	2.57	1.51
Agriculture	0.2%	0%	0%	0%
Developed	43.7%	47.1%	32.9%	36.7%
Natural	43.8%	40.2%	36.8%	29.9%
Wetland	12.3%	12.7%	30.3%	33.4%
Impervious	27.8%	30.5%	21.2%	25.3%

AU Category 2022	AU Category 2024/26	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Curly-leaf Pondweed*)	--	Unchanged
5	5	Benthic Macroinvertebrates	--	Unchanged
5	5	Chloride	--	Unchanged
5	5	Dissolved Oxygen	--	Unchanged
5	5	Escherichia Coli (E. Coli)	--	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	--	--	--	--
Benthic Macroinvertebrates	Source Unknown (N)	X	--	--	--	--
Chloride	Highway/Road/Bridge Runoff (Non-construction Related) (Y)	X	--	--	--	--
Chloride	Impervious Surface/Parking Lot Runoff (Y)	X	--	--	--	--
Dissolved Oxygen	Baseflow Depletion from Groundwater Withdrawals (N)	X	--	--	--	--
Dissolved Oxygen	Source Unknown (N)	X	--	--	--	--
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	--	--	--	X	--
Escherichia Coli (E. Coli)	Source Unknown (N)	--	--	--	X	--
Turbidity	Sand/Gravel/Rock Mining or Quarries (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 in Vine Brook (MA83-06), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert

Not Supporting	NO

2024/26 Use Attainment Summary

The Aesthetics Use for Vine Brook (MA83-06) is assessed as Not Supporting with the Turbidity impairment being carried forward.

MassDEP staff recorded aesthetics observations at one station in the downstream portion of Vine Brook just downstream/west of the Rt. 62 eastbound ramp to Rt. 3 northbound in Bedford (W2522) in the summer 2015 (n=5). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded, though field staff noted minor trash on three occasions. According to information compiled in the 2016 reporting cycle, MassDEP sampling in 1995 found issues with turbidity in Butterfield Pond (in the upstream third of the AU) due to adjacent sand and gravel operations (MassDEP Undated 6). Since recent sampling was not conducted in that area of the brook, there is insufficient information to delist this impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2522	MassDEP	Water Quality	Vine Brook	[just downstream/west of the Route 62 eastbound ramp to Route 3 northbound, Bedford]	42.501785	-71.240716

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2020) (MassDEP Undated 4)

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

Station Code	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2522	2015	5	Aesthetic observations were made by MassDEP field sampling crews at Station W2522 on Vine Brook (MA83-06) during 5 site visits between May 2015 and Aug 2015. 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 7) (MassDEP Undated 4)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2522	2015	5	3	0

MassDEP Aesthetics Observations (2011-2020) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2522	Vine Brook	2015	Aesthetics Impaired?	No	5	5

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2522	Vine Brook	2015	Aquatic Plant Density, Overall	None	3	5
W2522	Vine Brook	2015	Aquatic Plant Density, Overall	Sparse	1	5
W2522	Vine Brook	2015	Aquatic Plant Density, Overall	Unobservable	1	5
W2522	Vine Brook	2015	Color	Light Yellow/Tan	5	5
W2522	Vine Brook	2015	Objectionable Deposits	No	2	5
W2522	Vine Brook	2015	Objectionable Deposits	Yes	3	5
W2522	Vine Brook	2015	Odor	None	5	5
W2522	Vine Brook	2015	Periphyton Density, Filamentous	None	3	5
W2522	Vine Brook	2015	Periphyton Density, Filamentous	Unobservable	2	5
W2522	Vine Brook	2015	Periphyton Density, Film	None	2	5
W2522	Vine Brook	2015	Periphyton Density, Film	Sparse	1	5
W2522	Vine Brook	2015	Periphyton Density, Film	Unobservable	2	5
W2522	Vine Brook	2015	Scum	No	5	5
W2522	Vine Brook	2015	Turbidity	None	2	5
W2522	Vine Brook	2015	Turbidity	Slightly Turbid	3	5

