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

Appendix 14
Hudson: Kinderhook River Basin
Assessment and Listing Decision Summary

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

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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.

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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.

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2022 Cycle Impairment Changes

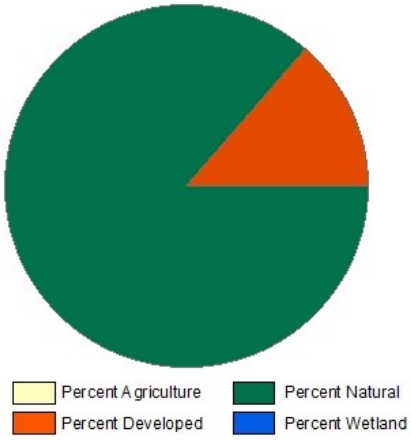
Waterbody	AU_ID	2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
Bently Brook	MA12-02	2	2	None		Unchanged
Kinderhook Creek	MA12-01	5	5	Benthic Macroinvertebrates		Unchanged

Bently Brook (MA12-02)

Location:	Headwaters, perennial portion, south of Brodie Mountain Road, Lanesborough to mouth at confluence with Kinderhook Creek, Hancock.
AU Type:	RIVER
AU Size:	2.1 MILES
Classification/Qualifier:	B

Bently Brook - MA12-02

Watershed Area: 2.99 square miles



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	2.99	2.99	0.75	0.75
Agriculture	0.9%	0.9%	0.8%	0.8%
Developed	13.4%	13.4%	17.7%	17.7%
Natural	84.8%	84.8%	78.6%	78.6%
Wetland	0.8%	0.8%	2.8%	2.8%
Impervious Cover	3.4%			

2018/20 AU Category	2022 AU Category	Impairment	ATTAINS Action ID	Impairment Change Summary
2	2	None		Unchanged

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Fully Supporting	NO
2022 Use Attainment Summary	
MassDFG biologists conducted backpack electrofishing in Bently Brook near Corey Road behind the restaurant on Brodie Mtn Rd, Hancock (SampleID 8487) in July 2019. The fish sample contained slimy sculpin, multiple age classes of brook trout, and brown trout. The sample was comprised entirely by intolerant, fluvial species. The Aquatic Life Use of Bently Brook is assessed as Fully Supporting based on the presence of cold water fish species which are indicate of excellent habitat and water quality conditions.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
8487	MassDFG	Fish Community	Bentley Brook	DS of Corey Rd (main entrance to Jimney Peak), behind restaurant on Brodie Mtn Rd, Hancock	42.55752	-73.29419

Biological Monitoring Information

Fish Community Data and DELTS

Fish Community Data (2014-2019) Provided by MassDFG. (MassDFG 2020) (MassDEP Undated 1)

[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]

[Species List: BT = Brown Trout, EBT = Brook Trout, SC = Slimy Sculpin]

Sample ID	Sample Date	Method	Sample Type	Total Taxa	Total Ind	EBT Ind	EBT Min Length (mm)	EBT Max Length (mm)	EBT ≤140mm Ind	SC Ind	Cold Ind %	Fluvial Ind %	Notables	CFR	Species List
8487	07/16/19	BP	TP	3	168	15	54	177	14	119	100%	100%	Yes	Yes	BT, EBT, SC,

Fish Consumption

2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No fish toxics sampling has been conducted in Bently Brook, therefore the Fish Consumption Use 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 Aesthetics Use for Bently Brook, 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 status of the Primary Contact Recreational Use for Bently Brook, so it is Not Assessed.	

