Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle

Appendix 25
Ten Mile 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
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May 2023

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Massachusetts Department of Environmental Protection

MassDEP's mission is to protect and enhance the Commonwealth's natural resources – air, water, and land – to provide for the health, safety, and welfare of all people, and to ensure a clean and safe environment for future generations. In carrying out this mission MassDEP commits to address and advance environmental justice and equity for all people of the Commonwealth; provide meaningful, inclusive opportunities for people to participate in agency decisions that affect their lives; and ensure a diverse workforce that reflects the communities we serve.

Watershed Planning Program

The Watershed Planning Program is a statewide program in the Division of Watershed Management, Bureau of Water Resources, at MassDEP. We are stewards of the water resources of Massachusetts. Together with other state environmental agencies, we share in the duty and responsibility to protect, enhance, and restore the quality and value of the waters of the Commonwealth. We are guided by the federal Clean Water Act and work to secure the environmental, recreational, and public health benefits of clean water for the residents of Massachusetts. The Watershed Planning Program is organized into five Sections that each have a different technical focus under the Clean Water Act: (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 Pollution.

Disclaimer

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

Contact Information

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Notice of Availability

This report is available on the Massachusetts Department of Environmental Protection website: https://www.mass.gov/lists/integrated-lists-of-waters-related-reports.

Table of Contents

2022 Cycle Impairment Changes

Waterbody	AU_ID	2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
Bungay River	MA52-06	5	5	Benthic Macroinvertebrates		Unchanged
Bungay River	MA52-06	5	5	Dissolved Oxygen		Unchanged
Cargill Pond	MA52004	5	5	Turbidity		Unchanged
Central Pond	MA52006	5	5	(Aquatic Plants (Macrophytes)*)		Changed
Central Pond	MA52006	5	5	Algae		Unchanged
Central Pond	MA52006	5	5	Dissolved Oxygen		Unchanged
Central Pond	MA52006	5	5	Dissolved Oxygen Supersaturation		Unchanged
Central Pond	MA52006	5	5	Harmful Algal Blooms		Added
Central Pond	MA52006	5	5	Nutrient/Eutrophication Biological Indicators		Added
Central Pond	MA52006	5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
Central Pond	MA52006	5	5	Phosphorus, Total		Unchanged
Coles Brook	MA52-11	5	5	(Dewatering*)		Unchanged
Coles Brook	MA52-11	5	5	Dissolved Oxygen		Unchanged
Coles Brook	MA52-11	5	5	Escherichia Coli (E. Coli)		Unchanged
Falls Pond, North Basin	MA52013	5	5	Algae		Unchanged
Falls Pond, North Basin	MA52013	5	5	Dissolved Oxygen		Unchanged
Falls Pond, North Basin	MA52013	5	5	Mercury in Fish Tissue		Added
Falls Pond, North Basin	MA52013	5	5	Nutrient/Eutrophication Biological Indicators		Unchanged
Falls Pond, North Basin	MA52013	5	5	Phosphorus, Total		Unchanged
Falls Pond, South Basin	MA52014	4c	4c	(Non-Native Aquatic Plants*)		Unchanged
Fourmile Brook	MA52-10	5	5	Sedimentation/Siltation		Unchanged
Greenwood Lake	MA52017	3	3	None		Unchanged
Hoppin Hill Reservoir	MA52021	3	3	None		Unchanged
James V. Turner Reservoir	MA52022	5	5	(Aquatic Plants (Macrophytes)*)		Changed
James V. Turner Reservoir	MA52022	5	5	Algae		Unchanged
James V. Turner Reservoir	MA52022	5	5	Dissolved Oxygen Supersaturation		Unchanged
James V. Turner Reservoir	MA52022	5	5	Harmful Algal Blooms		Unchanged
James V. Turner Reservoir	MA52022	5	5	Nutrient/Eutrophication Biological Indicators		Added

Waterbody	AU_ID	2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
James V. Turner Reservoir	MA52022	5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
James V. Turner Reservoir	MA52022	5	5	Phosphorus, Total		Unchanged
Lake Como	MA52010	5	5	(Fanwort*)		Added
Lake Como	MA52010	5	5	(Non-Native Aquatic Plants*)		Removed
Lake Como	MA52010	5	5	Algae		Unchanged
Lake Como	MA52010	5	5	Turbidity		Unchanged
Manchester Pond Reservoir	MA52026	3	3	None		Unchanged
Orrs Pond	MA52029	4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)		Unchanged
Plain Street Pond	MA52032	5	5	(Fanwort*)		Added
Plain Street Pond	MA52032	5	5	(Non-Native Aquatic Plants*)		Removed
Plain Street Pond	MA52032	5	5	Algae		Unchanged
Scotts Brook	MA52-09	5	5	(Dewatering*)		Unchanged
Scotts Brook	MA52-09	5	5	Escherichia Coli (E. Coli)		Unchanged
Sevenmile River	MA52-07	5	5	Escherichia Coli (E. Coli)		Unchanged
Sevenmile River	MA52-08	5	5	Benthic Macroinvertebrates		Added
Sevenmile River	MA52-08	5	5	Escherichia Coli (E. Coli)		Unchanged
Sevenmile River	MA52-08	5	5	Fecal Coliform		Unchanged
Speedway Brook	MA52-05	5	5	(Alteration in Stream-side or Littoral Vegetative Covers*)		Unchanged
Speedway Brook	MA52-05	5	5	(Habitat Assessment*)		Unchanged
Speedway Brook	MA52-05	5	5	Benthic Macroinvertebrates		Unchanged
Speedway Brook	MA52-05	5	5	Dissolved Oxygen		Unchanged
Speedway Brook	MA52-05	5	5	Escherichia Coli (E. Coli)		Unchanged
Speedway Brook	MA52-05	5	5	Fecal Coliform		Unchanged
Speedway Brook	MA52-05	5	5	Metals		Unchanged
Speedway Brook	MA52-05	5	5	Sedimentation/Siltation		Unchanged
Ten Mile River	MA52-01	5	5	Metals		Unchanged
Ten Mile River	MA52-02	5	5	Escherichia Coli (E. Coli)		Unchanged
Ten Mile River	MA52-02	5	5	Fecal Coliform		Unchanged
Ten Mile River	MA52-02	5	5	Metals		Unchanged
Ten Mile River	MA52-03	5	5	(Aquatic Plants (Macrophytes)*)		Unchanged
Ten Mile River	MA52-03	5	5	(Water Chestnut*)		Added
Ten Mile River	MA52-03	5	5	Algae		Unchanged
Ten Mile River	MA52-03	5	5	Benthic Macroinvertebrates		Unchanged
Ten Mile River	MA52-03	5	5	Chlordane in Fish Tissue		Unchanged
Ten Mile River	MA52-03	5	5	Dissolved Oxygen		Unchanged
Ten Mile River	MA52-03	5	5	Escherichia Coli (E. Coli)		Unchanged
Ten Mile River	MA52-03	5	5	Fecal Coliform		Unchanged
Ten Mile River	MA52-03	5	5	Nutrient/Eutrophication Biological Indicators		Unchanged
Ten Mile River	MA52-03	5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
Ten Mile River	MA52-03	5	5	Phosphorus, Total		Unchanged

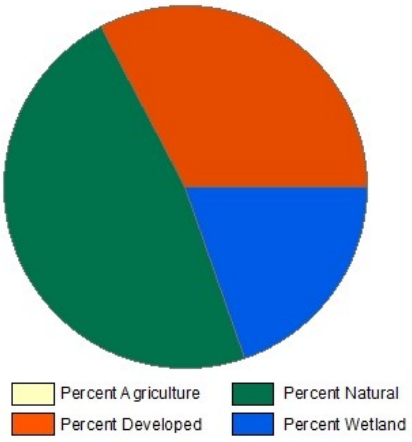
Waterbody	AU_ID	2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
Ten Mile River	MA52-03	5	5	Unspecified Metals in Sediment		Unchanged
Whiting Pond	MA52042	4a	4a	Mercury in Fish Tissue	33880	Unchanged

Bungay River (MA52-06)

Location:	Headwaters, outlet Greenwood Lake, North Attleborough to mouth at inlet of Mechanics Pond (a Ten Mile River impoundment), Attleboro.
AU Type:	RIVER
AU Size:	5.1 MILES
Classification/Qualifier:	B: WWF

Bungay River - MA52-06

Watershed Area: 7.48 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	7.48	4.96	1.82	1.26
Agriculture	0.6%	1%	0.3%	0.5%
Developed	32.6%	33.3%	24.4%	23.4%
Natural	47.2%	40.9%	39.1%	33.4%
Wetland	19.6%	24.9%	36.2%	42.8%
Impervious Cover	17.2%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Benthic Macroinvertebrates		Unchanged
5	5	Dissolved Oxygen		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Benthic Macroinvertebrates	Source Unknown (N)	X				
Dissolved Oxygen	Source Unknown (N)	X				

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO

2022 Use Attainment Summary
No recent data are available to assess the status of the Aquatic Life Use for the Bungay River, so it will continue to be assessed as Not Supporting, with the Benthic Macroinvertebrates and Dissolved Oxygen impairments being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0901	MassDEP	Water Quality	Bungay River	[at outlet of impoundment locally known as Blackinton Pond approximately 400 feet downstream of North Main Street, (Route 152), Attleboro]	41.950024	-71.291335
W2294	MassDEP	Water Quality	Bungay River	[North Main Street (Route 152), Attleboro]	41.950000	-71.290060

Physico-chemical Water Quality Information

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)
[Summer seasonal total phosphorus data collected May-Sept]

Station Code	Data Year	Seasonal TP Count	Seasonal TP Min (mg/L)	Seasonal TP Max (mg/L)	Seasonal TP Avg (mg/L)	Delta DO Max (mg/L)	Delta DO Avg (mg/L)	DO Sat Max (%)	pH Max (SU)	Count Algal Obsv.	Dense/V. Dense Film/Fila. Algae
W0901	2011	--	--	--	--	--	--	--	--	2	0
W0901	2013	--	--	--	--	--	--	--	--	2	0
W2294	2011	--	--	--	--	--	--	--	--	2	0
W2294	2013	--	--	--	--	--	--	--	--	1	0

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was done in 1986 just upstream of Holden Street and just downstream of North Main Street, Attleboro, no site-specific fish consumption advisory was issued by DPH. The Fish Consumption Use for Bungay River (MA52-06) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Fully Supporting	NO
2022 Use Attainment Summary	

MassDEP staff recorded aesthetics observations at two sites along Bungay River in the summers of 2011 and 2013 as follows: North Main Street (Rt.152), Attleboro (W2294) (2011 & 2013) and at outlet of impoundment locally known as Blackinton Pond just downstream of North Main Street, (Rt. 152), Attleboro (W0901) (2011 & 2013). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DWM-WPP field sampling crews during the surveys at both stations (n=8). The Aesthetics Use for the Bungay River is assessed as Fully Supporting.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0901	MassDEP	Water Quality	Bungay River	[at outlet of impoundment locally known as Blackinton Pond approximately 400 feet downstream of North Main Street, (Route 152), Attleboro]	41.950024	-71.291335
W2294	MassDEP	Water Quality	Bungay River	[North Main Street (Route 152), Attleboro]	41.950000	-71.290060

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0901	Bungay River	2011	2	There are insufficient data available to assess the Aesthetics Use for the Bungay River. There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP staff at station W0901 during surveys in summer 2011 and 2013, however, data were limited (n=2 each year).
W0901	Bungay River	2013	2	There are insufficient data available to assess the Aesthetics Use for the Bungay River. There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP staff at station W0901 during surveys in summer 2011 and 2013, however, data were limited (n=2 each year).
W2294	Bungay River	2011	2	MassDEP aesthetics observations for station W2294 on Bungay River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2011. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2294	Bungay River	2013	2	MassDEP aesthetics observations for station W2294 on Bungay River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0901	2011	2	2	0

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0901	2013	2	2	0
W2294	2011	2	2	0
W2294	2013	2	1	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0901	Bungay River	2011	Color	None	2	2
W0901	Bungay River	2011	Objectionable Deposits	Not Applicable (N/A)	2	2
W0901	Bungay River	2011	Odor	None	2	2
W0901	Bungay River	2011	Scum	Not Applicable (N/A)	2	2
W0901	Bungay River	2011	Turbidity	Moderately Turbid	1	2
W0901	Bungay River	2011	Turbidity	Slightly Turbid	1	2
W0901	Bungay River	2013	Color	Brownish	1	2
W0901	Bungay River	2013	Color	None	1	2
W0901	Bungay River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W0901	Bungay River	2013	Odor	Musty (Basement)	1	2
W0901	Bungay River	2013	Odor	None	1	2
W0901	Bungay River	2013	Scum	Not Applicable (N/A)	2	2
W0901	Bungay River	2013	Turbidity	Moderately Turbid	2	2
W2294	Bungay River	2011	Color	None	2	2
W2294	Bungay River	2011	Objectionable Deposits	Not Applicable (N/A)	2	2
W2294	Bungay River	2011	Odor	None	2	2
W2294	Bungay River	2011	Scum	Not Applicable (N/A)	2	2
W2294	Bungay River	2011	Turbidity	Highly Turbid	1	2
W2294	Bungay River	2011	Turbidity	Moderately Turbid	1	2
W2294	Bungay River	2013	Color	Brownish	1	2
W2294	Bungay River	2013	Color	None	1	2
W2294	Bungay River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2294	Bungay River	2013	Odor	None	2	2
W2294	Bungay River	2013	Scum	Not Applicable (N/A)	2	2
W2294	Bungay River	2013	Turbidity	Moderately Turbid	2	2

Primary Contact Recreation

2022 Use Attainment	Alert
Insufficient Information	NO
2022 Use Attainment Summary	

E. coli bacteria samples were collected from the Bungay River at the following sampling stations in Attleboro (data years) as part the MassDEP Bacteria Source Tracking (BST) project: North Main Street (Rt.152) (W2294) and at the outlet of the impoundment locally known as Blackinton Pond, just downstream of North Main Street (Rt. 152) (W0901), during the summer of 2011 and 2013. Overall, the BST project found that *E. coli* concentrations ranged from 63 to 554MPN but found no correctable source of bacteria and concluded that Blackinton Pond is not a significant source of bacteria to the Bungay River. There were never more than two samples within a 90-day GM interval, therefore these data are too limited to assess the Primary Contact Recreational Use for Bungay River according to the CALM "Use Attainment Impairment Decision Schema", so it is assessed as Insufficient Information.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0901	MassDEP	Water Quality	Bungay River	[at outlet of impoundment locally known as Blackinton Pond approximately 400 feet downstream of North Main Street, (Route 152), Attleboro]	41.950024	-71.291335
W2294	MassDEP	Water Quality	Bungay River	[North Main Street (Route 152), Attleboro]	41.950000	-71.290060

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0901	MassDEP	E. coli	06/02/11	07/06/11	2	311	554	415
W0901	MassDEP	E. coli	06/26/13	08/07/13	2	93	276	160
W2294	MassDEP	E. coli	06/02/11	07/06/11	2	185	185	185
W2294	MassDEP	E. coli	06/26/13	08/07/13	2	63	387	156

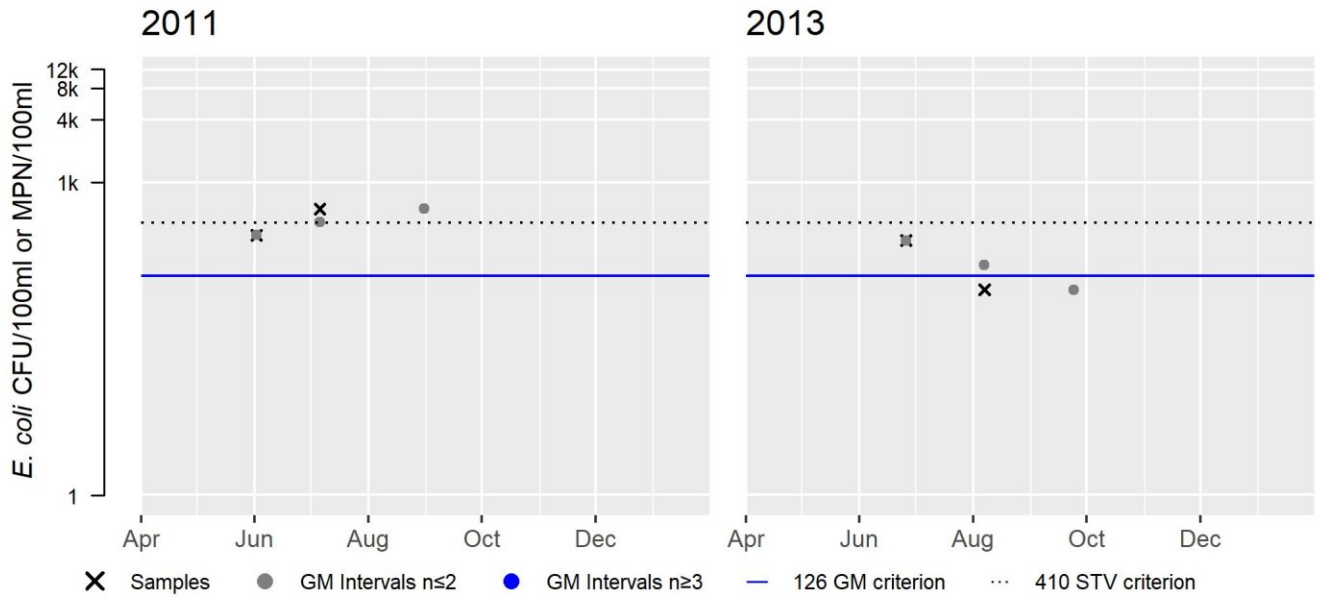
W0901 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	415
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Var	Res
Samples	2
SeasGM	160
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



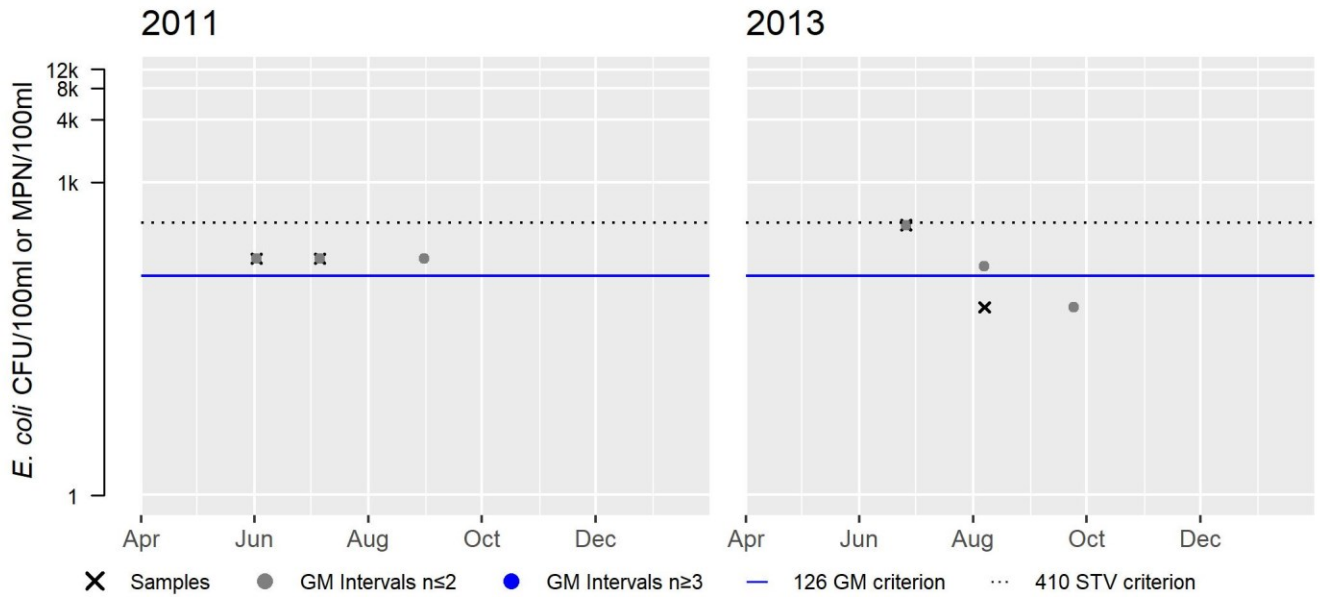
W2294 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	185
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	156
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
BST work was conducted between 2011 and 2013 along the Bungay River AU (MA52-06) at two sites bracketing the locally named "Blackington Pond", which is located upstream of Main Street, Attleboro. *E. coli* concentrations ranged from 63 to 554MPN. No correctable source was ever found, and it was concluded that the pond itself is not a significant source of bacteria to the Bungay River.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Insufficient Information	NO
2022 Use Attainment Summary	

E. coli bacteria samples were collected from the Bungay River at the following sampling stations in Attleboro (data years) as part the MassDEP Bacteria Source Tracking (BST) project: North Main Street (Rt.152) (W2294) and at the outlet of the impoundment locally known as Blackinton Pond, just downstream of North Main Street (Rt. 152) (W0901), during the summer of 2011 and 2013. Overall, the BST project found that *E. coli* concentrations ranged from 63 to 554MPN but found no correctable source of bacteria and concluded that Blackinton Pond is not a significant source of bacteria to the Bungay River. There were never more than two samples within a 90-day GM interval, therefore these data are too limited to assess the Secondary Contact Recreational Use for Bungay River according to the CALM "Use Attainment Impairment Decision Schema", so it is assessed as Insufficient Information.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0901	MassDEP	Water Quality	Bungay River	[at outlet of impoundment locally known as Blackinton Pond approximately 400 feet downstream of North Main Street, (Route 152), Attleboro]	41.950024	-71.291335
W2294	MassDEP	Water Quality	Bungay River	[North Main Street (Route 152), Attleboro]	41.950000	-71.290060

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W0901	MassDEP	E. coli	06/02/11	07/06/11	2	311	554	415
W0901	MassDEP	E. coli	06/26/13	08/07/13	2	93	276	160
W2294	MassDEP	E. coli	06/02/11	07/06/11	2	185	185	185
W2294	MassDEP	E. coli	06/26/13	08/07/13	2	63	387	156

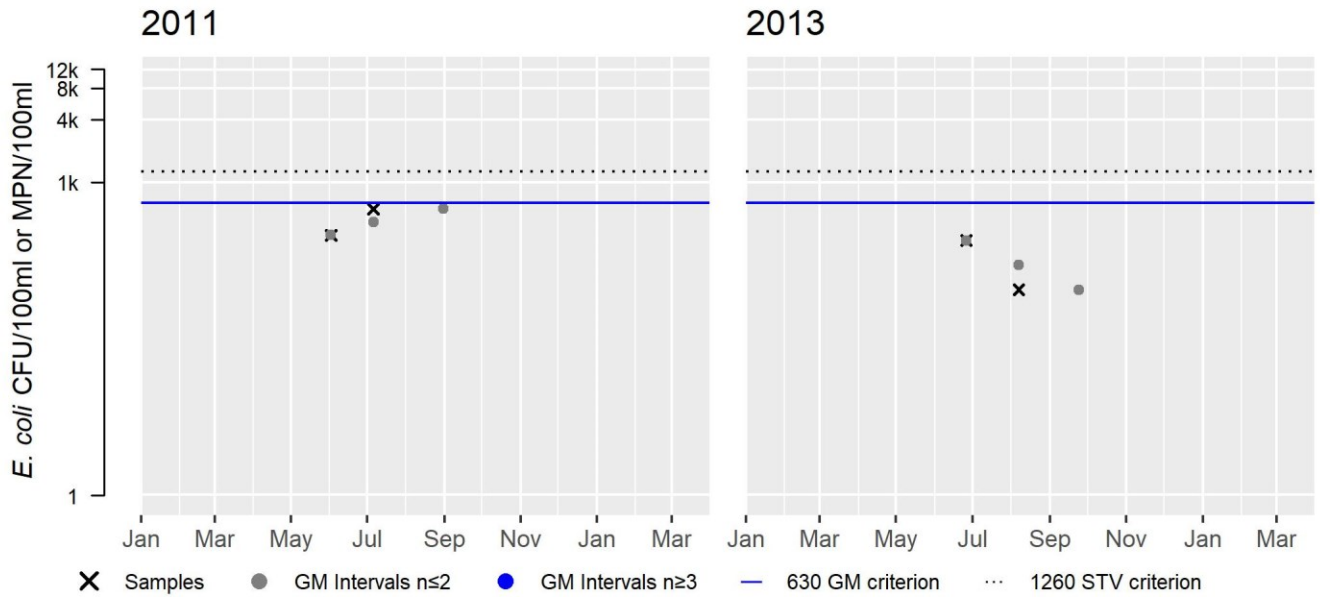
W0901 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	415
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	160
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



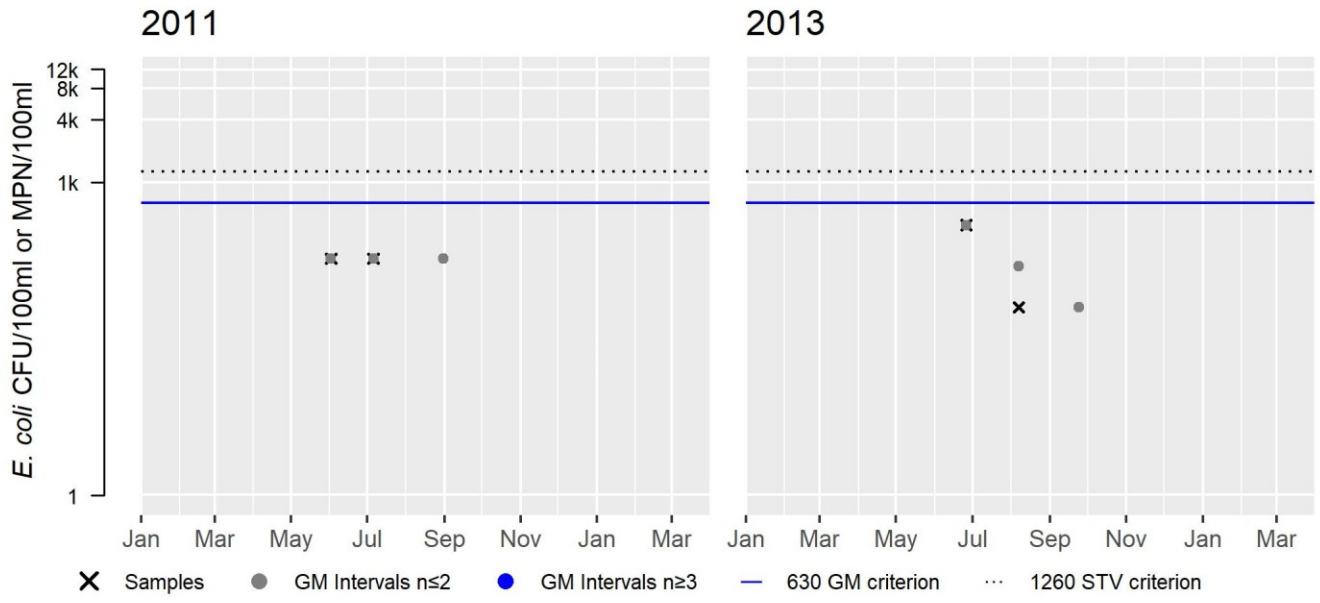
W2294 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	185
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	156
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



Cargill Pond (MA52004)

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

No usable data were available for Cargill Pond (MA52004) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Turbidity		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Turbidity	Source Unknown (N)			X	X	X

Central Pond (MA52006)

Location:	Seekonk,MA/Pawtucket,RI/Providence,RI (size indicates portion in Massachusetts).
AU Type:	FRESHWATER LAKE
AU Size:	6 ACRES
Classification/Qualifier:	B

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)		Changed
5	5	Algae		Unchanged
5	5	Dissolved Oxygen		Unchanged
5	5	Dissolved Oxygen Supersaturation		Unchanged
5	5	Harmful Algal Blooms		Added
5	5	Nutrient/Eutrophication Biological Indicators		Added
5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
5	5	Phosphorus, Total		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
(Aquatic Plants (Macrophytes)*)	Municipal (Urbanized High Density Area) (N)	X		X	X	X
(Aquatic Plants (Macrophytes)*)	Municipal Point Source Discharges (Y)	X		X	X	X
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Algae	Municipal (Urbanized High Density Area) (N)	X		X	X	X
Algae	Municipal Point Source Discharges (Y)	X		X	X	X
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Dissolved Oxygen	Municipal (Urbanized High Density Area) (N)	X				
Dissolved Oxygen	Municipal Point Source Discharges (Y)	X				
Dissolved Oxygen Supersaturation	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Dissolved Oxygen Supersaturation	Municipal (Urbanized High Density Area) (N)	X				
Dissolved Oxygen Supersaturation	Municipal Point Source Discharges (Y)	X				
Harmful Algal Blooms	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)			X	X	X
Harmful Algal Blooms	Municipal (Urbanized High Density Area) (N)			X	X	X
Harmful Algal Blooms	Municipal Point Source Discharges (Y)			X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Nutrient/Eutrophication Biological Indicators	Municipal (Urbanized High Density Area) (N)	X		X	X	X

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (Y)	X		X	X	X
Organic Enrichment (Sewage) Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Organic Enrichment (Sewage) Biological Indicators	Municipal (Urbanized High Density Area) (N)	X				
Organic Enrichment (Sewage) Biological Indicators	Municipal Point Source Discharges (Y)	X				
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Phosphorus, Total	Municipal (Urbanized High Density Area) (N)	X		X	X	X
Phosphorus, Total	Municipal Point Source Discharges (Y)	X		X	X	X

Supporting Information for Removed Impairments

2018/20 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2022 CALM guidance document (MassDEP 2022), the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. Central Pond (MA52006) was first listed as impaired for Noxious Aquatic Plants in 1992 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2008 IR cycle (MassDEP 2015). Although the original 1984 data used to make the impairment could not be located, during a July 1997 synoptic survey, MassDEP staff noted that 10% of the pond was covered in dense or very dense vegetation; this was mostly algal mats, but also included the non-rooted, floating species, *Lemna*/*Wolffia* spp. (MassDEP 1997, MassDEP 2002). Google Earth images from September 2014 and August 2016 show that more than 25% of the pond was covered in vegetation (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of non-rooted, floating, aquatic macrophyte species. Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in vegetation in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: MA52006 WATERSHED: Ten Mile(52) (Printed 05/13/96)
NAME: Central Pond TYPE: Lake/Pond
CODE: 52006 SIZE: 139.00(acres) CLASS: B
ORW?: Yes or No
Water Supply?: Yes or No

LATITUDE:
LONGITUDE: (415115/712027)
Lake/Pond Name: Central Pond, Seekonk/Pawtucket,R.I./Providence,R.I.
Ecoregion Name: (59) Northeastern Coastal Zone
Description:

Assessment Date: 9112 9609 Begin Sampling: 8406 Water Quality Limited?: YES or NO
Cycle: 94 96 End Sampling: 8409 303(d) List?: YES or NO

Lake Specific Information		1996	
Significantly Publicly Owned:	Y	Significantly Publicly Owned:	Y or N
Trophic Status:	H	Trophic Status:	O M E H D U
Trophic Trend:		Trophic Trend:	I S D U
Acidity/Toxics Trend:		Acidity/Toxics Trend:	I S D U
Acidity Effects:		Acidity Effects:	I V N U

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				139.00	139.0	
ALUS			139.00		139.0	
FISH CONSUMPTION				139.00	139.0	
PRIMARY CONTACT			139.00		139.0	
SECONDARY CONTACT		46.00	93.00		139.0	
Aesthetics				139.00	139.0	

Nonattainment Causes			1996		
Code	Size	Magnitude	Code	Size	Magnitude
0500- Metals	139.00	H			
0900- Nutrients	139.00	M			
2200- Noxious aquatic plants	139.00	M			
2400- Total toxics	139.00	H			

Nonattainment Sources			1996		
Code	Size	Magnitude	Code	Size	Magnitude
9000- SOURCE UNKNOWN	139.00	H			

Assessment Type (Assessment Category =>Evaluated) | 1996 Assessment Category => M E NA

Media/Pollutants Assessed (Toxics Monitoring =>N) | 1996 Toxics Monitoring => YES or NO
10 - Metals in sediments
11 - Metals in fish tissue

Comments:
SUSPENDED SOLIDS AND ALGAL "BLOOMS" REDUCE TRANSPARENCY TO BELOW SAFETY CRITERIA (4 FT. SECCHI DISK), VERY DENSE MACROPHYTE GROWTHS COVER NORTHERN END AND WESTERN LITTORAL ZONE OF THE POND, AND FISHING ADVISORY DUE TO LEAD IN FISH TISSUE. LIKELY NO CHANGE IN LOADING TO THIS RIVER SYSTEM SINCE SURVEY.
1996 - DATA TOO OLD TO MAKE ASSESSMENT

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1997 Synoptic Survey Field Sheet (MassDEP 1997):

LAKE/POND: Central Pond SIZE (acres): 139 PALIS NO. 52006

TOWN/CITY: Seekonk USGS TOPO. SHEET: E. Providence

DATE: 7/17/97 WATERSHED: 10 mile OBSERVERS: DeCosmo / Osborn

ACCESS -- Location [describe each observation site and assign sequential numbers (1, 2, 3, etc.) to use in subsequent records; be specific in descriptions (e.g., public boat ramp at west cove area off Simpson St., etc.)]

Site (1) South end @ RT 152 - sand launch

Site (2)

Site (3)

ACCESS -- Type (for multiple observation sites use numbers in boxes that apply)

Formal Boat Ramp ☐☐☐ and/or Beach ☐☐☐ Informal Boat Ramp ☑☐☐ and/or Beach ☐☐☐

Park ☐☐☐ Conservation Area ☐☐☐ Right-of-Way: Road ☐☐☐ Other ☐☐☐

Other (describe): ☐

☐

☐

ACCESS -- Ownership (for multiple observation sites use numbers in boxes that apply)

Public ☑☐☐ Private ☐☐☐ Uncertain ☐☐☐

Names of Owners ☐ No. & Street Name ☐

☐ No. & Street Name ☐

☐ No. & Street Name ☐

SIGN POSTINGS --

☐☐☐ Warning: Stop Aquatic Plant Spread ☐☐☐ Fishing Advisory or Ban

☐☐☐ Public Access without Restrictions ☐☐☐ Public Access with Restrictions

Describe any restrictions (or other notes) ☐

☐

☐

WATER / LAKE QUALITY OBSERVATIONS --

Turbidity: ☑☐☐ Slight ☐☐☐ Moderate ☐☐☐ Excessive

Diss. Organics: ☑☐☐ Slight ☐☐☐ Moderate ☐☐☐ Dark

Algal Bloom: ☐☐☐ Slight ☐☐☐ Moderate ☑☐☐ Dense

Transparency: ☐☐☐ < 1.2 m. (4 ft.) ☑☐☐ > 1.2 m. (4 ft.)

☑☐☐ Estimated visually

☐☐☐ Measured w/ Secchi Disk ☐ _____ meters

☐ _____ meters

☐ _____ meters

Bottom Type: ☐☐☐ Undecomposed matter ☑☐☐ Muck/silt ☑☐☐ Sand ☐☐☐ Gravel ☐☐☐ Cobble ☐☐☐ Boulders

☐☐☐ Vegetation Other ☐ ☐ ☐

Other Observations: ☐ oily sheens in algal mats

☐ Low Shoreline development

☐

AESTHETICALLY OBJECTIONABLE -- Substances attributable to wastewater or other discharges (point or nonpoint) that:

☑☐☐ Settle to form objectionable deposits

Describe: silt / algae

☑☐☐ Float as debris, scum or other matter to form a nuisance

Describe: algae

☐☐☐ Produce objectionable odor, color, taste, or turbidity

Describe:

☑☐☐ Produce undesirable nuisance species of aquatic life

Describe: algae

RECORD OF AQUATIC PLANT "SPECIES" OBSERVED --

NON-NATIVE WETLANDS SPECIES PRESENT: ☐☐☐ *Lythrum Salicaria* ☐☐☐ *Phragmites* sp.

NON-NATIVE AQUATIC SPECIES PRESENT: ☐☐☐ *Butomus umbellatus* ☐☐☐ *Cabomba caroliniana* ☐☐☐ *Egeria densa*

☐☐☐ *Eichornia crassipes* ☐☐☐ *Hydrilla verticillata* ☐☐☐ *Hydrocharis morsus-ranae* ☐☐☐ *Marsilea quadrifolia*

☐☐☐ *Myriophyllum aquaticum* ☐☐☐ *Myriophyllum heterophyllum* ☐☐☐ *Myriophyllum spicatum*

☐☐☐ *M.* sp. (*M. heterophyllum* requiring further confirmation when flowering heads are evident) _____

☐☐☐ *Najas minor* ☐☐☐ *Nelumbo lutea* ☐☐☐ *Nymphoides peltata* ☐☐☐ *Potamogeton crispus* ☐☐☐ *Trapa natans*

NATIVE SPECIES POPULATIONS:

Emergent Plants	Floating Leaf Plants	Submergent Plants
☐☐☐ Pe/tandra	☐☐☐ Nuphar	☐☐☐
☐☐☐ Decodon	☐☐☐ Lemna	☐☐☐
☐☐☐ Sagittaria	☐☐☐ Wolffia	☐☐☐
☐☐☐ Pontederia	☐☐☐	☐☐☐
☐☐☐ Iris	☐☐☐	☐☐☐
☐☐☐ Cephalanthus	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐

AQUATIC PLANT DENSITY --

Percent of suface area (at observation site) with dense (50 - 75 %) aquatic plant cover ☐ ____ % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent] present ☐ _____ ☐ _____ ☐ _____

Percent of surface area (observation site) with very dense (75 - 100 %) plant cover ☐ ____ % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent) present ☐ _____ ☐ _____ ☐ _____

Percent of entire lake surface covered with dense or very dense aquatic plants 10 % Forms mostly algal mats

Describe locations of dense and/or very dense plant beds _____

Loss of open water habitat over entire lake (estimated): ☐ 90 - 100 % ☐ 60 - 85 % ☐ 30 - 55 % ☑ ≤ 25 %

ASSESSMENTS --

TROPHIC STATUS ESTIMATE: ☐ Oligotrophic ☐ Mesotrophic ☐ Eutrophic ☑ Hypereutrophic (previous formation) ☐ Dystrophic ☐ Undetermined

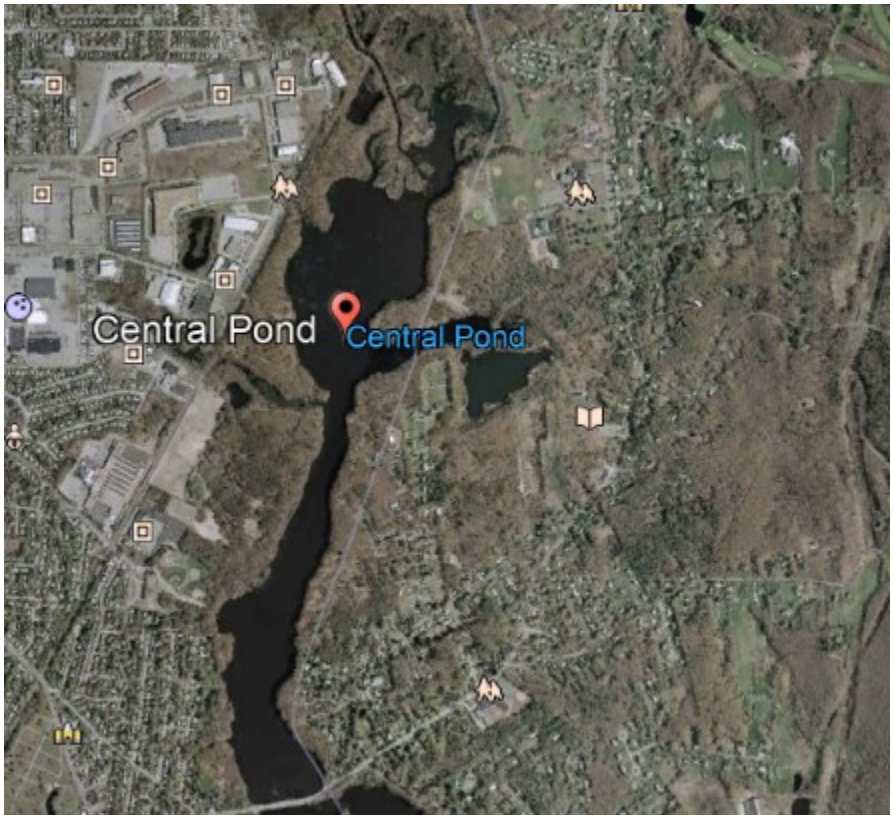
305(b) USE IMPAIRMENT ASSESSMENTS (Acres):

USES	Full Support	Threatened	Partial Support	Non-support	Not Assessed
Aquatic Life					139.0
Fish Consumption					139.0
Primary Contact				14.0	125.0
Secondary Contact	125.0			14.0	
Aesthetics	125.0			14.0	

CAUSES: ☒ Noxious plants (2200) -- Size 14.0 acres / Magnitude H ☐ Exotic plants (2600) -- Size _____ acres / Magnitude ____
☐ Turbidity (2500) -- Size _____ acres / Magnitude ____ ☐ Flow alteration (1500) -- Size _____ acres / Magnitude ____
☐ Metals (0500) ☐ Hg (0501) -- Size _____ acres / Magnitude ____ ☐ Siltation (1100) -- Size _____ acres / Magnitude ____
☐ _____ ( ) -- Size _____ acres / Magnitude ____ ☐ _____ ( ) -- Size _____ acres / Magnitude ____

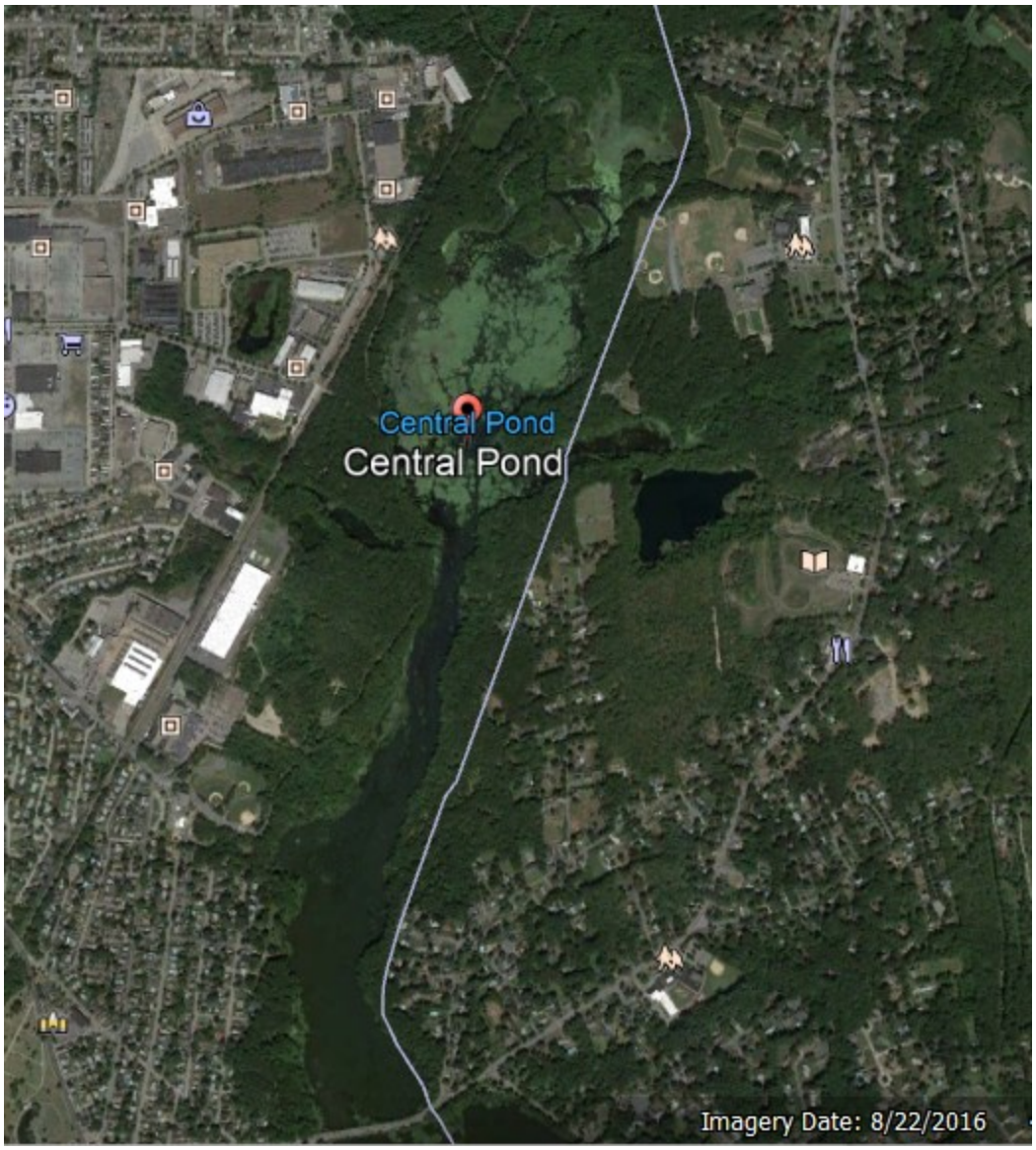
SOURCES: Describe any obvious sources of impairment Road

Google Earth image of Central Pond while mostly clear, 3/31/2002 (Google Earth Pro Undated):



Google Earth image of Central Pond, 9/11/2014 (Google Earth Pro Undated):

Google Earth image of Central Pond, 8/22/2016 (Google Earth Pro Undated):



Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Except for the re-evaluation of the Aquatic Plants Macrophyte impairment, no other recent data are available and therefore the Aquatic Life Use for Central Pond (MA52006) will continue to be assessed as Not Supporting. The impairments for Algae, Dissolved Oxygen, Dissolved Oxygen Supersaturation, Organic Enrichment (Sewage) Biological Indicators, and Total Phosphorus impairments are being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back as a non-pollutant, and a Nutrient/Eutrophication Biological Indicators impairment is being added.	