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
The Primary Contact Recreation Use for Vine Brook (MA83-06) continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) impairment is being carried forward based on 2015 bacteria data not meeting the threshold at W2522. The prior Turbidity impairment (from the Aesthetics Use) is also being carried forward. MassDEP staff collected *E. coli* bacteria samples in the downstream portion of Vine Brook (MA83-06) at W2522 (just downstream/W of the Rt. 62 eastbound ramp to Rt. 3 northbound in Bedford) from May-Aug 2015 (n=5). Analysis of this limited frequency *E. coli* dataset indicated 80% of intervals had GMs >126 CFU/100mL, 1 sample exceeded the 410 CFU/100mL STV, and the seasonal GM was 159 CFU/100mL. These data are indicative of an Escherichia Coli (E. Coli) impairment.

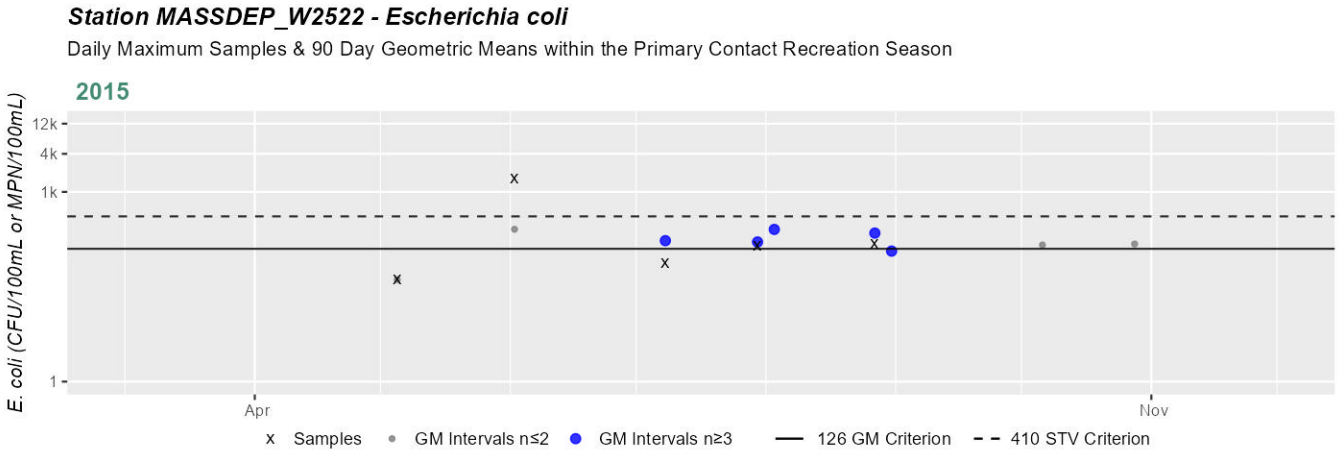
Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2522	MassDEP	Water Quality	Vine Brook	[just downstream/west of the Route 62 eastbound ramp to Route 3 northbound, Bedford]	42.501785	-71.240716

Bacteria Data

Bacteria Data Collected by MassDEP (2011-2020) and External Data Providers (2011-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W2522	MassDEP	E. coli	05/05/15	08/27/15	5	41	1600	159



Variable*	Result
Samples	5
SeasGM	159
#GMI	5
#GMI Ex	4
%GMI Ex	80%
n>STV	1
%n>STV	20%

Cumulative %GMI Exceedance
Current (2011-2022)
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.*

