

Sims, Meagan

From: Nate Libby <NLibby@lewistonmaine.gov>
Sent: Tuesday, June 24, 2025 10:16 AM
To: DEP, TRComments; Sims, Meagan
Cc: 2024 Elected Officials; Jonathan Connor; Shelley Norton; Kevin Gagne
Subject: Triennial Review public comment - City of Lewiston
Attachments: City of Lewiston Resolve re Androscoggin River 6.17.25pdf.pdf; Cover Letter Androscoggin River Reclass Resolve 6.24.25.pdf

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To: Maine DEP officials & Maine BEP members
From: Honorable Mayor and City Council, City of Lewiston, Maine
Re: Triennial Review and Androscoggin River (base of Gulf Island Pond to Worumbo Dam) Class Upgrade

Please find enclosed the City of Lewiston's comments on this matter, including a cover letter and a resolution unanimously adopted by the City Council of Lewiston, Maine expressing support for the class upgrade of the Androscoggin River from Gulf Island Pond to Worumbo Dam.

Thank you,

Nate Libby, MBA

DIRECTOR
ECONOMIC & COMMUNITY DEVELOPMENT

Lewiston City Hall

27 Pine Street, Lewiston, ME 04240
(207) 513-6161 (mobile)
(207) 513-3126 (office)

[Book time on my calendar here](#)

Visit us at LewistonMaine.gov

LEWISTON  **ME**

Economic & Community Development

To: Maine DEP officials, Maine BEP members
From: Nate Libby, Director of Economic & Community Development
Re: Triennial Review Androscoggin River Classification Upgrade
Date: June 24, 2025

For many years, river advocates and stakeholders have urged the Maine DEP to recognize the unique conditions of the Androscoggin River between Gulf Island Pond and the Worumbo Dam in Lisbon. This section of the river experiences lower flow rates than larger Maine rivers, licensed discharges are far below their maximum limits, and the unusually deep water at Gulf Island affects water quality readings—among other distinct factors.

Through its volunteer water quality monitoring program, the Androscoggin River Watershed Council has gathered and submitted several years of data to the DEP, demonstrating consistent attainment and ongoing improvement in dissolved oxygen levels in this stretch of the river. The Council has been a leading voice in advocating for reclassification from Class C to Class B, and their data strongly support this upgrade. The ARWC along with Grow L+A have submitted testimony and evidence supporting upgrade, and we agree with their findings.

Our Public Works leadership—responsible for combined sewer overflow (CSO), stormwater discharge, and related regulatory matters—have reviewed this matter and are supportive of the upgrade as well.

City officials strongly support the reclassification effort for this part of the Androscoggin. An upgrade in river classification supports our desire for improved water quality, a healthier river habitat, expanded recreational use, enhanced community image, and future riverfront redevelopment opportunities.

Please contact us if you have questions or require additional information.

cc: Honorable Mayor and City Councilors, City Administration
Encl: City of Lewiston Resolve re: Androscoggin River 6.17.25

City Clerk

CERTIFICATION OF CITY COUNCIL ACTION

I, Kathleen M. Montejo, City Clerk of Lewiston, Maine, do hereby certify that the following action was taken by the Lewiston City Council at a public meeting of the City Council, held on Tuesday, June 17, 2025:

**RESOLVE, EXPRESSION OF SUPPORT FOR RECLASSIFICATION OF THE
ANDROSCOGGIN RIVER FROM GULF ISLAND POND TO WORUMBO DAM IN LISBON
FALLS FROM CLASS C TO CLASS B**

VOTE (166-2025)

Motion by Councilor Chittim, seconded by Councilor Nagine:

To adopt the Resolve, Expression of support for reclassification of the Androscoggin River from Gulf Island Pond to Worumbo Dam in Lisbon Falls from Class C to Class B:

Whereas, the Maine Department of Environmental Protection (DEP) is conducting its Triennial Review of Maine's Water Quality Standards; and

Whereas, they are receiving comments currently and will review those comments at their Triennial Review Public Meeting on June 23, 2025; and

Whereas, Maine's water quality standards describe what uses, such as recreation or fishing, are appropriate for which waterbodies, and which criteria and antidegradation measures are in place to protect those uses; and

Whereas, the federal Clean Water Act, which requires such state reviews, was authored by Rumford native and Bates College graduate Senator Ed Muskie, who was inspired to enact the landmark legislation having grown up near the Androscoggin River during a period of extreme pollution and degraded water quality; and

Whereas, significant progress has been made since the passage of the Clean Water Act to reduce pollution from runoff and discharge, increase flow, and improve river water quality for the benefit of wildlife, residents, recreation, and overall image and economic development efforts; and

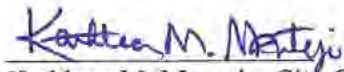
Whereas, the Androscoggin River Watershed Council, through its volunteer water quality sampling program, has over a period of several years produced evidence that the Androscoggin River water quality at Gulf Island Pond meets class B requirements; and

Whereas, the City Council desires to improve the attractiveness, accessibility, environmental conditions, recreational opportunities, and the overall quality of Lewiston's historic riverfront;

Now, therefore, be it resolved by the City Council of the City of Lewiston, this expression of support for reclassification of the Androscoggin River from Gulf Island Pond to Worumbo Dam in Lisbon Falls from Class C to Class B is adopted, and further directs the City Administrator or their designee to submit a letter of support and supporting documentation to Maine DEP as part of its triannual review of water quality.

Passed - Vote 7-0

ATTEST:



Kathleen M. Montejo, City Clerk

June 23, 2025

Date



Sims, Meagan

From: Mark Holt <jsewer@jay-maine.org>
Sent: Tuesday, June 24, 2025 1:23 PM
To: DEP, TRComments
Subject: Fwd: Triennial Review Comments - Androscoggin River
Attachments: Triennial Review Comments - 6-24-25.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

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Meagan,

Please refer to the forwarded message below. I had the wrong email address the first time around.

Thanks,
Mark

----- Forwarded message -----

From: Mark Holt <jsewer@jay-maine.org>
Date: Tue, Jun 24, 2025 at 1:17 PM
Subject: Triennial Review Comments - Androscoggin River
To: <TRCommentsDEP@maine.gov>

Meagan,

Thank you for the opportunity to supply comments during this triennial review process.

Attached are my comments in support of keeping the Class C designation for the Androscoggin River.

If you have any questions, require additional information, or if I can provide you with further assistance, please feel free to contact me.

Respectfully,
Mark L. Holt
Supt., LF & Jay Sewer Dept.'s

**Comments Pertaining to the Triennial Review of the Classification for the
Androscoggin River**

June 24, 2025

I was raised on the banks of the Androscoggin River, just a few miles downstream from the Jay paper mill's waste water discharge and the Livermore Falls & Jay municipal waste water discharge.

In the 1960's, the Androscoggin River was a disgusting environmental disgrace, filled with pollutants and covered with foam. Spring flood waters would leave a mat of paper pulp discarded from the upstream paper mills all over the farmland. The material left behind from the flood waters would be so thick that it would require removal via a hay rake to allow the grassy crops to grow and not be choked out from the encompassing mat of paper mill waste. Human excrement and various toiletry byproducts would be found left behind from the flood waters as well.

In the 1970's, thanks to the Clean Water Act and backed by Federal funding, waste water treatment facilities were constructed to treat the waste water from the paper mills and municipal sources. Slowly, the Androscoggin River's ecology and its overall water quality began to improve.

In the 1980's and 1990's, more stringent discharge regulations were imposed by the EPA and DEP which further improved the water quality of the River. Class C water quality was now achieved by the River most of the time and folks were utilizing the River as a source of recreation. Hunting, fishing, canoeing, kayaking, and even swimming was now taking place all along the banks of the River.

In the 2000's, the Androscoggin River faced much scrutiny. Although the River had made great strides towards becoming a recreational resource, there were still some isolated areas that were not attaining Class C water quality criteria for dissolved oxygen and bacteria levels. These isolated areas of non-attainment of dissolved oxygen were determined to be caused by stratification in the deeper areas of the River in an area known as "Gulf Island Pond." Limits for bacteria levels were also

being exceeded below the Lewiston/Auburn (L/A) area which were determined to be from combined sewer overflows (CSO's) emanating from the L/A communities.

Also, if memory serves me correctly, in the late 1990's thru the 2000's, the DEP began computer modeling along the River to determine what increased discharge limits could be implemented to improve the water quality. As a result, increased phosphorus limits were imposed on the waste water dischargers all along the river. Also, the modeling performed by the DEP determined that if all waste water dischargers were to be removed from the River, the River would still not be able to meet the higher classification of "B" status during low flow periods of the river. Furthermore, the River would not meet class "C" standards for dissolved oxygen levels in Gulf Island Pond even with all point source discharges removed from the waterway.

In the 2010's, with more stringent point source discharge regulations in place, the river began to attain Class C water quality status on a more frequent basis. Efforts had been made to introduce artificial oxygenation at the "deep hole" of Gulf Island Pond to increase dissolved oxygen levels and the State of Maine and the L/A community's invested millions of dollars to reduce the CSO's that were causing the elevated bacteria levels in the River.

Now, in the 2020's, it is once again time to perform a triennial review of the River's water quality and consider upgrading its classification to Class B. However, history and computer modeling has determined that this River, in its current state, does not meet Class B (nor even Class C) standards, by definition, 100% of the time. Although certain sections of the River *may* meet Class B standards part of the time and certain other sections meet Class C standards most of the time, this River is not a Class B waterway and therefore should not be classified nor considered as such.

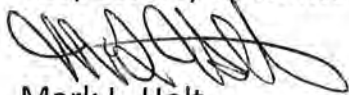
Since the 1960's, hundreds of millions of dollars and perhaps even billions of dollars, have been invested in the reclamation of the Androscoggin River to provide us with the Class C water quality of the River as we know it today. The River provides all communities along its banks a resource for industrial manufacturing, municipal waste water discharge, and extensive recreation from New Hampshire to Merrymeeting Bay.

Although upgrading the river to a Class B designation may be a milestone to someday attain, it is a goal which is unrealistic at this time. Although the Class B designation may be helpful in increasing the recreational value and inherent financial gains from the River for the communities along its banks, the added income from the improved water body Class B status is dwarfed by the financial value provided by the class C waterway which allows for electrical power generation, manufacturing, and municipal waste water discharges. If you remove these resources from the River's attributes to attain Class B status, the communities along its banks would not exist. The communities along the River would not survive on the revenues generated by the recreational opportunities alone. However, with the Class C water quality designation, all of the current resources are available to the communities including extensive recreational opportunities.

I am currently the sole Trustee of the 285-acre farm that I grew up on. This farm has over a mile of waterfront property along the banks of the Androscoggin River. This farm produces potatoes for Lay's Potato Chips. I have a vested personal and financial interest in the water quality of the Androscoggin River. It would great if the River were to meet Class B standards. But it does not. The Androscoggin River is a Class C waterway. It provides a resource for the upstream and downstream communities for manufacturing, regulated municipal waste water discharge, and is a gem for recreational opportunities.

Please do not classify the Androscoggin River as something its not. It is a Class C waterway and we should continue to invest in ways to assure it meets all of the Class C criteria 100% of the time. Period!

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Mark L. Holt', written over a horizontal line.

Mark L. Holt

Supt., LF & Jay Sewer Dept.'s

Sims, Meagan

From: Peter Rubins <prubins1@gmail.com>
Sent: Thursday, June 26, 2025 1:41 PM
To: DEP, TRComments
Subject: Fwd: Androscoggin River 7Q10
Attachments: Legal Opion CLF 6-26-25.pdf; TO B OR NOT TO B! POWERPOINT TRIENNIL 6-24-25.pptx

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----- Forwarded message -----

From: Peter Rubins <prubins1@gmail.com>
Date: Thu, Jun 26, 2025 at 6:39 AM
Subject: Fwd: Androscoggin River 7Q10
To: Robert C <Robert.C.Mohlar@maine.gov>, <Meagan.Sims@maine.gov>, Kavanah, Brian W <brian.w.kavanah@maine.gov>, Garland, Wendy <Wendy.Garland@maine.gov>, Arthur T <Arthur.T.Mcglaulin@maine.gov>

To: Megan, Brian, Robert, Arthur, Wendy,

I have been working on improving the Androscoggin for the past 50 years. One of my mentors was Dr. Walter Lawrance, appointed River Master by the Maine Supreme Court in 1942-1977 and Senator Ed Muskie, Rumford resident and creator of the Clean Water Act and Clean Air Act of 1972. FRUSTRATION is the only way I can respond to your response to our appeal to Reclassify to B from Gulf Island Dam down to Worumbo.

DATA! The data attached below includes DEP's Sonde testing (see attached) in 2019 at absolute minimum flows required by Brookfield at Gulf Island Dam of 1450 CFS. for 15 days. The two points noted as My Readings on 8/22/2019 shows that our ARWC readings were actually lower than your Sonde readings, all well above 7PPM.

GULF ISLAND POND.

DEP's excuse that GIP's Deep Hole does not allow you to consider your data below the dam is not correct.

There are stratified deep holes in Sebago Lake! DEP's Permanent Station data (see attached) shows that for the past 10 years the FLOW of the pond under the Turner Bridge is well above 7PPM in the low flow month of August. So that same flow exits GIP at the Gulf Island Dam and is aerated even more through the turbans all above 7PPM.

Also, I believe we are still a country of Laws. The Clean Water Act and your own DEP regulations demand
a GOAL ORIENTED APPROACH. PLEASE READ THESE PAGES FROM OUR APPEAL, and respond to their significance. (see attached)
LEGAL OPINION 6-26-25 Pages 1-2-4-5

Attached is a powerpoint of several graphs.

#1 DO dippings, 4 Months ARWC June 4-2022----Sept. 23-2022 USGS shows min amounts required for Brookfeild at GIP dam. 1450CFS + Little Andro=2000

Results	5/3/22	6/28/22	7/18/22	9/23/22
Festival Plaza	8.4 DO	8.5DO	7.7DO	7.6DO
DAM--GID	8.5DO	8.5DO	7.3DO	8.3DO

#2 DEP SONDE GRAPH 2019--GIP, FP, DURHAM LAUNCH 8-13-2019-----8-28-2019
August readings with minimum flows for Brookfield, 1450CFS+LITTLE ANDRO + 2000cfs

ALL ABOVE 7PPM!!!!

#3 DEP data for Permanent Station on Turner Bridge in the month of August.
Well above 7PPM DO FOR THE PAST 10 YEARS

I hope that you all will seriously read over pages 1-2-4-5, in attached Legal Opinion, in this email and discuss it and make a decision to be "GOAL ORIENTED" and respond to upgrade the Androscoggin from Gulf Island Dam south to Worumbo!

Regards, Peter Rubins
GROW LA
GROW LA RIVER WORKING GROUP, chair

Upgrade the Lower Androscoggin from Class C to Class B Fact Sheet (Executive Summary)

The Androscoggin was Muskie's river and impetus for passage of the Clean Water Act. It is now much improved thanks to various state and federal laws and to the cooperation of various dischargers along the river. This success should be celebrated and recognized by codifying improvements as they occur and as required by law.

For many years Friends of Merrymeeting Bay's EPA and DEP approved water quality monitoring data on the lower river have shown with very few exceptions, compliance with Class B conditions and yet the DEP, conflating statutes we believe (see CLF legal opinion), refuses to endorse upgrading the lower river from Class C our minimum standard, to Class B, the standard reflecting actual ambient conditions. The biases of the DEP and influence of industry weigh heavy on the river despite support from riverside communities for an upgrade, state and federal clean water laws and scientific data. We respectfully ask for your support of our current upgrade proposal.

Why Upgrade?

It's the law!

Anti-degradation language prohibits backsliding in water quality.

A cleaner river has well-documented economic and quality of life benefits.

Sixty percent of our wildlife species inhabit river corridors and all benefit as do we.

DEP classification proposal submission guidelines state:

*“Maine’s Water Quality Classification System is **goal-based**. When proposing an upgrade in classification, recommend waters that either presently attain or with reasonable application of improved treatment or Best Management Practices (BMPs), could reasonably be expected to attain, the standards and criteria of a higher proposed class.”*



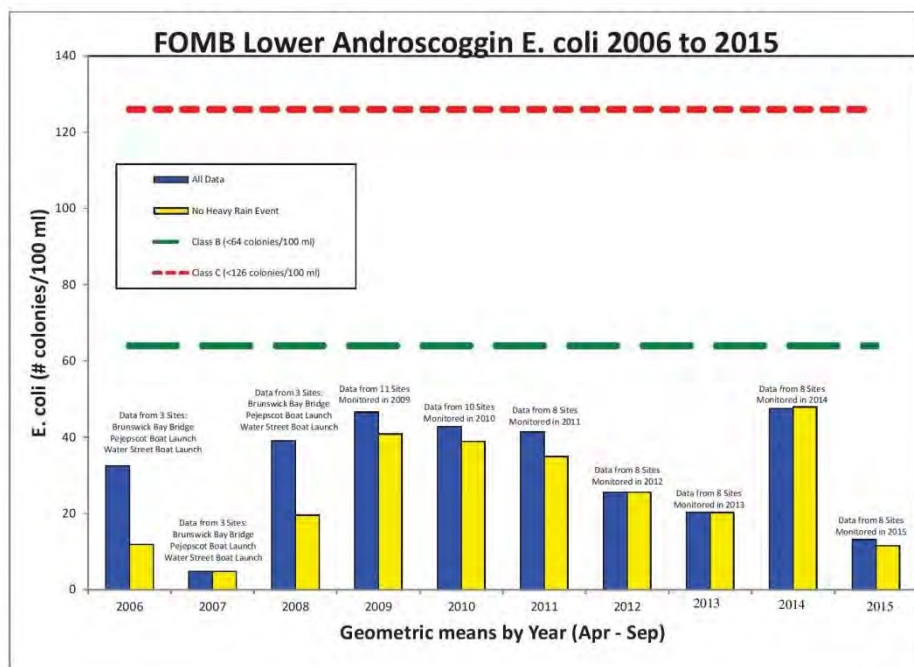
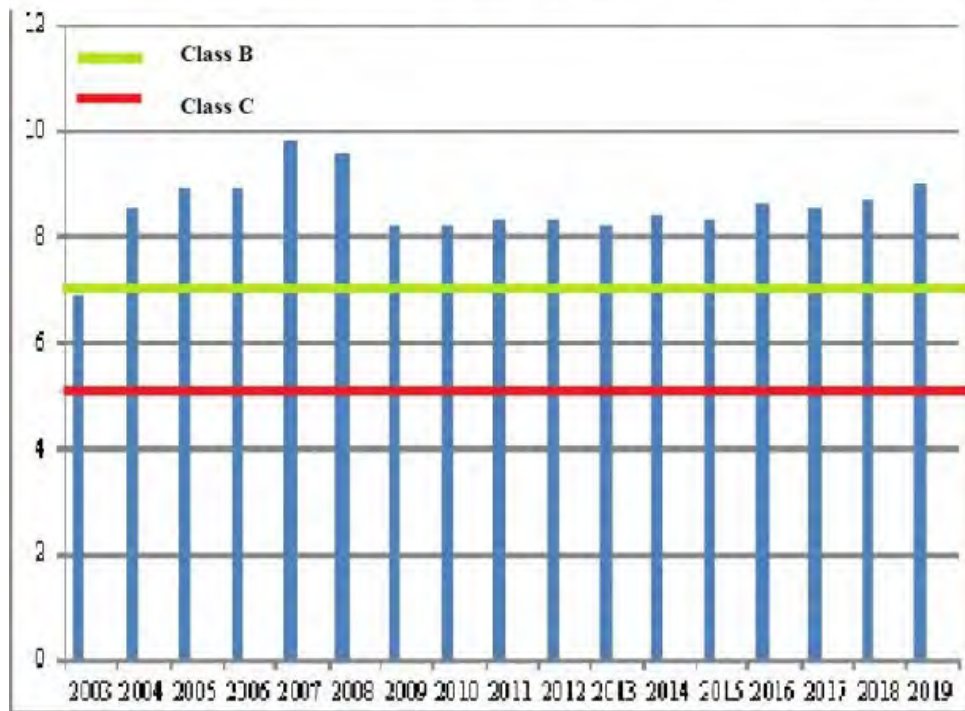
Upgrade the Lower Androscoggin from Class C to Class B Fact Sheet

38 M.R.S.A. § 464 (4) (F) (4)

*“When **the actual quality** of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained and protected. The board **shall recommend** to the Legislature that water be reclassified in the next higher classification.”*

What do the data show?

Dissolved Oxygen-Geometric Means Lower Androscoggin 2003-2019 Class C 5ppm, Class B 7ppm



Upgrade the Lower Androscoggin from Class C to Class B Fact Sheet

A cleaner river equals a more vibrant economy and increased quality of life.

Auburn/Lewiston Riverwalk:

“The river section of Lewiston-Auburn features boat launches, fishing areas, canals, and dams. The Cities of Lewiston and Auburn have developed parts of the river and businesses are flourishing along its banks and canals, from outdoor decks at Gritty’s Brew Pub and Pat’s Pizza, to Fishbones. The Cities of Lewiston and Auburn have dedicated considerable resources to its beautification with the Riverwalk, which connects Railroad Park in Lewiston to Festival Plaza in Auburn, the site of numerous outdoor events and summer concerts.”
[www.laitshappeninghere.com]

Androscoggin Bicycle and Pedestrian Path:

“Gorgeous views of the Androscoggin, a major Maine river, make exercising fun and exhilarating!” [www.suite101.com]

Androscoggin Riverwalk-Topsham:

“Ranked #2 of 6 attractions in Topsham” [Tripadvisor]

Northeast-Midwest Institute, University of Illinois Study

“*Buffalo, NY.* Residential property values near the Buffalo River could increase as much as 140 million if contamination in the river is eliminated, according to a study conducted by the University of Illinois and the Northeast-Midwest Institute.

Researchers collected data from housing sales in Erie County in the years 2002-2004, and directly surveyed 850 recent home buyers in Erie County. Results of the study of housing sales data indicate that **the polluted state of the river currently is depressing single-family, owner-occupied property values by \$80 to \$140 million,** or six to nine percent of the assessed residential property values in the area studied. Clean-up could be expected to raise the property values commensurately.”

Sheboygan, WI. Residential property values near the Sheboygan River could increase as much as 108 million if contamination in the river is eliminated, according to a study conducted by the University of Illinois and the Northeast-Midwest Institute.

Researchers collected data from housing sales in Sheboygan County in the years 2002-2004, and directly surveyed 850 recent home buyers in Erie County. Results of the study of housing sales data indicate that **the polluted state of the river currently is depressing single-family, owner-occupied property values by \$8 to \$108 million,** or one to seven percent of the assessed residential property values in the area studied. Clean-up could be expected to raise the property values commensurately.”

Upgrade the Lower Androscoggin from Class C to Class B Fact Sheet

Why the conflict with DEP and river industry? They are citing the wrong statute!

Reclassification vs. Relicensing

These are two different items falling under two different statute sections yet the DEP and industry consistently and purposefully conflate the two. Reclassification is designed to drive relicensing. As slight changes are made to license renewals to comply with classification upgrades, water quality is slowly improved. Discharge and river condition modeling both used in relicensing, have no legal bearing on classification. This is discussed on page 2 of our 2011-2012 Androscoggin River Monitoring Report [Water Quality Data Analysis and Review, Lower Androscoggin River](#) at www.fomb.org and again in a legal opinion from the Conservation Law Foundation (see below).

According to Maine statutes, modeling has no bearing on the classification process §464 (4) (F) (4) which is based solely on actual ambient river conditions. In contrast to classification, modeling does play a role in relicensing (§464 (4) (D) when dischargers are to meet the river classification under minimum seven-day low flow conditions expected to take place once every ten years (a theoretical value known as 7Q10).

The purposeful policy reason for the difference in requirements for classification and relicensing is so that water quality conditions may slowly be improved or ratcheted up. This is the goal-oriented purpose both of the Clean Water Act and Maine statute. If a river had to meet the relicensing standard before an upgrade as the DEP and industry would have you believe, it likely never would and therefore there would be no motivating driver for improvements in water quality.



Upgrade the Lower Androscoggin from Class C to Class B Fact Sheet

A Legal Opinion: Excerpt from Conservation Law Foundation BEP Comments 10/2/2008*

The Lower Androscoggin

CLF strongly disagrees with the Department's recommendation and rationale for not upgrading this river segment. The Department has stated that proponents must provide water quality data and modeling showing "the likelihood of attainment of Class B water quality criteria at maximum licensed loads." See Reclassification Memorandum at 29. This makes no logical, legal or economic sense. First, no one operates at maximum licensed loads; rather a large buffer is generally built into all permits to avoid violations. Thus, DEP is requesting an impossible and unnecessary showing.

Second, the Department's recommendation violates the legal standard in the Clean Water Act that a state shall revise its standards to reflect uses and water quality actually being attained. 40 C.F.R. § 131.10(i). See also id. § 131.6(d); 38 MRSA § 464(4)(F). Thus, the Board's analyses must be based on *existing* water quality-not hypothetical modeling with point sources operating at maximum licensed discharge. Indeed, the Board is specifically prohibited from considering maximum licensed loads because both state and federal regulations prohibit consideration of waste discharge or transport as a designated use. 40 C.F.R. § 131.1(a); 38 MRSA § 464(4)(F)(1)(d).

Third, as many of the dischargers in this watershed have already recognized, water quality upgrades are generally good for surrounding communities. As has been shown over and over again, clean water is an economic boon. Examples abound throughout New England, including the recent revival of Boston Harbor, the Portland Waterfront, the Auburn Riverfront and the resurgence of Merrymeeting Bay and the Kennebec River. The Androscoggin River deserves the same.

CLF believes that the data, including both dissolved oxygen levels and recreational uses shows that existing uses in the lower Androscoggin have improved over time and that the river currently attains the higher bacteria and dissolved oxygen standards set forth in the Class B designation. As noted by the Department, it has no reason to question the data; indeed it has relied upon data supplied by the proponent in prior reclassifications. Therefore, barring a showing that the data is invalid, the Board must recommend upgrading this section.

* Further extensive legal analyses have been submitted by Greenfire Law as [Exhibit 4](#) of the 2020 proposal.

* (From page 2) 2016-2019 *E. coli* geometric means-not graphed. Class B <64 colonies/100ml, Class C <126 colonies/100 ml

	E.coli
2016	13.5
2017	17.5
2018	38.2
2019	42.5

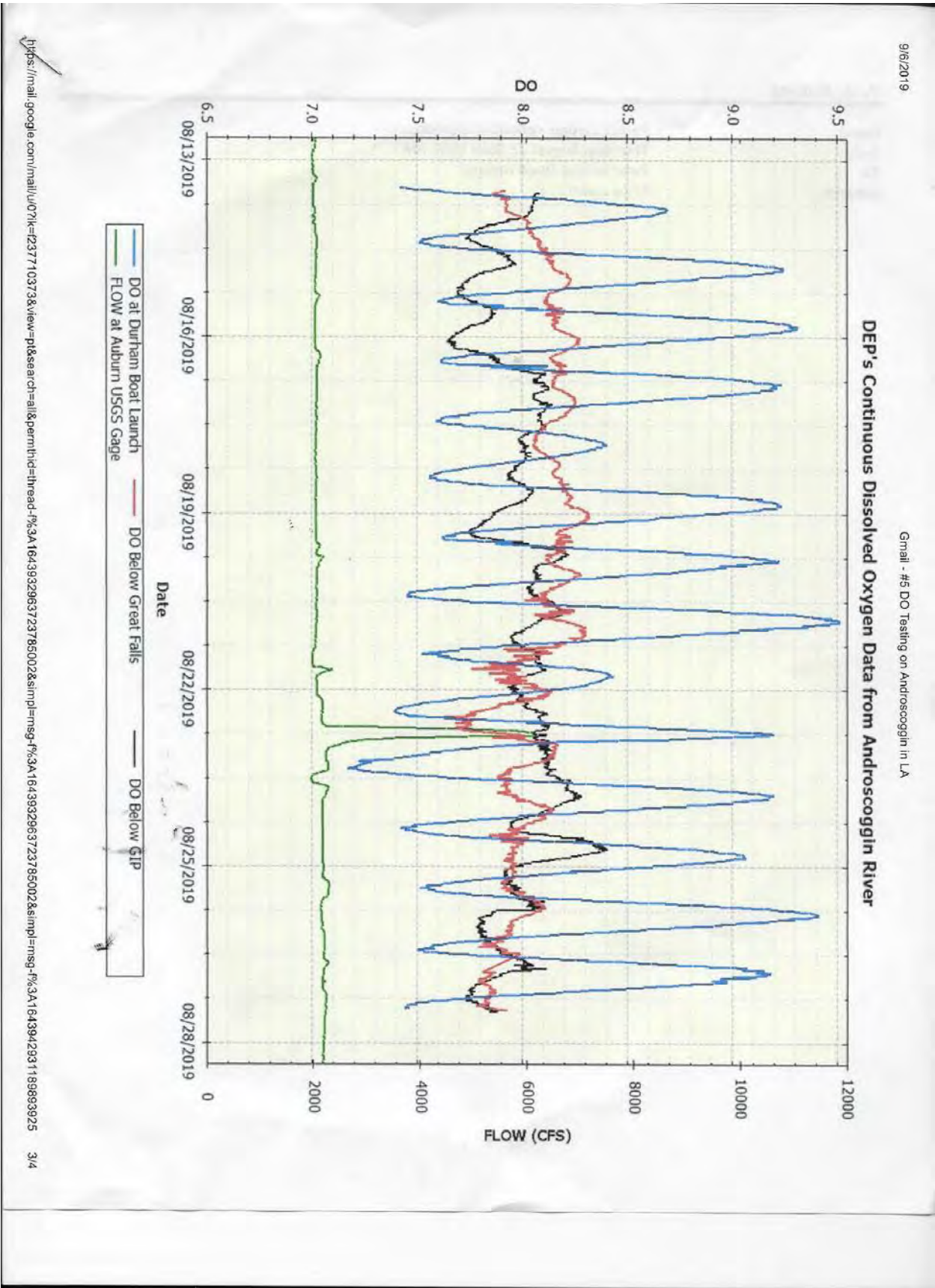
Upgrade the Lower Androscoggin from Class C to Class B

Summary Fact Sheet

- DO & *E. coli* levels consistently surpass Class B standards [see graphs in #2].
- Keeping the levels at current Class C allows backsliding from the current high oxygen and bacteria levels [more than 7ppm] to those which are the minimum for Class C [5ppm]. Ditto for bacteria. Geometric mean levels don't exceed 64 colonies/100ml [the Class B maximum] but staying in Class C they could legally rise to 126 colonies.
- Keeping Class C means more room to pollute [and be legal].
- Classifications must be based on ambient river conditions. They cannot be based on modeling. Classification = one statute; Relicensing = a different statute.
- Relicensing is based on modeling under worst case conditions [7Q10-theoretical minimum 7-day flow in a 10 year period] however current license limits are inflated over actual discharges by as much as 90% which can make the standard exceptionally difficult for a discharger to meet. Relicensing = a different statute from classification.
- 7Q10 means low warm flow conditions that typically lead to lowest DO. However, these same conditions are typically lowest in bacteria [a good thing], the other main criteria. Bacteria are highest as high flows cause a lot of runoff and overload wastewater systems.
- Hydropower impoundments get exemptions from meeting aquatic life [macro-invertebrates] criteria [§464-10].
- Does it make any sense that a river upgrade be governed by whether or not it meets the new classification during the theoretical worst week in a 10 year period? Of course not. And by law, it need not.
- DEP classification proposal submission guidelines state:
“Maine’s Water Quality Classification System is goal-based. When proposing an upgrade in classification, recommend waters that either presently attain or with reasonable application of improved treatment or Best Management Practices (BMPs), could reasonably be expected to attain, the standards and criteria of a higher proposed class.”
- **Supporters of the Upgrade:** (previous and or expected current)
 - The towns of Brunswick • Auburn • Topsham • Durham • Lewiston • Lisbon • the Auburn Sewage District • Friends of Merrymeeting Bay • Conservation Law Foundation • Brunswick Topsham Land Trust • Downeast Salmon Federation • Friends of Casco Bay • Grow L/A • Trout Unlimited Androscoggin Land Trust • John Nutting • Alewife Harvesters of Maine

Upgrade the Lower Androscoggin from Class C to Class B

Summary Fact Sheet



Upgrade the Lower Androscoggin from Class C to Class B Summary Fact Sheet

Section 3 CSO Improvements - Nineteen Years of Progress (2000-2018)

Tighe&Bond



FIGURE 3-6

Auburn Sewer District 2000-2018 Precipitation vs. CSO Discharge

Section 3 CSO Improvements - Nineteen Years of Progress (2000-2018)

Tighe&Bond

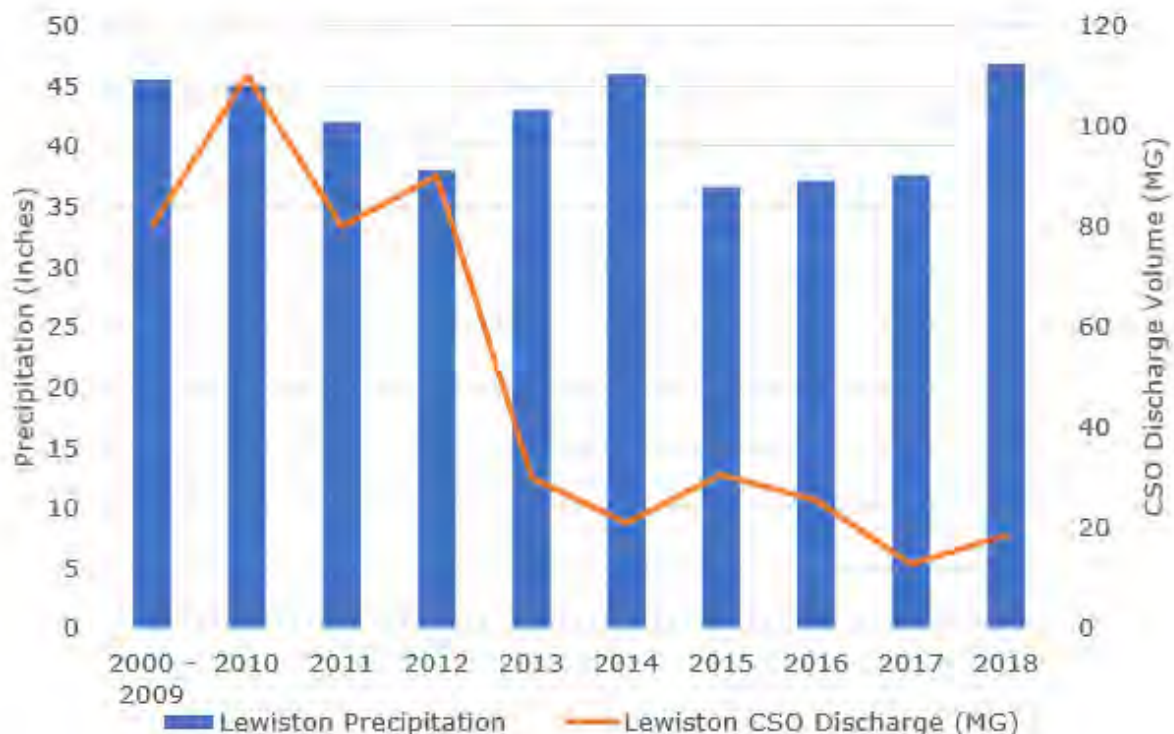


FIGURE 3-13

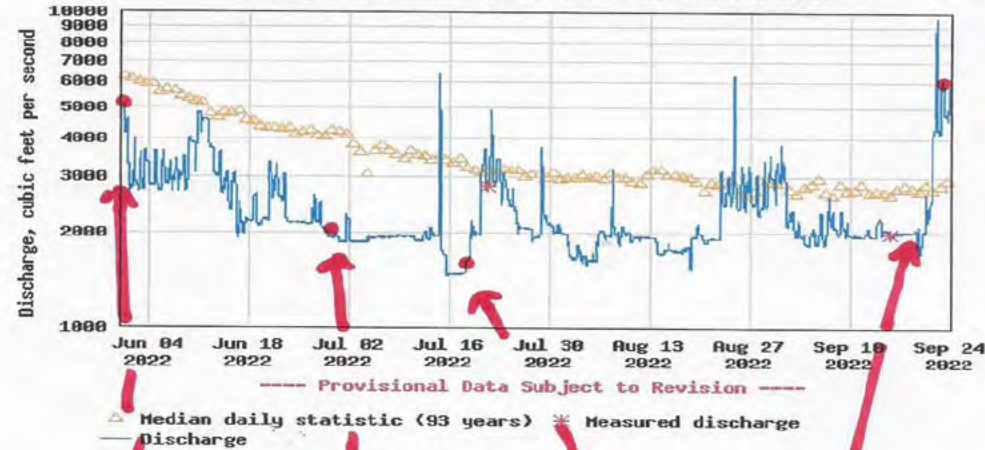
City of Lewiston 2000-2018 Precipitation vs. CSO Discharge

TO B OR NOT TO B!

TRIENNIAL REVIEW –ANDROSCOGIN RIVER CLASS B

Readings at Festival Plaza - Gulf Island Dam

USGS 01059000 Androscoggin River near Auburn, Maine 2022



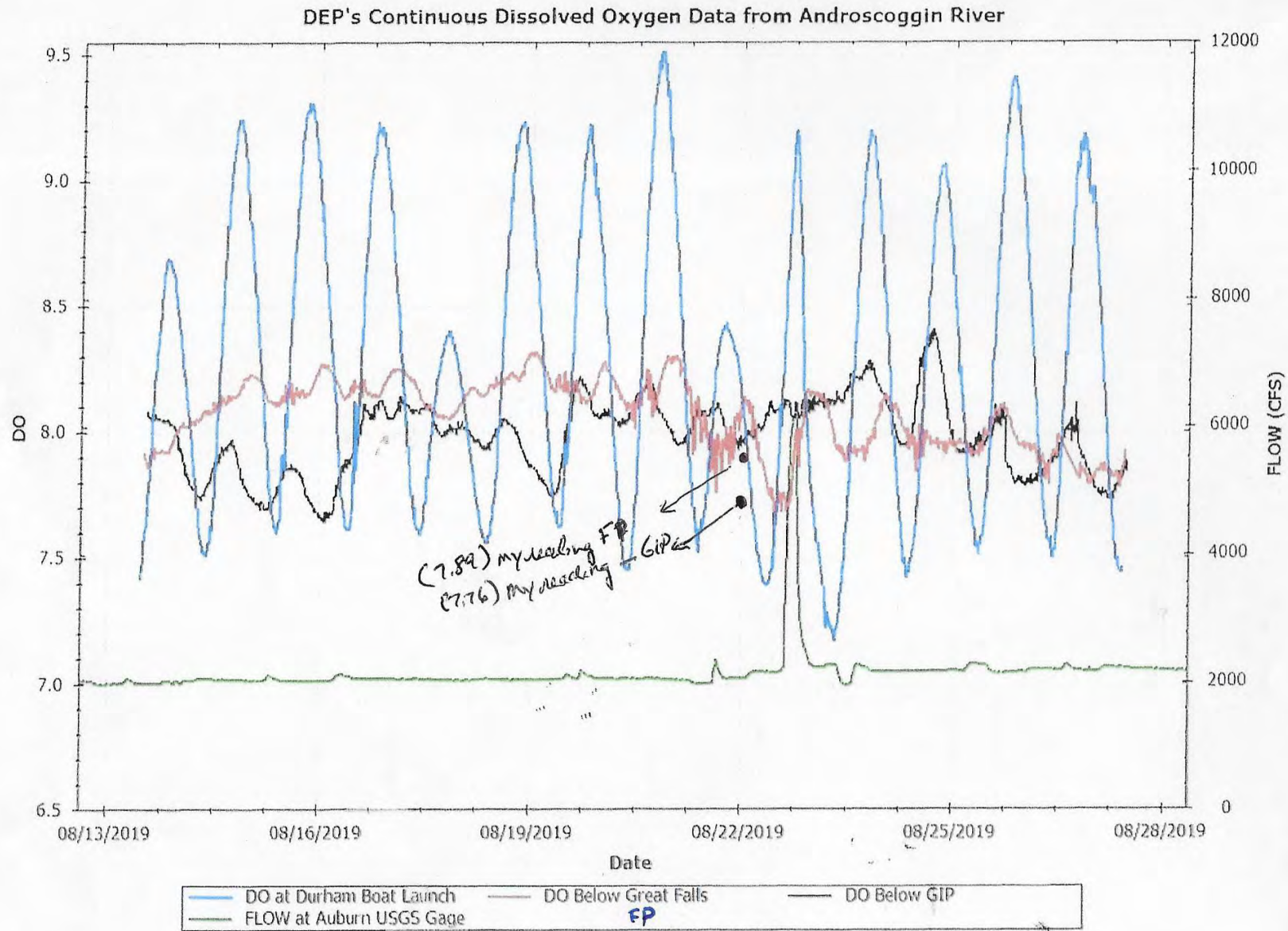
	<u>5/3/22</u>	<u>6/28/22</u>	<u>7/18/22</u>	<u>9/23/22</u>
<u>FP</u>	8.4 DO	8.5 DO	7.7	7.6
<u>GID</u>	8.5 DO	8.5 DO	7.3	8.3

JUNE-SEPT MINIMUM

FLOWS 2000 CFS

SIDE OF BANK DIPPING DO---6-8AM

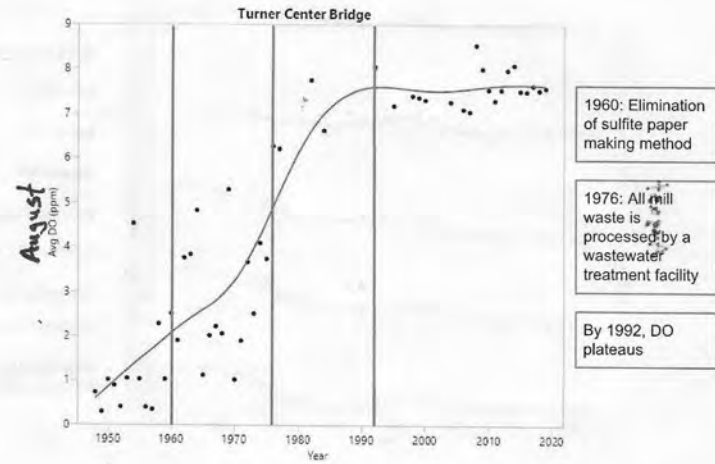
2022



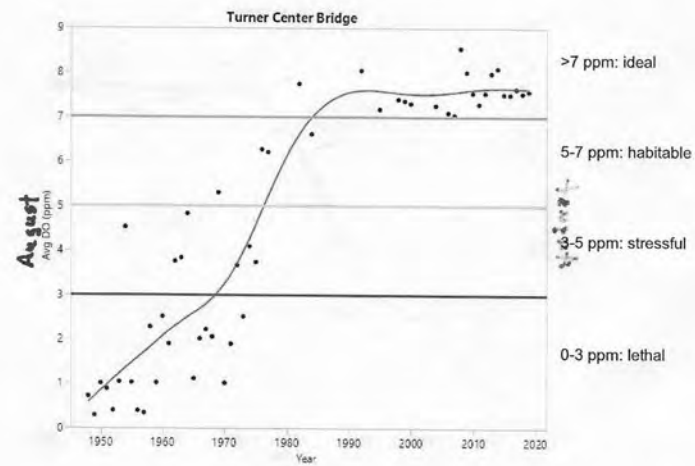
DO>7%

Aug. 2019

DEP SONDE READING



Gulf Island Pond Turner Bridge



Permanent Test Site--August

>7% DO

Sims, Meagan

From: Sean Turley <sturley@mpmlaw.com>
Sent: Thursday, June 26, 2025 4:53 PM
To: Sims, Meagan
Cc: DEP, TRComments
Subject: Public Comment on Water Quality Reclassification Request for Chandler Bay, Washington County, Maine by Eastern Maine Conservation Initiative
Attachments: 2025-06-26 EMCI Triennial Review Letter.pdf

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Coordinator Sims,

Please accept, on behalf of my client, Eastern Maine Conservation Initiative, public comment related to EMCI's request that Chandler Bay be reclassified to a Class SA marine waterbody. If you can please confirm receipt of this comment, I would greatly appreciate it.