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No fish toxics sampling has been conducted in Central Pond, therefore the Fish Consumption Use is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Cyanobacteria Harmful Algal Bloom (C-HAB) postings for Central Pond (MA52006) were reported to MassDPH for 155 days in 2018. No other more recent data are available. The Aesthetic Use for Central Pond will continue to be assessed as Not Supporting with the Algae and Total Phosphorus impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and a Nutrient/Eutrophication Biological Indicators impairment is being added. Since C-HAB blooms >20 days in length were reported in a recent year, a new impairment for Harmful Algal Blooms is also being added.	

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2019 MassDPH Data (Bailey, Logan April 15, 2021) (MassDEP Undated 3)

C-HAB Summary Statement
C-HAB postings for Central Pond (MA52006) were reported to MassDPH for 155 days in 2018. Since blooms >20 days in length were reported in a recent year, the Primary/Secondary Contact Recreational Uses and Aesthetics Use are assessed as Not Supporting.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2019) Provided by MassDPH (Bailey, Logan April 15, 2021)

Waterbody	Sample Analysis Used in Issuing Advisory	Bloom Days, 2015	Bloom Days, 2016	Bloom Days, 2017	Bloom Days, 2018	Bloom Days, 2019	# Years with >20 Days of Closure	>1 Posting Per Year
Central Pond	Not issued or confirmed by sampling				155		1	no

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Cyanobacteria Harmful Algal Bloom (C-HAB) postings for Central Pond (MA52006) were reported to MassDPH for 155 days in 2018. No other more recent data are available. The Primary Contact Recreational Use for Central Pond will continue to be assessed as Not Supporting with the Algae and Total Phosphorus impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and a Nutrient/Eutrophication Biological Indicators impairment is being added. Since C-HAB blooms >20 days in length were reported in a recent year, a new impairment for Harmful Algal Blooms is also being added.	

Secondary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Cyanobacteria Harmful Algal Bloom (C-HAB) postings for Central Pond (MA52006) were reported to MassDPH for 155 days in 2018. No other more recent data are available. The Secondary Contact Recreational Use for Central Pond will continue to be assessed as Not Supporting with the Algae and Total Phosphorus impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and a Nutrient/Eutrophication Biological Indicators impairment is being added. Since C-HAB blooms >20 days in length were reported in a recent year, a new impairment for Harmful Algal Blooms is also being added.	

Coles Brook (MA52-11)

Location:	Headwaters, Grassie Swamp west of Allens Lane, Rehoboth to mouth at inlet Central Pond, Seekonk.
AU Type:	RIVER
AU Size:	4.2 MILES
Classification/Qualifier:	B

No usable data were available for Coles Brook (MA52-11) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Dewatering*)		Unchanged
5	5	Dissolved Oxygen		Unchanged
5	5	Escherichia Coli (E. Coli)		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Dewatering*)	Baseflow Depletion from Groundwater Withdrawals (N)	X				
Dissolved Oxygen	Baseflow Depletion from Groundwater Withdrawals (N)	X				
Escherichia Coli (E. Coli)	Source Unknown (N)				X	

Falls Pond, North Basin (MA52013)

Location:	North Attleborough.
AU Type:	FRESHWATER LAKE
AU Size:	54 ACRES
Classification/Qualifier:	B: WWF

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Algae		Unchanged
5	5	Dissolved Oxygen		Unchanged
5	5	Mercury in Fish Tissue		Added
5	5	Nutrient/Eutrophication Biological Indicators		Unchanged
5	5	Phosphorus, Total		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Algae	Source Unknown (N)	X				
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Dissolved Oxygen	Internal Nutrient Recycling (N)	X				
Dissolved Oxygen	Source Unknown (N)	X				
Mercury in Fish Tissue	Atmospheric Deposition - Toxics (N)		X			
Mercury in Fish Tissue	Source Unknown (N)		X			
Nutrient/Eutrophication Biological Indicators	Source Unknown (N)	X				
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Phosphorus, Total	Internal Nutrient Recycling (N)	X				
Phosphorus, Total	Source Unknown (N)	X				

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
No recent data are available to assess the status of the Aquatic Life Use for Falls Pond, North Basin (MA52013), so it will continue to be assessed as Not Supporting. The impairments for algae, dissolved oxygen, nutrient eutrophication biological indicators, and total phosphorus are being carried forward.	

Fish Consumption

2022 Use Attainment	Alert

Not Supporting	NO
2022 Use Attainment Summary	
MassDEP biologists conducted fish toxics sampling at Falls Pond (North Basin) in North Attleborough in May 2018 as part of the probabilistic lake surveys (MAP2). Because of elevated mercury measured in largemouth bass fillets, MassDPH issued the following fish consumption advisories: • *"Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any of the affected fish species (largemouth bass) from this water body."* • *"The general public should limit consumption of affected fish species (largemouth bass) to two meals per month."* Since there is a site specific DPH advisory for elevated mercury in fish tissue, the Fish Consumption Use for Falls Pond, North Basin (MA52013) is assessed as Not Supporting.	

MassDEP fish toxics sampling information (2018-2020) and MassDPH Fish Consumption Advisory information (2019-2021) (MassDPH 2021) (MassDEP 2018) (MassDEP Undated 7).

MassDEP biologists conducted fish toxics sampling at Falls Pond (North Basin) in North Attleborough in May 2018 as part of the probabilistic lake surveys (MAP2). Because of elevated mercury measured in largemouth bass fillets, MassDPH issued the following fish consumption advisories:

- *"Children younger than 12 years of age, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any of the affected fish species (largemouth bass) from this water body."*
- *"The general public should limit consumption of affected fish species (largemouth bass) to two meals per month."*

Since there is a site specific DPH advisory for elevated mercury in fish tissue, the Fish Consumption Use for Falls Pond (MA52013) is assessed as Not Supporting. The likely source, although not confirmed, is atmospheric deposition.

Aesthetic

2022 Use Attainment	Alert
Insufficient Information	YES
2022 Use Attainment Summary	
MassDEP aesthetics observations for station W2588 (the North Basin Town beach) on Falls Pond can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015 (n=2). Too limited data are available to assess the Aesthetics Use for Falls Pond North Basin (MA52013), so it is assessed as having Insufficient Information. The Alert identified due to a phytoplankton bloom observed during an August 2002 survey, will be carried forwards.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2588	MassDEP	Water Quality	Ten Mile River/Falls Pond	[North Basin, from the town beach on Falls Pond (a Ten Mile River impoundment), North Attleboro]	41.968880	-71.326227

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2588	Ten Mile River/Falls Pond	2015	2	MassDEP aesthetics observations for station W2588 on Ten Mile River/Falls Pond can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2588	2015	2	0	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2588	Ten Mile River/Falls Pond	2015	Color	None	1	2
W2588	Ten Mile River/Falls Pond	2015	Color	NR	1	2
W2588	Ten Mile River/Falls Pond	2015	Objectionable Deposits	Not Applicable (N/A)	2	2
W2588	Ten Mile River/Falls Pond	2015	Odor	None	2	2
W2588	Ten Mile River/Falls Pond	2015	Scum	Not Applicable (N/A)	2	2
W2588	Ten Mile River/Falls Pond	2015	Turbidity	NR	1	2
W2588	Ten Mile River/Falls Pond	2015	Turbidity	Slightly Turbid	1	2

Primary Contact Recreation

2022 Use Attainment	Alert
Insufficient Information	YES
2022 Use Attainment Summary	

MassDEP staff conducted a limited amount of *E. coli* bacteria sampling in Falls Pond North Basin at the Town beach, North Attleboro (W2588) in 2015. Of the two samples collected, *E. coli* counts were once slightly above the 410 STV criterion, though the overall GM was 211 cfu/100ml. MassDEP staff also conducted Bacteria Source Tracking (BST) work at three sites along the shore of the pond in 2015, with *E. coli* concentrations ranging 53 to 770MPN, though no correctable source was ever found. Overall, too limited bacteria data are available to assess the Primary Contact Recreational Use for Falls Pond North Basin according to the CALM "Use Attainment Impairment Decision Schema", so this use will be assessed as Insufficient Information. The Alert for a phytoplankton bloom observed during an August 2002 survey is being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2588	MassDEP	Water Quality	Ten Mile River/Falls Pond	[North Basin, from the town beach on Falls Pond (a Ten Mile River impoundment), North Attleboro]	41.968880	-71.326227

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

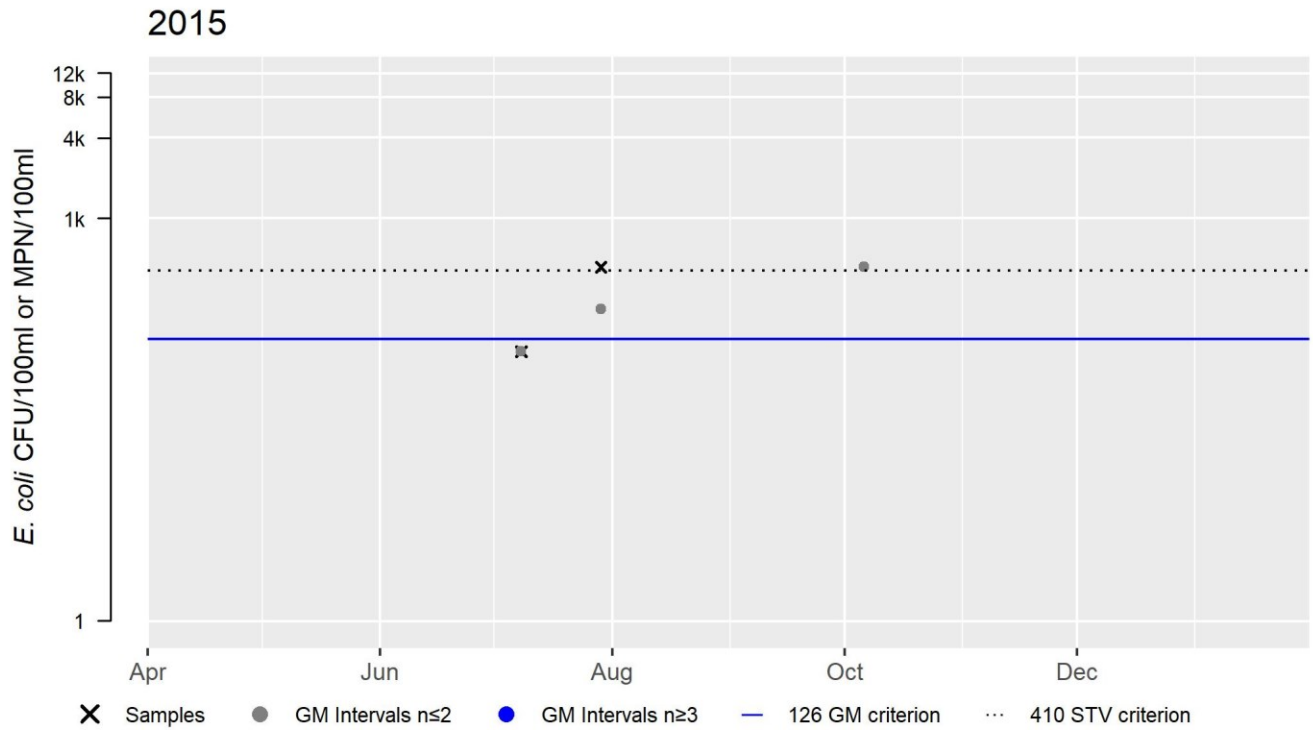
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2588	MassDEP	E. coli	07/08/15	07/29/15	2	102	435	211

W2588 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	211
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
BST samples were collected at 3 sites along the shore of the Falls Pond AU (MA52013) in 2015, with E.coli concentrations ranging 53 to 770MPN in dry weather conditions. No correctable source was ever found.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Insufficient Information	YES
2022 Use Attainment Summary	

MassDEP staff conducted a limited amount of *E. coli* bacteria sampling in Falls Pond North Basin at the Town beach, North Attleboro (W2588) in 2015. Of the two samples collected, *E. coli* counts were both well below the 630 GM criterion with an overall GM of 211 cfu/100ml. MassDEP staff also conducted Bacteria Source Tracking (BST) at three sites along the shore of the pond in 2015, with *E. coli* concentrations ranging 53 to 770MPN, though no correctable source was ever found. Overall, too limited data are available to assess the Secondary Contact Recreational Use for Falls Pond North Basin according to the CALM "Use Attainment Impairment Decision Schema", so this use is assessed as Insufficient Information. The Alert for a phytoplankton bloom observed during an August 2002 survey is being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2588	MassDEP	Water Quality	Ten Mile River/Falls Pond	[North Basin, from the town beach on Falls Pond (a Ten Mile River impoundment), North Attleboro]	41.968880	-71.326227

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

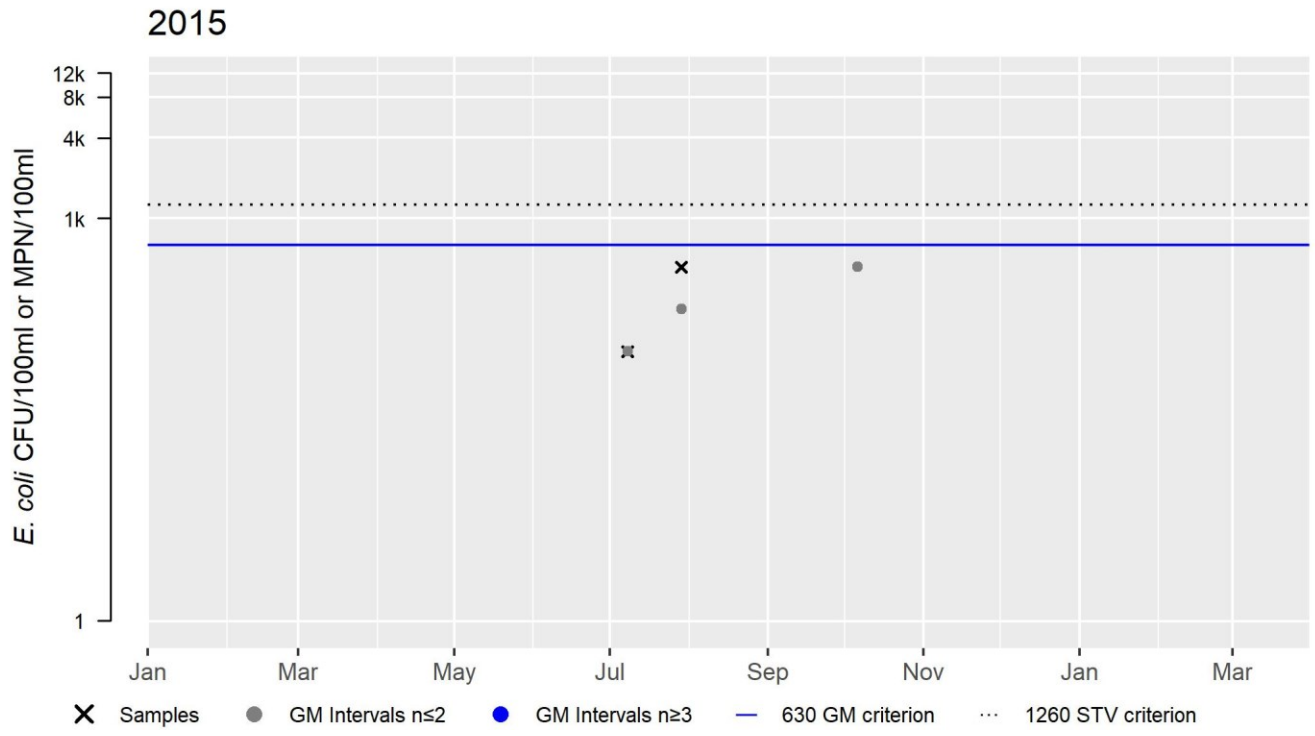
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W2588	MassDEP	E. coli	07/08/15	07/29/15	2	102	435	211

W2588 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	211
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



Falls Pond, South Basin (MA52014)

Location:	North Attleborough.
AU Type:	FRESHWATER LAKE
AU Size:	50 ACRES
Classification/Qualifier:	B

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Non-Native Aquatic Plants*)		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Non-Native Aquatic Plants*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X				

Recommendations

2022 Recommendations
ALU: Conduct an aquatic macrophyte survey in the South Basin of Falls Pond when flowering heads are present to confirm the presence of the non-native *Myriophyllum heterophyllum* in the pond.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
It was previously reported that MassDEP staff noted the "likely" presence of the non-native aquatic macrophyte, variable milfoil (*Myriophyllum heterophyllum*), in the South Basin of Falls Pond during a July 1997 synoptic survey. A recommendation will be made to confirm the presence of this specific non-native. The Aquatic Life Use will continue to be assessed as Not Supporting. The impairment for non-native aquatic plants will be carried forward.	

Biological Monitoring Information

Non-native Aquatic Species Presence

MassDEP Non-Native Aquatic Invasive Species Records as of May 2021. (MassDEP 1997)

Summary Statement	Assessment Recommendation
It was previously reported that MassDEP staff noted the presence of the non-native aquatic macrophyte, variable milfoil (*Myriophyllum heterophyllum*), in the South Basin of Falls Pond during a July 1997 synoptic survey.	Conduct an aquatic macrophyte survey in the South Basin of Falls Pond when flowering heads are present to confirm the presence of the non-native *Myriophyllum heterophyllum* in the pond.

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was done in 1984 in Falls Pond, South Basin, no site-specific fish consumption advisory was issued by MA DPH. The Fish Consumption Use for Falls Pond, South Basin (MA52014) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Assessed	YES
2022 Use Attainment Summary	
There are no data available to assess the Aesthetic Use for Falls Pond, South Basin so it is Not Assessed. The alert for the density of the non-native macrophytes (approximately 25% of the lake area) is being carried forward (MassDEP 2006).	

Primary Contact Recreation

2022 Use Attainment	Alert
Not Assessed	YES
2022 Use Attainment Summary	
There are no data available to assess the Primary Contact Use for Falls Pond, South Basin so it is Not Assessed. The alert for the density of the non-native macrophytes (approximately 25% of the lake area) is being carried forward (MassDEP 2006).	

Secondary Contact Recreation

2022 Use Attainment	Alert
Not Assessed	YES
2022 Use Attainment Summary	
There are no data available to assess the Secondary Contact Use for Falls Pond, South Basin so it is Not Assessed. The alert for the density of the non-native macrophytes (approximately 25% of the lake area) is being carried forward (MassDEP 2006).	

Fourmile Brook (MA52-10)

Location:	Headwaters, outlet Manchester Pond Reservoir, Attleboro to inlet Orrs Pond (a Sevenmile River impoundment), Attleboro.
AU Type:	RIVER
AU Size:	1 MILES
Classification/Qualifier:	A: PWS, ORW (Tributary)

No usable data were available for Fourmile Brook (MA52-10) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Sedimentation/Siltation		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Sedimentation/Siltation	Habitat Modification - other than Hydromodification (Y)	X				

Greenwood Lake (MA52017)

Location:	Mansfield/North Attleborough.
AU Type:	FRESHWATER LAKE
AU Size:	96 ACRES
Classification/Qualifier:	B

No usable data were available for Greenwood Lake (MA52017) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None		Unchanged

Hoppin Hill Reservoir (MA52021)

Location:	North Attleborough.
AU Type:	FRESHWATER LAKE
AU Size:	22 ACRES
Classification/Qualifier:	A: PWS, ORW (Tributary)

No usable data were available for Hoppin Hill Reservoir (MA52021) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None		Unchanged

James V. Turner Reservoir (MA52022)

Location:	Seekonk,MA/E. Providence,RI (size indicates portion in Massachusetts).
AU Type:	FRESHWATER LAKE
AU Size:	28 ACRES
Classification/Qualifier:	B

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)		Changed
5	5	Algae		Unchanged
5	5	Dissolved Oxygen Supersaturation		Unchanged
5	5	Harmful Algal Blooms		Unchanged
5	5	Nutrient/Eutrophication Biological Indicators		Added
5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
5	5	Phosphorus, Total		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
(Aquatic Plants (Macrophytes)*)	Municipal (Urbanized High Density Area) (N)	X		X	X	X
(Aquatic Plants (Macrophytes)*)	Municipal Point Source Discharges (Y)	X		X	X	X
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Algae	Municipal (Urbanized High Density Area) (N)	X		X	X	X
Algae	Municipal Point Source Discharges (Y)	X		X	X	X
Dissolved Oxygen Supersaturation	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Dissolved Oxygen Supersaturation	Municipal (Urbanized High Density Area) (N)	X				
Dissolved Oxygen Supersaturation	Municipal Point Source Discharges (Y)	X				
Harmful Algal Blooms	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)			X	X	X
Harmful Algal Blooms	Municipal (Urbanized High Density Area) (N)			X	X	X
Harmful Algal Blooms	Municipal Point Source Discharges (Y)			X	X	X
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X		X
Nutrient/Eutrophication Biological Indicators	Municipal (Urbanized High Density Area) (N)	X		X		X
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (Y)	X		X		X
Organic Enrichment (Sewage) Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Organic Enrichment (Sewage) Biological Indicators	Municipal (Urbanized High Density Area) (N)	X				
Organic Enrichment (Sewage) Biological Indicators	Municipal Point Source Discharges (Y)	X				
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Phosphorus, Total	Municipal (Urbanized High Density Area) (N)	X		X	X	X
Phosphorus, Total	Municipal Point Source Discharges (Y)	X		X	X	X

Supporting Information for Removed Impairments

2018/20 Removed Impairment	Removal Reason	Removal Comment
Aquatic Plants (Macrophytes)	Not caused by a pollutant (4c)	As described in detail in the 2022 CALM guidance document (MassDEP 2022), the mapping of Aquatic Plants (Macrophytes) impairments as a pollutant is being reevaluated. The James V. Turner Reservoir (MA52022) was first listed as impaired for Noxious Aquatic Plants in 1992 and this cause was remapped to Aquatic Plants (Macrophytes) during the 2008 IR cycle (MassDEP 2015). Although the original 1984 data used to make the impairment could not be located, during a July 1997 synoptic survey conducted by MassDEP staff, they noted that 10% of the pond (the entire shoreline) was covered with *Nymphaea* sp. (lilies) and they also noted the presence of the non-rooted, floating species, *Lemna* sp. (MassDEP 1997, MassDEP 2002). In Google Earth images from July 2008, December 2009, and September 2014, more than half of the reservoir is covered in vegetation (Google Earth Pro Undated). Nutrient/Eutrophication Biological Indicators is being added as an impairment based on the presence of a non-rooted, floating, aquatic macrophyte species (*Lemna* sp.). Additionally, Aquatic Plants (Macrophytes) is being delisted as a pollutant and added again as a non-pollutant since more than 25% of the pond was covered in vegetation in recent years.

Aquatic Plants (Macrophytes)

1996 WBS Coding Sheet (MassDEP 2002):

WBID: MA52022 WATERSHED: Ten Mile(52) (Printed 05/13/96)
NAME: James V. Turner Reservoir TYPE: Lake/Pond
CODE: 52022 SIZE: 124.00(acres)

CLASS: B
ORW?: Yes or No
Water Supply?: Yes or No

LATITUDE:
LONGITUDE: ()
Lake/Pond Name: James V. Turner Reservoir, Seekonk/E. Providence, R.I.
Ecoregion Name: ()
Description:

Assessment Date: 9112 9609 **Begin Sampling:** 8406 **Water Quality Limited?:** YES or NO
Cycle: 94 96 **End Sampling:** 8409 **303(d) List?:** YES or NO

Lake Specific Information		1996	
Significantly Publicly Owned:	Y	Significantly Publicly Owned:	Y or N
Trophic Status:	H	Trophic Status:	O M E H D U
Trophic Trend:		Trophic Trend:	I S D U
Acidity/Toxics Trend:		Acidity/Toxics Trend:	I S D U
Acidity Effects:		Acidity Effects:	I V N U

Uses	Support	Threat	Partial	Non-Sup	Not-Asses	Not-Attain
OVERALL USE SUPPORT				124.00	124.0	
ALUS	124.00				124.0	
FISH CONSUMPTION				124.00	124.0	
PRIMARY CONTACT			124.00		124.0	
SECONDARY CONTACT	124.00				124.0	
Aesthetics			124.00		124.0	

Nonattainment Causes			1996		
Code	Size	Magnitude	Code	Size	Magnitude
0500 - Metals	124.00	H			
0900 - Nutrients	124.00	M			
2200 - Noxious aquatic plants	124.00	M			
2400 - Total toxics	124.00	H			

Nonattainment Sources			1996		
Code	Size	Magnitude	Code	Size	Magnitude
0200 - MUNICIPAL POINT SOURCES	124.00	M			
9000 - SOURCE UNKNOWN	124.00	M			

Assessment Type (Assessment Category = > Evaluated)
1996 Assessment Category = > M E NA

Media/Pollutants Assessed (Toxics Monitoring = > Y)
03 - Organics in fish tissue
09 - Metals in water column
10 - Metals in sediments
11 - Metals in fish tissue

1996 Toxics Monitoring = > YES or NO

Comments:
HISTORICALLY VERY HIGH TOTAL PHOSPHORUS LEVELS, ALGAL "BLOOMS" REDUCE THE TRANSPARENCY TO BELOW THE SAFETY CRITERIA (4 FT. SECCHI DISK), AND A FISHING ADVISORY DUE TO LEAD IN FISH FLESH ANALYSES. NO MANAGEMENT EFFORTS IMPLEMENTED TO DATE.
1996 - DATA TOO OLD TO MAKE ASSESSMENT.

E. RSM 10/31/96

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1997 Synoptic Survey Field Sheet (MassDEP 1997):

James V.

LAKE/POND: Turner Reservoir SIZE (acres): 124 PALIS NO. 52022

TOWN/CITY: Seekonk USGS TOPO. SHEET: E. Providence

DATE: 7/17/97 WATERSHED: 10 Mile OBSERVERS: DeCesare/O'Shea

ACCESS – Location [describe each observation site and assign sequential numbers (1, 2, 3, etc.) to use in subsequent records; be specific in descriptions (e.g., public boat ramp at west cove area off Simpson St., etc.)]

Site (1) Informal packed sand ramp @ RT 152 crossing (Turner/Central Res.)

Site (2)

Site (3)

ACCESS – Type (for multiple observation sites use numbers in boxes that apply)

Formal Boat Ramp ☐☐☐ and/or Beach ☐☐☐ Informal Boat Ramp ☑☐☐ and/or Beach ☐☐☐

Park ☐☐☐ Conservation Area ☐☐☐ Right-of-Way: Road ☑☐☐ Other ☐☐☐

Other (describe): ☐

☐

☐

ACCESS – Ownership (for multiple observation sites use numbers in boxes that apply)

Public ☐☐☐ Private ☐☐☐ Uncertain ☑☐☐

Names of Owners ☐ No. & Street Name ☐

☐ No. & Street Name ☐

☐ No. & Street Name ☐

SIGN POSTINGS –

☐☐☐ Warning: Stop Aquatic Plant Spread ☐☐☐ Fishing Advisory or Ban

☐☐☐ Public Access without Restrictions ☐☐☐ Public Access with Restrictions

Describe any restrictions (or other notes) ☐

☐

☐

WATER /LAKE QUALITY OBSERVATIONS –

Turbidity: ☐☐☐ Slight ☑☐☐ Moderate ☐☐☐ Excessive

Transparency: ☐☐☐ <1.2 m.(4 ft.) ☑☐☐ >1.2 m. (4 ft.)

☑☐☐ Estimated visually

☐☐☐ Measured w/ Secchi Disk ☐ meters ☐ meters ☐ meters

Diss. Organics: ☑☐☐ Slight ☐☐☐ Moderate ☐☐☐ Dark

Algal Bloom: ☐☐☐ Slight ☐☐☐ Moderate ☑☐☐ Dense

Bottom Type: ☐☐☐ Undecomposed matter ☑☐☐ Muck/silt ☑☐☐ Sand ☐☐☐ Gravel ☐☐☐ Cobble ☑☐☐ Boulders

☑☐☐ Vegetation Other ☐ ☐ ☐

Other Observations: ☐ low shoreline development

☐

☐

AESTHETICALLY OBJECTIONABLE – Substances attributable to wastewater or other discharges (point or nonpoint) that:

☑☐☐ Settle to form objectionable deposits

Describe: silt

☑☐☐ Float as debris, scum or other matter to form a nuisance

Describe: Algal mats

☐☐☐ Produce objectionable odor, color, taste, or turbidity

Describe:

☑☐☐ Produce undesirable nuisance species of aquatic life

Describe: Algae

RECORD OF AQUATIC PLANT "SPECIES" OBSERVED – Knotweed

NON-NATIVE WETLANDS SPECIES PRESENT: ☐☐☐ *Lythrum Salicaria* ☐☐☐ *Phragmites* sp.

NON-NATIVE AQUATIC SPECIES PRESENT: ☐☐☐ *Butomus umbellatus* ☐☐☐ *Cabomba caroliniana* ☐☐☐ *Egeria densa*

☐☐☐ *Eichornia crassipes* ☐☐☐ *Hydrilla verticillata* ☐☐☐ *Hydrocharis morsus-ranae* ☐☐☐ *Marsilea quadrifolia*

☐☐☐ *Myriophyllum aquaticum* ☐☐☐ *Myriophyllum heterophyllum* ☐☐☐ *Myriophyllum spicatum*

☐☐☐ *M.* sp. (*M. heterophyllum* requiring further confirmation when flowering heads are evident) _____

☐☐☐ *Najas minor* ☐☐☐ *Nelumbo lutea* ☐☐☐ *Nymphoides peltata* ☐☐☐ *Potamogeton crispus* ☐☐☐ *Trapa natans*

NATIVE SPECIES POPULATIONS:

Emergent Plants	Floating Leaf Plants	Submergent Plants
☑☐☐ Sagitaria	☑☐☐ Nymphaea	☐☐☐ none
☑☐☐ Pontederia	☑☐☐ Nuphar	☐☐☐
☑☐☐ Iris	☑☐☐ Lemna	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
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☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐
☐☐☐	☐☐☐	☐☐☐

AQUATIC PLANT DENSITY –

Percent of suface area (at observation site) with dense (50 - 75 %) aquatic plant cover ☐ ____ % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent] present ☐ _____ ☐ _____ ☐ _____

Percent of surface area (observation site) with very dense (75 - 100 %) plant cover ☐ ____ % ☐ ____ % ☐ ____ %

Forms [(E)mergent, (F)loating, or (S)ubmerent) present ☐ _____ ☐ _____ ☐ _____

Percent of entire lake surface covered with dense or very dense aquatic plants 10 % Forms F(lilies)

Describe locations of dense and/or very dense plant beds entire shoreline

Loss of open water habitat over entire lake (estimated): ☐ 90 - 100 % ☐ 60 - 85 % ☐ 30 - 55 % ☑ ≤ 25 %

ASSESSMENTS –

TROPHIC STATUS ESTIMATE: ☐ Oligotrophic ☐ Mesotrophic ☐ Eutrophic ☑ Hypereutrophic (previous information) ☐ Dystrophic ☐ Undetermined

305(b) USE IMPAIRMENT ASSESSMENTS (Acres):

USES	Full Support	Threatened	Partial Support	Non-support	Not Assessed
Aquatic Life					124.0
Fish Consumption					124.0
Primary Contact				12.0	112.0
Secondary Contact	112.0			12.0	
Aesthetics	112.0			12.0	

CAUSES: ☑ Noxious plants (2200) (Algae) -- Size 12 acres / Magnitude H ☐ Exotic plants (2600) -- Size _____ acres / Magnitude _____

☐ Turbidity (2500) -- Size _____ acres / Magnitude _____ ☐ Flow alteration (1500) -- Size _____ acres / Magnitude _____

☐ Metals (0500) ☐ Hg (0501) -- Size N/A acres / Magnitude _____ ☐ Siltation (1100) -- Size _____ acres / Magnitude _____

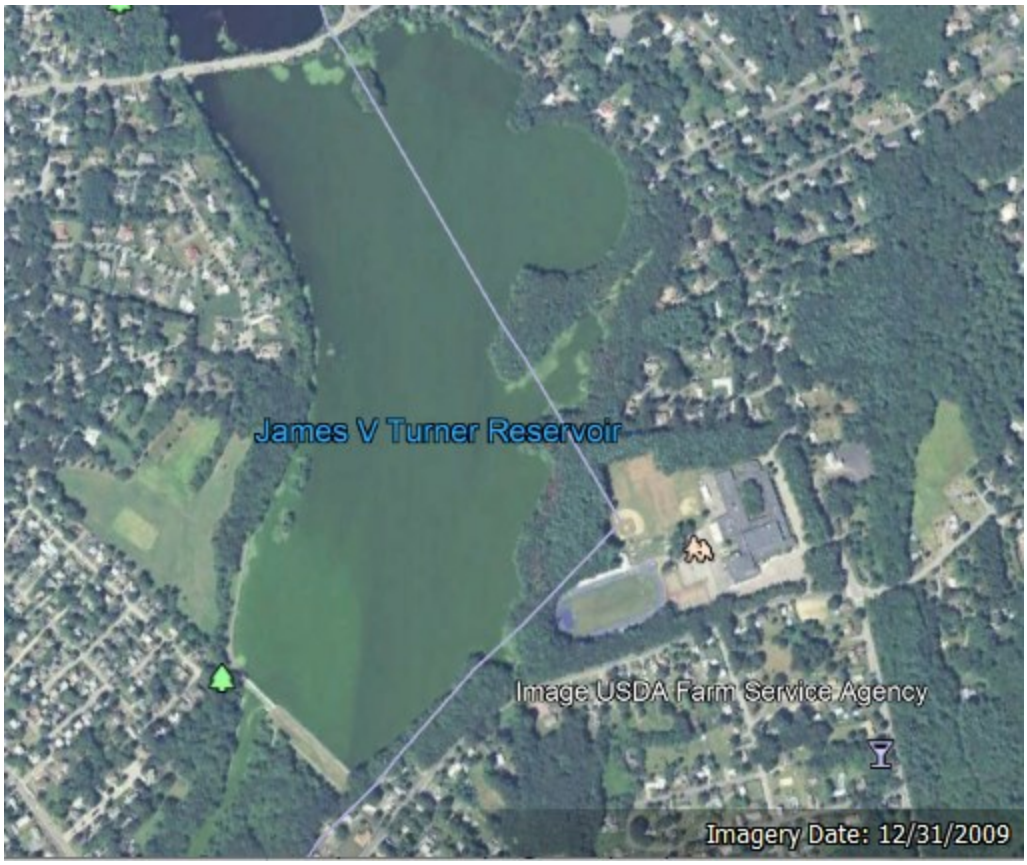
☐ _____ ( ) -- Size _____ acres / Magnitude _____ ☐ _____ ( ) -- Size _____ acres / Magnitude _____

SOURCES: Describe any obvious sources of impairment Heavy road run-off, bank erosion

Google Earth image of James V. Turner Reservoir while mostly clear, 3/31/2005 (Google Earth Pro Undated):

Google Earth image of James V. Turner Reservoir, 7/2/2008 (Google Earth Pro Undated):

Google Earth image of James V. Turner Reservoir, 12/31/2009 (Google Earth Pro Undated):



Google Earth image of James V. Turner Reservoir, 9/11/2014 (Google Earth Pro Undated):

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Except for the re-evaluation of the Aquatic Plants Macrophyte impairment, no other recent data are available and therefore the Aquatic Life Use for James V. Turner Reservoir (MA52022) will continue to be assessed as Not Supporting. The impairments for Algae, Dissolved Oxygen Supersaturation, Organic Enrichment (Sewage) Biological Indicators and Total Phosphorus impairments are being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back as a non-pollutant, and a Nutrient/Eutrophication Biological Indicators impairment is being added.	

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was done in 1984 in James V. Turner Reservoir, no site-specific fish consumption advisory is in place, therefore the Fish Consumption Use for James V. Turner Reservoir (MA52022) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert

Not Supporting	NO
2022 Use Attainment Summary	
C-HAB postings for Turner Reservoir (MA52022) were reported to MassDPH for 155 days in 2018. Since the bloom was >20 days in length and reported in a recent year, this reinforces the existing impairment for Harmful Algal Blooms in Turner Reservoir. No other more recent data are available. The Aesthetic Use for James V. Turner Reservoir will continue to be assessed as Not Supporting with the Algae, Total Phosphorus, and Harmful Algal Blooms impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and the Nutrient/Eutrophication Biological Indicators impairment is being added.	

Algal Bloom Information

Cyanobacteria Harmful Algal Bloom (C-HAB) Summary Statements for 2015-2019 MassDPH Data (Bailey, Logan April 15, 2021) (MassDEP Undated 3)

C-HAB Summary Statement
C-HAB postings for Turner Reservoir (MA52022) were reported to MassDPH for 155 days in 2018. Since blooms >20 days in length were reported in a recent year, the Primary/Secondary Contact Recreational Uses and Aesthetics Use are assessed as Not Supporting.

Cyanobacteria Harmful Algal Bloom (C-HAB) Data (2015-2019) Provided by MassDPH (Bailey, Logan April 15, 2021)

Waterbody	Sample Analysis Used in Issuing Advisory	Bloom Days, 2015	Bloom Days, 2016	Bloom Days, 2017	Bloom Days, 2018	Bloom Days, 2019	# Years with >20 Days of Closure	>1 Posting Per Year
Turner Reservoir	Not issued or confirmed by sampling				155		1	no

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
C-HAB postings for Turner Reservoir (MA52022) were reported to MassDPH for 155 days in 2018. Since the bloom was >20 days in length and reported in a recent year, this reinforces the existing impairment for Harmful Algal Blooms in Turner Reservoir. No other more recent data are available. The Primary Contact Recreational Use for James V. Turner Reservoir will continue to be assessed as Not Supporting with the Algae, Total Phosphorus, and Harmful Algal Blooms impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and the Nutrient/Eutrophication Biological Indicators impairment is being added.	

Secondary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
C-HAB postings for Turner Reservoir (MA52022) were reported to MassDPH for 155 days in 2018. Since the bloom was >20 days in length and reported in a recent year, this reinforces the existing impairment for Harmful Algal Blooms in Turner Reservoir. No other more recent data are available. The Secondary Contact Recreational Use for James V. Turner Reservoir will continue to be assessed as Not Supporting with the Algae, Total Phosphorus, and Harmful Algal Blooms impairments being carried forward. The Aquatic Plants (Macrophytes) impairment is being removed as a pollutant and added back in as a non-pollutant and the Nutrient/Eutrophication Biological Indicators impairment is being added.	

Lake Como (MA52010)

Location:	Attleboro.
AU Type:	FRESHWATER LAKE
AU Size:	5 ACRES
Classification/Qualifier:	B

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)		Added
5	5	(Non-Native Aquatic Plants*)		Removed
5	5	Algae		Unchanged
5	5	Turbidity		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X		X	X	X
Algae	Source Unknown (N)	X		X	X	X
Turbidity	Source Unknown (N)	X		X	X	X

Supporting Information for Removed Impairments

2018/20 Removed Impairment	Removal Reason	Removal Comment
Non-Native Aquatic Plants	Clarification of listing cause	The generic Non-Native Aquatic Plants impairment code is being removed since the species-specific Fanwort impairment is being added.

Non-Native Aquatic Plants

The generic "Non-Native Aquatic Plants" impairment is being removed since the specific macrophyte Fanwort (*Cabomba caroliniana*) impairment is being added.

Recommendations

2022 Recommendations
ALU: Conduct an aquatic macrophyte survey in Lake Como when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the lake.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert

Not Supporting	YES
2022 Use Attainment Summary	
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Lake Como during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. No other data are available to assess the status of the Aquatic Life Use so it will continue to be assessed as Not Supporting with the Algae and Turbidity impairments being carried forward. The generic Non-Native Aquatic Plants impairment is being removed since the Fanwort impairment is being added and an Alert is being identified for the possible infestation of non-native *Myriophyllum* species.	

Biological Monitoring Information

Non-native Aquatic Species Presence

MassDEP Non-Native Aquatic Invasive Species Records as of May 2021. (MassDEP 1997)

Summary Statement	Assessment Recommendation
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Lake Como during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. An aquatic macrophyte survey should be conducted to determine whether any of the non-native species of *Myriophyllum* are present in the lake and an Alert should be issued.	Conduct an aquatic macrophyte survey in Lake Como when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the lake.

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No fish toxics sampling has been conducted in Lake Como, therefore the Fish Consumption Use is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Supporting	YES
2022 Use Attainment Summary	
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Lake Como during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. No other data are available to assess the status of the Aesthetics Use so it will continue to be assessed as Not Supporting with the Algae and Turbidity impairments being carried forward. The generic Non-Native Aquatic Plants impairment is being removed since the Fanwort impairment is being added and an Alert is being identified for the possible infestation of non-native *Myriophyllum* species.	

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	YES
2022 Use Attainment Summary	

As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Lake Como during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. No other data are available to assess the status of the Primary Contact Recreational Use so it will continue to be assessed as Not Supporting with the Algae and Turbidity impairments being carried forward. The generic Non-Native Aquatic Plants impairment is being removed since the Fanwort impairment is being added and an Alert is being identified for the possible infestation of non-native *Myriophyllum* species.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Not Supporting	YES
2022 Use Attainment Summary	
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Lake Como during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. No other data are available to assess the status of the Secondary Contact Recreational Use so it will continue to be assessed as Not Supporting with the Algae and Turbidity impairments being carried forward. The generic Non-Native Aquatic Plants impairment is being removed since the Fanwort impairment is being added and an Alert is being identified for the possible infestation of non-native *Myriophyllum* species.	

Manchester Pond Reservoir (MA52026)

Location:	Attleboro.
AU Type:	FRESHWATER LAKE
AU Size:	238 ACRES
Classification/Qualifier:	A: PWS, ORW (PWS and Tributary to PWS)

No usable data were available for Manchester Pond Reservoir (MA52026) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
3	3	None		Unchanged

Orrs Pond (MA52029)

Location:	Attleboro.
AU Type:	FRESHWATER LAKE
AU Size:	58 ACRES
Classification/Qualifier:	A: PWS, ORW

No usable data were available for Orrs Pond (MA52029) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
4c	4c	(Eurasian Water Milfoil, Myriophyllum Spicatum*)		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Eurasian Water Milfoil, Myriophyllum Spicatum*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X				

Plain Street Pond (MA52032)

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

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Fanwort*)		Added
5	5	(Non-Native Aquatic Plants*)		Removed
5	5	Algae		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Fanwort*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X				
Algae	Source Unknown (N)			X	X	X

Supporting Information for Removed Impairments

2018/20 Removed Impairment	Removal Reason	Removal Comment
Non-Native Aquatic Plants	Clarification of listing cause	The generic Non-Native plants impairment code is being delisted and replaced with the specific fanwort impairment code.

Non-Native Aquatic Plants

The generic "Non-Native Aquatic Plants" impairment is being removed since the specific macrophyte Fanwort (*Cabomba caroliniana*) impairment is being added.

Recommendations

2022 Recommendations
ALU: Conduct an aquatic macrophyte survey in Plain Street Pond when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the pond.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	YES

2022 Use Attainment Summary
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Plain Street Pond during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. The Aquatic Life Use for Plain Street Pond will continue to be assessed as Not Supporting. The generic Non-Native Aquatic Plants impairment is being removed since the species-specific Fanwort (*Cabomba caroliniana)* impairment is being added. An Alert is also being identified for the possible infestation of a non-native *Myriophyllum* species.

Biological Monitoring Information

Non-native Aquatic Species Presence

MassDEP Non-Native Aquatic Invasive Species Records as of May 2021. (MassDEP 1997)

Summary Statement	Assessment Recommendation
As was previously reported, MassDEP staff identified an infestation of the non-native aquatic macrophyte, fanwort (*Cabomba caroliniana*), in Plain Street Pond during a July 1997 synoptic survey. A review of DEP aquatic invasive species records revealed that the presence of *Myriophyllum* sp. was also noted during the synoptic survey. An aquatic macrophyte survey should be conducted to determine whether any of the non-native species of *Myriophyllum* are present in the lake and an Alert should be issued.	Conduct an aquatic macrophyte survey in Plain Street Pond when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the pond.

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No fish toxics sampling has been conducted in Plain Street Pond; therefore, the Fish Consumption Use is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Since no new data are available, the Aesthetic Use for Plain Street Pond will continue to be assessed as Not Supporting with the Algae impairment being carried forward.	

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Since no new data are available, the Primary Contact Recreational Use for Plain Street Pond will continue to be assessed as Not Supporting with the Algae impairment being carried forward.	

Secondary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Since no new data are available, the Secondary Contact Recreational Use for Plain Street Pond will continue to be assessed as Not Supporting with the Algae impairment being carried forward.	

Scotts Brook (MA52-09)

Location:	Headwaters, north of High Street, North Attleborough to mouth at confluence with Ten Mile River, North Attleborough.
AU Type:	RIVER
AU Size:	2.1 MILES
Classification/Qualifier:	B

No usable data were available for Scotts Brook (MA52-09) for the 2022 Integrated Reporting cycle, therefore its category, use attainments, impairments, associated actions, and sources remain unchanged from the previous cycle.