Secondary Contact Recreation

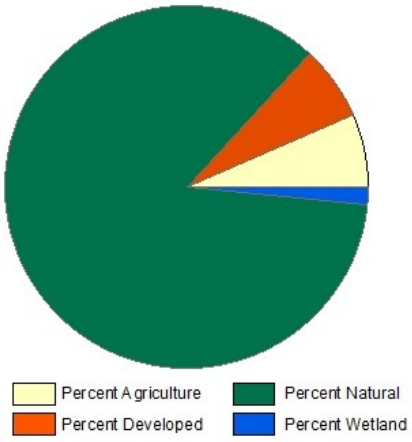
2022 Use Attainment	Alert
Not Assessed	NO
2022 Use Attainment Summary	
No bacteria data are available to assess the status of the Secondary Contact Recreational Use for Bently Brook, so it is Not Assessed.	

Kinderhook Creek (MA12-01)

Location:	Whitman Road, Hancock to New York/Massachusetts border, Hancock.
AU Type:	RIVER
AU Size:	4.6 MILES
Classification/Qualifier:	B: CWF, HQW

Kinderhook Creek - MA12-01

Watershed Area: 13.03 square miles



Landuse Type	Entire Basin	5km Radius Proximal Subbasin	100m Stream Buffer	Proximal Stream Buffer
Land Use Area (square miles)	13.03	6.74	3.12	1.61
Agriculture	6.5%	9.8%	9.5%	14.6%
Developed	6.6%	6.8%	9.8%	12.3%
Natural	85.3%	82%	75.4%	68.5%
Wetland	1.6%	1.3%	5.3%	4.6%
Impervious Cover	2.1%			

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

Impairment	Source (Confirmed Y/N)	Fish, other Aquatic Life and Wildlife	Fish Consumption	Aesthetic	Primary Contact Recreation	Secondary Contact Recreation
Benthic Macroinvertebrates	Agriculture (N)	X				
Benthic Macroinvertebrates	Highway/Road/Bridge Runoff (Non-construction Related) (N)	X				

Designated Use Attainment Decisions

Fish, other Aquatic Life and Wildlife

2022 Use Attainment	Alert
Not Supporting	NO
2022 Use Attainment Summary	

MassDEP biologists sampled Kinderhook Creek 1675 feet upstream of Potter Mountain Road, Hancock (W2256, B0793) during the summer of 2012 as part of the MAP2 wadeable streams monitoring project. Survey results of this Cold Water habitat can be briefly summarized as follows: the benthic community (Station B0793) IBI score was indicative of moderately degraded conditions (44), multiple age classes of eastern brook trout and other cold water and fluvial species were documented (backpack electrofishing in August 2012 [Sample ID 5046]), water quality sampling data including both deployed probe and discrete sampling efforts (Station W2256) were indicative of excellent conditions (minimum dissolved oxygen 7.7mg/L, maximum temperature 19.9°C with maximum 24 hour rolling average 17.8°C, pH 7.0 to 7.3SU, no physico-chemical indications of any nutrient enrichment problems [seasonal average total phosphorus concentration 0.006mg/L, max diel DO shift 1.6mg/L, maximum saturation 95%, maximum pH 7.3SU], low concentrations of ammonia-nitrogen (maximum 0.02mg/L) and chloride (maximum 24mg/L) nor any acute or chronic metals criteria exceedances). MassDFG biologists also conducted backpack electrofishing further downstream in Kinderhook Creek upstream of Potter Mountain Road, Hancock (SampleID 7637) and downstream of the first Route 43 crossing near the NY border, Hancock (SampleID 7635) in July 2018. These samples were both dominated by slimy sculpin, and contained multiple age classes of brook trout, and brown trout as well as a few longnose dace (all intolerant, fluvial species).
The Aquatic Life Use of Kinderhook Creek will continue to be assessed as Not Supporting based on the degraded benthic macroinvertebrate community. All other biological and water quality data were indicative of excellent conditions.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
5046	MassDEP	Fish Community	Kinderhook Creek	0.3mi US of Potter Mtn Rd, adjacent to Rt 43	42.54503	-73.31275
7635	MassDFG	Fish Community	Kinderhook Creek	Downstream of 1st Rt. 43 crossing near NY border, Hancock	42.53841	-73.33411
7637	MassDFG	Fish Community	Kinderhook Creek	Upstream of Potter Mountain Rd., Hancock	42.54248	-73.31694
B0793	MassDEP	Benthic	Kinderhook Creek/	[approximately 510 meters upstream of Potter Mountain Road, Hancock, MA]	42.545032	-73.312753
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

