

Massachusetts Year 2016 Integrated List of Waters

Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act



MASSACHUSETTS
DEPARTMENT
OF
ENVIRONMENTAL
PROTECTION

CN 470.1

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Kathleen A. Theoharides, Secretary
Massachusetts Department of Environmental Protection
Martin Suuberg, Commissioner
Bureau of Water Resources
Kathleen Baskin, Assistant Commissioner

Massachusetts Year 2016 Integrated List of Waters

*Final Listing of the Condition of Massachusetts' Waters Pursuant to
Sections 305(b), 314 and 303(d) of the Clean Water Act*

Prepared by:

Massachusetts Division of Watershed Management
Watershed Planning Program

CN: 470.1

December, 2019



MASSACHUSETTS
DEPARTMENT
OF
ENVIRONMENTAL
PROTECTION

Massachusetts Department of Environmental Protection
Division of Watershed Management
Watershed Planning Program
8 New Bond Street
Worcester, Massachusetts 01606

**Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"**

Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Sevenmile River	MA36-12	Confluence with Cranberry River, Spencer to mouth at confluence with East Brookfield River, East Brookfield.	2.50	Miles	Escherichia Coli (E. Coli)	
Unnamed Tributary	MA36-39	Unnamed tributary to the Chicopee River locally known as "Poor Brook" from headwaters near the Conrail tracks, Springfield to mouth at confluence with the Chicopee River, Chicopee.	2.20	Miles	(Bacterial Slimes*)	
					(Debris*)	
					(Trash*)	
					Escherichia Coli (E. Coli)	
Ware River	MA36-03	MDC intake, Barre to dam at South Barre Reservoir (NATID: MA00091), Barre (through former segments Powder Mill Pond MA36126 and South Barre Reservoir MA36141).	2.10	Miles	Mercury in Fish Tissue	
Ware River	MA36-05	Wheelwright Pond Dam (NATID: MA00616), New Braintree/Hardwick to Ware Impoundment dam (NATID: MA00594), Ware.	11.50	Miles	Escherichia Coli (E. Coli)	
Ware River	MA36-06	Ware Impoundment dam (NATID: MA00594), Ware to Thorndike Dam (NATID: MA00563), Palmer.	10.10	Miles	Escherichia Coli (E. Coli) Fecal Coliform	
Ware River	MA36-27	Confluence of East Branch Ware and West Branch Ware rivers, Barre to MDC intake, Barre.	4.90	Miles	Dissolved Oxygen	
					Temperature	
Concord (SuAsCo)						
Assabet River	MA82B-01	Headwaters, outlet Assabet River Reservoir, Westborough to the Westborough WWTP discharge (NPDES: MA0100412), Westborough.	1.20	Miles	(Dewatering*)	
					Benthic Macroinvertebrates	
					Phosphorus, Total	35103
Assabet River	MA82B-02	From the Westborough WWTP discharge (NPDES: MA0100412), Westborough to the dam (NATID: MA02843) Route 20, Northborough.	3.80	Miles	(Aquatic Plants (Macrophytes)*)	
					Algae	35104
					Benthic Macroinvertebrates	
					Dissolved Oxygen	35104
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Nutrient/Eutrophication Biological Indicators	35104
Phosphorus, Total	35104					



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The 303(d) List – "Waters requiring a TMDL"**

Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Assabet River	MA82B-03	From the dam (NATID: MA02843) Route 20, Northborough to the Marlborough West WWTP discharge (NPDES: MA0100480), Marlborough.	2.40	Miles	(Debris*)	
					(Non-Native Aquatic Plants*)	
					(Trash*)	
					Algae	35105
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Nutrient/Eutrophication Biological Indicators	35105
					Odor	
Phosphorus, Total	35105					
Assabet River	MA82B-04	From the Marlborough West WWTP discharge (NPDES: MA0100480), Marlborough to the Hudson WWTP discharge (NPDES: MA0101788), Hudson.	8.00	Miles	Algae	35106
					Aquatic Plants (Macrophytes)	35106
					Benthic Macroinvertebrates	
					Dissolved Oxygen	35106
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Fish Bioassessments	
					Phosphorus, Total	35106
Assabet River	MA82B-05	From the Hudson WWTP discharge (NPDES: MA0101788), Hudson to the USGS gage (#01097000) at Routes 27/62, Maynard.	8.20	Miles	(Debris*)	
					(Non-Native Aquatic Plants*)	
					(Trash*)	
					Algae	35107
					Aquatic Plants (Macrophytes)	35107
					Dissolved Oxygen	35107
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Nutrient/Eutrophication Biological Indicators	35107
					Odor	
Phosphorus, Total	35107					
Assabet River	MA82B-06	From the USGS gage (#01097000) at Routes 27/62, Maynard to the Powdermill Dam (NATID: MA00128), Acton.	1.20	Miles	(Non-Native Aquatic Plants*)	
					Algae	35108
					Aquatic Plants (Macrophytes)	35108
					Dissolved Oxygen	35108
					Other Organics	
					Phosphorus, Total	35108
					Temperature	
					Unspecified Metals in Sediment	



**Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"**

Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Assabet River	MA82B-07	From the Powdermill Dam (NATID: MA00128), Acton to mouth at confluence with the Sudbury River (forming headwaters Concord River), Concord.	6.40	Miles	Escherichia Coli (E. Coli)	35109
					Fecal Coliform	
					Phosphorus, Total	
Assabet River Reservoir	MA82004	Westborough.	355.00	Acres	(Eurasian Water Milfoil, Myriophyllum spicatum*)	33880
					Algae	
					Dissolved Oxygen	
					Dissolved Oxygen Supersaturation	
					Mercury in Fish Tissue	
					Turbidity	
Beaver Brook	MA82A-34	Headwaters south at Rack Road, Chelmsford to mouth at confluence with River Meadow Brook, Chelmsford.	6.30	Miles	Escherichia Coli (E. Coli)	
Carding Mill Pond	MA82015	Sudbury.	40.00	Acres	(Non-Native Aquatic Plants*)	
					Algae	
					Aquatic Plants (Macrophytes)	
					Dissolved Oxygen Supersaturation	
					Phosphorus, Total	
Coles Brook	MA82B-22	Headwaters, east of Francine Road, Acton to mouth at confluence with Fort Pond Brook, Acton.	2.00	Miles	Escherichia Coli (E. Coli)	
Concord River	MA82A-07	Headwaters, confluence Assabet and Sudbury rivers, Concord to Billerica Water Supply intake, Billerica.	10.40	Miles	(Eurasian Water Milfoil, Myriophyllum spicatum*)	
					(Non-Native Aquatic Plants*)	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Mercury in Fish Tissue	
Concord River	MA82A-08	From Billerica Water Supply intake, Billerica to Rogers Street bridge, Lowell.	5.10	Miles	(Eurasian Water Milfoil, Myriophyllum spicatum*)	
					(Non-Native Aquatic Plants*)	
					Mercury in Fish Tissue	
Concord River	MA82A-09	From Rogers Street bridge, Lowell to mouth at confluence with the Merrimack River, Lowell.	0.90	Miles	(Debris*)	
					(Trash*)	
					Algae	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Mercury in Fish Tissue	
					Turbidity	
Dean Park Pond	MA82026	Shrewsbury.	7.00	Acres	Harmful Algal Blooms	





October 23, 2017

Arthur S. Johnson
Mass DEP
Division of Watershed Management
Watershed Planning Program
8 New Bond Street
Worcester, MA 01606

Re: Comments on proposed 2016 Integrated List of Waters

Dear Mr. Johnson,

OARS appreciates the opportunity to comment on the proposed Massachusetts Year 2016 Integrated List of Waters. OARS is the watershed organization for the Concord basin, comprising the Sudbury, Assabet and Concord Rivers in a 400-square mile area west of Boston. A non-profit organization founded in 1986, OARS works primarily through science-based advocacy and education to develop a scientific understanding of the causes of river degradation and works with communities to seek effective solutions. Its mission is “to protect, improve and preserve the Assabet, Sudbury, and Concord Rivers, their tributaries and watersheds, for public recreation, water supply, and wildlife habitat.”

General Comments:

External Data: We applaud DEP’s effort to include external data and hope that the Department will dedicate resources to reviewing and incorporating external data in the future. We understand that DEP will be using our data for the 2018 Integrated list. To that end, we urge DEP to publish additional recommendations for external groups on the parameter-specific methods and data quality objectives that would result in acceptable data for Level 3 “Regulatory/Assessment” use by DEP. In reference to the acceptability of external data, CALM document says “These DQOs are then compared to the MassDEP DWM-WPP’s DQOs to look for *any large discrepancies* that could affect acceptability,” but does not quantify what a “large discrepancy” might be. OARS’ Water Quality Monitoring Program has been collecting data on under an approved QAPP since 2000. Although OARS’ data for 2009 – 2016 has been submitted to DEP, we understand that external data, including OARS’, is still under review and is not included in the 2016 Integrated List Report.