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Dewatering*)		Unchanged
5	5	Escherichia Coli (E. Coli)		Unchanged

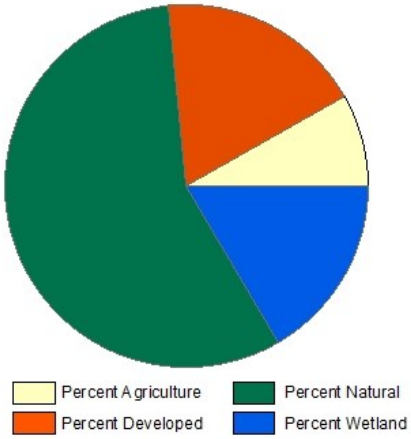
Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Dewatering*)	Source Unknown (N)	X				
Escherichia Coli (E. Coli)	Source Unknown (N)				X	

Sevenmile River (MA52-07)

Location:	Headwaters, outlet Hoppin Hill Reservoir, North Attleborough to inlet Orrs Pond, Attleboro (through former 2006 segment: Luther Reservoir MA52025).
AU Type:	RIVER
AU Size:	3.2 MILES
Classification/Qualifier:	A: PWS, ORW

Sevenmile River - MA52-07

Watershed Area: 4.98 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	4.98	3.22	3.17	2.11
Agriculture	8.2%	3%	8.8%	1.8%
Developed	18.5%	24.2%	15.6%	20.7%
Natural	56.8%	57.1%	53%	56.5%
Wetland	16.6%	15.6%	22.6%	21%
Impervious Cover	10.4%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Escherichia Coli (E. Coli)		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Escherichia Coli (E. Coli)	Source Unknown (N)				X	

Recommendations

2022 Recommendations
ALU: Conduct an aquatic macrophyte survey in the Luther Reservoir impoundment of the Sevenmile River (MA52-07) when flowering heads are present, to determine if any non-native species of *Myriophyllum* are infesting the reservoir.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Insufficient Information	YES

2022 Use Attainment Summary

MassDFG biologists conducted backpack electrofishing in this Sevenmile River AU (MA52-07) upstream of Draper Ave, North Attleboro (SampleID 5460) in June 2015. Although pumpkinseed (a moderately pollution tolerant macrohabitat generalist) was present and comprised half of the sample in the low gradient habitat, only four fish were captured. During validation of MassDEP aquatic invasive species records, it was noted that DEP biologists listed "*Myriophyllum* sp." on the field sheet for a July 1997 synoptic survey of Luther Reservoir, located just downstream of Old Post Road in Attleboro (now part of this Sevenmile River AU - MA52-07). Too limited data are available to assess the status of the Aquatic Life Use for this Sevenmile River AU (MA52-07), so it is assessed as Insufficient Information. An Alert is being identified for the possible infestation of a non-native *Myriophyllum* species in the Luther Reservoir impoundment.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
5460	MassDFG	Fish Community	Seven Mile River	Draper Ave (US), North Attleboro	41.95194	-71.34177

Biological Monitoring Information

Fish Community Data and DELTS

Fish Community Data (2012-2019) Provided by MassDFG. (MassDFG 2020) (MassDEP Undated 2)

[Sample Type: TP= Total Pickup, SP= Selective Pickup, Method: BT=Boat Shocking, BP= Backpack Shocking, BG= Barge Shocking, SE= Seine, SL= Snorkel, NS= Not Stated, MT= Minnow Trap, GN= Gillnet, FY= Fyke Net, Gradient: H = High, L = Low; I/MT MG= Intolerant/Moderately Tolerant Macrohabitat Generalist]

[Species List: B = Bluegill, GS = Golden Shiner, P = Pumpkinseed]

Sample ID	Sample Date	Method	Sample Type	Gradient	Total Taxa	Total Ind	Cold Ind %	Fluvial Taxa	Fluvial Ind %	Intol Ind %	I/MT MG Taxa	I/MT MG Ind %	Notables	CFR	Species List
5460	06/17/15	BP	TP	L	3	4	0%	0	0%	0%	1	50%	No	No	B, GS, P,

Non-native Aquatic Species Presence

MassDEP Non-Native Aquatic Invasive Species Records as of May 2021. (MassDEP 1997)

Summary Statement	Assessment Recommendation
During validation of MassDEP aquatic invasive species records, it was noted that DEP biologists listed "*Myriophyllum* sp." on the field sheet for a July 1997 synoptic survey of Luther Reservoir (now part of Sevenmile River MA52-07). An aquatic macrophyte survey should be conducted to determine whether any of the non-native *Myriophyllum* species are infesting the pond and an Alert should be issued.	Conduct an aquatic macrophyte survey in the Luther Reservoir impoundment of the Sevenmile River (MA52-07) when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the reservoir.

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was done in 1984 just upstream of Draper Avenue, North Attleboro and in 1986 just downstream of Sunset Road, Attleboro in the Luther Reservoir impoundment, no site-specific fish consumption advisory is in place, therefore the Fish Consumption Use for this Sevenmile River AU (MA52-07) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No data are available to assess the status of the Aesthetic Use for this Sevenmile River AU (MA52-07), so it is Not Assessed.	

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
No recent bacteria data are available to assess the status of the Primary Contact Recreation Use for this Sevenmile River AU (MA52-07), so it will continue to be assessed as Not Supporting with the *E. coli* impairment being carried forward.	

Secondary Contact Recreation

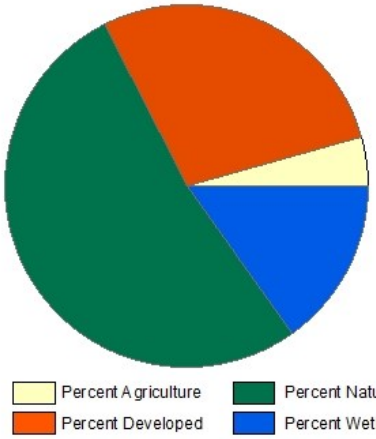
2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No recent bacteria data are available to assess the status of the Secondary Contact Recreation Use for this Sevenmile River AU (MA52-07), so it is Not Assessed.	

Sevenmile River (MA52-08)

Location:	Outlet Orrs Pond, Attleboro to mouth at confluence with Ten Mile River, Pawtucket, Rhode Island.
AU Type:	RIVER
AU Size:	3.4 MILES
Classification/Qualifier:	B

Sevenmile River - MA52-08

Watershed Area: 12.5 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	12.5	6.19	6.23	2.42
Agriculture	4.3%	1.8%	5.3%	1.7%
Developed	28.2%	38.9%	19.6%	25%
Natural	52.4%	44.5%	51.3%	46.9%
Wetland	15.1%	14.7%	23.9%	26.4%
Impervious Cover	15.4%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Benthic Macroinvertebrates		Added
5	5	Escherichia Coli (E. Coli)		Unchanged
5	5	Fecal Coliform		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Benthic Macroinvertebrates	Source Unknown (N)	X				
Escherichia Coli (E. Coli)	Source Unknown (N)				X	
Fecal Coliform	Source Unknown (N)				X	

Recommendations

2022 Recommendations
ALU: Additional benthic macroinvertebrates sampling should be conducted to clarify the extent of impairment to the benthic community in the Sevenmile River (MA52-08).

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO

2022 Use Attainment Summary

Benthic and water quality monitoring was conducted at one site along this Sevenmile River AU (MA52-08) by MassDEP staff approximately 440 ft downstream from Roy Avenue, Attleboro (W2179, B0702) as part of the MAP2 monitoring project during the summer of 2011. The benthic sample (B0702) IBI score was indicative of moderately degraded conditions (54). The water quality monitoring data (including both deployed probe and discrete sampling efforts at Station W2179) were indicative of good conditions: minimum DO 5.1mg/L, with a minimum 3-5DADMin of 5.6mg/L (three 3-5-day deploys), the maximum temperature was 26°C (7-DADM always <27.7°C, max 24hr rolling average 24.4°C during the continuous probe deployment from June 1 to September 15, 2011), discrete pH measurements ranged from 6.7 to 6.8SU (n=6). There were generally no physico-chemical indicators of nutrient enrichment issues (max diel DO shift was a little high at 3.2mg/L, but max DO saturation was only 107.1%, there were no observations of dense/very dense filamentous algae, and the seasonal average total phosphorus concentration was low -- only 0.026mg/L (n=5, max 0.03mg/L). Specific conductance and chloride concentrations were both low (max 447µS/cm, n=6 and 130mg/L n=5, respectively), as was total ammonia-nitrogen (TAN) (max 0.07mg/L, n=5 with no toxicity estimated). Aside from one exceedance of the chronic criterion for lead (TU of 1.6 in September 2011) there were no other acute or chronic metals criteria exceedances (n=3) (note, dissolved Al data were compared to total recoverable Al criteria, so exceedances cannot be ruled out). The Aquatic Life Use of this Sevenmile River AU (MA52-08) is assessed as Not Supporting based on the moderately degraded condition of the benthic community.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
B0702	MassDEP	Benthic	Sevenmile River/	[approximately 135 meters downstream from Roy Avenue, Attleboro, MA]	41.917866	-71.352161
W0183	MassDEP	Water Quality	Sevenmile River	[County Street, Attleboro]	41.901258	-71.343429
W0900	MassDEP	Water Quality	Sevenmile River	[Pitas Avenue, Attleboro]	41.910298	-71.351910
W2179	MassDEP	Water Quality	Sevenmile River	[approximately 440 feet downstream from Roy Avenue, Attleboro]	41.917866	-71.352161
W2417	MassDEP	Water Quality	Sevenmile River	[approximately 120 feet upstream of confluence with Ten Mile River, Pawtucket, Rhode Island]	41.894620	-71.340481
W2421	MassDEP	Water Quality	Sevenmile River	[approximately 650 feet downstream/south of Pitas Avenue, Attleboro (upstream of influence of unnamed tributary draining Sweedens Swamp)]	41.908564	-71.351341
W2423	MassDEP	Water Quality	Sevenmile River	[Roy Avenue, Attleboro]	41.918904	-71.352300
W2424	MassDEP	Water Quality	Sevenmile River	[Read Street, Attleboro]	41.925726	-71.341611
W2493	MassDEP	Water Quality	Sevenmile River	[approximately 2200 feet downstream (southeast) of County Street, Attleboro, MA (just downstream of Crest Drive pump station, Pawtucket, RI)]	41.898152	-71.339842

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2587	MassDEP	Water Quality	Sevenmile River	[325 feet downstream/south of Route 95, Attleboro]	41.904353	-71.346752
W2659	MassDEP	Water Quality	Sevenmile River	[approximately 910 feet upstream of Route 95, Attleboro]	41.906938	-71.349929

Biological Monitoring Information

Benthic Macroinvertebrate Data

MassDEP Benthic Macroinvertebrate Data (2011-2017). (MassDEP Undated 4)

[Index Biological Condition Class: E= Exceptional, S= Satisfactory, MD= Moderately Degraded, SD= Severely Degraded; High Gradient IBI Thresholds: E= 100-75, S= 74-55, MD= 54-35, SD= 34-0; Low Gradient IBI Thresholds: E= 100-81, S= 80-62, MD= 61-38, SD= 37-0; R qualifier = Rarefaction (100ct) <55]

Station Code	Collection Date	Collection Method	Index Type	Organism Count	Index Score	Index Biological Condition Class
B0702	08/01/11	RBP multihab	Statewide_Low_Gradient	98	54	MD

Physico-chemical Water Quality Information

DO, pH, Temperature

MassDEP Short-term Continuous Dissolved Oxygen Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Note: Most deploys 3-5 days in length; Day Count= total # of days over all deploys; XDADMin= 3-5 Day Average of the Daily Minima, XDADA= 3-5 Day Average of the Daily Average, CW= Coldwater, WW= Warmwater]

Station Code	Data Year	Deploys Count	Day Count	DO Min (mg/L)	Min XDADMin (mg/L)	Min XDADA (mg/L)	Delta DO Max (mg/L)	Count CW XDADMin <6.0	Count CW 1Day Min <5.0	Count WW Early Life Stages XDADA <6.5	Count WW Early Life Stages 1Day Min <5.0	Count WW Other Life Stages XDADMin <5.0	Count WW Other Life Stages 1Day Min <4.0
W2179	2011	3	12	5.1	5.6	6.4	3.2	1	0	0	0	0	0

MassDEP Discrete Dissolved Oxygen Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[CW= Coldwater, WW= Warmwater]

Station Code	Start Date	End Date	DO Count	DO Min (mg/L)	DO Avg (mg/L)	Count CW <5.0	Count WW Early Life Stages <5.0	Count WW Other Life Stages <4.0
W2179	05/25/11	10/11/11	6	7.1	7.4	0	0	0

MassDEP Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; Max Daily Mean= Maximum 24-Hour Average, 7DADM= 7-Day Average of the Daily Maxima, 7DADA= 7-Day Average of the Daily Average, CW= Coldwater, WW= Warmwater; NOTE: In the case of more than one row of data in the same year for a site, different types of temperature probes were deployed.]

Station Code	Start Date	End Date	Index Count	7day Count	Max Daily Mean (°C)	Max Temp (°C)	Max 7DADM (°C)	Max 7DADA (°C)	Count CWTier1 7DADM >20	Count CWTier1 Daily Mean >23.5	Count CWTier2 7DADA >21	Count CWTier2 Daily Mean >24.1	Count WW 7DADM >27.7	Count WW Daily Mean >28.3
W2179	06/01/11	09/15/11	107	107	24.3	26.0	24.3	22.8	76	2	41	1	0	0

MassDEP Short-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; Most Deploys 3-5 Days in Length; Day Count= total # of days over all deploys; Max Daily Mean= Maximum 24-Hour Average, XDADM= 3-5 Day Average of the Daily Maxima, XDADA= 3-5 Day Average of the Daily Average, CW= Coldwater, WW= Warmwater]

Station Code	Data Year	Deploys Count	Day Count	Max Daily Mean (°C)	Max Temp (°C)	Max XDADM (°C)	Max XDADA (°C)	Count CWTier1 XDADM >20	Count CWTier1 Daily Mean >23.5	Count CWTier2 XDADA >21	Count CWTier2 Daily Mean >24.1	Count WW XDADM >27.7	Count WW Daily Mean >28.3
W2179	2011	3	12	22.5	24.0	22.8	21.8	2	0	1	0	0	0

24-hour Rolling Average Calculations for MassDEP Short- and Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; CW= Coldwater, WW= Warmwater; NOTE: In the case of more than one row of data in the same year for a site, different types of temperature probes were deployed.]

Station Code	Start Date	End Date	Count Days Deployed	24hr Rolling Count	Max 24hr Avg Rolling Temp (°C)	Count CWTier1 24hr Avg Rolling >23.5 °C	Count CWTier2 24hr Avg Rolling >24.1 °C	Count WW 24hr Avg Rolling >28.3°C
W2179	06/01/11	09/15/11	107	5136	24.4	137	37	0
W2179	06/17/11	08/24/11	68	577	23.5	0	0	0

MassDEP Discrete Temperature Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; CW= Coldwater, WW= Warmwater]

Station Code	Start Date	End Date	Temp Count	Index Count	Temp Max (°C)	Temp Avg (°C)	Count CW >20	Count CW >22	Count WW >28.3	Count WW >30.3
W2179	05/25/11	10/11/11	8	6	22.7	18.7	2	1	0	0

MassDEP Discrete pH Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Start Date	End Date	pH Count	pH Min (SU)	pH Max (SU)	pH Count <6.5 & >8.3	pH Count <6.0 & >8.8
W2179	05/25/11	10/11/11	6	6.7	6.8	0	0

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer seasonal total phosphorus data collected May-Sept]

Station Code	Data Year	Seasonal TP Count	Seasonal TP Min (mg/L)	Seasonal TP Max (mg/L)	Seasonal TP Avg (mg/L)	Delta DO Max (mg/L)	Delta DO Avg (mg/L)	DO Sat Max (%)	pH Max (SU)	Count Algal Obsv.	Dense/V. Dense Film/Fila. Algae
W0183	2013	--	--	--	--	--	--	--	--	3	0
W0183	2014	--	--	--	--	--	--	--	--	2	0
W0183	2015	--	--	--	--	--	--	--	--	3	0
W0900	2016	--	--	--	--	--	--	--	--	1	0
W0900	2017	--	--	--	--	--	--	--	--	2	0
W2179	2011	5	0.023	0.030	0.026	3.2	1.4	107.1	6.8	2	0
W2417	2013	--	--	--	--	--	--	--	--	3	0
W2417	2014	--	--	--	--	--	--	--	--	2	0
W2421	2013	--	--	--	--	--	--	--	--	2	0
W2421	2016	--	--	--	--	--	--	--	--	2	0
W2421	2017	--	--	--	--	--	--	--	--	1	0
W2423	2013	--	--	--	--	--	--	--	--	2	0
W2424	2013	--	--	--	--	--	--	--	--	2	0
W2493	2014	--	--	--	--	--	--	--	--	2	0
W2587	2015	--	--	--	--	--	--	--	--	4	0
W2587	2016	--	--	--	--	--	--	--	--	2	0
W2659	2016	--	--	--	--	--	--	--	--	2	0

Toxics and other pollutants (metals, ammonia, chloride, chlorine)

MassDEP Clean Metals Water Column Data (2011-2018), Acute Criteria Violations. (MassDEP Undated 7) (MassDEP Undated 5)

[CMC= Criterion Maximum Concentration, TU= Toxic Unit]

Station Code	Data Year	Metals Count	As CMC TU >1	Cd CMC TU >1	Cr III CMC TU >1	Cu CMC TU >1	Pb CMC TU >1	Ni CMC TU >1	Ag CMC TU >1	Zn CMC TU >1
W2179	2011	3	0	0	0	0	0	0	0	0

MassDEP Clean Metals Water Column Data (2011-2018), Chronic Criteria Violations. (MassDEP Undated 7) (MassDEP Undated 5)

[CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Data Year	Metals Count	As CCC TU >1	Cd CCC TU >1	Cr III CCC TU >1	Cu CCC TU >1	Pb CCC TU >1	Ni CCC TU >1	Se CCC TU >1	Zn CCC TU >1
W2179	2011	3	0	0	0	0	1	0	0	0

MassDEP Clean Metals Water Column Data (2011-2018), Selected TU Calculations. (MassDEP Undated 7) (MassDEP Undated 5)

[CMC= Criterion Maximum Concentration, CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Sample Date	Cd CMC TU	Cd CCC TU	Cu CMC TU	Cu CCC TU	Pb CMC TU	Pb CCC TU
W2179	07/19/11	0.2	0.4	0.3	0.42	0.0	0.4
W2179	08/24/11	0.2	0.5	0.2	0.27	0.0	0.5
W2179	09/08/11	0.3	0.6	0.5	0.64	0.1	1.6

MassDEP Dissolved Aluminum Water Column Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)
[Since only dissolved aluminum data were available, these data were compared to the default freshwater criteria for total recoverable aluminum (TRA), presented in Appendix E of MassDEP's 2022 CALM. As dissolved Al is a fraction of TRA, an exceedance count of 0 does not rule out violations of the TRA criteria. CMC= Criterion Maximum Concentration, CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Data Year	Dissolved Al Count	Al Min (mg/L)	Al Max (mg/L)	Al Avg (mg/L)	Al CMC TU Max	Al CCC TU Max	Al CMC TU >1	Al CCC TU >1
W2179	2011	3	0.007	0.034	0.016	0.1	0.1	0	0

MassDEP Total Ammonia Nitrogen (TAN) Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)
[TAN= NH3 + NH4+]

Station Code	Data Year	TAN Count	TAN Min (mg/L)	TAN Max (mg/L)	TAN Avg (mg/L)	Count TAN >Chronic	Count TAN >Acute
W2179	2011	5	0.020	0.070	0.044	0	0

MassDEP Chloride Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Chloride Count	Chloride Min (mg/L)	Chloride Max (mg/L)	Chloride Avg (mg/L)	Count Chloride >230	Count Chloride >860
W2179	2011	5	93	130	109	0	0

MassDEP Discrete Specific Conductance Data (2011-2018) Compared to Estimated Chloride Criteria. (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Start Date	End Date	SpCond Count	SpCond Min (µs/cm)	SpCond Max (µs/cm)	Count SpCond >904	Count SpCond >994	Count SpCond >3193	Count SpCond >3512	Consecutive sets >904	Consecutive sets >994
W2179	05/25/11	10/11/11	6	418	447	0	0	0	0	0	0

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was done in 1986 just upstream of Read Street, Attleboro, no site-specific fish consumption advisory is in place, therefore the Fish Consumption Use for this Sevenmile River AU (MA52-08) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Fully Supporting	YES
2022 Use Attainment Summary	

MassDEP staff recorded aesthetics observations at eleven sites along this Sevenmile River AU (MA52-08) in Attleboro between the summers of 2013 and 2017 (n=45) as follows: at Read St (W2424) (2013), Roy Avenue (W2423) (2013), ~ 440 ft downstream from Roy Avenue (W2179) (2011), due east between the eastern ends of Lockwood and Simpson avenues (W2740) (2017), Pitas Avenue (W0900) (2016, 2017), ~ 650 ft downstream of Pitas Avenue (W2421) (2013, 2016, 2017), ~ 910 ft upstream of Rt. 95 (W2659) (2016), ~ 325 ft downstream of Rt. 95 (W2587) (2015, 2016), County St. (W0183) (2013-2015), ~ 2200 ft downstream of County St (W2493) (2014), ~ 120 ft upstream of confluence with Ten Mile River, Pawtucket, RI (W2417) (2013, 2014). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DWM-WPP field sampling crews during the surveys at most of the stations, although the water was observed to be moderately turbid at County St. (W0183) on all site visits in 2013 and 2015 (n=7). The Aesthetics Use for Sevenmile River (MA52-08) is assessed as Fully Supporting, with an Alert identified due to the moderate turbidity observed at County St. in 2013 and 2015.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0183	MassDEP	Water Quality	Sevenmile River	[County Street, Attleboro]	41.901258	-71.343429
W0900	MassDEP	Water Quality	Sevenmile River	[Pitas Avenue, Attleboro]	41.910298	-71.351910
W2179	MassDEP	Water Quality	Sevenmile River	[approximately 440 feet downstream from Roy Avenue, Attleboro]	41.917866	-71.352161
W2417	MassDEP	Water Quality	Sevenmile River	[approximately 120 feet upstream of confluence with Ten Mile River, Pawtucket, Rhode Island]	41.894620	-71.340481
W2421	MassDEP	Water Quality	Sevenmile River	[approximately 650 feet downstream/south of Pitas Avenue, Attleboro (upstream of influence of unnamed tributary draining Sweedens Swamp)]	41.908564	-71.351341
W2423	MassDEP	Water Quality	Sevenmile River	[Roy Avenue, Attleboro]	41.918904	-71.352300
W2424	MassDEP	Water Quality	Sevenmile River	[Read Street, Attleboro]	41.925726	-71.341611
W2493	MassDEP	Water Quality	Sevenmile River	[approximately 2200 feet downstream (southeast) of County Street, Attleboro, MA (just downstream of Crest Drive pump station, Pawtucket, RI)]	41.898152	-71.339842
W2587	MassDEP	Water Quality	Sevenmile River	[325 feet downstream/south of Route 95, Attleboro]	41.904353	-71.346752
W2659	MassDEP	Water Quality	Sevenmile River	[approximately 910 feet upstream of Route 95, Attleboro]	41.906938	-71.349929
W2740	MassDEP	Water Quality	Sevenmile River	[due east between the eastern ends of Lockwood and Simpson avenues, Attleboro]	41.914846	-71.352554

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0183	Sevenmile River	2013	3	The Aesthetics use for this Sevenmile River AU (MA52-08) is assessed as Fully Supporting based on observations (generally no odors, deposits, or growths) by MassDEP staff during field surveys at station W0183 in summer 2013 (n=3), 2014 (n=2), and 2015 (n=4). However, the use is identified with an Alert status since the water was moderately turbid on all site visits in 2013 and 2015.
W0183	Sevenmile River	2014	2	The Aesthetics use for this Sevenmile River AU (MA52-08) is assessed as Fully Supporting based on observations (generally no odors, deposits, or growths) by MassDEP staff during field surveys at station W0183 in summer 2013 (n=3), 2014 (n=2), and 2015 (n=4). However, the use is identified with an Alert status since the water was moderately turbid on all site visits in 2013 and 2015.
W0183	Sevenmile River	2015	4	The Aesthetics use for this Sevenmile River AU (MA52-08) is assessed as Fully Supporting based on observations (generally no odors, deposits, or growths) by MassDEP staff during field surveys at station W0183 in summer 2013 (n=3), 2014 (n=2), and 2015 (n=4). However, the use is identified with an Alert status since the water was moderately turbid on all site visits in 2013 and 2015.
W0900	Sevenmile River	2016	1	There are insufficient data available to assess the Aesthetics Use for the Sevenmile River. There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP staff at station W0900 during surveys in summer 2016 and 2017, however, data were limited (n= 1 & 2 respectively).
W0900	Sevenmile River	2017	2	There are insufficient data available to assess the Aesthetics Use for the Sevenmile River. There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP staff at station W0900 during surveys in summer 2016 and 2017, however, data were limited (n= 1 & 2 respectively).
W2179	Sevenmile River	2011	6	MassDEP aesthetics observations for station W2179/MAP2-004 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2011.
W2417	Sevenmile River	2013	3	MassDEP aesthetics observations for station W2417 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013.
W2417	Sevenmile River	2014	2	MassDEP aesthetics observations for station W2417 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2421	Sevenmile River	2013	2	MassDEP aesthetics observations for station W2421 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2421	Sevenmile River	2016	2	MassDEP aesthetics observations for station W2421 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2421	Sevenmile River	2017	2	MassDEP aesthetics observations for station W2421 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2017. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2423	Sevenmile River	2013	2	MassDEP aesthetics observations for station W2423 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2424	Sevenmile River	2013	2	MassDEP aesthetics observations for station W2424 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2493	Sevenmile River	2014	2	MassDEP aesthetics observations for station W2493 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2587	Sevenmile River	2015	4	MassDEP aesthetics observations for station W2587 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015.

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2587	Sevenmile River	2016	2	MassDEP aesthetics observations for station W2587 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2659	Sevenmile River	2016	2	MassDEP aesthetics observations for station W2659 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2740	Sevenmile River	2017	2	MassDEP aesthetics observations for station W2740 on Sevenmile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2017. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0183	2013	3	3	0
W0183	2014	2	2	0
W0183	2015	4	3	0
W0900	2016	1	1	0
W0900	2017	2	2	0
W2179	2011	6	2	0
W2417	2013	3	3	0
W2417	2014	2	2	0
W2421	2013	2	2	0
W2421	2016	2	2	0
W2421	2017	2	1	0
W2423	2013	2	2	0
W2424	2013	2	2	0
W2493	2014	2	2	0
W2587	2015	4	4	0
W2587	2016	2	2	0
W2659	2016	2	2	0
W2740	2017	2	0	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0183	Sevenmile River	2013	Color	None	3	3
W0183	Sevenmile River	2013	Objectionable Deposits	Not Applicable (N/A)	3	3
W0183	Sevenmile River	2013	Odor	None	3	3
W0183	Sevenmile River	2013	Scum	Not Applicable (N/A)	3	3
W0183	Sevenmile River	2013	Turbidity	Moderately Turbid	3	3
W0183	Sevenmile River	2014	Color	None	2	2
W0183	Sevenmile River	2014	Objectionable Deposits	Not Applicable (N/A)	2	2
W0183	Sevenmile River	2014	Odor	None	2	2
W0183	Sevenmile River	2014	Scum	Not Applicable (N/A)	2	2
W0183	Sevenmile River	2014	Turbidity	Slightly Turbid	2	2
W0183	Sevenmile River	2015	Color	None	4	4
W0183	Sevenmile River	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W0183	Sevenmile River	2015	Odor	None	4	4
W0183	Sevenmile River	2015	Scum	Not Applicable (N/A)	4	4
W0183	Sevenmile River	2015	Turbidity	Moderately Turbid	4	4
W0900	Sevenmile River	2016	Color	None	1	1
W0900	Sevenmile River	2016	Objectionable Deposits	Not Applicable (N/A)	1	1
W0900	Sevenmile River	2016	Odor	None	1	1
W0900	Sevenmile River	2016	Scum	Not Applicable (N/A)	1	1
W0900	Sevenmile River	2016	Turbidity	Slightly Turbid	1	1
W0900	Sevenmile River	2017	Color	None	2	2
W0900	Sevenmile River	2017	Objectionable Deposits	Not Applicable (N/A)	2	2
W0900	Sevenmile River	2017	Odor	None	2	2
W0900	Sevenmile River	2017	Scum	Not Applicable (N/A)	2	2
W0900	Sevenmile River	2017	Turbidity	Moderately Turbid	1	2
W0900	Sevenmile River	2017	Turbidity	Slightly Turbid	1	2
W2179	Sevenmile River	2011	Color	Greyish	1	6
W2179	Sevenmile River	2011	Color	Light Yellow/Tan	3	6
W2179	Sevenmile River	2011	Color	None	2	6
W2179	Sevenmile River	2011	Objectionable Deposits	No	6	6
W2179	Sevenmile River	2011	Odor	None	6	6
W2179	Sevenmile River	2011	Scum	No	6	6
W2179	Sevenmile River	2011	Turbidity	Moderately Turbid	3	6
W2179	Sevenmile River	2011	Turbidity	None	2	6
W2179	Sevenmile River	2011	Turbidity	Slightly Turbid	1	6
W2417	Sevenmile River	2013	Color	None	3	3
W2417	Sevenmile River	2013	Objectionable Deposits	Not Applicable (N/A)	3	3
W2417	Sevenmile River	2013	Odor	None	3	3
W2417	Sevenmile River	2013	Scum	Not Applicable (N/A)	3	3
W2417	Sevenmile River	2013	Turbidity	Slightly Turbid	3	3
W2417	Sevenmile River	2014	Color	None	2	2
W2417	Sevenmile River	2014	Objectionable Deposits	Not Applicable (N/A)	2	2
W2417	Sevenmile River	2014	Odor	None	2	2
W2417	Sevenmile River	2014	Scum	Not Applicable (N/A)	2	2
W2417	Sevenmile River	2014	Turbidity	Slightly Turbid	2	2
W2421	Sevenmile River	2013	Color	None	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2421	Sevenmile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2013	Odor	None	2	2
W2421	Sevenmile River	2013	Scum	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2013	Turbidity	Slightly Turbid	2	2
W2421	Sevenmile River	2016	Color	None	2	2
W2421	Sevenmile River	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2016	Odor	None	2	2
W2421	Sevenmile River	2016	Scum	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2016	Turbidity	Moderately Turbid	2	2
W2421	Sevenmile River	2017	Color	None	2	2
W2421	Sevenmile River	2017	Objectionable Deposits	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2017	Odor	None	2	2
W2421	Sevenmile River	2017	Scum	Not Applicable (N/A)	2	2
W2421	Sevenmile River	2017	Turbidity	Moderately Turbid	1	2
W2421	Sevenmile River	2017	Turbidity	Slightly Turbid	1	2
W2423	Sevenmile River	2013	Color	None	2	2
W2423	Sevenmile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2423	Sevenmile River	2013	Odor	None	2	2
W2423	Sevenmile River	2013	Scum	Not Applicable (N/A)	2	2
W2423	Sevenmile River	2013	Turbidity	None	1	2
W2423	Sevenmile River	2013	Turbidity	Slightly Turbid	1	2
W2424	Sevenmile River	2013	Color	None	2	2
W2424	Sevenmile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2424	Sevenmile River	2013	Odor	None	2	2
W2424	Sevenmile River	2013	Scum	Not Applicable (N/A)	2	2
W2424	Sevenmile River	2013	Turbidity	Slightly Turbid	2	2
W2493	Sevenmile River	2014	Color	None	2	2
W2493	Sevenmile River	2014	Objectionable Deposits	Not Applicable (N/A)	2	2
W2493	Sevenmile River	2014	Odor	None	2	2
W2493	Sevenmile River	2014	Scum	Not Applicable (N/A)	2	2
W2493	Sevenmile River	2014	Turbidity	Slightly Turbid	2	2
W2587	Sevenmile River	2015	Color	None	4	4
W2587	Sevenmile River	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W2587	Sevenmile River	2015	Odor	None	4	4
W2587	Sevenmile River	2015	Scum	Not Applicable (N/A)	4	4
W2587	Sevenmile River	2015	Turbidity	Moderately Turbid	1	4
W2587	Sevenmile River	2015	Turbidity	None	1	4
W2587	Sevenmile River	2015	Turbidity	Slightly Turbid	2	4
W2587	Sevenmile River	2016	Color	None	2	2
W2587	Sevenmile River	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W2587	Sevenmile River	2016	Odor	None	2	2
W2587	Sevenmile River	2016	Scum	Not Applicable (N/A)	2	2
W2587	Sevenmile River	2016	Turbidity	Slightly Turbid	2	2
W2659	Sevenmile River	2016	Color	None	2	2
W2659	Sevenmile River	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W2659	Sevenmile River	2016	Odor	None	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2659	Sevenmile River	2016	Scum	Not Applicable (N/A)	2	2
W2659	Sevenmile River	2016	Turbidity	Slightly Turbid	2	2
W2740	Sevenmile River	2017	Color	None	2	2
W2740	Sevenmile River	2017	Objectionable Deposits	Not Applicable (N/A)	2	2
W2740	Sevenmile River	2017	Odor	None	2	2
W2740	Sevenmile River	2017	Scum	Not Applicable (N/A)	2	2
W2740	Sevenmile River	2017	Turbidity	Moderately Turbid	1	2
W2740	Sevenmile River	2017	Turbidity	Slightly Turbid	1	2

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO

2022 Use Attainment Summary

E. coli (and occasionally *Enterococcus*) bacteria samples were collected at ten stations in Attleboro (and one in Pawtucket, RI), along this Sevenmile River AU (MA52-08) as part of the MAP2 monitoring project during the summer of 2011 and the MassDEP Bacteria Source Tracking (BST) project during the summers of 2013 to 2017. Overall, samples were collected between one and four times per year at: Read St (W2424) (2013), Roy Avenue (W2423) (2013), ~ 440 ft downstream from Roy Avenue (W2179) (2011), due east between the eastern ends of Lockwood and Simpson avenues (W2740) (2017), Pitas Avenue (W0900) (2016, 2017), ~ 650 ft downstream of Pitas Avenue (W2421) (2013, 2016, 2017), ~ 910 ft upstream of Rt. 95 (W2659) (2016), ~ 325 ft downstream of Rt. 95 (W2587) (2015, 2016), County St. (W0183) (2013-2015), ~ 2200 ft downstream of County St (W2493) (2014), ~ 120 ft upstream of confluence with Ten Mile River, Pawtucket, RI (W2417) (2013, 2014). There were only sufficient samples to calculate usable GMs at four of the stations, namely W2179, W2587, W0183 and W2417 (n=20). Data analysis of these single and multi-year, low frequency *E. coli* datasets indicated generally poor water quality conditions (elevated bacteria) at all four sample stations; as 100% of intervals had GMs > 126 cfu/100ml, the single year datasets had seasonal GMs of 422 (at W2179), 752 (at W2587) and 384 (at W2417) and 100% of the cumulative GMs were >126 cfu/100ml for the multi-year dataset (at W0183). BST project notes indicated that the dry weather bacteria concentrations seemed to fluctuate widely from year to year, with 2016 showing comparatively much higher counts. However, detergents, ammonia/potassium and human marker analysis data collected in 2016 at Pitas Avenue were not indicative of a human source. Also, a "none" human marker analysis result was recorded at the downstream end of the AU in 2014. No correctable source was ever found. The available *Enterococcus* data were too limited to assess the Primary Contact Recreational Use for this AU according to the CALM "Use Attainment Impairment Decision Schema". The Primary Contact Recreational Use for this Sevenmile River AU (MA52-08) will continue to be assessed as Not Supporting with the *E. coli* and Fecal coliform impairments being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0183	MassDEP	Water Quality	Sevenmile River	[County Street, Attleboro]	41.901258	-71.343429
W0900	MassDEP	Water Quality	Sevenmile River	[Pitas Avenue, Attleboro]	41.910298	-71.351910
W2179	MassDEP	Water Quality	Sevenmile River	[approximately 440 feet downstream from Roy Avenue, Attleboro]	41.917866	-71.352161
W2417	MassDEP	Water Quality	Sevenmile River	[approximately 120 feet upstream of confluence with Ten Mile River, Pawtucket, Rhode Island]	41.894620	-71.340481

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2421	MassDEP	Water Quality	Sevenmile River	[approximately 650 feet downstream/south of Pitas Avenue, Attleboro (upstream of influence of unnamed tributary draining Sweedens Swamp)]	41.908564	-71.351341
W2423	MassDEP	Water Quality	Sevenmile River	[Roy Avenue, Attleboro]	41.918904	-71.352300
W2424	MassDEP	Water Quality	Sevenmile River	[Read Street, Attleboro]	41.925726	-71.341611
W2493	MassDEP	Water Quality	Sevenmile River	[approximately 2200 feet downstream (southeast) of County Street, Attleboro, MA (just downstream of Crest Drive pump station, Pawtucket, RI)]	41.898152	-71.339842
W2587	MassDEP	Water Quality	Sevenmile River	[325 feet downstream/south of Route 95, Attleboro]	41.904353	-71.346752
W2659	MassDEP	Water Quality	Sevenmile River	[approximately 910 feet upstream of Route 95, Attleboro]	41.906938	-71.349929
W2740	MassDEP	Water Quality	Sevenmile River	[due east between the eastern ends of Lockwood and Simpson avenues, Attleboro]	41.914846	-71.352554

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0183	MassDEP	E. coli	06/25/13	09/11/13	3	326	517	395
W0183	MassDEP	E. coli	07/02/14	07/22/14	2	613	1200	858
W0183	MassDEP	E. coli	05/28/15	09/16/15	4	345	1300	746
W0900	MassDEP	E. coli	07/26/16	07/26/16	1	816	816	816
W0900	MassDEP	Enterococci	10/26/16	10/26/16	1	170	170	170
W0900	MassDEP	E. coli	07/19/17	08/15/17	2	238	649	393
W2179	MassDEP	E. coli	05/17/11	09/26/11	6	185	1730	422
W2417	MassDEP	E. coli	06/25/13	09/11/13	3	248	816	384
W2417	MassDEP	E. coli	07/02/14	07/22/14	2	345	727	501
W2417	MassDEP	Enterococci	08/19/14	08/19/14	1	130	130	130
W2421	MassDEP	E. coli	06/25/13	08/01/13	2	326	326	326
W2421	MassDEP	E. coli	07/20/16	07/26/16	2	1470	2419.6	1886
W2421	MassDEP	E. coli	07/19/17	08/15/17	2	210	410	293
W2423	MassDEP	E. coli	06/25/13	08/01/13	2	210	291	247
W2424	MassDEP	E. coli	06/25/13	08/01/13	2	51	66	58
W2493	MassDEP	E. coli	07/02/14	07/22/14	2	345	579	447
W2587	MassDEP	E. coli	05/28/15	09/16/15	4	201	1350	752
W2587	MassDEP	E. coli	07/20/16	07/26/16	2	1050	2419.6	1594
W2659	MassDEP	E. coli	07/20/16	07/26/16	2	1250	1990	1577
W2740	MassDEP	E. coli	07/19/17	08/15/17	2	17	866	121

W0183 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

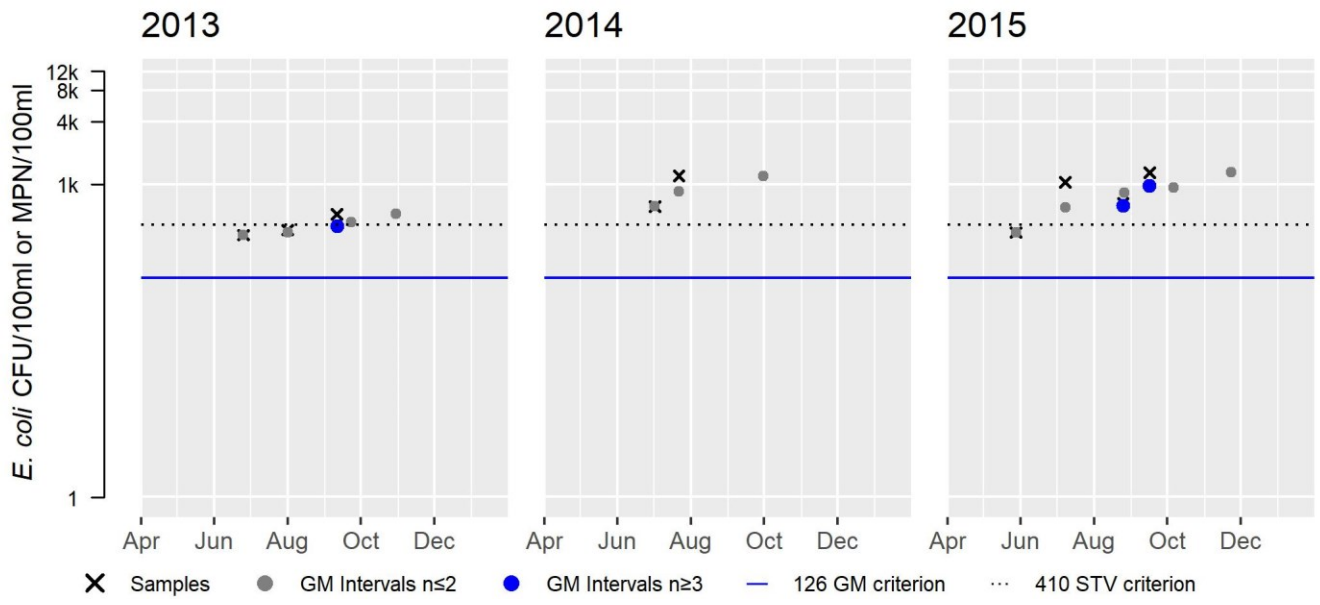
Var	Res
Samples	3
SeasGM	395
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	1
%n>STV	33

Var	Res
Samples	2
SeasGM	858
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

Var	Res
Samples	4
SeasGM	746
#GMI	2
#GMI Ex	2
%GMI Ex	100
n>STV	3
%n>STV	75

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	100



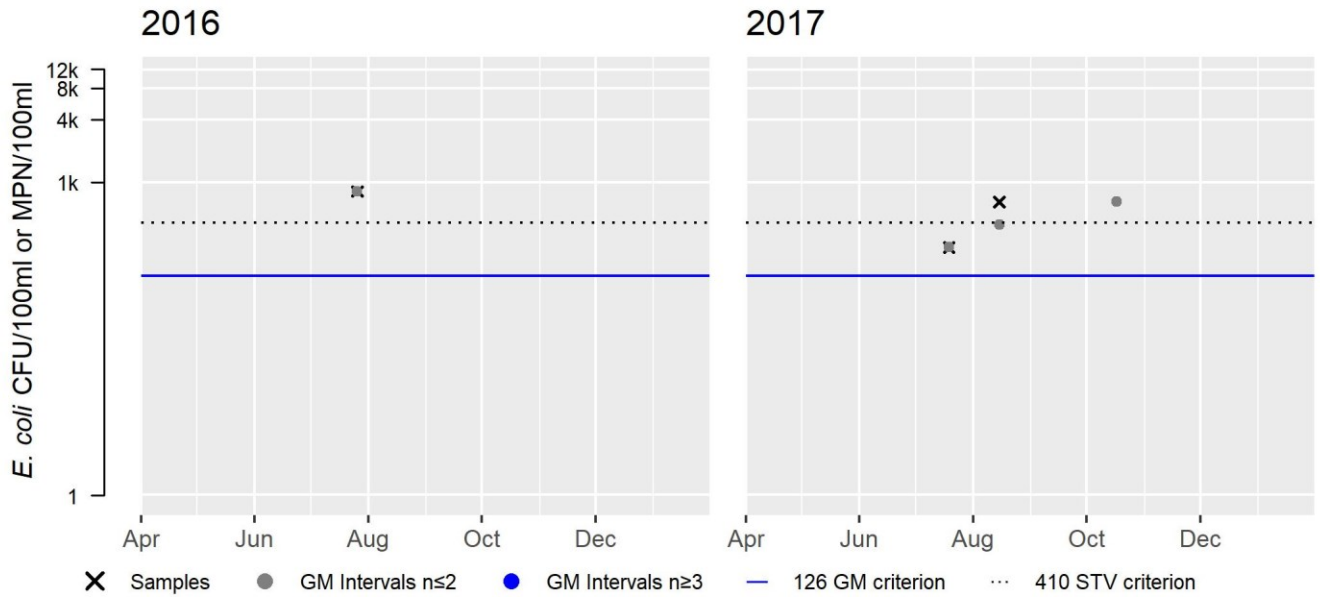
W0900 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	816
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Var	Res
Samples	2
SeasGM	393
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

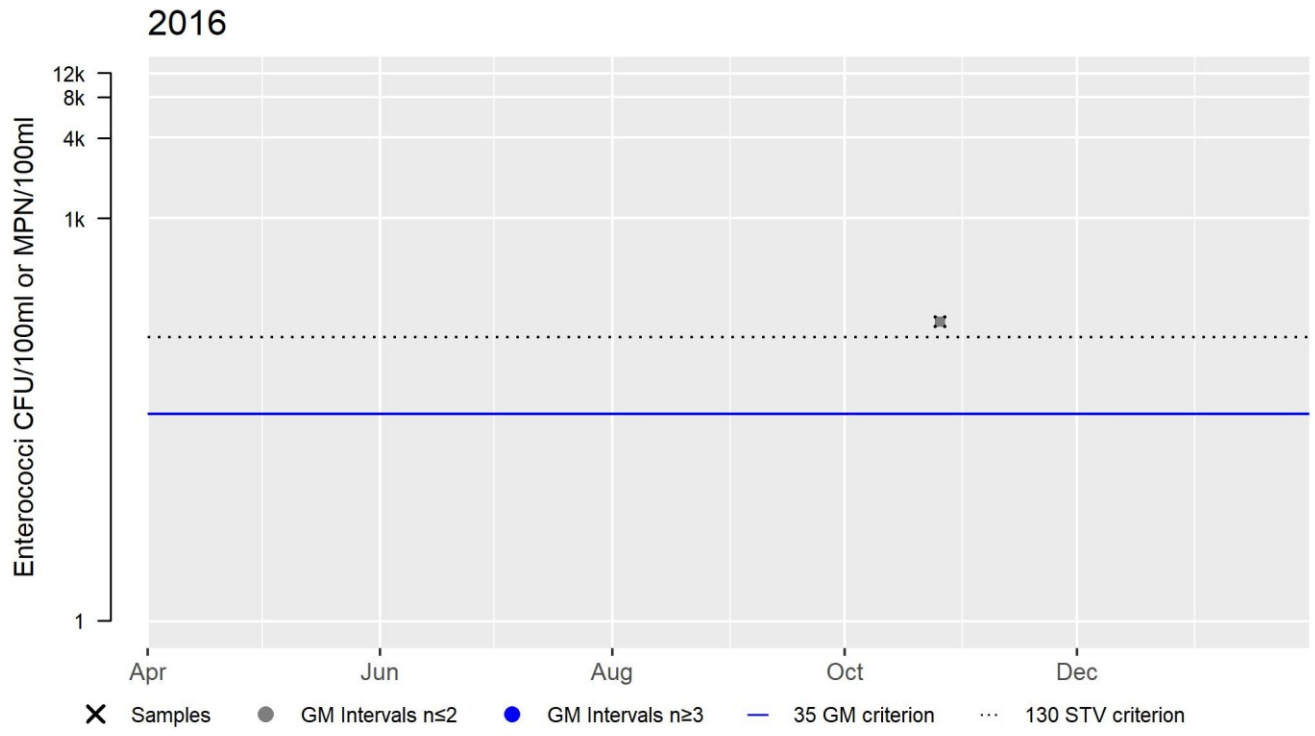
Variable	Cumulative %GMI Ex (all years)
Result	0