Biological Monitoring Information

Benthic Macroinvertebrate Data

MassDEP Benthic Macroinvertebrate Data (2011-2017). (MassDEP Undated 2)

[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
B0793	07/25/12	RBP kicknet	Western_Highlands_100ct	104	44	MD

Fish Community Data and DELTS

Fish Community Data (2012-2019) Provided by MassDFG. (MassDFG 2020) (MassDEP Undated 1)

[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]

[Species List: B = Bluegill, BC = Black Crappie, BT = Brown Trout, EBT = Brook Trout, LND = Longnose Dace, P = Pumpkinseed, SC = Slimy Sculpin]

Sample ID	Sample Date	Method	Sample Type	Total Taxa	Total Ind	EBT Ind	EBT Min Length (mm)	EBT Max Length (mm)	EBT ≤140mm Ind	SC Ind	Cold Ind %	Fluvial Ind %	Notables	CFR	Species List
5046	08/22/12	BP	TP	6	181	12	83	235	8	114	96%	96%	Yes	Yes	B, BC, BT, EBT, P, SC,
7635	07/19/18	BP	TP	4	253	16	67	192	14	160	97%	100%	No	Yes	BT, EBT, LND, SC,
7637	07/19/18	BP	TP	4	180	6	52	165	5	154	99%	100%	Yes	Yes	BT, EBT, LND, SC,

Physico-chemical Water Quality Information

DO, pH, Temperature

MassDEP Short-term Continuous Dissolved Oxygen Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	3	12	7.7	7.9	8.3	1.6	0	0	0	0	0	0

MassDEP Discrete Dissolved Oxygen Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	05/02/12	09/06/12	3	8.4	9.1	0	0	0

MassDEP Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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]

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
W2256	06/01/12	09/05/12	97	94	17.0	19.9	17.4	15.7	0	0	0	0	0	0

MassDEP Short-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	3	12	16.8	19.7	18.3	15.8	0	0	0	0	0	0

24-hour Rolling Average Calculations for MassDEP Short- and Long-term Continuous Temperature Data (Summer Index 2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	06/01/12	09/06/12	97	4677	17.8	0	0	0
W2256	06/06/12	08/14/12	69	581	17.6	0	0	0

MassDEP Discrete Temperature Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	05/02/12	09/06/12	5	4	15.5	13.4	0	0	0	0

MassDEP Discrete pH Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

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
W2256	05/02/12	09/06/12	3	7	7.3	0	0

Nutrients (Primary Producer Screening, Physico-chemical Screening)

MassDEP Nutrient Enrichment Indicator Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	5	0.005	0.007	0.006	1.6	1.0	95.1	7.3	6	4

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

MassDEP Clean Metals Water Column Data (2011-2018), Acute Criteria Violations. (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	3	0	0	0	0	0	0	0	0

MassDEP Clean Metals Water Column Data (2011-2018), Chronic Criteria Violations. (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	3	0	0	0	0	0	0	0	0

MassDEP Dissolved Aluminum Water Column Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	3	0.005	0.01	0.007	0.0	0.0	0	0

MassDEP Total Ammonia Nitrogen (TAN) Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

[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
W2256	2012	5	0.020	0.020	0.020	0	0

MassDEP Chloride Data (2011-2018). (MassDEP Undated 4) (MassDEP Undated 3)

Station Code	Data Year	Chloride Count	Chloride Min (mg/L)	Chloride Max (mg/L)	Chloride Avg (mg/L)	Count Chloride >230	Count Chloride >860
W2256	2012	5	12	24	19	0	0

MassDEP Discrete Specific Conductance Data (2011-2018) Compared to Estimated Chloride Criteria. (MassDEP Undated 4) (MassDEP Undated 3)