All my best,

Sean R. Turley
Murray Plumb & Murray
75 Pearl Street
P.O. Box 9785
Portland, Maine 04104-5085
Tel: 207-773-5651
Direct: 207-523-8202
Email: sturley@mpmlaw.com

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IRS Notice: In accordance with I.R.S. Circular 230 we advise you that any tax advice in this email (or in any attachment) is not intended or written to be used, and cannot be used, by any recipient for the avoidance of penalties under federal tax laws. Thank you.

June 26, 2025

Sent by email

Meagan Sims, Water Quality Standards Coordinator
Maine Department of Environmental Protection
SHS 17
Augusta, Maine 04333
meagan.sims@maine.gov
trcomments.dep@maine.gov

Re: *Water Quality Reclassification Request for Chandler Bay, Washington County, Maine
by Eastern Maine Conservation Initiative*

Coordinator Sims:

This firm serves as counsel to Eastern Maine Conservation Initiative (hereinafter “**EMCI**”), a nonprofit organization dedicated to conserving the significant and critical natural resources in eastern Maine. As you may remember, EMCI filed a request on June 27, 2024 (the “**Request**”) that Chandler Bay, which was, as a default, designated a Class SB marine waterbody,¹ be reclassified to a Class SA marine waterbody based on the overwhelming evidence presented by EMCI in the Request that it qualifies for that classification.

Despite this compelling evidence that Chandler Bay currently meets the criteria to be designated as Class SA in accordance with 38 M.R.S.A. § 465-B, DEP staff has recommended that Chandler Bay not be reclassified, reasoning that the mere issuance by the department of a Maine Pollutant Discharge Elimination System permit (the “**Permit**”) to Kingfish Maine, Inc. (“**Kingfish**”) that *might* result in discharges into Chandler Bay at some unspecified time in the future prevents Chandler Bay from satisfying the standards for a Class SA waterbody.

I write on EMCI’s behalf to comment on that grounds for department’s recommendation and explain that it is based on a misinterpretation of the statutes implementing Maine’s Water Quality Standards (the “**Standards**”). As the department recognizes in its report entitled “Maine Department of Environmental Protection 2025 Triennial Review of Water Quality Standards, Department Recommendations” dated May 2025 (the “**Report**”), the purpose of the Standards is to “restore and maintain the chemical, physical and biological integrity of the State’s waters and to preserve certain pristine state waters.”² This language closely tracks the Legislature’s announcement of its intent in implementing the Standards in 38 M.R.S.A. § 464(1), which “declares that it is the State’s objective to restore and maintain the chemical, physical and biological integrity of the State’s waters and to preserve certain pristine state waters.”³

¹ 38 M.R.S.A. § 469(7).

² Report at 4.

³ 38 M.R.S.A. § 464(1).

As reflected in this provision, the Legislature, by enacting the Standards, intended that they be interpreted to, among other things, maintain and preserve quality and integrity of waterbodies in the State of Maine. This clear statement of intent binds any agency or body vested with the power to interpret and enforce the Standards, including the department.⁴

Despite its obligation to interpret and apply the Standards in accordance with their stated purpose, the department has taken a position that conflicts with the Legislature's directive. In order to "maintain" the integrity of Chandler Bay the department needs to consider (a) its current condition and (b) whether that condition satisfies the standards that apply to Class SA waterbodies. That is because the emphasis is on the maintenance and preservation of that waterbody *as it currently exists*—not as it could conceivably exist based on speculation as to the potential effects of a particular use of that waterbody that may never occur. To "maintain" something means to "keep in an existing state" or "preserve from failure or decline."⁵ Likewise, "preserve" is defined as acting to "keep" something safe from "injury, harm or destruction."⁶ The objective, then, in classifying waterbodies is to identify the classification that reflects that waterbody's current conditions because it is those conditions that must be, at a minimum, maintained and preserved.

That is the principle that should guide the department's recommendation. EMCI presented data in the Request that demonstrates that Chandler Bay, in its current state, satisfies the definition of a Class SA marine waterbody. In spite of this evidence, DEP staff recommends *against* reclassification because it is conceivably possible that there may be discharges into Chandler Bay in the future by Kingfish. By doing so, the department has erred because it has assigned greater value to the possible *future* condition of Chandler Bay than to its current, pristine condition. That weighing is particularly problematic when, as here, it is highly unlikely that the future condition will ever occur.

As of the writing of this letter, Kingfish has not engaged in any activities under the Permit resulting in the discharge of any pollutants into Chandler Bay. Although Kingfish received the Permit over four years ago, the site of its proposed industrial aquafarm facility (the "**Facility**") on Dun Garvin Road in Jonesport (the "**Site**") remains completely undeveloped. No structures have been erected, no infrastructure has been installed, and no improvements of any kind have been made on the Site. It

⁴ The paramount objective when interpreting statutes is always to give effect to the Legislature's intent. *State v. Haste*, 2018 ME 147, ¶ 23, 196 A.3d 432 ("In interpreting a statute, our single goal is to give effect to the Legislature's intent in enacting the statute."); *Cent. Maine Med. Ctr. v. Maine Health Care Fin. Comm'n*, 644 A.2d 1383, 1386 (Me. 1994) ("The fundamental rule of statutory interpretation is that the legislative intent, as discerned from the language of the statute, controls."). This is true even when the interpretation of that statute is within the expertise of a state agency. *See, e.g., Cent. Maine Power Co. v. Maine Pub. Utilities Comm'n*, 436 A.2d 880, 885 (Me. 1981) ("Deference to the agency's construction must yield to the fundamental approach of determining the legislative intent, particularly as it is manifest in the language of the statute itself This intent, once revealed, prevails.").

⁵ *Maintain*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/maintain> (last visited June 26, 2025). Undefined terms must be "construed according to their natural import in common and approved usage," *Zablotny v. State Bd. of Nursing*, 2014 ME 46, ¶ 17, 89 A.3d 143, which may be provided by a dictionary, *Friends of Cong. Square Park v. City of Portland*, 2014 ME 63, ¶ 9, 91 A.3d 601 ("We often rely on dictionary definitions to determine the common and generally accepted meaning of undefined or ambiguous terms.").

⁶ *Preserve*, MERRIAM-WEBSTER <https://www.merriam-webster.com/dictionary/preserve> (last visited June 26, 2025).

exists today in virtually the same state as when the department issued the Permit on June 25, 2021. Given these facts, it is incredibly unlikely that the Facility will be operational—let alone that any discharge will take place—prior to either the expiration of the Permit on June 25, 2026 or the Legislature’s vote on the proposed reclassification of the State’s waterbodies during its next session.

If no construction has taken place by the date the Permit expires, any application Kingfish might submit to renew the Permit would be “subject to the procedural and substantive requirements in effect at the time of acceptance of the renewal application.”⁷ This vulnerability to potential changes in the law, including the reclassification of Chandler Bay, continues to exist unless Kingfish vests its rights in the Permit, which it has thus far failed to do.⁸

Consequently, the issuance of the Permit is not a reasonable justification for the department to refuse to recommend to reclassify Chandler Bay as a Class SA waterbody. The department is not bound by the consequences of the decision to issue Kingfish a MEPDES permit because Kingfish never took—and is unlikely to take—the steps necessary to protect that permit from future changes to statutes and regulations that might prevent it from developing the Facility. Unlike a discharge into a waterbody that *presently* exists, the hypothetical discharge of pollutants into that waterbody by a licensee who is likely to lose its rights in the discharge permit because of its voluntary inaction is not grounds to recommend against reclassifying that waterbody. The Permit is in a far too tenuous position for the department to offer recommendations as if discharges into Chandler Bay from the Facility are a foregone conclusion. Rather than acting as if its hands are tied by the existence of a permit authorizing discharges that will likely never occur, the department should revise its recommendation to support the reclassification of Chandler Bay to a Class SA marine waterbody because its current condition obligates the department to take that position.

EMCI greatly appreciates your time and attention to this matter. Please let me know if you would like to discuss this matter further or if I can answer any questions.

All my best,



Sean R. Turley, Bar No. 6351
sturley@mpmlaw.com
MURRAY PLUMB & MURRAY
75 Pearl Street, P.O. Box 9785
Portland, Maine 04104-5085
(207) 773-5651

⁷ 06-096 C.M.R. ch. 2, § 21.A.

⁸ To vest those rights, Kingfish must make “substantial good faith expenditures on the activity within the scope of the affected permit . . . (1) in reliance on the affected permit or grant of authority, (2) before the law changed, and (3) according to a schedule that was not created or expedited for the purpose of generating a vested rights claim.” *NECEC Transmission LLC v. Bureau of Parks & Lands*, 2022 ME 48, ¶ 47, 281 A.3d 618, *as revised* (Sept. 8, 2022).

CC: Client (by email)

Sims, Meagan

From: Melissa Cote <melissa@midcoastconservancy.org>
Sent: Friday, June 27, 2025 9:02 AM
To: DEP, TRComments
Subject: Midcoast Conservancy Public Comment regarding DEP Triennial Review Recommendations
Attachments: Midcoast Conservancy Public Comment_DEP's Recommendations for the Triennial Review of Maine's Water Quality Standards (1).pdf

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Sims,

Midcoast Conservancy appreciates this opportunity to submit comments on DEP's recommendations as part of its Triennial Review process. Please see the attached comments from Midcoast Conservancy.

Sincerely,
Melissa Cote

--

Melissa Cote (she/her)
Sheepscot River Watershed Manager



[\(207\) 386-6490](tel:2073866490) | melissa@midcoastconservancy.org

Mail: PO Box 439, Edgecomb, ME 04556

HQ: 290 US Route One, Edgecomb, ME 04556

www.midcoastconservancy.org

We protect and restore vital lands and waters on a scale that matters.

6/27/2025



Meagan Sims
Water Quality Standards Coordinator
ME Department of Environmental Protection
State House Station 17
Augusta, ME 04333-0017

RE: Public Comments for Maine DEP's Recommendations for the Triennial Review of Maine's Water Quality Standards.

Dear Ms. Sims,

Thank you for the opportunity to submit public comment on the Maine Department of Environmental Protection's Recommendations for Maine's Water Quality Standards as part of its Triennial Review process. Midcoast Conservancy is disappointed that DEP is not recommending an upgrade based on its proposal for the segment of the mainstem Sheepscot River from Route 17 in Whitefield to the Palermo/Somerville town line from Class B to Class A. At a minimum, Midcoast Conservancy believes that the Department should recommend an upgrade from Class B to Class A for the section of the Sheepscot River from Route 17 to Long Pond based on the following:

1. The Coopers Mills Dam, located on the mainstem just above Route 17, was removed in 2019 and the impoundment above the dam was restored to natural riffle-run habitat. The removal of the dam restored the river to a naturally free-flowing river and provided river herring unimpeded access to Long Pond to spawn.
2. The Sheepscot River is home to the southern-most genetically distinct population of federally endangered Atlantic salmon. The population of Atlantic salmon in the Sheepscot River is one of 8 remaining genetically distinct populations within the Gulf of Maine Distinct Population Segment listed under the Endangered Species Act. An upgrade from Class B to Class A in this section of river is an opportunity to add protections to this endangered species. Between Route 17 and Long Pond there is Atlantic salmon habitat throughout. According to the Maine Stream Habitat Viewer there are 12,727.86 units (1 unit = 100 square meters) of rearing habitat and 2,462.16 units of spawning habitat. The Department of Marine Resources fry stocks Atlantic salmon in the reach above Route 17 and below the former Coopers Mill dam site. It would be a disservice to this iconic and endangered species to not upgrade this section of river.

Clean Water. Thriving Communities. Land for All.

290 US Route One, PO Box 439, Edgecomb, ME 04556-0439
(207) 389-5150
midcoastconservancy.org



3. The bacteria data from just below the former Coopers Mill dam site showed attainment of Class A waters from 2019 to 2023 that Midcoast Conservancy submitted in its original proposal.

Thank you for your consideration of these comments.

Sincerely,

Melissa Cote
Sheepscot River Watershed Manager
Midcoast Conservancy
melissa@midcoastconservancy.org
(207) 386-6490



Sims, Meagan

From: Kaitlyn Nuzzo <kaitlyn.nuzzo@TNC.ORG>
Sent: Friday, June 27, 2025 4:27 PM
To: DEP, TRComments
Cc: Molly Payne Wynne
Subject: Triennial Review of Water Quality Standards - TNC Comments
Attachments: DEP Triennial Review TNC Comments 6.27.25.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

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Good afternoon Ms. Sims,

Please find attached comments from The Nature Conservancy in Maine with regards to the Maine Department of Environmental Protection's initial recommendations within the Triennial Review of Water Quality Standards.

Please do not hesitate to let us know if you have any questions.

Best,
Kaitlyn Nuzzo

Kaitlyn Nuzzo | Director of Government Relations in Maine

207-231-0336 (m) | kaitlyn.nuzzo@tnc.org | www.nature.org/maine |  THE NATURE CONSERVANCY
14 Maine Street, Suite 401 | Brunswick, ME 04011 |



The Nature Conservancy in Maine
14 Maine Street, Suite 401
Brunswick, ME 04011

tel [207] 729-5181
fax [207] 729-4118
nature.org/maine

Meagan Sims
Water Quality Standards Coordinator
Maine Department of Environmental Protection
17 State House Station
Augusta, Me 04333

June 27, 2025

RE: Public Comments for Maine DEP's Recommendations for the Triennial Review of Maine's Water Quality Standards.

Dear Ms. Sims:

The Nature Conservancy in Maine (TNC) appreciates the opportunity to submit public comment on the Maine Department of Environmental Protection's Recommendations for Maine's Water Quality Standards as part of its Triennial Review process.

TNC is a nonprofit conservation organization dedicated to conserving the lands and waters on which all life depends. Guided by science, we create innovative, on-the-ground solutions to our world's toughest challenges so that nature and people can thrive together. We use a collaborative approach that engages local communities, governments, the private sector, and other partners. We work across Maine to restore rivers and streams, partner with fishermen in the Gulf of Maine to rebuild groundfish populations and develop innovative solutions to address our changing climate. TNC works closely with state agencies – including the Maine Department of Inland Fisheries and Wildlife (DIFW) and the Maine Department of Marine Resources (DMR) – on a variety of levels to ensure Maine's fisheries and the communities that rely on them are sustained and supported into the future.

While TNC did not offer specific proposals for this Triennial Review, staff from TNC had the opportunity to attend meetings to discuss some of the proposals contained in this review document. TNC's interests are specifically related to our conservation-related interests and those of our partner agencies and NGOs.

We offer the following comments and suggested amendments to the Department's proposed changes to the state's Water Classification Program:

- TNC agrees with and supports the need for adoption of nutrient criteria for Class AA, A, B, and C waters.

- TNC agrees with and supports the Department's proposed amendments to dissolved oxygen standards for Class AA, A, B and C waters including the clarification of the term "as naturally occurs".
- TNC agrees with the Department's proposal to clarify the narrative aquatic life standards for Classes AA, A, and GPA waters.
- TNC supports the Department's 3 proposed classification upgrades.

TNC recommends that the Department reconsider its decision not to include the following classification upgrades. The following are all related to upgrades of waters identified to support, or potentially support, Atlantic salmon, as well as other migratory species and high-quality native brook trout habitat important to our freshwater ecosystems. Ever since the listing of Atlantic salmon in 1999, the State and many conservation organizations have been working to enhance this species' survival and propagation. DEP has been an important contributor to this effort, especially by protecting significant habitat through upgrades to water classification. As stated in the introduction of this triennial review document, Maine's "classification system is a goal-oriented one". It is important that the DEP recognize the importance of using this goal-based approach as part of the State's Atlantic salmon restoration policy and recommend upgrades even where the data record may be incomplete or where the Department's management of wastewater or stormwater may require improvements to assure protection of quality:

- Sandy River and tributaries: Class B to A. The Sandy River watershed provides the most significant spawning and rearing habitat in the Kennebec River Basin and is the site of major restoration efforts by DMR and other conservation partners. The DEP has already upgraded many waters within the Sandy River watershed to Class A and AA. Upgrade of additional waters is consistent with the DEP's current and future management of these waters to protect and enhance our Atlantic salmon.
- Temple Stream and tributaries: Class B to A. A recent dam removal on Temple Stream has finally opened this subwatershed for salmon access.
- Sheepscot River: Class B to A. The Sheepscot River is home to the southernmost genetically distinct population of federally endangered Atlantic salmon. The population of Atlantic salmon in the Sheepscot River is one of 8 remaining genetically distinct populations within the Gulf of Maine Distinct Population Segment listed under the Endangered Species Act. An upgrade from Class B to Class A in this section of river is an opportunity to add protection to this endangered species. Between Route 17 and Long Pond there is Atlantic salmon habitat throughout. According to the Maine Stream Habitat Viewer there are 12,727.86 units (1 unit = 100 square meters) of rearing habitat and 2,462.16 units of spawning habitat. The Department of Marine Resources fry stocks Atlantic salmon in the reach above Route 17 and below the former Coopers Mill dam site. It would be a disservice to the work of the Midcoast Conservancy, TNC and others and to this iconic and endangered species to not upgrade this section of river

Thank you for the opportunity to provide written comments on the initial recommendations.
Please do not hesitate to reach out if you have any questions.

Sincerely,

A handwritten signature in black ink, reading "Molly Payne Wynne". The signature is fluid and cursive, with the first name "Molly" being the most prominent.

Molly Payne Wynne
Freshwater Program Director
The Nature Conservancy in Maine

Sims, Meagan

From: mark.c.whiting@gmx.com
Sent: Sunday, June 29, 2025 3:55 PM
To: DEP, TRComments
Subject: Comments on TR proposals

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Meagan Sims

Maine Department of Environmental Protection

Bureau of Water Quality

State House Station 17

Augusta, ME 04333-0017

Re.: Comments on Triennial Review\

Dear Ms Sims:

Our Conservation District is pleased that the DEP will develop pH criteria for Maine waters that are consistent with EPA criteria, and will adopt nutrient criteria. We still want the West Branch of the Union River upgraded to AA, but agree that less is known about the Middle and East Branches. Can we amend our proposal to list the West Branch of the Union as AA now, and then take some time to study the Middle and East Branches? It would help us if we knew more about what information the DEP specifically needs for an upgrade.

We are disappointed that DEP will not adopt turbidity criteria at this time. The Turbidity problem in the Union River is a 100 year old problem. DEP has not used other pollution criteria or programs to specifically address this. DEP really needsl to have criteria for all pollutants, especially the most common issues like pH and turbidity.

Turbidity is a critical environmental concern in lakes and streams. Turbidity significantly impacts aquatic ecosystems, water quality, and human health. Preventing turbidity is essential to maintaining ecological integrity, supporting biodiversity, and ensuring clean water for human use.

One of the most pressing reasons to control turbidity is its harmful effect on aquatic life. Suspended particles reduce light penetration, which is vital for photosynthesis in aquatic plants and algae. When light is blocked, oxygen levels drop, and the food chain is disrupted. Fish and invertebrates also suffer because excessive turbidity can clog gills, impair reproduction, and destroy habitats such as spawning grounds. Over time, a once-thriving ecosystem can collapse, leading to a loss of biodiversity. Specifically, Leonard Lake, a reservoir behind the lower dam in the Union River has seasonal oxygen depletion in deep water. This could be due to turbidity, light extinction, and limited photosynthesis in deeper water.

Turbidity also compromises water quality, making it unsafe for consumption and recreation. Swimmers and boaters cannot see obstructions. Turbid water can harbor harmful bacteria, viruses, and other pathogens. These microorganisms attach to suspended particles, making water treatment more difficult and expensive. Additionally, high turbidity can carry pollutants such as pesticides, heavy metals, and nutrients that contribute to algal blooms and further degrade water quality. This poses health risks to both wildlife and humans who rely on these water bodies for drinking water, fishing, or swimming. These are protected uses under Maine law.

Preventing turbidity is not just an ecological responsibility—it is also a matter of public policy and stewardship. Communities, state and federal policymakers, and individuals must work together to implement these solutions to protect freshwater resources.

In summary, turbidity in lakes and streams is more than just murky water—it is a threat to the health of ecosystems and humans alike. By preventing turbidity, we preserve the natural beauty and function of aquatic environments and ensure clean, safe water for future generations. What should be the legal standard in Maine. Would you settle for less than "clean and clear, and free of settleable solids" for your lake or stream?

Sincerely, Mark Whiting, Chair of the Board, Hancock County Soil & Water Conservation District

Sims, Meagan

From: bookcity13@gmail.com
Sent: Sunday, June 29, 2025 5:31 PM
To: DEP, TRComments
Cc: bookcity13@gmail.com; 'Ariana Fischer'
Subject: Chandler Bay Water Reclassification - Submission for Comment Period deadline June 30, 2025
Attachments: Lobster Industry.pdf
Importance: High
Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please accept this submission as comment for the consideration of Chandler Bay water reclassification from SB to SA.

Thank you,
Carrie Peabody
[REDACTED]
Jonesport Maine 04649
Bookcity13@gmail.com
[REDACTED]

June 29, 2025

Bureau of Water Quality
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333

Subject: Chandler Bay – Water reclassification impact upon lobster industry

To Whom it May Concern:

My name is Carrie Peabody and I am the wife of a 4th generation Jonesport-Beals fisherman. I am concerned about the impact water quality degradation will have upon our vital fishing industry in Jonesport, Maine. Revenue generated by the Zone A lobster sector, licenses held, and landing reports documented by County (2024-2025) detail the dependency our area has upon the pristine water quality of Chandler Bay. Changes in the Bay's water quality health could threaten the eco-system dependent upon it, thus affecting jobs and revenue.

The DMR Zone A Licensing and Trap Tag report for 2024 indicates that there are currently 1,222 lobster fishing licenses and 606,492 tags. Dependent upon the license, each boat has 2 or more crew. In terms of lobster landings, preliminary reports for the 2024 fishing season indicate that Jonesport caught 86,125,724 pounds of lobsters generating a total revenue of \$528,421,645. These figures reflect a continued trend of strong performance in the lobster market, driven by both local demand and export opportunities. This fleet is a testament to the community's commitment to sustainable fishing practices and the preservation of our marine resources.

Looking ahead to 2025, we anticipate that lobster landings will remain steady, with projections suggesting a similar volume of landings and revenue generation. The resilience of our local fishermen, combined with favorable market conditions, positions Jonesport to maintain its status as a key player in the lobster fishing industry.

The economic impact of the lobster fishery extends beyond the immediate revenue generated. It is estimated that the industry supports a variety of marine-related jobs in Jonesport, encompassing not only fishermen but also those involved in processing, distribution, and ancillary services such as distribution and retail. This employment is crucial for the local economy, providing livelihoods for many families in our community.

I recently attended the Bureau's meeting on Zoom last Monday, June 23, 2025. Chandler Bay was presented to show that the current recommendation for reclassification is as follows:

"Based on the current status of the wastewater discharge permit held by Kingfish Maine, Chandler Bay does not meet the statutory requirements in 38 M.R.S. Section 465-B.1.C stating there may be no direct discharges of pollutants to Class SA waters except for in certain cases. Therefore, the Department does not recommend that Chandler Bay be upgraded to Class SA at this time."

Given that there has been little data produced on Chandler Bay's water quality until water testing was required for the Kingfish permit, the existing determination of SB water should be challenged. There are many SA water bodies that feed into Chandler Bay or surround it. The criteria for SA vs. SB is muddy given the DEP is planning to allow Kingfish to discharge 28 million gallons/day of exchange water, 1580 pounds of nitrogen/day, and 399 pounds of phosphorus/day into Chandler Bay using an open recirculating aquaculture system (RAS). Kingfish is not a closed-loop or land-based operation. Based on the attached chemical list of planned discharge agents, shouldn't the Bureau be concerned about the effects this will have on the Bay's water quality in general?

When did the Bureau of Water Quality make the decision to incorporate the DEP recommendation to over-ride existing water quality standards? Clearly the standards are breached if the DEP gives exception to Kingfish by allowing them to discharge a daily maximum flow of 28.7 MGD of treated wastewater into Chandler Bay. Per the attached effluent chart, why would the DEP allow Kingfish to pollute Chandler and risk the loss of a viable and prosperous seafood industry? Jonesport is one of the top lobster and seafood producers in the state!

In conclusion, the fishing industry, particularly the lobster sector, plays a vital role in the economic landscape of Jonesport, Maine. As we move forward, it is essential to continue supporting our local fishermen by promoting sustainable practices to ensure the longevity of this important industry. Sustainable practices should include upholding water quality standards as defined in the Clean Water Act, EPA guidelines and Maine water quality standards/laws.

As stated in MRS Title 38, §464. Classification of Maine Waters:

"The Legislature intends by passage of this article to establish a water quality classification system which will allow the State to manage its surface waters so as to protect the quality of those waters and, where water quality standards are not being achieved, to enhance water quality. This classification system shall be based on water quality standards which designate the uses and related characteristics of those uses for each class of water and which also establish water quality criteria necessary to protect those uses and related characteristics."

The Kingfish permit has absolutely no measure in the classification process, neither should economic conditions. The Bureau of Water Quality must be vigilant in remaining independent from outside influence and base its decisions purely on science and current water quality data. Scientific analysis of the water quality in Chandler Bay strongly indicates the water quality is worthy of an upgrade from SB to SA.

Thank you for your attention to this matter.

Sincerely,

Carrie Peabody
Citizen / Wife of Lobster Fisherman



Jonesport, ME 04649

bookcity13@gmail.com

References:

[2019-2024 DMR LICENSE AND TAG SUMMARY 4-30-25.pdf](#)

[Maine Lobster Fishing License and Trap Tag Counts | Department of Marine Resources](#)

[LandingsBySpecies.Table .pdf](#)

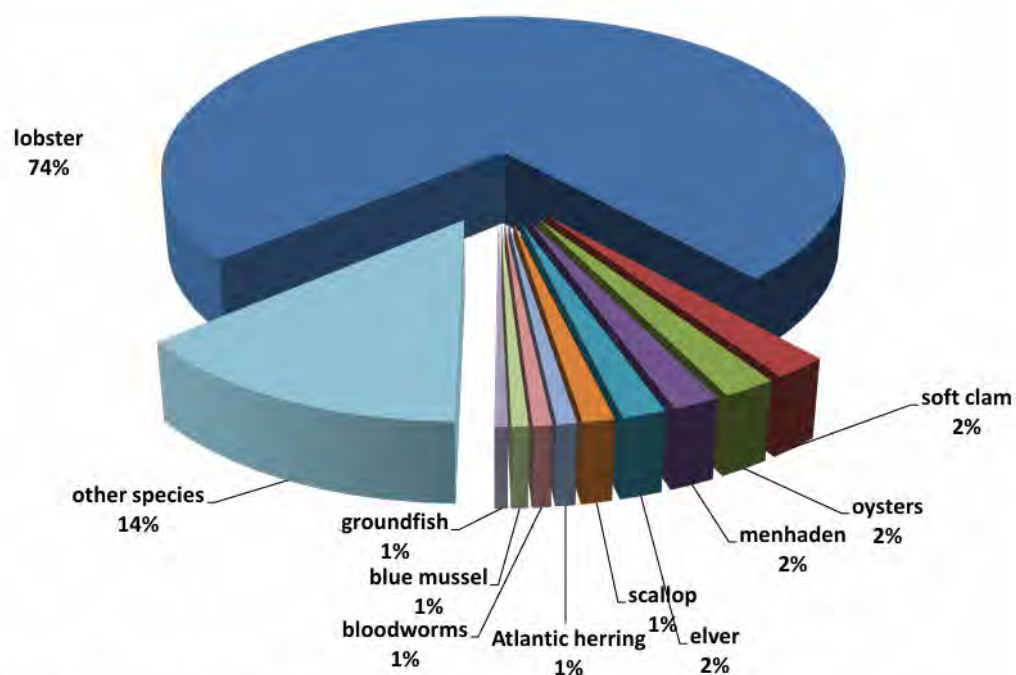
[PoundsBySpecies.Pie .Graph 0.pdf](#)

[ValueBySpecies.Pie .Graph 0.pdf](#)

[Microsoft Word - ME0037559 2021.doc](#)

MRS Title 38, §464. CLASSIFICATION OF MAINE WATERS

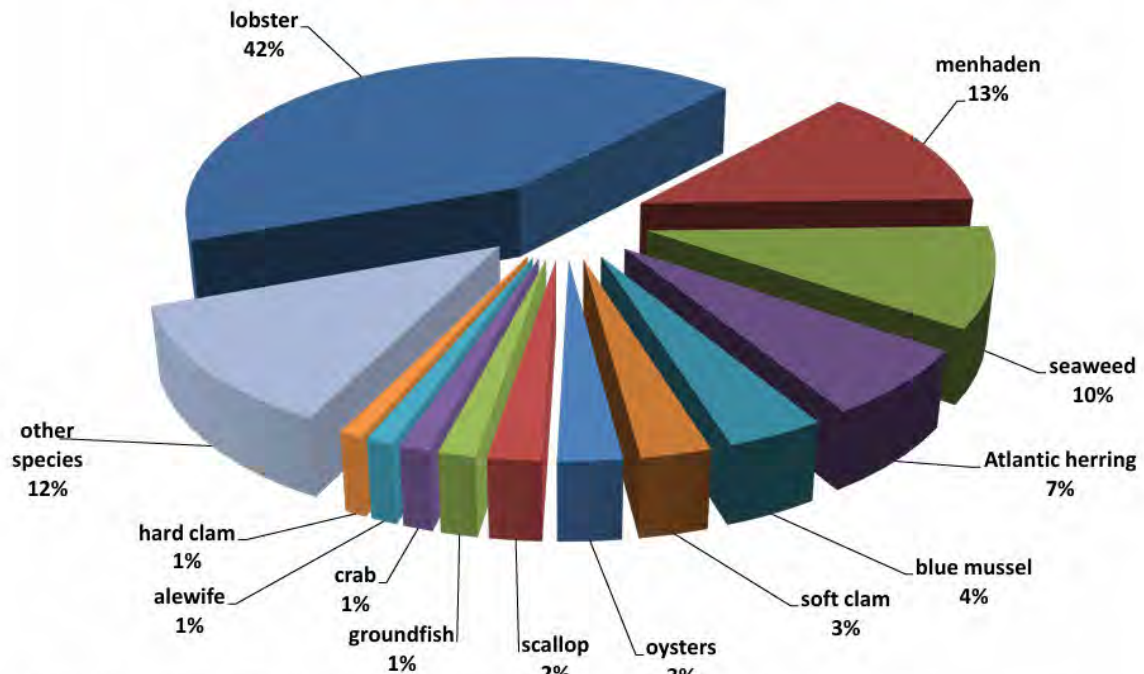
Preliminary 2024 Commercial Maine Landings By Ex-vessel Value
Total: \$709,509,984 as of 2/14/2025



*Other species include confidential species and other species that make up less than 1% of total catch.

Preliminary 2024 Commercial Maine Landings By Live Pounds

Total: 202,791,055 as of 02/14/2025



*Other species include confidential species and other species that make up less than 1% of total catch.

2020-2024* Commercial Maine Landings					
Species	2020	2021	2022	2023	2024*
alewife					
Pounds	1,576,645	1,835,855	2,689,400	2,602,355	2,244,673
Value	\$586,668	\$723,291	\$1,184,127	\$1,161,838	\$1,026,532
Atlantic herring					
Pounds	11,537,719	5,029,850	3,822,900	14,741,557	13,607,969
Value	\$4,206,324	\$1,909,398	\$1,846,609	\$4,982,810	\$5,605,070
bloodworms					
Pounds	391,811	301,885	230,526	226,479	189,564
Value	\$6,786,173	\$5,791,124	\$4,937,990	\$5,491,083	\$5,226,066
blue mussel (tot)					
Pounds	9,185,540	8,026,728	5,583,473	5,747,990	7,927,304
Value	\$2,700,386	\$3,406,901	\$4,044,509	\$4,506,481	\$4,675,767
blue mussel (AQ)					
Pounds		1,720,371	1,988,116	2,039,823	2,086,910
Value		\$2,933,567	\$3,675,150	\$4,018,008	\$4,036,254
crab					
Pounds	1,832,196	2,628,580	3,049,155	3,064,571	2,507,252
Value	\$1,017,055	\$1,957,428	\$2,769,593	\$2,041,627	\$1,298,941
elver					
Pounds	9,652	9,106	9,459	9,710	9,842
Value	\$5,067,521	\$16,681,103	\$20,163,965	\$19,508,478	\$12,201,545
groundfish					
Pounds	2,069,377	1,975,980	2,581,734	3,624,233	3,034,020
Value	\$2,185,851	\$2,537,839	\$3,628,452	\$4,196,278	\$3,608,905
hard clam					
Pounds	1,577,697	1,422,763	1,654,924	1,740,115	1,878,534
Value	\$2,368,328	\$3,212,434	\$3,484,298	\$3,435,978	\$3,438,410
lobster					
Pounds	97,954,590	110,704,227	98,985,470	96,957,725	86,125,724
Value	\$412,629,231	\$742,989,021	\$393,277,334	\$482,022,737	\$528,421,645

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow [50050]	Report MGD [03]	28.7 MGD [03]	---	---	Continuous [99/99]	Meter [MR]
Total Kjeldahl Nitrogen (as N) [00625] (May – Oct)	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	Report mg/L [19]	1/Week [01/07]	Composite ⁽²⁾ [24]
Nitrate + Nitrite Nitrogen (as N) [00630] (May – Oct)	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	Report mg/L [19]	1/Week [01/07]	Composite ⁽²⁾ [24]
Total Nitrogen (as N) ^(3,4) [00600] (May – Oct)	1,580 lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	Report mg/L [19]	1/Week [01/07]	Calculated [CA]
Fish on Hand [45604]	---	Report Metric Tons [41]	---	---	1/Month [01/30]	Calculated [CA]
Total Phosphorus ⁽⁵⁾ [00665] (May – Oct)	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	Report mg/L [19]	1/Week [01/07]	Composite ⁽²⁾ [24]
Total Ammonia (as N) [00610] (May – Oct)	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	Report mg/L [19]	1/Week [01/07]	Grab [GR]
Temperature [00011] (June 1 – Sept 1)	---	---	---	Report °F [15]	1/Day [01/01]	Measure [MS]
pH (Std. Units) [00400]	---	---	---	6.0-9.0 [12]	3/Week [03/07]	Grab [GR]
Formalin ⁽⁶⁾ /51064/ 1-Hour Treatment Maximum	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	45 mg/L [19]	1/Occurrence [01/OC]	Calculated [CA]
Formalin ⁽⁶⁾ /51064/ 24-Hour Treatment Maximum	Report lbs./day [26]	Report lbs./day [26]	Report mg/L [19]	25 mg/L [19]	1/Occurrence [01/OC]	Calculated [CA]
Production ⁽⁷⁾ [00145] (Yellowtail Kingfish)	Report lbs./day [26]	Report lbs./day [26]	---	---	Daily [01/01]	Measured [MS]

ME0037559
W009238-6F-A-N

Final Permit

Page 6 of 20

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- The permittee is authorized to discharge treated wastewater associated with the process/culture processes of a land-based RAS from Outfall #001A **OR** Outfall #001B to Chandler Bay. Such discharges are limited and must be monitored by the permittee as specified below:⁽¹⁾

****Parameters listed in this table must be sampled prior to mixing with heat recovery water.****

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow [50050]	Report MGD [03]	6.5 MGD [03]	---	---	Continuous [99/99]	Meter [MR]
Biochemical Oxygen Demand ⁽³⁾ (BOD ₅) [00310]	1,626 lbs./day [26]	2,711 lbs./day [26]	30 mg/L [19]	50 mg/L [19]	3/Week [03/07]	Composite ⁽²⁾ [24]
Total Suspended Solids(TSS) ⁽³⁾ [00530]	1,626 lbs./day [26]	2,711 lbs./day [26]	30 mg/L [19]	50 mg/L [19]	3/Week [03/07]	Composite ⁽²⁾ [24]
Total Residual Chlorine ⁽⁸⁾ [50060]	---	---	0.1 mg/L [19]	0.3 mg/L [19]	1/Day [01/01]	Grab [GR]
Fish Oil and Grease [00552]	39 lbs./day [26]	96 lbs./day [26]	Report mg/L [19]	Report mg/L [19]	2/Week [02/07]	Grab [GR]

Sims, Meagan

From: Roland Arsenault <Super@RMSEWER.COM>
Sent: Monday, June 30, 2025 9:04 AM
To: DEP, TRComments
Cc: Matthew Desroches
Subject: RMSD comments to the Triennial Review
Attachments: 6-30-2025 RMSD comments_DEP_TriennialReview.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Meagan,

Please find RMSD's comments to the Triennial Review of Maine's Water Quality Standards attached to this email, and please confirm your receipt.

Thank you!

Roland M. Arsenault
SUPERINTENDENT
Location: 228 River Road
Mexico, ME 04257



RUMFORD-MEXICO SEWERAGE DISTRICT

Phone: (207) 364-7225 Cell: (207) 364-6177 email: super@rmsewer.com
P.O. Box 160 • Rumford, ME 04276



RUMFORD-MEXICO SEWERAGE DISTRICT

Phone: (207)-364-7225 Cell: (207)-364-6177 email: super@rmsewer.com
P.O. Box 160, Rumford, ME 04276

June 30, 2025

VIA EMAIL

Meagan Sims
Water Quality Standards Coordinator
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333
TRComments.DEP@maine.gov

Re: 2024–2026 Triennial Review of Maine’s Water Quality Standards

The Rumford-Mexico Sewerage District (“RMSD”) submits the following preliminary comments in response to the Maine Department of Environmental Protection’s (“DEP”) proposed revisions to the dissolved oxygen (“DO”) criteria for Class B waterbodies, as part of the 2024–2026 Triennial Review of Water Quality Standards.

We appreciate DEP’s ongoing work to align water quality standards with evolving scientific understanding and practical implementation concerns. RMSD supports DEP’s proposal to revise the Class B DO criteria—currently requiring both a minimum of 7.0 mg/L and 75% saturation—to allow for brief excursions below 7.0 mg/L, provided the daily average of 7.0 mg/L is maintained and levels do not fall below 6.0 mg/L. This proposed revision acknowledges natural diurnal variation and provides an important measure of flexibility in assessing waterbody health.

However, we are concerned that the proposed revisions do not address a critical issue: the reliance of certain waterbodies on artificial oxygenation systems to meet DO criteria. Without appropriate safeguards, the proposed revisions could inadvertently result in the reclassification of such waterbodies to Class B, despite their inability to meet DO criteria under natural conditions.