W0900 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	170
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

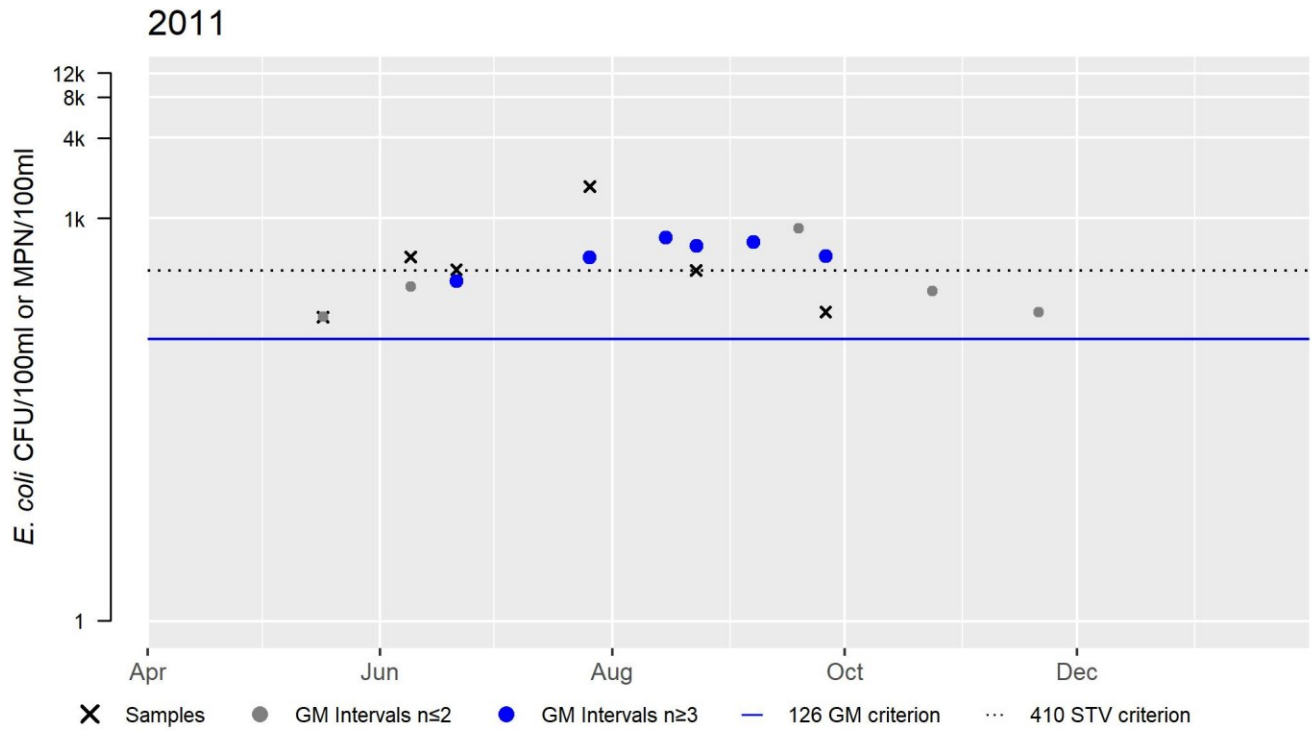
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2179 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	422
#GMI	6
#GMI Ex	6
%GMI Ex	100
n>STV	4
%n>STV	67

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



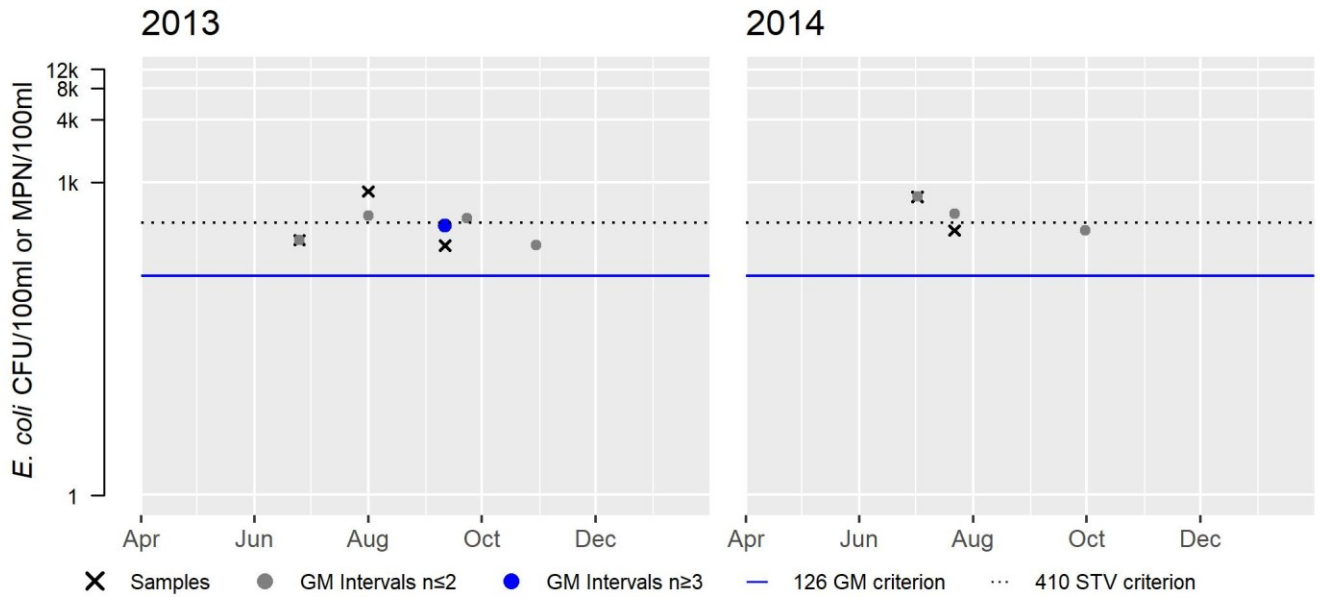
W2417 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	384
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	1
%n>STV	33

Var	Res
Samples	2
SeasGM	501
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

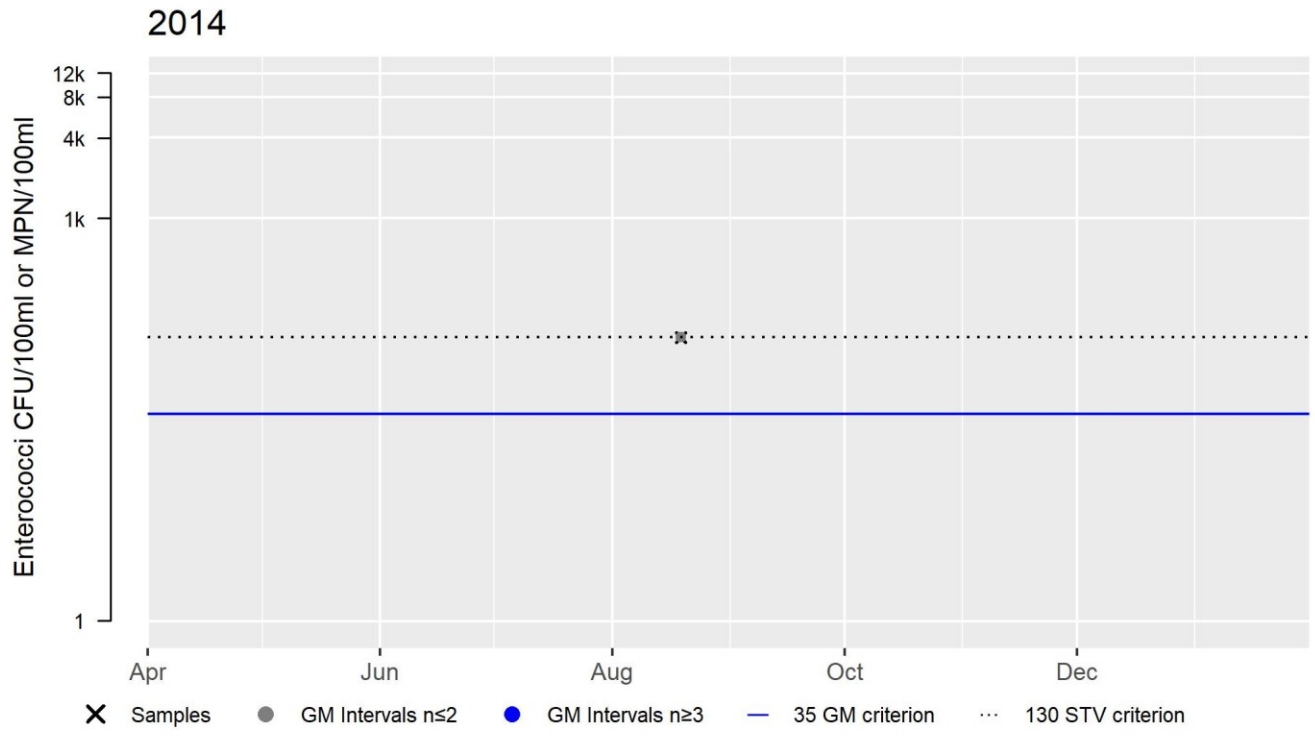
Variable	Cumulative %GMI Ex (all years)
Result	100



W2417 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	130
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2421 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

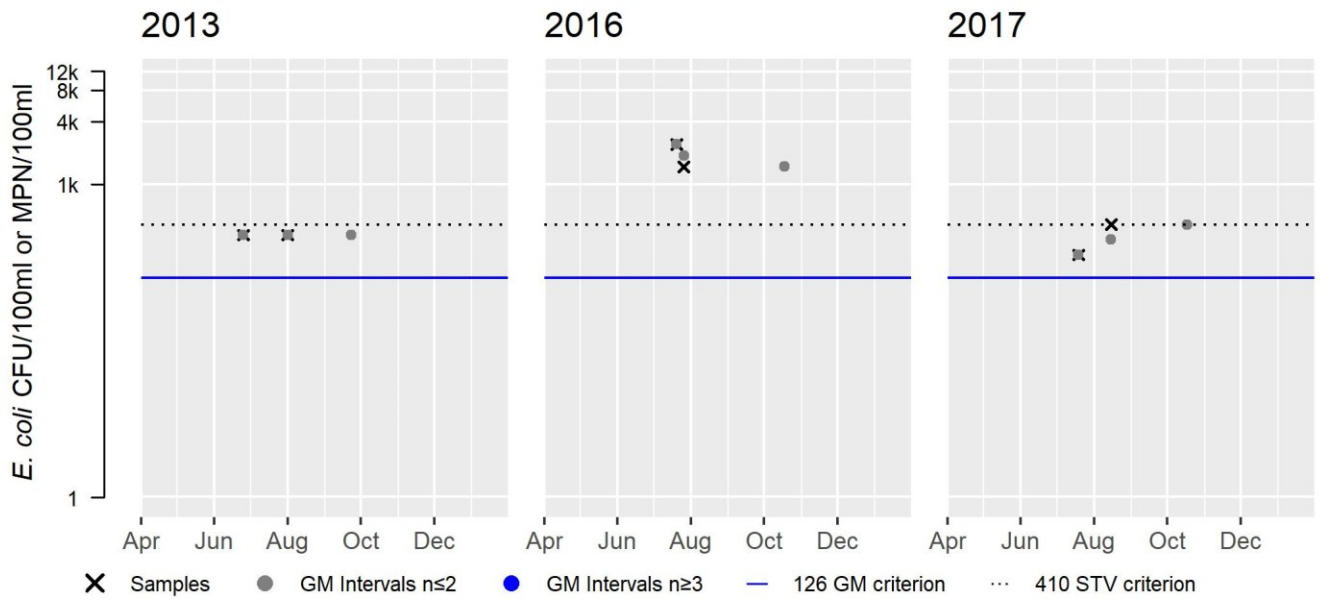
Var	Res
Samples	2
SeasGM	326
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	1886
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

Var	Res
Samples	2
SeasGM	293
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

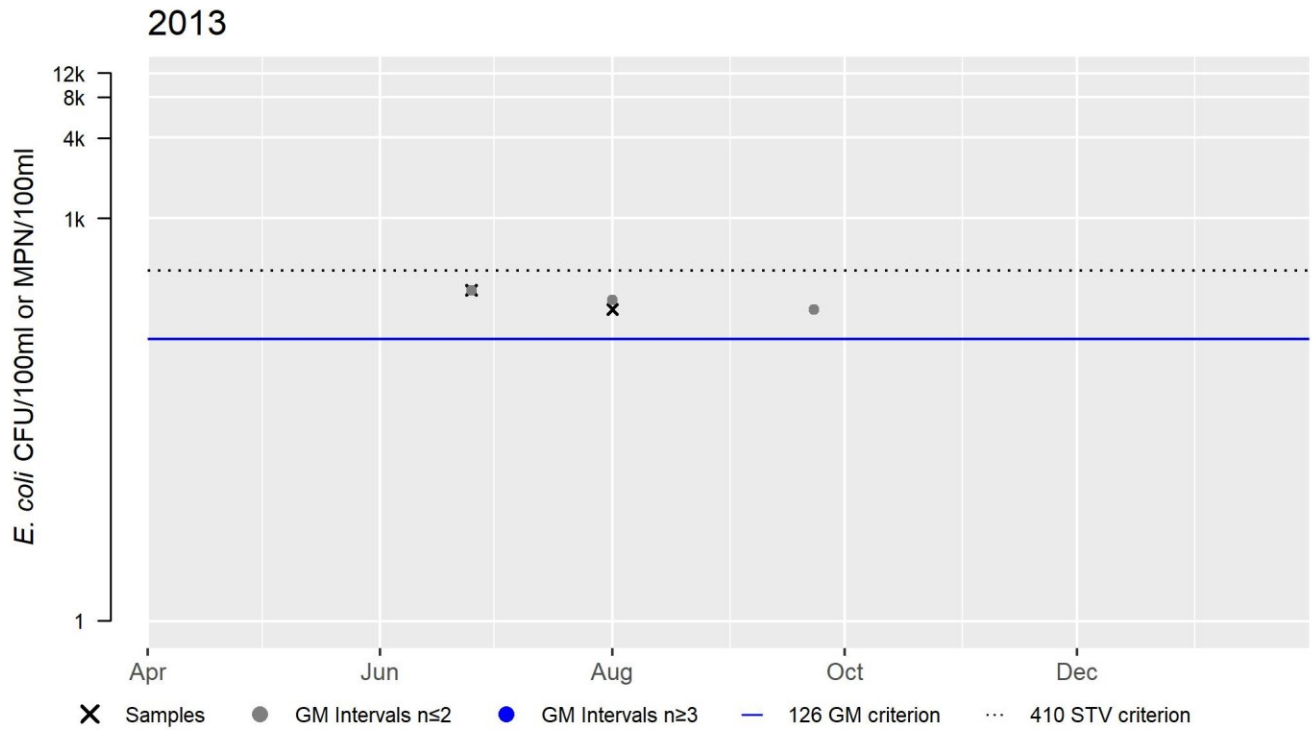
Variable	Cumulative %GMI Ex (all years)
Result	0



W2423 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	247
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

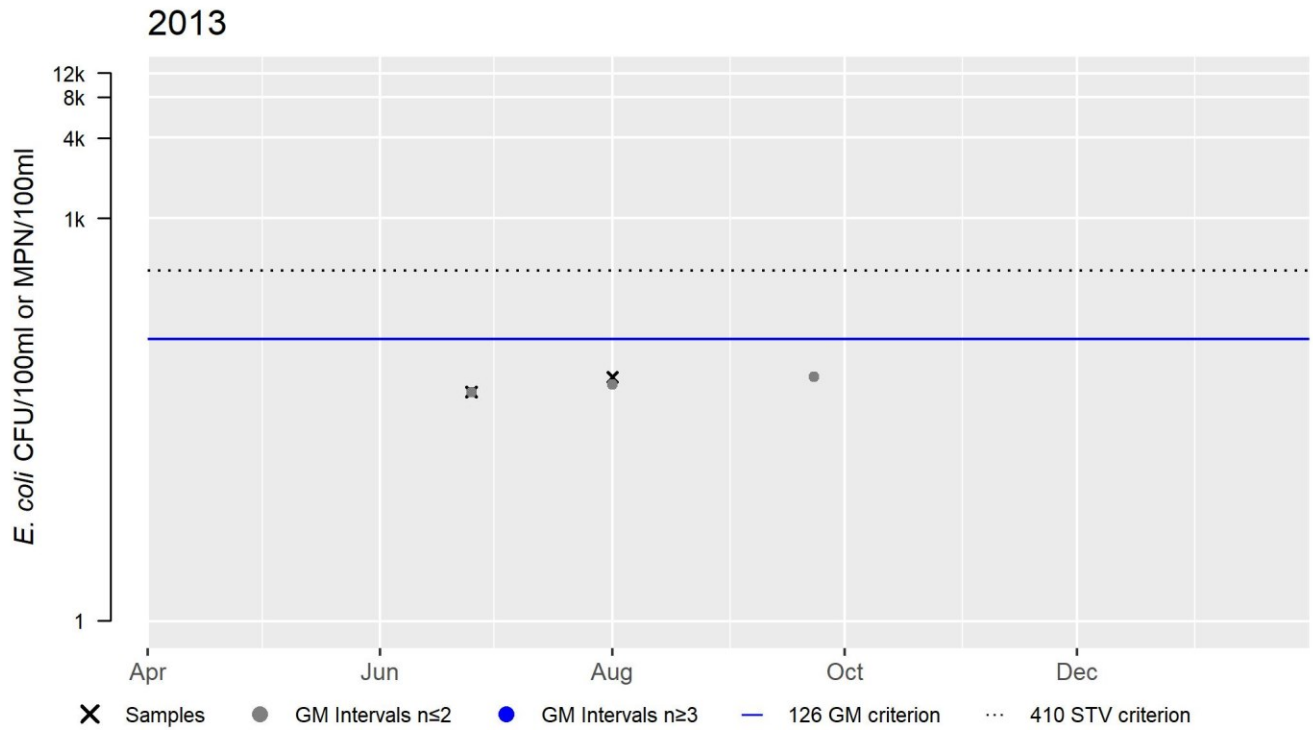
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2424 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	58
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

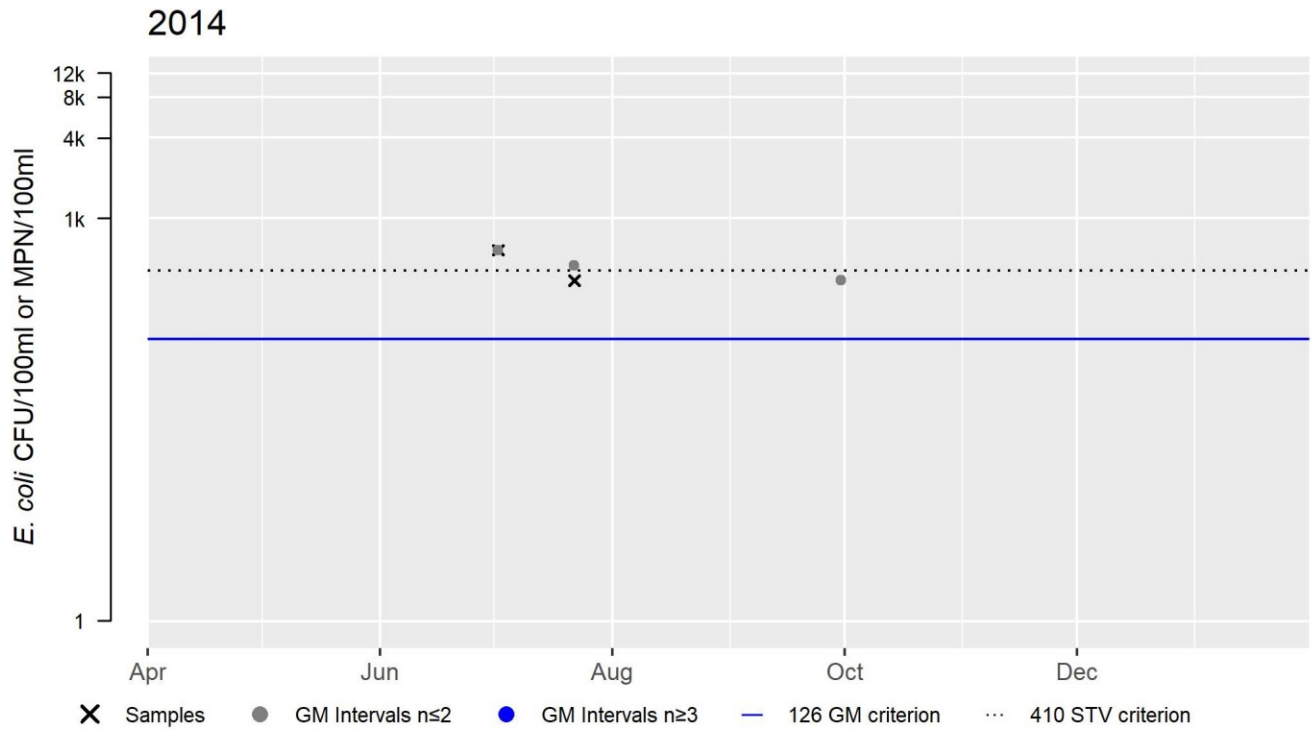
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2493 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	447
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



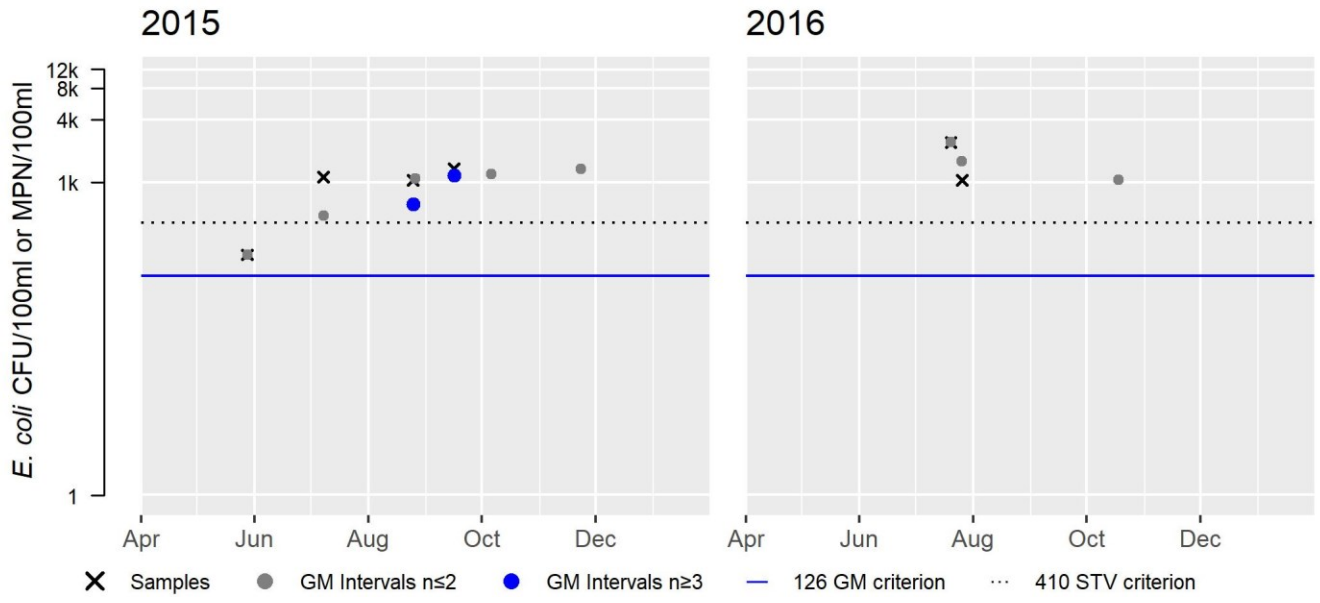
W2587 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	4
SeasGM	752
#GMI	2
#GMI Ex	2
%GMI Ex	100
n>STV	3
%n>STV	75

Var	Res
Samples	2
SeasGM	1594
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

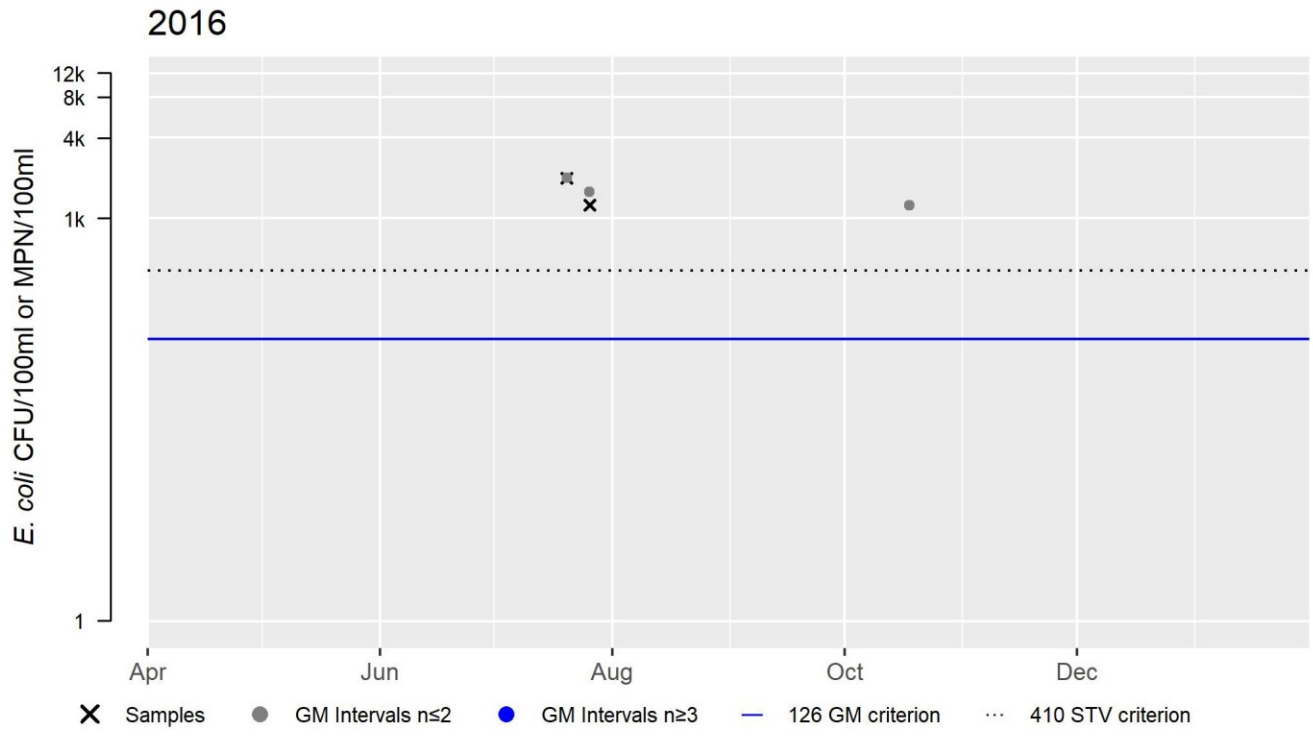
Variable	Cumulative %GMI Ex (all years)
Result	100



W2659 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	1577
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

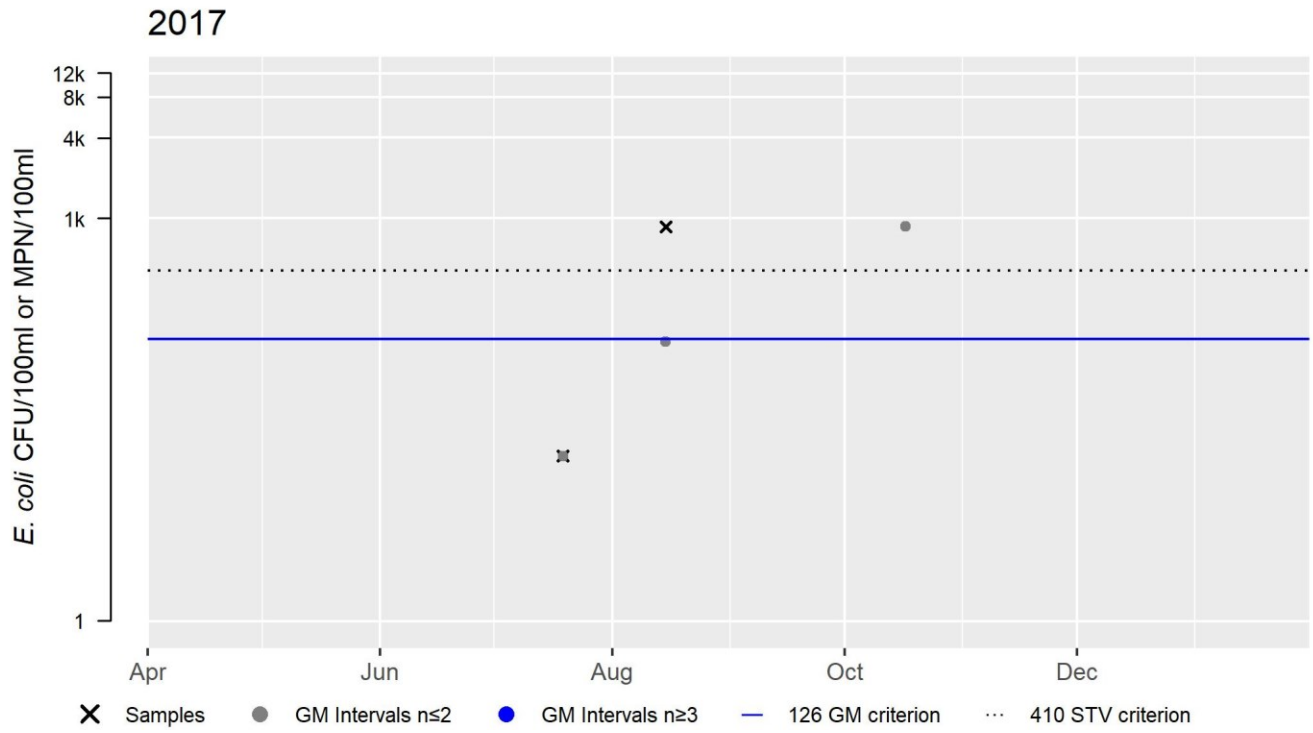
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2740 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	121
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
BST work was conducted between 2013 and 2017 at 13 sites along the Sevenmile River AU (MA52-08) and an additional 7 unnamed tributary sites; with E.coli concentrations ranging 11 to >2,419.6MPN. Overall the dry weather bacteria concentrations seemed to fluctuate widely from year to year, with 2016 showing comparatively much higher counts. However, detergents, ammonia/potassium and human marker analysis data collected in 2016 at Pitas Avenue were not indicative of a human source. Also a "none" human marker analysis result was recorded at the bottom of the AU in 2014. No correctable source was ever found.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Fully Supporting	YES
2022 Use Attainment Summary	

E. coli (and occasionally *Enterococcus*) bacteria samples were collected at ten stations in Attleboro (and one in Pawtucket, RI), along this Sevenmile River AU (MA52-08) as part of the MAP2 monitoring project during the summer of 2011 and the MassDEP Bacteria Source Tracking (BST) project during the summers of 2013 to 2017. The available *Enterococcus* data were too limited to assess the Secondary Contact Recreational Use for this AU according to the CALM "Use Attainment Impairment Decision Schema". Overall, the *E. coli* samples were collected between one and four times per year at: Read St (W2424) (2013), Roy Avenue (W2423) (2013), ~ 440 ft downstream from Roy Avenue (W2179) (2011), due east between the eastern ends of Lockwood and Simpson avenues (W2740) (2017), Pitas Avenue (W0900) (2016, 2017), ~ 650 ft downstream of Pitas Avenue (W2421) (2013, 2016, 2017), ~ 910 ft upstream of Rt. 95 (W2659) (2016), ~ 325 ft downstream of Rt. 95 (W2587) (2015, 2016), County St. (W0183) (2013-2015), ~ 2200 ft downstream of County St (W2493) (2014), ~ 120 ft upstream of confluence with Ten Mile River, Pawtucket, RI (W2417) (2013, 2014). There were only sufficient samples to calculate usable GMs at four of the stations, namely W2179, W2587, W0183 and W2417 (n=20). Data analysis of these single and multi-year, low frequency *E. coli* datasets at all four sample stations can be summarized as follows: while at times GMs exceeded 630 cfu/100ml (33% of intervals at W2179 and 50% at W2587), seasonal GMs were often low (422 cfu at W2179) (384 cfu at W2417); and while the seasonal GM exceeded the 630 cfu/100ml criterion at W2587 in 2015 (752 cfu), at most only one sample at each station per year at any station exceeded the 1260 cfu/100ml STV. For the multi-year dataset (at W0183) while 33% of the cumulative GMs were >630 cfu/100ml only one sample in 2015 exceeded the 1260 cfu/100ml STV. BST project notes indicated that the dry weather bacteria concentrations seemed to fluctuate widely from year to year, with 2016 showing comparatively much higher counts. However, detergents, ammonia/potassium and human marker analysis data collected in 2016 at Pitas Avenue were not indicative of a human source. Also, a "none" human marker analysis result was recorded at the downstream end of the AU in 2014. No correctable source was ever found. The Secondary Contact Recreational Use for this Sevenmile River AU (MA52-08) will continue to be assessed as Fully Supporting based on the *E. coli* data collected by MassDEP staff between 2011 and 2017, however, an Alert will be identified due to the elevated *E. coli* in the river just downstream of Rt.95 (Station W2587) and incidences of occasional extremely high *E. coli* counts throughout the AU.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
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Bacteria Data

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
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W2417	MassDEP	E. coli	07/02/14	07/22/14	2	345	727	501
W2421	MassDEP	E. coli	06/25/13	08/01/13	2	326	326	326
W2421	MassDEP	E. coli	07/20/16	07/26/16	2	1470	2419.6	1886
W2421	MassDEP	E. coli	07/19/17	08/15/17	2	210	410	293
W2423	MassDEP	E. coli	06/25/13	08/01/13	2	210	291	247
W2424	MassDEP	E. coli	06/25/13	08/01/13	2	51	66	58
W2493	MassDEP	E. coli	07/02/14	07/22/14	2	345	579	447
W2587	MassDEP	E. coli	05/28/15	09/16/15	4	201	1350	752
W2587	MassDEP	E. coli	07/20/16	07/26/16	2	1050	2419.6	1594
W2659	MassDEP	E. coli	07/20/16	07/26/16	2	1250	1990	1577
W2740	MassDEP	E. coli	07/19/17	08/15/17	2	17	866	121

W0183 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

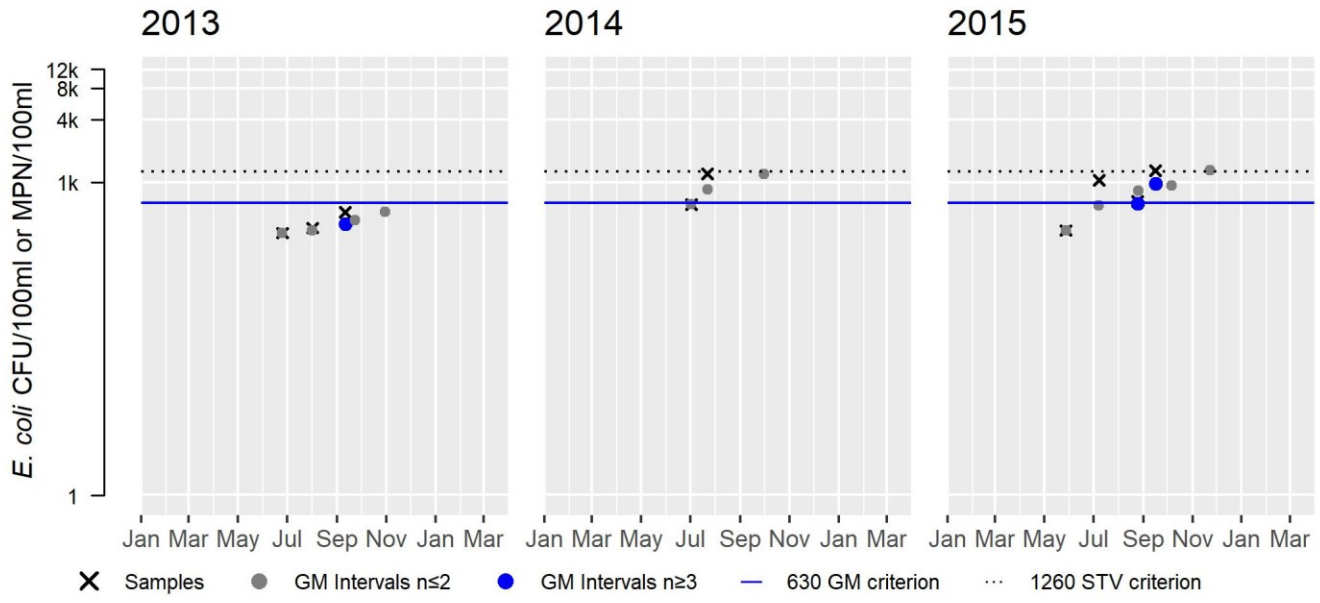
Var	Res
Samples	3
SeasGM	395
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	858
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	746
#GMI	2
#GMI Ex	1
%GMI Ex	50
n>STV	1
%n>STV	25

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	33



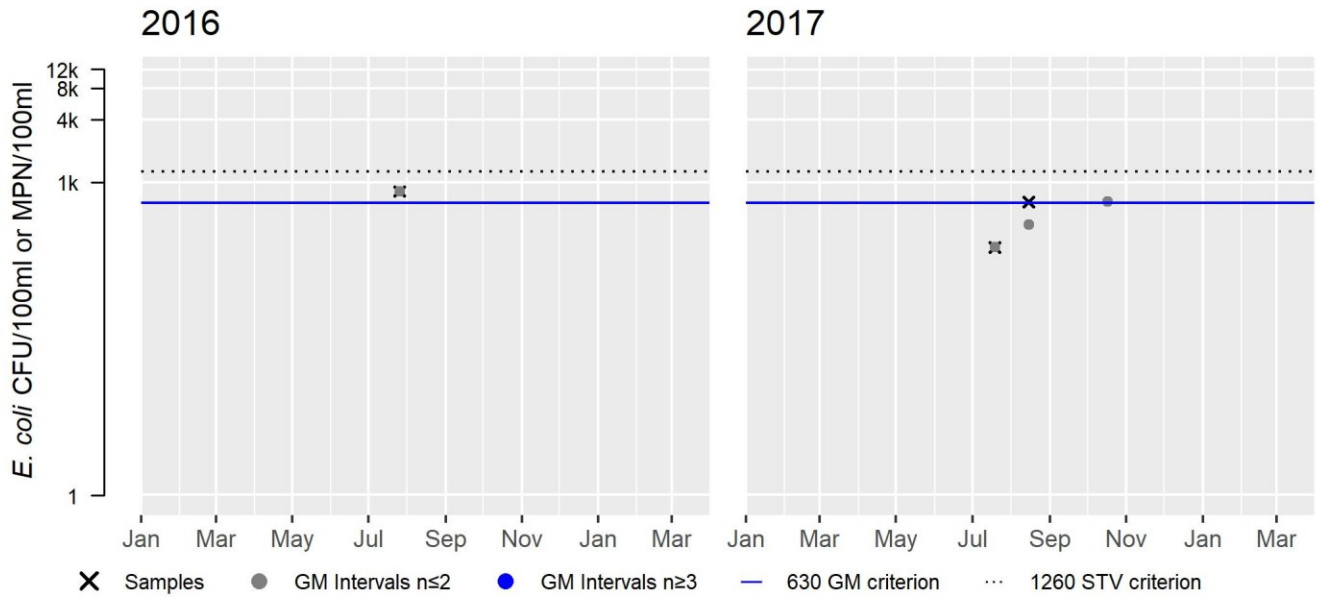
W0900 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	816
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	393
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

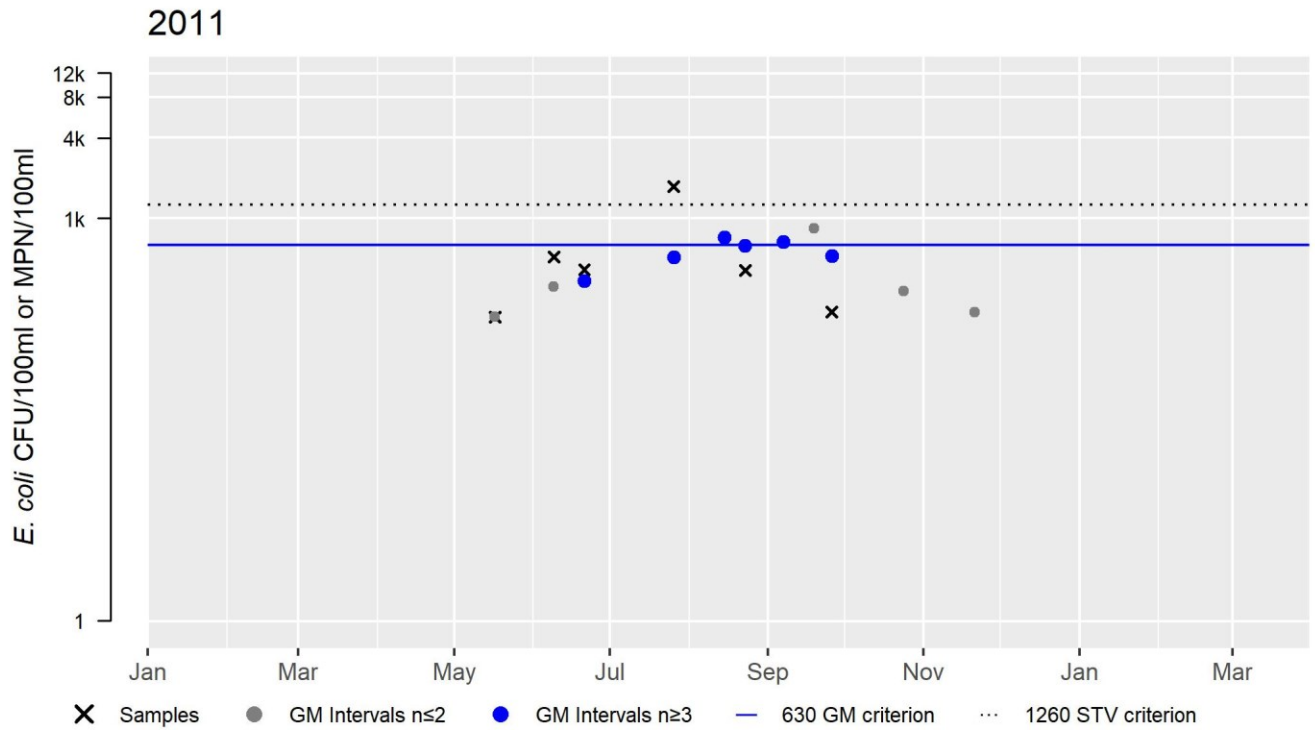
Variable	Cumulative %GMI Ex (all years)
Result	0



W2179 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	422
#GMI	6
#GMI Ex	2
%GMI Ex	33
n>STV	1
%n>STV	17

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



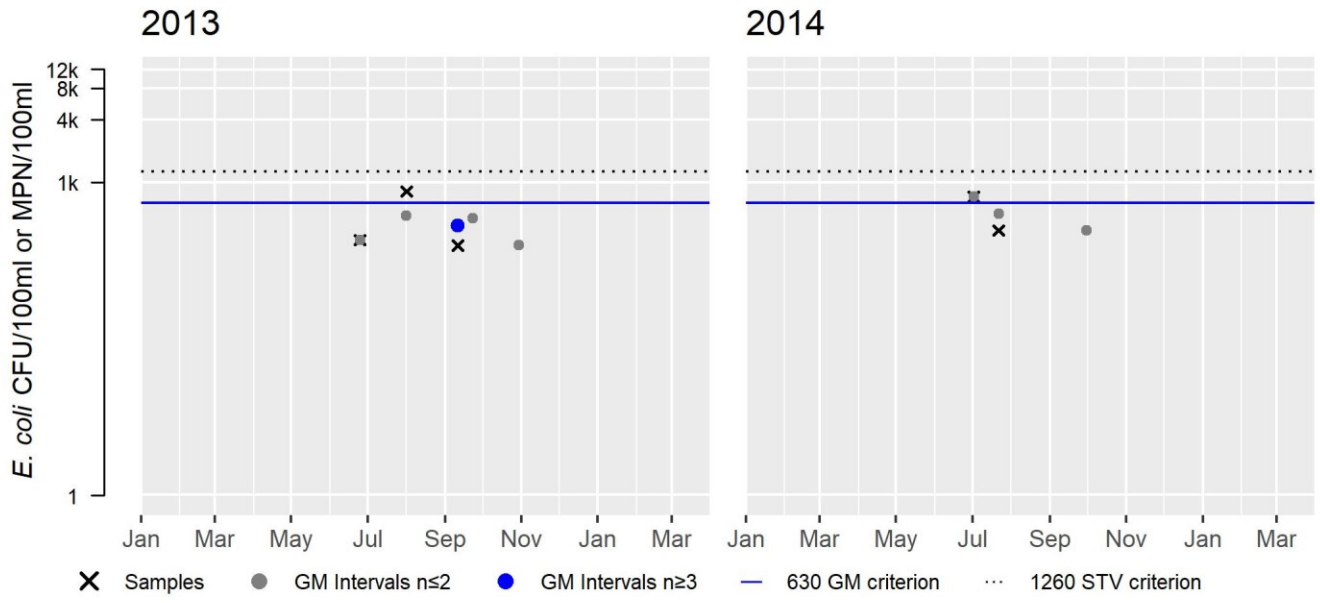
W2417 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	384
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	501
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