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
W2256	05/02/12	09/06/12	3	164	200	0	0	0	0	0	0

Fish Consumption

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

Aesthetic

2022 Use Attainment	Alert
Fully Supporting	YES
2022 Use Attainment Summary	
MassDEP staff surveyed Kinderhook Creek ~1675 feet upstream of Potter Mountain Road, Hancock (W2256) during the summer of 2012 as part of the MAP2 wadeable streams monitoring project. There were no objectionable odors, colors, deposits, or turbidity noted however there were observations of dense/very dense growths of filamentous algae during four of the six surveys. The Aesthetics use for Kinderhook Creek is assessed as Fully Supporting based on the general lack of objectionable conditions (odors, deposits, or turbidity) observed by MassDEP staff at station W2256/MAP2-182 in summer 2012 (n=6). However, an Alert is being identified due to observations of dense filamentous algae during four of the site visits.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

Aesthetic Observations

Aesthetics Summary Statements for MassDEP Stations (2011-2018) (MassDEP Undated 3)

Station Code	Waterbody	Data Year	Field Sheet Count	Aesthetics Summary Statement
W2256	Kinderhook Creek	2012	6	The Aesthetics use for Kinderhook Creek is assessed as Fully Supporting based on the lack of objectionable conditions (odors, deposits, or turbidity) observed by MassDEP staff at station W2256/MAP2-182 in summer 2012 (n=6). However, an Alert is being identified due to observations of dense filamentous algae during 4 of the site visits.

Observations of Filamentous/Film Algae at MassDEP Stations (2011-2018) (MassDEP Undated 4) (MassDEP Undated 3)

Station Code	Data Year	Field Sheet Count	Field Sheet Count w/ Film & Filamentous Algae Observations	Dense/ Very Dense Film/ Filamentous Algae
W2256	2012	6	6	4

MassDEP Aesthetics Observations (2011-2018) (MassDEP Undated 4)

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2256	Kinderhook Creek	2012	Color	None	5	6
W2256	Kinderhook Creek	2012	Color	NR	1	6

Station Code	Waterbody	Data Year	Parameter	Result	Result Count	Total Field Sheet Count
W2256	Kinderhook Creek	2012	Objectionable Deposits	No	6	6
W2256	Kinderhook Creek	2012	Odor	None	6	6
W2256	Kinderhook Creek	2012	Scum	No	6	6
W2256	Kinderhook Creek	2012	Turbidity	None	5	6
W2256	Kinderhook Creek	2012	Turbidity	NR	1	6

Primary Contact Recreation

2022 Use Attainment	Alert
Fully Supporting	YES

2022 Use Attainment Summary

MassDEP staff collected E. coli bacteria samples from Kinderhook Creek approximately 1675 feet upstream of Potter Mountain Road, Hancock (W2256) between May and September 2012 (n=6). Data analysis indicated none of the intervals had GMs >126 cfu/100ml, none of the samples exceeded the 410 cfu/100ml STV, and the seasonal GM was 34 cfu/100ml. An Alert, however, is being identified due to observations of dense filamentous algae during four of the site visits.

The Primary Contact Recreational Use for Kinderhook Creek is assessed as Fully Supporting based on the low E. coli concentrations, but an Alert is being identified because of observations of dense filamentous algae.

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 4) (MassDEP Undated 3)