Secondary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary

The Secondary Contact Recreation Use for Vine Brook (MA83-06) continues to be assessed as Not Supporting. The prior Turbidity impairment (from the Aesthetics Use) is being carried forward.
MassDEP staff collected *E. coli* bacteria samples in the downstream portion of Vine Brook (MA83-06) at W2522 (just downstream/W of the Rt. 62 eastbound ramp to Rt. 3 northbound in Bedford) from May-Aug 2015 (n=5). Analysis of this limited frequency *E. coli* dataset indicated 20% of intervals had GMs >244 CFU/100mL, 1 sample exceeded the 794 CFU/100mL STV, and the overall GM was 159 CFU/100mL. These data are not indicative of poor water quality conditions. DEP staff also collected historical *E. coli* data from May-Sep 2005 (n=5) farther upstream in Vine Brook at W0357 (Terrace Hall Avenue in Burlington) which were indicative of good water quality conditions, but since they were not collected in the current IR window (2011-2022), they ultimately cannot be used to assess the Secondary Contact Recreation Use of Vine Brook.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0357	MassDEP	Water Quality	Vine Brook	[Terrace Hall Avenue, Burlington]	42.496453	-71.224266
W2522	MassDEP	Water Quality	Vine Brook	[just downstream/west of the Route 62 eastbound ramp to Route 3 northbound, Bedford]	42.501785	-71.240716

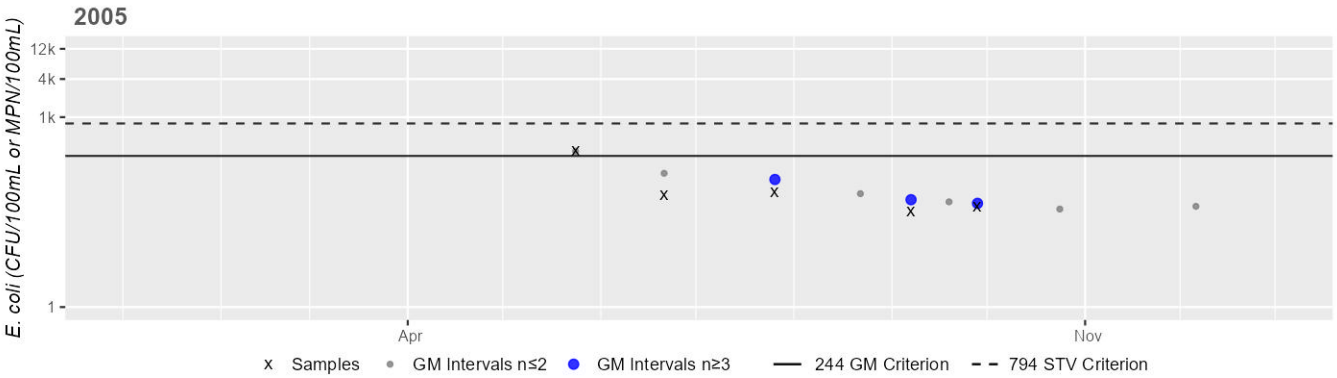
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W0357	MassDEP	E. coli	05/24/05	09/28/05	5	32	290	67
W2522	MassDEP	E. coli	05/05/15	08/27/15	5	41	1600	159

Station MASSDEP_W0357 - Escherichia coli

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



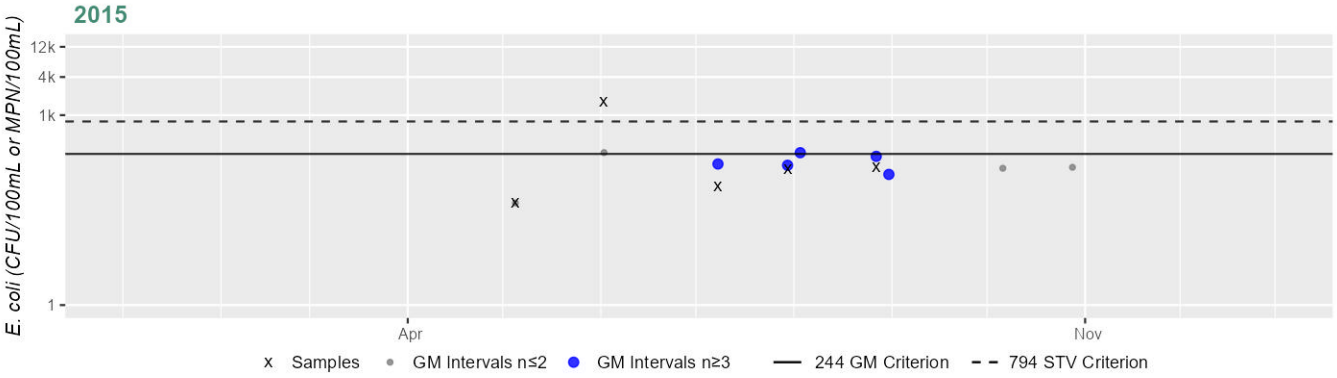
Variable*	Result
Samples	5
SeasGM	67
#GMI	3
#GMI Ex	0
%GMI Ex	0%
n>STV	0
%n>STV	0%