W2421 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

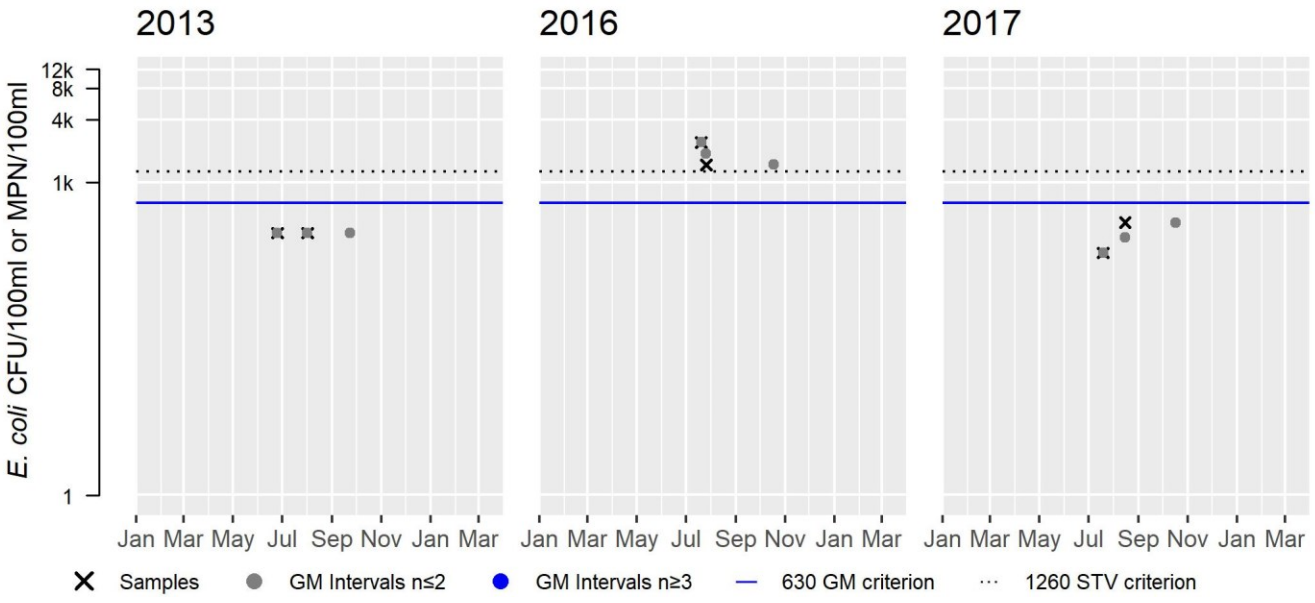
Var	Res
Samples	2
SeasGM	326
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	1886
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

Var	Res
Samples	2
SeasGM	293
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

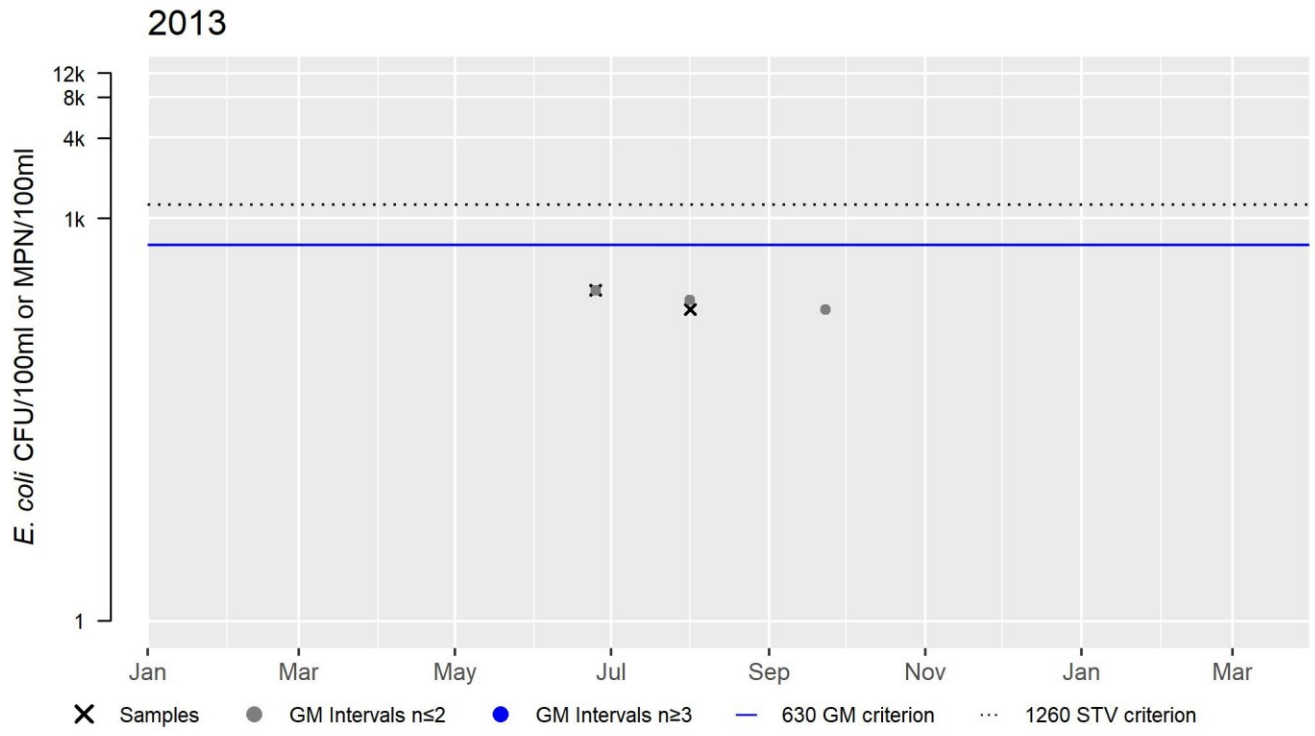
Variable	Cumulative %GMI Ex (all years)
Result	0



W2423 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	247
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

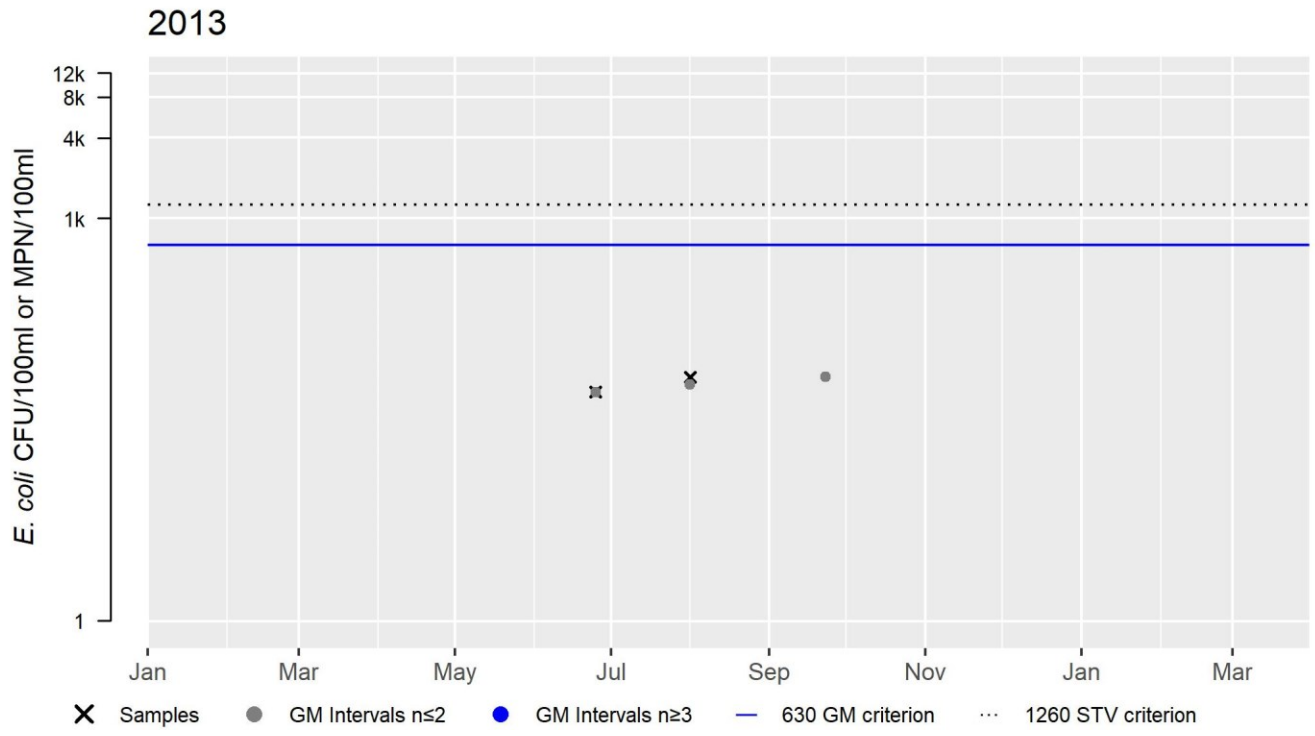
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2424 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	58
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

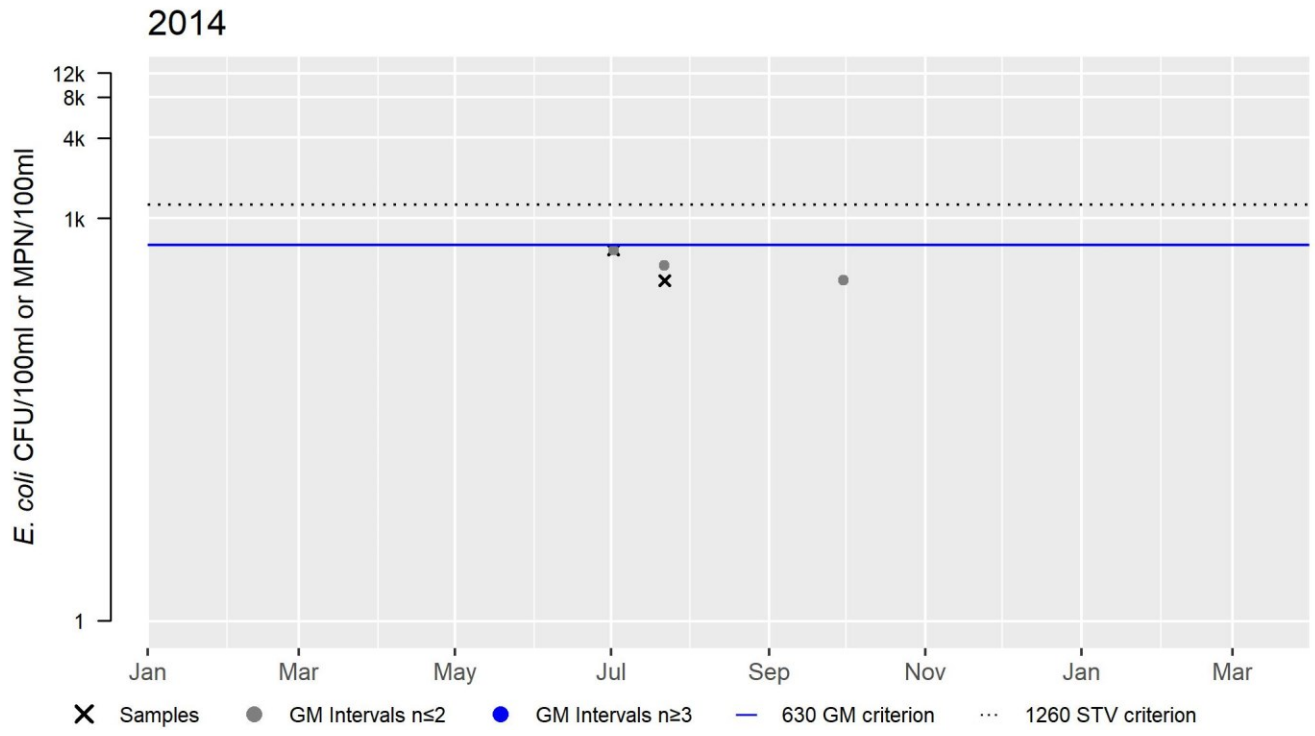
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2493 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	447
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



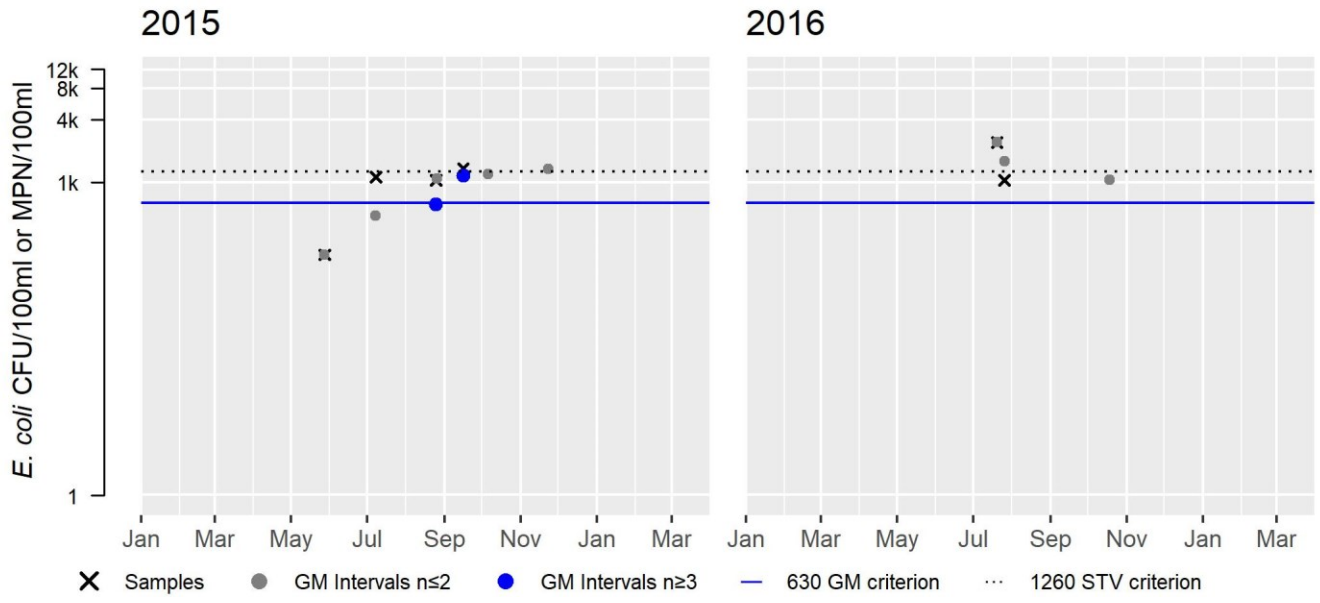
W2587 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	4
SeasGM	752
#GMI	2
#GMI Ex	1
%GMI Ex	50
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	1594
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

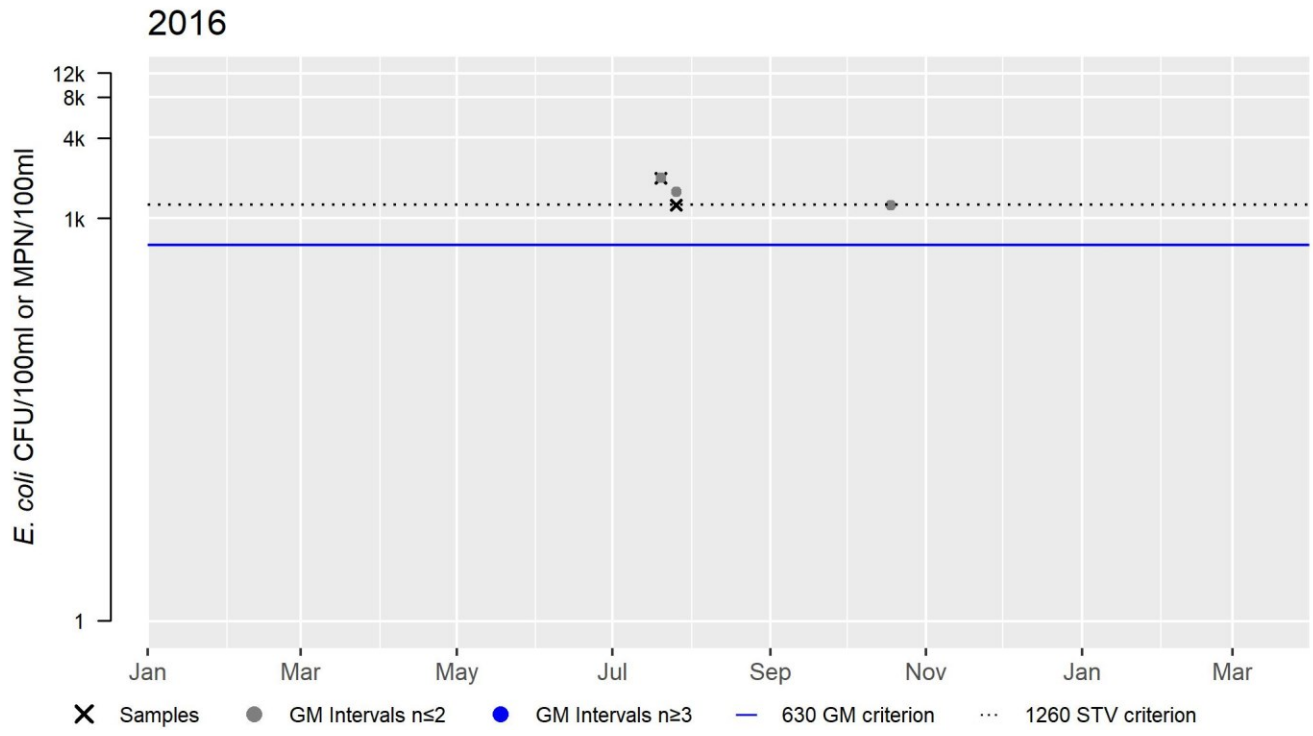
Variable	Cumulative %GMI Ex (all years)
Result	50



W2659 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	1577
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

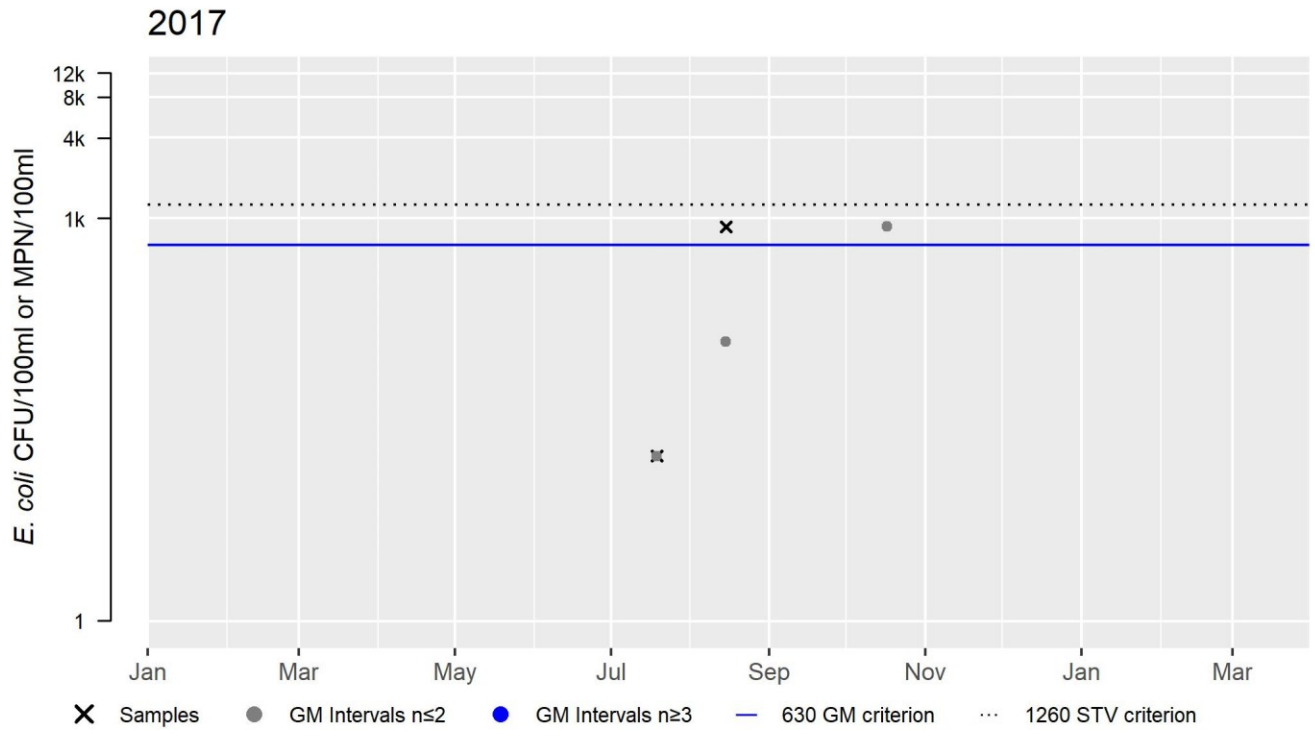
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2740 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	121
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

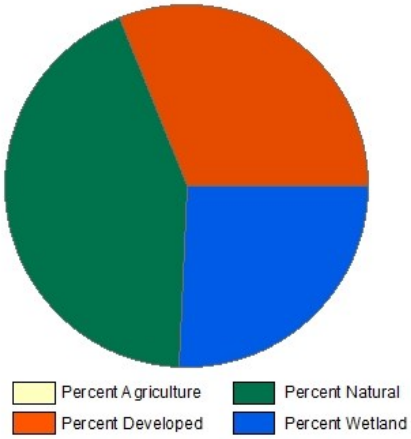


Speedway Brook (MA52-05)

Location:	(locally known as Thacher Brook) Headwaters, Attleboro to mouth at inlet of Dodgeville Pond (a Ten Mile River impoundment), Attleboro.
AU Type:	RIVER
AU Size:	0.9 MILES
Classification/Qualifier:	B: WWF

Speedway Brook - MA52-05

Watershed Area: 3.39 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	3.39	3.39	0.89	0.89
Agriculture	0.4%	0.4%	0.1%	0.1%
Developed	30.9%	30.9%	11.3%	11.3%
Natural	43.1%	43.1%	38.5%	38.5%
Wetland	25.5%	25.5%	50.1%	50.1%
Impervious Cover	18.7%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Alteration in Stream-side or Littoral Vegetative Covers*)		Unchanged
5	5	(Habitat Assessment*)		Unchanged
5	5	Benthic Macroinvertebrates		Unchanged
5	5	Dissolved Oxygen		Unchanged
5	5	Escherichia Coli (E. Coli)		Unchanged
5	5	Fecal Coliform		Unchanged
5	5	Metals		Unchanged
5	5	Sedimentation/Siltation		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Alteration in Stream-side or Littoral Vegetative Covers*)	Source Unknown (N)	X				
(Habitat Assessment*)	Source Unknown (N)	X				

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Benthic Macroinvertebrates	Source Unknown (N)	X				
Dissolved Oxygen	Source Unknown (N)	X				
Escherichia Coli (E. Coli)	Source Unknown (N)				X	
Escherichia Coli (E. Coli)	Waterfowl (Y)				X	
Fecal Coliform	Source Unknown (N)				X	
Fecal Coliform	Waterfowl (Y)				X	
Metals	Source Unknown (N)	X				
Sedimentation/Siltation	Source Unknown (N)	X				

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Except for very limited records of algal observations no other recent data are available to assess the status of the Aquatic Life Use for Speedway Brook, so it will continue to be assessed as Not Supporting. The Alterations in Stream-side or Littoral Vegetative Covers, Benthic Macroinvertebrates, Dissolved Oxygen, Habitat Assessment, Metals, and Sedimentation/Siltation impairments are being carried forward.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0180	MassDEP	Water Quality	Speedway Brook	[Route 152, Attleboro]	41.927261	-71.285224
W1517	MassDEP	Water Quality	Speedway Brook	[Dexter Street, Attleboro]	41.928698	-71.280345
W1618	MassDEP	Water Quality	Speedway Brook	[at emergence from culvert south of Maple Street, Attleboro]	41.935108	-71.275443
W2494	MassDEP	Water Quality	Speedway Brook	[approximately 1300 feet upstream (northeast) of Dexter Street (downstream of unnamed tributary), Attleboro]	41.931486	-71.277031

Physico-chemical Water Quality Information

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)
[Summer seasonal total phosphorus data collected May-Sept]

Station Code	Data Year	Seasonal TP Count	Seasonal TP Min (mg/L)	Seasonal TP Max (mg/L)	Seasonal TP Avg (mg/L)	Delta DO Max (mg/L)	Delta DO Avg (mg/L)	DO Sat Max (%)	pH Max (SU)	Count Algal Obsv.	Dense/V. Dense Film/Fila. Algae
W0180	2013	--	--	--	--	--	--	--	--	3	0
W0180	2014	--	--	--	--	--	--	--	--	1	0
W0180	2015	--	--	--	--	--	--	--	--	4	1
W0180	2016	--	--	--	--	--	--	--	--	2	0
W1517	2013	--	--	--	--	--	--	--	--	3	0
W1517	2014	--	--	--	--	--	--	--	--	2	0
W1517	2015	--	--	--	--	--	--	--	--	4	0
W1517	2016	--	--	--	--	--	--	--	--	2	0
W1618	2011	--	--	--	--	--	--	--	--	3	0
W1618	2014	--	--	--	--	--	--	--	--	3	0
W1618	2015	--	--	--	--	--	--	--	--	4	0
W1618	2016	--	--	--	--	--	--	--	--	2	0
W2494	2014	--	--	--	--	--	--	--	--	2	0
W2494	2015	--	--	--	--	--	--	--	--	4	0
W2494	2016	--	--	--	--	--	--	--	--	2	0

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No site-specific fish consumption advisory has been issued by DPH; therefore, the Fish Consumption Use for Speedway Brook (MA52-05) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Fully Supporting	NO
2022 Use Attainment Summary	
MassDEP staff recorded aesthetics observations at four sites in Attleboro along Speedway Brook between the summers of 2011 and 2016 as follows: at emergence from culvert south of Maple Street (W1618) (2011, 2014, 2015, 2016), approximately 1300 feet upstream (northeast) of Dexter Street (W2494) (2014, 2015, 2016), Dexter Street (W1517) (2013, 2014, 2015), and Rt.152 (W0180) (2013, 2014, 2015, 2016). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DWM-WPP field sampling crews during the surveys at all four stations (n=43). The Aesthetics Use for Speedway Brook is assessed as Fully Supporting.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0180	MassDEP	Water Quality	Speedway Brook	[Route 152, Attleboro]	41.927261	-71.285224
W1517	MassDEP	Water Quality	Speedway Brook	[Dexter Street, Attleboro]	41.928698	-71.280345

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W1618	MassDEP	Water Quality	Speedway Brook	[at emergence from culvert south of Maple Street, Attleboro]	41.935108	-71.275443
W2494	MassDEP	Water Quality	Speedway Brook	[approximately 1300 feet upstream (northeast) of Dexter Street (downstream of unnamed tributary), Attleboro]	41.931486	-71.277031

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0180	Speedway Brook	2013	4	MassDEP aesthetics observations for station W0180 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013.
W0180	Speedway Brook	2014	1	MassDEP aesthetics observations for station W0180 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=1).
W0180	Speedway Brook	2015	4	MassDEP aesthetics observations for station W0180 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015.
W0180	Speedway Brook	2016	2	MassDEP aesthetics observations for station W0180 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W1517	Speedway Brook	2013	3	MassDEP aesthetics observations for station W1517 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013.
W1517	Speedway Brook	2014	3	MassDEP aesthetics observations for station W1517 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014.
W1517	Speedway Brook	2015	4	MassDEP aesthetics observations for station W1517 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015.

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W1517	Speedway Brook	2016	2	MassDEP aesthetics observations for station W1517 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W1618	Speedway Brook	2011	3	MassDEP aesthetics observations for station W1618 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2011.
W1618	Speedway Brook	2014	3	MassDEP aesthetics observations for station W1618 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014.
W1618	Speedway Brook	2015	4	MassDEP aesthetics observations for station W1618 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015.
W1618	Speedway Brook	2016	2	MassDEP aesthetics observations for station W1618 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2494	Speedway Brook	2014	2	MassDEP aesthetics observations for station W2494 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2014. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2494	Speedway Brook	2015	4	MassDEP aesthetics observations for station W2494 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015.
W2494	Speedway Brook	2016	2	MassDEP aesthetics observations for station W2494 on Speedway Brook can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2016. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0180	2013	4	3	0
W0180	2014	1	1	0
W0180	2015	4	4	1
W0180	2016	2	2	0
W1517	2013	3	3	0
W1517	2014	3	2	0
W1517	2015	4	4	0
W1517	2016	2	2	0
W1618	2011	3	3	0
W1618	2014	3	3	0
W1618	2015	4	4	0
W1618	2016	2	2	0
W2494	2014	2	2	0
W2494	2015	4	4	0
W2494	2016	2	2	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0180	Speedway Brook	2013	Color	Light Yellow/Tan	1	4
W0180	Speedway Brook	2013	Color	None	2	4
W0180	Speedway Brook	2013	Color	NR	1	4
W0180	Speedway Brook	2013	Objectionable Deposits	Not Applicable (N/A)	4	4
W0180	Speedway Brook	2013	Odor	Musty (Basement)	1	4
W0180	Speedway Brook	2013	Odor	None	2	4
W0180	Speedway Brook	2013	Odor	NR	1	4
W0180	Speedway Brook	2013	Scum	Not Applicable (N/A)	4	4
W0180	Speedway Brook	2013	Turbidity	Moderately Turbid	1	4
W0180	Speedway Brook	2013	Turbidity	NR	1	4
W0180	Speedway Brook	2013	Turbidity	Slightly Turbid	2	4
W0180	Speedway Brook	2014	Color	None	1	1
W0180	Speedway Brook	2014	Objectionable Deposits	Not Applicable (N/A)	1	1
W0180	Speedway Brook	2014	Odor	None	1	1
W0180	Speedway Brook	2014	Scum	Yes	1	1
W0180	Speedway Brook	2014	Turbidity	Slightly Turbid	1	1
W0180	Speedway Brook	2015	Color	Light Yellow/Tan	1	4
W0180	Speedway Brook	2015	Color	None	3	4
W0180	Speedway Brook	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W0180	Speedway Brook	2015	Odor	None	4	4
W0180	Speedway Brook	2015	Scum	Not Applicable (N/A)	4	4
W0180	Speedway Brook	2015	Turbidity	Moderately Turbid	1	4
W0180	Speedway Brook	2015	Turbidity	Slightly Turbid	3	4
W0180	Speedway Brook	2016	Color	Light Yellow/Tan	1	2
W0180	Speedway Brook	2016	Color	None	1	2
W0180	Speedway Brook	2016	Objectionable Deposits	Not Applicable (N/A)	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0180	Speedway Brook	2016	Odor	None	2	2
W0180	Speedway Brook	2016	Scum	Not Applicable (N/A)	2	2
W0180	Speedway Brook	2016	Turbidity	Slightly Turbid	2	2
W1517	Speedway Brook	2013	Color	Light Yellow/Tan	1	3
W1517	Speedway Brook	2013	Color	None	2	3
W1517	Speedway Brook	2013	Objectionable Deposits	Not Applicable (N/A)	3	3
W1517	Speedway Brook	2013	Odor	None	3	3
W1517	Speedway Brook	2013	Scum	Not Applicable (N/A)	3	3
W1517	Speedway Brook	2013	Turbidity	Moderately Turbid	1	3
W1517	Speedway Brook	2013	Turbidity	Slightly Turbid	2	3
W1517	Speedway Brook	2014	Color	Light Yellow/Tan	1	3
W1517	Speedway Brook	2014	Color	None	2	3
W1517	Speedway Brook	2014	Objectionable Deposits	Not Applicable (N/A)	3	3
W1517	Speedway Brook	2014	Odor	None	3	3
W1517	Speedway Brook	2014	Scum	Not Applicable (N/A)	2	3
W1517	Speedway Brook	2014	Scum	Yes	1	3
W1517	Speedway Brook	2014	Turbidity	Moderately Turbid	1	3
W1517	Speedway Brook	2014	Turbidity	Slightly Turbid	2	3
W1517	Speedway Brook	2015	Color	None	4	4
W1517	Speedway Brook	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W1517	Speedway Brook	2015	Odor	None	4	4
W1517	Speedway Brook	2015	Scum	Not Applicable (N/A)	4	4
W1517	Speedway Brook	2015	Turbidity	Moderately Turbid	2	4
W1517	Speedway Brook	2015	Turbidity	Slightly Turbid	2	4
W1517	Speedway Brook	2016	Color	Light Yellow/Tan	1	2
W1517	Speedway Brook	2016	Color	None	1	2
W1517	Speedway Brook	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W1517	Speedway Brook	2016	Odor	None	2	2
W1517	Speedway Brook	2016	Scum	Not Applicable (N/A)	2	2
W1517	Speedway Brook	2016	Turbidity	Slightly Turbid	2	2
W1618	Speedway Brook	2011	Color	None	3	3
W1618	Speedway Brook	2011	Objectionable Deposits	Not Applicable (N/A)	3	3
W1618	Speedway Brook	2011	Odor	Musty (Basement)	1	3
W1618	Speedway Brook	2011	Odor	None	1	3
W1618	Speedway Brook	2011	Odor	Other	1	3
W1618	Speedway Brook	2011	Scum	Not Applicable (N/A)	3	3
W1618	Speedway Brook	2011	Turbidity	None	1	3
W1618	Speedway Brook	2011	Turbidity	Slightly Turbid	2	3
W1618	Speedway Brook	2014	Color	None	3	3
W1618	Speedway Brook	2014	Objectionable Deposits	Not Applicable (N/A)	3	3
W1618	Speedway Brook	2014	Odor	None	3	3
W1618	Speedway Brook	2014	Scum	Not Applicable (N/A)	3	3
W1618	Speedway Brook	2014	Turbidity	Slightly Turbid	3	3
W1618	Speedway Brook	2015	Color	None	4	4
W1618	Speedway Brook	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W1618	Speedway Brook	2015	Odor	None	3	4

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W1618	Speedway Brook	2015	Odor	Septic	1	4
W1618	Speedway Brook	2015	Scum	Not Applicable (N/A)	4	4
W1618	Speedway Brook	2015	Turbidity	Moderately Turbid	1	4
W1618	Speedway Brook	2015	Turbidity	Slightly Turbid	3	4
W1618	Speedway Brook	2016	Color	Light Yellow/Tan	1	2
W1618	Speedway Brook	2016	Color	None	1	2
W1618	Speedway Brook	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W1618	Speedway Brook	2016	Odor	None	2	2
W1618	Speedway Brook	2016	Scum	Not Applicable (N/A)	2	2
W1618	Speedway Brook	2016	Turbidity	Slightly Turbid	2	2
W2494	Speedway Brook	2014	Color	None	2	2
W2494	Speedway Brook	2014	Objectionable Deposits	Not Applicable (N/A)	2	2
W2494	Speedway Brook	2014	Odor	None	2	2
W2494	Speedway Brook	2014	Scum	Not Applicable (N/A)	2	2
W2494	Speedway Brook	2014	Turbidity	Moderately Turbid	1	2
W2494	Speedway Brook	2014	Turbidity	Slightly Turbid	1	2
W2494	Speedway Brook	2015	Color	None	4	4
W2494	Speedway Brook	2015	Objectionable Deposits	Not Applicable (N/A)	4	4
W2494	Speedway Brook	2015	Odor	None	4	4
W2494	Speedway Brook	2015	Scum	Not Applicable (N/A)	4	4
W2494	Speedway Brook	2015	Turbidity	Moderately Turbid	2	4
W2494	Speedway Brook	2015	Turbidity	Slightly Turbid	2	4
W2494	Speedway Brook	2016	Color	Light Yellow/Tan	1	2
W2494	Speedway Brook	2016	Color	None	1	2
W2494	Speedway Brook	2016	Objectionable Deposits	Not Applicable (N/A)	2	2
W2494	Speedway Brook	2016	Odor	None	2	2
W2494	Speedway Brook	2016	Scum	Not Applicable (N/A)	2	2
W2494	Speedway Brook	2016	Turbidity	Slightly Turbid	2	2

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	

E. coli (and occasionally *Enterococcus*) bacteria samples were collected from Speedway Brook at four sampling stations in Attleboro as part the MassDEP Bacteria Source Tracking (BST) project. The available *Enterococcus* data were too limited to assess the Primary Contact Recreational Use for this AU according to the CALM "Use Attainment Impairment Decision Schema". *E. coli* samples were collected between one and four times per year during the summers of 2013 to 2016 at: the emergence from culvert south of Maple Street (W1618) approximately 1300 feet upstream (northeast) of Dexter Street (W2494), Dexter Street (W1517) and Rt.152 (W0180). Data analysis of these single and multi-year, low frequency *E. coli* datasets (when enough data were available according to the CALM "Use Attainment Impairment Decision Schema") indicated generally poor water quality conditions (elevated bacteria) at the majority of sample stations, as 100% of intervals (in the single year dataset at W2494 in 2015) and 50-100% of intervals (in the two-year datasets) had GMs > 126 cfu/100ml; also with the single year dataset the seasonal GM was 361 cfu/100ml and for the two-year datasets 67-100% of the cumulative GMs were >126 cfu/100ml. BST project notes indicated that human marker analysis results at Rt.152 in 2014 were "weak", indicating a possible human source(s); however, it was concluded that this is more likely the result of industrial source optical brighteners (such as a car wash or laundry) combining with fecal matter from the ducks and geese on the pond at the Brook Haven Estates condo complex. Based on intermittently elevated *E. coli* and detergents at Maple Street in 2015 and 2016, it was concluded that an early season intermittent human source may still exist within the drainage infrastructure upstream of Maple Street. The Primary Contact Recreational Use for Speedway Brook will continue to be assessed as Not Supporting with both the *E. coli* and Fecal Coliform impairments being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0180	MassDEP	Water Quality	Speedway Brook	[Route 152, Attleboro]	41.927261	-71.285224
W1517	MassDEP	Water Quality	Speedway Brook	[Dexter Street, Attleboro]	41.928698	-71.280345
W1618	MassDEP	Water Quality	Speedway Brook	[at emergence from culvert south of Maple Street, Attleboro]	41.935108	-71.275443
W2494	MassDEP	Water Quality	Speedway Brook	[approximately 1300 feet upstream (northeast) of Dexter Street (downstream of unnamed tributary), Attleboro]	41.931486	-71.277031

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0180	MassDEP	E. coli	06/26/13	09/11/13	3	173	1010	493
W0180	MassDEP	Enterococci	10/01/13	10/01/13	1	290	290	290
W0180	MassDEP	E. coli	06/17/14	06/17/14	1	435	435	435
W0180	MassDEP	Enterococci	08/19/14	08/19/14	1	480	480	480
W0180	MassDEP	E. coli	05/28/15	09/16/15	4	120	687	279
W0180	MassDEP	E. coli	06/13/16	07/20/16	2	155	291	212
W1517	MassDEP	E. coli	06/26/13	09/11/13	3	196	1440	516
W1517	MassDEP	E. coli	06/17/14	07/30/14	3	308	387	348
W1517	MassDEP	Enterococci	08/19/14	08/19/14	1	700	700	700
W1517	MassDEP	E. coli	05/28/15	09/16/15	4	145	1660	476
W1517	MassDEP	E. coli	06/13/16	07/20/16	2	96	387	193
W1618	MassDEP	E. coli	06/02/11	09/20/11	3	146	980	329

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W1618	MassDEP	E. coli	06/17/14	07/30/14	3	105	556	225
W1618	MassDEP	Enterococci	08/19/14	08/19/14	1	44	44	44
W1618	MassDEP	E. coli	05/28/15	09/16/15	4	88	1730	242
W1618	MassDEP	E. coli	06/13/16	07/20/16	2	261	305	282
W2494	MassDEP	E. coli	07/22/14	07/30/14	2	579	613	596
W2494	MassDEP	E. coli	05/28/15	09/16/15	4	96	1730	361
W2494	MassDEP	E. coli	06/13/16	07/20/16	2	59	565	183

W0180 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	493
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	2
%n>STV	67

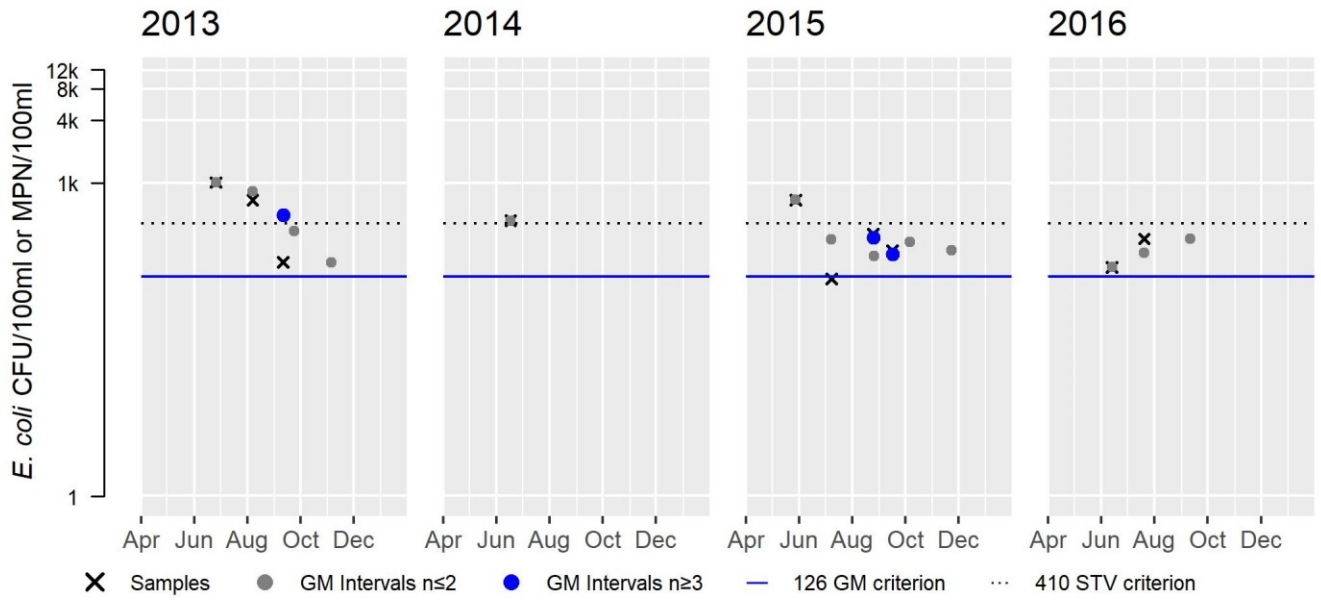
Var	Res
Samples	1
SeasGM	435
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Var	Res
Samples	4
SeasGM	279
#GMI	2
#GMI Ex	2
%GMI Ex	100
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	212
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	100



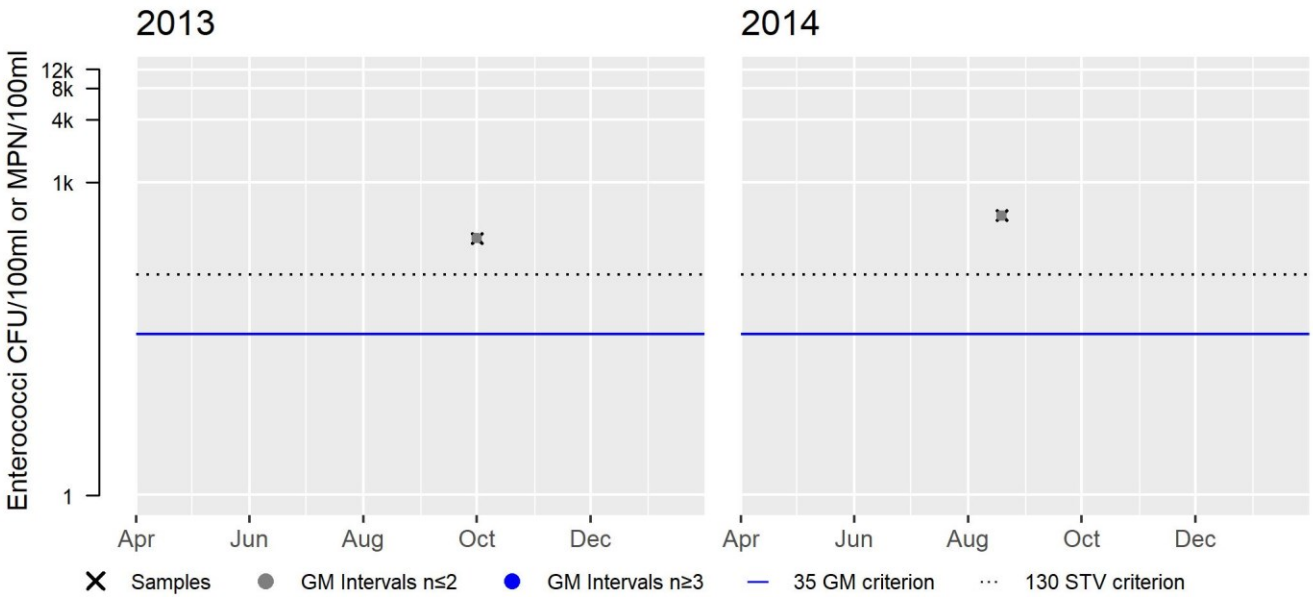
W0180 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	290
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Var	Res
Samples	1
SeasGM	480
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



W1517 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	516
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	2
%n>STV	67