Transparency: Publishing the 2016 Consolidated Assessment and Listing Methodology and the DEP WPP QAPP 2015-2019 are significant steps towards transparency in the decision-making that goes into the Integrated List. We encourage the department to publish the particular data and standards applied in the assessment decisions for each Assessment Unit.

Surface Water Quality Standards: It is concerning that the Surface Water Quality Standards have not been updated since 2006, although the Integrated List (Pg. 8) refers to an expected update of the standards for 2017. We urge the Department to commit to a review and update of the SWQS, incorporating in particular EPA’s nutrient criteria recommendations for numeric nutrient standards.

Specific Comments for the Concord Basin:

Concord River: OARS supports the removal of Total Phosphorus as an impairment from the Concord River sections MA82A-07, MA82A-08, and MA82A-09. Our data indicate that summer (June – August) water column concentrations of total phosphorus at the four Concord River sites tested have decreased between 2004 and 2016 (Fig 1; data submitted to DEP previously), average dissolved oxygen concentrations are generally above 70%, and our observations indicate that the

Concord River does not generally have the significant growths of filamentous algae that are apparent in the Assabet River impoundments (upstream). We request that DEP share the standards and data on which the decision to remove Total Phosphorus as an impairment was based.

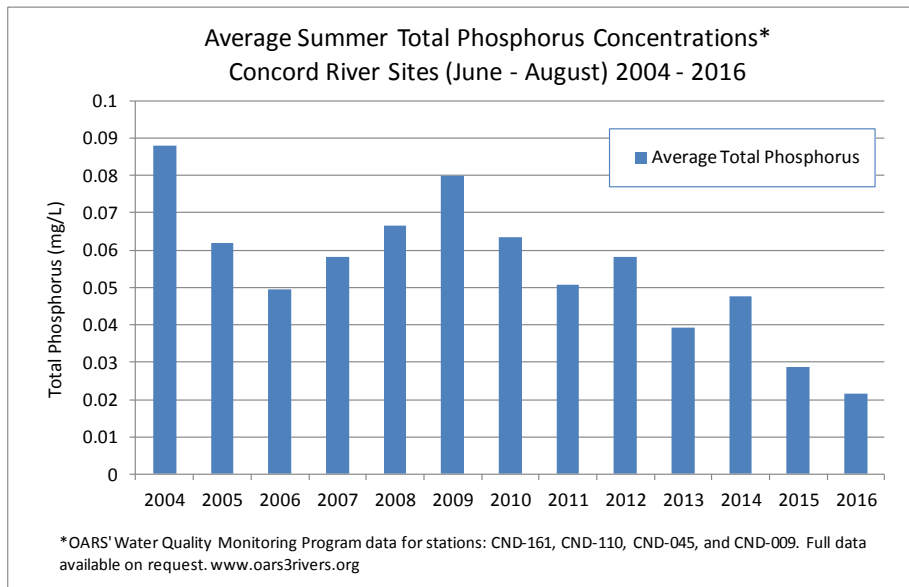


Figure 1: Average Summer TP Concentrations, Concord River

Hop Brook, Sudbury: OARS requests that “Excess Algal Growth” not be removed as an impairment from Hop Brook segment MA82A-06. Our observations from Landham Road of that section suggest that algal growth and excess plant growth in general remains a problem in that section (see Figure 2, below). We request that DEP share the standards and data on which the decision to remove Excess Algal Growth as an impairment was based.



Figure 2: Hop Brook (MA82A-06), Landham Road, Sudbury, August 2016

Cold Water Streams: We request that DEP consider adding the 33 streams identified by Mass. Div. of Fisheries and Wildlife as Coldwater Fishery Resources in the Concord basin (<http://www.mass.gov/eea/agencies/dfg/dfw/wildlife-habitat-conservation/coldwater-fish-resources-list.html>) to the Assessment Units, and classify them as Class B Cold Water streams. Currently only Jackstraw Brook is identified as a Cold Water Fishery in the standards for the Concord basin. OARS has collected, and is willing to share, continuous temperature data over several years for two streams with surveyed populations of breeding native brook trout: UNT to Hop Brook (Trout Brook) (SARIS #8247830), and Cranberry Brook (SARIS #8247885). \

Thank you for considering these comments. Please contact us if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Suzanne H. Flint". The signature is written in a cursive, flowing style.