I. Artificial Oxygenation in the Androscoggin River: Gulf Island Pond System

A clear example of this concern is the reach of the Androscoggin River between the confluence with the Ellis River at Rumford Point and the Worumbo Dam in Lisbon Falls. This stretch is heavily influenced by a mechanical oxygenation system located in Gulf Island Pond, which injects oxygen into the river during critical periods to maintain compliance with DO standards for Class C waterbodies. The system compensates for naturally low oxygen levels caused by the river’s morphology (impounded, slow-moving waters), nutrient and organic loading, and warm summer temperatures.

Without continuous operation of this oxygenation system, this reach of the Androscoggin would not be capable of meeting the existing or proposed Class B DO criteria. The attainment of DO

thresholds in this reach is not a reflection of natural assimilative capacity but of sustained, artificial intervention. Simply put, the mechanical bubbler has effectively created artificial conditions that would not otherwise exist in this stretch of the river.



RUMFORD-MEXICO SEWERAGE DISTRICT

Phone: (207)-364-7225 Cell: (207)-364-6177 email: super@rmsewer.com
P.O. Box 160, Rumford, ME 04276

II. Potential Regulatory and Economic Consequences

Upgrading this reach of the Androscoggin River to Class B based on DO levels achieved through artificial means would be inappropriate and misleading. It would also impose significant and unnecessary burdens on local dischargers, including RMSD. A Class B designation would trigger stricter effluent limitations and potentially costly upgrades to wastewater treatment infrastructure—burdens that would fall on the District and its ratepayers despite no corresponding improvement in the river's natural condition or water quality.

III. Recommended Regulatory Language

To preserve the integrity of the classification system and ensure equitable implementation, RMSD urges DEP to incorporate the following language into the Water Quality Standards DO criteria:

"Waterbodies that attain the dissolved oxygen criteria for Class B classification solely as a result of artificial aeration, oxygenation, or other mechanical or chemical enhancement shall not be eligible for reclassification to Class B. Classification decisions shall be based on a waterbody's natural ability to meet dissolved oxygen criteria without reliance on continuous artificial intervention."

This language would appropriately prevent upgrades based on engineered or temporary conditions that do not reflect the true ecological status of the waterbody.

IV. Final Note

These comments are submitted as RMSD's initial response to the DEP's proposal to the Board of Environmental Protection and are based on our current understanding of the Triennial Review materials and recommendations. RMSD would appreciate the opportunity to supplement or amend these comments as we conduct further review of DEP's final recommendations and any additional documentation presented to the Board of Environmental Protection.

We thank DEP for the opportunity to participate in this important review process and look forward to a continued dialogue on water quality standards that are both scientifically sound and practicably enforceable.

Sincerely,

A handwritten signature in black ink, appearing to read "Roland M. Arsenault".

Roland M. Arsenault, Superintendent

Sims, Meagan

From: Will Plumley <wsplumley@gmail.com>
Sent: Monday, June 30, 2025 9:17 AM
To: DEP, TRComments
Cc: Andrew Fisk; David Butler; Sandy Cort; Stephanie Noyes; Doug Roncarati; Michael Shaughnessy; Peter Stuckey; Curtis C Bohlen; Janelle A Goeke; Will Sedlack; ifrignoca
Subject: FOPR Comments on DEP Initial Recommendation regarding proposed Lower Presumpscot River upgrade to Class B
Attachments: FOPR Comments on DEP Initial Denial of Class B for Presumpscot June 28 2025.docx
Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Meagan Sims
Water Quality Standards Coordinator
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333

Dear Meagan,

Attached are FOPR's comments on DEP's Initial Recommendation to deny the proposed Lower Presumpscot River upgrade to Class B.

Thank you for the good meeting on June 23.

We look forward to continue working with DEP to protect the current level of water quality in the lower river and further improve water quality where needed. This work is critically important for the health of the river, its communities (human and non-human), and Casco Bay.

Ccing FOPR Healthy Waters Committee, proposal partner American Rivers, and select stakeholders Casco Bay Estuary Partnership, Presumpscot Regional Land Trust, and Friends of Casco Bay.

Much appreciated,

--Will

Will Plumley

Vice President
Friends of the Presumpscot River
[REDACTED]
Windham, ME 04062
wsplumley@gmail.com
207-595-2134

Friends of the Presumpscot River Comments and Questions on DEP's initial denial of proposed reclassification of lower Presumpscot from Class C to Class B - June 2025

Verbal Testimony at the June 23 Meeting:

Friends of the Presumpscot River (FOPR) and American Rivers (AR) disagree with and are disappointed by DEP's initial finding that the lower Presumpscot River does not deserve reclassification at this time. We made a valid case for reclassification. Based on previous experience, I do not expect DEP to change its mind before presenting these recommendations to the Board of Environmental Protection.

The urgency here is that Class C protections alone are inadequate for protecting the water quality the lower river has achieved, especially when it comes to dissolved oxygen. The C classification only protects about 70% of the DO in the lower river, leaving 30% at risk. So, we need a custom plan to protect the lower river. In the event of Class B denial, stakeholders contingency plan had been to engage Maine DEP in a collegial process to thoughtfully and respectfully develop such a custom protection plan together.

However, a recent, exciting development has caused us to shift our course and not ask DEP to enter discussion on a custom plan at this time. Here's why:

This fall, Casco Bay Estuary Partnership will convene an open process to determine the most important areas for focus and action and develop a blueprint for the river over the next 5 years or so. Something similar to reconvening the Presumpscot River Watershed Coalition that DEP's participation contributed so much to over its 11 years of existence. This process may or may not include developing a custom protection plan the lower river. DEP will surely have the opportunity to participate, and we look forward to working with DEP again in the coalition. Given this exciting course of action, we are holding next steps for protecting the lower Presumpscot in abeyance to let this effort play out. We still have 30 months of protection for the lower river before the moratorium forbidding new point source discharges to the lower river expires at the end of 2027.

We look forward to further discussion of lower river protection in this new, broader group.

We have some additional technical comments that we will include when I submit today's testimony in writing.

Thank you.



Further Comments and Questions on DEP's initial Presumpscot recommendation:

Concern about representativeness of two monitoring stations

The biological monitoring site above the discharges was set in the Cumberland Mills Impoundment near the top of a well-known eddy backwater area whose upstream flow occasionally produces massive ice disks in winter. We question the suitability of this site for accurately depicting the biological health of this section of the river. We also question the suitability of the site near State Highway 302 due to the highway's influence. Monitoring at both sites returned Class C results, and we believe both sites are compromised by their locations. We look forward to discussing this issue with the DEP as part of the work being launched by the CBEP.

The third and final biological monitoring site was at the end of the fresh water just above head of tide. This site returned Class B results. This means that at the end of its journey to the estuary, the river meets Class B criteria for biological health. Isn't that what really matters most? Given this attainment, we continue to believe that an aspirational reclassification of the river to Class B is appropriate and will not adversely impact existing dischargers to the river.

Existing license limits can be reduced

DEP's critical condition analysis includes maximum permissible discharges from both PWD and Sappi. We reject this calculation because Sappi's license is overdue for renewal, and we expect that renewal should, and will, reduce Sappi's maximum permissible discharge by more than 50%. We understand the concerns expressed by dischargers when there are proposals to reduce maximum discharges, but we believe that unless reasonable and significant reductions in allowable discharges are not imposed on Sappi there will never be an opportunity for the river to attain Class B standards because the worst-case scenario calculation will continue to be flawed and not representative of an actual worst-case scenario.

DEP's Antidegradation policy does not support the current DO levels being attained in the lower river. In the most recent analysis, the policy will only protect about 70% of the current DO and could allow water quality to backslide significantly to minimum Class C requirements. This is unacceptable.



Friends of the Presumpscot River Comments and Questions on DEP's initial denial of proposed reclassification of lower Presumpscot from Class C to Class B - June 2025

Page 75, first paragraph includes this: *planned discharge reductions to the Pleasant River, which is a tributary to the segment proposed for upgrade*. NOTE: The Pleasant River does not flow into the segment proposed for an upgrade. The Pleasant flows into the Presumpscot about 7 miles upstream from the segment proposed for upgrade.

The map on page 79 shows a dam at Saccarappa where there is no dam today.

Other Comments:

We are very supportive of the various proposals put forward by the DEP in particular the significant additions to Class AA waters. This classification protects the highest quality waters and is based on a nationally significant biological definition of aquatic health.

We support the other reclassification and water quality standards proposals submitted by CLF, FOCB, and the Androscoggin River Watershed Council.

Please contact me with any questions you may have, and please send me your responses to thoughts and questions raised in these comments. We look forward to continued engagement with the DEP as the Presumpscot River continues its progress toward being a fully restored river.

NOTE: FOPR developed these comments with assistance from our proposal partner American Rivers.

Thank you.

Will Plumley
Vice President
Friends of the Presumpscot River

Windham, ME 04062
wsplumley@gmail.com
207-595-2134



Sims, Meagan

From: Ed Friedman <edfomb@comcast.net>
Sent: Monday, June 30, 2025 9:15 AM
To: DEP, TRComments
Cc: Sims, Meagan
Subject: RE: Triennial Review Comments
Attachments: FOMB DEP Triennial Comments Final 6-29-25 Compressed.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

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Thanks Meagan,

FOMB Triennial Review comments are re-attached to the address you provided. I mistakenly thought you were in charge of the review intake.

Ed

From: Sims, Meagan [mailto:Meagan.Sims@maine.gov]
Sent: Monday, June 30, 2025 7:05 AM
To: Ed Friedman
Cc: DEP, TRComments
Subject: RE: Triennial Review Comments

Good morning Ed,

Thank you for your comments regarding the Androscoggin River upgrade proposal.

If you'd like your comments to be considered and addressed in the Department's responses to comments documentation, please submit those details to the DEP's Triennial Review email address shown below and copied on this email.

TRComments.DEP@maine.gov

Take care,
Meagan

Meagan Sims
Water Quality Standards Coordinator, Bureau of Water Quality
[Maine Department of Environmental Protection](#)
17 State House Station, Augusta, ME 04333
(207) 508-8776, meagan.sims@maine.gov

From: Ed Friedman <edfomb@comcast.net>
Sent: Monday, June 30, 2025 12:31 AM

To: Sims, Meagan <Meagan.Sims@maine.gov>

Subject: Triennial Review Comments

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Meagan,

Please find our Friends of Merrymeeting Bay Comments on the Triennial Review proposed Androscoggin upgrade from Worumbo to GIP attached.

Thank you,

Ed

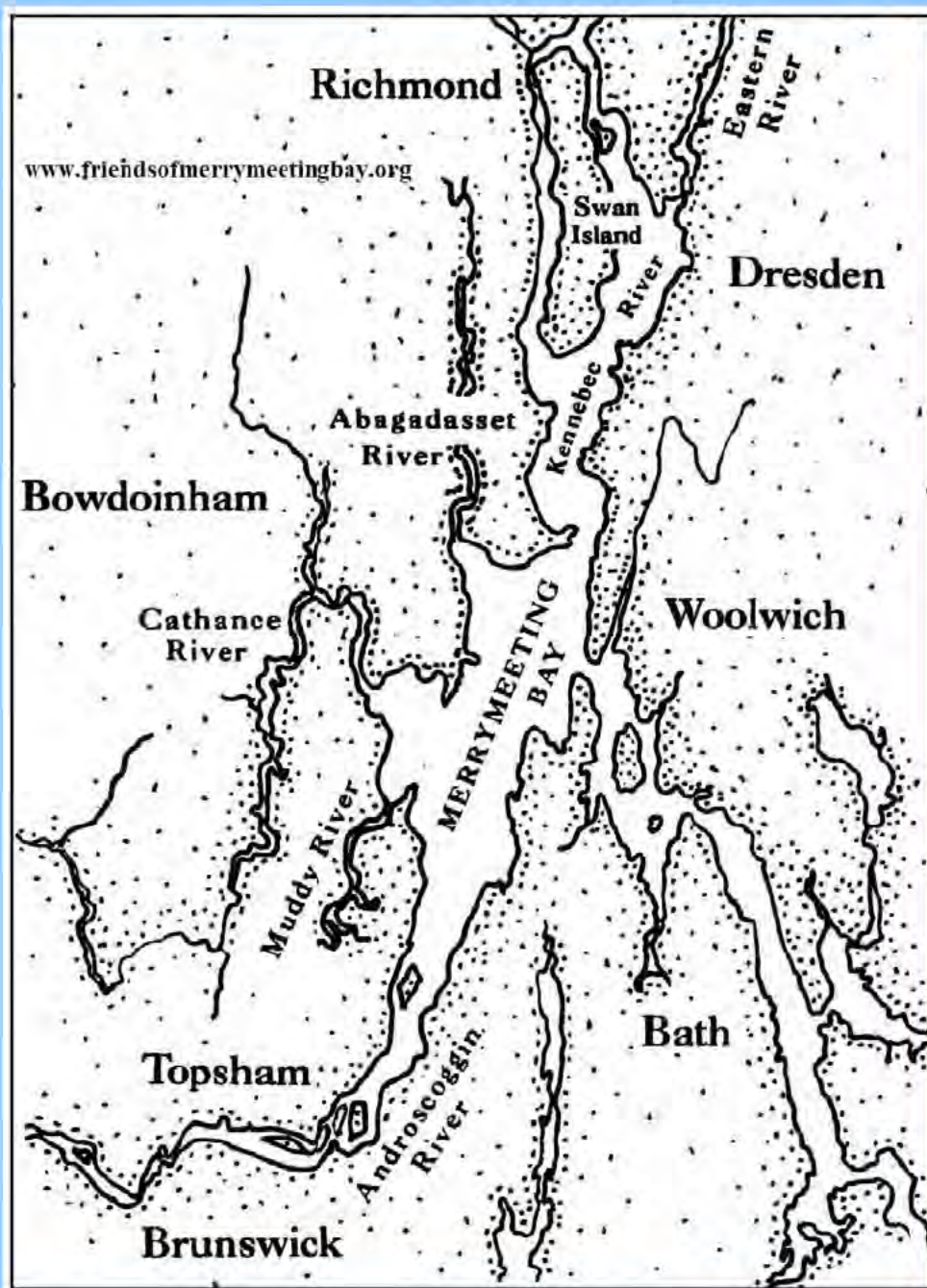
666-3372

www.friendsofmerrymeetingbay.org

Friends of Merrymeeting Bay

DEP Triennial Review Comments

6/29/2025



The Department's own submission guidelines state:

“Maine's Water Quality Classification System is **goal-based**.

When proposing an upgrade in classification, recommend waters that either presently attain or with reasonable application of improved treatment or Best Management Practices (BMPs), could reasonably be expected to attain, the standards and criteria of a higher proposed class.”



P.O. Box 233, Richmond, ME 04357 www.fomb.org

6/29/25

Megan Sims
Maine Department of Environmental Protection
Water Quality Standards Coordinator
508-8776
Meagan.Sims@maine.gov

Via Email

Megan,

Please accept these comments from Friends of Merrymeeting Bay (FOMB) in regards to the 2026 Triennial Review of water quality proposals.

We support the Grow L+A nomination for upgrading the (upper) lower Androscoggin between Worumbo dam and Gulf Island Pond from a C to a B however, it appears the actual past data for the section are a bit sporadic and we hope to change that with our longitudinal profiles from last year (one trial run), this year (expected six profiles) and probably next year. We do not support the idea of changing classifications to include something between the current C and B although if it were done, B should stay as is to avoid confusion. We support the upgrade for this section provided our data and others substantiate it and trust that by the time the Board and certainly the legislature consider this, further data of ours will be in hand.

Water Sampling

In the past, FOMB volunteers have done some sampling (see Site Map for years) above the Gulf Island Pond (GIP) oxygen diffusers (from 982 N. River Rd.) and below them (Bates Boathouse). This was in the early- mid-2000's. Our years of water quality data are [here](#) in the Chemical section of our Cybrary. We later did a few years of sampling from the Auburn Boat Launch but from the very early days we have sampled in Durham (for O2 and later total and fecal bacteria), first from the boat launch and when access there became a bit obscured, a mile or so down the road in the straight section of river across from the farmland. When FOMB became part of the VRMP program we were asked to stop using Winkler Titration methodology for dissolved oxygen and so the Durham monitor continued as bacteria (by this time E.coli and total coliform using IDEXX Colilert) only. We have sampled at one of the Durham sites from 2004 through the present.

In 2021 FOMB contracted with Moody Mountain Environmental for a survey of [Benthic Macro Invertebrates \(BMI\) in the lower Androscoggin River](#), deploying rock baskets at six locations with the first four being above Worumbo dam (1-4) in the current proposed upgrade area and last two (5, 6) between Worumbo dam and Brunswick dam. Aquatic life at Sites 1, 2, and 3 all were appropriate for Class B according to Moody Mountain and the DEP. Site 4 was more appropriate for Class C but being in the upper Worumbo impoundment falls under the hydropower exclusion which elevates the classification to B.

Recognizing the paucity of comprehensive data for the proposed upgrade area (the Grow L+A proposal notes relevant Brookfield and DEP data), last summer FOMB, working with [Point of View Helicopter Services](#),

trialed a comprehensive sampling run using a helicopter equipped with amphibious floats. Because FOMB membership is concentrated closer to the Bay, getting enough volunteers to sample the upper lower river particularly in coordination with our existing sampling program, is not feasible using standard ground-based methods. In contrast, the helicopter worked very well, allowing two people (pilot and sampler) to land on the water, get DO meter readings and capture a water sample for bacteria analysis. Two people could cover 10 sites in about 1.5 hours from leaving the Auburn airport to returning there.

Our helo sampling sites began below the mouth of Sabattus Stream at our BMI Site 4 and went up into GIP. They also included BMI Sites 1-3. FOMB and Merrymeeting Bay Trout Unlimited (MMBTU) are funding six sampling flights this year and hopefully in 2026. We are focused on times of low flows and hot weather with tentatively one flight in June, two in July, two in August and one in September. Just last week we made the first 2025 flight and data from this and the 2024 trial are attached. Of note from these two samplings are the relative homogeneity of DO and bacteria levels throughout, which does provide an argument for limited site sampling being sufficient.

Classification

Unfortunately the Department continues to misinterpret state and federal statute by insisting all sections of river must meet the proposed classification 100% of the time. The Department also conflates classification with discharge permitting and ignores the statutory language around allowance for natural conditions.

We have attached two legal opinions (Conservation Law Foundation [CLF] and [Greenfire Law](#)), also presented during the previous upgrade efforts. Aside from particulars regarding data on the section from Worumbo to the Bay, the analyses regarding federal and state law remains the same. A few excerpts and areas covered from Greenfire are below:

Maine DEP has a nondiscretionary duty to recommend the lower Androscoggin for reclassification because it attains the Class B standard.

Under federal and Maine law, a water quality standard is composed of narrative or quantitative criteria, designated uses, and an anti-degradation policy. The Clean Water Act (CWA) and Maine's anti-degradation policy require that "[w]hen the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained and protected. The board shall recommend to the Legislature that that water be reclassified in the next higher classification."² Simply put, if actual data show that the lower Androscoggin in fact meets the standard for a Class B water, then the Maine Board of Environmental Protection has a non-discretionary duty to recommend to the legislature that it be so classified.

Field data demonstrates the lower Androscoggin meets Class B water quality criteria

First, there is no requirement to show even that the *actual* Class B water quality numeric standards need be attained one hundred percent of the time in every section of the reach being reviewed, much less that some remote, modeled scenario should dictate the classification of the reach. For example, some of the more stringent chemical criteria are stated as averages, meaning that measurements above and below that number are to be expected.¹¹

Additionally, instances of non-attainment are anticipated as a designated use is maintained by law, "whether or not that use is being attained."¹² Finally, the EPA explicitly directs that "States are encouraged to designate uses that the State believes can be attained in the future."¹³

Second, flexibility is allowed in assessing the proper classification based upon the unique natural features of the water at issue. For example, some natural conditions, such as the incoming tides from Merrymeeting Bay and Sediment Oxygen Demand may cause the lower Androscoggin to fail to achieve a water quality criterion from time to time. But these natural conditions expressly may not be used to determine non-attainment of a use.¹⁴

DEP's interpretation would moor a reach to its lowest possibly quality days rather than pulling it towards its best uses attained since the Clean Water Act was adopted—and that is the exact opposite of what the law requires. After all, the purpose of the Clean Water Act is to eliminate water pollution, not to accommodate it by preventing progress towards more protective standards because of exceptionally rare hypothetical events.¹⁵

DEP has relied on inappropriate factors to recommend against reclassification in the past.

In previous years DEP staff recommended against reclassification of the Androscoggin to Class B for the following reasons, none of which is appropriate in the face of actual attainment of the Class B standard:

- a) Under modeled “critical” once-in-a-decade low flow, high temperature conditions, the lower Androscoggin might fail to meet Class B standard,
- b) Waste discharge permits might have to be altered and might not be allowed at all under Class B designation because of the requirement to consider modeled once-in-a-decade low flow, high temperature conditions,
- c) Impoundments create low dissolved oxygen concentrations, and
- d) Upstream pollution.

Pollution assimilation modeling cannot be used to overcome classification based on demonstration of uses actually being attained.

DEP's recommendation against reclassification of the lower Androscoggin primarily was based on modeling. DEP determined that “the existing models provide sufficient information to support the Department's previous assessment that there is no feasible approach to ensure attainment of Class B. But the models DEP relied upon are used to minimize risk of harm to aquatic resources when permitting a discharge, not to determine whether a use is present in a river stretch. As such, they are designed to be conservative in permitting harmful impact to waters—emphasize worst-case scenarios to build in a margin of safety to guard against degradation of the nations' waters. The models are not intended to be used to thwart the purpose of the anti-degradation policy.

Essentially, there is *supposed to be* a rebuttable presumption that water quality standards consistent with actual water quality should stand.³¹ And, there is no ability to constrain a reach at a lower classification where the water is actually attaining the designated uses and standards of a more protective classification.³² Thus, there is not properly room for a Use Attainability Analysis here. Anti-degradation policy—the ratcheting always towards improved quality--ensures that water quality is continually improved over time and that improvements are maintained. Effectively, DEP's attachment of proof of attainment under the most dire possible modeled scenario reverses the ratchet direction of the state and federal anti-degradation policy and statute.

Use of the water body to receive waste water discharges is not a permissible consideration in establishing appropriate classification.

There are no other factors that should be considered in determining what class the lower Androscoggin is actually attaining. DEP expressly may not take into account industrial discharge capacity needs in determining uses.³³ DEP improperly invited consideration of the waste-assimilative capacity of the River as part of the reclassification review, stating that waste permitting limits “is an important requirement [to consider] when a reclassification is being evaluated. It is highly recommended that the Legislature fully understands any new licensing requirements that will be imposed on any discharge prior to a reclassification decision being made.”³⁴ In short, the DEP was directing the legislature to be careful not to eliminate the ability of the water legally to support the waste disposal needs of industry, which is not allowed.³⁵

Naturally occurring conditions cannot be used as evidence of non-attainment of water quality standards.

DEP's analysis of dissolved oxygen deficiency relied on naturally occurring conditions. “Where natural conditions, including, but not limited to, marshes, bogs and abnormal concentrations of wildlife cause the dissolved oxygen or other

water quality criteria to fall below the minimum standards specified in sections 465, 465-A and 465-B, those waters shall not be considered to be failing to attain their classification because of those natural conditions.”³⁶

Upstream conditions must be ameliorated rather than used as an excuse to avoid protecting downstream water quality.

DEP concluded that “river sampling showed a nutrient loading from sources upstream.”³⁷ The States designation of those upstream sources should not negatively impact downstream waters.³⁸ Further, “[n]o waste load allocation can be developed or NPDES permit issued that would result in standards being violated. With respect to antidegradation, that means existing uses must be protected, water quality may not be lowered in [Outstanding Natural Resource Waters], and in the case of waters whose quality exceeds that necessary for the section 101(a)(2) goals of the Act, an activity cannot result in a lowering of water quality unless the applicable public participation, intergovernmental review, and baseline control requirements of the antidegradation policy have been met.”³⁹

Conclusion

In conclusion, the DEP should present to the Board of Environmental Protection and the legislature the factual basis for the lower Androscoggin’s attainment of Class B criterion and character and refrain from including within that recommendation any argument that might be construed as a Use Attainability Analysis.

***** Greenfire Law

Provided FOMB/MMBTU and other data show actual conditions of the upper lower Androscoggin reflect those of Class B most of the time, the Department should support the upgrade with the Board. If the Department continues in their refusal to support upgrades consistent with actual conditions, then the Board, as they did last time, should correctly follow the statutes and recommend this upgrade to the Joint Legislative Committee on Environment and Natural Resources, while also directing the Department to do so.

Thank you for your consideration,



Ed Friedman, Chair
207-666-3372

- | | |
|-----------|--|
| Exhibit 1 | Greenfire Law Memo |
| Exhibit 2 | CLF Memo |
| Exhibit 3 | Sampling Map |
| Exhibit 4 | FOMB Helicopter Sampling Results 2024 & 2025 to Date |
| Exhibit 5 | Helicopter Sampling Sites |
| Exhibit 6 | FOMB Historical Water Quality Data 1999-2024 |
| Exhibit 7 | Aquatic Life Determination Study of the Lower Androscoggin River (BMI Study) |

Exhibit 1

Why Upgrade?

- 1. The Legislature declares it is the State's objective to restore and maintain the chemical, physical and biological integrity of the State's waters... (§464.1.)**
- 2. Anti-degradation language prohibits backsliding in water quality. (§464 (F)(4))**
- 3. An upgrade locks in water quality improvements.**
- 4. A cleaner river has well-documented economic and quality of life benefits.**
- 5. Sixty percent of our wildlife species inhabit river corridors and benefit as do we.**
- 6. It is the law!**

Memorandum of Law

RE: Reclassification of the Lower Androscoggin River to Class B

From: Rachel Doughty, Greenfire Law, PC

Date: March 31, 2020

The lower Androscoggin must be designated Class B because of its demonstrated achievement of the minimum standards for that classification. Maine has for many years resisted upgrading the water quality classification of the Lower Androscoggin from Class C to Class B by eliding the non-discretionary state and federal anti-degradation policy with the use attainability analysis, which can only be used to remove legally-designated uses.

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Analysis

Maine Department of Environmental Protection (DEP) is presently preparing recommendations to the legislature as part of the State's triennial mandatory review of water quality standards.¹ Under the federal and Maine anti-degradation laws, DEP must recommend a change in use classification for the lower Androscoggin from Class C to Class B because that is the standard of water quality it is actually achieving the overwhelming majority of the time. Maine may not avoid reclassification of the lower reach based on hypothetical, once-in-a-decade modeled events. Nor may the lower Androscoggin be kept in Class C to permit the greatest flexibility to accommodate industrial waste assimilation as a priority.

I. Maine DEP has a nondiscretionary duty to recommend the lower Androscoggin for reclassification because it attains the Class B standard.

Under federal and Maine law, a water quality standard is composed of narrative or quantitative criteria, designated uses, and an anti-degradation policy. The Clean Water Act (CWA) and Maine's anti-degradation policy require that "[w]hen the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained and protected. The board shall recommend to the Legislature that that water be reclassified in the next higher classification."² Simply put, if actual data show that the lower Androscoggin in fact meets the standard for a Class B water, then the Maine Board of Environmental Protection has a non-discretionary duty to recommend to the legislature that it be so classified.

A. Field data demonstrates the lower Androscoggin meets Class B water quality criteria.

Actual field data shows the lower Androscoggin achieves Class B water quality criterion for dissolved oxygen (DO). Maine's dissolved oxygen criterion for Class B is:

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas.³

FOMB has monitored the River since 1999 following EPA and or DEP protocols.⁴ Using these DEP-approved protocols FOMB collected data spanning the years 1999 to present--731 individual DO

¹ 33 U.S.C.S. § 1313(c)(1).

² 38 M.R.S. § 464.4.F.4 (emphasis added); see also 40 C.F.R. § 131.20(i) ("Where existing water quality standards specify designated uses less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained.").

³ 38 M.R.S. § 465.3.B.

⁴ Exhibit 29, *Friends of Casco Bay EPA Quality Assurance Plan* under which FOMB operated until 2018, Exhibit 34, *MDEP VRMP Sampling Protocols* also used since 2009, Exhibit 28 FOMB, *Volunteer River Monitoring Program 2009-2018* (including DO and *E. coli* data) See also Exhibits 30 (Auburn Boat Launch DO data 2010-

samples--on the lower Androscoggin.⁵ Of these samples, only 16--two percent--fell below the Class B 7mg/L criterion for DO, mostly within the acceptable range of calibration error of 0.6 mg/L.⁶ Thus, actual sampling of the lower Androscoggin demonstrates attainment with the DO criterion for Class B 98% of the time.⁷

Likewise, field data shows the lower Androscoggin achieves Class B water quality criterion for *E. coli*. Maine's *E. coli* criterion for Class B is:

Between May 15th and September 30th, the number of *Escherichia coli* bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures.⁸

E. coli sampling has been done since 2006. Again, the results were overwhelmingly above the Class B criterion.⁹

DEP, in its 2018 Proposed Reclassifications seemed to imply that if a scenario can be imagined and modeled demonstrating a once in ten year failure to meet a criterion of a water quality standard for a particular class, then the reach cannot be reclassified to the standard it meets the overwhelming majority of the time.¹⁰ The law is not that inflexible—certainly not in the direction implied.

First, there is no requirement to show even that the *actual* Class B water quality numeric standards need be attained one hundred percent of the time in every section of the reach being reviewed, much less that some remote, modeled scenario should dictate the classification of the reach. For example, some of the more stringent chemical criteria are stated as averages, meaning that measurements above and below that

2011), 35, 36, 37 (Applied Biomonitoring-FOMB Reports covering DO and *E. coli* for years 2009-2012) and 38 (Complete FOMB raw data.1999-2019).

⁵ See Exhibit 38 (FOMB Complete WQ Data Files and Exhibits).

⁶ See Exhibit 27, Peter Milholland, *Quality Assurance Project Plan for Friends of Casco Bay Citizen Stewards Water Quality Monitoring Program* (Sept. 15, 2006) p. 52 (describing calibration protocol) and Table 2. Under the federal EPA Quality Assurance Plan governing DO sampling for Friends of Merrymeeting Bay and Friend of Casco Bay, during annual refreshers there was an allowance of 0.6 mg/L leeway between test reading and calibrated sample. In other words, a DO test result of as low as 6.4 would be within acceptable parameters for attainment of 7mg/L, the Class B standard. The occasional low DO reading over the years has generally been on the order of 6.8 or 6.9 well within the allowed margin of error.

⁷ Calculated from Exhibit 38 (FOMB Complete WQ Data Files and Exhibits).

⁸ 38 M.R.S. § 465.3.B.

⁹ See attached, Exhibit 26: *Geometric means chart for 2006-2019*; See also, Exhibit 38: FOMB Complete WQ Data Files and Exhibits 35, 36, 37: Applied Biomonitoring Reports 2010, 2011, 2013

¹⁰ In a October 25, 2019, letter to Senators Libby and Claxton (Exhibit 30), the DEP stated at page 3 that it considered the anti-degradation mandate “in the full context of the water quality laws including the sections of law that establish the conditions under which a discharge may be licensed.” So, citing findings made when determining the waste assimilative capacity of the water, the DEP concluded that a water cannot be recommended for a more protected classification if it cannot meet that standard in a modeled “7-day low flow that can be expected to occur with a frequency of once in 10 years.”

number are to be expected.¹¹ Additionally, instances of non-attainment are anticipated as a designated use is maintained by law, “whether or not that use is being attained.”¹² Finally, the EPA explicitly directs that “States are encouraged to designate uses that the State believes can be attained in the future.”¹³

Second, flexibility is allowed in assessing the proper classification based upon the unique natural features of the water at issue. For example, some natural conditions, such as the incoming tides from Merrymeeting Bay and Sediment Oxygen Demand may cause the lower Androscoggin to fail to achieve a water quality criterion from time to time. But these natural conditions expressly may not be used to determine non-attainment of a use.¹⁴

DEP’s interpretation would moor a reach to its lowest possibly quality days rather than pulling it towards its best uses attained since the Clean Water Act was adopted—and that is the exact opposite of what the law requires. After all, the purpose of the Clean Water Act is to eliminate water pollution, not to accommodate it by preventing progress towards more protective standards because of exceptionally rare hypothetical events.¹⁵

B. The actual uses of the lower Androscoggin are consistent with Class B designation.

Currently, the lower Androscoggin “[f]rom its confluence with the Ellis River to a line formed by the extension of the Bath-Brunswick boundary across Merrymeeting Bay in a northwesterly direction” is designated Class C.¹⁶ The designated uses of Class B and Class C are substantially the same, differing only in whether the habitat supported by the reach is characterized as unimpaired:

Class B: waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under

¹¹ See, e.g., 38 M.R.S. § 465.3.B (describing even the most stringent criterion for Class B dissolved oxygen as a 7-day mean).

¹² 38 M.R.S. § 464.2-A.F.

¹³ Section 2.4

¹⁴

Where natural conditions, including, but not limited to, marshes, bogs and abnormal concentrations of wildlife cause the dissolved oxygen or other water quality criteria to fall below the minimum standards specified in section 465, 465-A and 465-B, those waters shall not be considered to be failing to attain their classification because of those natural conditions.

38 M.R.S. § 464.4.C.

¹⁵ See 33 U.S.C. § 1251(a) (“The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act—**(1)** it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.”)

¹⁶ 38 M.R.S. § 467.1.A(2).

Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.¹⁷

“‘Unimpaired’ means without a diminished capacity to support aquatic life.” 38 M.R.S. § 466.11. The lower Androscoggin has and does support unimpaired aquatic life, and is not listed as impaired on this section for any relevant parameter.¹⁸ Biological monitoring of the freeflowing sections of the Lower Androscoggin demonstrates attainment of Class B aquatic life standards.¹⁹

In determining what uses must be protected and maintained, the DEP may consider the actually designated uses contained in the Class B and C standards, as well as:

- (a) Aquatic, estuarine and marine life present in the water body;
- (b) Wildlife that utilize the water body;
- (c) Habitat, including significant wetlands, within a water body supporting existing populations of wildlife or aquatic, estuarine or marine life, or plant life that is maintained by the water body;
- (d) The use of the water body for recreation in or on the water, fishing, water supply, or commercial activity that depends directly on the preservation of an existing level of water quality; [. . .] and
- (e) Any other evidence that, for divisions (a), (b) and (c), demonstrates their ecological significance because of their role or importance in the functioning of the ecosystem or their rarity and, for division (d), demonstrates its historical or social significance.²⁰

The lower Androscoggin provides exceptional and unique habitat. It feeds tidal wetlands that have been recognized by the U.S. Fish and Wildlife Service “highest value habitat,” including for multiple rare inter-tidal plants and endangered, threatened and species of special concern (e.g., creeper, tidewater mucket, yellow lamp mussels, dry land sedge, etc.). It sustains, silver maple floodplain and birch-oak rocky communities. It is a spawning and nursery area for endangered short nose sturgeon, and Atlantic salmon

¹⁷ 38 M.R.S. § 465.3.A (emphasis added) Compare:

Class C: Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as a habitat for fish and other aquatic life.

38 M.R.S. § 465.4.A.

¹⁸ It is listed as impaired for PCBs, but so are other reaches that are designated Class B.

¹⁹ See Exhibit 31, Maine Department of Environmental Protection, *Lower Androscoggin River Basin Water Quality Study Modeling Report* (March 2011), Appendix D (Station 954 (below Pejepscot Dam, free-flowing) attained Class B aquatic life standard.) Other stations were taken from impoundments and impoundments attained Class C aquatic life criteria, which by law must be treated as attaining A or B criteria in these locations. 38 M.R.S. § 464. 10.A(1). See also Exhibit 32 (FOMB annotations to Exhibit 31, *Appendix D* (Aquatic Life)).

²⁰ 38 M.R.S. § 465.4.F.

and threatened Atlantic sturgeon. Other significant diadromous fish including alewives, blueback herring, sea lamprey, American eel striped bass, rainbow smelt and American shad. The river provides sites for multiple bald eagle nests [13 to GIP], and several Peregrine falcon nests.²¹

The maintenance of a clean and lower Androscoggin is a critical economic resource to Maine as well.²² It is well loved for recreation-fishing, hiking and paddling.²³ As a result, there is overwhelming support for reclassifying the Lower Androscoggin to protect it as an economic and recreational asset.²⁴

And, even if water has degraded since the Clean Water Act was adopted, any “uses which have actually occurred on or after November 28, 1975, in or on a water body whether or not the uses are included in the standard for classification of the particular water body” must be protected in the absence of a use attainability analysis and a specific finding to eliminate a use.²⁵

The lower Androscoggin clearly meets the use, criteria, and anti-degradation components for Class B waters and DEP’s analysis should end here with a recommended change to that classification for the Board.

II. DEP has relied on inappropriate factors to recommend against reclassification in the past.

In previous years DEP staff recommended against reclassification of the Androscoggin to Class B for the following reasons, none of which is appropriate in the face of actual attainment of the Class B standard:

- a) Under modeled “critical” once-in-a-decade low flow, high temperature conditions, the lower Androscoggin might fail to meet Class B standard,
- b) Waste discharge permits might have to be altered and might not be allowed at all under Class B designation because of the requirement to consider modeled once-in-a-decade low flow, high temperature conditions,
- c) Impoundments create low dissolved oxygen concentrations, and
- d) Upstream pollution.

A. Pollution assimilation modeling cannot be used to overcome classification based on demonstration of uses actually being attained.

DEP’s recommendation against reclassification of the lower Androscoggin primarily was based on modeling. DEP determined that “the existing models provide sufficient information to support the Department’s previous assessment that there is no feasible approach to ensure attainment of Class B

²¹ See Exhibits 9 to 18

²² See Exhibits 8,15, 16, and 17.

²³ See *id.* and Exhibits 18-22 (describing protected lands and trails along the River).

²⁴ Exhibit 7 (compiled support letters); Exhibit 8 (Economic Benefit Articles), Exhibit 6 (Comprehensive Plan Excerpts).

²⁵ See 38 M.R.S. § 464.F.(1).

dissolved oxygen criteria in the lower Androscoggin River.”²⁶ But the models DEP relied upon are used to minimize risk of harm to aquatic resources when permitting a discharge, not to determine whether a use is present in a river stretch. As such, they are designed to be conservative in permitting harmful impact to waters—emphasize worst-case scenarios to build in a margin of safety to guard against degradation of the nations’ waters. The models are not intended to be used to thwart the purpose of the anti-degradation policy.

What DEP essentially did was perform a perfunctory Use Attainability Analysis to argue that the River should not be classified as the law would otherwise require.²⁷ But, a Use Attainability Analysis is appropriate in only two circumstances: when designating a use not included in the CWA and if removing a designated use.²⁸ DEP has been called upon to do neither of these things with regard to the lower Androscoggin, and the DEP may not use a use attainability analysis to avoid its *non-discretionary obligation* to recommend reclassification to a higher standard reflective of actual use and water quality.²⁹ Only *after* a use has been designated may the DEP perform a Use Attainability Analysis and consider the sort of things put before the Board here (e.g., economic effect on permits of reclassifying the River).³⁰

Essentially, there is *supposed to be* a rebuttable presumption that water quality standards consistent with actual water quality should stand.³¹ And, there is no ability to constrain a reach at a lower classification where the water is actually attaining the designated uses and standards of a more protective classification.³² Thus, there is not properly room for a Use Attainability Analysis here. Anti-degradation policy—the ratcheting always towards improved quality—ensures that water quality is continually improved over time and that improvements are maintained. Effectively, DEP’s attachment of proof of attainment under the most dire possible modeled scenario reverses the ratchet direction of the state and federal anti-degradation policy and statute.

²⁶ Oct. 25, 2019 Kavanaugh letter at pp. 7-8.

²⁷ To remove a designated use, DEP must make a number of findings demonstrating why that use is not attainable, hold a public hearing, and demonstrate that the conditions of 40 C.F.R. § 131.10(g) are met.²⁷

²⁸ 38 M.R.S. § 464.2-A.A; *see also* 40 C.F.R § 131.10(h).

“‘Use attainability analysis’ means a structured scientific assessment of the factors affecting the attainment of a designated use in a water body. The assessment may include consideration of physical, chemical, biological and economic factors.” 38 M.R.S. § 466.11-A.

²⁹ 38 M.R.S. § 464.4.F.4 (“When the actual quality of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained and protected. The board shall recommend to the Legislature that that water be reclassified in the next higher classification.”) (emphasis added).

³⁰ *See above*, Section I, discussing what the Board can consider in making its classification recommendation.

³¹ *Idaho Mining Ass’n v. Browner*, 90 F. Supp. 2d 1078, 1097-98 (D. Idaho 2000).

³² *Kan. Nat. Res. Council, Inc. v. Whitman*, 255 F. Supp. 2d 1208, 1209 (D. Kan. 2003)

B. Use of the water body to receive waste water discharges is not a permissible consideration in establishing appropriate classification.