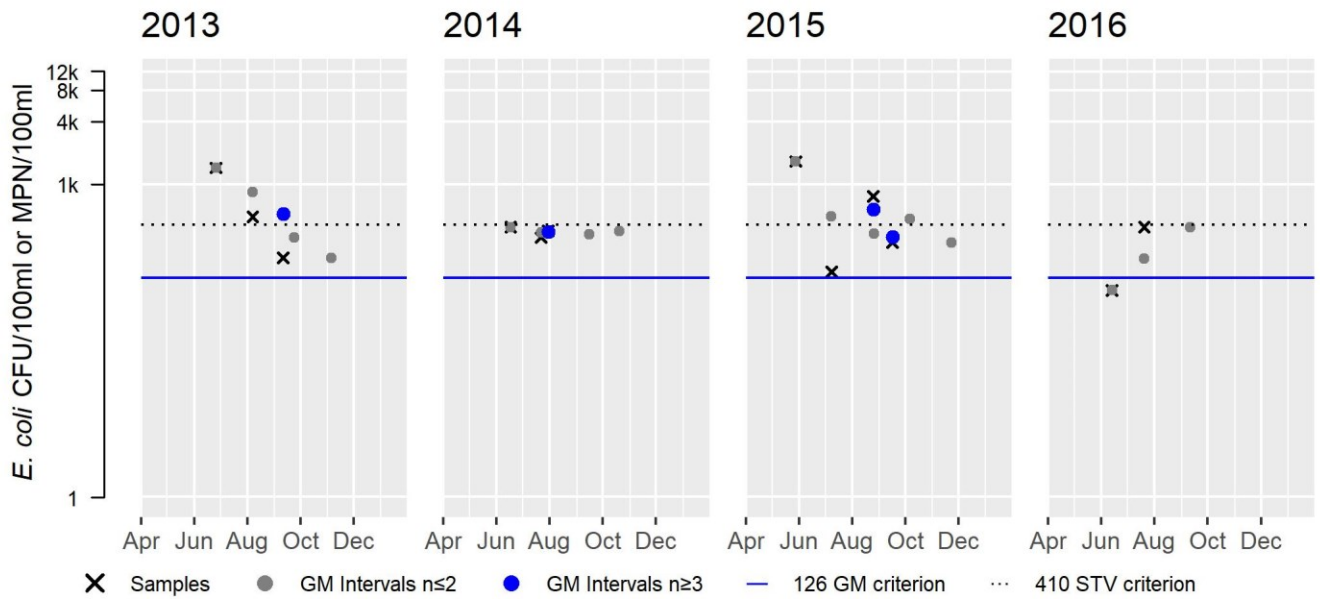
Var	Res
Samples	3
SeasGM	348
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	476
#GMI	2
#GMI Ex	2
%GMI Ex	100
n>STV	2
%n>STV	50

Var	Res
Samples	2
SeasGM	193
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

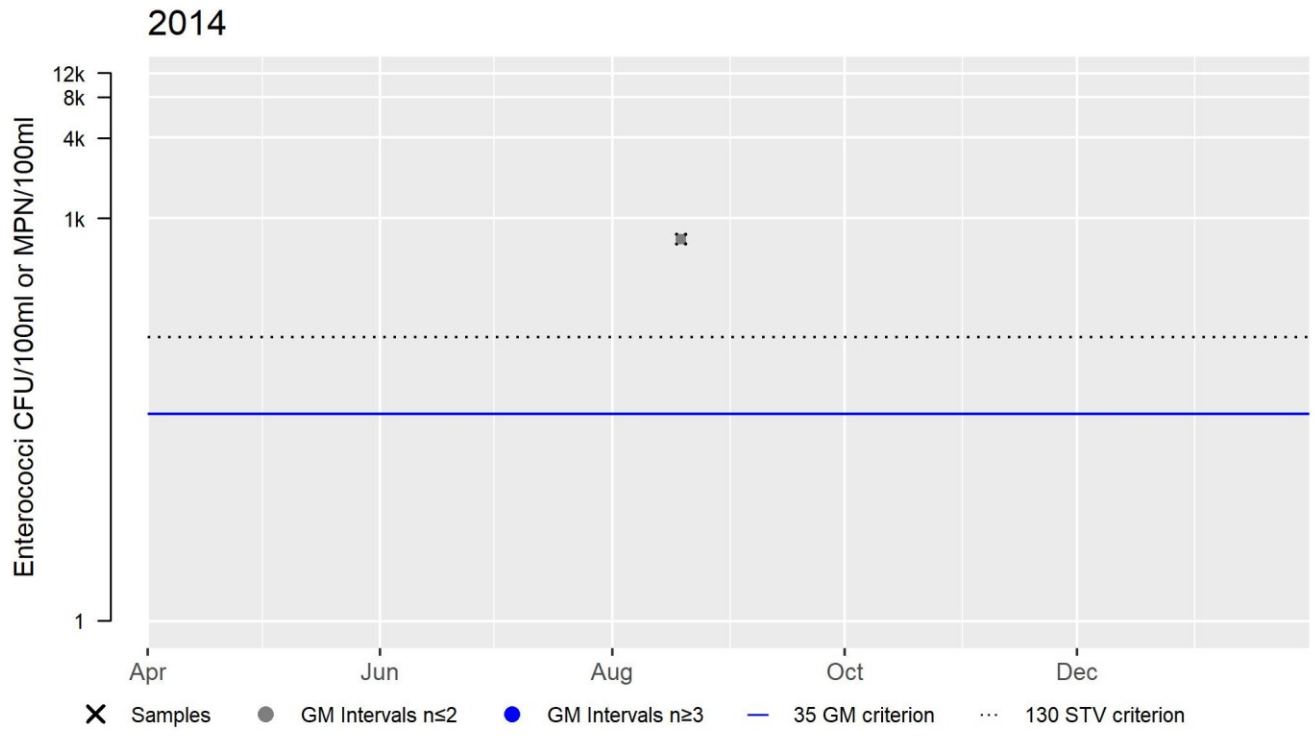
Variable	Cumulative %GMI Ex (all years)
Result	100



W1517 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	700
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W1618 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	329
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	33

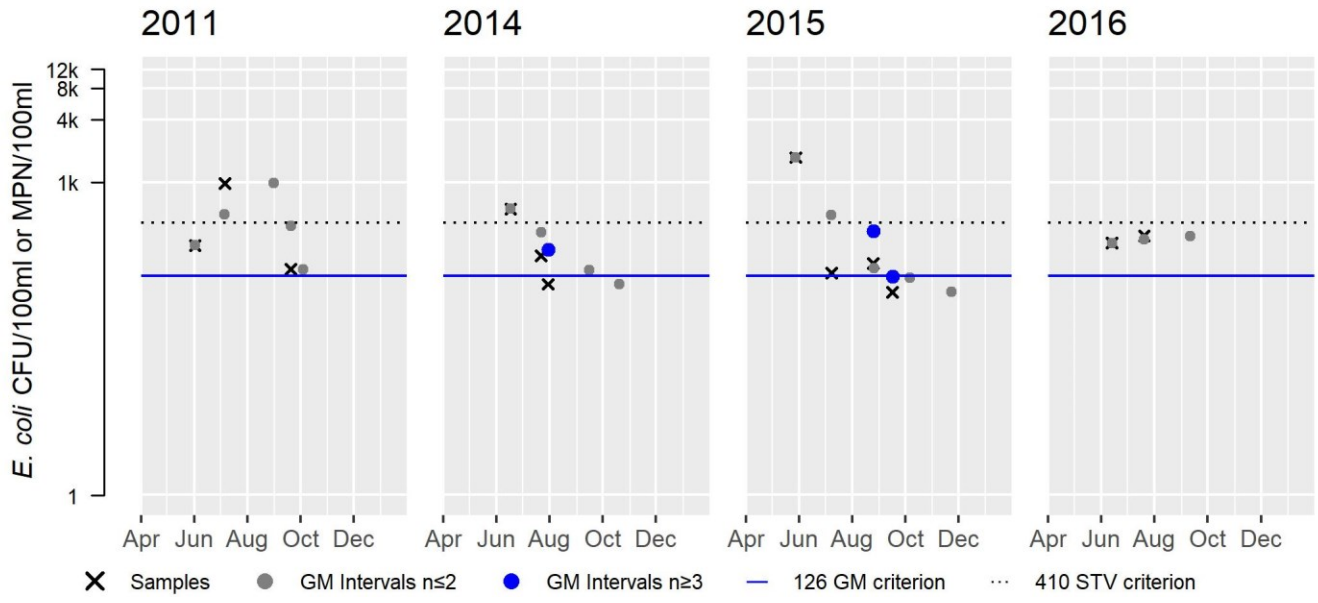
Var	Res
Samples	3
SeasGM	225
#GMI	1
#GMI Ex	1
%GMI Ex	100
n>STV	1
%n>STV	33

Var	Res
Samples	4
SeasGM	242
#GMI	2
#GMI Ex	1
%GMI Ex	50
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	282
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

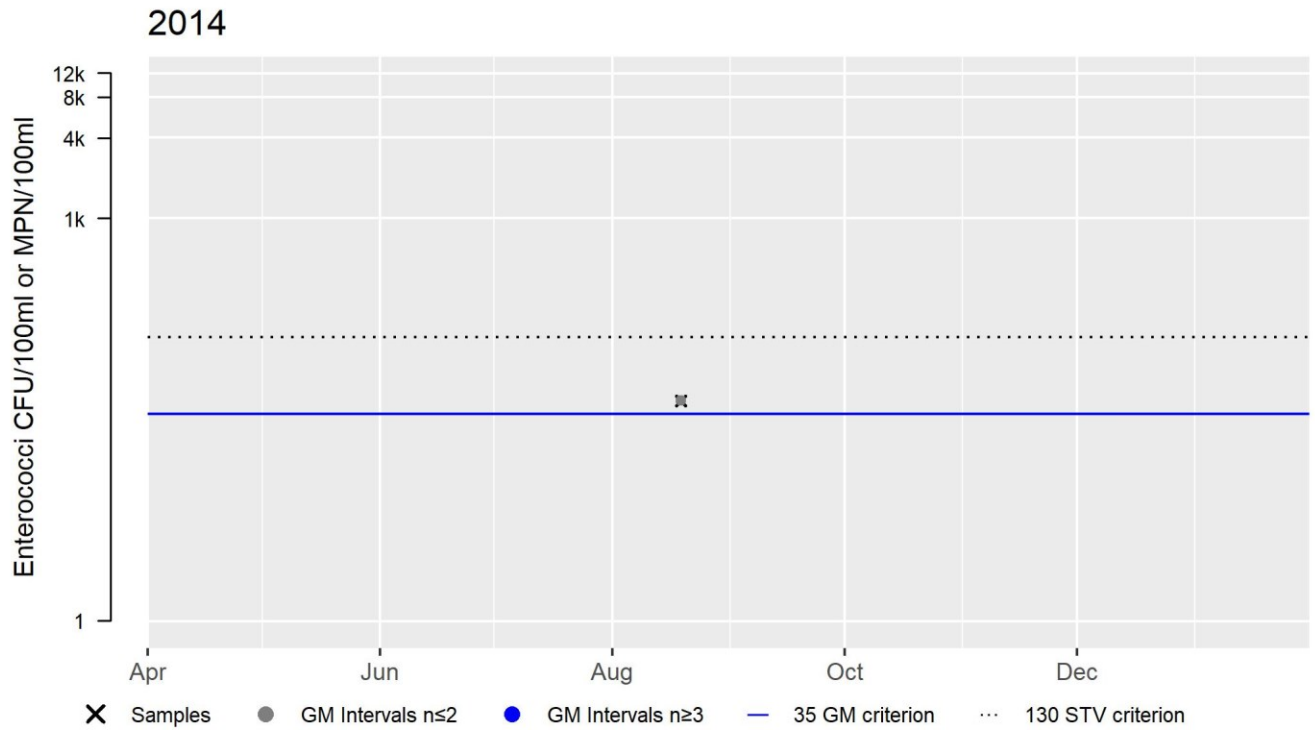
Variable	Cumulative %GMI Ex (all years)
Result	67



W1618 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	44
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2494 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

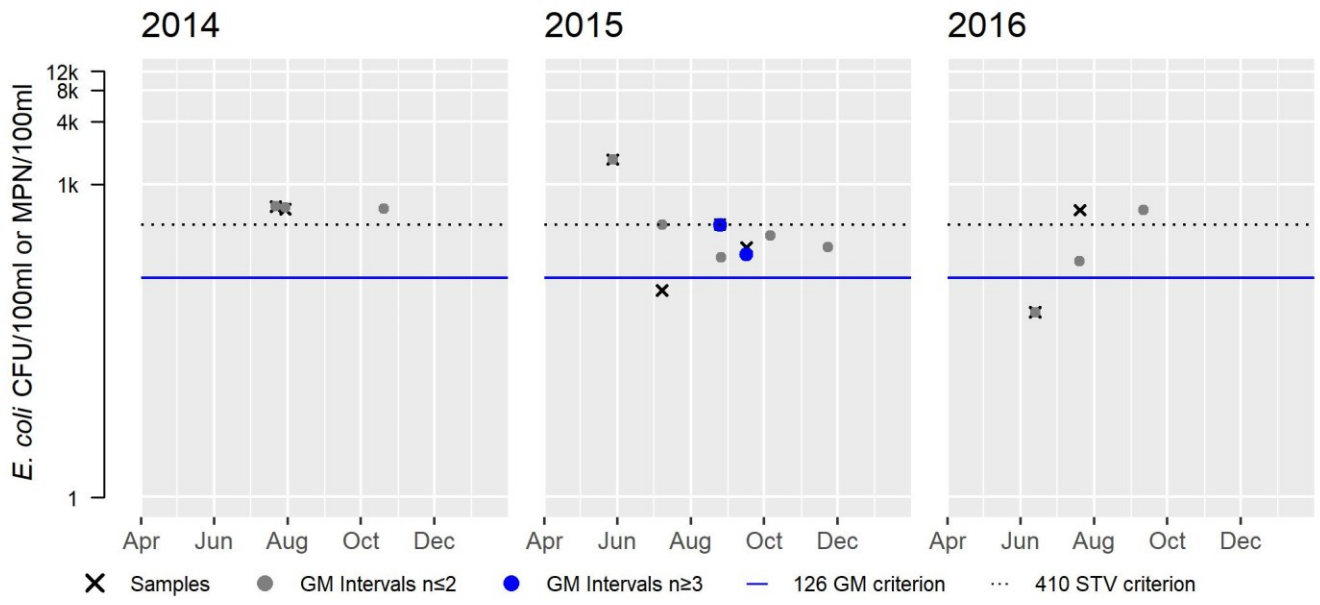
Var	Res
Samples	2
SeasGM	596
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

Var	Res
Samples	4
SeasGM	361
#GMI	2
#GMI Ex	2
%GMI Ex	100
n>STV	2
%n>STV	50

Var	Res
Samples	2
SeasGM	183
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	100



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
Prior to 2011, BST work was conducted along the Speedway Brook AU (MA52-05) and within the stormwater infrastructure upgradient of Maple Street; with a max *E. coli* concentration of 19,863MPN. In 2011 human sources of bacteria were found and corrected by the City of Attleboro. Additional BST work was conducted between 2011 and 2016 years at 6 sites along Speedway Brook and an additional 4 unnamed tributary sites: with *E. coli* concentrations ranging 105 to 1,733MPN. Human marker analysis results at Rt.152 in 2014 were “weak”, indicating a human source(s); however, it was concluded that this is likely the result of industrial source optical brighteners (such as a car wash or laundry) combining with fecal matter from the ducks and geese on the pond at the Brook Haven Estates condo complex. Based on intermittently elevated *E. coli* and detergents at Maple Street in 2015 and 2016, it was concluded that an early season intermittent human source may still exist within the drainage infrastructure upstream of Maple Street.

Secondary Contact Recreation

2022 Use Attainment	Alert
Fully Supporting	NO

2022 Use Attainment Summary

E. coli (and occasionally *Enterococcus*) bacteria samples were collected from Speedway Brood at four sampling stations in Attleboro as part the MassDEP Bacteria Source Tracking (BST) project. The available *Enterococcus* data were too limited to assess the Secondary Contact Recreational Use for this AU according to the CALM "Use Attainment Impairment Decision Schema". *E. coli* samples were collected between one and four times per year during the summers of 2013 to 2016 at: the emergence from culvert south of Maple Street (W1618) approximately 1300 feet upstream (northeast) of Dexter Street (W2494), Dexter Street (W1517) and Rt.152 (W0180). Data analysis of these single and multi-year, low frequency *E. coli* datasets (when enough data were available according to the CALM "Use Attainment Impairment Decision Schema") indicated generally good conditions at the majority of sample stations as none of the intervals had GMs > 630 cfu/100ml; at most only one sample a year exceeded the 1260 STV and also with the single year dataset (at W2494 in 2015) the seasonal GM was only 361 cfu/100ml.
The Secondary Contact Recreational Use for Speedway Brook is assessed as Fully Supporting based on the recent *E. coli* data collected by the MassDEP BST project in 2013-2015 that does not exceed the "Use Attainment Impairment Decision Schema" described in the 2022 CALM (MassDEP 2022). The prior impairment for E. coli is being removed from this use only (E. coli remains an impairment for Primary Contact Recreation).

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0180	MassDEP	Water Quality	Speedway Brook	[Route 152, Attleboro]	41.927261	-71.285224
W1517	MassDEP	Water Quality	Speedway Brook	[Dexter Street, Attleboro]	41.928698	-71.280345
W1618	MassDEP	Water Quality	Speedway Brook	[at emergence from culvert south of Maple Street, Attleboro]	41.935108	-71.275443
W2494	MassDEP	Water Quality	Speedway Brook	[approximately 1300 feet upstream (northeast) of Dexter Street (downstream of unnamed tributary), Attleboro]	41.931486	-71.277031

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W0180	MassDEP	E. coli	06/26/13	09/11/13	3	173	1010	493
W0180	MassDEP	E. coli	06/17/14	06/17/14	1	435	435	435
W0180	MassDEP	E. coli	05/28/15	09/16/15	4	120	687	279
W0180	MassDEP	E. coli	06/13/16	07/20/16	2	155	291	212
W1517	MassDEP	E. coli	06/26/13	09/11/13	3	196	1440	516
W1517	MassDEP	E. coli	06/17/14	07/30/14	3	308	387	348
W1517	MassDEP	E. coli	05/28/15	09/16/15	4	145	1660	476
W1517	MassDEP	E. coli	06/13/16	07/20/16	2	96	387	193
W1618	MassDEP	E. coli	06/02/11	09/20/11	3	146	980	329

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W1618	MassDEP	E. coli	06/17/14	07/30/14	3	105	556	225
W1618	MassDEP	E. coli	05/28/15	09/16/15	4	88	1730	242
W1618	MassDEP	E. coli	06/13/16	07/20/16	2	261	305	282
W2494	MassDEP	E. coli	07/22/14	07/30/14	2	579	613	596
W2494	MassDEP	E. coli	05/28/15	09/16/15	4	96	1730	361
W2494	MassDEP	E. coli	06/13/16	07/20/16	2	59	565	183

W0180 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	493
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

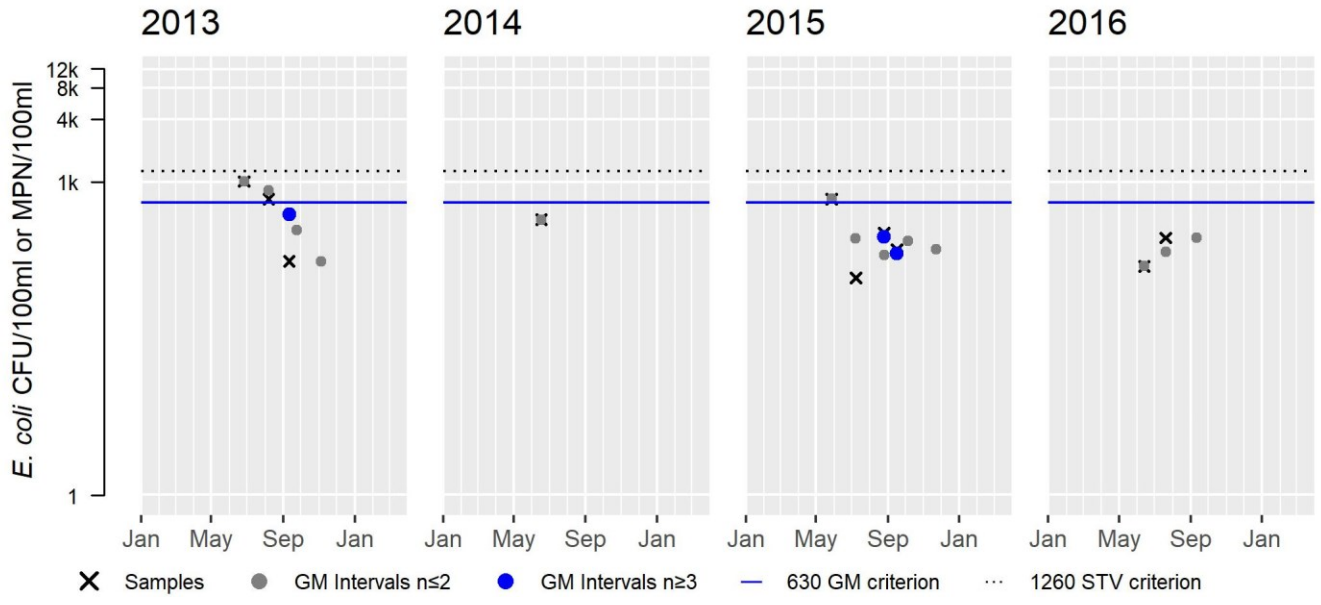
Var	Res
Samples	1
SeasGM	435
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	279
#GMI	2
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	212
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



W1517 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	516
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	33

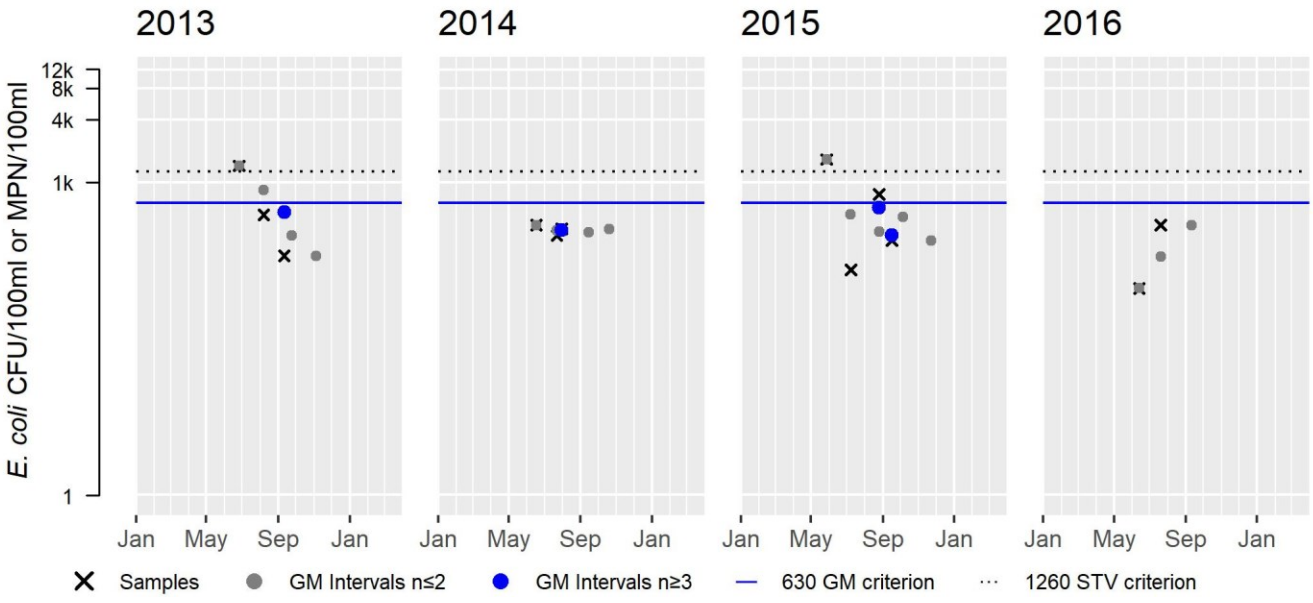
Var	Res
Samples	3
SeasGM	348
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	476
#GMI	2
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	193
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



W1618 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	329
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

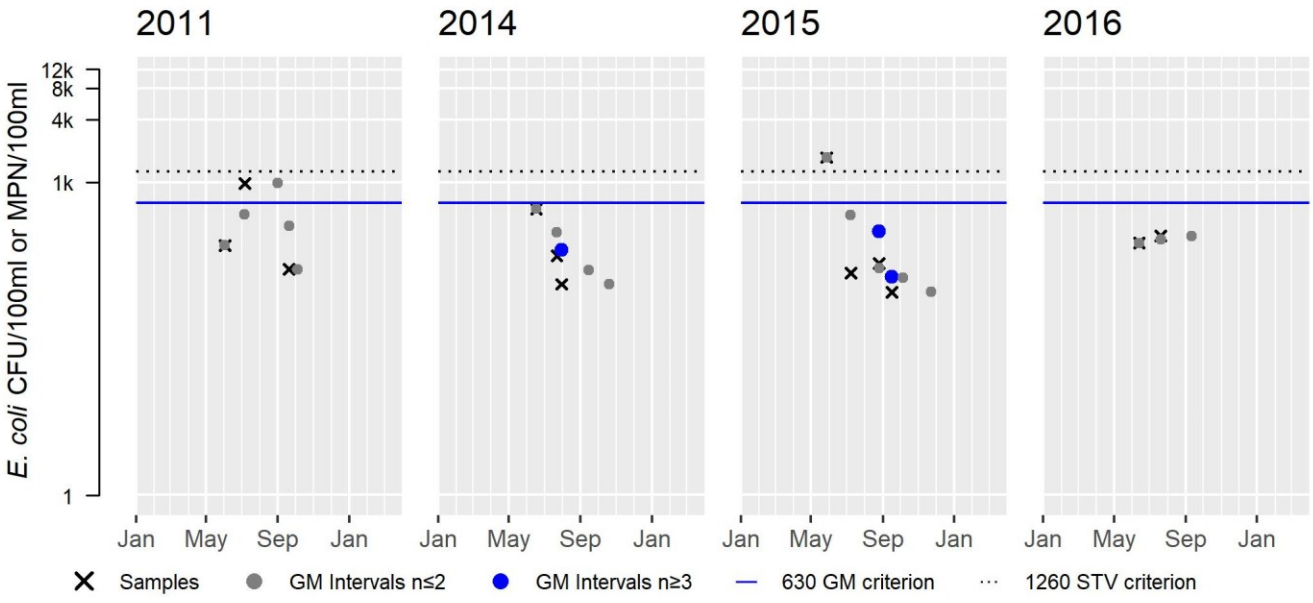
Var	Res
Samples	3
SeasGM	225
#GMI	1
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	242
#GMI	2
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	282
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



W2494 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

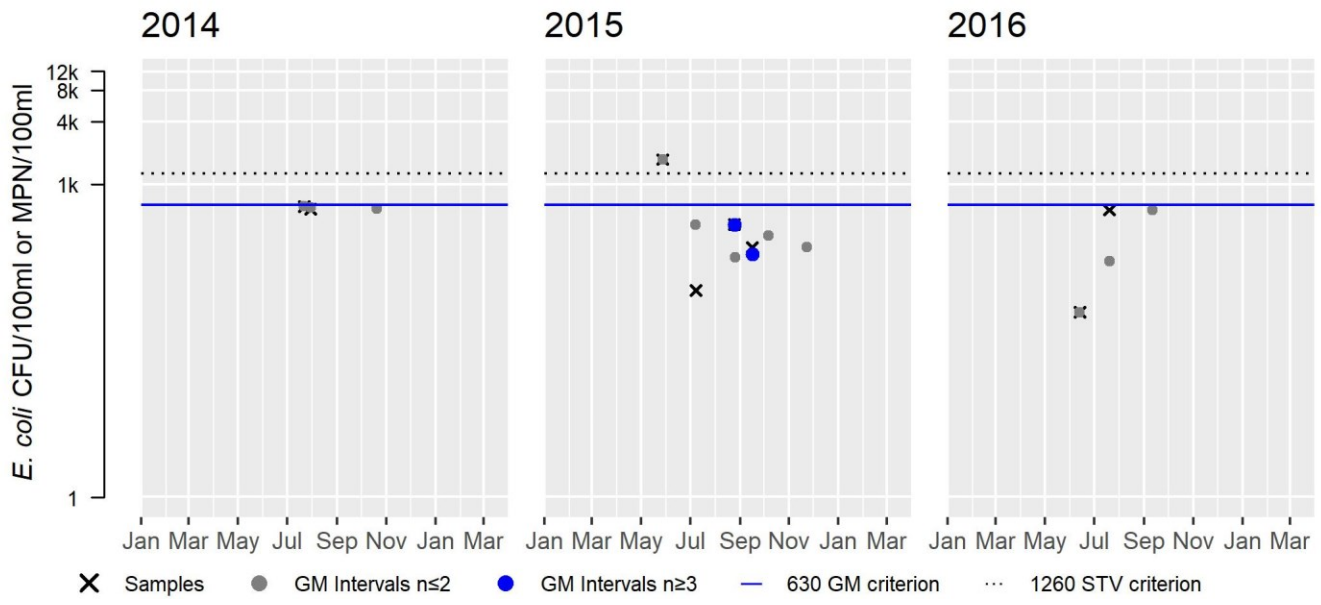
Var	Res
Samples	2
SeasGM	596
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	4
SeasGM	361
#GMI	2
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	25

Var	Res
Samples	2
SeasGM	183
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0

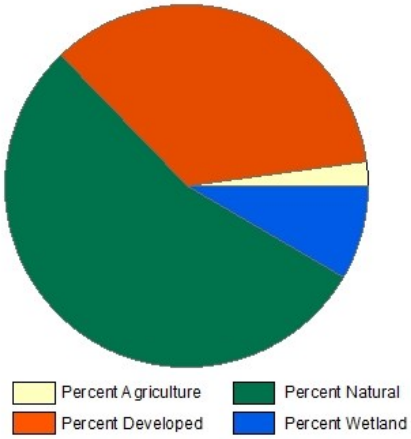


Ten Mile River (MA52-01)

Location:	Headwaters, outlet Cargill Pond, Plainville to West Bacon Street, Plainville (through former 2006 segment: Fuller Pond MA52016).
AU Type:	RIVER
AU Size:	1.5 MILES
Classification/Qualifier:	B: WWF, HQW

Ten Mile River - MA52-01

Watershed Area: 3.32 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	3.32	3.32	0.5	0.5
Agriculture	2.1%	2.1%	2.2%	2.2%
Developed	35.1%	35.1%	22.4%	22.4%
Natural	54.5%	54.5%	49.4%	49.4%
Wetland	8.4%	8.4%	26.1%	26.1%
Impervious Cover	14.9%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Metals		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Metals	Contaminated Sediments (N)	X				

Recommendations

2022 Recommendations
ALU: Conduct an aquatic macrophyte survey in the Fuller Pond impoundment of the Ten Mile River (MA52-01) when flowering heads are present, to determine if any non-native species of *Myriophyllum* are infesting the pond.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	YES
2022 Use Attainment Summary	
During validation of MassDEP aquatic invasive species records, it was noted that DEP biologists listed "*Myriophyllum* sp." on the field sheet for a July 1997 synoptic survey of Fuller Pond, located just upstream of Fuller Street in Plainville (now part of Ten Mile River MA52-01). The Aquatic Life Use for this Ten Mile River AU (MA52-01) will continue to be assessed as Not Supporting, with the metals impairment carried forward. An alert is also being identified for the possible infestation of non-native *Myriophyllum* species in the Fuller Pond impoundment of this Ten Mile River AU (MA52-01).	

Biological Monitoring Information

Non-native Aquatic Species Presence

MassDEP Non-Native Aquatic Invasive Species Records as of May 2021. (MassDEP 1997)

Summary Statement	Assessment Recommendation
During validation of MassDEP aquatic invasive species records, it was noted that DEP biologists listed "*Myriophyllum* sp." on the field sheet for a July 1997 synoptic survey of Fuller Pond (now part of Ten Mile River MA52-01). An aquatic macrophyte survey should be conducted to determine whether any of the non-native *Myriophyllum* species are infesting the pond and an Alert should be issued.	Conduct an aquatic macrophyte survey in the Fuller Pond impoundment of the Ten Mile River (MA52-01) when flowering heads are present to determine if any non-native species of *Myriophyllum* are infesting the pond.

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was conducted in this Ten Mile River AU (MA52-01) in 1984 just upstream of Fuller Street, Plainville, no site-specific fish consumption advisory is in place, therefore the Fish Consumption Use for this Ten Mile River (MA52-01) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No data are available to assess the status of the Aesthetic Use for this Ten Mile River AU (MA52-01), so it is Not Assessed.	

Primary Contact Recreation

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No bacteria data are available to assess the Primary Contact Recreational Use for this Ten Mile River AU (MA52-01), so it is Not Assessed.	

Secondary Contact Recreation

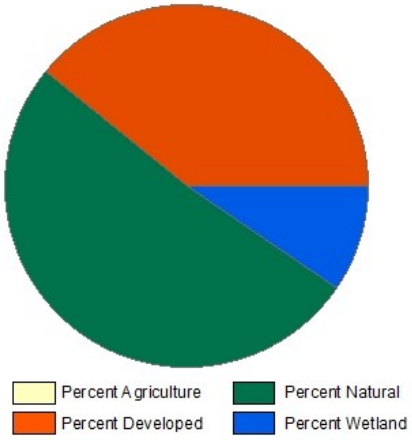
2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No bacteria data are available to assess the Secondary Contact Recreational Use for this Ten Mile River AU (MA52-01), so it is Not Assessed.	

Ten Mile River (MA52-02)

Location:	West Bacon Street, Plainville to North Attleborough WWTP discharge (NPDES: MA0101036), Attleboro (excluding 0.9 miles through Falls Pond segment MA52013, but including through former 2006 segment: Wetherells Pond MA52041) (HQW qualifier applies to portion of river upstream of Whiting Pond Dam (NATID: MA00859)).
AU Type:	RIVER
AU Size:	4.1 MILES
Classification/Qualifier:	B: WWF, HQW* (*HQW qualifier applies to portion of river upstream of Whiting Pond Dam)

Ten Mile River - MA52-02

Watershed Area: 11 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	11	6.41	3.74	2.68
Agriculture	0.9%	0.2%	0.5%	0%
Developed	38.8%	41.5%	32.3%	34.9%
Natural	50.9%	48.4%	48.5%	47.8%
Wetland	9.4%	9.9%	18.6%	17.3%
Impervious Cover	19.2%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	Escherichia Coli (E. Coli)		Unchanged
5	5	Fecal Coliform		Unchanged
5	5	Metals		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Escherichia Coli (E. Coli)	Source Unknown (N)				X	
Fecal Coliform	Source Unknown (N)				X	
Metals	Contaminated Sediments (N)	X				

Recommendations

2022 Recommendations
ALU: Conduct additional water quality monitoring on this Ten Mile River AU (MA52-02), being sure to include an evaluation of DO at Rt.1, Attleboro, where low DO was noted to be associated with low flow conditions in 2007. Also reevaluate the metals (due to elevated concentrations noted prior to 1992) to confirm if the Ten Mile River (MA52-02) should continue to be impaired for metals. Many industrial discharges have been eliminated from the watershed since 1992.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	YES
2022 Use Attainment Summary	
MassDFG biologists conducted backpack electrofishing at two sites along this Ten Mile River AU (MA52-02) during the summer of 2019, from up to downstream as follows: downstream of West Bacon Street, Plainville (SampleID 8576) and above and below Freeman Street, North Attleboro (SampleID 8540). The sample collected in a low-moderate gradient habitat reach upstream of Falls Pond at West Bacon Street (SampleID 8576) consisted of nine Redfin pickerel (a moderately pollution tolerant macrohabitat generalist). The low gradient habitat sample taken from downstream of Falls Pond at Freeman Street (SampleID 8576) was 55% comprised of intolerant/moderately tolerant macrohabitat generalist fishes (largemouth bass, pumpkinseed and redfin pickerel). The Aquatic Life Use for this Ten Mile River AU (MA52-02) will continue to be assessed as Not Supporting, with the metals impairment carried forward. The Alert identified for low DO will also be carried forward.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
8540	MassDFG	Fish Community	Ten Mile River	above and below Freeman Street, North Attleborough	41.96616	-71.30891
8576	MassDFG	Fish Community	Ten Mile River	West Bacon St d.s., Plainville	42.00234	-71.33890
W0169	MassDEP	Water Quality	Ten Mile River	[Route 1, North Attleborough]	41.974633	-71.329576
W0904	MassDEP	Water Quality	Ten Mile River	[Fisher Street, North Attleborough]	41.986132	-71.329522
W1594	MassDEP	Water Quality	Ten Mile River	[downstream at Orne Street, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.982719	-71.328462
W2348	MassDEP	Water Quality	Ten Mile River	[just upstream of culvert under Route 1/Elm Street intersection, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.981317	-71.329580
W2349	MassDEP	Water Quality	Ten Mile River	[North Washington Street, North Attleborough]	41.992433	-71.329822
W2589	MassDEP	Water Quality	Ten Mile River	[outlet of Falls Pond, just downstream of Mount Hope Street bridge, North Attleboro]	41.970938	-71.318217

Biological Monitoring Information

Fish Community Data and DELTS

Fish Community Data (2012-2019) Provided by MassDFG. (MassDFG 2020) (MassDEP Undated 2)

[Sample Type: TP= Total Pickup, SP= Selective Pickup, Method: BT=Boat Shocking, BP= Backpack Shocking, BG= Barge Shocking, SE= Seine, SL= Snorkel, NS= Not Stated, MT= Minnow Trap, GN= Gillnet, FY= Fyke Net, Gradient: H = High, L = Low; I/MT MG= Intolerant/Moderately Tolerant Macrohabitat Generalist]

[Species List: B = Bluegill, BB = Brown Bullhead, LMB = Largemouth Bass, P = Pumpkinseed, RP = Redfin Pickerel, YB = Yellow Bullhead]

Sample ID	Sample Date	Method	Sample Type	Gradient	Total Taxa	Total Ind	Cold Ind %	Fluvial Taxa	Fluvial Ind %	Intol Ind %	I/MT MG Taxa	I/MT MG Ind %	Notables	CFR	Species List
8540	08/12/19	BP	TP	L	6	38	0%	0	0%	0%	3	55%	No	No	B, BB, LMB, P, RP, YB,
8576	07/15/19	BP	TP		1	9	0%	0	0%	0%	1	100%	No	No	RP,

Physico-chemical Water Quality Information

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer seasonal total phosphorus data collected May-Sept]

Station Code	Data Year	Seasonal TP Count	Seasonal TP Min (mg/L)	Seasonal TP Max (mg/L)	Seasonal TP Avg (mg/L)	Delta DO Max (mg/L)	Delta DO Avg (mg/L)	DO Sat Max (%)	pH Max (SU)	Count Algal Obsv.	Dense/V. Dense Film/Fila. Algae
W0169	2015	--	--	--	--	--	--	--	--	1	0
W0904	2013	--	--	--	--	--	--	--	--	2	0
W1594	2013	--	--	--	--	--	--	--	--	3	0
W2348	2012	--	--	--	--	--	--	--	--	1	0
W2348	2013	--	--	--	--	--	--	--	--	2	0
W2349	2012	--	--	--	--	--	--	--	--	1	0
W2349	2013	--	--	--	--	--	--	--	--	2	0
W2589	2015	--	--	--	--	--	--	--	--	2	0

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
Although fish toxics sampling was conducted in this Ten Mile River AU (MA52-02) in 1984 near Cedar Road, Attleboro, no site-specific fish consumption advisory is in place, therefore the Fish Consumption Use for this Ten Mile River (MA52-02) is Not Assessed.	

Aesthetic

2022 Use Attainment	Alert
Fully Supporting	NO

2022 Use Attainment Summary
MassDEP staff recorded aesthetics observations at six sites along this Ten Mile River AU (MA52-02) in North Attleboro from up to downstream stations (data years) as follows: North Washington Street (W2349) (2012, 2013); Fisher Street (W0904) (2013); downstream at Orne Street (W1594) (2013); just upstream of the culvert under Rt.1/Elm Street intersection (W2348) (2012, 2013); Rt.1 (W0169) (2015) and at the outlet of Falls Pond (W2589) (2015). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DWM-WPP field sampling crews at any of these sites during the surveys at these stations. The Aesthetics Use for this Ten Mile River AU (MA52-02) is assessed as Fully Supporting based on the lack of objectionable conditions at any of the sites sampled by MassDEP staff in 2012, 2013, or 2015.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0169	MassDEP	Water Quality	Ten Mile River	[Route 1, North Attleborough]	41.974633	-71.329576
W0904	MassDEP	Water Quality	Ten Mile River	[Fisher Street, North Attleborough]	41.986132	-71.329522
W1594	MassDEP	Water Quality	Ten Mile River	[downstream at Orne Street, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.982719	-71.328462
W2348	MassDEP	Water Quality	Ten Mile River	[just upstream of culvert under Route 1/Elm Street intersection, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.981317	-71.329580
W2349	MassDEP	Water Quality	Ten Mile River	[North Washington Street, North Attleborough]	41.992433	-71.329822
W2589	MassDEP	Water Quality	Ten Mile River	[outlet of Falls Pond, just downstream of Mount Hope Street bridge, North Attleboro]	41.970938	-71.318217

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W0169	Ten Mile River	2015	2	MassDEP aesthetics observations for station W0169 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015. However, data are limited (n=2 observations).
W0904	Ten Mile River	2013	2	There are insufficient data available to assess the Aesthetics Use for the Ten Mile River. There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by MassDEP staff at station W0904 during surveys in summer 2013, however, data were limited (n=2).
W1594	Ten Mile River	2013	3	MassDEP aesthetics observations for station W1594 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013.