Suzanne Flint
Staff Scientist

CC: Massachusetts Rivers Alliance
Mass Division of Fisheries and Wildlife

**Massachusetts Integrated List of Waters for the
Clean Water Act 2018/2020 Reporting Cycle**

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Draft for Public Comment



MASSACHUSETTS
D E P A R T M E N T
E N V I R O N M E N T A L
P R O T E C T I O N

CN 505.0

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Kathleen A. Theoharides, Secretary
Massachusetts Department of Environmental Protection
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Bureau of Water Resources
Kathleen Baskin, Assistant Commissioner

Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle

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Draft for Public Comment

Prepared by:

Massachusetts Division of Watershed Management
Watershed Planning Program

CN: 505.0

April 2021



MASSACHUSETTS
DEPARTMENT
of
ENVIRONMENTAL
PROTECTION

Massachusetts Department of Environmental Protection
Division of Watershed Management
Watershed Planning Program
8 New Bond Street
Worcester, Massachusetts 01606

**Category 5 waters listed alphabetically by major watershed
The 303(d) List – “Waters requiring a TMDL”**

Waterbody	AU_ID	Description	Size	Units	Impairment	ATTAINS Action ID
Sevenmile River	MA36-12	Confluence with Cranberry River, Spencer to mouth at confluence with East Brookfield River, East Brookfield.	2.50	Miles	Escherichia Coli (E. Coli)	
Silver Brook	MA36-72	Headwaters, perennial portion east of Spring Hill Road, Barre to mouth at confluence with East Branch Swift River, Petersham (excluding the approximately 0.5 mile through Carter Pond, Petersham).	2.00	Miles	Temperature	
Twelvemile Brook	MA36-53	Headwaters, perennial portion west of Zuell Hill Road, Monson to mouth at confluence with Chicopee River, Wilbraham (excluding the approximately 0.25 miles through Pulpit Rock Pond, Monson).	7.20	Miles	Temperature	
Unnamed Tributary	MA36-39	Unnamed tributary to the Chicopee River locally known as "Poor Brook" from headwaters near the Conrail tracks, Springfield to mouth at confluence with the Chicopee River, Chicopee.	2.20	Miles	(Bacterial Slimes*)	
					(Debris*)	
					Escherichia Coli (E. Coli)	
					Trash	
Ware River	MA36-03	MDC intake, Barre to dam at South Barre Reservoir (NATID: MA00091), Barre (through former 2008 segments: Powder Mill Pond MA36126 and South Barre Reservoir MA36141).	2.10	Miles	Lack of a coldwater assemblage	
					Mercury in Fish Tissue	
					Temperature	
Ware River	MA36-05	Wheelwright Pond Dam (NATID: MA00616), New Braintree/Hardwick to Ware Impoundment dam (NATID: MA00594), Ware.	11.50	Miles	(Non-Native Aquatic Plants*)	
					Escherichia Coli (E. Coli)	
Ware River	MA36-06	Ware Impoundment dam (NATID: MA00594), Ware to Thorndike Dam (NATID: MA00563), Palmer.	10.10	Miles	(Non-Native Aquatic Plants*)	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
Concord (SuAsCo)						
Assabet River	MA82B-01	Headwaters, outlet Assabet River Reservoir, Westborough to the Westborough WWTP discharge (NPDES: MA0100412), Westborough.	1.20	Miles	(Dewatering*)	
					Benthic Macroinvertebrates	
					Fish Bioassessments	
Assabet River	MA82B-02	From the Westborough WWTP discharge (NPDES: MA0100412), Westborough to the dam (NATID: MA02843) Route 20, Northborough.	3.80	Miles	(Aquatic Plants (Macrophytes)*)	
					(Curly-leaf Pondweed*)	
					Algae	35104
					Benthic Macroinvertebrates	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
Nutrient/Eutrophication Biological Indicators	35104					