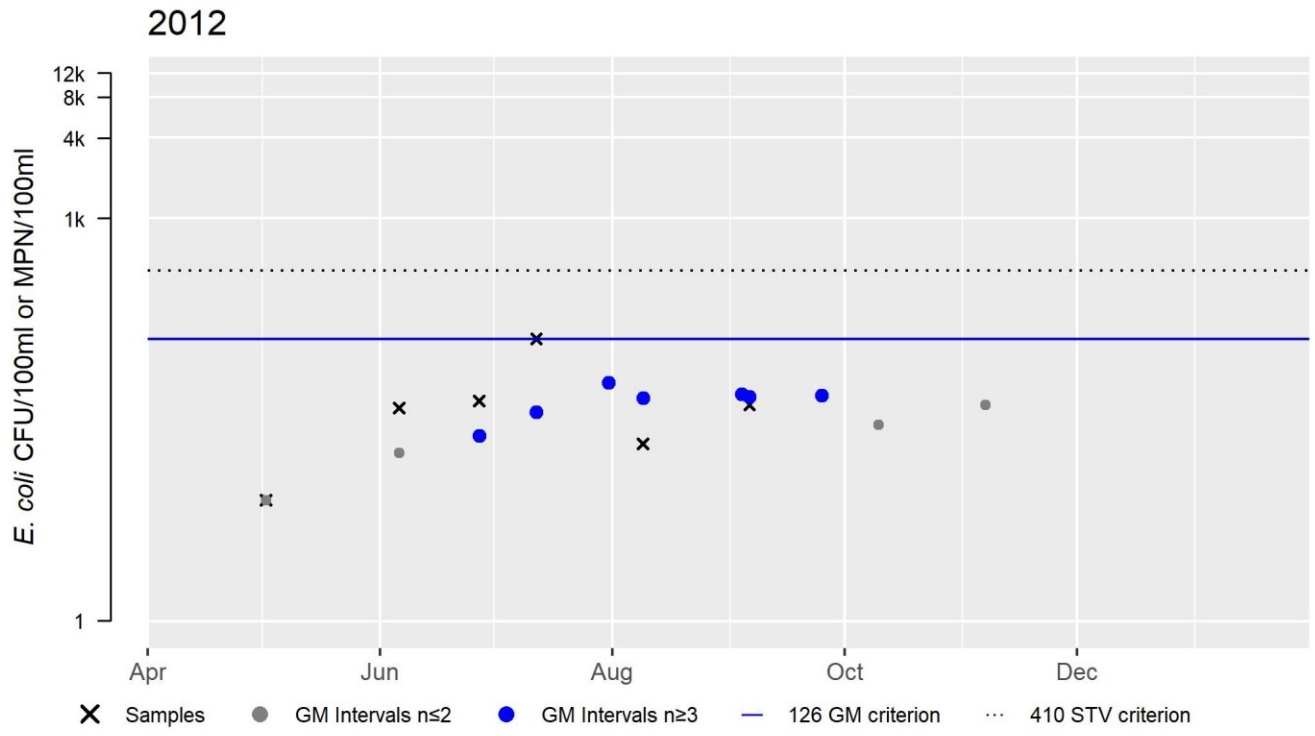
[Result units are CFU/100ml or MPN/100ml]

Station Code	Organization	Indicator	Start Date	End Date	Sample Count	Minimum Sample Result	Maximum Sample Result	Seasonal Geometric Mean
W2256	MassDEP	E. coli	05/02/12	09/06/12	6	8	127	34

W2256 *E. coli* (90-day Interval), Primary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	34
#GMI	7
#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



Secondary Contact Recreation

2022 Use Attainment	**Alert**
Fully Supporting	YES
2022 Use Attainment Summary	
MassDEP staff collected E. coli bacteria samples from Kinderhook Creek approximately 1675 feet upstream of Potter Mountain Road, Hancock (W2256) between May and September 2012 (n=6). Data analysis indicated none of the intervals had GMs >630 cfu/100ml, none of the samples exceeded the 1260 cfu/100ml STV, and the overall GM was 34 cfu/100ml. An Alert, however, is being identified due to observations of dense filamentous algae during four of the site visits. The Secondary Contact Recreational Use for Kinderhook Creek is assessed as Fully Supporting based on the low E. coli concentrations, but an Alert is being identified because of observations of dense filamentous algae.	