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2348	Ten Mile River	2012	2	MassDEP aesthetics observations for station W2348 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2012. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2348	Ten Mile River	2013	2	MassDEP aesthetics observations for station W2348 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2349	Ten Mile River	2012	2	MassDEP aesthetics observations for station W2349 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2012. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2349	Ten Mile River	2013	2	MassDEP aesthetics observations for station W2349 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2013. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).
W2589	Ten Mile River	2015	2	MassDEP aesthetics observations for station W2589 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=2).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W0169	2015	2	1	0
W0904	2013	2	2	0
W1594	2013	3	3	0
W2348	2012	2	1	0
W2348	2013	2	2	0
W2349	2012	2	1	0
W2349	2013	2	2	0
W2589	2015	2	2	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0169	Ten Mile River	2015	Color	None	2	2
W0169	Ten Mile River	2015	Objectionable Deposits	Not Applicable (N/A)	2	2
W0169	Ten Mile River	2015	Odor	None	2	2

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W0169	Ten Mile River	2015	Scum	Not Applicable (N/A)	2	2
W0169	Ten Mile River	2015	Turbidity	Moderately Turbid	2	2
W0904	Ten Mile River	2013	Color	None	2	2
W0904	Ten Mile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W0904	Ten Mile River	2013	Odor	None	2	2
W0904	Ten Mile River	2013	Scum	Not Applicable (N/A)	2	2
W0904	Ten Mile River	2013	Turbidity	Slightly Turbid	2	2
W1594	Ten Mile River	2013	Color	None	3	3
W1594	Ten Mile River	2013	Objectionable Deposits	Not Applicable (N/A)	3	3
W1594	Ten Mile River	2013	Odor	None	3	3
W1594	Ten Mile River	2013	Scum	Not Applicable (N/A)	3	3
W1594	Ten Mile River	2013	Turbidity	Slightly Turbid	3	3
W2348	Ten Mile River	2012	Color	None	1	2
W2348	Ten Mile River	2012	Color	NR	1	2
W2348	Ten Mile River	2012	Objectionable Deposits	Not Applicable (N/A)	2	2
W2348	Ten Mile River	2012	Odor	None	1	2
W2348	Ten Mile River	2012	Odor	NR	1	2
W2348	Ten Mile River	2012	Scum	Not Applicable (N/A)	2	2
W2348	Ten Mile River	2012	Turbidity	NR	1	2
W2348	Ten Mile River	2012	Turbidity	Slightly Turbid	1	2
W2348	Ten Mile River	2013	Color	None	2	2
W2348	Ten Mile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2348	Ten Mile River	2013	Odor	None	2	2
W2348	Ten Mile River	2013	Scum	Not Applicable (N/A)	2	2
W2348	Ten Mile River	2013	Turbidity	Slightly Turbid	2	2
W2349	Ten Mile River	2012	Color	None	1	2
W2349	Ten Mile River	2012	Color	NR	1	2
W2349	Ten Mile River	2012	Objectionable Deposits	Not Applicable (N/A)	2	2
W2349	Ten Mile River	2012	Odor	None	1	2
W2349	Ten Mile River	2012	Odor	NR	1	2
W2349	Ten Mile River	2012	Scum	Not Applicable (N/A)	2	2
W2349	Ten Mile River	2012	Turbidity	NR	1	2
W2349	Ten Mile River	2012	Turbidity	Slightly Turbid	1	2
W2349	Ten Mile River	2013	Color	None	2	2
W2349	Ten Mile River	2013	Objectionable Deposits	Not Applicable (N/A)	2	2
W2349	Ten Mile River	2013	Odor	None	2	2
W2349	Ten Mile River	2013	Scum	Not Applicable (N/A)	2	2
W2349	Ten Mile River	2013	Turbidity	Slightly Turbid	2	2
W2589	Ten Mile River	2015	Color	None	2	2
W2589	Ten Mile River	2015	Objectionable Deposits	Not Applicable (N/A)	2	2
W2589	Ten Mile River	2015	Odor	None	2	2
W2589	Ten Mile River	2015	Scum	Not Applicable (N/A)	2	2
W2589	Ten Mile River	2015	Turbidity	Slightly Turbid	2	2

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	NO

2022 Use Attainment Summary

E. coli (and occasionally *Enterococcus*) bacteria samples were collected (1 to 3 times per year) by MassDEP staff from this Ten Mile River AU (MA 52-02) between 2012 and 2015 at the following sampling stations (data years): North Washington Street (W2349) (2012, 2013); Fisher Street (W0904) (2013); downstream at Orne Street (W1594) (2013); just upstream of the culvert under Rt.1/Elm Street intersection (W2348) (2012, 2013); Rt.1 (W0169) (2015) and at the outlet of Falls Pond (W2589) (2015). Data analysis of this low frequency multi-year dataset indicated insufficient samples to calculate usable GMs i.e., there were never more than two samples within a 90-day GM interval. However, six out of the fifteen *E. coli* samples exceed the 410 cfu/100ml STV with seasonal GMs ranging 54-921 cfu/100ml; and both *Enteroccocus* samples exceed the 130 cfu/100ml STV, with a max of 250 cfu/100ml just upstream of the culvert under Rt.1/Elm Street (W2348). MassDEP staff also conducted Bacteria Source Tracking (BST) work between 2011 and 2013 at six sites along this Ten Mile River AU. Despite the identification of hotspot areas, human marker analysis in 2012 was "inconclusive" and no correctable source was ever found. Too limited data are available to assess the Primary Recreational Use for this Ten Mile River AU (MA52-02) according to the CALM "Use Attainment Impairment Decision Schema". The Primary Contact Recreational Use will, therefore, continue to be assessed as Not Supporting, with the *E. coli* and Fecal Coliform impairments being carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0169	MassDEP	Water Quality	Ten Mile River	[Route 1, North Attleborough]	41.974633	-71.329576
W0904	MassDEP	Water Quality	Ten Mile River	[Fisher Street, North Attleborough]	41.986132	-71.329522
W1594	MassDEP	Water Quality	Ten Mile River	[downstream at Orne Street, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.982719	-71.328462
W2348	MassDEP	Water Quality	Ten Mile River	[just upstream of culvert under Route 1/Elm Street intersection, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.981317	-71.329580
W2349	MassDEP	Water Quality	Ten Mile River	[North Washington Street, North Attleborough]	41.992433	-71.329822
W2589	MassDEP	Water Quality	Ten Mile River	[outlet of Falls Pond, just downstream of Mount Hope Street bridge, North Attleboro]	41.970938	-71.318217

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

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

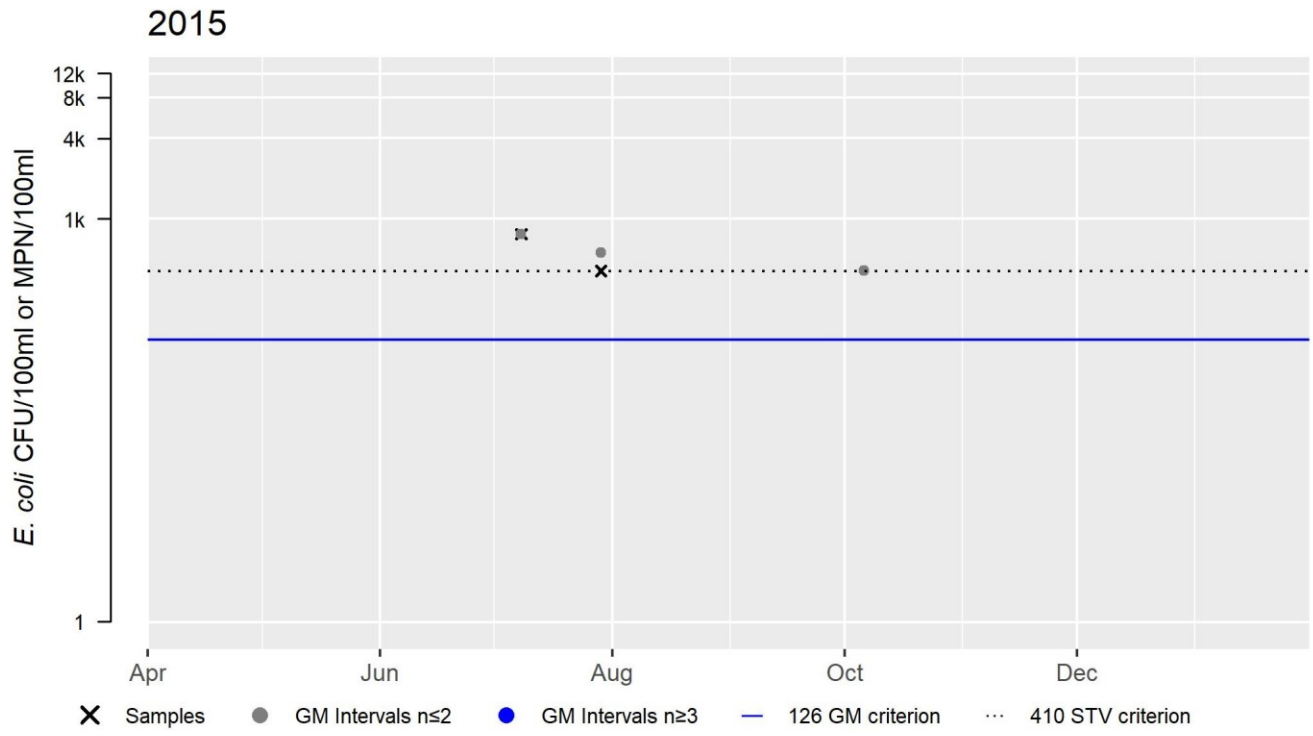
Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W0169	MassDEP	E. coli	07/08/15	07/29/15	2	411	770	563
W0904	MassDEP	E. coli	06/26/13	08/07/13	2	88	236	144
W1594	MassDEP	E. coli	06/26/13	10/16/13	3	102	649	191
W2348	MassDEP	E. coli	08/08/12	08/08/12	1	770	770	770
W2348	MassDEP	Enterococci	09/26/12	09/26/12	1	250	250	250

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2348	MassDEP	E. coli	06/26/13	08/07/13	2	128	548	265
W2349	MassDEP	E. coli	08/08/12	08/08/12	1	921	921	921
W2349	MassDEP	Enterococci	08/22/12	08/22/12	1	160	160	160
W2349	MassDEP	E. coli	06/26/13	08/07/13	2	82	172	119
W2589	MassDEP	E. coli	07/08/15	07/29/15	2	53	55	54

W0169 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	563
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	2
%n>STV	100

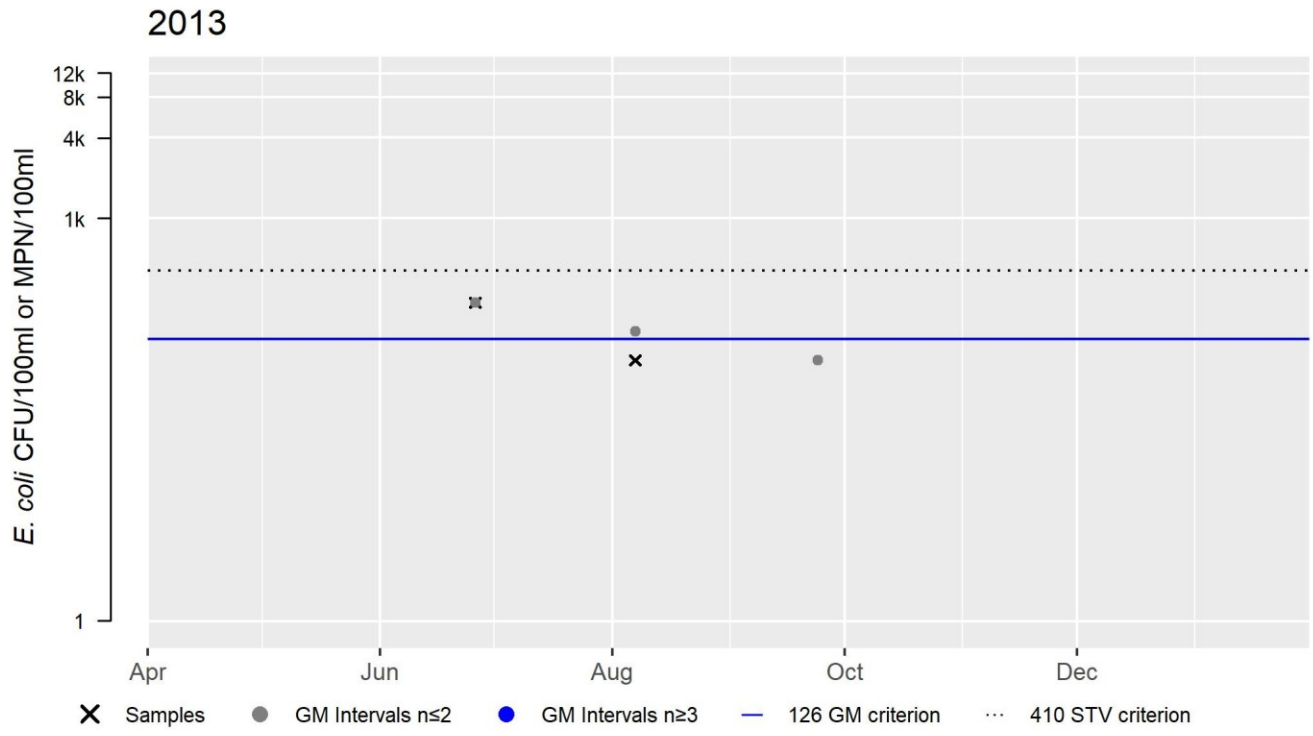
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W0904 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	144
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

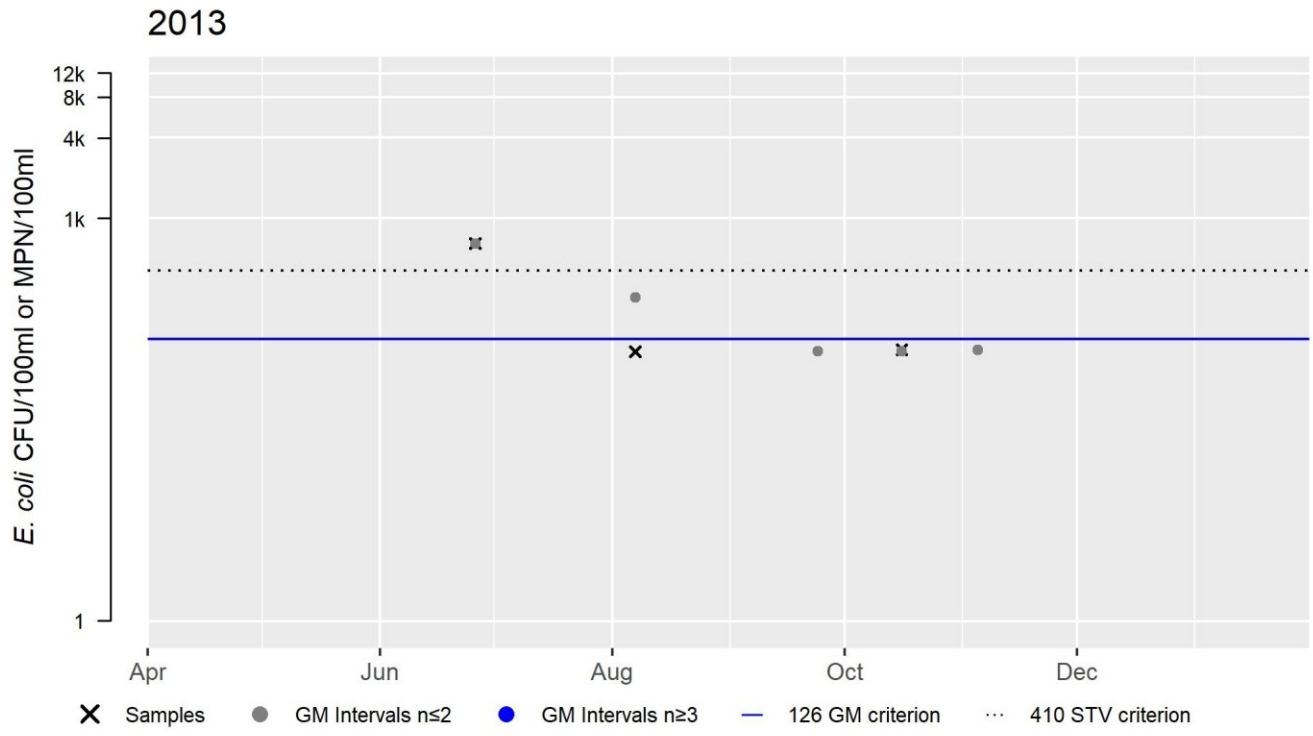
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W1594 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	191
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	33

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



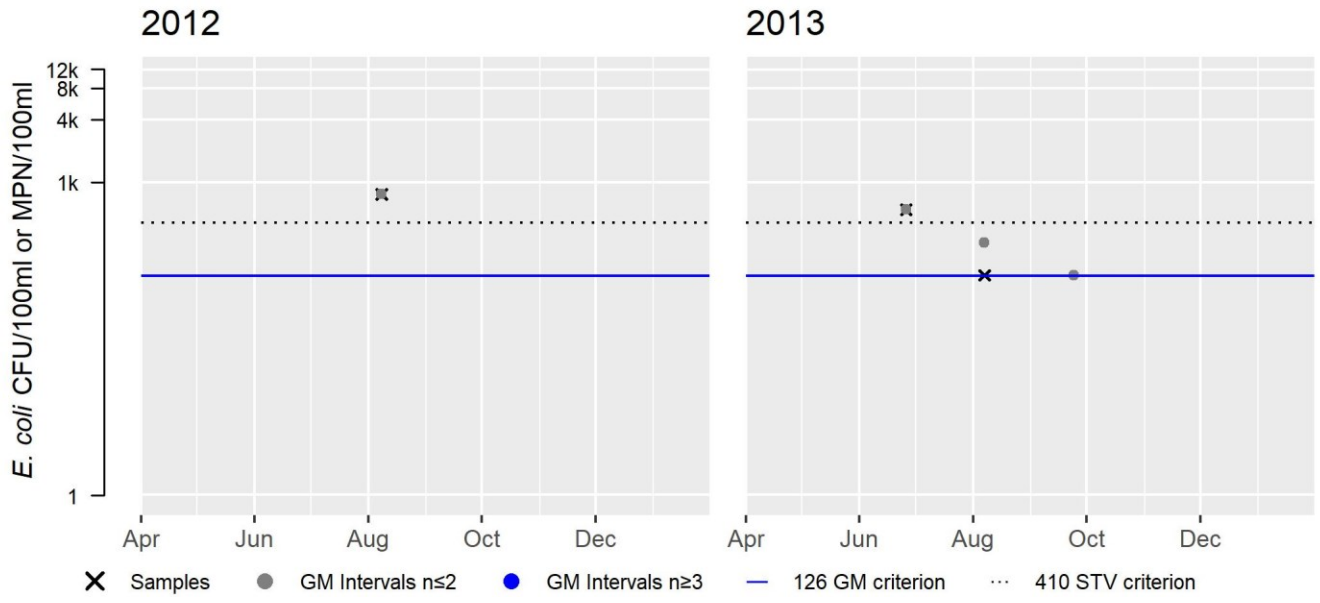
W2348 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	770
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Var	Res
Samples	2
SeasGM	265
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

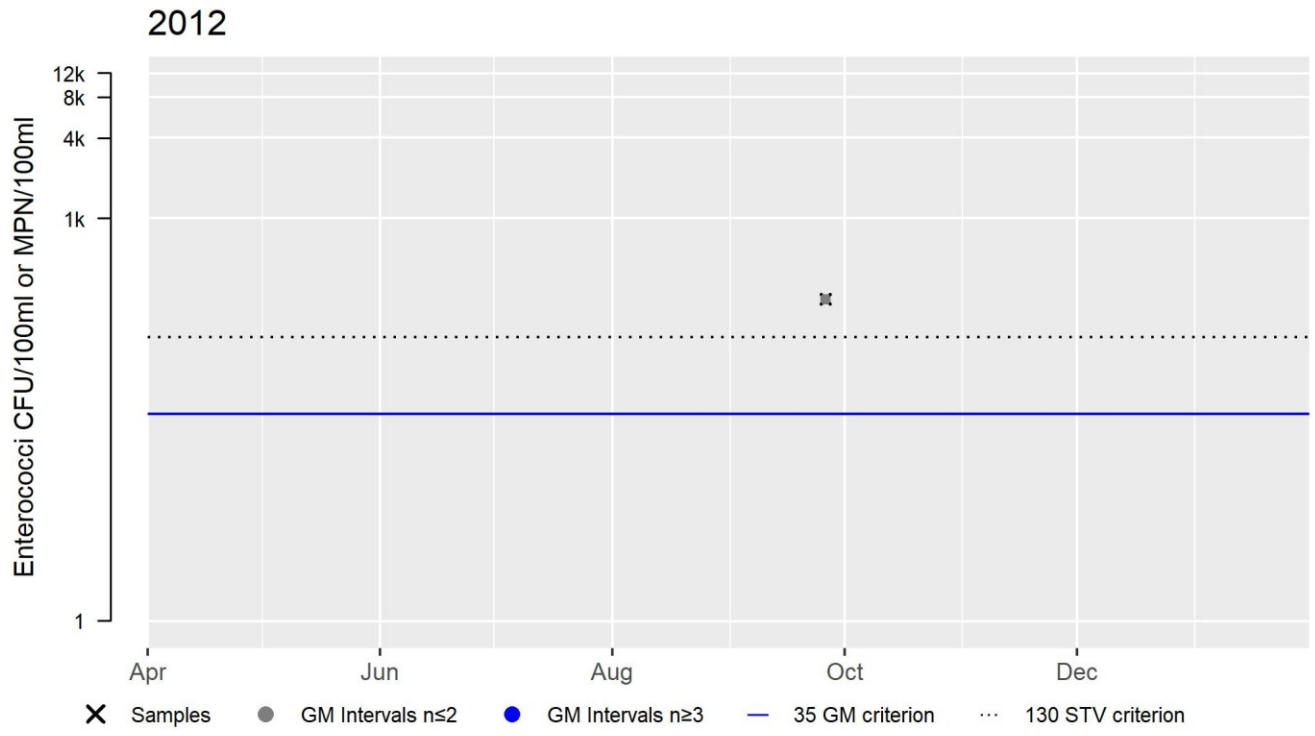
Variable	Cumulative %GMI Ex (all years)
Result	0



W2348 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	250
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



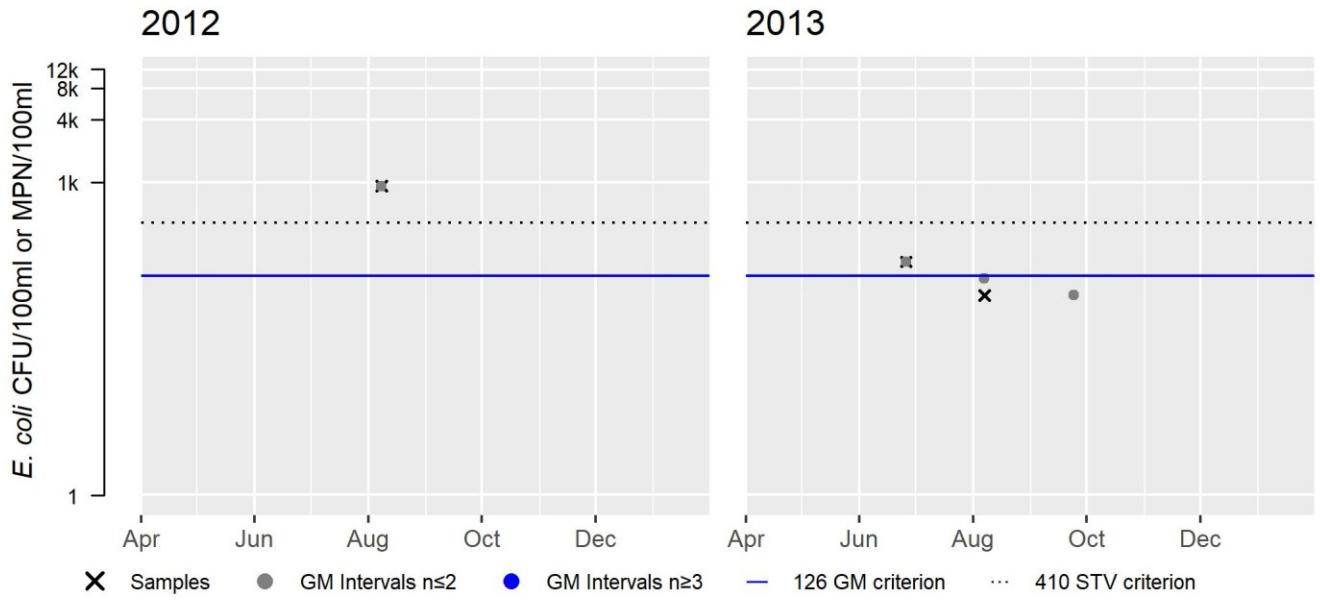
W2349 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	921
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

Var	Res
Samples	2
SeasGM	119
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

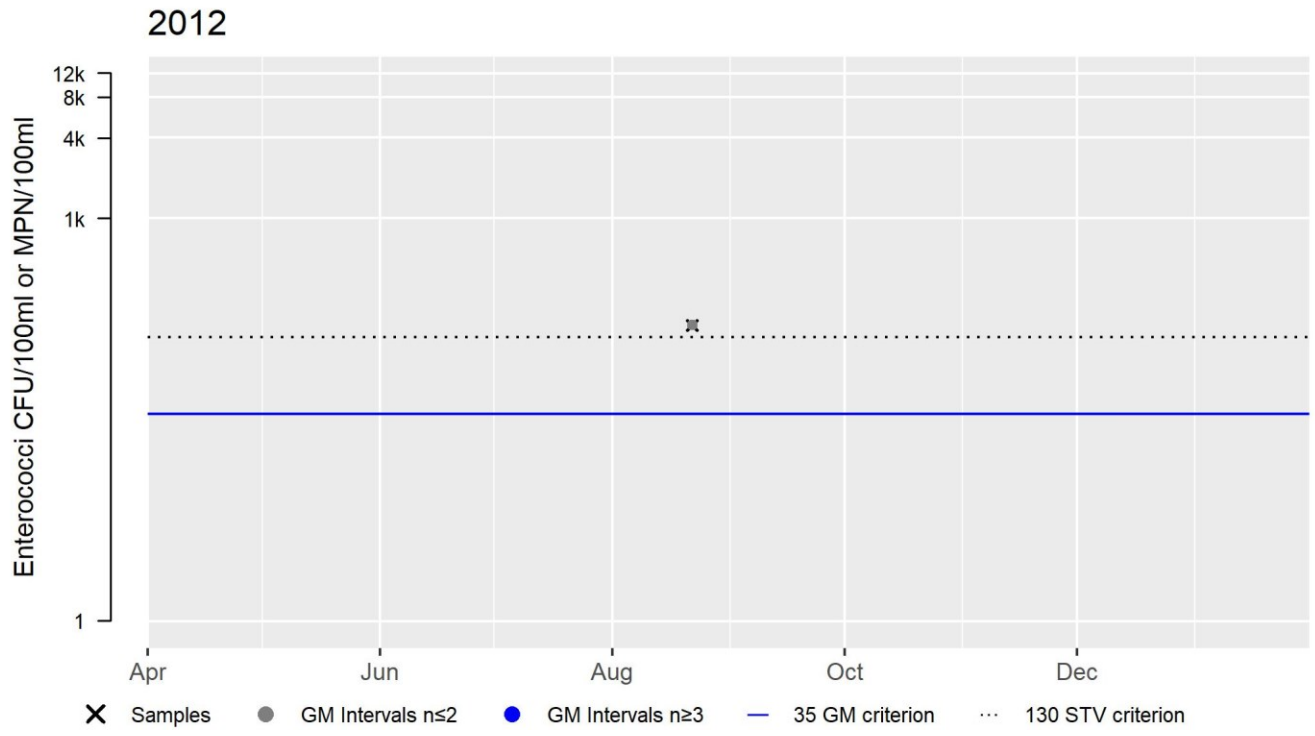
Variable	Cumulative %GMI Ex (all years)
Result	0



W2349 Enterococci (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	160
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	100

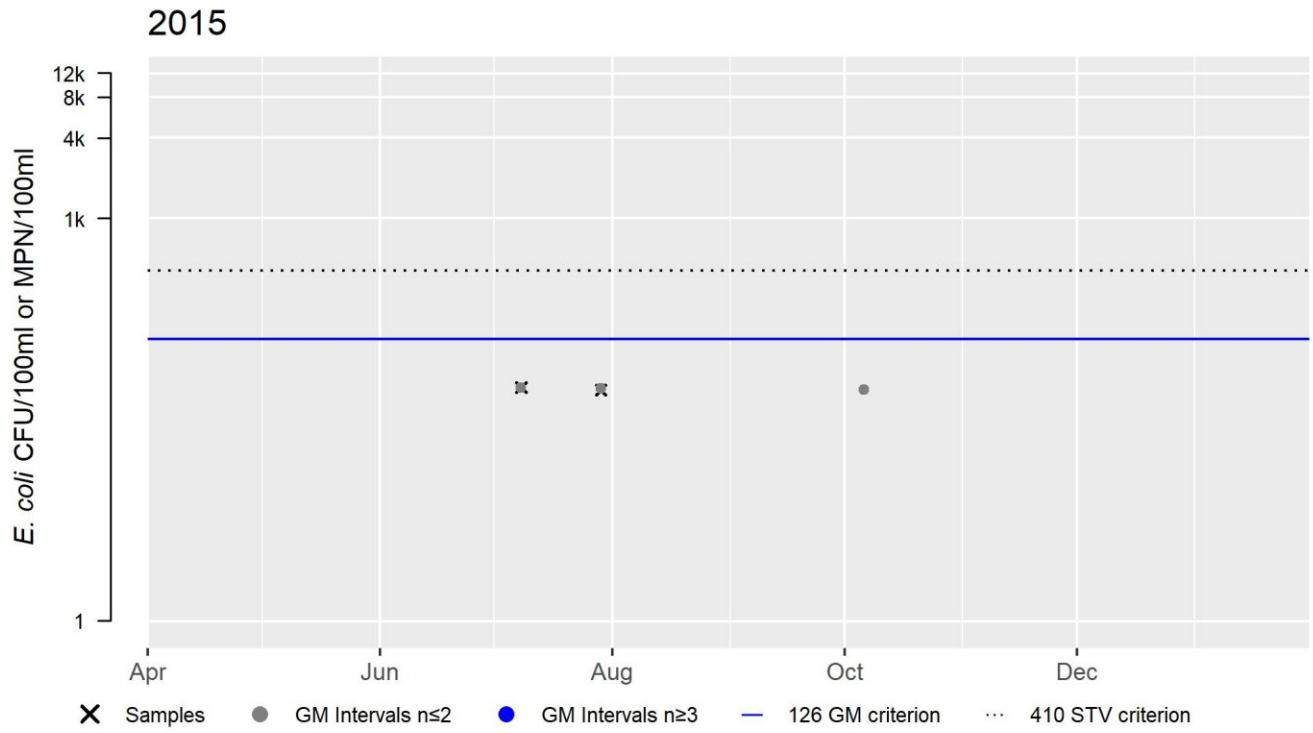
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W2589 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	54
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
Prior to 2011, BST work was conducted along the Ten Mile River AU (MA52-02), with a max *E. coli* concentration of 1,733MPN. Additional BST work was conducted between 2011 and 2013 years at 6 sites along the Ten Mile River, with *E. coli* concentrations ranging 82 to 921MPN. Despite the identification of hotspot areas, human marker analysis in 2012 was "inconclusive". No correctable source was ever found. BST samples were also collected along the shore at Whiting Pond (n=4) (tributary to this Ten Mile River AU) in 2015. At Whiting Pond a great number of waterfowl and waterfowl fecal matter were observed on the Town beach, which was most likely to be a source of bacteria at this location.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Insufficient Information	NO

2022 Use Attainment Summary
E. coli bacteria samples were collected (1 to 3 times per year) by MassDEP staff from this Ten Mile River AU (MA 52-02) between 2012 and 2015 at the following sampling stations (data years): North Washington Street (W2349) (2012, 2013); Fisher Street (W0904) (2013); downstream at Orne Street (W1594) (2013); just upstream of the culvert under Rt.1/Elm Street intersection (W2348) (2012, 2013); Rt.1 (W0169) (2015) and at the outlet of Falls Pond (W2589) (2015). Data analysis of this low frequency multi-year dataset indicated insufficient samples to calculate usable GMs i.e., there were never more than two samples within a 90-day GM interval. However, it can be noted that none of the 15 *E. coli* samples exceeded the 1260 cfu/100ml STV, with seasonal GMs ranging 54-921 cfu/100ml. Too limited data are available to assess the Secondary Recreational Use for this Ten Mile River AU (MA52-02) according to the CALM "Use Attainment Impairment Decision Schema", so the Secondary Contact Recreational Use is assessed as Insufficient Information.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W0169	MassDEP	Water Quality	Ten Mile River	[Route 1, North Attleborough]	41.974633	-71.329576
W0904	MassDEP	Water Quality	Ten Mile River	[Fisher Street, North Attleborough]	41.986132	-71.329522
W1594	MassDEP	Water Quality	Ten Mile River	[downstream at Orne Street, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.982719	-71.328462
W2348	MassDEP	Water Quality	Ten Mile River	[just upstream of culvert under Route 1/Elm Street intersection, North Attleborough (this portion of the Ten Mile River not depicted on the 1987 USGS Attleboro quadrangle)]	41.981317	-71.329580
W2349	MassDEP	Water Quality	Ten Mile River	[North Washington Street, North Attleborough]	41.992433	-71.329822
W2589	MassDEP	Water Quality	Ten Mile River	[outlet of Falls Pond, just downstream of Mount Hope Street bridge, North Attleboro]	41.970938	-71.318217

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

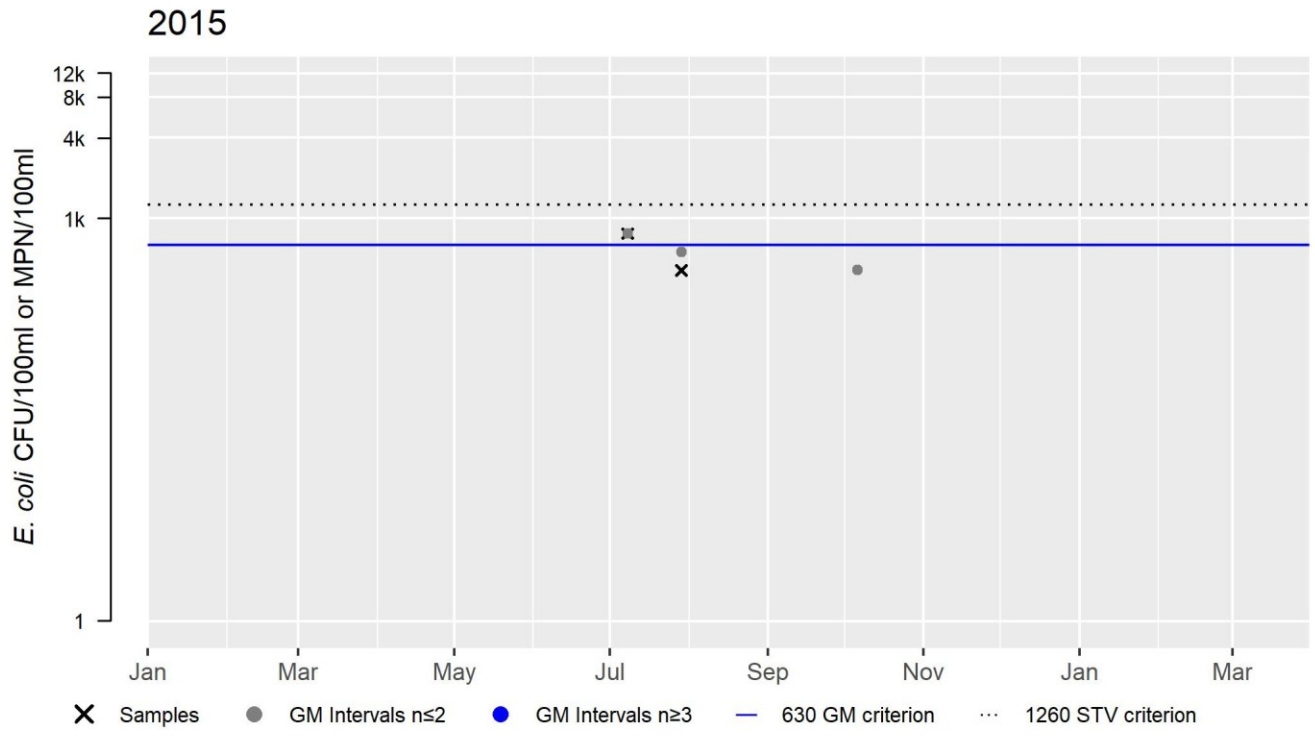
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W0169	MassDEP	E. coli	07/08/15	07/29/15	2	411	770	563
W0904	MassDEP	E. coli	06/26/13	08/07/13	2	88	236	144
W1594	MassDEP	E. coli	06/26/13	10/16/13	3	102	649	191
W2348	MassDEP	E. coli	08/08/12	08/08/12	1	770	770	770
W2348	MassDEP	E. coli	06/26/13	08/07/13	2	128	548	265
W2349	MassDEP	E. coli	08/08/12	08/08/12	1	921	921	921
W2349	MassDEP	E. coli	06/26/13	08/07/13	2	82	172	119
W2589	MassDEP	E. coli	07/08/15	07/29/15	2	53	55	54

W0169 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	563
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

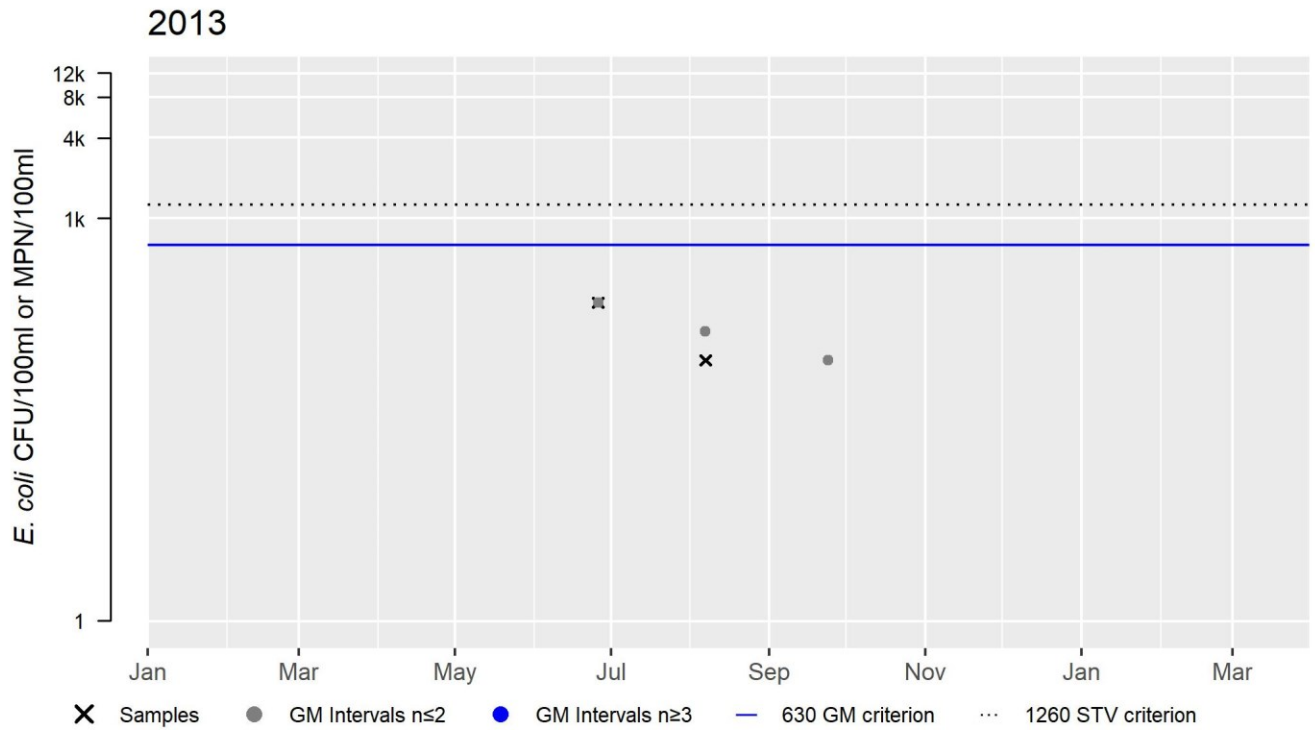
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W0904 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	144
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

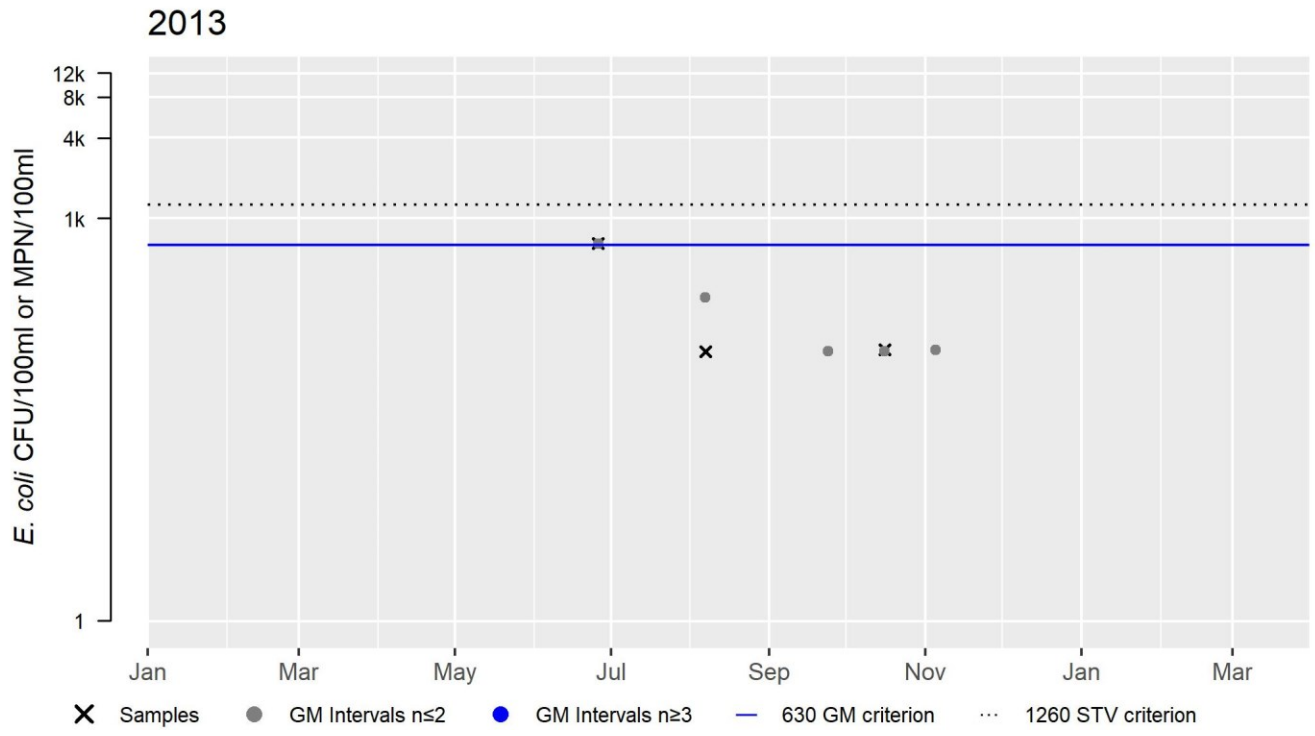
Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



W1594 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	3
SeasGM	191
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



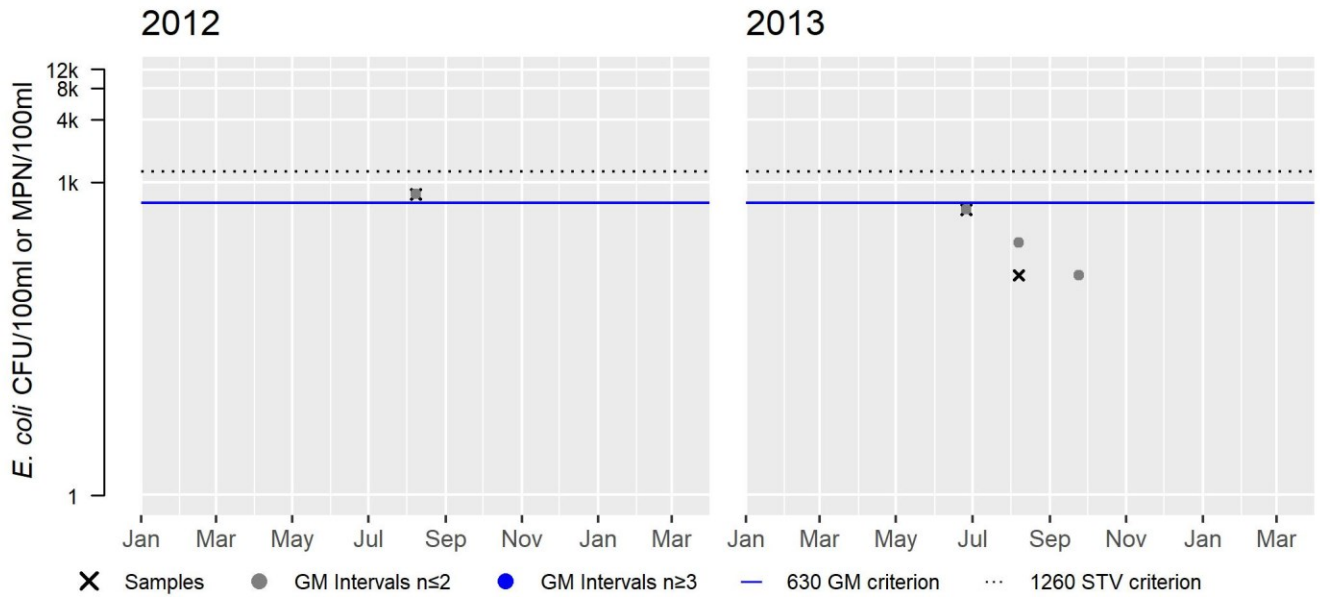
W2348 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	770
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	265
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

Variable	Cumulative %GMI Ex (all years)
Result	0



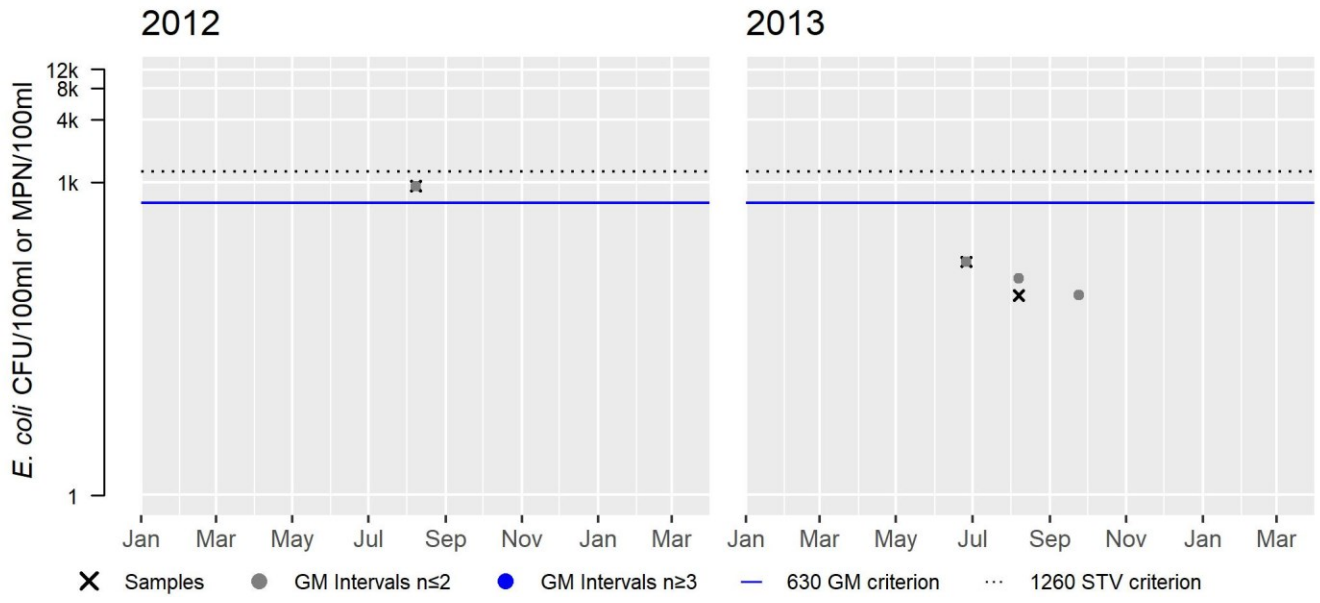
W2349 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	1
SeasGM	921
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Var	Res
Samples	2
SeasGM	119
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

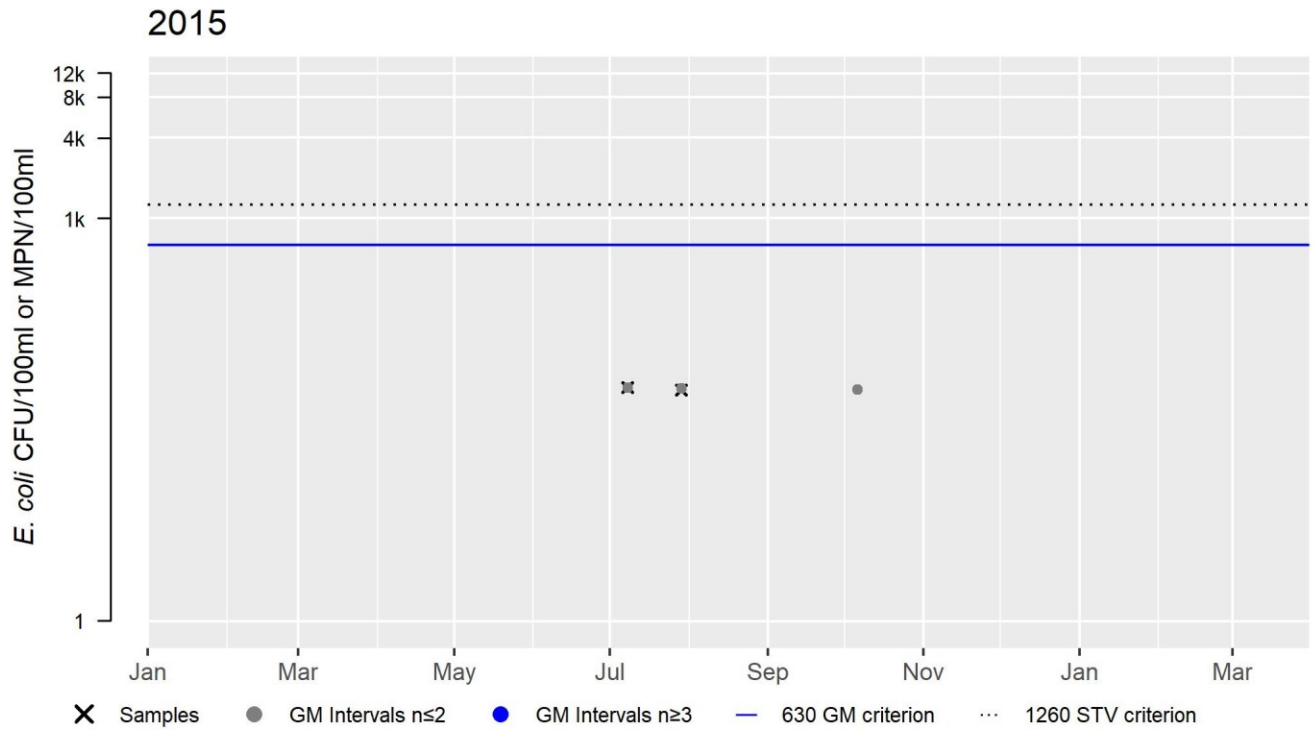
Variable	Cumulative %GMI Ex (all years)
Result	0



W2589 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	54
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV

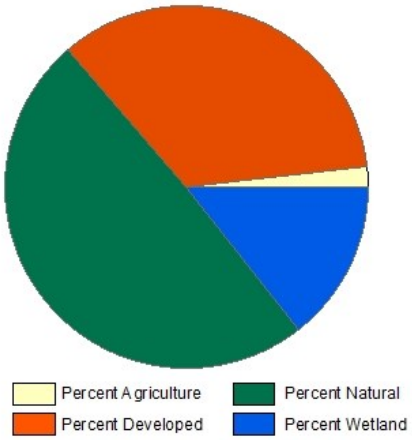


Ten Mile River (MA52-03)

Location:	North Attleborough WWTP discharge (NPDES: MA0101036), Attleboro to the MA/RI border near Central Avenue, Seekonk, MA/Pawtucket, RI (through former 2006 segments: Farmers Pond MA52015, Mechanics Pond MA52027, Dodgeville Pond MA52011, Hebronville Pond MA52020).
AU Type:	RIVER
AU Size:	9.1 MILES
Classification/Qualifier:	B: WWF

Ten Mile River - MA52-03

Watershed Area: 41.78 square miles not including areas outside Massachusetts



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	41.78	9.77	15.21	3.59
Agriculture	1.8%	1.5%	2.4%	1.3%
Developed	34.6%	38.7%	24.9%	26.4%
Natural	49.3%	45.4%	47.9%	45.9%
Wetland	14.4%	14.3%	24.9%	26.5%
Impervious Cover	18.1%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
5	5	(Aquatic Plants (Macrophytes)*)		Unchanged
5	5	(Water Chestnut*)		Added
5	5	Algae		Unchanged
5	5	Benthic Macroinvertebrates		Unchanged
5	5	Chlordane in Fish Tissue		Unchanged
5	5	Dissolved Oxygen		Unchanged
5	5	Escherichia Coli (E. Coli)		Unchanged
5	5	Fecal Coliform		Unchanged
5	5	Nutrient/Eutrophication Biological Indicators		Unchanged
5	5	Organic Enrichment (Sewage) Biological Indicators		Unchanged
5	5	Phosphorus, Total		Unchanged
5	5	Unspecified Metals in Sediment		Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
(Aquatic Plants (Macrophytes)*)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
(Aquatic Plants (Macrophytes)*)	Municipal Point Source Discharges (Y)	X		X	X	X
(Water Chestnut*)	Introduction of Non-native Organisms (Accidental or Intentional) (Y)	X				
Algae	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Algae	Municipal Point Source Discharges (Y)	X		X	X	X
Benthic Macroinvertebrates	Source Unknown (N)	X				
Chlordane in Fish Tissue	Source Unknown (N)		X			
Dissolved Oxygen	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Dissolved Oxygen	Municipal Point Source Discharges (Y)	X				
Escherichia Coli (E. Coli)	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)				X	
Escherichia Coli (E. Coli)	Municipal Point Source Discharges (Y)				X	
Fecal Coliform	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)				X	
Fecal Coliform	Municipal Point Source Discharges (Y)				X	
Nutrient/Eutrophication Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Nutrient/Eutrophication Biological Indicators	Municipal Point Source Discharges (Y)	X		X	X	X
Organic Enrichment (Sewage) Biological Indicators	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X				
Organic Enrichment (Sewage) Biological Indicators	Municipal Point Source Discharges (Y)	X				
Phosphorus, Total	Discharges from Municipal Separate Storm Sewer Systems (MS4) (N)	X		X	X	X
Phosphorus, Total	Municipal Point Source Discharges (Y)	X		X	X	X
Unspecified Metals in Sediment	Contaminated Sediments (N)	X				

Recommendations

2022 Recommendations
ALU: Water quality monitoring should be conducted in this Ten Mile River AU (MA52-03) to reevaluate biological and water quality conditions since the NPDES permits for both the North Attleboro (MA0101036) and Attleboro (MA0100595) WWTPs required reduction of Total Phosphorus concentrations in the effluent discharges (April to October limits in 2008 permits 0.1mg/L down from 1.0mg/L in the 1999 permits) so improved conditions should be occurring. Sampling should be conducted with good spatial representativeness (including both free flowing and impounded reaches) along the river for potential delisting of nutrient enrichment related impairments (Algae, Dissolved Oxygen, Nutrient/Eutrophication Biological Indicators, Organic Enrichment (Sewage) Biological Indicators, and Total Phosphorus).