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Waterbody	AU_ID	Description	Size	Units	Impairment	ATTAINS Action ID
Assabet River	MA82B-03	From the dam (NATID: MA02843) Route 20, Northborough to the Marlborough West WWTP discharge (NPDES: MA0100480), Marlborough.	2.40	Miles	(Curly-leaf Pondweed*)	
					(Debris*)	
					Algae	35105
					Ambient Bioassays - Chronic Aquatic Toxicity	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Nutrient/Eutrophication Biological Indicators	35105
					Odor	
					Phosphorus, Total	35105
					Trash	
Assabet River	MA82B-04	From the Marlborough West WWTP discharge (NPDES: MA0100480), Marlborough to the Hudson WWTP discharge (NPDES: MA0101788), Hudson.	8.00	Miles	(Water Chestnut*)	
					Algae	35106
					Benthic Macroinvertebrates	
					Dissolved Oxygen	35106
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Fish Bioassessments	
					Nutrient/Eutrophication Biological Indicators	
					Phosphorus, Total	35106
Assabet River	MA82B-05	From the Hudson WWTP discharge (NPDES: MA0101788), Hudson to the USGS gage (#01097000) at Routes 27/62, Maynard.	8.20	Miles	(Curly-leaf Pondweed*)	
					(Debris*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Fanwort*)	
					(Water Chestnut*)	
					Algae	35107
					Dissolved Oxygen	35107
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Nutrient/Eutrophication Biological Indicators	35107
					Odor	
					Phosphorus, Total	35107
					Trash	



**Category 5 waters listed alphabetically by major watershed
The 303(d) List – “Waters requiring a TMDL”**

Waterbody	AU ID	Description	Size	Units	Impairment	ATTAINS Action ID
Assabet River	MA82B-06	From the USGS gage (#01097000) at Routes 27/62, Maynard to the Powdermill Dam (NATID: MA00128), Acton.	1.20	Miles	(Curly-leaf Pondweed*)	
					(Fanwort*)	
					(Water Chestnut*)	
					Dissolved Oxygen	35108
					Other Organics	
					Unspecified Metals in Sediment	
Assabet River	MA82B-07	From the Powdermill Dam (NATID: MA00128), Acton to mouth at confluence with the Sudbury River (forming headwaters Concord River), Concord.	6.40	Miles	Escherichia Coli (E. Coli)	
					Fecal Coliform	
Assabet River Reservoir	MA82004	Westborough.	355.00	Acres	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Water Chestnut*)	
					Algae	
					Dissolved Oxygen	
					Dissolved Oxygen Supersaturation	
					Mercury in Fish Tissue	33880
					Turbidity	
Beaver Brook	MA82A-34	Headwaters south at Rack Road, Chelmsford to mouth at confluence with River Meadow Brook, Chelmsford.	6.30	Miles	Dissolved Oxygen	
					Escherichia Coli (E. Coli)	
Carding Mill Pond	MA82015	Sudbury.	40.00	Acres	(Curly-leaf Pondweed*)	
					(Water Chestnut*)	
					Algae	
					Aquatic Plants (Macrophytes)	
					Dissolved Oxygen Supersaturation	
					Phosphorus, Total	
Coles Brook	MA82B-22	Headwaters, east of Francine Road, Acton to mouth at confluence with Fort Pond Brook, Acton.	2.00	Miles	Chloride	
					Escherichia Coli (E. Coli)	
Concord River	MA82A-07	Headwaters, confluence Assabet and Sudbury rivers, Concord to Billerica Water Supply intake, Billerica.	10.40	Miles	(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Fanwort*)	
					(Non-Native Aquatic Plants*)	
					(Non-Native Fish/Shellfish/Zooplankton*)	
					(Water Chestnut*)	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
Mercury in Fish Tissue						



**Category 5 waters listed alphabetically by major watershed
The 303(d) List – “Waters requiring a TMDL”**

Waterbody	AU ID	Description	Size	Units	Impairment	ATTAINS Action ID
Concord River	MA82A-08	From Billerica Water Supply intake, Billerica to Rogers Street bridge, Lowell.	5.10	Miles	(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Fanwort*)	
					(Fish Passage Barrier*)	
					(Non-Native Aquatic Plants*)	
					(Water Chestnut*)	
Concord River	MA82A-09	From Rogers Street bridge, Lowell to mouth at confluence with the Merrimack River, Lowell.	0.90	Miles	Mercury in Fish Tissue	
					(Debris*)	
					Algae	
					Escherichia Coli (E. Coli)	
					Fecal Coliform	
					Mercury in Fish Tissue	
Dean Park Pond	MA82026	Shrewsbury.	7.00	Acres	Trash	
					Turbidity	
Dudley Pond	MA82029	Wayland.	83.00	Acres	Harmful Algal Blooms	
					(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Non-Native Fish/Shellfish/Zooplankton*)	
					Dissolved Oxygen	
Eames Brook	MA82A-13	Headwaters, outlet Farm Pond, Framingham to mouth at confluence with the Sudbury River, Framingham.	0.60	Miles	Turbidity	
					(Debris*)	
					Algae	
					Benthic Macroinvertebrates	
					Odor	
Elizabeth Brook	MA82B-12	From the outlet of an unnamed pond (Delaney Project on Stow/Harvard border) west of Harvard Road, Stow to mouth at inlet of Fletchers Pond, Stow.	3.70	Miles	Trash	
					Escherichia Coli (E. Coli)	
Farm Pond	MA82035	Framingham.	139.00	Acres	(Curly-leaf Pondweed*)	
					(Eurasian Water Milfoil, Myriophyllum Spicatum*)	
					(Fanwort*)	
					Algae	
					Turbidity	
Farrar Pond	MA82036	Lincoln.	83.00	Acres	Mercury in Fish Tissue	