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_W2522 - Escherichia coli

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



Variable*	Result
Samples	5
SeasGM	159
#GMI	5
#GMI Ex	1
%GMI Ex	20%
n>STV	1
%n>STV	20%

Cumulative %GMI Exceedance
Current (2011-2022)
20%

**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.*

Webb Brook (MA83-22)

Location:	Headwaters north of Webb Brook Road, Billerica to confluence with Shawsheen River, Billerica.
AU Type:	RIVER
AU Size:	1.6 MILES
Classification/Qualifier:	B

Webb Brook (MA83-22)

Watershed Area: 0.76 square miles

Land Cover Type	Entire Basin	Proximal Subbasin (5 km radius)	Stream Buffer (100 m)	Proximal Stream Buffer
Land Cover Area (square miles)	0.76	0.76	0.20	0.20
Agriculture	3.7%	3.7%	1%	1%
Developed	47.7%	47.7%	33.5%	33.5%
Natural	38.1%	38.1%	40.5%	40.5%
Wetland	10.5%	10.5%	25%	25%
Impervious	22.4%	22.4%	16.9%	16.9%

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 in Webb Brook (MA83-22), so the Fish Consumption Use is Not Assessed.

Aesthetic

2024/26 Use Attainment	Alert
Not Assessed	NO

2024/26 Use Attainment Summary
No data are available to assess the status of the Aesthetics Use for Webb Brook (MA83-22), so it is Not Assessed.

Primary Contact Recreation

2024/26 Use Attainment	Alert
Not Supporting	NO

2024/26 Use Attainment Summary
No recent bacteria data have been collected in Webb Brook (MA83-22), 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
Since no recent bacteria data have been collected in Webb Brook (MA83-22), the Secondary Contact Recreation Use continues to be assessed as Not Supporting. The prior Escherichia Coli (E. Coli) impairment is being carried forward based on historical bacteria data (collected in 2010) not meeting the threshold at W2145. MassDEP staff collected historical *E. coli* bacteria samples in the headwaters of Webb Brook (MA83-22) at W2145 [~660 ft upstream of Webb Brook Rd in Billerica] from May-Sep 2010 (n=6). Analysis of this limited frequency *E. coli* dataset indicated 100% of intervals had GMs >244 CFU/100mL and all 6 samples exceeded the 794 CFU/100mL STV (the overall GM was 3394 CFU/100mL). These data are indicative of an Escherichia Coli (E. Coli) impairment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2145	MassDEP	Water Quality	Webb Brook	[approximately 660 feet upstream of Webb Brook Road, Billerica]	42.546252	-71.252721