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO

2022 Use Attainment Summary

MassDFG biologists conducted backpack electrofishing at three sites spread roughly throughout the upper-middle section of this Ten Mile River AU (MA52-03) in August 2019 from up to downstream as follows: Olive Street, Attleboro (SampleID 8539), Thacher Street, Attleboro (SampleID 8538), below Dodgeville Pond off S. Main Street (SampleID 8541). Fish collected in the low gradient habitat included the fluvial taxon (tessellated darter) comprising between 5 and 11% of the samples as well as other intolerant/moderately tolerant macrohabitat generalist fishes such as pumpkinseed, redfin pickerel, chain pickerel and banded sunfish. The non-native aquatic macrophyte water chestnut (*Trapa natans*) was noted to be present in the drawn down Dodgeville Pond impoundment upstream of Thatcher Street (SampleID 8538). MassDEP biologists conducted benthic and water quality sampling downstream of Pond Street, Seekonk (W2210) as part of the MAP2 monitoring project during the summer of 2011. The benthic sample (B0730) IBI score was indicative of moderately degraded conditions (40). Water quality monitoring data (including both deployed probe and discrete sampling efforts) can be summarized as follows: minimum DO 5.9mg/L, with a minimum 3-5DADMin of 6.2mg/L (three 3-5-day deploys), maximum temperature 29.9°C (7-DADM always <27.7°C, max 24hr rolling average 27.8°C during the continuous probe deployment from June 1 to September 15), discrete pH measurements ranged from 6.9 to 7.1SU (n=6). There were no physico-chemical indicators of nutrient enrichment issues (max diel DO shift 1.0mg/L, max DO saturation only 97.5%, no observations of dense/very dense filamentous algae) although the seasonal average total phosphorus concentration was 0.098mg/L (n=5, max 0.14mg/L). Specific conductance and chloride concentrations were both low (max 597µS/cm (n=6) and 140mg/L (n=5) respectively), as was total ammonia-nitrogen (TAN) (max 0.18mg/L, n=3 with no toxicity indicated). There were no acute criteria exceedances for any metals (copper was at criteria TU=1.0 in the August sample) although both samples exceeded the chronic criteria for copper (TU's of 1.16 and 1.39) and for lead (TU's of 1.3 and 1.8) (n=2) (note, dissolved Al data were compared to total recoverable Al criteria, so exceedances cannot be ruled out). Too limited metals data are available to make a use impairment decision at this time, but additional sampling will be recommended.

The Aquatic Life Use for this Ten Mile River AU (MA52-03) will continue to be assessed as Not Supporting with the nutrient enrichment indicators (Algae, Dissolved Oxygen, Nutrient/Eutrophication Biological Indicators, Organic Enrichment (Sewage) Biological Indicators, and Total Phosphorus), Benthic Macroinvertebrates, Aquatic Plants (Macrophytes), and Unspecified Metals in Sediment impairments being carried forward. A new impairment for Water Chestnut (*T. natans*) is being added.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
8538	MassDFG	Fish Community	Ten Mile River	upstream of Thacher Street, Attleboro	41.92767	-71.28916
8539	MassDFG	Fish Community	Ten Mile River	above and below Olive Street, Attleboro	41.93695	-71.29069
8541	MassDFG	Fish Community	Ten Mile River	Below Dodegville Pond Demers bros 453 South main Street, Attleboro	41.92156	-71.29842
B0730	MassDEP	Benthic	Ten Mile River/	[approximately 850 meters downstream from Pond Street, Seekonk, MA]	41.896400	-71.333215
W2210	MassDEP	Water Quality	Ten Mile River	[approximately 2780 feet downstream from Pond Street, Seekonk]	41.896400	-71.333215

Biological Monitoring Information

Benthic Macroinvertebrate Data

MassDEP Benthic Macroinvertebrate Data (2011-2017). (MassDEP Undated 4)

[Index Biological Condition Class: E= Exceptional, S= Satisfactory, MD= Moderately Degraded, SD= Severely Degraded; High Gradient IBI Thresholds: E= 100-75, S= 74-55, MD= 54-35, SD= 34-0; Low Gradient IBI Thresholds: E= 100-81, S= 80-62, MD= 61-38, SD= 37-0; R qualifier = Rarefaction (100ct) <55]

Station Code	Collection Date	Collection Method	Index Type	Organism Count	Index Score	Index Biological Condition Class
B0730	08/01/11	RBP kicknet	Central_Hills_100ct_SE	105	40	MD

Fish Community Data and DELTS

Fish Community Data (2012-2019) Provided by MassDFG. (MassDFG 2020) (MassDEP Undated 2)

[Sample Type: TP= Total Pickup, SP= Selective Pickup, Method: BT=Boat Shocking, BP= Backpack Shocking, BG= Barge Shocking, SE= Seine, SL= Snorkel, NS= Not Stated, MT= Minnow Trap, GN= Gillnet, FY= Fyke Net, Gradient: H = High, L = Low; I/MT MG= Intolerant/Moderately Tolerant Macrohabitat Generalist]

[Species List: AE = American Eel, B = Bluegill, BS = Banded Sunfish, CP = Chain Pickerel, GS = Golden Shiner, P = Pumpkinseed, RP = Redfin Pickerel, TD = Tesselated Darter, YB = Yellow Bullhead]

Sample ID	Sample Date	Method	Sample Type	Gradient	Total Taxa	Total Ind	Cold Ind %	Fluvial Taxa	Fluvial Ind %	Intol Ind %	I/MT MG Taxa	I/MT MG Ind %	Notables	CFR	Species List
8538	08/12/19	BP	TP	L	5	9	0%	1	11%	0%	2	67%	No	No	AE, B, P, RP, TD,
8539	08/12/19	BP	TP	L	5	16	0%	1	6%	0%	2	50%	Yes	No	AE, B, P, RP, TD,
8541	08/13/19	BP	TP	L	8	38	0%	1	5%	5%	3	58%	No	No	AE, B, BS, CP, GS, P, TD, YB,

Physico-chemical Water Quality Information

DO, pH, Temperature

MassDEP Short-term Continuous Dissolved Oxygen Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Note: Most deploys 3-5 days in length; Day Count= total # of days over all deploys; XDADMin= 3-5 Day Average of the Daily Minima, XDADA= 3-5 Day Average of the Daily Average, CW= Coldwater, WW= Warmwater]

Station Code	Data Year	Deploys Count	Day Count	DO Min (mg/L)	Min XDADMin (mg/L)	Min XDADA (mg/L)	Delta DO Max (mg/L)	Count CW XDADMin <6.0	Count CW 1Day Min <5.0	Count WW Early Life Stages XDADA <6.5	Count WW Early Life Stages 1Day Min <5.0	Count WW Other Life Stages XDADMin <5.0	Count WW Other Life Stages 1Day Min <4.0
W2210	2011	3	12	5.9	6.2	6.5	1	0	0	0	0	0	0

MassDEP Discrete Dissolved Oxygen Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[CW= Coldwater, WW= Warmwater]

Station Code	Start Date	End Date	DO Count	DO Min (mg/L)	DO Avg (mg/L)	Count CW <5.0	Count WW Early Life Stages <5.0	Count WW Other Life Stages <4.0
W2210	05/25/11	10/11/11	6	6.5	7.5	0	0	0

MassDEP Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; Max Daily Mean= Maximum 24-Hour Average, 7DADM= 7-Day Average of the Daily Maxima, 7DADA= 7-Day Average of the Daily Average, CW= Coldwater, WW= Warmwater; NOTE: In the case of more than one row of data in the same year for a site, different types of temperature probes were deployed.]

Station Code	Start Date	End Date	Index Count	7day Count	Max Daily Mean (°C)	Max Temp (°C)	Max 7DADM (°C)	Max 7DADA (°C)	Count CWTier1 7DADM >20	Count CWTier1 Daily Mean >23.5	Count CWTier2 7DADA >21	Count CWTier2 Daily Mean >24.1	Count WW 7DADM >27.7	Count WW Daily Mean >28.3
W2210	06/01/11	09/15/11	107	107	27.6	29.9	27.5	26.0	107	49	88	34	0	0

MassDEP Short-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; Most Deploys 3-5 Days in Length; Day Count= total # of days over all deploys; Max Daily Mean= Maximum 24-Hour Average, XDADM= 3-5 Day Average of the Daily Maxima, XDADA= 3-5 Day Average of the Daily Average, CW= Coldwater, WW= Warmwater]

Station Code	Data Year	Deploys Count	Day Count	Max Daily Mean (°C)	Max Temp (°C)	Max XDADM (°C)	Max XDADA (°C)	Count CWTier1 XDADM >20	Count CWTier1 Daily Mean >23.5	Count CWTier2 XDADA >21	Count CWTier2 Daily Mean >24.1	Count WW XDADM >27.7	Count WW Daily Mean >28.3
W2210	2011	3	12	26.8	27.9	25.9	24.8	3	6	3	3	0	0

24-hour Rolling Average Calculations for MassDEP Short- and Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; CW= Coldwater, WW= Warmwater; NOTE: In the case of more than one row of data in the same year for a site, different types of temperature probes were deployed.]

Station Code	Start Date	End Date	Count Days Deployed	24hr Rolling Count	Max 24hr Avg Rolling Temp (°C)	Count CWTier1 24hr Avg Rolling >23.5 °C	Count CWTier2 24hr Avg Rolling >24.1 °C	Count WW 24hr Avg Rolling >28.3°C
W2210	06/01/11	09/15/11	107	5136	27.8	2449	1676	0
W2210	06/17/11	08/24/11	68	575	27.7	273	185	0

MassDEP Discrete Temperature Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer Index is June 1 – Sept 15; CW= Coldwater, WW= Warmwater]

Station Code	Start Date	End Date	Temp Count	Index Count	Temp Max (°C)	Temp Avg (°C)	Count CW >20	Count CW >22	Count WW >28.3	Count WW >30.3
W2210	05/25/11	10/11/11	8	6	26.7	21.4	6	4	0	0

MassDEP Discrete pH Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Start Date	End Date	pH Count	pH Min (SU)	pH Max (SU)	pH Count <6.5 & >8.3	pH Count <6.0 & >8.8
W2210	05/25/11	10/11/11	6	6.9	7.1	0	0

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Summer seasonal total phosphorus data collected May-Sept]

Station Code	Data Year	Seasonal TP Count	Seasonal TP Min (mg/L)	Seasonal TP Max (mg/L)	Seasonal TP Avg (mg/L)	Delta DO Max (mg/L)	Delta DO Avg (mg/L)	DO Sat Max (%)	pH Max (SU)	Count Algal Obsv.	Dense/V. Dense Film/Fila. Algae
W2210	2011	5	0.075	0.140	0.098	1.0	0.7	97.5	7.1	5	0

Toxics and other pollutants (metals, ammonia, chloride, chlorine)

MassDEP Clean Metals Water Column Data (2011-2018), Acute Criteria Violations. (MassDEP Undated 7) (MassDEP Undated 5)

[CMC= Criterion Maximum Concentration, TU= Toxic Unit]

Station Code	Data Year	Metals Count	As CMC TU >1	Cd CMC TU >1	Cr III CMC TU >1	Cu CMC TU >1	Pb CMC TU >1	Ni CMC TU >1	Ag CMC TU >1	Zn CMC TU >1
W2210	2011	2	0	0	0	0	0	0	0	0

MassDEP Clean Metals Water Column Data (2011-2018), Chronic Criteria Violations. (MassDEP Undated 7) (MassDEP Undated 5)

[CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Data Year	Metals Count	As CCC TU >1	Cd CCC TU >1	Cr III CCC TU >1	Cu CCC TU >1	Pb CCC TU >1	Ni CCC TU >1	Se CCC TU >1	Zn CCC TU >1
W2210	2011	2	0	0	0	2	2	0	0	0

MassDEP Clean Metals Water Column Data (2011-2018), Selected TU Calculations. (MassDEP Undated 7) (MassDEP Undated 5)

[CMC= Criterion Maximum Concentration, CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Sample Date	Cd CMC TU	Cd CCC TU	Cu CMC TU	Cu CCC TU	Pb CMC TU	Pb CCC TU
W2210	07/19/11	0.1	0.4	0.8	1.16	0.0	1.3
W2210	08/24/11	0.1	0.3	1.0	1.39	0.1	1.8

MassDEP Dissolved Aluminum Water Column Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

[Since only dissolved aluminum data were available, these data were compared to the default freshwater criteria for total recoverable aluminum (TRA), presented in Appendix E of MassDEP's 2022 CALM. As dissolved Al is a fraction of TRA, an exceedance count of 0 does not rule out violations of the TRA criteria. CMC= Criterion Maximum Concentration, CCC= Criterion Continuous Concentration, TU= Toxic Unit]

Station Code	Data Year	Dissolved Al Count	Al Min (mg/L)	Al Max (mg/L)	Al Avg (mg/L)	Al CMC TU Max	Al CCC TU Max	Al CMC TU >1	Al CCC TU >1
W2210	2011	2	0.014	0.016	0.015	0.0	0.1	0	0

MassDEP Total Ammonia Nitrogen (TAN) Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)
[TAN= NH3 + NH4+]

Station Code	Data Year	TAN Count	TAN Min (mg/L)	TAN Max (mg/L)	TAN Avg (mg/L)	Count TAN >Chronic	Count TAN >Acute
W2210	2011	5	0.050	0.180	0.092	0	0

MassDEP Chloride Data (2011-2018). (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Chloride Count	Chloride Min (mg/L)	Chloride Max (mg/L)	Chloride Avg (mg/L)	Count Chloride >230	Count Chloride >860
W2210	2011	5	84	140	106	0	0

MassDEP Discrete Specific Conductance Data (2011-2018) Compared to Estimated Chloride Criteria. (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Start Date	End Date	SpCond Count	SpCond Min (µs/cm)	SpCond Max (µs/cm)	Count SpCond >904	Count SpCond >994	Count SpCond >3193	Count SpCond >3512	Consecutive sets >904	Consecutive sets >994
W2210	05/25/11	10/11/11	6	404	597	0	0	0	0	0	0

Fish Consumption

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Because of the site-specific fish consumption advisory for the Mechanics Pond impoundment of this Ten Mile River AU (MA52-03), the Fish Consumption Use will continue to be assessed as Not Supporting with the chlordane in Fish Tissue impairment being carried forward. The advisory recommends the following: Children under 12, pregnant women, nursing mothers, and women of childbearing age who may become pregnant should refrain from consuming white perch from Mechanics Pond, Dodgeville Pond, and the section of the Ten Mile River that connects them, and the general public should limit the consumption of white perch caught from Mechanics Pond, Dodgeville Pond, and the section of the Ten Mile River that connects them to two meals per month.	

As reported in (MassDEP 2006), fish were collected from the Mechanics Pond impoundment of this Ten Mile River AU (MA52-03) in June 2002. Three fillet composites each of largemouth bass, white perch, pumpkinseed, bluegill, and black crappie were analyzed for heavy metals, PCB, organochlorine pesticides, and percent lipids (Maietta 2007). Due to the presence of elevated chlordane in white perch, MA DPH issued the following advisory recommending:

- "Children under 12, pregnant women, nursing mothers, and women of childbearing age who may become pregnant should refrain from consuming white perch from Mechanics Pond"
- "The general public should limit the consumption of white perch caught from Mechanics Pond to two meals per month".

Aesthetic

2022 Use Attainment	Alert
Not Supporting	YES
2022 Use Attainment Summary	

MassDEP staff recorded aesthetics observations as part of the MAP2 monitoring project in summer 2011, close to the downstream end of this Ten Mile River AU (MA52-03), approximately 2780 feet downstream from Pond Street, Seekonk (W2210/Map2-068). There were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DWM-WPP field sampling crews during the surveys (n=6). However, because this sampling station was not located in the impounded reaches of the river, where it was originally documented with dense duckweed and filamentous algae cover during a 2002 synoptic survey (MassDEP 2006), it cannot be confirmed if the excessive algal growth and aquatic plants continue to impair the aesthetics in that section of the Ten Mile River. Therefore, the Aesthetics Use for this Ten Mile River AU (MA52-03) will continue to be assessed as Not Supporting with the Algae, Nutrient/Eutrophication Biological indicators, Total Phosphorus, and Aquatic Plants (Macrophytes) impairments being carried forward. The prior Alert identified for trash in the river at Olive Street in 2007 (MassDEP Undated 6) will also be carried forward, since this location was not observed in 2011.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2210	MassDEP	Water Quality	Ten Mile River	[approximately 2780 feet downstream from Pond Street, Seekonk]	41.896400	-71.333215

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2210	Ten Mile River	2011	6	MassDEP aesthetics observations for station W2210/MAP2-068 on Ten Mile River can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2011.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2210	2011	6	5	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2210	Ten Mile River	2011	Color	Light Yellow/Tan	6	6
W2210	Ten Mile River	2011	Objectionable Deposits	No	5	6
W2210	Ten Mile River	2011	Objectionable Deposits	Yes	1	6
W2210	Ten Mile River	2011	Odor	Musty (Basement)	2	6
W2210	Ten Mile River	2011	Odor	None	4	6
W2210	Ten Mile River	2011	Scum	No	6	6
W2210	Ten Mile River	2011	Turbidity	None	1	6
W2210	Ten Mile River	2011	Turbidity	Slightly Turbid	5	6

Primary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	YES

2022 Use Attainment Summary

E. coli bacteria samples were collected by MassDEP staff approximately 2780 feet downstream from Pond Street, Seekonk (W2210) six times during the summer of 2011. Analysis of this single year limited frequency data indicated 100% of intervals had GMs >126 cfu/100ml and a seasonal GM of 233 cfu/100ml. Although there were generally no objectionable conditions observed, this sampling station was not located in the impounded reaches of the river where the aesthetics problems were originally documented. Therefore, the Primary Contact Recreational Use for this Ten Mile River AU (MA52-03) will continue to be assessed as Not Supporting with the Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological indicators, Total Phosphorus, E. Coli, and Fecal Coliform impairments being carried forward. The prior Alert identified for trash in the river at Olive Street in 2007 (MassDEP Undated 6) will also be carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2210	MassDEP	Water Quality	Ten Mile River	[approximately 2780 feet downstream from Pond Street, Seekonk]	41.896400	-71.333215

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (30-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

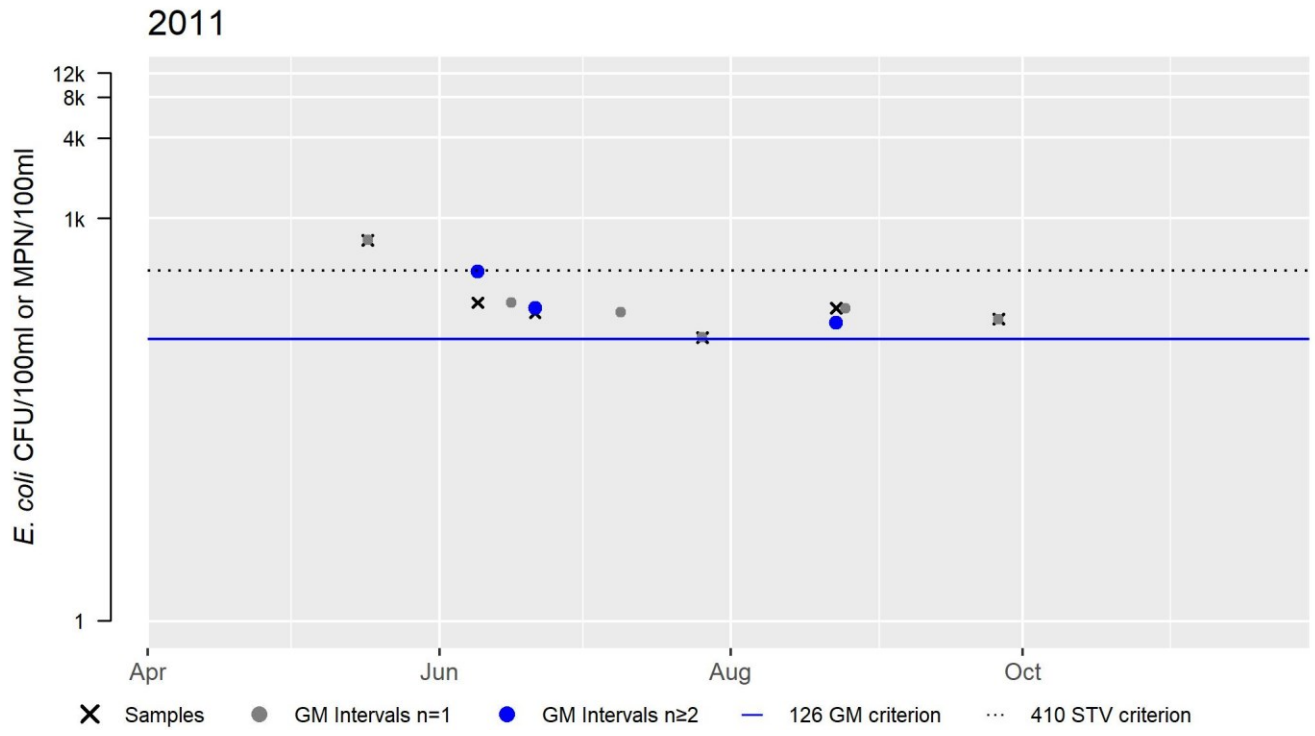
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2210	MassDEP	E. coli	05/17/11	09/26/11	6	130	687	233

W2210 *E. coli* (30-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	233
#GMI	3
#GMI Ex	3
%GMI Ex	100
n>STV	1
%n>STV	17

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



Secondary Contact Recreation

2022 Use Attainment	Alert
Not Supporting	YES

2022 Use Attainment Summary

E. coli bacteria samples were collected by MassDEP staff close to the downstream end of this Ten Mile River AU (MA52-03) approximately 2780 feet downstream from Pond Street, Seekonk (W2210) six times during the summer of 2011. Analysis of this single year limited frequency data indicated none of the intervals had GMs >630 cfu/100ml with a seasonal GM of 233 cfu/100ml and no exceedances of the STV (1260 cfu/100mls). Although there were generally no objectionable conditions observed, this sampling station was not located in the impounded reaches of the river where the aesthetics problems were originally documented. Therefore, the Secondary Contact Recreational Use for this Ten Mile River AU (MA52-03) will continue to be assessed as Not Supporting with the Algae, Aquatic Plants (Macrophytes), Nutrient/Eutrophication Biological indicators, and Total Phosphorus impairments being carried forward. The prior Alert identified for trash in the river at Olive Street in 2007 (MassDEP Undated 6) will also be carried forward.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2210	MassDEP	Water Quality	Ten Mile River	[approximately 2780 feet downstream from Pond Street, Seekonk]	41.896400	-71.333215

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

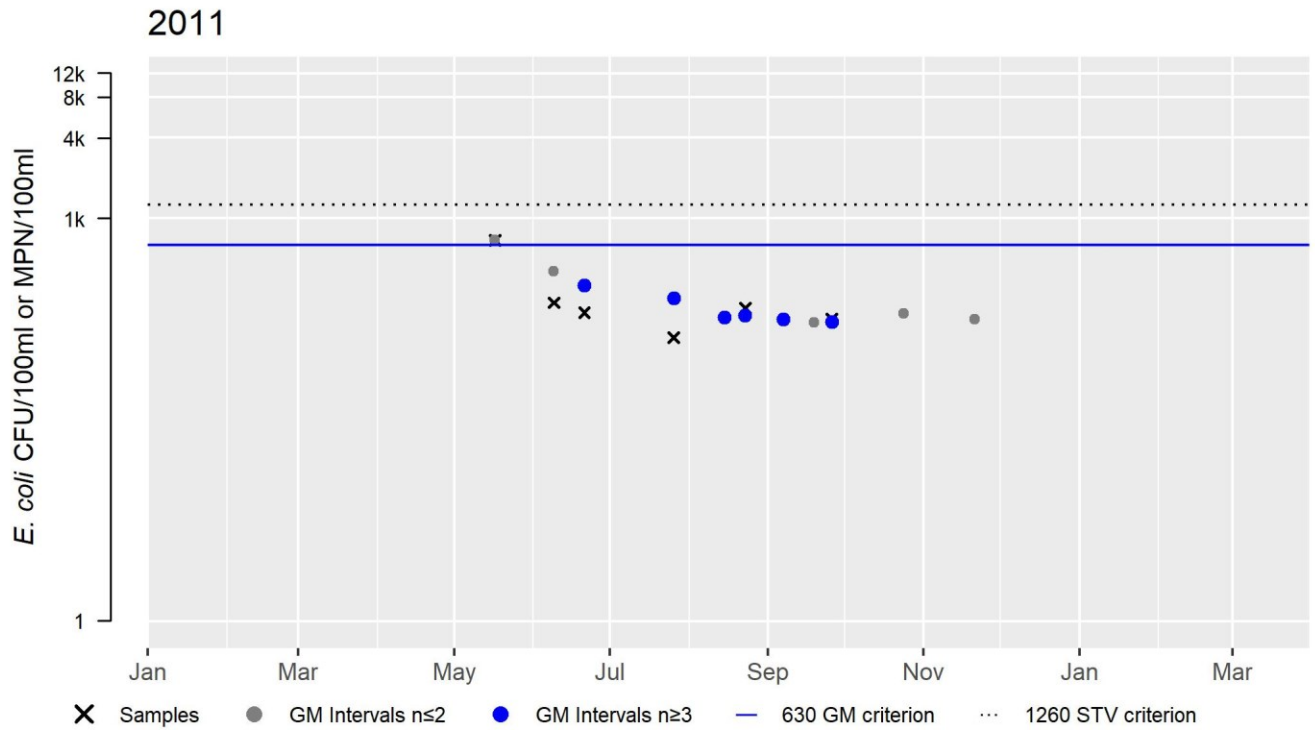
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W2210	MassDEP	E. coli	05/17/11	09/26/11	6	130	687	233

W2210 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	233
#GMI	6
#GMI Ex	0
%GMI Ex	0
n>STV	0
%n>STV	0

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



Whiting Pond (MA52042)

Location:	North Attleborough/Plainville.
AU Type:	FRESHWATER LAKE
AU Size:	24 ACRES
Classification/Qualifier:	B: WWF, HQW

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
4a	4a	Mercury in Fish Tissue	33880	Unchanged

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Mercury in Fish Tissue	Atmospheric Deposition - Toxics (Y)		X			
Mercury in Fish Tissue	Source Unknown (N)		X			

Recommendations

2022 Recommendations
REC: Conduct additional bacteria sampling/analysis on Whiting Pond to better evaluate if the pond should be impaired for *E. coli*.

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No data are available to assess the status of the Aquatic Life Use for Whiting Pond (MA52042), so it is Not Assessed.	

Fish Consumption

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	
Because of the site-specific fish consumption advisory for this Whitings Pond AU (MA52042) due to mercury contamination, the Fish Consumption Use will continue to be assessed as Not Supporting with the mercury in Fish Tissue impairment being carried forward.	

As reported in (MassDEP 2006) fish were collected from this Whiting Pond AU (MA52042) in June 2002. Three fillet composites of largemouth bass, bluegill, pumpkinseed, black crappie, and brown bullhead were analyzed for heavy metals, PCB, organochlorine pesticides, and percent lipids (Maietta 2007). Due to the presence of elevated mercury in largemouth bass and bluegill samples, MA DPH issued the following advisory recommending:

- "Children under 12, pregnant women, nursing mothers, and women of childbearing age who may become pregnant should refrain from consuming bluegill and largemouth bass from Whitings Pond"
- "The general public should limit consumption of bluegill and largemouth bass caught from Whitings Pond to two meals per month".

Aesthetic

2022 Use Attainment	Alert
Insufficient Information	NO
2022 Use Attainment Summary	
MassDEP aesthetics observations for station W2590 (the Town beach) on Whiting Pond can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015 (n=1). Too limited data are available to assess the Aesthetics Use for Whiting Pond (MA52042), so it is assessed as having Insufficient Information.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2590	MassDEP	Water Quality	Ten Mile River/Whiting Pond	[from the town beach on Whiting Pond (an impoundment on a braid of the Ten Mile River), North Attleboro]	41.994566	-71.336185

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 5)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2590	Ten Mile River/Whiting Pond	2015	1	MassDEP aesthetics observations for station W2590 on Ten Mile River/Whiting Pond can be summarized as follows: there were generally no noted objectionable conditions (odors, deposits, growths, or turbidity) recorded by DEP field sampling crews during summer 2015. However, there is insufficient information to assess the Aesthetics Use since data were limited (n=1).

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 7) (MassDEP Undated 5)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2590	2015	1	0	0

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 7)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2590	Ten Mile River/Whiting Pond	2015	Color	NR	1	1
W2590	Ten Mile River/Whiting Pond	2015	Objectionable Deposits	Not Applicable (N/A)	1	1
W2590	Ten Mile River/Whiting Pond	2015	Odor	None	1	1
W2590	Ten Mile River/Whiting Pond	2015	Scum	Not Applicable (N/A)	1	1
W2590	Ten Mile River/Whiting Pond	2015	Turbidity	NR	1	1

Primary Contact Recreation

2022 Use Attainment	Alert
Insufficient Information	YES

2022 Use Attainment Summary

MassDEP staff conducted a limited amount of *E. coli* bacteria sampling in Whiting Pond (an impoundment on a braid of the Ten Mile River) at the Town beach in North Attleboro (W2590) in 2015. Of the two samples collected, *E. coli* counts were elevated (both above 126 cfu/100ml and one above the 410 STV criterion, with an overall GM of 656 cfu/100ml). MassDEP staff also conducted Bacteria Source Tracking (BST) work at four sites along the shore of Whiting Pond in 2015, with a max *E. coli* of 2,419.6MPN. Waterfowl and waterfowl fecal matter were an observed source of bacteria on the Town beach. Overall, too limited data are available to assess the Primary Contact Recreational Use for Whiting Pond according to the CALM "Use Attainment Impairment Decision Schema", so this use is assessed as Insufficient Information. An alert is being identified for elevated *E. coli* bacteria based on high counts at the Town beach in 2015.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2590	MassDEP	Water Quality	Ten Mile River/Whiting Pond	[from the town beach on Whiting Pond (an impoundment on a braid of the Ten Mile River), North Attleboro]	41.994566	-71.336185

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

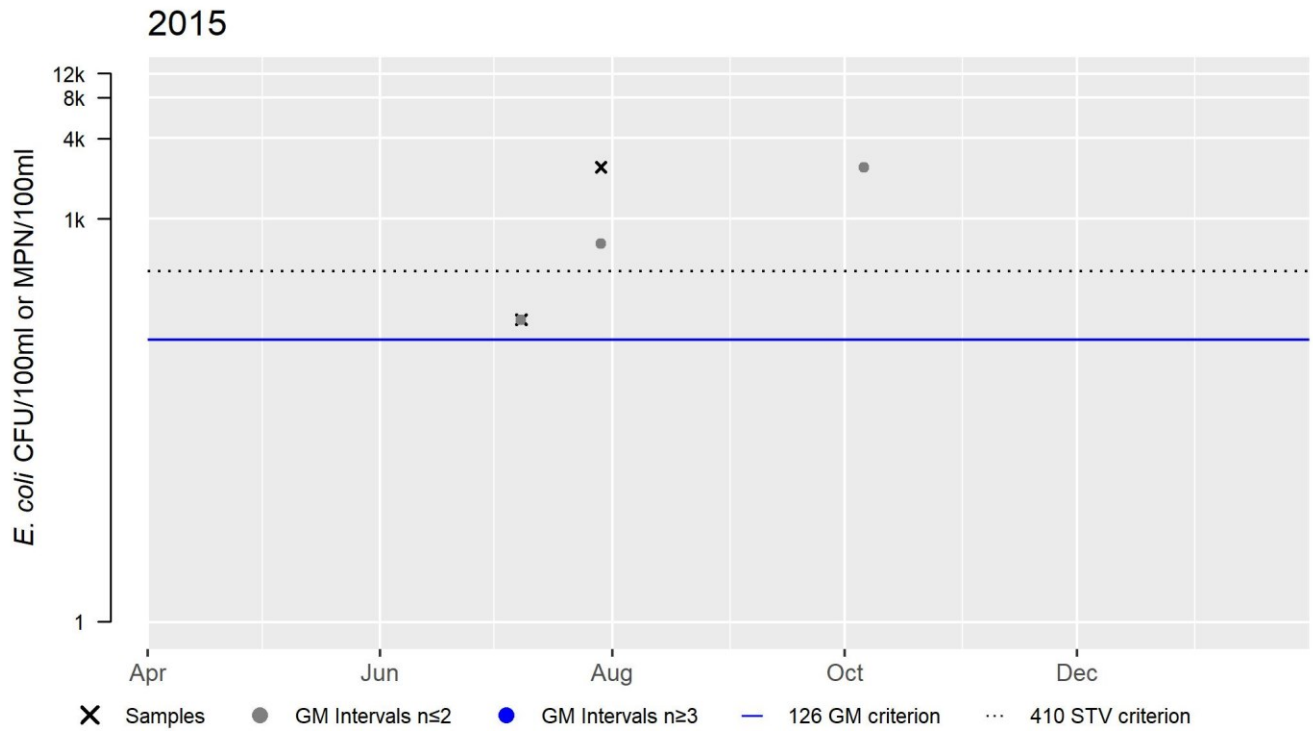
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2590	MassDEP	E. coli	07/08/15	07/29/15	2	178	2420	656

W2590 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	656
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



MassDEP Bacteria Source Tracking (BST) Summary Statement for 2011-2019 (MassDEP Undated 1)

Summary
BST samples were collected at 4 sites along the shore of the Whiting Pond AU (MA52042) in 2015, with a max *E. coli* concentration of 2,419.6 in dry weather conditions. A great number of waterfowl and waterfowl fecal matter were observed on the Town beach, which was most likely to be a source of bacteria at this location. No correctable source was ever found.

Secondary Contact Recreation

2022 Use Attainment	**Alert**
Insufficient Information	NO
2022 Use Attainment Summary	

MassDEP staff conducted a limited amount of *E. coli* bacteria sampling in Whiting Pond (an impoundment on a braid of the Ten Mile River) at the Town beach in North Attleboro (W2590) in 2015. Of the two samples collected, *E. coli* counts were once greater than 630 cfu/100ml and greater than the 1260 STV criterion. MassDEP also conducted BST work at four sites along the shore of Whiting Pond in 2015, with a max *E. coli* of 2,419.6MPN. Waterfowl and waterfowl fecal matter were an observed source of bacteria on the Town beach. Too limited data are available to assess the Secondary Contact Recreational Use for Whiting Pond according to the CALM "Use Attainment Impairment Decision Schema", so this use is assessed as Insufficient Information.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2590	MassDEP	Water Quality	Ten Mile River/Whiting Pond	[from the town beach on Whiting Pond (an impoundment on a braid of the Ten Mile River), North Attleboro]	41.994566	-71.336185

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 7) (MassDEP Undated 5)

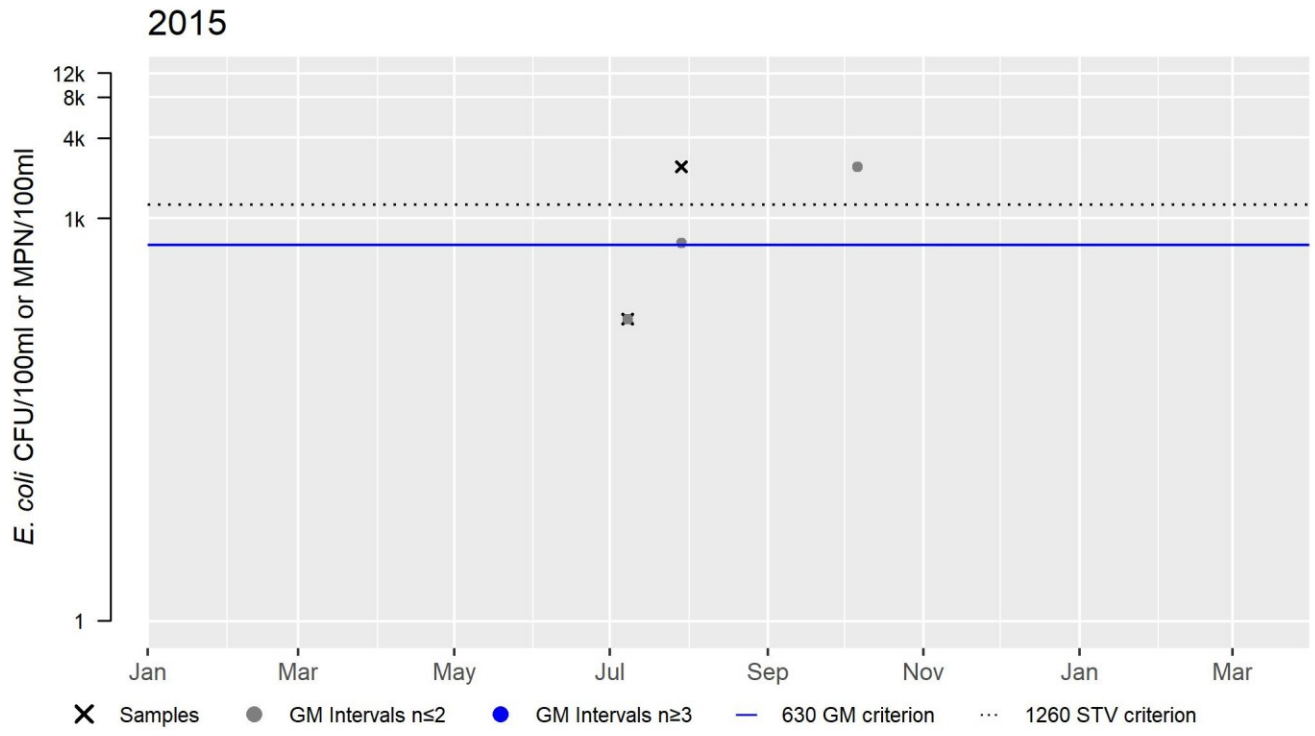
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result (CFU/100ml or MPN/100ml)	Maximum Sample Result (CFU/100ml or MPN/100ml)	Seasonal Geometric Mean (CFU/100ml or MPN/100ml)
W2590	MassDEP	E. coli	07/08/15	07/29/15	2	178	2420	656

W2590 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	2
SeasGM	656
#GMI	0
#GMI Ex	0
%GMI Ex	0
n>STV	1
%n>STV	50

Abbreviations: Samples = #samples; SeasGM = Seasonal Geometric Mean (GM); #GMI = number GM Intervals; #GMI Ex = number GMI Exeedances; %GMI Ex = percent GMI Exeedances; n>STV = #samples>Statistical Threshold Value (STV); %n>STV = percent samples>STV



Data Sources

Bailey, Logan. "Email providing Harmful Algal Bloom advisory data (2015-2019) in the attached spreadsheet "HAB_Advisory_Data_forDEP"." Email to Laurie Kennedy (MassDEP Watershed Planning Program) and others with subject line "RE: Beaches Bill reporting data", Environmental Toxicology Program, Bureau of Environmental Health, Massachusetts Department of Public Health, Boston, MA, April 15, 2021.

Google Earth Pro. "Satellite Imagery of selected stream and lake/pond segments." Massachusetts, Undated.

Maietta, R. J. "1983-2007 Fish Toxics Monitoring Survey List." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, 2007.

MassDEP. "2015 Scanned Project Files, Ten Mile watershed lake survey data, 1997, D01-31.PDF." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, 1997.

—. "2018 DWM Environmental Monitoring Overview." CN 444.0. Division of Watershed Management, Massachusetts Department of Environmental Protection. 2018. https://www.mass.gov/doc/2018-environmental-monitoring-summary/download (accessed July 2021).

MassDEP. "Integrated Listing History 1992-2014 INTLIST_HISTORY.xlsx." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, 2015.

MassDEP. "Massachusetts Consolidated Assessment and Listing Methodology (CALM) Guidance Manual for the 2022 Reporting Cycle." CN 564.0, Watershed Planning Program, Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, 2022.

MassDEP. "Open file analysis of 2011-2019 bacteria source tracking data collected by MassDEP Southeast Regional Office staff." Southeast Regional Office, Massachusetts Department of Environmental Protection, Lakeville, MA, Undated 1.

MassDEP. "Open file analysis of DFG 2012-2019 fish community data using 2022 CALM guidance." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 2.

MassDEP. "Open file analysis of external water quality data (potential date range 2011-2020) using 2022 CALM guidance." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 3.

MassDEP. "Open file analysis of MassDEP WPP benthic survey data (2011-2018) using 2022 CALM guidance." Watershed Planning Program, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 4.

MassDEP. "Open file analysis of MassDEP WPP water quality data collected between 2011 and 2018 using 2022 CALM guidance." Division of Watershed Management, 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." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, Undated 7.

MassDEP. "Scanned historical 305(b) and 303(d) coding sheets tenmile91_02_searchable." Division of Watershed Management, Massachusetts Department of Environmental Protection, Worcester, MA, 2002.

MassDEP. "Ten Mile River Watershed 2002 Water Quality Assessment Report." CN 137.5, Division of Watershed Managament, Massachusetts Department of Environmental Protection, Worcester, MA, 2006.

MassDFG. Fish Community Data 1964-2019. Database submitted to MassDEP on 24 November 2020. Division of Fisheries and Wildlife, Massachusetts Department of Fish and Game. Westborough, MA, November 24, 2020.

MassDPH. "Freshwater Fish Consumption Advisory List." Bureau of Environmental Health, Massachusetts Department of Public Health. June 2021. https://www.mass.gov/doc/public-health-freshwater-fish-consumption-advisories-2021/download (accessed July 2021).