There are no other factors that should be considered in determining what class the lower Androscoggin is actually attaining. DEP expressly may not take into account industrial discharge capacity needs in determining uses.³³

DEP improperly invited consideration of the waste-assimilative capacity of the River as part of the reclassification review, stating that waste permitting limits “is an important requirement [to consider] when a reclassification is being evaluated. . . It is highly recommended that the Legislature fully understands any new licensing requirements that will be imposed on any discharge prior to a reclassification decision being made.”³⁴ In short, the DEP was directing the legislature to be careful not to eliminate the ability of the water legally to support the waste disposal needs of industry, which is not allowed.³⁵

C. Naturally occurring conditions cannot be used as evidence of non-attainment of water quality standards.

DEP’s analysis of dissolved oxygen deficiency relied on naturally occurring conditions. “Where natural conditions, including, but not limited to, marshes, bogs and abnormal concentrations of wildlife cause the dissolved oxygen or other water quality criteria to fall below the minimum standards specified in sections 465, 465-A and 465-B, those waters shall not be considered to be failing to attain their classification because of those natural conditions.”³⁶

D. Upstream conditions must be ameliorated rather than used as an excuse to avoid protecting downstream water quality.

DEP concluded that “river sampling showed a nutrient loading from sources upstream.”³⁷ The States designation of those upstream sources should not negatively impact downstream waters.³⁸ Further, “[n]o waste load allocation can be developed or NPDES permit issued that would result in standards being violated. With respect to antidegradation, that means existing uses must be protected, water quality may not be lowered in [Outstanding Natural Resource Waters], and in the case of waters whose quality exceeds that necessary for the section 101(a)(2) goals of the Act, an activity cannot result in a lowering of

³³ 38 M.R.S. § 465.4.F (d) (“Use of the water body to receive or transport waste water discharges is not considered an existing use for purposes of this antidegradation policy”); 40 C.F.R. § 131.10 (“In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.”)

³⁴ Exhibit 33, Oct. 25, 2019 letter at p. 5.

³⁵ See above, n. 33.

³⁶ 38 M.R.S. § 464.4.C.

³⁷ Oct. 25, 2019 letter at 7.

³⁸ 40 C.F.R. § 131.10(b).

water quality unless the applicable public participation, intergovernmental review, and baseline control requirements of the antidegradation policy have been met.”³⁹

III. Conclusion

In conclusion, the DEP should present to the Board of Environmental Protection and the legislature the factual basis for the lower Androscoggin’s attainment of Class B criterion and character and refrain from including within that recommendation any argument that might be construed as a Use Attainability Analysis.

³⁹ U.S. EPA, Clean Water Act Handbook, Chapter 4, p. 14.

Exhibit 2

38 M.R.S.A. § 464 (F) (4)

*“When the **actual quality** of any classified water exceeds the minimum standards of the next highest classification, that higher water quality must be maintained and protected. The board shall recommend to the Legislature that water be reclassified in the next higher classification.”*

**A Legal Opinion: Excerpt from Conservation Law Foundation BEP Comments 10/2/2008
The Lower Androscoggin River**

“The Department’s refusal to recommend an upgrade violates the legal standard in the Clean Water Act that a state shall revise its standards to reflect uses and water quality actually being attained. 40 C.F.R. §131.10(i). See also id. §131.6(d); 38 M.R.S.A. §464(4)(F). Thus, the Committee’s [or Board’s] analysis must be based on existing water quality-not hypothetical modeling with point sources operating at maximum licensed discharge. Indeed, the Committee [or Board] is specifically prohibited from considering maximum licensed loads because both state and federal regulations prohibit consideration of waste discharge or transport as a designated use. 40 C.F.R. §131.10(a); 38 M.R.S.A. §464(4)(F)(1)(d).

CLF strongly disagrees with the Department's recommendation and rationale for not upgrading this river segment. The Department has stated that proponents must provide water quality data and modeling showing "the likelihood of attainment of Class B water quality criteria at maximum licensed loads." See Reclassification Memorandum at 29. This makes no logical, legal or economic sense. First, no one operates at maximum licensed loads; rather a large buffer is generally built into all permits to avoid violations. Thus, DEP is requesting an impossible and unnecessary showing.

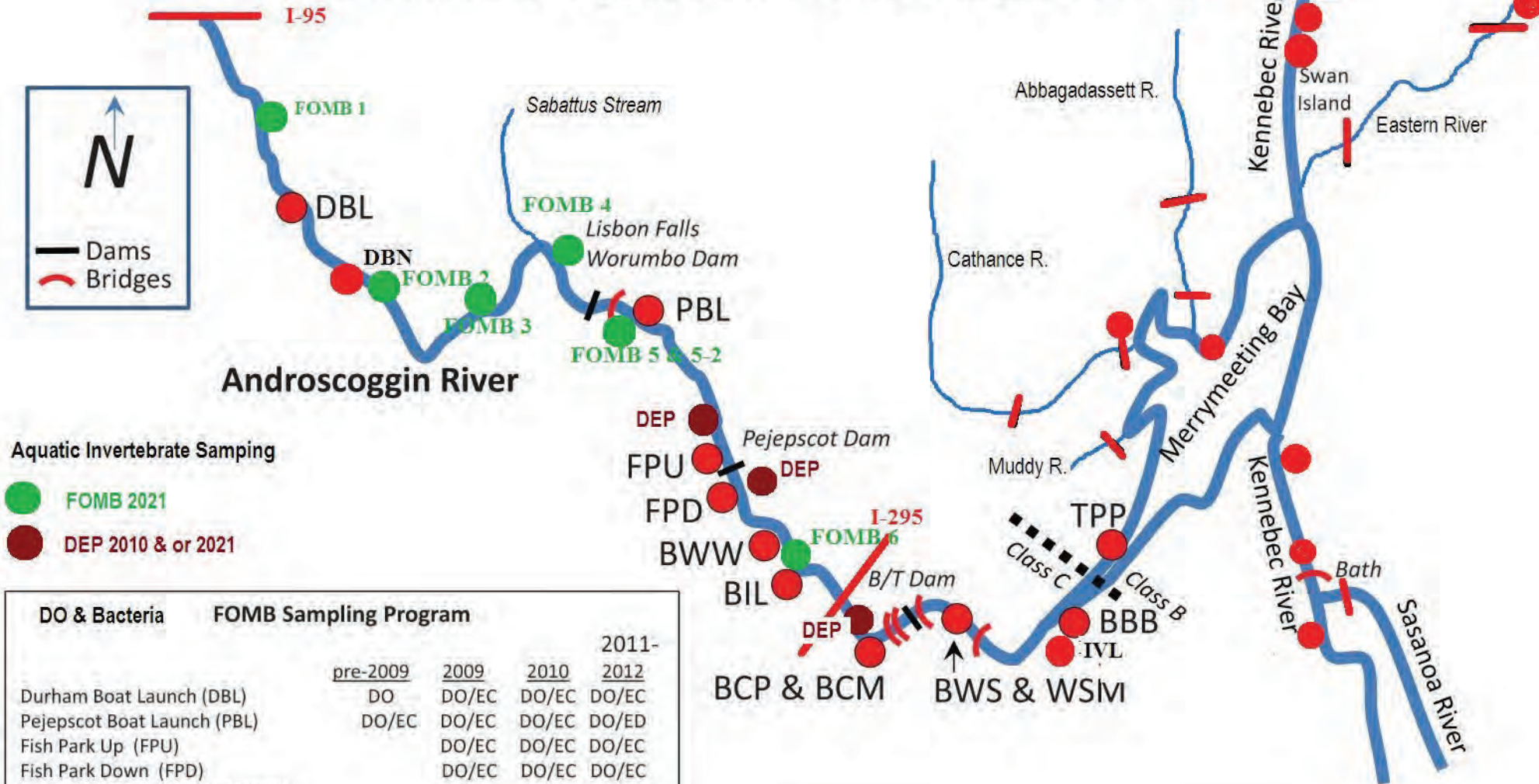
Second, the Department's recommendation violates the legal standard in the Clean Water Act that a state shall revise its standards to reflect uses and water quality actually being attained. 40 C.F.R. §131.10(i). See also id. § 131.6(d); 38 M.R.S.A. § 464(4)(F). Thus, the Board's analysis must be based on existing water quality - not hypothetical modeling with point sources operating at maximum licensed discharge. Indeed, the Board is specifically prohibited from considering maximum licensed loads because both state and federal regulations prohibit consideration of waste discharge or transport as a designated use. 40 C.F.R. § 131.10(a); 38 M.R.S.A. § 464(4)(F)(1)(d).

Third, as many of the dischargers in this watershed have already recognized, water quality upgrades are generally good for surrounding communities. As has been shown over and over again, clean water is an economic boon. Examples abound throughout New England, including the recent revival of Boston Harbor, the Portland Waterfront, the Auburn Riverfront, and the resurgence of Merrymeeting Bay and the Kennebec River. The Androscoggin River deserves the same.

CLF believes that the data, including both dissolved oxygen levels and recreational uses, shows that existing uses in the lower Androscoggin have improved over time and that the river currently attains the higher bacteria and dissolved oxygen standards set forth in the Class B designation. As noted by the Department, it has no reason to question the data; indeed, it has relied upon data supplied by the proponent in prior reclassifications. Therefore, barring a showing that the data is invalid, the Board must recommend upgrading this section.”

Exhibit 3

Lower Androscoggin River – FOMB Sample Sites



DO & Bacteria

FOMB Sampling Program

		pre-2009	2009	2010	2011-2012
Durham Boat Launch (DBL)		DO	DO/EC	DO/EC	DO/EC
Pejepscot Boat Launch (PBL)		DO/EC	DO/EC	DO/EC	DO/ED
Fish Park Up (FPU)			DO/EC	DO/EC	DO/EC
Fish Park Down (FPD)			DO/EC	DO/EC	DO/EC
Brunswick Water Works (BWW)			EC	na	na
Brunswick Interstate Ledges (BIL)			DO/EC	DO/EC	DO/EC
Brunswick Canoe Portage (BCP)			DO/EC	DO/EC	DO/EC
Brunswick Canoe Mooring (BCM)			DO/EC	DO/EC	na
Brunswick Water St. Boat Launch (BWS)	EC	DO/EC	DO/EC	DO/EC	DO/EC
Water Street Mooring (WSM)			DO/EC	DO/EC	na
Brunswick Bay Bridge (BBB)	EC	DO/EC	DO/EC	DO/EC	DO/EC
Topsham Pleasant Pt. (TPP)	DO	DO	DO	DO	DO

Upstream Monitoring

	pre-2009	2009	2010-2012
Gulf Island Pond Above	DO		
Gulf Island Pond Below (Bates Boathouse)	DO		
Auburn Boat Launch		DO	DO

Exhibit 4

Upper Lower Androscoggin Helicopter Water Sampling Profile 8/24/24-FOMB

Site	Lat	Long	Time	DO mg/l	DO %	Spec Cond	H2O Temp	Depth Ft.	Air Temp	E. coli	Total Col.
A1	44° 0.524N	70° 5.169W	6:22	7.8	90.2	61.6	21.5	6	15	18.5	1119.9
A2	43° 59.573N	70° 6.839W	6:31	7.8	89	61	21.4	4	15	23.8	1299.7
A3	44° 0.116N	70° 9.076W	6:40	7.7	88.9	60.5	21.5	3	12	24.3	980.4
A4	44° 2.744N	70° 11.278W	6:51	7.8	89.6	60.7	21.4	4	13	20.1	816.4
BR	44° 3.917N	70° 12.457W	6:55	7.8	98.1	61.5	21.2				
A5	44° 13.010N	70° 13.010W	7:03	7.7	88.8	55.3	21.5	4	15	24.6	727
A6	44° 6.364N	70° 13.406W	7:10	7.7	88.8	54.8	21.5	8	15	9.7	613.1
A7	44° 7.791N	70° 12.358W	7:19	7.8	90.1	54.9	21.5	9	16	13.5	547.5
A8	44° 8.421N	70° 12.125W	7:24	7.8	89.9	55.2	21.5	7	16	13.5	648.8
A9	44° 9.586N	70° 12.415W	7:29	7.9	92.9	54.5	22.1	8	16	10.8	547.5

Site Notes

A1-FOMB Site 4 from BMI study-below Sabbatus mouth
A2-FOMB Site 3 from BMI study-in westerly rapid below Durham
A3-FOMB Site 2 from BMI study-Shallows opposite FOMB DBN
A4-FOMB eagle nest site XF
BR-Bottom of Benner Rips-done to see if rapids elevated DO
A5-Little Andy alt site below bridge
A6-Upstream of island between O'Reilly's and long building on east
A7-Below Deer Rips upstream of double points-east bank
A8-Start of narrows above Deer Rips dam
A9-GIP 850' above first island opposite west point, below rocks

Notes

DEP YSI ProSOLO meter #46- Calibrated (99.7%) Used in FOMB VRMP program. Bacteria samples analyzed with IDEXX Colilert.
Air temperatures from helicopter thermometer-no idea of accuracy
Helicopter-Schweizer 300C with amphibious floats
Had not pre-planned to do Benton Rips so no bacteria and forgot depth
USGS Auburn Flows-3,840 cfs, median- 2,920 cfs. Checked 4:15 am & 9:15 am-same readings
Ed Friedman & Mauricio Handler
Engine start 6am. Depart KLEW 6:15. End sampling 7:33. Back at KLEW 7:50

Upper Lower Androscoggin Helicopter Water Sampling Profile 6/26/25-FOMB

Site	Lat	Long	Time	DO mg/l	DO %	Spec Cond	H2O Temp	Depth Ft.	Air Temp	E. coli	Total Col.
A1	44° 0.524N	70° 5.169V	6:37	8	92.9	75.2	23.1	4	19	42.2	1986
A2	43° 59.573	70° 6.839V	6:52	7.9	91.5	74.7	22.7	2	19	22.8	2419.6
A3	44° 0.116N	70° 9.076V	7:00	7.9	91.6	74.2	22.6	2	19	50.4	2419.6
A4	44° 2.744N	70° 11.278	7:12	8	93.9	74.1	22.7	2	19	58.1	816.4
BR	44° 3.917N	70° 12.457	7:18	7.9	91.6	74.2	22.5	4	19	47.8	571.7
A5	44° 13.010	70° 13.010	7:25	7.9	92.1	68.5	22.6	4	19	59.8	640.5
A6	44° 6.364N	70° 13.406	7:28	7.9	91.2	68.3	22.6	4	19	51.2	980.4
A7	44° 7.791N	70° 12.358	7:42	8	92.6	7.6	22.8	4	19	32.8	1986.3
A8	44° 8.421N	70° 12.125	7:47	7.9	92.5	67.7	22.9	4	19	31.8	436.2
A9	44° 9.586N	70° 12.415	7:53	8.8	107.2	68.7	25.7	4	19	37.9	238.2
A1	Replicate		6:46	8	92.9	75.2	23.1	4	19	30.5	2419.6
Lab Blank			9:30							0	0

Site Notes

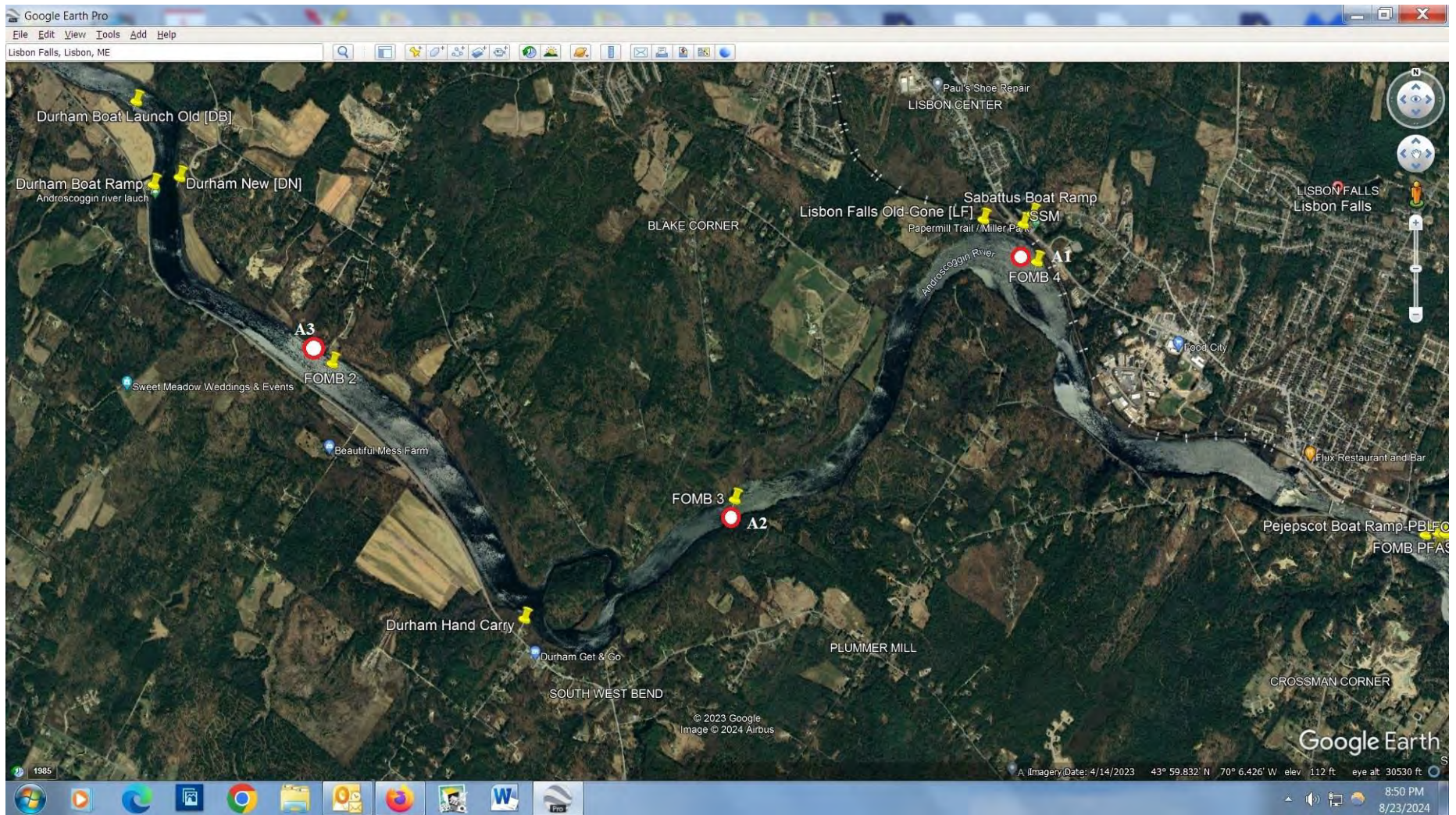
A1-FOMB Site 4 from BMI study-below Sabbatus mouth
A2-FOMB Site 3 from BMI study-in westerly rapid below Durham
A3-FOMB Site 2 from BMI study-Shallows opposite FOMB DBN
A4-FOMB Site 4 from BMI study. Eagle nest site XF
Br-Bottom of Benner Rips-below LAPCA
A5-Little Andy alt site below bridge
A6-Upstream of island between O'Reilly's and long building on east
A7-Below Deer Rips upstream of double points-east bank
A8-Start of narrows above Deer Rips dam. At 10'-same readings
A9-GIP 850' above first island opposite west point, below rocks (A8)

Notes

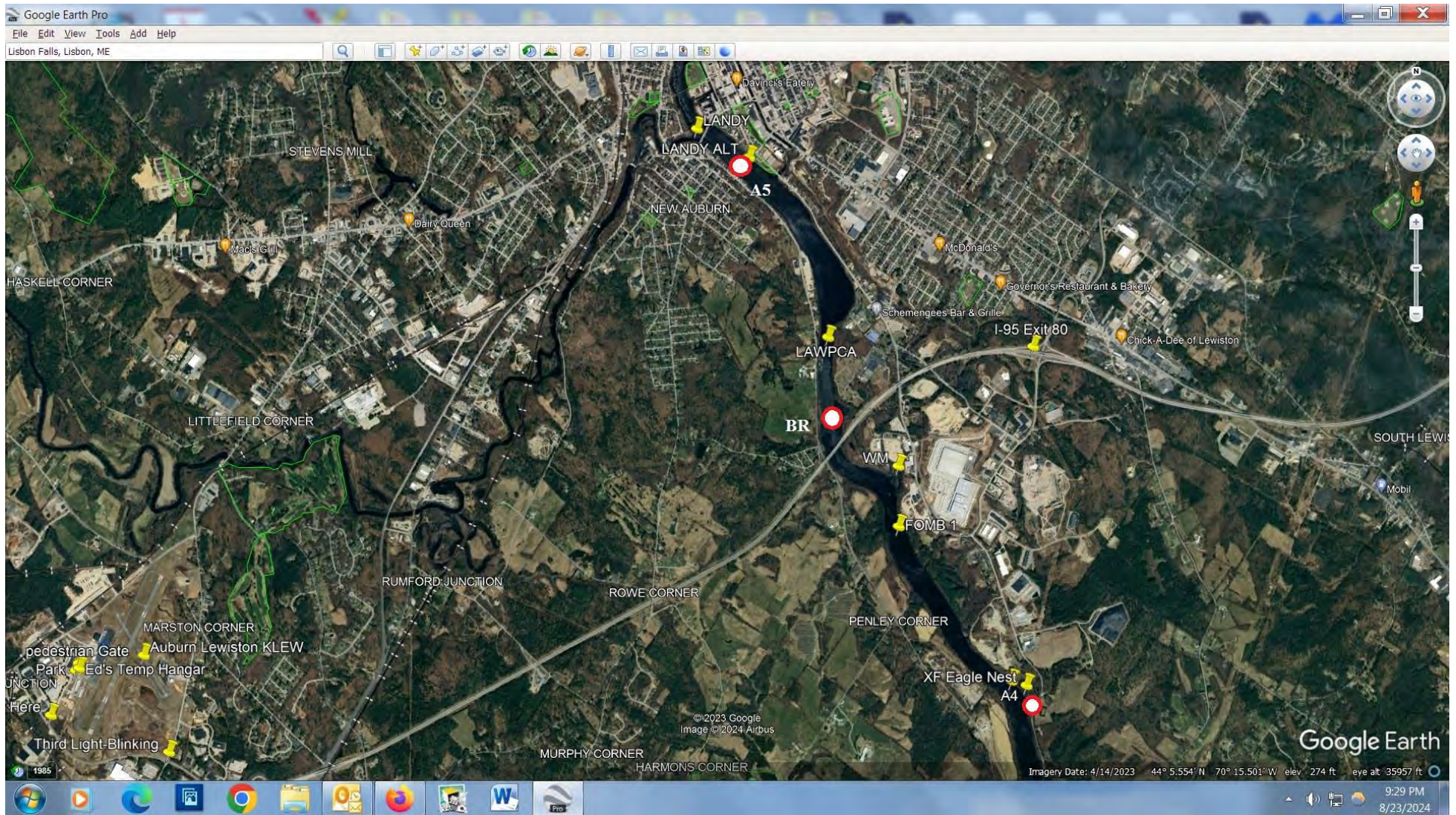
DEP YSI ProSOLO meter #46- Calibrated ((99.9%) used in FOMB VRMP program. Bacteria samples analyzed with IDEXX Colilert.
Air temperatures from helicopter thermometer-no idea of accuracy
Helicopter-Schweizer 300C with amphibious floats
USGS Auburn Flows-3,150 cfs, median-4,240 cfs. Checked 6:45 am & 8:00 am-same readings. 3,25 at 4:15am.
Ed Friedman & Kathy Claerr
Engine start 6:17am. Depart KLEW 6:30. End sampling 7:57. Back at KLEW 8:10

Exhibit 5

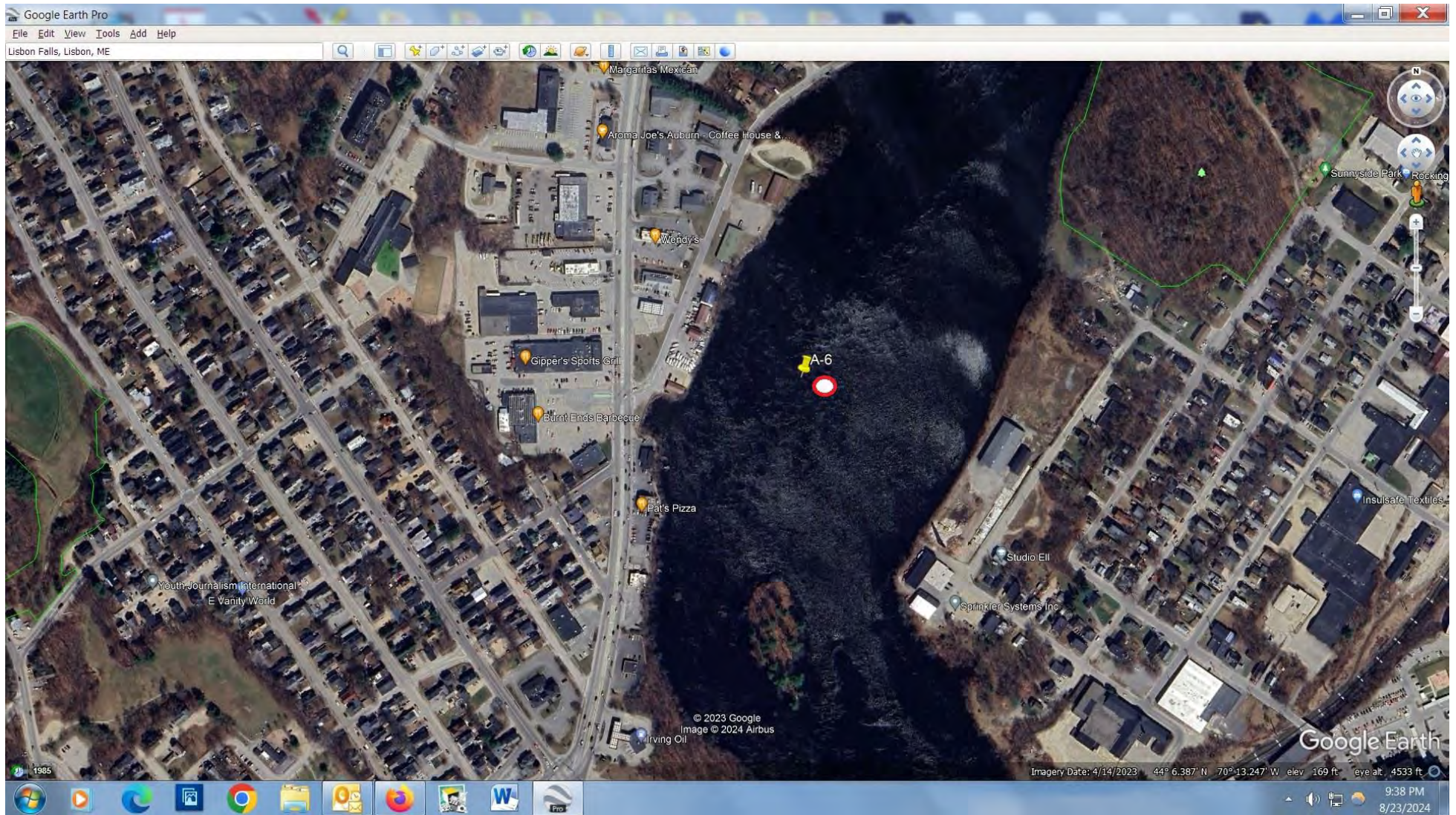
FOMB Helicopter Sampling Sites A1, A2, A3



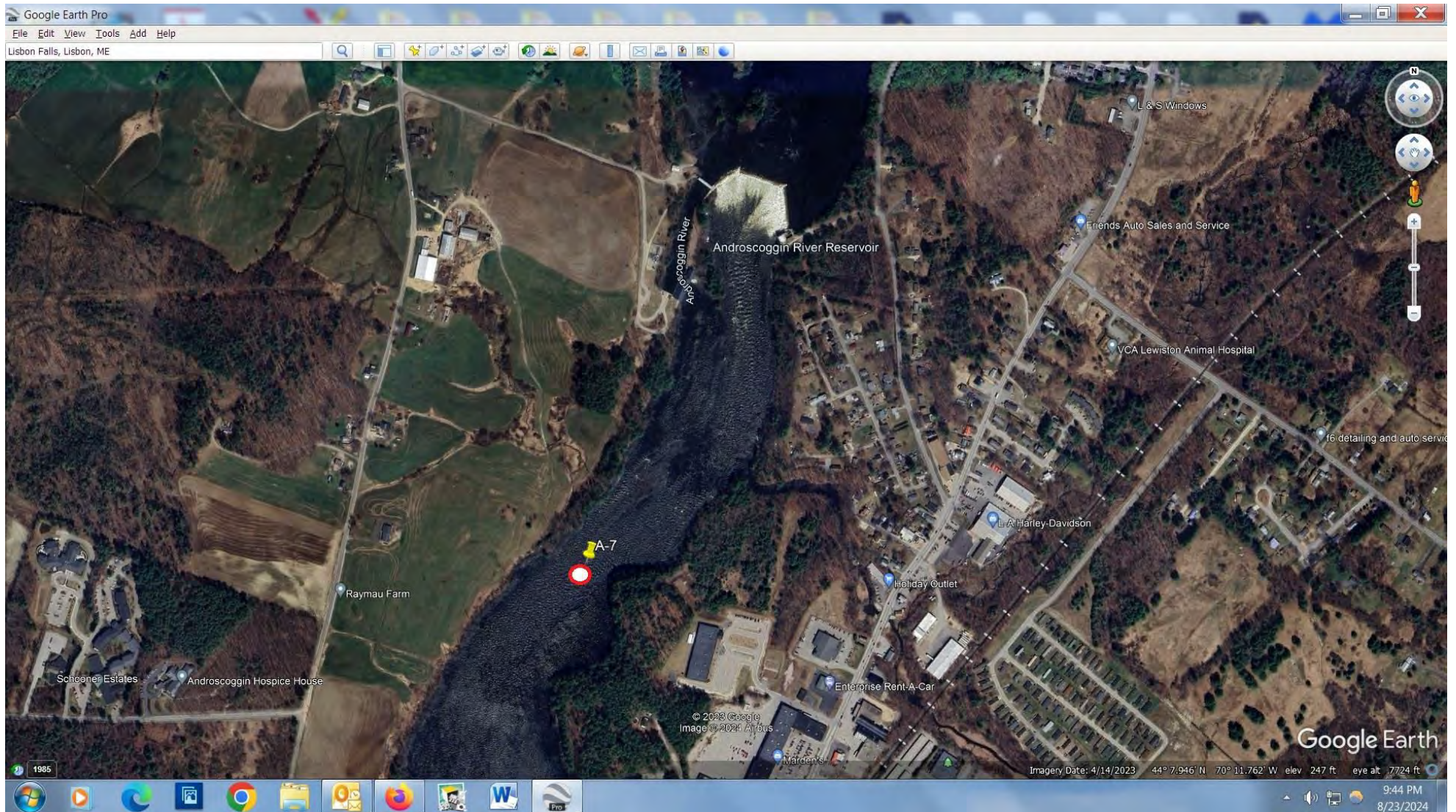
FOMB Helicopter Sampling Sites A4, BR, A5



FOMB Helicopter Sampling Site A6



FOMB Helicopter Sampling Site A7



FOMB Helicopter Sampling Sites A8, A9

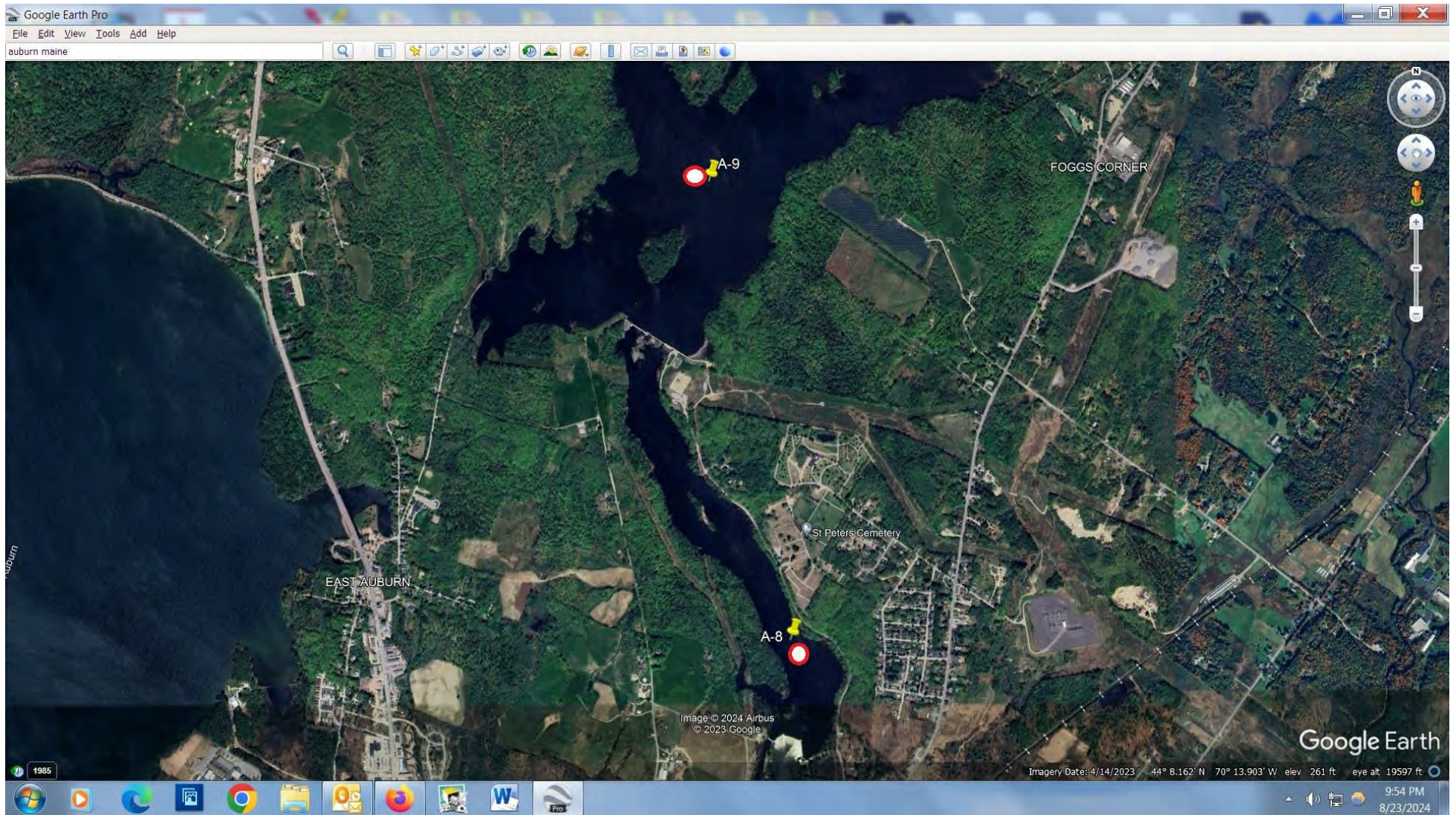


Exhibit 6

FOMB Water Quality Monitoring Data.

<http://cybrary.friendsofmerrymeetingbay.org/WaterQualityProgram.cfm>

- [1999_chartdata](#) (XLS File 13 KB)
- [1999_data_ss](#) (XLS File 17 KB)
- [1999_WQ_Complete](#) (XLS File 17 KB)
- [1999_WQData](#) (XLS File 13 KB)
- [1999_WQMFullData](#) (XLS File 17 KB)
- [2000_Chartdata](#) (XLS File 16 KB)
- [2000_MMBDO](#) (XLS File 17 KB)
- [2000_WQ_Complete](#) (XLS File 40 KB)
- [2001_chartdata](#) (XLS File 17 KB)
- [2001_WQ](#) (XLS File 42 KB)
- [2001_WQ_Abbrev](#) (XLS File 36 KB)
- [2002_Complete](#) (XLS File 42 KB)
- [2002_DO](#) (XLS File 18 KB)
- [2002_WQ_Summary](#) (XLS File 22 KB)
- [2003_WQ_data](#) (XLS File 55 KB)
- [2004_WQ_data](#) (XLS File 47 KB)
- [2005_fecal_coliform_rain_events](#) (XLS File 20 KB)
- [2005_WQ_Data](#) (XLS File 142 KB)
- [2006_DO_Data](#) (XLS File 59 KB)
- [2006_Fecal_Data\(complete_set\)](#) (XLS File 40 KB)
- [2007_ColiformData](#) (XLS File 24 KB)
- [2007_DO_Data](#) (XLS File 46 KB)
- [2008_DO_Data](#) (XLS File 50 KB)
- [2008_Fecal_Data](#) (XLS File 38 KB)
- [2008_Fecal_replicates](#) (XLS File 28 KB)
- [2008_Fecal_YTDApril-June](#) (XLS File 25 KB)
- [2008_LowerAndroDO_dataThrough June](#) (XLS File 15 KB)
- [2009 Dissolved O2 Data](#) (XLS File 37 KB)
- [2009 Ordered Andro data Geomeans](#) (XLS File 178 KB)
- [2009-Coliscan Bacteria](#) (XLS File 28 KB)
- [2010 Andro data with E coli & DO Geomeans](#) (XLS File 36 KB)
- [2010 Dissolved O2 Data La Motte\(version 1\)](#) (XLS File 44 KB)
- [20100000-Coliform-Final](#) (XLS File 58 KB)
- [2011-FOMB Ecoli](#) (XLS File 16 KB)
- [2011 Dissolved O2 Data \(version 1\)](#) (XLS File 53 KB)
- [2012 Dissolved O2 Data \(version 1\)](#) (XLS File 47 KB)
- [2013 Dissolved O2 Data \(version 1\)](#) (XLS File 42 KB)
- [20140000-Coliform-Final](#) (XLS File 34 KB)
- [20140000-Dissolved O2 Data \(version 1\)](#) (XLS File 44 KB)
- [20150000 Coliform Final](#) (XLS File 36 KB)
- [20160414 Update Dissolved O2 Data HW Data Sheets](#) (XLS File 47 KB)
- [20161231 Coliform Data](#) (XLS File 37 KB)
- [20161231 Coliform Final](#) (XLS File 37 KB)
- [20161231 Dissolved O2 Data](#) (XLS File 47 KB)
- [20171231 Androscoggin and Misc Coliform Data](#) (XLS File 54 KB)
- [20171231 Dissolved O2 Data](#) (XLS File 48 KB)

- [20181201_FOMB_Coliform_and_DO_Data](#) (XLS File 56 KB)
- [20191230-Coliform DO Final](#) (XLS File 59 KB)
- [2020_WQ_Data_Complete](#) (XLS File 62 KB)
- [2021 Colliform and Dissolved O2 Data](#) (XLS File 60 KB)
- [2022 Colliform and Dissolved O2 Data](#) (XLS File 62 KB)
- [2023 Colliform and Dissolved O2 Data](#) (XLS File 63 KB)
- [2024 Coliform and Dissolved O2 Data](#) (XLS File 61 KB)
- [DataSheet](#) (DOC File 46 KB)
- [DMRDataSheet](#) (DOC File 34 KB)
- [FOMBFecalColiformFieldDataSheet2008](#) (DOC File 27 KB)
- [Water Quality 03-05](#) (DOC File 1.72 MB)
- [WQ.htm](#) (HTM-OLD File 2 KB)
- [WS_FTP](#) (LOG File 12 KB)

Exhibit 7

2021

Aquatic Life Determination

Macroinvertebrate Sampling Study

of the

Androscoggin River,

Lewiston to Brunswick

Submitted by:

Paul C. Leeper
Moody Mountain Environmental
137 Diamond Str
Searsmont Maine 04973

Submitted to:

Friends of Merrymeeting Bay
P.O. Box 233
Richmond, Maine 04357
Date: May 4 2022

Introduction

This macroinvertebrate sampling study was conducted to determine what Maine Aquatic Life Water Quality Standards the lower Androscoggin River currently attains, between Lewiston and Brunswick. Rock bags/baskets were deployed at six sites during August and September, 2021 providing standardized substrates for macroinvertebrate colonization. Samples were retrieved, and the organisms were identified and enumerated. These data were submitted to the DEP for classification modeling and decisions on water quality class attainment in terms of Aquatic Life. The project was funded by Friends of Merrymeeting Bay (FOMB).

Study Objectives

The goal of the macroinvertebrate sampling study was to generate data on the aquatic macroinvertebrate communities in the Androscoggin River between Lewiston and Brunswick and assess these communities in terms of Maine's Aquatic Life Standards. The study was undertaken to better inform current reclassification efforts.

Study Area

In 2021 we placed samples at six (6) sites in the Androscoggin River to study aquatic macroinvertebrates (Figure 1). Table 1 shows the locations of the sample sites.

Figure 1. Location of aquatic macroinvertebrate sampling sites between Lewiston and Brunswick on the Androscoggin River, August, September 2021.