June 21, 2021

Richard F. Chase
MassDEP-Bureau of Water Resources
Watershed Planning Program
8 New Bond Street
Worcester, MA 01606

Re: Comments on Draft 2018/2020 Massachusetts Integrated List of Waters

Dear Mr. Chase,

OARS appreciates the opportunity to comment on the draft Massachusetts Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle. OARS is the watershed organization for the Concord basin, comprising the Sudbury, Assabet and Concord Rivers in a 400-square mile area west of Boston. A non-profit organization founded in 1986, OARS works primarily through science-based advocacy and education to develop a scientific understanding of the causes of river degradation and works with communities to seek effective solutions. Its mission is “to protect, improve and preserve the Assabet, Sudbury, and Concord Rivers, their tributaries and watersheds, for public recreation, water supply, and wildlife habitat.”

General Comments:

External Data: We applaud DEP’s effort to utilize external data and hope that this will continue. We did notice, however, that this draft of the Integrated List only referenced OARS data up through 2017, despite the 2018/2020 title. Quality controlled data from 2018 to 2020 have been provided to DEP by OARS each year through WQX, and may shed additional light on some of the proposed listings. It is not clear why this report being issued in 2021 does not include data from the last three years. We also note that while the internal data that were used were often very old and often only for a single year, the external data were annual and more recent. Since external contributors, like OARS, provide defensible, QAQC long-term data, it should be given due weighting.

Nitrogen: We noticed that Nitrogen is never listed as an impairment in upstream waters – probably because nitrogen is generally not the limiting nutrient in freshwater systems. However, excess nitrogen is a major impairment in estuaries, and the source of the nitrogen in estuaries is the upstream waters. Is there a way to call out excessive nitrogen upstream as an impairment, to account for this?

Mercury: We would like to note that mercury deposition, transport and methylation in riverine systems will behave differently than in lakes and ponds. However, DEP’s general statewide monitoring appears to rely solely on data from lake and ponds. We recommend that fish tissue mercury data be collected specifically from affected rivers rather than relying on lake and pond data as a proxy for riverine levels.

Debris/Trash: Please clarify the definitions and explain why both Debris and Trash are listed as impairments for the same AUs in many cases. Often Debris was listed as Unchanged and Trash was listed as Changed (e.g., MA82B-03, MA82B-05, MA82A-09, MA82A-10, MA82A-22). We found this confusing.

Specific Comments for the Concord Basin:

Assabet Phosphorus: The removal of the Total Phosphorus impairment for all the Assabet River segments except the middle three is consistent with our data. We note that there are still serious aquatic plant biomass and/or algae impairments in the main impoundments in the middle three segments, including at Allen St. in Northborough.

Sudbury and Concord Mercury: According to information made available to OARS, mercury impairments in the Sudbury and Concord Rivers are based on data used to develop the Fish Consumption Advisories issued by the Mass. Department of Public Health (DPH)—data from 2015 for the Sudbury River and 2001 for the Concord River. We suggest that the most recent fish mercury data for the Sudbury River (Ashland-Framingham) in the “Final 2018 Sudbury River Long Term Fish Monitoring Report” prepared for DEP’s Bureau of Waste Site Cleanup (Nyanza Superfund Site) by ES&M, released September 10, 2020, be used. Does DEP coordinate with the DPH to ensure that the most recent data are used in the FCAs? These rivers are heavily used by anglers, who deserve the most up-to-date advice.