Monitoring Stations

Station Code	Organization	Type	Water Body	Station Description	Latitude	Longitude
W2256	MassDEP	Water Quality	Kinderhook Creek	[approximately 1675 feet upstream of Potter Mountain Road, Hancock]	42.545032	-73.312753

Bacteria Data

Bacteria Data Collected by MassDEP and External Data Providers 2011-2020 (90-day Interval Analysis) (MassDEP Undated 4) (MassDEP Undated 3)

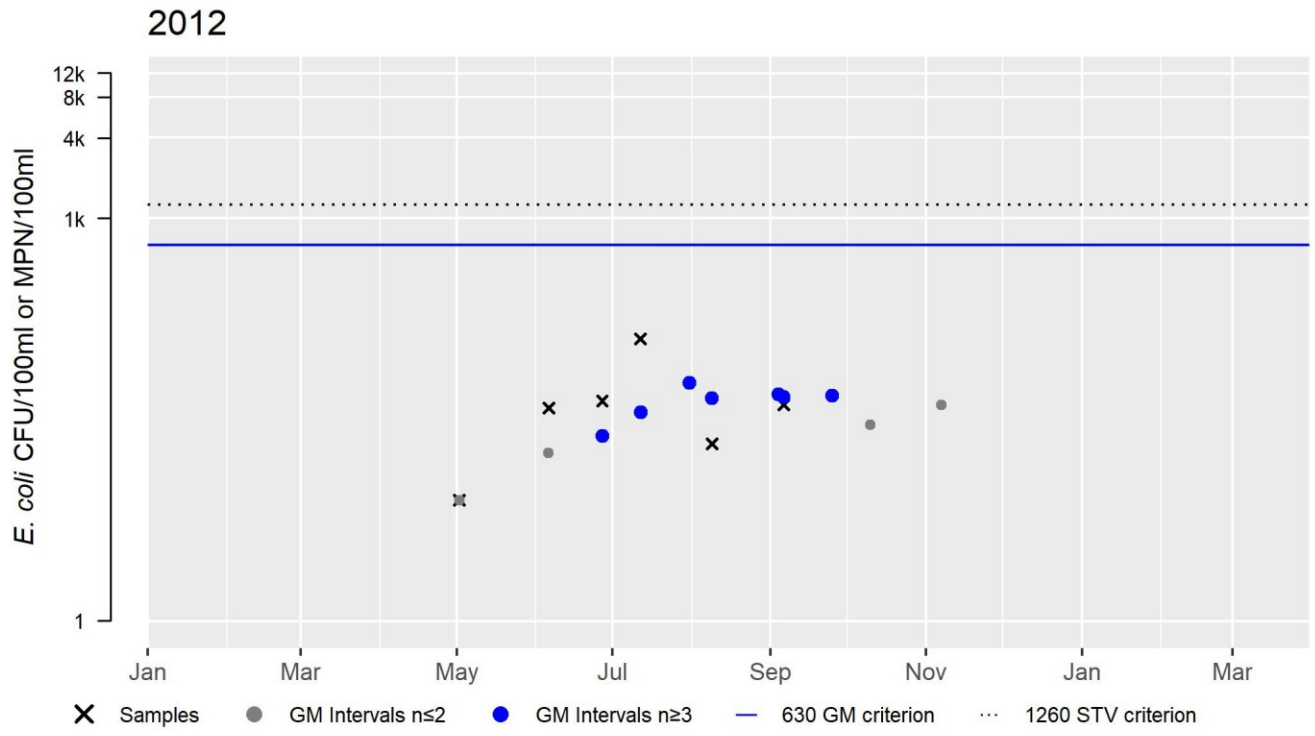
[Result units are CFU/100ml or MPN/100ml]

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)
W2256	MassDEP	E. coli	05/02/12	09/06/12	6	8	127	34

W2256 *E. coli* (90-day Interval), Secondary Contact Recreational Use Season

Var	Res
Samples	6
SeasGM	34
#GMI	7
#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



Data Sources

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 1.

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 2.

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 3.

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 4.

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.