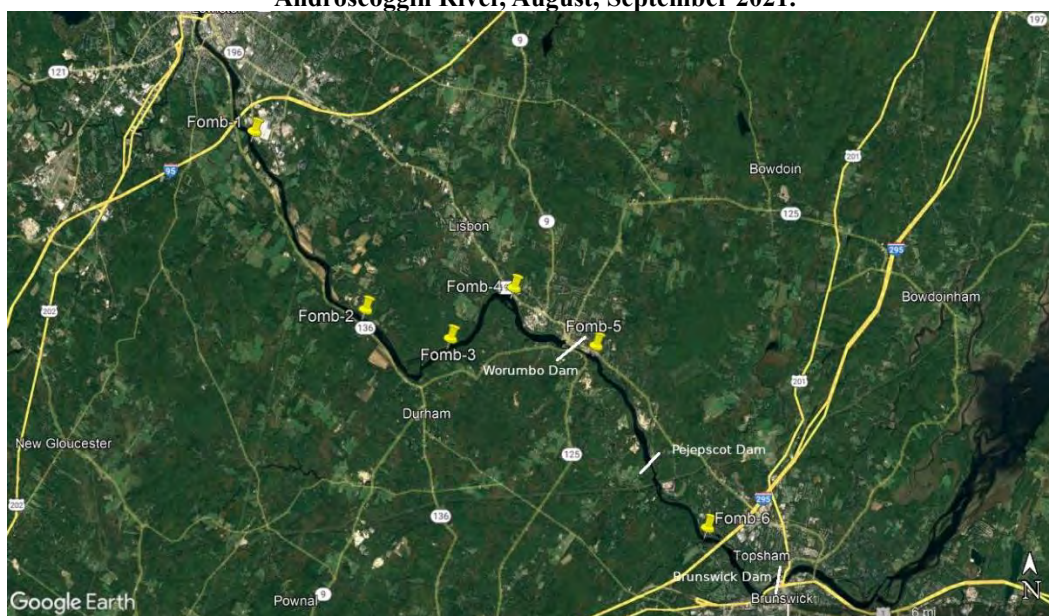


Table 1. Location of six (6) macroinvertebrate sample sites on the Androscoggin River in 2021 with notes.

Site	Town	Latitude	Longitude	Notes
1	Lewiston	44.058082	70.20023	
2	Durham	44.001923	70.15123	
3	Lisbon	43.992786	70.11391	
4	Lisbon	44.008722	70.08600	Worumbo Impoundment
5	Lisbon Falls	43.990480	70.04998	Pejepscot Impoundment
6	Brunswick	43.932984	70.00109	possibly impounded by Brunswick Dam at times

Water Classification

The Androscoggin River between Lewiston and Brunswick, during the time of the study, was classified Class C ((38 M.R.S.A § 467(1)(B)(1)(b))). With respect to designated uses, the Maine Water Quality Law requires that “Class C waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life.” (38 M.R.S.A. § 465(4)(A)). In addition, for Class C waters, “Discharges to Class C waters may cause some changes to aquatic life, except that the receiving waters must be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community...” (38 M.R.S.A. § 465(4)(C). The term "community function" means mechanisms of uptake, storage and transfer of life-sustaining materials available to a biological community which determines the efficiency of use and the amount of export of the materials from the community” ((38 M.R.S.A. § 466(3)). The term "community structure" means the organization of a biological community based on numbers of individuals within different taxonomic groups and the proportion each taxonomic group represents of the total community” ((38 M.R.S.A. § 466(4)). The term “resident biological community” is defined as “aquatic life expected to exist in a habitat which is free from the influence of the discharge of any pollutant” ((38 M.R.S.A. § 466(10)).

Study Methods

The objective of the macroinvertebrate sampling study was to determine if the aquatic life, in this case the macroinvertebrate community, attained these Class C standards or; was the aquatic

life attaining a higher class? The Maine Department of Environmental Protection (DEP) "Methods for Biological Sampling and Analysis of Maine's Inland Waters" (Davies and Tsomides Revised 2014) were used as the basis of the field and laboratory procedures in the macroinvertebrate sampling study. A summary of these methods is given below.

The DEP standard rock bag/basket samplers were used for this study. These samplers hold approximately 16 lbs. of clean, washed, bank-run cobble, graded to uniform diameter range of 1.5 to 3 inches. Three (3) samplers were placed at each sample site; samplers are left in the river for approximately 28 days ($\pm$ 4 days) to allow for invertebrate colonization. Retrieval of the samplers was done using an aquatic D-net at sites 1, 2, and 3. The net was placed directly downstream of a sampler; the sampler was then picked up and placed in the net. The contents of each sampler and the net were washed through a sieve bucket and preserved in labeled jars. Samplers at Sites 4, 5, and 6 were deployed and retrieved by certified SCUBA diver. At these deeper, non-wadeable, sites a diver is required in order to observe the conditions on the bottom and ensure proper placement and retrieval of the samplers. The diver retrieved the samplers using fine mesh collection bags. After enclosing the samplers, the samplers were brought to the surface.

Habitat measurements including substrate type, depth, current velocity and temperature were collected at sampler collection and retrieval.

The samplers were collected, preserved, and transported to the Moody Mountain Environmental laboratory. The three (3) samplers (replicates) were sorted, identified, and enumerated.

The Maine DEP, Division of Environmental Assessment (DEA) uses a linear discriminant water quality model (LDM) and professional judgment to determine water quality class attainment of aquatic macroinvertebrate communities. The LDM results are percentages indicating the probability of a site attaining water quality classes A, and AA (the biocriteria requirements are the same), B, or C. The LDM numeric criteria results can be supplanted by professional judgment if conditions are such that the data sets are unsuitable for LDM analysis.

The Method outlines a number of conditions that can trigger the use of professional judgment to analyze data. Among these are:

1. Minimum Provisions - if the sample Mean Total Abundance is less than 50 individuals or Generic Richness is less than 15 genera.
2. Atypical Conditions - where atypical conditions could result in uncharacteristic findings, professional judgment can be used to make adjustments. Examples of these atypical conditions are:
 - a. - Habitat Factors
 - Lake Outlets
 - Impounded Waters
 - Substrate Characteristics
 - Tidal Waters
 - b. - Sampling Factors
 - Disturbed Samples
 - Unusual Taxa Assemblages
 - Human Error in Sampling
 - c. - Analytical Factors
 - Subsample versus Whole Sample analysis
 - Human Error in Processing

In cases where professional judgment is used the Method outlines a process by which adjustments should occur. These are:

- a. **Resample** the site if specific sampling factors may have influenced the results
- b. **Raise the Finding** of the LDM from non-attainment to indeterminate or attainment of Class C;
- c. **Raise the Finding** of the LDM from one class to the next higher class;
- d. **Lower the Finding** of the LDM to indeterminate or the next lower class. This would be based on evidence that the narrative aquatic life criteria for the assigned class are not met;
- e. **Determination of Non-Attainment:** Minimum Provisions not met by samples for which no evidence exists of atypical conditions.
- f. **Determination of Attainment:** Minimum Provisions not met by samples for which there is evidence of factors that could result in minimum provisions not being met, professional judgment may be used to make a professional finding of attainment of the aquatic life criteria for any class. Such decisions will be provisional until appropriate resampling is carried out.

Results

The samplers were placed in the river on August 4 and 5, 2022. Samplers were retrieved on August 31 (Sites 1-4) and September 3 (Site 5-6). At Site 5 it was found that the samplers had been disturbed so 3 new samplers were deployed and retrieved on September 29, 2022. Habitat measurements are shown in Table 2. Underwater photos of the substrate and sampler placement are included below.

Table 2. Site Information and habitat measurements at six (6) sites in the Androscoggin River between Lewiston and Brunswick for aquatic macroinvertebrate sampling. August, September 2021

Site	Town	Sample Method	Deployment Date	Deployment Time	Number Deployed	Deployed Depth (cm)	Retrieval Date	Retrieval Time	Number Retrieved
1	Lewiston	Rock Bag	8/4/2021	12:10 PM	3	55	8/31/2021	12:40 PM	3
2	Durham	Rock Bag	8/4/2021	1:50 PM	3	52	8/31/2021	10:30 AM	3
3	Lisbon	Rock Bag	8/4/2021	2:45 PM	3	30	8/31/2021	3:20 PM	3
4	Lisbon	RB-Rock Basket	8/4/2021	3:45 PM	3	314	8/31/2021	4:00 PM	3
5	Lisbon Falls	RB-Rock Basket	9/3/2021	11:00 AM	3	344	9/29/2021	9:45 AM	3
6	Brunswick	Rock Bag	8/5/2021	3:45 PM	3	317	9/3/2021	9:45 AM	3

Physical Characteristics									
Site	Land Use 1	Land Use 2	Land Use 3	Terrain	Canopy Cover	Notes	Notes	Notes	Notes
1	Upland hardwood	Upland conifer		Rolling	Open	Below Urban NPS		Below POTW	
2	Upland hardwood	Upland conifer		Flat	Open	Below Urban NPS		Below POTW	Below Agriculture NPS
3	Upland hardwood	Upland conifer		Rolling	Open	Below Urban NPS		Below POTW	Below Agriculture NPS
4	Upland hardwood	Upland conifer		Rolling	Open	Below Urban NPS	Above Dam	Below POTW	Below Agriculture NPS
5	Upland hardwood	Upland conifer	Urban	Rolling	Open	Below Urban NPS	Above Dam	Below POTW	Below Dam
6	Upland hardwood	Upland conifer		Rolling	Open	Above Dam			

	Potential Stressor(s)			
Site	Stressor 1	Stressor 2	Stressor 3	Stressor 4
1	NPS Pollution	Urban Runoff		
2	NPS Pollution	Urban Runoff		
3	NPS Pollution	Urban Runoff		
4	NPS Pollution	Urban Runoff	Impounded	Nutrients
5	Impounded	NPS Pollution	Urban Runoff	
6				

	Physical Characteristics of Bottom (%)				
Site	Bedrock	Boulders (>10")	Rubble/Cobble (2.5" – 10")	Gravel (1/8" – 2.5")	Sand (<1/8")
1		10	55	25	10
2			5	15	80
3		80		10	10
4					100
5			50	40	10
6	50	10	40		

Habitat Characteristics at Placement					
Site	Wetted Width (m)	Depth (cm)	Velocity (cm/sec)	DO (mg/l)	Temperature (°C)
1	152	55	59	9.5	23.3
2	252	52	21	11	24.8
3	139	30	27	10.6	24.3
4	396	314	8.5	9.4	23.6
5	185	344	18	7.9	22
6	176	317	30	8.3	23.5
Habitat Characteristics at Retrieval					
Site	Wetted Width (m)	Depth (cm)	Velocity (cm/sec)	DO (mg/l)	Temperature (°C)
1	152	40	45	8.4	23.3
2	252	46	21	10	24.9
3	139	37	11	9.4	25.5
4	396	320	5	8.1	24.9
5	185	393	18	8.5	19.5
6	176	310	34	7.6	23.2

Photo 1. Rock baskets and rock bag samplers before deployment. August, 2021



Photo 2. Deploying rock bags, Androscoggin River. August, 2021 (Site 1).



Photo 3. Site 1 substrate and typical sample placement and condition at retrieval. Androscoggin R. August, 2021.



Photo 4. Site 2 substrate and typical sample placement and condition at retrieval. Androscoggin R. August, 2021.

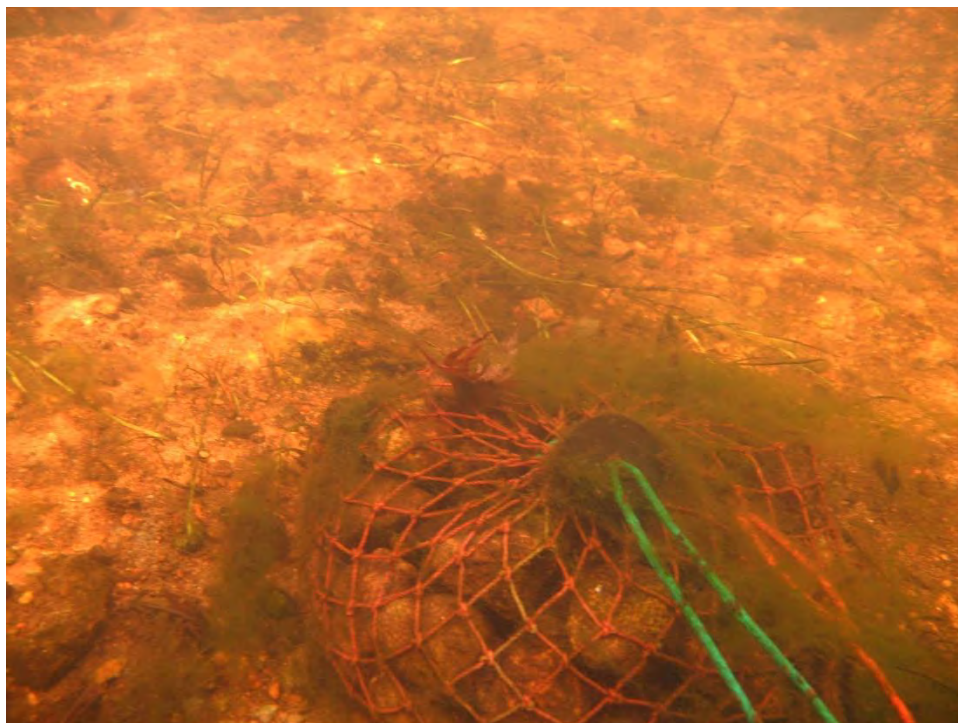


Photo 5. Site 3 substrate and typical sample placement and condition at retrieval. Androscoggin R. August, 2021.



Photo 6. Site 4 substrate and typical sample placement and condition at retrieval. Androscoggin R. August, 2021.

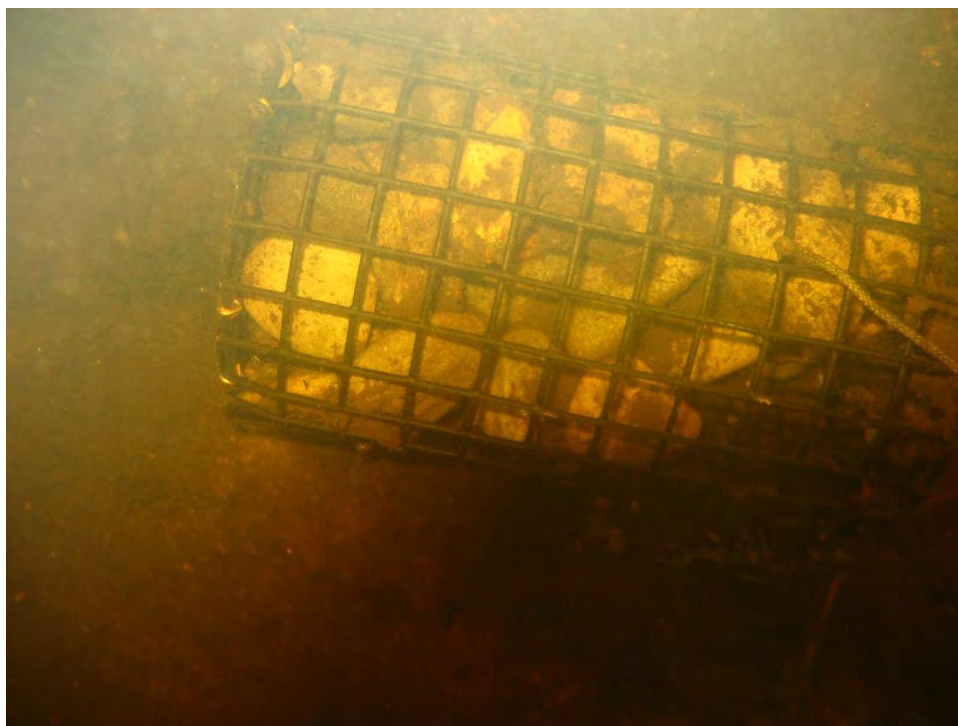


Photo 7. Site 4 typical substrate. Androscoggin R. August, 2021.

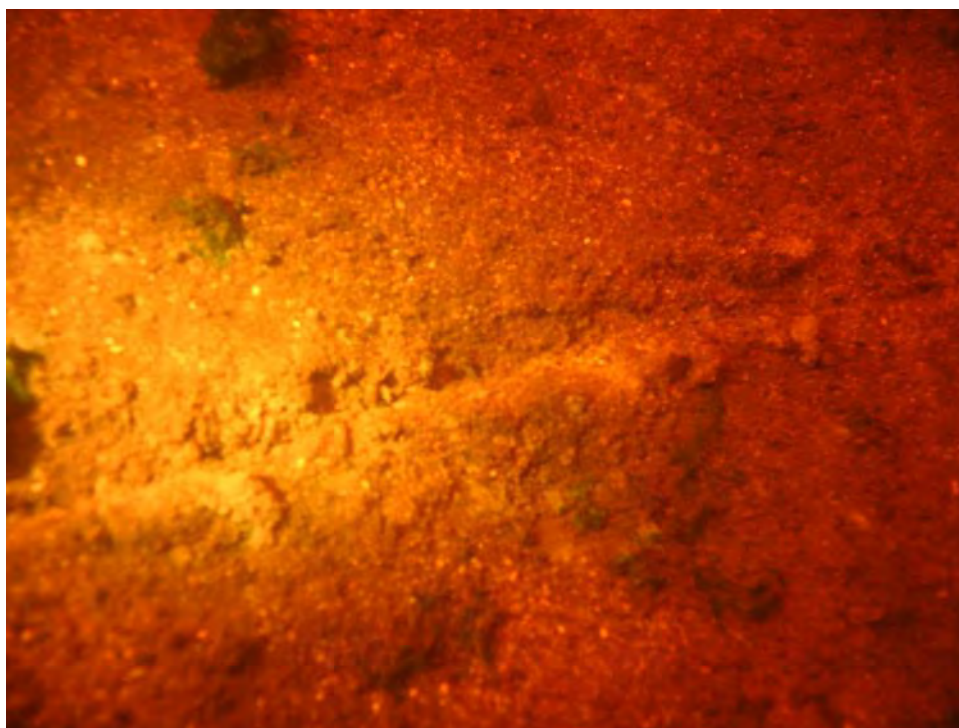


Photo 8. Site 5 substrate and typical sample placement and condition at retrieval. Androscoggin R. September, 2021.

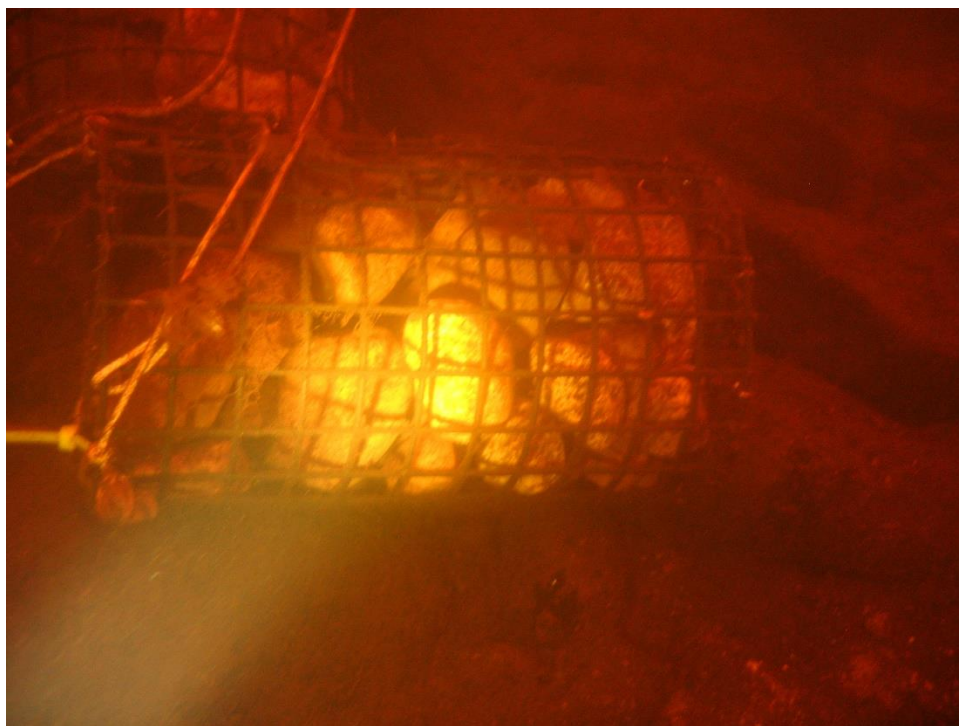


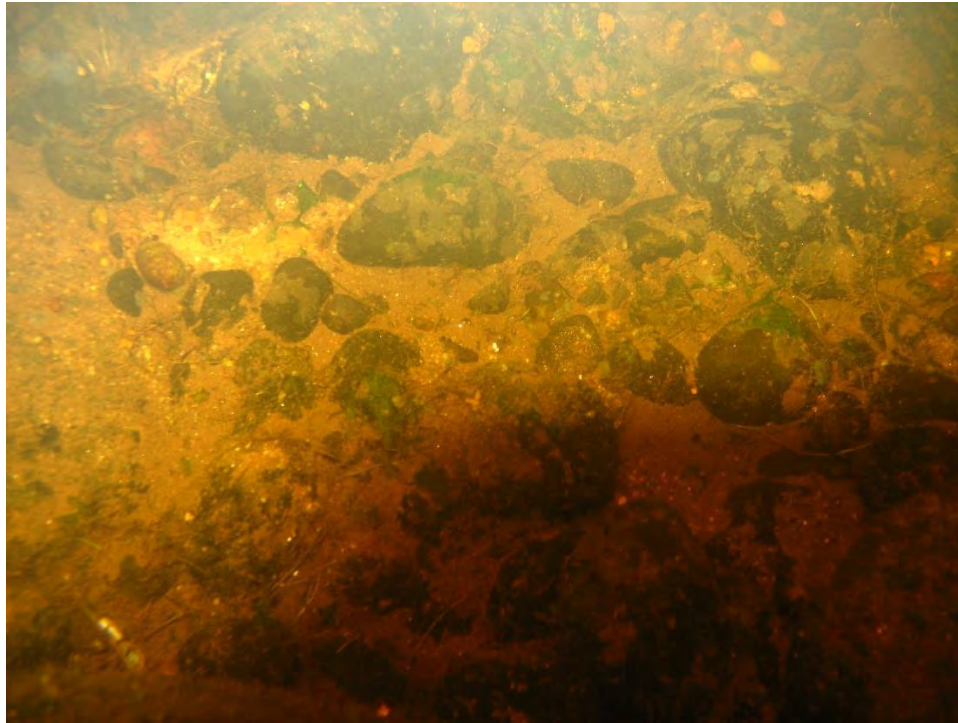
Photo 9. Site 5 substrate. Androscoggin R. September, 2021.



Photo 10. Site 6 substrate and typical sample placement and condition at retrieval. Androscoggin R. September, 2021.



Photo 11. Site 6 substrate. Androscoggin R. September, 2021.



Community Analysis

Structural indices for the sampled communities are shown in Table 3. Dominant organisms (representing over 5% of the Total Abundance) in the communities are shown in Table 4 arranged from the most sensitive organisms to the organisms most tolerant of poor water quality conditions. The make-up of these communities and a discussion of the results are presented below.

Table 3. Indices of community structure for the aquatic invertebrate communities at six (6) sites in the Androscoggin River between Lewiston and Brunswick. August, September 2021.

Site	Tot. Abund.	Taxa Richness	S-W Div.	Hils. Biotic Index (HBN)	Water Quality indication from HBN	Mayfly, Stonefly, Caddisfly (EPT) Richness	Mayfly, Stonefly (EP)		Midge		Worms & Snails
							Rich	% Ab	Rich	% Ab	% Ab
1	2388.3	27	2.85	3.21	Excellent	13	4	7.2%	5	5.1%	26.9%
2	677.3	37	3.71	5.18	Good	16	5	20.6%	10	12.5%	19.9%
3	1359.0	30	3.68	4.06	V. Good	15	6	16.2%	8	12.8%	14.5%
4	295.0	40	3.71	6.4	Fair	16	5	10.5%	11	34.1%	12.5%
5	279.0	34	3.63	6.43	Fair	16	6	21.4%	8	16.2%	7.6%
6	312.7	33	3.55	5.6	Fair	13	4	7.8%	10	4.3%	25.6%

Table 4. Dominant aquatic invertebrate organisms at six (6) sites in the Androscoggin River between Lewiston and Brunswick. August, September 2021. Organisms are ranked from most sensitive to most tolerant.

Sensitivity to Poor Water Quality		Site					
		1	2	3	4	5	6
Sensitive	Caddisfly <i>Chimarra</i>	42.0%		24.6%			
	Caddisfly <i>Ochrotrichia</i>		6.8%				
Intermediate	Caddisfly <i>Cheumatopsyche</i>	7.2%	27.4%	11.9%			
	Mayfly <i>Acerpenna</i>	6.7%	16.6%	11.6%			
	Midge <i>Pentaneura</i>						20.5%
	Midge <i>Polypedilum</i>		5.2%	7.0%			
	Midge <i>Microtendipes</i>			5.8%			
	Caddisfly <i>Polycentropus</i>				27.3%	6.7%	
Tolerant	Mayfly <i>Stenacron</i>				6.1%	13.1%	13.0%
	Caddisfly <i>Neureclipsis</i>				5.0%	35.2%	
	Amphipod <i>Hyalella</i>				12.5%		
	Caddisfly <i>Oecetis</i>				11.2%		
	Midge <i>Dicortendipes</i>					6.0%	27.0%
	Flatworm Planariidae	16.4%	8.4%	13.5%	5.1%		
	Snail Hydrobiidae	10.3%	5.4%				6.2%
	Mussel Physidae				9.5%		

Site 1-

The Site 1 was located in riffle habitat with moderate current velocities and predominantly cobble and gravel substrates. It was just downstream of the Walmart distribution Center in Lewiston. Aquatic vegetation and attached filamentous algae were common. The invertebrate community was numerous and moderately rich and diverse. Indexes measuring the tolerance to poor water quality conditions revealed that sensitive organisms accounted for a large portion of the community. The EPT richness index showed that sensitive mayfly (Ephemeroptera), stonefly (Plecoptera), and caddisfly (Trichoptera) taxa were well represented. Of those 3 orders, the mayflies and stoneflies are generally more sensitive to environmental stressors. The number of taxa from these 2 orders (EP richness) however, represented 15% of the taxa richness and just 7% of the total abundance. Hilsenhoff's Biotic Index value, 3.2, indicated excellent water quality (Hilsenhoff 1987). The sensitive caddisfly *Chimarra* made up 42% of the community.

Site-2

Site 2 to was located in a shallow run with predominantly sandy substrates. Attached filamentous algae was present. The invertebrate community was abundant, rich and diverse. EPT taxa were well represented and EP taxa represented 21% of the total abundance. Hilsenhoff's Biotic Index value, 5.2, indicated good water quality. The community was dominated by sensitive or intermediate organisms representing 56% of the community. This site was mid-river near FOMB's water monitoring site DBN.

Site-3

Site-3 was located in boulder strewn riffle midway between the Durham Carry-in Launch and the outlet of Sabbatus Stream. There was less attached filamentous algae at this site compared to the upstream sites. The invertebrate community was very abundant, moderately rich in taxa, and diverse. EPT taxa were well represented and EP taxa represented 16% of the total abundance. Hilsenhoff's Biotic Index value, 4.1, indicated very good water quality. The sensitive caddisfly *Chimarra* made up a quarter of the community and sensitive or intermediate organisms represented 61% of the community.

Site 4-

Site 4 was located approximately 1.75 miles upstream of the Worumbo Dam just downstream of the outlet of Sabbatus Stream. The site was within the impoundment and had a predominantly sandy substrate and low current. The invertebrate community had relatively low abundance compared to upstream, free-flowing communities but was rich in taxa and diverse. EPT taxa were well represented but EP taxa represented just 11% of the total abundance. Hilsenhoff's Biotic Index value, 6.4, indicated fair water quality. The caddisfly *Polycentropus*, an intermediately tolerant organism, represented 27% of the community. The remainder of the dominant organisms fell into the tolerant category and represented almost half of the community.

Site-5

Site 5 was located approximately a half mile downstream of the Worumbo Dam just upstream of the Pejepscot Boat Launch, FOMB's water monitoring site PBL. This site was impounded by the Pejepscot Dam located over 2 miles downstream. This invertebrate community was also less abundant than the upstream, free-flowing communities. The community was

moderately rich in taxa and diverse. EPT taxa were well represented and EP taxa represented 21% of the total abundance. Hilsenhoff's Biotic Index value, 6.4, indicated fair water quality. The caddisfly *Polycentropus*, an intermediately tolerant organism, represented just 7% of the community. The remainder of the dominant organisms fell into the tolerant category and represented over half of the community.

Site-6

Site 6, at the time of deployment and retrieval, was free-flowing run habitat approximately 2.4 mile upstream of the Brunswick Dam. There is some question whether this location is within the impoundment at higher head pond levels. It is outboard of the ledges marking FOMB monitoring site BIL. The substrates were a combination of ledge, boulders and cobble. Similar to sites 4 and 5 the invertebrate community was less abundant than the upstream, free-flowing communities at site 1, 2, and 3. The community was moderately rich in taxa and diverse. EPT taxa were well represented but EP taxa represented just 8% of the total abundance. Hilsenhoff's Biotic Index value, 5.6, indicated fair water quality. The midge *Pentaneura*, an intermediately tolerant organism, represented over 20% of the community. The remainder of the dominant organisms fell into the tolerant category and represented 46% of the community.

LDM Results

The LDM biocriteria results and DEP determinations are shown in Table 5 and Appendix 1. As mentioned previously, to attain a particular class a site must have a 60% or greater score in the test for that class and Professional Judgement can be used to raise or lower a finding. DEP determined that Sites 1 through 3 attained Class B standards and the downstream site (4-6) attained Class C standards. DEP used professional judgement to raise the finding at Site 2 to Class B based on the community structure. In addition, as mentioned above, Sites 4 and 5 are impounded and it is unclear if Site 6 is impounded at certain head pond water levels. DEP methodology allows for extended sampler exposure periods of 56 days $\pm$ 4 days to allow for adequate colonization in the case of assessments of low velocity or impounded. If Sites 4 and 5 are sampled again it is the authors recommendation that samplers remain in the water for the extended exposure period. In addition, if the community in the vicinity of Site 6 is sampled again the location should be changed

to a documented free flowing area or a documented impounded area. If the new location is in a documented impounded area then the extended exposure period should be used.

Table 5. Results of the DEP linear discriminant model (LDM) and DEP determinations for six (6) sites on the Androscoggin River between Lewiston and Brunswick.

Site	Probability of Class A	Probability of Class B	Probability of Class C	Probability of Non-Attainment	DEP Final Determination
1	16%	99%	100%	0%	B
2	1%	51%	100%	0%	B*
3	6%	97%	100%	0%	B
4	0%	0%	100%	0%	C
5	2%	4%	100%	0%	C
6	1%	31%	100%	0%	C

* DEP used Best Professional Judgement: Indeterminate for Class B ($p = 0.51$), Raised to Class B based on community structure.

Summary

1. The objective of the macroinvertebrate sampling study was to generate data on the aquatic macroinvertebrate community in the Androscoggin River between Lewiston and Brunswick and assess this community in terms of Maine's Aquatic Life Standards. The river downstream of Lewiston's Great Falls dam at the time of the study was classified Class C. Six (6) sites were sampled on the river.
2. The Maine Department of Environmental Protection (DEP) "Methods for Biological Sampling and Analysis of Maine's Inland Waters" (Davies and Tsomides 2014) were used as the basis of the field and laboratory procedures in this study.
3. Samplers were retrieved on August 31 (Sites 1-4) and September 3 (Site 6). At Site 5 it was found that the samplers had been disturbed so 3 new samplers were deployed and retrieved on September 29, 2022.
4. Sites 1-3 were located in free-flowing habitat. Sites 4 and 5 were located in impoundments. Site 6 appeared free-flowing during deployment and retrieval but may be impounded when the Brunswick head pond is at higher water levels.
5. The macroinvertebrate communities sampled between Lewiston and Brunswick were rich in taxa. The communities at Site 1, 2, 3 were more numerous than downstream communities and populated with more organisms that are intolerant of poor water quality.

6. Maine DEP found the sites 1, 2, and 3 attained Class B Aquatic Life Standards and sites 4, 5, and 6 attained class C standards.
7. On March 31, 2022 Governor Mills signed into law [LD 1964](#), the DEP triennial water reclassification bill. LD 1964 included an upgrade of the lower Androscoggin River from Worumbo dam in Lisbon Falls to Merrymeeting Bay from Class C to B, encompassing Sites 5 and 6. While DEP found these sites attained Class C, the river as a whole was found to meet Class B conditions including dissolved oxygen and *E. coli* bacteria levels.

Because of their unique characteristics, hydropower impoundments are granted certain exemptions by the legislature under §464 (See Appendix 2). In summary the statute says that recognizing the aquatic life differences of impoundments, if a river with impoundments is classified as A or B, the impoundment shall also be considered to meet that standard provided it at least meets C criteria; unless:

- (1) Reasonable changes can be implemented that do not significantly affect existing energy generation capability; and
- (2) Those changes would result in improvement in the habitat and aquatic life of the impounded waters.

If the conditions described in (1) and (2) occur, those changes must be implemented and the resulting improvement in habitat and aquatic life must be achieved and maintained. According to statute, a determination should be made whether above conditions 1 or 2 apply to river sections encompassing Sites 4, 5 & 6 and if so, improvements must be implemented (to meet Class B conditions). If 1 and 2 do not apply, Class B conditions are deemed to have been met in these impoundments.

References

- Davies, S.P. and L. Tsomides. 2014. Methods for biological sampling and analysis of Maine's rivers and streams. ME Dept. of Env. Prot. Augusta, ME. 31p.
- Hilsenhoff, W.L. 1987. An improved biotic index of organic stream pollution. The Great Lake Entomologist. Pgs. 31-39.

MDEP S-1204 = FOMB Site 1



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Classification Attainment Report**

Station Information

Station Number:	S-1204	River Basin:	Androscoggin
Waterbody:	Androscoggin River - Station 1204	HUC8 Name:	
Town:	Lewiston	Latitude:	44 3 28.97 N
Directions:	FROM DURHAM BOAT LAUNCH GO UPSTREAM 300 YDS DWNSTRM OF OLD DEP SAMPLING SITE "HELO BEACH"	Longitude:	70 12 0.98 W
		Stream Order:	

Sample Information

Log Number: 2938	Type of Sample: ROCK BASKET	Date Deployed: 8/4/2021
Subsample Factor: X1	Replicates: 3	Date Retrieved: 8/31/2021

Classification Attainment

Statutory Class:	C	Final Determination:	B	Date: 3/29/2022
Model Result with $P \geq 0.6$:	B	Reason for Determination:	Model	
Date Last Calculated:	3/23/2022	Comments:		

Model Probabilities

First Stage Model				C or Better Model	
Class A	0.32	Class C	0.04	Class A, B, or C	1.00
Class B	0.64	NA	0.00	Non-Attainment	0.00
B or Better Model				A Model	
Class A or B			0.99	Class A	0.16
Class C or Non-Attainment			0.01	Class B or C or Non-Attainment	0.84

Model Variables

[illegible]

Appendix 1 continued MDEP S-1204 = FOMB Site 1



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Number: S-1204 Town: Lewiston Date Deployed: 8/4/2021
Log Number: 2938 Waterbody: Androscoggin River - Station 1204 Date Retrieved: 8/31/2021

Sample Collection and Processing Information

Sampling Organization: MOODY MOUNTAIN ENVIRONMENTAL Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)

Waterbody Information - Deployment

Temperature: 23.3 deg C
Dissolved Oxygen: 9.5 mg/l
Dissolved Oxygen Saturation:
Specific Conductance:
Velocity: 59 cm/s
pH:
Wetted Width: 152 m
Bankfull Width:
Depth: 55 cm

Waterbody Information - Retrieval

Temperature:
Dissolved Oxygen:
Dissolved Oxygen Saturation:
Specific Conductance:
Velocity:
pH:
Wetted Width: 152 m
Bankfull Width:
Depth: 55 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Nps Pollution	Below POTW	Boulder 10 %
Urban Runoff	Below Urban NPS	Gravel 25 %
		Rubble/Cobble 55 %
		Sand 10 %

Landcover Summary - 2004 Data

Sample Comments

FILAMENTOUS ALGAE, AQ. PLANTS

Appendix 1 continued MDEP S-1204 = FOMB Site 1



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Taxonomic Inventory Report

Station Number: S-1204		Waterbody: Androscoggin River - Station 1204			Town: Lewiston		
Log Number: 2938		Subsample Factor: X1		Replicates: 3	Calculated: 3/23/2022		
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	392.33	392.33		—	16.4	16.4
Annelida	08	2.67	2.67		—	0.1	0.1
<i>Paragnetina</i>	09020209049	2.67	2.67	1	PR	0.1	0.1
<i>Boyeria</i>	09020301004	0.33	0.33	2	PR	0.0	0.0
<i>Acerpenna</i>	09020401007	160.67	160.67	5	CG	6.7	6.7
<i>Maccaffertium</i>	09020402015	0.67	0.67	4	SC	0.0	0.0
<i>Isonychia</i>	09020404018	7.67	7.67	2	CF	0.3	0.3
<i>Chimarra</i>	09020601003	1002.00	1002.00	2	CF	42.0	42.0
<i>Cheumatopsyche</i>	09020604015	172.67	172.67	5	CF	7.2	7.2
<i>Hydropsyche</i>	09020604016	32.33	32.33	4	CF	1.4	1.4
<i>Macrostemum</i>	09020604018	55.67	55.67	3	CF	2.3	2.3
<i>Ochrotrichia</i>	09020607027	65.00	65.00	4	P	2.7	2.7
<i>Oxyethira</i>	09020607028	5.33	5.33	3	P	0.2	0.2
<i>Brachycentrus</i>	09020609043	3.00	3.00	0	CF	0.1	0.1
<i>Nectopsyche</i>	09020618074	9.00	9.00	3	SH	0.4	0.4
<i>Oecetis</i>	09020618078	20.00	20.00	8	PR	0.8	0.8
<i>Pentaneura</i>	09021011014	10.67	10.67	6	PR	0.4	0.4
<i>Cricotopus</i>	09021011037	2.67	2.67	7	SH	0.1	0.1
<i>Eukiefferiella</i>	09021011041	29.33	29.33	8	CG	1.2	1.2
<i>Tanytarsus</i>	09021011076	8.00	8.00	6	CF	0.3	0.3
<i>Polypedium</i>	09021011102	72.00	72.00	6	SH	3.0	3.0
<i>Simulium</i>	09021012047	78.00	78.00	4	CF	3.3	3.3
Elmidae	09021113	2.67	2.67		—	0.1	0.1
<i>Ancyronyx</i>	09021113063	5.33	5.33	6	—	0.2	0.2
<i>Hydrachna</i>	09030103001	0.33	0.33		—	0.0	0.0
Hydrobiidae	10010104	247.00	247.00		—	10.3	10.3
Physidae	10010202	0.33	0.33		SC	0.0	0.0

Appendix 1 continued MDEP S-1205 = FOMB Site 2



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1205	River Basin:	Androscoggin	
Waterbody:	Androscoggin River - Station 1205	HUC8 Name:	
Town:	Durham	Latitude:	44° 00' 06.90221700" N
Directions:	FROM DURHAM BOAT LAUNCH GO DOWNSTREAM APPROX. 1 MILE UPSTREAM OF SAND BAR. CONSULTANT SITE NAME: ANDY 2	Longitude:	
		Stream Order:	

Sample Information

Log Number: 2939	Type of Sample:	ROCK BASKET	Date Deployed:	8/4/2021	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/31/2021

Classification Attainment

Statutory Class: C	Final Determination: B	Date:	3/29/2022
Model Result with $P \geq 0.6$: C	Reason for Determination: Best Professional Judgement		
Date Last Calculated:	3/23/2022	Comments:	Indeterminate for Class B ($p = 0.51$). Raised to Class B based on community structure.