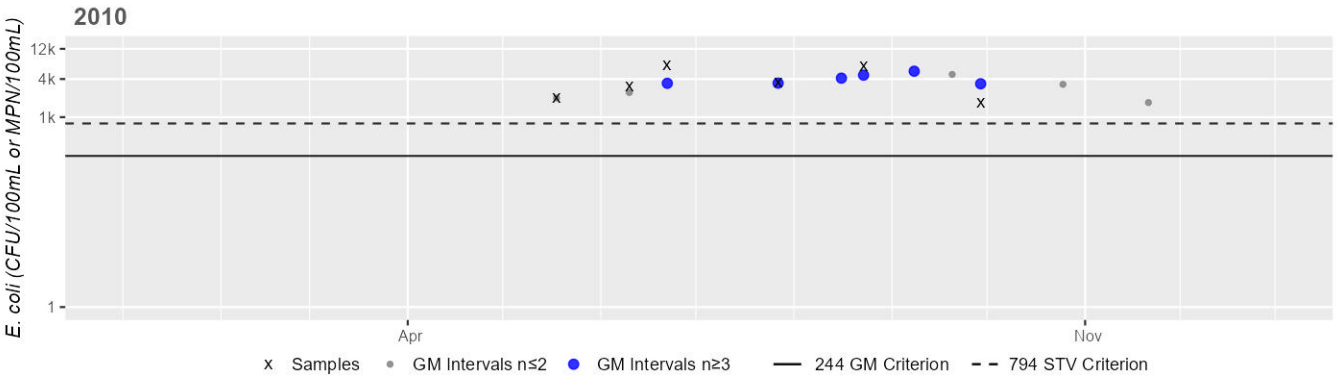
Bacteria Data

Bacteria Data Collected by MassDEP (1997-2020) and External Data Providers (1997-2022) (90-day Interval Analysis)
(MassDEP Undated 7) (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
W2145	MassDEP	E. coli	05/18/10	09/29/10	6	1700	6700	3394

Station MASSDEP_W2145 - Escherichia coli

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



Variable*	Result
Samples	6
SeasGM	3394
#GMI	6
#GMI Ex	6
%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.*

Data Sources

Bailey, Logan. "Email providing Harmful Algal Bloom advisory data (2015-2022) in the attached spreadsheet "CyanoHAB_Advisories.csv"." Email to Dan Davis and Laurie Kennedy (MassDEP Watershed Planning Program) with subject line "RE: DPH Beach Posting information update needed for 2024 IR", Environmental Toxicology Program, Bureau of Environmental Health, Massachusetts Department of Public Health, Boston, MA, April 26, 2023.

MA DPH. "Freshwater Fish Consumption Advisory List." Bureau of Climate and Environmental Health, Massachusetts Department of Public Health. January 2025. https://www.mass.gov/doc/public-health-freshwater-fish-consumption-advisories-2025-0/download (accessed January 2025).

MassDEP. "Open file analysis of external water quality data (potential date range 1997-2022) using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 1.

MassDEP. "Open file analysis of external water quality data (potential date range 2011-2022) using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 2.

MassDEP. "Open file analysis of MassDEP WPP water quality data collected between 1997 and 2020 using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 3.

MassDEP. "Open file analysis of MassDEP WPP water quality data collected between 2011 and 2020 using 2024 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 4.

MassDEP. "Open files of fish toxicity testing data, metadata, and GIS datalayers in development." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 5.

MassDEP. "Open files of repository documents for the 2016 Integrated Report cycle." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 6.

MassDEP. "Open files of unpublished, validated water quality monitoring data, field sheet data, and GIS datalayers in development." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 7.

MyRWA. "2011-2019 bacteria data submitted to MassDEP WPP portal on 12/31/2019." Mystic River Watershed Association, Arlington, MA, 2019.

Savoie, Jennifer G, and Denise M Argue. "Concentrations of Per- and Polyfluoroalkyl Substances (PFAS) in Selected Rivers and Streams in Massachusetts, 2020." U.S. Geological Survey data report 1160 version 2.0 and accompanying data prepared in cooperation with the Massachusetts Department of Environmental Protection. October 2023. https://doi.org/10.5066/P967NOOZ (accessed January 2024).

USGS. "USGS 2011-2022 bacteria data downloaded from WQX 10/21/2024." United States Geological Survey, 2024.