Assabet Biomass: In evaluating biomass trends on the Assabet River, DEP did not use OARS’ biomass data, which is included in the OARS Final Report that is issued every one or two years and shared with DEP. In general, the conclusions match our conclusions, except where the draft cites a significant decrease in duckweed between 2007 and 2014 (MA82B-04, MA82B-05). This claim does not hold up with our data spanning 2007-2020. The most recent report, “Water Quality Monitoring Program Final Report: 2018-2019 Field Seasons”, OARS, March 2020, shows that there is no statistically significant trend in duckweed for 2007-2019. Figure 1 shows data through 2020 and shows that even though 2014 was lower than 2007, those two data points do not constitute a significant trend.

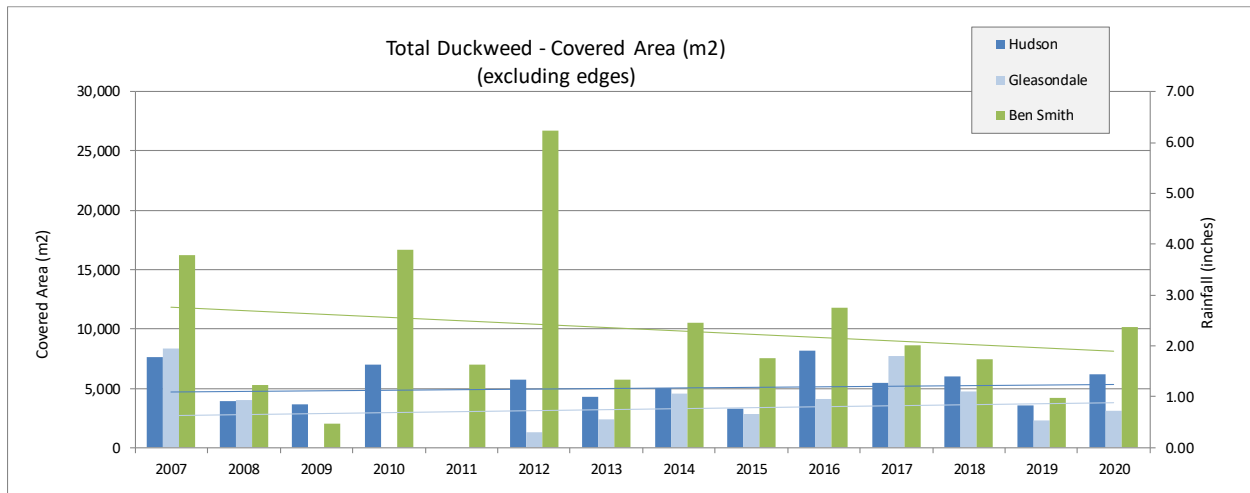


Figure 1: OARS Biomass survey data for the Hudson, Gleasondale, and Ben Smith impoundments (2007-2020)

Bacteria in Assabet: AU MA82B-06 should be listed as impaired for Bacteria. Segments both upstream and downstream of AU MA82B-06 are listed as impaired, and OARS has collected data in 2019 and 2020 at the USGS Gage in Maynard (OARS site ABT-077 at the top of this AU) that document a bacteria impairment. In 2019 and 2020, OARS analyzed 30 samples for *E. coli*, 11 of which exceeded the EPA swimming threshold of 235 CFU/100mL. The geomean of all samples was 187 CFU/100mL, also exceeding the EPA geomean threshold of 126. These data were submitted to WQX.

Bacteria in Concord: AU MA82A-07 should be delisted for Bacteria. This listing is based on old data from 2006. OARS has been monitoring *E. coli* for two years at site CND-110 (Rt. 225 bridge in this AU). None of the 30

samples collected in 2019 and 2020 exceeded the EPA swimming threshold of 235 CFU/100mL. The geometric mean of all samples was 33 CFU/100mL. These data were submitted to WQX.

Dissolved Oxygen in Hop Brook: AU MA82A-05 should not be delisted for Dissolved Oxygen. OARS has been tracking significant eutrophication concerns in Carding Mill Pond, which is just above this AU, and our monitoring in 2020 has shown that the effects of this eutrophication extend downstream into this AU. OARS sampled site HBS-065, which is in this AU at the Surrey Lane footbridge, in August and September 2020, and recorded DO concentrations of 3.9 mg/L and 2.2 mg/L respectively. These data have been submitted to WQX.

Carding Mill Pond Nutrients: AU MA82015 should be listed as impaired for Nutrient/Eutrophication. Both upstream (Gristmill) and downstream (Hop Brook) are listed as impaired for Nutrient/Eutrophication, and our monitoring has shown that Carding Mill may actually be the most impaired of the three sections. Figure 2 is a picture of a typical summer day on Carding Mill Pond.