Model Probabilities

<u>First Stage Model</u>			<u>C or Better Model</u>		
Class A	0.12	Class C	0.29	Class A, B, or C	1.00
Class B	0.59	NA	0.00	Non-Attainment	0.00
<u>B or Better Model</u>			<u>A Model</u>		
Class A or B		0.51	Class A	0.01	
Class C or Non-Attainment		0.49	Class B or C or Non-Attainment	0.99	

Model Variables

01 Total Mean Abundance	677.33	18 Relative Abundance Ephemeroptera	0.20
02 Generic Richness	37.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	1.00	21 Sum of Abundances: <i>Dicrctendipes</i> ,	8.00
04 Ephemeroptera Mean Abundance	138.33	<i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	
05 Shannon-Wiener Generic Diversity	3.71	23 Relative Generic Richness- Plecoptera	0.03
06 Hilsenhoff Biotic Index	5.18	25 Sum of Abundances: <i>Cheumatopsyche</i> ,	195.33
07 Relative Abundance - Chironomidae	0.13	<i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	
08 Relative Generic Richness Diptera	0.30	26 Sum of Abundances: <i>Acronewria</i> ,	23.33
09 <i>Hydropsyche</i> Abundance	0.33	<i>Maccaffertium</i> , <i>Stenonema</i>	
11 <i>Cheumatopsyche</i> Abundance	185.67	28 EP Generic Richness/14	0.36
12 EPT Generic Richness/ Diptera	1.45	30 Presence of Class A Indicator Taxa/7	0.00
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	1.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	61.67		
17 Chironomini Abundance (Family Functional Group)	18.67		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Cheumatopsyche</i>	27.41
2	<i>Acerpenna</i>	16.58
3	Planariidae	8.42
4	<i>Pentaneura</i>	6.84
5	Hydrobiidae	5.36

Appendix 1 continued MDEP S-1205 = FOMB Site 2



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Number: S-1205	Town: Durham	Date Deployed: 8/4/2021
Log Number: 2939	Waterbody: Androscoggin River - Station 1205	Date Retrieved: 8/31/2021

Sample Collection and Processing Information

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)	Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)
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Waterbody Information - Deployment

Temperature:	24.8 deg C
Dissolved Oxygen:	11 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	21 cm/s
pH:	
Wetted Width:	252 m
Bankfull Width:	
Depth:	52 cm

Waterbody Information - Retrieval

Temperature:	24.9 deg C
Dissolved Oxygen:	10 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	
pH:	
Wetted Width:	252 m
Bankfull Width:	
Depth:	46 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>	
Upland Conifer	Open	Flat	
Upland Hardwood			
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>	
Nps Pollution	Below Agriculture NPS	Gravel	15 %
Urban Runoff	Below POTW	Rubble/Cobble	5 %
	Below Urban NPS	Sand	80 %

Landcover Summary - 2004 Data

Sample Comments

Appendix 1 continued MDEP S-1205 = FOMB Site 2



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Taxonomic Inventory Report

Station Number: S-1205		Waterbody: Androscoggin River - Station 1205			Town: Durham		
Log Number: 2939		Subsample Factor: X1		Replicates: 3	Calculated: 3/23/2022		
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	57.00	57.00		—	8.4	8.4
Annelida	08	0.33	0.33		—	0.0	0.0
<i>Hyalella</i>	09010203006	3.00	3.00	8	CG	0.4	0.4
<i>Orconectes</i>	09010301008		1.00		CG		0.1
<i>Orconectes limosus</i>	09010301008013	1.00			—	0.1	
<i>Acronuria</i>	09020209042	1.00	1.00	0	PR	0.1	0.1
<i>Amphiagrion</i>	09020309046	11.00	11.00	9	PR	1.6	1.6
<i>Chromagrion</i>	09020309049	0.33	0.33	4	PR	0.0	0.0
<i>Acerpenna</i>	09020401007	112.33	112.33	5	CG	16.6	16.6
<i>Maccaffertium</i>	09020402015	22.33	22.33	4	SC	3.3	3.3
<i>Isonychia</i>	09020404018	0.33	0.33	2	CF	0.0	0.0
<i>Tricorythodes</i>	09020411038	3.33	3.33	4	CG	0.5	0.5
<i>Chimarra</i>	09020601003	7.33	7.33	2	CF	1.1	1.1
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.0	0.0
<i>Polycentropus</i>	09020603010	7.00	7.00	6	PR	1.0	1.0
<i>Cheumatopsyche</i>	09020604015	185.67	185.67	5	CF	27.4	27.4
<i>Hydropsyche</i>	09020604016	0.33	0.33	4	CF	0.0	0.0
<i>Macrostemum</i>	09020604018	1.33	1.33	3	CF	0.2	0.2
<i>Ochrotrichia</i>	09020607027	35.33	35.33	4	P	5.2	5.2
<i>Oxyethira</i>	09020607028	13.67	13.67	3	P	2.0	2.0
<i>Ceraclea</i>	09020618072	1.00	1.00	3	CG	0.1	0.1
<i>Nectopsyche</i>	09020618074	9.67	9.67	3	SH	1.4	1.4
<i>Oecetis</i>	09020618078	28.00	28.00	8	PR	4.1	4.1
<i>Ablabesmyia</i>	09021011001	8.33	8.33	8	PR	1.2	1.2
<i>Pentaneura</i>	09021011014	46.33	46.33	6	PR	6.8	6.8
<i>Thienemannimyia</i>	09021011020	7.00	7.00	3	PR	1.0	1.0
<i>Nanocladius</i>	09021011049	1.33	1.33	3	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072	1.67	1.67	6	CF	0.2	0.2
<i>Tanytarsus</i>	09021011076	1.33	1.33	6	CF	0.2	0.2
<i>Dicrotendipes</i>	09021011085	8.00	8.00	8	CG	1.2	1.2
<i>Microtendipes</i>	09021011094	2.67	2.67	6	CF	0.4	0.4
<i>Polypedilum</i>	09021011102	7.67	7.67	6	SH	1.1	1.1
<i>Robackia</i>	09021011103	0.33	0.33		CG	0.0	0.0
Simuliidae	09021012	1.33	1.33		—	0.2	0.2
Hydrobiidae	10010104	36.33	36.33		—	5.4	5.4
Physidae	10010202	31.00	31.00		SC	4.6	4.6
Planorbidae	10010203	10.33	10.33		—	1.5	1.5

Report Printed: 4/6/2022

Contact: biome@maine.gov or (207)287-7688

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Appendix 1 continued MDEP S-1205 = FOMB Site 2



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-1205		Waterbody: Androscoggin River - Station 1205		Town: Durham			
Log Number: 2939		Subsample Factor: X1	Replicates: 3	Calculated: 3/23/2022			
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Ancylidae	10010204	12.00	12.00		SC	1.8	1.8

Appendix 1 continued MDEP S-1206 = FOMB Site 3



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1206	River Basin:	Androscoggin	
Waterbody:	Androscoggin River - Station 1206	HUC8 Name:	
Town:	Lisbon	Latitude:	43° 59' 34.17243456" N
Directions:	FROM SABATTUS STREAM LAUNCH GO UPSTREAM APPROX. 2 MILE TO BOULDER FIELD. CONSULTANT SITE NAME: ANDY 3	Longitude:	
		Stream Order:	

Sample Information

Log Number: 2940	Type of Sample:	ROCK BASKET	Date Deployed:	8/4/2021	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/31/2021

Classification Attainment

Statutory Class: C	Final Determination: B	Date:	3/29/2022
Model Result with $P \geq 0.6$:	B	Reason for Determination:	Model
Date Last Calculated:	3/23/2022	Comments:	

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.29	Class A, B, or C	1.00
Class B	0.66	Non-Attainment	0.00
B or Better Model		A Model	
Class A or B	0.97	Class A	0.06
Class C or Non-Attainment	0.03	Class B or C or Non-Attainment	0.94

Model Variables

01 Total Mean Abundance	1359.00	18 Relative Abundance Ephemeroptera	0.16
02 Generic Richness	30.00	19 EPT Generic Richness	15.00
03 Plecoptera Mean Abundance	7.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	5.33
04 Ephemeroptera Mean Abundance	213.67	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	3.68	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	194.67
06 Hilsenhoff Biotic Index	4.06	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	38.00
07 Relative Abundance - Chironomidae	0.13	28 EP Generic Richness/14	0.43
08 Relative Generic Richness Diptera	0.30	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	40.33		
11 <i>Cheumatopsyche</i> Abundance	161.33		
12 EPT Generic Richness/ Diptera Generic Richness	1.67		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	7.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	22.67		
17 Chironomini Abundance (Family Functional Group)	114.67		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Chironomus</i>	24.60
2	Planariidae	13.47
3	<i>Cheumatopsyche</i>	11.87
4	<i>Acerperina</i>	11.63
5	<i>Ochrotrichia</i>	6.99

Appendix 1 continued MDEP S-1206 = FOMB Site 3



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Number: S-1206 Town: Lisbon Date Deployed: 8/4/2021
Log Number: 2940 Waterbody: Androscoggin River - Station 1206 Date Retrieved: 8/31/2021

Sample Collection and Processing Information

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL) Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)

Waterbody Information - Deployment		Waterbody Information - Retrieval	
Temperature:	24.3 deg C	Temperature:	25.5 deg C
Dissolved Oxygen:	10.6 mg/l	Dissolved Oxygen:	9.4 mg/l
Dissolved Oxygen Saturation:		Dissolved Oxygen Saturation:	
Specific Conductance:		Specific Conductance:	
Velocity:	27 cm/s	Velocity:	11 cm/s
pH:		pH:	
Wetted Width:	139 m	Wetted Width:	139 m
Bankfull Width:		Bankfull Width:	
Depth:	30 cm	Depth:	37 cm

Water Chemistry

Summary of Habitat Characteristics

Landuse Name	Canopy Cover	Terrain
Upland Conifer	Open	Rolling
Upland Hardwood		
Potential Stressor	Location	Substrate
Nps Pollution	Below Agriculture NPS	Boulder 80 %
Urban Runoff	Below POTW	Gravel 10 %
	Below Urban NPS	Sand 10 %

Landcover Summary - 2004 Data

Sample Comments

BOULDER FIELD

Appendix 1 continued MDEP S-1206 = FOMB Site 3



Maine Department of Environmental Protection Biological Monitoring Program

Aquatic Life Taxonomic Inventory Report

Station Number: S-1206		Waterbody: Androscoggin River - Station 1206			Town: Lisbon		
Log Number: 2940		Subsample Factor: X1		Replicates: 3	Calculated: 3/23/2022		
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	183.00	183.00		—	13.5	13.5
<i>Acroneuria</i>	09020209042	7.00	7.00	0	PR	0.5	0.5
<i>Acerpenna</i>	09020401007	158.00	158.00	5	CG	11.6	11.6
<i>Plautius</i>	09020401012	13.33	13.33		CG	1.0	1.0
<i>Maccaffertium</i>	09020402015	31.00	31.00	4	SC	2.3	2.3
<i>Isonychia</i>	09020404018	7.33	7.33	2	CF	0.5	0.5
<i>Tricorythodes</i>	09020411038	4.00	4.00	4	CG	0.3	0.3
<i>Chimarra</i>	09020601003	334.33	334.33	2	CF	24.6	24.6
<i>Neureclipsis</i>	09020603008	22.67	22.67	7	CF	1.7	1.7
<i>Cheumatopsyche</i>	09020604015	161.33	161.33	5	CF	11.9	11.9
<i>Hydropsyche</i>	09020604016	40.33	40.33	4	CF	3.0	3.0
<i>Macrostemum</i>	09020604018	46.00	46.00	3	CF	3.4	3.4
<i>Ochrotrichia</i>	09020607027	95.00	95.00	4	P	7.0	7.0
<i>Brachycentrus</i>	09020609043	2.67	2.67	0	CF	0.2	0.2
<i>Nectopsyche</i>	09020618074	9.33	9.33	3	SH	0.7	0.7
<i>Oecetis</i>	09020618078	25.33	25.33	8	PR	1.9	1.9
<i>Petrophila</i>	09020901004	1.00	1.00	5	SC	0.1	0.1
<i>Pentaneura</i>	09021011014	14.67	14.67	6	PR	1.1	1.1
<i>Thienemannimyia</i>	09021011020	8.00	8.00	3	PR	0.6	0.6
<i>Cricotopus</i>	09021011037	17.33	17.33	7	SH	1.3	1.3
<i>Paratanytarsus</i>	09021011071	2.67	2.67	6	—	0.2	0.2
<i>Tanytarsus</i>	09021011076	16.00	16.00	6	CF	1.2	1.2
<i>Dicrotendipes</i>	09021011085	5.33	5.33	8	CG	0.4	0.4
<i>Microtendipes</i>	09021011094	30.67	30.67	6	CF	2.3	2.3
<i>Polypedilum</i>	09021011102	78.67	78.67	6	SH	5.8	5.8
<i>Simulium</i>	09021012047	13.33	13.33	4	CF	1.0	1.0
Elmidae	09021113	4.00	4.00		—	0.3	0.3
<i>Macronychus</i>	09021113065	12.00	12.00	4	—	0.9	0.9
Hydrobiidae	10010104	12.33	12.33		—	0.9	0.9
Physidae	10010202	2.33	2.33		SC	0.2	0.2

Appendix 1 continued MDEP S-1207 = FOMB Site 4



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1207	River Basin:	Androscoggin	
Waterbody:	Androscoggin River - Station 1207	HUC8 Name:	
Town:	Lisbon	Latitude:	44° 00' 31.44009501" N
Directions:	FROM SABATTUS STREAM LAUNCH GO DOWNTREAM APPROX. 350 YDS. CONSULTANT SITE NAME: ANDY 4	Longitude:	
		Stream Order:	

Sample Information

Log Number: 2941	Type of Sample:	ROCK BASKET	Date Deployed:	8/4/2021	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	8/31/2021

Classification Attainment

Statutory Class: C	Final Determination: C	Date:	3/29/2022
Model Result with $P \geq 0.6$:	C	Reason for Determination:	Model
Date Last Calculated:	3/23/2022	Comments:	

Model Probabilities

First Stage Model				C or Better Model	
Class A	0.00	Class C	0.94	Class A, B, or C	1.00
Class B	0.01	NA	0.05	Non-Attainment	0.00
B or Better Model				A Model	
Class A or B			0.00	Class A	0.00
Class C or Non-Attainment			1.00	Class B or C or Non-Attainment	1.00

Model Variables

01 Total Mean Abundance	295.00	18 Relative Abundance Ephemeroptera	0.11
02 Generic Richness	40.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	0.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.00
04 Ephemeroptera Mean Abundance	31.00	23 Relative Generic Richness- Plecoptera	0.00
05 Shannon-Wiener Generic Diversity	3.71	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	13.00
06 Hilsenhoff Biotic Index	6.40	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	11.67
07 Relative Abundance - Chironomidae	0.34	28 EP Generic Richness/14	0.36
08 Relative Generic Richness Diptera	0.28	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	0.67		
11 <i>Cheumatopsyche</i> Abundance	2.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.45		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	0.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	11.33		
17 Chironomini Abundance (Family Functional Group)	85.33		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Microtendipes</i>	27.34
2	<i>Polycentropus</i>	12.54
3	<i>Hyaella</i>	11.19
4	<i>Oecetis</i>	9.49
5	Physidae	6.10

Appendix 1 continued MDEP S-1207 = FOMB Site 4



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Classification Attainment Report**

Station Number: S-1207	Town: Lisbon	Date Deployed: 8/4/2021
Log Number: 2941	Waterbody: Androscoggin River - Station 1207	Date Retrieved: 8/31/2021

Sample Collection and Processing Information

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)	Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)
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Waterbody Information - Deployment

Temperature:	23.6 deg C
Dissolved Oxygen:	9.4 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	8.5 cm/s
pH:	
Wetted Width:	396 m
Bankfull Width:	
Depth:	314 cm

Waterbody Information - Retrieval

Temperature:	24.9 deg C
Dissolved Oxygen:	8.1 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	5 cm/s
pH:	
Wetted Width:	396 m
Bankfull Width:	
Depth:	320 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Impounded	Below Agriculture NPS	Sand
Nps Pollution	Below POTW	100 %
Nutrients	Below Urban NPS	
Urban Runoff		

Landcover Summary - 2004 Data

Sample Comments

Appendix 1 continued MDEP S-1207 = FOMB Site 4



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Taxonomic Inventory Report

Station Number: S-1207		Waterbody: Androscoggin River - Station 1207			Town: Lisbon		
Log Number: 2941		Subsample Factor: X1		Replicates: 3	Calculated: 3/23/2022		
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	15.00	15.00		—	5.1	5.1
Annelida	08	0.33	0.33		—	0.1	0.1
Hirudinidae	08030201	1.67	1.67		—	0.6	0.6
Amphipoda	090102	0.33	0.33	8	—	0.1	0.1
<i>Hyalella</i>	09010203006	33.00	33.00	8	CG	11.2	11.2
<i>Orconectes</i>	09010301008		0.67		CG		0.2
<i>Orconectes limosus</i>	09010301008013	0.67			—	0.2	
<i>Somatochlora</i>	09020305027	0.33	0.33	1	PR	0.1	0.1
<i>Argia</i>	09020309048	1.00	1.00	7	PR	0.3	0.3
<i>Coenagrion</i>	09020309050	1.00	1.00	8	PR	0.3	0.3
<i>Acerpenna</i>	09020401007	1.00	1.00	5	CG	0.3	0.3
<i>Plautitus</i>	09020401012	0.33	0.33		CG	0.1	0.1
<i>Stenacron</i>	09020402014	14.67	14.67	7	SC	5.0	5.0
<i>Muccaffertium</i>	09020402015	11.67	11.67	4	SC	4.0	4.0
<i>Caenis</i>	09020412040	3.33	3.33	7	CG	1.1	1.1
<i>Chimarra</i>	09020601003	0.67	0.67	2	CF	0.2	0.2
<i>Neureclipsis</i>	09020603008	0.33	0.33	7	CF	0.1	0.1
<i>Polycentropus</i>	09020603010	37.00	37.00	6	PR	12.5	12.5
<i>Cheumatopsyche</i>	09020604015	2.00	2.00	5	CF	0.7	0.7
<i>Hydropsyche</i>	09020604016	0.67	0.67	4	CF	0.2	0.2
<i>Ochrotrichia</i>	09020607027	2.00	2.00	4	P	0.7	0.7
<i>Oxyethira</i>	09020607028	0.33	0.33	3	P	0.1	0.1
Brachycentridae	09020609	1.00	1.00		—	0.3	0.3
<i>Nectopsyche</i>	09020618074	8.33	8.33	3	SH	2.8	2.8
<i>Trienodes</i>	09020618077	0.33	0.33	6	SH	0.1	0.1
<i>Oecetis</i>	09020618078	28.00	28.00	8	PR	9.5	9.5
<i>Ablabesmyia</i>	09021011001	9.00	9.00	8	PR	3.1	3.1
<i>Nilotanytus</i>	09021011012	0.33	0.33	6	PR	0.1	0.1
<i>Pentaneura</i>	09021011014	0.67	0.67	6	PR	0.2	0.2
<i>Thienemannimyia</i>	09021011020	1.33	1.33	3	PR	0.5	0.5
<i>Cricotopus</i>	09021011037	0.67	0.67	7	SH	0.2	0.2
<i>Eukiefferiella</i>	09021011041	0.67	0.67	8	CG	0.2	0.2
<i>Rheotanytarsus</i>	09021011072	1.33	1.33	6	CF	0.5	0.5
<i>Tanytarsus</i>	09021011076	1.33	1.33	6	CF	0.5	0.5
<i>Dicortendipes</i>	09021011085	1.00	1.00	8	CG	0.3	0.3
<i>Microtendipes</i>	09021011094	80.67	80.67	6	CF	27.3	27.3
<i>Polypedium</i>	09021011102	3.67	3.67	6	SH	1.2	1.2

Report Printed: 4/6/2022

Contact: biome@maine.gov or (207)287-7688

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Appendix 1 continued MDEP S-1207 = FOMB Site 4



**Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Taxonomic Inventory Report**

Station Number: S-1207		Waterbody: Androscoggin River - Station 1207		Town: Lisbon			
Log Number: 2941		Subsample Factor: X1		Replicates: 3		Calculated: 3/23/2022	
Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Elmidae	09021113	0.33	0.33	6	--	0.1	0.1
<i>Ancyronyx</i>	09021113063	0.33	0.33		--	0.1	0.1
Hydrobiidae	10010104	2.67	2.67		--	0.9	0.9
Physidae	10010202	18.00	18.00		SC	6.1	6.1
Planorbidae	10010203	1.00	1.00		--	0.3	0.3
<i>Pisidium</i>	10020201002	7.00	7.00		CF	2.4	2.4

Appendix 1 continued MDEP S-1202 = FOMB Site 5



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1202	River Basin:	Androscoggin
Waterbody: Androscoggin River - Station 1202	HUC8 Name:	Lower Androscoggin
Town: Lisbon	Latitude:	43° 59' 25.812" N
Directions: FROM PEJEPSCOT BOAT RAMP IN LISBON FALLS, UPSTREAM 100YDS, MID CHANNEL	Longitude:	70° 2' 59.882" W
	Stream Order:	

Sample Information

Log Number: 2936	Type of Sample:	ROCK BASKET	Date Deployed:	9/3/2021	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	9/29/2021

Classification Attainment

Statutory Class: C	Final Determination: C	Date:	1/28/2022
Model Result with $P \geq 0.6$: C	Reason for Determination: Model		
Date Last Calculated:	1/27/2022	Comments:	

Model Probabilities

First Stage Model				C or Better Model	
Class A	0.03	Class C	0.65	Class A, B, or C	1.00
Class B	0.32	NA	0.00	Non-Attainment	0.00
B or Better Model				A Model	
Class A or B			0.04	Class A	0.02
Class C or Non-Attainment			0.96	Class B or C or Non-Attainment	0.98

Model Variables

01 Total Mean Abundance	279.00	18 Relative Abundance Ephemeroptera	0.21
02 Generic Richness	34.00	19 EPT Generic Richness	16.00
03 Plecoptera Mean Abundance	1.00	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Microsestra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	16.67
04 Ephemeroptera Mean Abundance	58.67	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	3.63	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	14.00
06 Hilsenhoff Biotic Index	6.43	26 Sum of Abundances: <i>Acronuria</i> , <i>Muccaffertium</i> , <i>Stenonema</i>	14.37
07 Relative Abundance - Chironomidae	0.16	28 EP Generic Richness/14	0.43
08 Relative Generic Richness Diptera	0.24	30 Presence of Class A Indicator Taxa/7	0.14
09 <i>Hydropsyche</i> Abundance	0.67		
11 <i>Cheumatopsyche</i> Abundance	8.33		
12 EPT Generic Richness/ Diptera Generic Richness	2.00		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	1.00		
16 Tanypodinae Mean Abundance (Family Functional Group)	1.33		
17 Chironomini Abundance (Family Functional Group)	21.33		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Neureclipsis</i>	35.24
2	<i>Stenacron</i>	13.13
3	<i>Polycentropus</i>	6.69
4	<i>Dicrotendipes</i>	5.97
5	<i>Muccaffertium</i>	4.79

Appendix 1 continued MDEP S-1202 = FOMB Site 5



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Number: S-1202 Town: Lisbon Date Deployed: 9/3/2021
Log Number: 2936 Waterbody: Androscoggin River - Station 1202 Date Retrieved: 9/29/2021

Sample Collection and Processing Information

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL) Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)

Waterbody Information - Deployment

Temperature: 22 deg C
Dissolved Oxygen: 7.9 mg/l
Dissolved Oxygen Saturation:
Specific Conductance:
Velocity: 18 cm/s
pH:
Wetted Width: 185 m
Bankfull Width:
Depth: 344 cm

Waterbody Information - Retrieval

Temperature: 19.5 deg C
Dissolved Oxygen: 8.5 mg/l
Dissolved Oxygen Saturation:
Specific Conductance: 90 uS/cm
Velocity:
pH:
Wetted Width: 185 m
Bankfull Width:
Depth: 393 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
Urban		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
Impounded	Below Dam	Gravel 40 %
Nps Pollution	Below POTW	Rubble/Cobble 50 %
Urban Runoff	Below Urban NPS	Sand 10 %

Landcover Summary - 2004 Data

Sample Comments

MIDCHANNEL 100 YDS UPSTREAM OF PEJEPSCOT BOAT LAUNCH

Appendix 1 continued MDEP S-1202 = FOMB Site 5



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Taxonomic Inventory Report

Station Number: S-1202 Waterbody: Androscoggin River - Station 1202 Town: Lisbon
Log Number: 2936 Subsample Factor: X1 Replicates: 3 Calculated: 1/27/2022

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	8.00	8.00		—	2.9	2.9
Annelida	08	10.00	10.00		—	3.6	3.6
<i>Hyalella</i>	09010203006	0.67	0.67	8	CG	0.2	0.2
<i>Orconectes</i>	09010301008		0.33		CG		0.1
<i>Orconectes limosus</i>	09010301008013	0.33			—	0.1	
<i>Acroneuria</i>	09020209042	1.00	1.00	0	PR	0.4	0.4
<i>Chromagrion</i>	09020309049	6.33	6.33	4	PR	2.3	2.3
<i>Acerpenna</i>	09020401007	7.33	7.33	5	CG	2.6	2.6
Heptageniidae	09020402	21.33			—	7.6	
<i>Stenacron</i>	09020402014	21.00	36.63	7	SC	7.5	13.1
<i>Muccaffertium</i>	09020402015	7.67	13.37	4	SC	2.7	4.8
Leptophlebiidae	09020406	0.67	0.67		—	0.2	0.2
<i>Eurylophella</i>	09020410036	0.67	0.67	3	CG	0.2	0.2
<i>Chimarra</i>	09020601003	0.67	0.67	2	CF	0.2	0.2
<i>Neureclipsis</i>	09020603008	98.33	98.33	7	CF	35.2	35.2
<i>Polycentropus</i>	09020603010	18.67	18.67	6	PR	6.7	6.7
<i>Cheumatopsyche</i>	09020604015	8.33	8.33	5	CF	3.0	3.0
<i>Hydropsyche</i>	09020604016	0.67	0.67	4	CF	0.2	0.2
<i>Agraylea</i>	09020607024	2.67	2.67	8	P	1.0	1.0
<i>Hydropsyche</i>	09020607026	4.00	4.00	6	P	1.4	1.4
<i>Oxyethira</i>	09020607028	4.00	4.00	3	P	1.4	1.4
<i>Mystacides</i>	09020618075	0.67	0.67	4	CG	0.2	0.2
<i>Oecetis</i>	09020618078	5.33	5.33	8	PR	1.9	1.9
<i>Thienemannimyia</i>	09021011020	1.33	1.33	3	PR	0.5	0.5
<i>Cricotopus</i>	09021011037	5.67	5.67	7	SH	2.0	2.0
<i>Eukiefferiella</i>	09021011041	7.00	7.00	8	CG	2.5	2.5
<i>Nanocladius</i>	09021011049	5.33	5.33	3	CG	1.9	1.9
<i>Psectrocladius</i>	09021011056	2.00	2.00	8	CG	0.7	0.7
<i>Paratanytarsus</i>	09021011071	2.67	2.67	6	—	1.0	1.0
<i>Dicerotendipes</i>	09021011085	16.67	16.67	8	CG	6.0	6.0
<i>Microtendipes</i>	09021011094	4.67	4.67	6	CF	1.7	1.7
Hydrobiidae	10010104	1.33	1.33		—	0.5	0.5
Physidae	10010202	1.33	1.33		SC	0.5	0.5
Planorbidae	10010203	0.67	0.67		—	0.2	0.2
<i>Elliptio</i>	10020102009	0.33	0.33		CF	0.1	0.1
Sphaeriidae	10020201	1.67	1.67		CF	0.6	0.6

Report Printed: 2/1/2022

Contact: biome@maine.gov or (207)287-7688

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Appendix 1 continued MDEP S-1203 = FOMB Site 6



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Classification Attainment Report

Station Information

Station Number: S-1203	River Basin:	Androscoggin	
Waterbody:	Androscoggin River - Station 1203	HUC8 Name:	Lower Androscoggin
Town:	Brunswick	Latitude:	43° 55' 58.841" N
Directions:	FROM CARRY IN ACCESS IN BRUNSWICK, PROCEED UP RIVER, UNDER 295 TO LEDGE RIVER LEFT	Longitude:	70° 0' 3.895" W
		Stream Order:	

Sample Information

Log Number: 2937	Type of Sample:	ROCK BASKET	Date Deployed:	8/5/2021	
Subsample Factor:	X1	Replicates:	3	Date Retrieved:	9/3/2021

Classification Attainment

Statutory Class: C	Final Determination: C	Date:	1/28/2022
Model Result with $P \geq 0.6$:	C	Reason for Determination:	Model
Date Last Calculated:	1/27/2022	Comments:	

Model Probabilities

First Stage Model		C or Better Model	
Class A	0.16	Class C	0.28
Class B	0.56	NA	0.00
B or Better Model		A Model	
Class A or B	0.31	Class A	0.01
Class C or Non-Attainment	0.69	Class B or C or Non-Attainment	0.99

Model Variables

01 Total Mean Abundance	312.67	18 Relative Abundance Ephemeroptera	0.07
02 Generic Richness	33.00	19 EPT Generic Richness	13.00
03 Plecoptera Mean Abundance	3.33	21 Sum of Abundances: <i>Dicrotendipes</i> , <i>Micropectra</i> , <i>Parachironomus</i> , <i>Helobdella</i>	1.00
04 Ephemeroptera Mean Abundance	21.00	23 Relative Generic Richness- Plecoptera	0.03
05 Shannon-Wiener Generic Diversity	3.55	25 Sum of Abundances: <i>Cheumatopsyche</i> , <i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>	66.33
06 Hilsenhoff Biotic Index	5.60	26 Sum of Abundances: <i>Acroneuria</i> , <i>Maccaffertium</i> , <i>Stenonema</i>	8.68
07 Relative Abundance - Chironomidae	0.04	28 EP Generic Richness/14	0.29
08 Relative Generic Richness Diptera	0.36	30 Presence of Class A Indicator Taxa/7	0.00
09 <i>Hydropsyche</i> Abundance	11.33		
11 <i>Cheumatopsyche</i> Abundance	64.00		
12 EPT Generic Richness/ Diptera Generic Richness	1.08		
13 Relative Abundance - Oligochaeta	0.00		
15 Perlidae Mean Abundance (Family Functional Group)	3.33		
16 Tanypodinae Mean Abundance (Family Functional Group)	3.00		
17 Chironomini Abundance (Family Functional Group)	3.33		

Five Most Dominant Taxa

Rank	Taxon Name	Percent
1	<i>Neureclipsis</i>	26.97
2	<i>Cheumatopsyche</i>	20.47
3	Physidae	13.01
4	Hydrobiidae	6.18
5	<i>Hydropsyche</i>	3.62

Appendix 1 continued MDEP S-1203 = FOMB Site 6



Maine Department of Environmental Protection
Biological Monitoring Program
Aquatic Life Classification Attainment Report

Station Number: S-1203	Town: Brunswick	Date Deployed: 8/5/2021
Log Number: 2937	Waterbody: Androscoggin River - Station 1203	Date Retrieved: 9/3/2021

Sample Collection and Processing Information

Sampling Organization: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)	Taxonomist: PAUL LEEPER (MOODY MOUNTAIN ENVIRONMENTAL)
--	---

Waterbody Information - Deployment

Temperature:	23.5 deg C
Dissolved Oxygen:	8.3 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	30 cm/s
pH:	
Wetted Width:	176 m
Bankfull Width:	
Depth:	317 cm

Waterbody Information - Retrieval

Temperature:	23.2 deg C
Dissolved Oxygen:	7.6 mg/l
Dissolved Oxygen Saturation:	
Specific Conductance:	
Velocity:	34 cm/s
pH:	
Wetted Width:	176 m
Bankfull Width:	
Depth:	310 cm

Water Chemistry

Summary of Habitat Characteristics

<u>Landuse Name</u>	<u>Canopy Cover</u>	<u>Terrain</u>
Upland Conifer	Open	Rolling
Upland Hardwood		
<u>Potential Stressor</u>	<u>Location</u>	<u>Substrate</u>
	Above Dam	Bedrock 50 %
		Boulder 10 %
		Rubble/Cobble 40 %

Landcover Summary - 2004 Data

Sample Comments

WATCH OUT FOR CRIPBS UNDERWATER

Appendix 1 continued MDEP S-1203 = FOMB Site 6



Maine Department of Environmental Protection Biological Monitoring Program Aquatic Life Taxonomic Inventory Report

Station Number: S-1203 Waterbody: Androscoggin River - Station 1203 Town: Brunswick
Log Number: 2937 Subsample Factor: X1 Replicates: 3 Calculated: 1/27/2022

Taxon	Maine Taxonomic Code	Count (Mean of Samplers)		Hilsenhoff Biotic Index	Functional Feeding Group	Relative Abundance %	
		Actual	Adjusted			Actual	Adjusted
Planariidae	03010101	11.00	11.00		—	3.5	3.5
Annelida	08	9.00	9.00		—	2.9	2.9
<i>Hyalella</i>	09010203006	0.33	0.33	8	CG	0.1	0.1
<i>Acroneuria</i>	09020209042	3.33	3.33	0	PR	1.1	1.1
<i>Somatochlora</i>	09020305027	1.67	1.67	1	PR	0.5	0.5
<i>Chromagrion</i>	09020309049	10.67	10.67	4	PR	3.4	3.4
<i>Acerpenna</i>	09020401007	5.33	5.33	5	CG	1.7	1.7
Heptageniidae	09020402	2.00			—	0.6	
<i>Stenacron</i>	09020402014	9.00	10.32	7	SC	2.9	3.3
<i>Maccaffertium</i>	09020402015	4.67	5.35	4	SC	1.5	1.7
<i>Chimarra</i>	09020601003	5.33	5.33	2	CF	1.7	1.7
<i>Neureclipsis</i>	09020603008	84.33	84.33	7	CF	27.0	27.0
<i>Polycentropus</i>	09020603010	4.33	4.33	6	PR	1.4	1.4
<i>Cheumatopsyche</i>	09020604015	64.00	64.00	5	CF	20.5	20.5
<i>Hydropsyche</i>	09020604016	11.33	11.33	4	CF	3.6	3.6
<i>Macrostemum</i>	09020604018	0.67	0.67	3	CF	0.2	0.2
<i>Ceraclea</i>	09020618072	0.33	0.33	3	CG	0.1	0.1
<i>Mystacides</i>	09020618075	1.33	1.33	4	CG	0.4	0.4
<i>Oecetis</i>	09020618078	4.67	4.67	8	PR	1.5	1.5
Tipulidae	09021001	1.00	1.00		—	0.3	0.3
<i>Ablabesmyia</i>	09021011001	0.33	0.33	8	PR	0.1	0.1
<i>Pentaneura</i>	09021011014	2.00	2.00	6	PR	0.6	0.6
<i>Thienemannimyia</i>	09021011020	0.67	0.67	3	PR	0.2	0.2
<i>Cricotopus</i>	09021011037	1.67	1.67	7	SH	0.5	0.5
<i>Eukiefferiella</i>	09021011041	2.33	2.33	8	CG	0.7	0.7
<i>Paratanytarsus</i>	09021011071	2.67	2.67	6	—	0.9	0.9
<i>Tanytarsus</i>	09021011076	0.33	0.33	6	CF	0.1	0.1
<i>Microtendipes</i>	09021011094	1.33	1.33	6	CF	0.4	0.4
<i>Parachironomus</i>	09021011097	1.00	1.00	10	PR	0.3	0.3
<i>Polypedium</i>	09021011102	1.00	1.00	6	SH	0.3	0.3
<i>Cnephia</i>	09021012046	4.33	4.33	0	CF	1.4	1.4
Elmidae	09021113	0.67	0.67		—	0.2	0.2
Hydrobiidae	10010104	19.33	19.33		—	6.2	6.2
Physidae	10010202	40.67	40.67		SC	13.0	13.0

Appendix 2. Hydropower Impoundment Classification Exceptions for Aquatic Life

Standards- Title 38 Sections 464 and 465

<https://www.mainelegislature.org/legis/statutes/38/title38sec464.html>

<https://www.mainelegislature.org/legis/statutes/38/title38sec465.html>

***Summary:** The statute says that recognizing the aquatic life differences of impoundments, if a river with impoundments is classified as A or B, the impoundment shall also be considered to meet that standard provided it at least meets C criteria; unless, (1) Reasonable changes can be implemented that do not significantly affect existing energy generation capability; and (2) Those changes would result in improvement in the habitat and aquatic life of the impounded waters. If the conditions described in (1) and (2) occur, those changes must be implemented and the resulting improvement in habitat and aquatic life must be achieved and maintained.*

§464. Classification of Maine waters

10. Existing hydropower impoundments managed under riverine classifications; habitat and aquatic life criteria. For the purposes of water quality certification under the Federal Water Pollution Control Act, Public Law 92-500, [section 401](#), as amended, and the licensing of modifications under [section 636](#), hydropower projects in existence on the effective date of this subsection, the impoundments of which are classified under section 465, are subject to the provisions of this subsection in recognition of some changes to aquatic life and habitat that have occurred due to the existing impoundments of these projects.

A. Except as provided in paragraphs B and D, the habitat characteristics and aquatic life criteria of Classes A and B are deemed to be met in the existing impoundments classified A or B of those projects if:

(1) The impounded waters achieve the aquatic life criteria of section 465, subsection 4, paragraph C. [PL 1991, c. 813, Pt. B, §1 (NEW).] (author's note- underlined and boldfaced, see section 465, subsection 4, paragraph C below)

B. The habitat characteristics and aquatic life criteria of Classes A and B are not deemed to be met in the existing impoundments of those projects referred to in [paragraph A](#) if:

(1) Reasonable changes can be implemented that do not significantly affect existing energy generation capability; and

(2) Those changes would result in improvement in the habitat and aquatic life of the impounded waters.

If the conditions described in subparagraphs (1) and (2) occur, those changes must be implemented and the resulting improvement in habitat and aquatic life must be achieved and maintained. [PL 1991, c. 813, Pt. B, §1 (NEW).]

C. If the conditions described in paragraph B, subparagraphs (1) and (2) occur at a project in existence on the effective date of this subsection, the impoundment of which is classified C, the changes described in [paragraph B](#), subparagraphs (1) and (2) must be implemented and the resulting improvement in habitat and aquatic life must be achieved and maintained. [PL 1991, c. 813, Pt. B, §1 (NEW).]

D. When the actual water quality of waters affected by this subsection attains any more stringent characteristic or criteria of those waters' classification under [sections 465](#), 467 and 468, that water quality must be maintained and protected. [PL 1991, c. 813, Pt. B, §1 (NEW).]

[PL 1991, c. 813, Pt. B, §1 (NEW).]

11. Downstream stretches affected by existing hydropower projects. Hydropower projects in existence on the effective date of this subsection that are located on water bodies referenced in [section 467, subsection 4, paragraph A](#), subparagraphs (1) and (7), and [section 467, subsection 12, paragraph A](#), subparagraphs (7) and (9) are subject to the provisions of this subsection.

For the purposes of water quality certification of hydropower projects under the Federal Water Pollution Control Act, Public Law 92-500, [Section 401](#), as amended, and licensing of modifications to these hydropower projects under [section 636](#), the habitat characteristics and aquatic life criteria of Class A are deemed to be met in the waters immediately downstream of and measurably affected by the projects listed in this subsection if the criteria contained in [section 465, subsection 4, paragraph C](#) are met.

[RR 1993, c. 1, §114 (COR).]

Section 465, subsection 4, paragraph C

C. Discharges to Class C waters may cause some changes to aquatic life, except that the receiving waters must be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. For the purpose of allowing the discharge of aquatic pesticides or chemicals approved by the department and conducted by the department, the Department of Inland Fisheries and Wildlife or an agent of either agency to restore biological communities affected by an invasive species, the department may find that the discharged effluent will not cause unacceptable changes to aquatic life as long as the materials and methods used will ensure the support of all species of indigenous fish and the structure and function of the resident biological community and will allow restoration of nontarget species. [PL 2017, c. 319, §9 (AMD).]

Sims, Meagan

From: Herrick, Jason <Jason.Herrick@metmuseum.org>
Sent: Monday, June 30, 2025 9:22 AM
To: DEP, TRComments
Subject: Chandler Bay
Attachments: Triennial Review Appeal.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Ms. Sims and the Triennial Review Panel,

I am attaching a letter to you regarding Chandler Bay.

Thank you,

Jason

Jason Herrick, Ph.D.
Chairman
Roque Island Homestead
917 435 5967

ROQUE ISLAND HOMESTEAD

243 SCHOPPEE POINT ROAD
ROQUE BLUFFS, MAINE 04654

Meagan Sims, Water Quality Standards Coordinator
Maine Department of Environmental Protection
SHS 17 Augusta, ME 04333
trcomments.dep@maine.gov

Subject: Support for Chandler Bay Reclassification to Class SA

Date: June 30, 2025

Dear Ms. Sims and the Triennial Review Panel,

We are writing in strong support of the Eastern Maine Conservation Initiative's (EMCI) petition to reclassify Chandler Bay in Jonesport from Class SB to Class SA. This reclassification aligns with all of the conservation activities that the Roque Island archipelago has supported for decades and is currently engaged in.

The Roque Island archipelago is comprised of seven barrier islands in Chandler and Englishman Bays. All of the islands are in natural resources management programs (tree growth, farmland, and forever wild). For over 200 years, our focus has been on environmental stewardship and ecological sustainability of the archipelago and surrounding areas. Many of the studies conducted focus on the critical importance of natural resource research and management (e.g. studies in water quality, seaweed, animal/fish/shellfish habitats, trees, flora, and birdlife). We work with many non-profits and educational institutions throughout New England to quantify and qualify the fragile and pristine ecosystem of this region.

Chandler Bay is not only an ecological asset but also a vital resource for the surrounding communities, who depend on its waters for their livelihoods as well as recreation. In fact, Jonesport and Beals combined have the number one lobster landings in the state for several years in a row. It is of grave concern to us that Chandler Bay would be denied an SA classification due to a permit having been mistakenly granted to the industrial fish farm Kingfish Maine (KM) using untested technology at an unprecedented scale. In any case, this facility has not been built despite having all its permits and has not demonstrated any capacity to be built in the foreseeable future.

The investment in the project so far has been minimal compared to the estimated cost of the facility and the cost, should the untested technology and business model fail. There is clean fully-land based technology available that does not run these risks. We ask that you seriously reconsider sacrificing a pristine body of water that has provided meaningful livelihoods for the community through fishing and harvesting *for generations* to be polluted by a non-existent massive industrial aquaculture/wastewater treatment facility. If the quality of Chandler Bay's water had been known

prior to KM's permit, *it would not have been granted*. Chandler Bay was given an SB class by default because no studies had been conducted yet.

In addition, the recreational value of having such pristine waters is at the heart of Maine's commitment to enjoying the great outdoors and Jonesport's mission to attract people to participate in its undeveloped natural beauty. This area has been a huge draw to sailors, boaters, kayakers, and swimmers for generations. In fact, the preponderance of indigenous artifacts from several tribes in this area is proof of the value of the water and its invaluable bounty for hundreds of years.

We ask that you reclassify Chandler Bay to the SA class based on the extensive scientific data that has been presented proving it as such, along with recognition of the importance of its health to the local community and state.

Thank you for your consideration.

Sincerely,

Jason Herrick
Chairman, Roque Island Homestead
917 435 5967

Sims, Meagan

From: John Burrows <jburrows@asfmaine.org>
Sent: Monday, June 30, 2025 12:59 PM
To: DEP, TRComments
Subject: Comments on Triennial Review
Attachments: ASF DEP Reclass 2025.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Ms. Sims,

Please find attached comments from ASF on the Triennial Review of of Maine's Water Quality Standards.

Thank you!

John

John R.J. Burrows

Vice President, U.S. Operations
Atlantic Salmon Federation
(207) 415-6637





June 25, 2025

Ms. Meagan Sims
Water Quality Standards Coordinator
Maine Department of Environmental Protection
State House Station 17
Augusta, ME 04333-0017

Dear Ms. Sims:

The Atlantic Salmon Federation (ASF) submits the following comments on the Maine Department of Environmental Protection's Triennial Review of Maine's Water Quality Standards.

ASF strongly supports the Department's proposed upgrades in water quality classification for a number of river and stream segments that are extremely important for endangered wild Atlantic salmon, including:

- Mount Blue Stream and Tributaries – Upgrade to Class AA
- Pleasant River Middle Branch and Tributaries – Upgrade to Class AA
- Sandy River and Tributaries – Upgrade to Class A
- Temple Stream and Tributaries – Upgrade to Class A

ASF and a numerous other conservation organizations have worked with local communities, state and federal agencies, tribes, and private landowners to conserve land in many of these areas, and to reconnect and restore river and stream habitat in these rivers and streams. Tens of millions of dollars have been spent to protect and restore the high-quality, coldwater fish habitat in these watersheds and upgrading their water quality classifications will help ensure that this investment will have long-lasting benefits for Atlantic salmon, brook trout, and myriad other native fish and wild species in these watersheds.

In addition to these upgrades, ASF respectfully recommends that the Department include the proposal from the Midcoast Conservancy to reclassify a portion of the mainstem of the Sheepscot River in the Towns of Whitefield, Windsor, Jefferson, and Somerville from Class B to Class A. This stretch of the Sheepscot is vitally important for Atlantic salmon, as it support a large amount of spawning and rearing habitat, as well as important coldwater refugia, all of which was made fully accessible following the removal of the Coopers Mills Dam in 2018. The Sheepscot supports the southernmost, genetically distinct population of Atlantic salmon remaining in North America and upgrading the water quality classification for this stretch of the river will help in the effort to prevent the extinction of this extremely valuable salmon population.

ASF also strongly supports the proposal submitted by the Board of Supervisors of the Hancock County Soil & Water Conservation District to reclassify portions of the upper Union River watershed – the West, East, and Middle Branches – from Class A to Class AA. These waters are



designated as critical habitat for Atlantic salmon and they also support a number of other rare species. The upper Union River watershed is also a highly climate resilient watershed, so upgrading to Class AA will prevent future degradation of this important habitat.

Lastly, we support the proposal from Grow L+A to upgrade the Lower Androscoggin from Class C to Class B. ASF has long-supported this upgrade, and we hope that the Department will finally support this reclassification given the large amount of data that shows this stretch of the Androscoggin almost always meets or exceeds Class B standards.

Thank you for the opportunity to comments on Triennial Review of Maine's Water Quality Standards.

Sincerely,

John R.J. Burrows
Vice President, U.S. Operations
Atlantic Salmon Federation

Sims, Meagan

From: Travis Peaslee <tpeaslee@lacwa.org>
Sent: Monday, June 30, 2025 2:27 PM
To: DEP, TRComments
Subject: LACWA Triennial Review Comments
Attachments: LACWA Triennial Review Comments June 30 2025.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Meagan,

Please find attached my comments on the Triennial Review.

Thanks, and have a wonderful day.

Travis Peaslee, P.E.
General Manager
Lewiston-Auburn Clean Water Authority
535 Lincoln St. Lewiston, ME 04240
Office 207-782-0917 ext. 22
Cell 207-450-3824
USPS: P.O. Box 1928-04241



June 30, 2025

Meagan Sims
Water Quality Standards Coordinator
ME Department of Environmental Protection
State House Station 17
Augusta, ME 04333-0017

Re: Triennial Review of Maine's Water Quality Standards

About LACWA- The Lewiston Auburn Clean Water Authority was created by an act of the Maine Legislature in 1967 to provide wastewater treatment services to the Cities of Lewiston and Auburn. The plant started operation in 1974, and was one of the first secondary wastewater treatment facilities in the State of Maine. Our mission is to serve the public by protecting and enhancing the Androscoggin River water quality.

Discussion- We are proud of our efforts over the past 50 years which have contributed to the drastic improvement of the Androscoggin River. We are also delighted to hear that the river is meeting Class B standard nearly all of the time, and that reclassification to such a standard is even being discussed on a river that served as the impetus for creation of the Clean Water Act nearly 50 years ago.

Although reclassification is a goal of the legislature, The DEP has legal requirements to ensure 100% attainment of any reclassification through permitting means on all dischargers on the Androscoggin, and the EPA has ultimate oversight on these permits, meaning discharge permit impacts, and public cost impacts are truly unknown at this time and subject to interpretation. If a reclassification were to happen without certainty of future attainment, then a TMDL would likely be a result, which has the potential to trigger additional cost and uncertainty for our facility. Additionally, consideration doesn't seem to be given to the artificial oxygenation system within the watershed, and whether or not "credit" should be given to such an unnatural intervention, as attainment of class B standards seems highly unlikely without it. Having no control over a significant factor in classification attainment, such as the artificial oxygenation system, creates tremendous trepidation on our part given the potential ramifications it could have if not operational at any point in the future.

The Cities of Lewiston and Auburn have made and continue to make, significant investments in their wastewater treatment infrastructure, including Combined Sewer Overflow (CSO) abatement. We are currently facing infrastructure needs over the next 2-5 years of approximately \$10-15 Million to address biosolids PFAS impacts, and are currently in the middle of a \$32

Million project to build a CSO storage tank. While we support the recognition of improved water quality, we also worry that the regulatory burden to comply with such a reclassification could add additional financial burden to the citizens of the twin cities. Additionally, any reductions in our permitted discharge have the potential of impacting future community and business growth, which appears to be counter to some of the upgrade proposal advocate's intent. Because the draft review generally references potential impacts to facilities such as our, I would like to formally request that the Department describe to us in writing any potential license changes for our facility that may be needed for an upgrade of classification on the Androscoggin River, under the current dissolved oxygen criteria and under the DEP proposed dissolved oxygen criteria.

LACWA largely supports the intent of the Androscoggin River classification upgrade proposals, and recognizing the tremendous improvements made to Androscoggin River water quality, but also agrees with the Departments recommendation to not support the upgrade proposals for the Androscoggin River from class C to class B, at this time. We also agree with the justification and reasoning behind the Department's proposal to update Dissolved Oxygen criteria for class B waters. Ultimately, we strongly support all efforts to provide the best water quality reasonably possible throughout the State of Maine: however, we are concerned with the unknown regulatory requirements that will become legally binding on our facility as a result of reclassification, the practical attainment of the new water quality requirements, and the lack of transparency with the public on what the costs associated with such an attainment would be. Ideally, before setting such a goal, all parties involved in the process from proposing changes, to making final determinations on classification upgrades, ensure that the new standards are attainable, and that the full cost impacts are understood and made transparent. Ideally, the DEP would be able to ensure that Class B standards in all sections of the Androscoggin River are reasonably and technically feasible to attain, and that the cost to do so is negligible for all impacted communities, creating a win for all interested parties, including those that live, work, and recreate on this wonderful river.

Thank you for your time and attention.

Sincerely,

A handwritten signature in black ink, appearing to read 'TP', is written over a light gray circular background.

Travis Peaslee, P.E.
General Manager
Lewiston Auburn Clean Water Authority

Sims, Meagan

From: Mary Blackstone <Mary.Blackstone@uregina.ca>
Sent: Monday, June 30, 2025 2:30 PM
To: DEP, TRComments
Subject: Comments on Triennial Review recommendations
Attachments: GE Triennial Review Response 2025.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please find attached Green Ellsworth's response to your Triennial Review recommendations. Please let me know if there is any problem with accessing them.

Mary Blackstone, Community Liaison
Green Ellsworth



June 30, 2025

Meagan Sims
Maine Department of Environmental Protection
Bureau of Water Quality
State House Station 17
Augusta, ME 04333-0017

RE: Triennial Review

Dear Ms. Sims,

On behalf of Green Ellsworth I am writing to provide comments regarding your recommendations in response to Triennial Review proposals. Green Ellsworth is an organization focused on the long term sustainability of our community and the environment. In 2021 we published a substantial Green Plan for the City of Ellsworth which subsequently used the plan as a cornerstone of its new Comprehensive Plan (approved in December 2024). We now have a number of action teams focused on the implementation of the more than 150 recommendations in the plan. The Water chapter was the first chapter in the Green Plan and we have a very active team focused on water issues.

We were delighted to see that you are going to create standards for pH and nutrients, but disappointed that you are not going to do the same for turbidity. Turbidity is the number 1 most significant water quality issue in our area—and we understand that it is a very serious issue elsewhere in the State and the country. We recognize that such standards would be complex to develop and enforce, but other states have such standards so it should be possible for Maine to do the same. If turbidity is the most common cause of compromised water quality, it makes no sense for DEP to not have criteria for measuring and addressing this problem.

We were pleased that you entertained the prospect of raising the upper Union River to AA status. As you noted, it will take some time for DEP to undertake the data collection and onsite assessments necessary for such action. However, there is already a substantial body of data for the most accessible of the three Union River branches—the West Branch. On the basis of this data, we would suggest that the West Branch of the river be designated AA now as a follow up to the Triennial review and that you provide us with a list of the data that you would need to elevate the other two branches. Our Action Team is blessed with Master Naturalists and botanists who hold graduate degrees, and we regularly hire summer interns with substantial credentials who could be supervised to assist with data collection. We could potentially partner with DEP to move data collection forward. Our intern this summer is focused on shoreline restoration and eDNA work, but in future we could secure a graduate student with the necessary credentials to help with Union River data collection.

Thank you for the opportunity to participate in the Triennial Review. We look forward to the next stage of the process.

Sincerely,

Mary A. Blackstone, Community Liaison


Ellsworth, Maine 04605

blackstm@uregina.ca
207-667-8878

Sims, Meagan

From: Krysta West <kwest@maineforest.org>
Sent: Monday, June 30, 2025 3:36 PM
To: Sims, Meagan; DEP, TRComments
Subject: MFPC Comments on Triennial Review
Attachments: 6.30.25 MFPC Comment DEP Triennial Review.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Please find MFPC's comments attached to this email. Thank you for your consideration.

Krysta West

Deputy Director

Maine Forest Products Council
535 Civic Center Dr.
Augusta, ME 04330

O: (207) 622-9288

C: (207) 779-6859

maineforest.org



Maine Forest Products Council

The voice of Maine's forest economy

June 30, 2025

Meagan Sims
Bureau of Water Quality
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017
Meagan.sims@maine.gov
TRComments.DEF@maine.gov

Dear Ms. Sims:

We appreciate your consideration of the Maine Forest Products Council's comments on the Triennial Review of Maine's Water Quality Standards ("Triennial Review"). Since 1961, the Maine Forest Products Council has been the voice of Maine's forest economy. MFPC represents the diverse needs of Maine's forest products community. Our members include landowners, loggers, truckers, paper mills, tree farmers, foresters and lumber processors, as well as bankers, lawyers and insurance executives. We represent anyone who has an interest in seeing the Maine woods remain a viable, sustainable resource.

As part of the Triennial Review, we recognize that MEDEP has received multiple proposals from various agencies and organizations. These include proposals to upgrade to the water quality classification of certain waterbodies as well as proposals to change the water quality standards. Many of these proposals represent substantive changes to current MEDEP regulatory standards and/or policies.

We are aware of multiple proposals to upgrade the classification of segments of the Androscoggin River. One proposal recommends upgrading a lengthy segment of the Androscoggin from Class C to Class B, which encompasses 15 municipalities with multiple municipal, commercial, and industrial dischargers and several dams. Our understanding is that although there are claims that monitoring data indicates attainment with Class B, this entire length of river has not been modeled to determine if Class B standards can be met. An upgrade of this broad river segment is expected to have consequences for the many stakeholders involved due to the existing Class B criteria being more stringent than Class C.

With regard to adjustment of the classification of river segments based upon dissolved oxygen levels, multiple parties, including MEDEP, propose modifications to the Class B water quality standards that suggest a different methodology to account for dissolved oxygen levels that may occasionally drop below the minimum regulatory criteria. The objectives of these proposals are good; however, the long-standing differentiation between water quality monitoring and water quality modeling must remain consistent. For MEDEP to assess attainment of a water quality classification, a waterbody is modeled by the MEDEP with all discharges at maximum permitted levels at critical warm temperatures and low flow conditions.

This is not the same as monitoring water quality parameters, which do not reflect these same critical conditions at the time of measurement. Although a waterbody may have monitored levels that meet the standards for a higher classification on any given day, this is not the same as designating the waterbody in attainment of the higher regulatory classification under worst-case, critical conditions. If the proposed changes to the dissolved oxygen criteria for Class B or C move forward, the MEDEP must still use water-

quality modeling to determine if the waterbody is attaining the standards of the classification (perhaps utilizing newly proposed, modified water quality standards). If the modeling does not show attainment, the segment should not be upgraded.

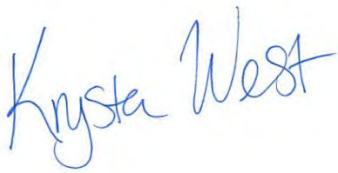
Concerning water quality standards related to metals, USEPA is proposing substantive changes to regulations for water quality standards for various metals with the purported objective of accounting for site-specific conditions. Generally speaking, site-specific conditions are an important factor when deriving limits for water toxics such as metals; however, the application of these factors is complicated. As an example, ND Paper's Rumford Mill and the former Pixelle Mill in Jay worked with a specialized consultant, MEDEP, and USEPA to develop the field study plan, sampling, chemistry, bioassays, and modeling necessary under Maine Ch. 584 to develop site-specific criteria for aluminum, copper, cadmium, and zinc on the Androscoggin River. The development and adoption of site-specific criteria for this river segment was completed in 2015 after spanning multiple years and costing over \$700,000.

Further, USEPA proposes that MEDEP adopt the 6.5 to 9 pH range as ambient criteria. This appears inconsistent with discharge limitations established in Part 430.22 Subpart B "Effluent limitations representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT)" for Bleached Kraft Facilities which establishes a pH range of 5 to 9 for continuous discharges. The implications of USEPA's proposal for existing site-specific criteria and pH are not fully understood and need further evaluation. The USEPA's eight recommended changes, which include those discussed above, should not be adopted as part of the Triennial Review.

Based on our understanding of the various proposals discussed at the Triennial Review public meeting, the Council is in general agreement with MEDEP regarding the proposals that are not recommended for adoption at this time.

Please contact me at kwest@maineforest.org or (207) 622-9288 if you have any questions.

Sincerely,



Krysta West
Deputy Director
Maine Forest Products Council

Sims, Meagan

From: Barry Mower <bnjmower@gmail.com>
Sent: Monday, June 30, 2025 3:49 PM
To: DEP, TRComments
Subject: Triennial Review

Follow Up Flag: Follow up
Flag Status: Flagged

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Ms Sims

Thanks for all the effort you and your colleagues have made to prepare for the huge task of the Triennial Review of Maine's Water Quality Standards. And thanks also for the opportunity for public comment.

As a retired DEP biologist who spent 47+ years trying to implement Maine's WQS, I have the following comments.

1. Please keep foremost in your minds the foundation of the WQS, i.e. the goals and objectives of the US Clean Water Act and Maine's Water Classification Program at 38 MRS sec 464. Those are the bases for everything you do.

2. Regarding DEP's proposal to update the DO criteria for Class B freshwaters to clarify the magnitude, duration, and frequency, I acknowledge that the existence of more data requires new thinking about the criteria. However, I don't see any specific proposal relative to magnitude, duration, and frequency in the DEP's initial online proposal. I did see a reference to a magnitude of 6.0 ppm in the link to the public meeting, but no mention of duration and frequency. Those need to be specified before anyone can make an informed comment.

I urge the DEP to confer with DIFW fishery division for input on all three factors. But keep in mind that DIFW's mandate is different, to manage fisheries which, in addition water quality, includes many other factors, such as predator/prey availability, budget, angler demand, and their management is often limited to single species. DEP's mission is to manage water quality for fish and other aquatic life as specified in the WQS, regardless of what species DIFW actively manages. And DEP's long standing interpretation of the WQS is that records exist to document that cold water fish are indigenous to essentially all flowing freshwaters of the State.

Any changes should follow 464 and not just be based on trying to make it easier for upgrades of certain waters, no matter how desirable by certain groups.

3. Regarding the proposal by ARWC to create an exemption for DO criteria in topographically isolated areas of riverine impoundments, I see no definite proposal but rather, in further considerations and recommendations, consultation with stakeholders. As one who worked on the issue

for years, I would like to be included as a stakeholder as I may be able to provide some biological perspective that might not be clear to the current DEP staff.

Thanks

Barry Mower

[REDACTED]

Cape Elizabeth, Me

bnjmower@gmail.com

207-216-0448

Sims, Meagan

From: cmbodaciousbelle@aol.com
Sent: Monday, June 30, 2025 3:53 PM
To: DEP, TRComments
Subject: Chandler Bay Water Reclassification

Follow Up Flag: Follow up
Flag Status: Flagged

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June 30, 2025

Bureau of Water Quality
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333

Subject: Chandler Bay Water Reclassification

To Whom It May Concern,

I am Cynthia Beauvais. I reside in Jonesport, Maine, on Chandler Bay. This letter is sent to show upgrading Chandler Bay to SA water quality is in line with Jonesport's Comprehensive Plan; the Plan that shines the light on our town's future and impacts not only this area but the whole state.

- "Preserving and protecting the character of Jonesport as a fishing community is vital to the continued stabilization and potential growth of the economy."

- "... Recognize the value of... conservation, recreation, and marine resources, ... to preserve and protect the character and integrity of the town as an amazing place to live, work, and play."

- Sandy River Beach and The Washout are listed as Special Places in Jonesport. Both of these locations are adjacent to Chandler Bay.

- “Protect both fresh water and salt water resources” and “preserve and protect beaches and all natural/marine life” as part of the Natural and Cultural Resource Conservation.

There is a mandate by Jonesport’s residents. By not upgrading the water quality of Chandler Bay from SB to SA, the people’s choices and voices are not being heard or taken into consideration.

- “Become known as a leader in environmental protection” and “work with neighboring communities to become a destination location highlighting its natural resources and show visitors ‘Real Maine’ “are cited as part of Jonesport’s Role in the Region. Here is an opportunity to make this a reality.

- “The survey revealed an emphasis on...preservation of open spaces and other natural resources.”

- “Over 40% of the employed population in Jonesport works in some type of Natural Resources occupation.”

- “The economy of Jonesport remains heavily reliant on fishing and marine-related industries.”

Jonesport is usually in the top rankings of live lobster landings in the whole state.

- The goal of the Comprehensive Plan’s Natural Resources section is “to preserve and protect the natural resources on which its economy and quality of life depend.”

- “Natural systems are critical to the economy, environment, and quality of life for people in Jonesport.”

- “The town’s tidal waters are of critical importance to a wide variety of interests including traditional fishermen, aquaculturists, recreational boaters, wildlife tour operators, and those who enjoy the view.”
- “Jonesport was founded on and continues as a commercial fishing community dependent on the ocean’s resources.”

The Comprehensive Plan serves as a guiding light to achieve goals relating to Jonesport’s vision for our future.

Now is the time to act showing that the Department of Environmental Protection truly cares about our State’s Marine Resources’ future.

There is currently a permit allowing a foreign company to discharge 28,700,000 gallons of effluent into Chandler Bay daily. This permit can be pulled at any time based on the many pages of new information which have been submitted to the Commissioner.

Wouldn’t it be advantageous to preserve the high quality waters of Chandler Bay now rather than try to play catch up by having to clean/restore an once immaculate water body?

Why wouldn’t an upgrade be granted when all requirements are met or exceeded? The proof exists.

Thank you for your thoughtful consideration.

Cynthia M Beauvais



Jonesport, ME 04649

[225.721.1514](tel:225.721.1514)

cmbodyaciousbelle@aol.com

Sims, Meagan

From: Ariana Fischer <ariana@arianafischer.com>
Sent: Monday, June 30, 2025 3:54 PM
To: DEP, TRComments
Cc: Sims, Meagan
Subject: Triennial Review - EMCI petition re: Chandler Bay
Attachments: EMCI Rebuttal letter to Triennial Review_JK.pdf; ChandlerBay-WaterQuality_JVaudrey.pdf; 1_Chandler Bay Entero_JKrumholz.pdf; 2_EMCI ecosystem letter_JKrumholz.pdf; VaudreyCV_2025Jun29_2pgCV.pdf; KrumholzCV_full_2024.docx

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Dear Meagan,

Please find attached EMCI's addendum letter regarding the reclassification of Chandler Bay. There are also three attachments that support the document. We have also included the CV's of the two scientists who analyzed and advised on water quality and entero data.

Thank you for reviewing this important material.

We wish you and the review board the very best.

Attachments:

CV's:



Eastern Maine Conservation Initiative
One Union Street, Suite 302
Portland, Maine 04101
(207) 775-7200
www.emcimaine.org

June 30, 2025

To: Meagan Sims, Water Quality Standards Coordinator
Maine Department of Environmental Protection
SHS 17
Augusta, ME 04333
meagan.sims@maine.gov
TRComments.DEP@maine.gov

E-Filed

Subject: Addendum to Water Re-Classification Proposal for Chandler Bay
Proposed Upgrade: SB to SA Chandler Bay, Washington County, Maine

Dear Ms. Sims:

I am writing to provide further information per the recommendations made by the Triennial Water Quality Review as it pertains to the (1) interpretation of coliform data as it relates to shellfish harvesting, (2) the recreational uses of Chandler Bay, and (3) threats to the bay as they are relevant to the proposed reclassification of Chandler Bay to Class SA.

1. Water Quality and Coliform Data:

Data collected regarding Chandler Bay's water quality (from 2022-2024) met Class SA standards for all parameters measured, as documented in the University of Maine's Darling Marine Center (DMC) monitoring report. The bay and its tributaries qualify as "outstanding ecological importance" due to their high quality, eelgrass beds, and designation as essential fish habitat for numerous species, including the endangered Atlantic salmon. These characteristics fulfill the requirements for SA waters which call for the highest level of protection for waters of exceptional ecological, social, scenic, economic, or recreational value. [See attached document – Chandler Bay Water Quality by Dr. Jamie Vaudrey]

Given the data provided by the DMC demonstrates the extremely high quality of the water in Chandler Bay and as no data is suggesting otherwise, it stands to reason that the State's Entero standards would not be violated in Chandler Bay. After reviewing the DMC data and researching



coliform for the area, Dr. Jason Krumholz, director of coastal restoration at Remote Ecologist, states: “Given the low population, high flushing, and lack of any other notable source of potential pollution/contamination that could lead to elevated *Enterococcus* levels, it is highly improbable that the region in question would meet all of the other standards for classification as SA (including Fecal Coliform), but not meet the SA standard for *Enterococcus*. It is therefore my recommendation that Maine DEP, absent any data suggesting otherwise, apply the precautionary principle and reclassify the area in question as SA, unless or until data can be provided showing that the area in question does not, in fact, meet that standard.”¹

2. Recreational and Economic Uses

Chandler Bay is a cornerstone of the Jonesport community, supporting a wide range of recreational and commercial activities. Chandler Bay is protected by state and municipal policies that prioritize public access and traditional marine uses, including:

- Sandy River Beach provides public access for swimming, sailing, kayaking, scuba diving, and beachcombing, with ample parking and a hand-carry boat launch.
- The bay and surrounding islands are also vital for wildlife, birdwatching, and tourism, with visitor data showing that sightseeing, excursions to outer islands, and nature observation are top reasons for visiting the region.
- Recreational boating, kayaking, waterfowl hunting, and fishing, all of which are recreational activities that depend on maintaining high water quality and open access.
- The town has invested in land and infrastructure to support picnicking, recreational and commercial shellfish harvesting, and boating, making Chandler Bay a site of regional significance.
- The bay is home to lobster fishing, scallop dragging, and public access to clam, worm, and seaweed harvest areas. In 2022, 385 harvester licenses were issued to Jonesport residents (this constitutes nearly 1/3 of the population of Jonesport according to the 2020 Census), reflecting the bay’s critical role in sustaining local fisheries and the broader regional economy.

3. Existing Discharge Permit

Regarding the issue of existing discharge permits, it is important to clarify that the only active wastewater discharge permit in Chandler Bay is for the proposed Kingfish Maine aquaculture facility. However, Kingfish Maine has not taken any active steps to vest their rights in this permit, as construction has not commenced, and their municipal permit is set to expire no later than August 13, 2024. While DEP staff note that Kingfish currently holds all necessary permits, it is likely that not all permits will remain valid prior to the decision on this reclassification request. Moreover, the presence of this permit should not be considered an impediment to reclassification, especially as the facility has not even begun construction, has not date set to do, and is therefore, not operational nor has any discharge has occurred.

¹ See attached document “*Chandler Bay Entero – Filling the Daat Gap for Bacteria in Chandler Bay*” by Dr. Jason Krumholz



While potential threats such as overboard discharge from boats, agricultural runoff, and other land-based activities exist, there is no evidence that these have compromised water quality in Chandler Bay. All evidence is to the contrary, Chandler Bay remains of the highest quality and is pristine. The bay remains free of active wastewater or stormwater discharges (apart from the non-operational Kingfish permit), landfills, or hazardous waste sites. The greatest threat to the bay's vitality is the pollution that would be emitted by Kingfish Maine; not only will it destroy the bay and threaten the local fish harvesting community, the costs for remediation, if necessary, will be an excessive burden for the state. ²

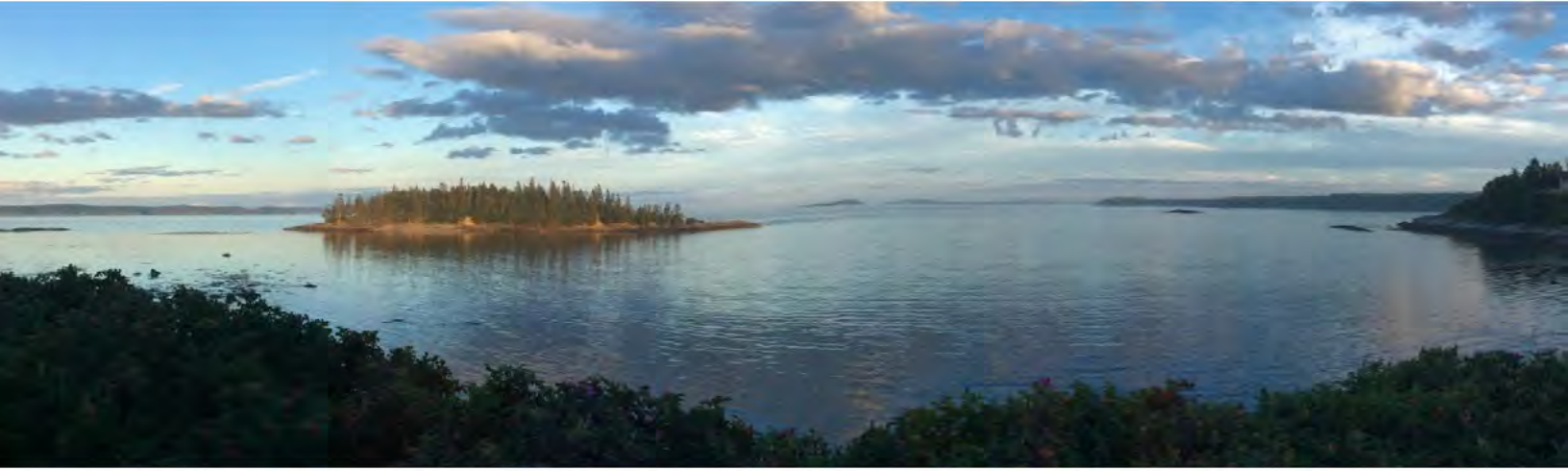
The request to reclassify Chandler Bay to Class SA is supported by comprehensive water quality data, the bay's outstanding ecological, economic, and recreational importance, and strong legal justification. All relevant data have been provided, and the small data gaps should not preclude reclassification when a viable proxy measurement suggests that it is very unlikely that the missing data would be likely to violate SA standards. The available Coliform data suggest that it is very unlikely the class SA *Enterococcus* standard would be violated. The existence of a non-vested, soon-to-expire discharge permit should not delay this action. Chandler Bay's continued protection as a Class SA waterbody is essential for the community, the environment, and the state.

Thank you for your consideration.

Kind Regards,

Anastasia Fischer
Chairman, *Eastern Maine Conservation Initiative*

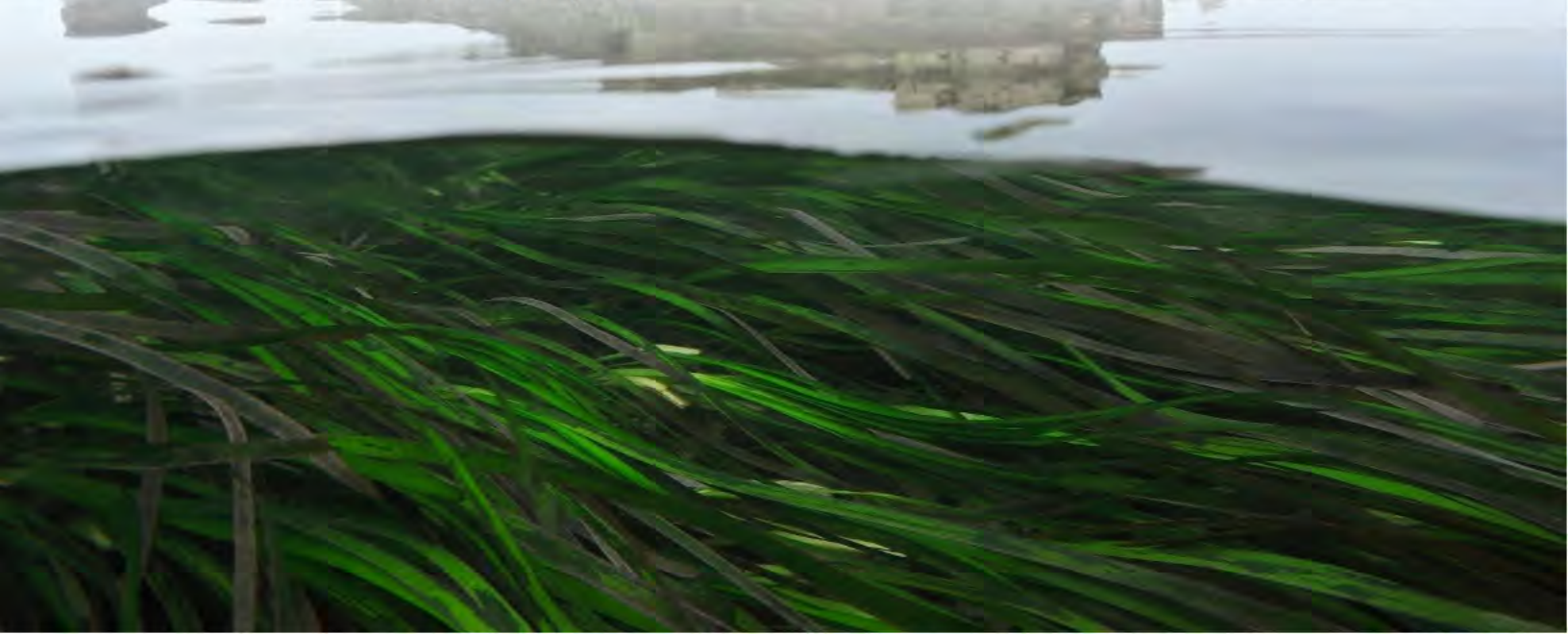
² See attached document "*Restoration Ecology*" by Dr. Jason Krumholz.



Our Bay, Our Future: A Community Rooted in Nature

The natural ecosystem of Chandler Bay and the Downeast coast is recognized for its pristine waters, critical habitats, and ecological richness, including eelgrass beds and essential fish habitat for endangered species like the Atlantic Salmon. Over 40% of Jonesport's workforce is employed in natural resource-based occupations like lobster fishing, shellfish harvesting, and forestry, making the health of these ecosystems essential to local livelihoodsⁱ. Because natural systems are so deeply tied to the economy, environment, and quality of life, accelerating development worldwide and its' impact on climate change represents the greatest threats to the region's future. Jonesport's Comprehensive Planⁱ, developed with input from the local community, explicitly supports conservation efforts, aiming to protect natural resources and sustain the local economy. This shared commitment reflects a broader recognition of the importance of safeguarding the region's natural heritage as a working waterfront in the face of human-induced environmental change.

Eelgrass, a beneficial underwater plant.



Clean Water, Clear Future: The Critical Role of Water Quality

Vibrant and productive marine habitats require excellent water quality to thrive. Examining the quality or status of key habitats tells us about the water quality in the absence of monitoring – the habitats integrate the impacts of good or poor water quality, responding to the conditions they are exposed to.

These key habitats provide services to the animals of our oceans and to us—economically, recreationally, and aesthetically (Table 1).



Table 1: Good water quality supports habitat resources, which in turn provide a multitude of benefits to us humans.

Habitat Resource	Benefits (Ecosystem Services)	Threats
Eelgrass Habitat	✓ Nursery habitat for juvenile fish and shellfish. ✓ Stabilizes sediment, improves water clarity. ✓ Supports biodiversity and is a key part of the food web.	▪ rising temperatures ▪ nutrient loading (eutrophication) ▪ invasive species (e.g., green crabs) ▪ boating propeller scarring
Essential Fish Habitat (EFH) for Atlantic Salmon	✓ Atlantic salmon are a keystone and endangered species. ✓ EFH includes rivers, estuaries, and nearshore marine areas – these areas provide key resources for the salmon throughout their lifetime.	▪ dams ▪ warming waters ▪ habitat degradation ▪ competition with non-native species
Lobster & other Shellfish (bivalves: clams, mussels, scallops)	✓ Economic backbone of coastal Maine. ✓ Lobster and other shellfish are an indicator of ecosystem health and productivity. ✓ Clams and mussels filter the water, improving water clarity and reducing algal blooms. ✓ The economy of Jonesport remains heavily reliant on fishing and maritime-related industries. In 2020, Jonesport ranked first in the state for live lobster landings with 12.76M pounds reported.ⁱⁱ	▪ ocean warming ▪ ocean acidification ▪ shell disease ▪ shifting distributions ▪ trap density ▪ habitat loss ▪ poaching

Chandler Bay's Waters: A Closer Look at Quality

Water quality monitoring in Chandler Bay was conducted by the Darling Center at the University of Maine,^{iii,iv,v} under contract with Kingfish Maine, to meet the requirements of the Maine Pollutant Discharge Elimination System (MEPDES) Permit.^{vi} Sampling occurred every three weeks, from May to October in 2022, 2023, and 2024 (Figure 1).

WATER QUALITY IS EXCELLENT IN CHANDLER BAY, as evidenced by comparing the local data to standards used in the National Coastal Condition Assessment's water quality module (Table 3, Table 4) and to standards protective of eelgrass established by Maine Department of Environmental Protection (DEP) (Table 4).



Figure 1: Water quality sampling locations. Stations were chosen by Maine DEP as part of the MEPDES permit issued to Kingfish Maine, sampled by the Ira C. Darling Marine Center, University of Maine. The red star indicates the approximate location of the Kingfish Maine proposed outfall. CB5 and CB6 were sampled only in 2023 and 2024, with CB5 sampled on the flood tides and CB6 sampled on ebb tides. Locations of eelgrass beds are designated by pink (2010) and green (1997) areas, as mapped by Maine Department of Marine Resources.^{vii}

The standards of water classification within the State of Maine are prescribed in 38 M.R.S. §465-B (Table 2). Class SA are “outstanding natural resources [...] which should be preserved because of their ecological, social, scenic, economic or recreational importance.” 38 M.R.S. §469, states that all estuarine and marine waters lying within the boundaries of coastal counties not otherwise classified are Class SB waters.

The recent water quality monitoring conducted in Chandler Bay indicates water quality is excellent in Chandler Bay (Tables 4 & 5), lending support to those calling for reclassification of Chandler Bay from SB to SA.

Table 2: Classification of Estuarine & Marine Waters		
Summary of the differences in classes of waters, from 38 M.R.S. §465-B.		
	SA	SB
Section A -- Designated Uses		
fishing	x	x
aquaculture	x	x
propagation and harvesting of shellfish	x	x
navigation	x	x
habitat for fish and other estuarine and marine life	x	x
industrial process & cooling water supply		x
hydroelectric power generation		x
Section B -- Marine Life & Habitat Quality		
dissolved oxygen	as naturally occurs	> 85% saturation
enterococcus bacteria	same for both	
Section C - Discharges to the Water Body		
discharges	none, excepting some storm water and pesticides	no new discharges that impact shellfish harvesting

Table 3: Thresholds for the EPA NCCA categorization for determining the water quality index, which indicates level of eutrophication in a system.^{viii} Thresholds shown apply to data for Northeast, Southeast, and Gulf Coast; water clarity values are appropriate for the Northeast. This assessment is typically applied to data collected on a single day between June and September.

Parameter	GOOD	FAIR	POOR
Dissolved Inorganic Nitrogen, DIN, surface	< 0.1 mg/L	0.1 – 0.5 mg/L	> 0.5 mg/L
Dissolved Inorganic Phosphorus, DIP, surface	< 0.01 mg/L	0.01 – 0.05 mg/L	> 0.05 mg/L
Chlorophyll <i>a</i> , surface	< 5 µg/L	5 – 20 µg/L	> 20 µg/L
Dissolved Oxygen, 1 meter above the sediment	> 5 mg/L	2 – 5 mg/L	< 2 mg/L
Water Clarity for sites in coastal waters that support SAV	> 40 % light at 1 m (turbidity < 3.4 NTU) (Secchi depth > 1.8 m)	20 – 40 % light at 1 m (turbidity of 3.4 to 7.9) (Secchi of 1.0 – 1.8 m)	< 20 % light at 1 m (turbidity > 7.9 NTU) (Secchi depth < 1.0 m)

Table 4: Summary of data collected by the Darling Center in Chandler Bay, relevant to the NCCA presented in Table 3. The colors in each box indicate the assessment of Chandler Bay data for stations 1 through 4 compared to NCCA standards, with EPA-defined options being GOOD, FAIR, POOR. The extreme values indicated in the text were assessed at all six stations. Note that many parameters highlight the high or low over the season; this was done to illustrate that even on its' worst day, Chandler Bay's water quality is excellent.

Parameter	2022	2023	2024
Dissolved Inorganic Nitrogen, DIN (mg/L)¹ – surface <i>DIN = NO_x + NH₄</i> <i>NH₄ was not sampled in 2022; we used average of 2023 and 2024 by station as a proxy for 2022 NH₄.</i>	GOOD Average ≈ 0.055 mg/L The maximum DIN was 0.239 mg/L and was recorded in May at CB4 at the bottom.	GOOD Average = 0.070 mg/L The maximum DIN was 0.313 mg/L and was recorded in May at CB1 at the surface.	GOOD Average = 0.030 mg/L The maximum DIN was 0.213 mg/L and was recorded in August at CB2 at the bottom.
Dissolved Inorganic Phosphorus, DIP (mg/L)¹ – surface <i>DIP was not sampled.</i>	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
Chlorophyll a (µg/L) – surface <i>High values shown were recorded at the bottom.</i>	GOOD Average = 3.29 µg/L Range of: 0.66 µg/L to 14.96 µg/L	GOOD Average = 2.05 µg/L Range of: 0.30 µg/L to 4.05 µg/L	GOOD Average = 2.12 µg/L Range of: 0.83 µg/L to 5.22 µg/L
Dissolved Oxygen (mg/L) – bottom	GOOD Average = 7.97 mg/L The minimum dissolved oxygen of 8.01 mg/L (92.7 % saturation) was observed in September at CB3 at 12 m.	GOOD Average = 7.65 mg/L The minimum dissolved oxygen of 7.65 mg/L (89 % saturation) was observed in October at CB3 at 12 m.	GOOD Average = 8.12 mg/L The minimum dissolved oxygen of 8.26 mg/L (94 % saturation) was observed in October at CB4 at 8 m.
Turbidity (FNU) – all depths	GOOD Highest mean turbidity was 2.37 FNU at CB1. Highest turbidity was 3.76 FNU, observed at CB1 at 3m in October.	GOOD Highest mean turbidity was 1.81 FNU at CB1. Highest turbidity was 3.51 FNU, observed at CB1 at 2.5m in October	FAIR Highest mean turbidity was 3.53 FNU at CB1. Highest turbidity was 7.07 FNU, observed at CB1 at 1.5m in August
Secchi Depth (m) – all depths	GOOD Average = 3.18 m CB1 average = 2.35 m CB2 average = 3.17 m CB3 average = 3.51 m CB4 average = 3.67 m	GOOD Average = 2.73 m CB1 average = 2.65 m CB2 average = 2.86 m CB3 average = 3.46 m CB4 average = 3.43 m	GOOD Average = 2.3 m CB1 average = 2.14 m CB2 average = 2.37 m CB3 average = 2.7 m CB4 average = 2.8 m
	<i>CB5 & CB6 not sampled</i>	CB 5 average = 1.76 m CB 6 average = 2.23 m	CB 5 average = 1.5 m CB 6 average = 2.3 m

¹ The Darling Marine Science Center analysis assigned a concentration value of 0 mg/L when values were below the method detection limit; this analysis assigns a value of half the method detection limit using the lowest limit (by parameter) across the three years.