Figure 2: Picture of Carding Mill Pond 7/22/20

Chloride in River Meadow Brook: AU MA82A-10 should be listed as impaired for Conductivity/Chloride. OARS has long-term conductivity data showing a significant impairment at site RVM-005, which is in this AU at Gorham

St., Lowell. Figure 3 shows all data since 2004 converted to chloride based on the EPA’s NE chloride regression model. Almost half of the points exceed the EPA’s chloride criterion. These data have been submitted to WQX.

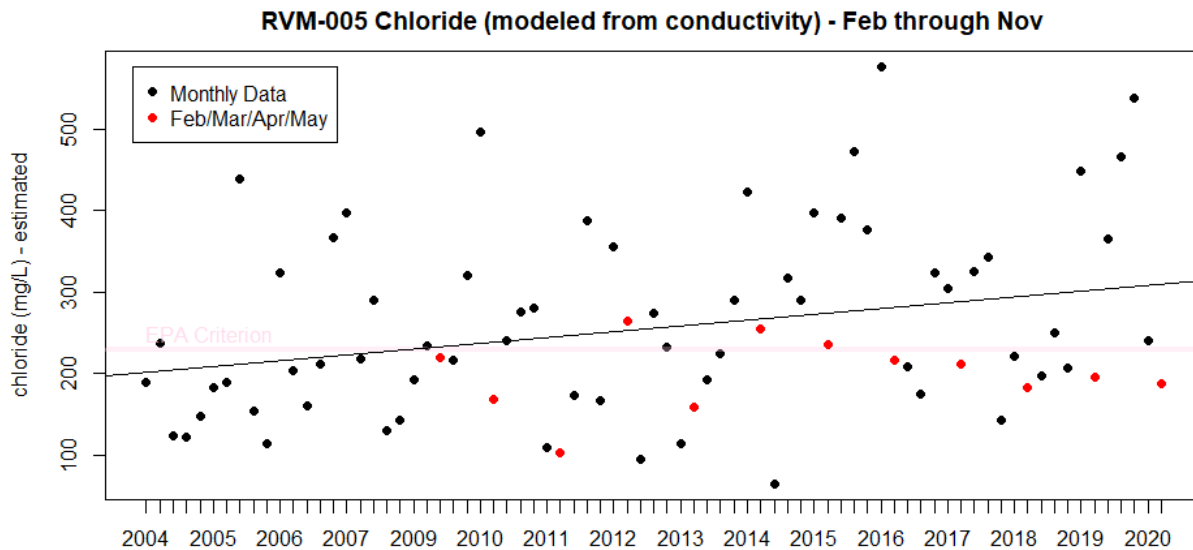


Figure 3: Chloride at RVM-005 modeled from OARS conductivity measurements based on the NE EPA chloride regression model.

Nashoba Brook Fish Bioassessment: AU MA82B-14 was delisted for Fish Bioassessment due to a change in the CALM guidance. This delisting should be justified by new field data rather than relying on comparisons of land use. We suggest that the listing be maintained until new data show that it is incorrect.

Cold Water Streams: In the comments for the 2016 Integrated List, OARS requested that the DFW Cold-Water-Streams be included in this listing. We notice that most of them are now included in the list. Thank you for adding them. However, most are still not qualified as Cold Water Fisheries. Can you please let us know what data (other than fish counts) could be used to qualify them as Cold Water Fisheries? We have a significant amount of data for two streams in particular: Cranberry Brook (MA82A-36), and Trout Brook (MA82A-35).

Minor edits:

MA82B-06 repeated text: In Appendix 14, the text for MA82B-06 is repeated three times.

Sites W0698 and NSH-047: In Appendix 14, in the description for MA82B-14, sites W0698 and NSH-047 were listed as different locations. They are actually exactly the same site – at the USGS gage.

Old names: It would be nice to clean up some of the waterbody names: Allowance Brook (MA82A-37) should be named Landham Brook; Assabet Brook (MA82B-17) should be named Elizabeth Brook; and many Unnamed Tributaries now have names, such as sections of Hop Brook above Carding Mill Pond (MA82A-16, MA82A-17).

We appreciate the amount of work that went into developing these updates to the List and thank you for considering these comments. Please contact us if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Benjamin Wetherill". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Benjamin Wetherill
Staff Scientist

CC: Massachusetts Rivers Alliance