Table 5: Summary of data collected by the Darling Center in Chandler Bay. These metrics are not part of the NCCA comparison presented in Table 3. The reference for determining “GOOD, FAIR, POOR” is presented in the first column.

Parameter	2022	2023	2024
Total Nitrogen, TN (mg/L)² – all depths <i>> Winter concentrations will be higher than summer (May-Oct).</i> <i>> Annual average greater than 0.32 mg/L is harmful to eelgrass.^{ix}</i>	GOOD Average = 0.119 mg/L The maximum TN was 0.274 mg/L and occurred in June at CB1 at the surface <i>Except for one high value near the seal haul out in May of 0.77 mg/L.</i>	GOOD Average = 0.121 mg/L The maximum TN was 0.195 mg/L and occurred in October at CB5 at the surface	GOOD Average = 0.142 mg/L The maximum TN was 0.245 mg/L and occurred in May at CB1 at the bottom.
Total Phosphorus, TP (mg/L)² – all depths <i>> Winter concentrations will be higher than summer (May-Oct).</i> <i>> No limit established for marine waters.</i>	Average = 0.063 mg/L The maximum TP was 0.170 mg/L and occurred in the end of May (5/31) at CB3 at the bottom.	Average = 0.056 mg/L The maximum TP was 0.403 mg/L and occurred in May at CB4 at the surface.	Average = 0.077 mg/L The maximum TP was 0.303 mg/L and occurred in October at CB2 at the bottom.
pH – all depths <i>> Greater than 7.5 is good for marine waters.</i>	GOOD Average = 7.97 pH ranged from 7.69 to 8.17.	GOOD Average = 7.88 pH ranged from 7.77 to 8.01.	GOOD Average = 7.87 pH ranged from 7.54 to 8.11.

Habitats as Indicators and Sentinels

While water quality is something we can easily measure and analyze, it is a snapshot in time—a glimpse at the conditions on a specific day at a specific stage of tide. Looking at the organisms living in an environment provides a longer-term assessment of the health of the habitat and the overall water quality experienced by the plants and animals that live in the habitat. Species of plants and animals are used to assess the health of ecosystems or the presence of hazards. Indicator species is a term used to describe species who signal changes in the ecosystem’s health or the presence of pollutants. Oysters and mussels make excellent indicators of contaminants. Sentinel species provide early warnings of health risks to humans or specific ecosystems, often being more sensitive to environmental hazards than humans. The plant, eelgrass (*Zostera marina*), can be used as a sentinel species, providing early warnings of risks to the overall ecosystem. Species can be both an indicator of change and a sentinel of ecosystem health.

² The Darling Marine Science Center analysis assigned a concentration value of 0 mg/L when values were below the method detection limit; this analysis assigns a value of half the method detection limit as 0 mg/L is unlikely.

Eelgrass as Sentinel—Indicator of Nutrient Pollution

Eelgrass (*Zostera marina*) is an underwater marine plant that only survives where water quality is excellent, and Chandler Bay and the broader region are host to numerous beds (Figure 1). This plant serves as an indicator of ecosystem health; its' presence is a living testament to clean waters. But eelgrass is especially susceptible to high nutrient inputs and increases in nutrient loads can easily cause the disappearance of this habitat. Maine DEP has identified a threshold for success: if average annual total nitrogen in marine water is greater than 0.32 mg/L,^x eelgrass will likely disappear from the impacted area.



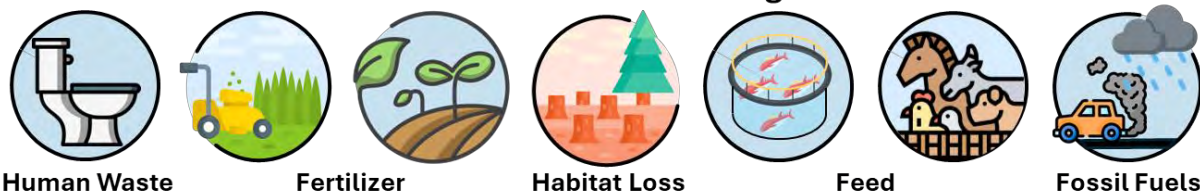
Eelgrass can only survive where water quality is excellent; Chandler Bay and the broader region are host to numerous beds.

The main source of nitrogen adversely impacting eelgrass can be sourced to human activities on the land. Nitrogen travels through groundwater, the streams and rivers, and in stormwater discharges and other discharges to the coast. Research from locations around the world have identified a few critical thresholds for eelgrass success^{xi}:

- When the nitrogen (N) load from the land to the receiving water is less than 50 kg N per hectare of receiving waters per year, eelgrass success is governed by other factors such as water depth and flow. (= less than 78 lbs. N per day per square mile receiving waters)
- When the nitrogen (N) load from the land to the receiving water is greater than 100 kg N per hectare of receiving waters per year, complete eelgrass loss is observed. (= greater than 156 lbs. N per day per square mile of receiving waters)
- Between 50 and 100 kg N per hectare of receiving waters per year, the response of eelgrass is variable, with cooler temperatures and clearer water aiding in eelgrass success. (= between 78 and 156 lbs. N per day per square mile of receiving waters)

If we assume the receiving area is 25 square miles (the area over which discharge from land discharges in about a day), the maximum nitrogen input to the Bay from all sources should be lower than 1,955 pounds of nitrogen per day to preserve and protect eelgrass habitats.

Sources and Contributors of Nitrogen Pollution



Human Waste

Fertilizer

Habitat Loss

Feed

Fossil Fuels

Nutrient Impacts on Habitat Quality & How to Help

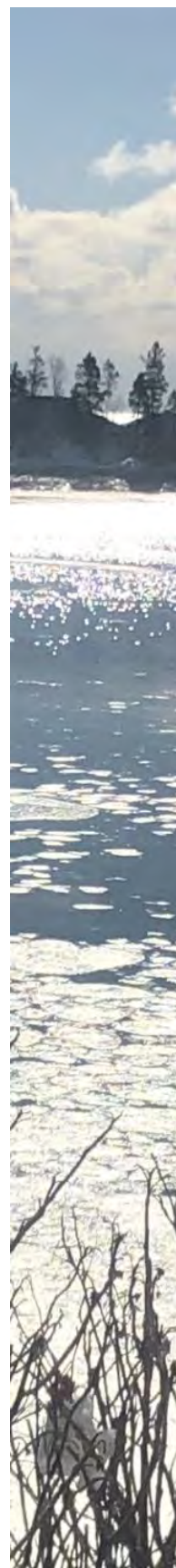
Chandler Bay water quality is currently excellent. But as with all coastal waters, future increases in nutrient loads have the potential to shift the system. If nutrient loading increases, the risk of eutrophication rises.

Symptoms of eutrophication include:

- Dissolved oxygen too low to support larval fish and other commercially and recreationally important species.
- Excess growth of microscopic plant-like organisms (phytoplankton) and nuisance seaweed (macroalgae) such as sea lettuce (*Ulva* sp.).
- Increase in harmful algal blooms (HABs).
- Die-off of eelgrass and loss of ecosystem services provided by eelgrass (nursery and foraging ground for fish and shellfish, reduction in wave energy, carbon storage).
- Fouling of shellfish and hard structures (e.g., piers and pilings).
- Loss of recreational and aesthetic enjoyment.
- Loss of economic viability as habitats shift and become less supportive of commercially important species.

Actions to combat eutrophication include:

- Reduce nitrogen content in **sewer and septic** system effluent
 - Upgrade sewer systems to remove the maximum level of nitrogen possible.
 - Install N-removing septic systems (innovative / advanced septic).
 - Maintain your septic system.
- Manage **animal waste**: livestock and pet manure, and waste from fish ponds
 - Keep livestock waste away from surface waters (ponds, streams, coastal waters), these are “highways” to the ocean for nutrients.
 - Clean up after your pet—pet waste is not “natural” as you are likely importing their food (for example, deer eat in the fields and forests – they are recycling local nutrients; your dog is not eating local).
 - Recycle waste from aquaculture practices to avoid releasing nutrients to the environment; consider using those “waste” nutrients to grow plants.
- Reduce **fertilizer** use
 - Apply fertilizer only when plants are growing.
 - Only apply what you need—if you like the way your lawn looks now, wait to fertilize until the lawn needs help.
- Reduce **fossil fuel** use
 - Burning gas, oil, and kerosene releases nitrogen and other contaminants into the air. These return to the land in rain, snow, and dust.
- **Preserve and encourage natural vegetation** in our town and at your home.
 - Trees, shrubs, and marsh vegetation are excellent sponges, trapping and utilizing nutrients and keeping the nutrients from reaching coastal waters.





Interconnected Ecosystems, Shared Responsibility

The health of Chandler Bay's ecosystems is not only a matter of environmental stewardship—it is a foundation for the region's economy, culture, and way of life. These habitats are intricately linked to the broader ecological network that supports recreationally, and ecologically important animals and plants, including eelgrass, kelp, lobster, clams, mussels, and fish, including the endangered Atlantic salmon. Eelgrass, as a rooted underwater marine plant, acts as an indicator of change for these ecosystems.

The loss of eelgrass due to nutrient loading, warming waters, and other stressors does not occur in isolation. It reverberates through the food web, undermining the resilience of lobster populations and degrading the habitat quality necessary for a thriving commercial fishing industry. These cumulative impacts threaten not only the diversity of the plants and animals present in these ecosystems, but also the economic backbone of communities like Jonesport, where livelihoods depend on a thriving marine environment.

To safeguard this interconnected system, a shift toward integrated, ecosystem-based management is essential. This means addressing land-based sources of nitrogen, protecting and restoring eelgrass beds, and ensuring that conservation efforts for fish, shellfish, and lobster are coordinated among local citizens, municipalities, managers, environmental practitioners, and scientists. By recognizing the shared fate of these habitats and species, and by acting collectively, we can preserve the ecological integrity and economic vitality of Chandler Bay for generations to come.

Atlantic Salmon Fry



Summary prepared for: Eastern Maine Conservation Initiative

1 Union Street, Suite 302, Portland, Maine 04101

Summary prepared by: Jamie Vaudrey, Ph.D.

Associate Research Professor, Department of Marine Sciences, University of Connecticut

1080 Shennecossett Road, Groton, CT 06340

May 2025

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<https://www.flickr.com/photos/16180154@N07/5714799266>

Page 10: Chandler Bay, Maine. Photo courtesy of Jessica Goldblatt, all rights reserved.

End Notes:

ⁱ Town of Jonesport, Maine (2023) Comprehensive Plan for the Town of Jonesport. Chapter A.

<https://www.townofjonesport.com/comprehensive-plan/>

ⁱⁱ Town of Jonesport, Maine (2023) Comprehensive Plan for the Town of Jonesport. Chapter A.

<https://www.townofjonesport.com/comprehensive-plan/>

ⁱⁱⁱ Brady, D.C. 2022. Report for 2022 Ambient Water Quality Monitoring Plan for Kingfish Maine, Land Based Aquaculture Project Jonesport, Washington County, Maine, USA. Report developed for Kingfish Maine. 52pp.

^{iv} Brady, D.C. 2023. Report for 2023 Ambient Water Quality Monitoring Plan for Kingfish Maine, Land Based Aquaculture Project Jonesport, Washington County, Maine, USA. Report for Kingfish Maine. 63pp.

^v Brady, D.C. 2024. Report for 2024 Ambient Water Quality Monitoring Plan for Kingfish Maine, Land Based Aquaculture Project Jonesport, Washington County, Maine, USA. Report for Kingfish Maine. 51pp.

^{vi} Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0037559; Maine Waste Discharge License (WDL) Application #W009238-6F-A-N Finalized MEPDES Permit *NEW*; June 25, 2021.

^{vii} Maine Department of Marine Resources, Geospatial Datasets: Eelgrass 2010, Eelgrass 1997. last accessed: 2025. <https://www.maine.gov/dmr/science/species-information/eelgrass>

^{viii} U.S. Environmental Protection Agency. Office of Water and Office of Research and Development. 2015. National Coastal Condition Assessment 2010 (EPA 841-R-15-006). Washington, DC. December 2015.

<http://www.epa.gov/national-aquatic-resource-surveys/ncca>

^{ix} Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0037559; Maine Waste Discharge License (WDL) Application #W009238-6F-A-N Finalized MEPDES Permit *NEW*; June 25, 2021.

^x Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0037559; Maine Waste Discharge License (WDL) Application #W009238-6F-A-N Finalized MEPDES Permit *NEW*; June 25, 2021.

^{xi} Latimer, J. S. and S. A. Rego. 2010. Empirical relationship between eelgrass extent and predicted watershed-derived nitrogen loading for shallow New England estuaries. *Estuarine, Coastal and Shelf Science* 90(4):231-240.



Filling the Data Gap for Bacteria in Chandler Bay

The standards for Class SA waters, according to the state of Maine are outlined below:

- *Class SA waters shall be of such quality that they are suitable for the designated uses of recreation in and on the water, fishing, aquaculture, propagation and harvesting of shellfish and navigation and as habitat for fish and other estuarine and marine life. The habitat shall be characterized as free-flowing and natural.*
- *The estuarine and marine life, dissolved oxygen and bacteria content of Class SA waters shall be as naturally occurs.*
- *There may be no direct discharge of pollutants to Class SA waters, except storm water discharges that are in compliance with state and local requirements.*

As it pertains to bacteria, the requirements are further outlined as follows:

The estuarine and marine life, dissolved oxygen and bacteria content of Class SA waters must be as naturally occurs, except that the number of enterococcus bacteria in these waters may not exceed a geometric mean of 8 CFU or MPN per 100 milliliters in any 90-day interval or 54 CFU or MPN per 100 milliliters in more than 10% of the samples in any 90-day interval. The number of total coliform bacteria or other specified indicator organisms in samples representative of the waters in shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration as set forth in its publication "Guide for the Control of Molluscan Shellfish" (2019 revision) or any successor publication.

Fecal Coliform (FC) and Enterococcus (Entero) are both bacteria commonly associated with mammalian feces, and indicators of human (or agricultural animal) impact on a water body. Although Entero has been shown to be slightly more sensitive during rainfall events, FC and Entero are strongly correlated to each other, and to regional populations¹. Exceptions to this may occur in areas with degrading sewer infrastructure or concentrated animal activity, but neither of those exceptions would be expected in this region.

The state monitors FC at several stations throughout the region in question². The 2024 data for the closest state monitoring stations, all of which feel representative of the region as a whole, are presented in Table 1 Below:

¹ <https://www.sciencedirect.com/science/article/abs/pii/S0043135402004967>

² <https://dmr-maine.opendata.arcgis.com/datasets>



Table 1: Mean and 90th percentile (P90) for 2024 Fecal Coliform at 5 stations near the proposed Kingfish Aquaculture Facility. Data are in MPN/100ml

Station	FC Mean	FC P90	% of State Threshold
EP018	3.6	12	40
EP014.5	2.4	5.4	18
EP018.5	3.1	9.5	32
EP013	2.4	5.6	19
EP014.1	2.8	6.7	22
Regional Average	2.4	6.5	22

The state threshold for shellfish harvesting (which would, by definition, be the SA standard) is a P90 of 30 MPN/100ml. None of these stations even approaches half of this state standard, and the regional average P90 is less than $\frac{1}{4}$ of the standard. At most stations, the average FC reading is barely above the detection limit of the test in question (typically 1MPN/100ml). It therefore stands to reason that the region significantly exceeds the State's standards for designation as class SA with respect to FC. Even relative to other areas in Maine, which has by far the cleanest marine waters in New England, these waters are pristine.

The state does not report Enterococcus data as part of the Open Data Portal. The closest analog is the Maine Healthy Beaches Program: (https://apps.web.maine.gov/online/healthy_beaches), which does not have any monitoring stations in the vicinity of Chandler Bay, probably because it is too remote and unpopulated. The closest monitoring stations are in Acadia National Park, which receives 3.8 million visitors per year (the equivalent of 8 times the population of Jonesport passing through every single day, 365 days per year, not counting locals). And the four marine stations in that region almost never see bacterial issues. Casco Bay, which has 250,000 people in its watershed relative to the roughly 30,000 in the Chandler/Englishmans/Machias Bay watershed, has 6 monitored beaches, all of which have much higher FC levels than observed in Chandler Bay, only one of those beaches would not meet the above standard of a P90 of 54 MPN/100ml³. Enterococcus contamination is simply not a common issue in the state of Maine, with only a few exceptions at the most populous and heavily visited beaches in the Southern portions of the state.

³ <https://www.cascobayestuary.org/strategic-planning/state-of-casco-bay/swimming-beaches-and-shellfish-beds>



If we accept the following statements as outlined above:

- 1) Both FC and Entero are highly correlated with human population, and with each other.
- 2) The primary exception to statement 1 above is areas of highly concentrated animal agriculture (e.g. concentrated feed lots), which are absent from the region.
- 3) The area in question clearly and consistently exceeds the state standard for class SA waters with respect to FC (and all other quantifiable measures).
- 4) The population in the area of Jonesport/Washington County, ME is substantially lower than closest areas in Maine where Entero is regularly monitored.
- 5) The closest areas in Maine where Entero is monitored have HIGHER FC numbers than the area in question, yet still meet established Entero standards.

It stands to reason that the logical conclusion, absent data suggesting otherwise, would be that it is extremely unlikely (albeit not completely impossible) that the State's Entero standards would be exceeded within the area in question. My professional opinion is that given the low population, high flushing, and lack of any reasonably likely source of potential pollution/contamination, it is highly improbable, that the region in question does not meet the SA standard for Entero. This opinion is based on the data at hand suggesting that the region in question easily meets all other quantifiable standards for classification as SA, and the lack of any identifiable source of pollution/contamination (to my knowledge) that might have a reasonable probability of causing failure of the Entero standard, WITHOUT causing failure of any of the other standards (e.g. fecal coliform) for which quantifiable data are available. It is therefore my recommendation that Maine DEP, absent any data suggesting otherwise, apply the precautionary principle and reclassify the area in question as SA, unless or until data can be provided showing that the area in question does not, in fact, meet that standard.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jason Krumholz'. The signature is fluid and cursive, with the first name 'Jason' and last name 'Krumholz' clearly distinguishable.

Jason Krumholz
Director, Coastal Restoration
Remote Ecologist



My name is Dr. Jason Krumholz, I am writing this letter on request of the Eastern Maine Conservation Initiative, as it pertains to the proposed Kingfish aquaculture facility in Chandler Bay. I have worked extensively on restoration ecology in a wide range of coastal ecosystems from temperate estuaries and their associated saltmarsh and eelgrass systems, to tropical environments, coral reefs, and mangrove ecosystems. One thing which remains constant across all of these systems is that it is FAR more expensive to restore ecosystems than to protect them, which must be considered when debating activities with potentially negative impacts on ecosystems which provide livelihoods, storm resistance, and recreation.

By this point, we have litigated and relitigated the numbers around this situation, and I see no reason to go around that circle again. One thing we all agree on is this: As suggested by Dr. Vaudrey's recent report, Chandler Bay is a special place, and the water quality here is pristine. Furthermore, nearly half of the local population is dependent on the natural resources of Chandler Bay and the surrounding area for their livelihoods. The Kingfish facility, at operational capacity, will discharge 1580 pounds of nitrogen per day into this system. This is roughly the equivalent of a large urban sewage treatment facility. Kingfish's modeling efforts suggest that the majority of this nitrogen will be swept into the open ocean and diluted, and negative impacts will be minimal. Dr. Kincaid's modeling efforts suggest that a significant portion of the nitrogen will be retained, leading to serious negative impacts. But the models are just that; simulations.

Personally, I'm a big football fan, but I could never get into sports talk shows. You can listen to the "talking heads" recite statistics and predictions all week, but at the end of the day, you've got to play the game on Sunday to figure out who's going to win. I feel like this situation may have a lot of parallels. You can lean into one model, or the other, and argue their relative merits, but we're well past that point. We're coming up on game day here, and the reality is, despite what either side tells you, nobody knows for SURE what's going to happen once the ball is kicked off.

I live near Providence, Rhode Island; the third largest city in New England. Our main sewage treatment plant, at Fields Point, has a measured average daily discharge of around 2,000 lbs which goes directly into Narragansett Bay. This is not that much more than the 1,580 lbs/day capacity load of the Kingfish facility in Chandler Bay, especially when you consider that Narragansett Bay is more than 10 times larger than Chandler Bay. Not all ecosystems respond the same, there is a lot of complicated physics, biochemistry, and geology in play that determines how a system will respond. The nitrogen picture in Narragansett Bay is very complicated, and Fields Point is only one part of that story. But we don't need models to predict what happened in Narragansett Bay, we can tell that story from experience. Decades of excess human nutrient inputs, mostly from sewage, wreaked havoc on our system. Shellfish beds closed, we had major fish kills due to hypoxia (lack of oxygen) in our waters, and every blade of eelgrass within about 20 miles of Fields Point vanished.

Thankfully, our story has a happy ending. After decades of over enrichment, in 2003 Rhode Islanders finally said "enough is enough" and approved bond issues to clean up our wastewater treatment facilities and remove the nitrogen pollution. It's taken us 20 years since then, but our water quality is improving, our eelgrass beds are slowly coming back, and recently, shellfish beds that had been closed for decades have reopened. Since 2003, prompted by a major fish kill, the state of RI has spent roughly \$900 Million on wastewater treatment upgrades, the cost of which was passed on to the taxpayers through rate hikes.



Thankfully, we have well over 200,000 rate payers in greater Providence, so this cost worked out to “only” a couple hundred dollars per family per year. Boston’s nitrogen load from sewage was about 4-6 times larger than ours, and they spent \$4.3 Billion to clean up Boston Harbor and Massachusetts Bay, which, thanks to their 650K+ population, again cost families a few hundred dollars annually. I could go on, but I won’t. These systems are very different, but the cost, per pound of nitrogen, tends to be about the same.

I can’t tell you for SURE that Chandler Bay will respond to this nitrogen load in the same way that Narragansett Bay did, even though the loads are roughly the same size. But I can tell you that the cost to remove a pound of nitrogen is probably going to be pretty consistent, which means that if things go south, it’s probably going to end up costing you several hundred million to clean this up. It took us decades to come up with a plan and raise the money it cost to fix our mistakes, and we only managed it thanks to hundreds of thousands of taxpayers sharing the burden. There are under 1300 people in Jonesport, less than 32,000 people in all of Washington County. I can’t see how you could possibly shoulder the burden of taxpayer funding that cleanup. If every man, woman and child in the county took an even share, we’re talking about tens of thousands per person, hundreds of thousands per family. If this goes south (and again, I can’t tell you for SURE it will, but Kingfish also can’t tell you for SURE it won’t), where does the money come from to clean it up? Who’s going to replace the livelihoods for the decade or two it’s going to take you to restore your lost eelgrass and shellfish beds?

I can tell you for sure it won’t be Kingfish. The last time I was up there I met the Kingfish folks and had a nice chat with them. I truly believe that they are well intentioned, but the reality is that they can barely afford to do this profitably even if it goes perfectly, and they have absolutely no means of coming up with the money to fix this if it doesn’t. They are good people. If they could have afforded to remove more nitrogen from their effluent, and still operate a profitable business, they would have offered to do so. But they can’t, so they didn’t. It’s also worth considering that often in these cases where there are polar opposed positions, the answer ends up somewhere in the middle. Rarely does it end up going perfectly, and equally rarely is it a worst case scenario. But even if you consider our experience to be the “worst case” (which I’m not sure it is), and you only end up with $\frac{1}{2}$ or $\frac{1}{4}$ of what it cost us... would that be a surmountable taxpayer burden?

I don’t have all the answers. I don’t know what it’s like to be in your shoes, and I don’t claim to. I’m not here to tell you what to do, or even what I think you should do. But I have spent enough time in coastal Maine to know the place you call home is a special place. I love my home, and I’m proud of the work we’ve done down here so that Narragansett Bay can be a place we’re proud to live, work, and play in. But I wanted to share my story to help you understand just how much work, money, and time it has taken us to get to this point. Protecting water quality is hard, nobody ever claimed otherwise. But restoring it is SO much harder. Thank you for listening.

Sincerely,

Jason Krumholz, Ph.D

Jamie M.P. Vaudrey, Ph.D.

Research Coordinator, CT National Estuarine Research Reserve

Associate Research Professor, Department of Marine Sciences

University of Connecticut

Groton, CT 06340

860-405-9149

jamie.vaudrey@uconn.edu

Professional Preparation

Wellesley College, Wellesley, MA	Biology, minor in Philosophy	B.A. 1993
University of Connecticut, Storrs, CT	Oceanography	Ph.D. 2007
University of Connecticut, Groton, CT	PostDoc – Seagrass Ecology	2006 - 2008
University of Connecticut, Groton, CT	PostDoc – Ecological Modeling	2007 - 2009

Appointments

Aug 2024 – present	Research Coordinator, Connecticut National Estuarine Research Reserve & Associate Research Professor, University of Connecticut, Groton, CT
Jul 2022 – Aug 2024	Research Coordinator, Connecticut National Estuarine Research Reserve & Assistant Research Professor, University of Connecticut, Groton, CT
Dec 2009 – Jul 2022	Assistant Research Professor, University of Connecticut, Groton, CT
Feb 2005 - Dec 2006	Research Scientist, University of Connecticut, Groton, CT

Selected Publications and Products

Barrett, L., P. Vlahos, M.A. McGuinness, M. Whitney, J.M.P. Vaudrey. (2024) Droughts and deluges: Changes in river discharge and the carbonate chemistry of an urbanized temperate estuary. *Frontiers in Marine Science* 11:1398087.

<https://doi.org/10.3389/fmars.2024.1398087>

Kelly, M.R., J.-M. Kasinak, E. McKinley, C. McLaughlin, J.M.P. Vaudrey, J.H. Mattei. (2023) Conceptualizing the construct of ocean identity. *npj Ocean Sustainability* 2, 17.

<https://doi.org/10.1038/s44183-023-00025-7>

Harris, L., T. Grayson, H.A. Neckles, C. Garza, C.R. Whitcraft, S. Williamson, K.W. Grimes, D.M. Talley, B. Fertig, K.A. Lewis, C.M. Palinkas, J. Pollack, S. Park, J.M.P. Vaudrey, C.T. Emrich (2022) A Socio-ecological Imperative for Broadening Participation in Coastal and Estuarine Research and Management. *Estuaries and Coasts* 45: 38-48.

(co-lead author) NOAA OCM. 2022. Connecticut National Estuarine Research Reserve Final Environmental Impact Statement, version December 3, 2021. Prepared by the National Oceanic and Atmospheric Administration (NOAA) Office of Coastal Management (OCM), with University of Connecticut and Connecticut Department of Energy and Environmental Protection. <https://www.federalregister.gov/documents/2022/01/14/2022-00734/notice-of-designation-of-the-connecticut-national-estuarine-research-reserve>

Rollinson, V. R., J. Granger, S.C. Clark, M.L. Blanus, C.P. Koerting, J.M.P. Vaudrey, L.A. Treibergs, H.C. Westbrook, C.M. Matassa, M.K. Hastings, C.R. Tobias (2021) Seasonality of nitrogen sources, cycling, and loading in a New England river discerned from nitrate isotope ratios, *Biogeosciences* 18(11): 3421-3444. <https://doi.org/10.5194/bg-18-3421-2021>.

Crosby, S.C., N.C. Spiller, D.E. Shulby, L. Brideau, L. Stewart, J.M.P. Vaudrey, K.E. Tietz, P.J. Fraboni (2021) Assessing the Resiliency of Salt Marshes under Increasing Nitrogen Loading. *Estuaries and Coasts* 44: 1658-1670. <https://doi.org/10.1007/s12237-021-00899-1>.

- Basso, G., J.M.P. Vaudrey, K. O'Brien, J. Barrett (2018) Advancing coastal habitat resiliency through landscape-scale assessment. *Coastal Management* 46(1): 19-39.
- Ganju, N.K., M. J. Brush, B. Rashleigh, A.L. Aretxabaleta, P. del Barrio, M. Forsyth, J.S. Grear, L.A. Harris, S.J. Lake, G. McCardell, J. O'Donnell, D.K. Ralston, R.P. Signell, J.M. Testa, and J.M.P. Vaudrey (2015) Progress and challenges in coupled hydrodynamic-ecological estuarine modeling. *Estuaries and Coasts* 39(2): 311-332. DOI 10.1007/s12237-015-0011-y.
- Vaudrey, J.M.P., Yarish, C., Kim, J.H., Pickerell, C., Brousseau, L. (2015) Comparative analysis and model development for determining the susceptibility to eutrophication of Long Island Sound embayments. final report to LISS, CT Sea Grant & NY Sea Grant.
<https://vaudrey.lab.uconn.edu/embayment-n-load/>
- Kremer, J.N., J.M.P. Vaudrey, D.S. Ullman, D.L. Bergondo, N. LaSota, C. Kincaid, D.L. Codiga, and M.J. Brush (2010) Simulating property exchange in estuarine ecosystem models at ecologically appropriate scales. *Ecological Modelling*. 221: 1080-1088.
- Vaudrey, J.M.P., J.N. Kremer, B.F. Branco, and F.T. Short (2010) Eelgrass recovery after nutrient enrichment reversal. *Aquatic Botany*. 93: 237-243.
- Vaudrey, J.M.P., T. Getchis, K. Shaw, J. Markow, R. Britton, and J.N Kremer (2009) Effects of oyster depuration gear on eelgrass (*Zostera marina* L.) growth rate and eelgrass sediment bed characteristics in a low density aquaculture site in Long Island Sound. *Journal of Shellfish Research*. 28(2): 243-250.

Synergistic Activities

- 2025 – present; member of EPA's Long Island Sound Program's Watersheds and Embayments/Clean Waters and Healthy Watersheds Work Group
- 2022 – present; Coordinator for the Niantic River Watershed Committee
- 2015 – present; member of the Narragansett Bay Estuary Program Science Advisory Committee
- 2012 – present; Long Island Sound Study's (LISS) Science and Technical Advisory Committee
- 2010 – present; member of the CT DEEP's Niantic Nitrogen Working Group
- 2010 – present; chair of the Coastal Perspectives Lecture Series planning committee, UConn
- 2007 – present; Scientific advisor to NGOs: Save the Sound; Save the River-Save the Hills
- 2023 – 2025; EPA LISS Climate Change and Sentinel Monitoring Working Group
- 2016 – 2025; member of the LISS Watershed and Embayments Workgroup
- 2014 – 2025; member of the LISS Water Quality Workgroup
- 2023 – 2024; Chair of CT General Assembly's Environmental Comm. Eelgrass Working Group
- 2021 – 2023; Diversity, Equity, Inclusion, and Justice (DEIJ) Committee of the Consortium of Aquatic Science Societies (CASS), representing the Coastal and Estuarine Research Federation
- 2020 – 2023; Coordinated Global Research Assessment of Seagrass System (C-GRASS), International Science Council, SCOR Working Group 158
- 2020 – 2023; Co-Chair of the Narragansett Bay Estuary Program Science Advisory Committee
- 2020 – 2021; CT Governor's Council on Climate Change, Wetlands Sub-Working Group
- 2019 – present; Broadening Participation Council, Coastal and Estuarine Research Federation
- 2019 – 2021; Secretary, Governing Board of the Coastal and Estuarine Research Federation
- 2016 – 2017; Science Program Chair, Coastal and Estuarine Research Federation's 2017 Biannual Conference, Providence, RI
- 2012 – 2018; President, New England Estuarine Research Society (NEERS)

Curriculum Vitae

Jason Seth Krumholz

Wakefield RI, 02879 jkrumholz@gmail.com
Mobile: (401) 787-0944 Office: (401) 874-6011

Personal Statement

My interests are in interdisciplinary restoration and research which puts my background in ocean sciences to work facilitating conservation, restoration, and sustainable ecosystem management.

Research Program Focus

My research focuses on the impact of management actions on sustainable usage of ecosystems. I have extensive experience in nearshore habitat restoration ecology, environmental impact assessment (including NEPA, ESA, MSFCMA, and MMPA application), and the impact of anthropogenic sound on marine organisms.

Education

May, 2012 Ph.D Oceanography URI, Graduate School of Oceanography, Narragansett, RI
Dissertation: Changes in nutrient dynamics with onset of tertiary wastewater treatment in Narragansett Bay, RI.

May, 2009 M.M.A. Marine Affairs University of Rhode Island, Kingston, RI
Thesis: Fishing or Catching? A review of modern trends relating to the status of global fisheries.

May, 2001 B.A. Biology Lawrence University, Appleton, WI.
Honors for G.P.A. and independent research 3.45 GPA

Current Appointments

2/1/2023 – present Stewardship Coordinator Connecticut NERR
Oversee reserve stewardship activities and collaborate with research, training and education sectors to write and execute collaborative grants and programs to achieve reserve goals.

08/01/2021 – present Founding Board Member & Restoration Lead Remote Ecologist
Guide new non-profit aimed at providing affiliation and services for independent scientists and consultants

01/01/2010 – present Scientific Coordinator The Reef Ball Foundation
Review experimental design, project layout, and monitoring plans for oyster, mangrove, and reef restoration. Conduct site assessments, train staff and volunteers, report and proposal writing.

Relevant Previous Appointments

07/01/2015 – 2/10/2023 Sr. Env. Scientist McLaughlin Research Corporation
Work alongside Navy staff to research, document, and mitigate environmental impacts from Navy operations

06/03/2012 – 09/01/2015 Liaison Ecologist NOAA/NMFS
Work with academic, government and non-profit scientists and managers to co-ordinate research and monitoring program for EPA Long Island Sound Study and implement science based management objectives.

09/15/2007 – 2/1/2021. Curriculum Development Consultant National Science Teachers Association
Write, edit, and provide support for online ocean science, ecology, and biological science content

09/05/2004-05/23/2012 Graduate Teaching/Research Assistant U.R.I./GSO
Run lab processing nutrients, DIC/DOC, C-14 productivity, chlorophyll, and oxygen. Grant and report writing, data presentation, lecture preparation, writing and grading of exams and homework.

09/02/2005 – 9/01/2007 NSF IGERT project Fellow Coastal Institute, University of Rhode Island
Work on innovative multidisciplinary solutions to coastal resource management.

10/1/2001 – 9/1/2004 Sales and Leasing Consultant Bergstrom Automotive
Responsible for sales and client management of new and used Land Rover, Jaguar, and Volvo vehicles

Example Synergistic Appointments

2011 – Present	Dive Control Board	University of Rhode Island
<i>Co-ordinate research diving activities and training in conjunction with Dive Safety Officer</i>		
2017 – Present	Climate Change Committee	National Military Fish and Wildlife Association
<i>Review and determine responses to policy changes, plan conference materials</i>		
2012-2015 & 2022 – Present	Scientific and Technical Advisory Committee	Long Island Sound Study
<i>Advise on policy and ecosystem science. Review LISS outputs and work products, advise on future direction</i>		
2018– Present	Research and Conservation Committee	Norwalk Maritime Aquarium
<i>Evaluate and advise on research and conservation programming, grant programs, and field collaborations</i>		
2016 – Present	Science Advisor	Save the Sound
<i>Oversee environmental report card for Long Island Sound, including designing and overseeing the Unified Water Study, a volunteer water quality monitoring program in Long Island Sound embayments</i>		

Related Skills & Background

- Diverse pedagogy experience: Experience in direct instruction and design of educational materials for diverse audiences ranging from K-12 to teachers, grassroots environmental groups, and general public.
- Excellent report writing and analytical skills: Written and reviewed reports and analysed large datasets for government agencies, non-profits, and private clients, while multi-tasking to meet deadlines. Strong familiarity with environmental planning and compliance, including CATEX, EA, EIS, CZMA, EFH, ESA, and IHA.
- Strong management background: Led state and federal work groups, proposal review teams, and project teams. Supervised 30+ undergraduate research assistants, technicians, and staff. Led teams of volunteers/staff on domestic and international projects. 10+ years of supervisory experience.
- Polished communicator: Professional training through NSF IGERT program in scientific communication, negotiation, and conflict resolution. Experience writing general audience articles, press releases, and online content as well as giving interviews, and presenting to scientific and general audiences.
- Extensive grant writing, review and budgeting experience: Written grants for local, state, and federal funds and administered RFP's for federal and private funds. Experience managing lab, and grant budgets.
- Proven publication record: Peer reviewed publications in several disciplines, including original research papers, white papers, encyclopaedia and book chapters, oral and poster presentations and invited talks.
- Business Experience: Four years of commission-based sales and several contract consulting positions for industry and non-profit clients provide familiarity of life outside academia.
- Active Volunteer: Volunteer with organizations such as URI Office of Marine Programs, Mystic Aquarium, National Ocean Science Bowl. Currently hold volunteer BoD positions for 3 nonprofits.

Example Field and Laboratory Skills

Laboratory Skills:

- Colorimetric Segmented Flow Nutrient Analysis
- ^{14}C & O_2 primary productivity analysis
- Spectrophotometry & Fluorometry
- CHN, TSS, DOC/TOC analysis
- Benthic community analysis
- CTD ops and data processing (YSI & Seabird)
- Radioactive and Haz. Mat. safety training
- QA/QC, and lab management

Field Skills:

- New England & Caribbean fish/invertebrate ID
- Basic instrument and boat maintenance skills
- BOEM Certified Marine Mammal Observer

SCUBA/Boating Related Skills:

- TDI/SDI Assistant Instructor, AAUS lead diver
- URI/U.S. Power Squadron small boat certified

Computer Skills

MS Office, Graph Pad, FasPac, EndNote, ArcGIS, Matlab, EwE, Sigmaplot, R, Primer, SAS, Dreamweaver, Sketch-Up, Google Earth, COREMO, Open Office, WordPress

- Hudson, D., Krumholz, J., Pochtar, D., Dossot, G., Dickenson N., Baker, E., and Moll, T. 2021. Behavioral and Physiological Impact of Vessel Noise and Simulated Sonar on Commercially Viable Invertebrates. *PeerJ* (10) e12841.
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- Brennan, M., D. Davis, R. Ballard, A. Trembanis, J. Vaughn, J. Krumholz, J. Delgado, C. Roman, C. Smart, K. Bell, M. Duman. 2016 Quantification of bottom trawl fishing damage to ancient shipwreck sites. *Mar. Geo.* 371, 82-88.
- J. Krumholz and M. Brennan. 2015. Fishing for common ground: Investigations of the impact of trawling on ancient shipwreck sites uncovers a potential for management synergy. *Marine Policy*. v.61, 127-133
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- Forrester, G. E., P. Baily, L. M. Forrester, S. Giovannini, L. Harmon, R. Karis, J.S. Krumholz, C. O'Connell-Rodwell, T. Rodwell, and L. Jarecki. 2010. Evaluating Methods for Transplanting Endangered Elkhorn Corals in the Virgin Islands. *Restoration Ecology*:8.
- Krumholz, J., T. Barber, and C. Jadot. 2010. Avoiding band-aid solutions in ecosystem restorations. *Ecological Restoration* 28:17-19.
- Krumholz, J and C. Jadot. 2009 Demonstration of a new Technology for Restoration of Red Mangrove (*Rhizophora mangle*) in High Energy Environments. *Marine Technology Society Journal*. 43(1) 64-72.

Selected Grey Literature (Book/Encyclopedia, Technical Report, etc.) Publications

- Anderson, B., J. Grabowski, J. Knisel, S. Scyphers, T. Maguire, J Krumholz, P. Kirshen, E. Douglas. 2024. Climate Change Impacts on the Marine Environment in the Greater Boston Area: Findings of the Greater Boston Research Advisory Group Report. UMass Boston. 39pp. <https://environment.umb.edu>
- Oliveira, E., M. DeAngelis, M. Chalek, A. DiMatteo, J. Krumholz, K. Anatone-Ruiz, N. Porter. 2024. Dive Distribution and Group Size Parameters for Marine Species Occurring in the U.S. Navy's Atlantic and Hawaii-California Training and Testing Study Areas. NUWC-NPT Technical Report 12,243A
- Borcuk, J. R., M. DeAngelis, E. Oliveria, M. Chalek, J. Krumholz, & E. Skeehan. 2020. Dive Distribution and Group Size Parameters for Marine Species Occurring in the US Navy's Gulf of Alaska Study Area. NUWC-NPT Technical Report 12,365. NUWC Newport, RI, United States.
- Moll, T., G. Mitchell, C. Tompsett, T. Vars, J. Krumholz, & Z. Singer-Leavitt. 2018. Haul-out Behavioral Patterns and Photo-Identification of Pinnipeds in Narragansett Bay, Rhode Island: 2016-2017 NUWC Newport Technical Report.
- Dossot, G., J. Krumholz, D. Hudson, and D. Pochtar. 2017. Simulated Anthropogenic Noise Exposure to Marine Invertebrates Using a Standing Wave Tube. *JASA*. 142 (4) 2597
- Jadot, C., P. Bertuol, G. Olivera and J. Krumholz. 2016. Intentional and Accidental Diver Contacts to Reefs at Popular Locations in the Dutch Caribbean. *In Proceedings of the American Academy of Underwater Sciences: Diving for Science 2016*, Lombardi, M. and L. Loebel eds. Nov 20-24, Narragansett, RI.

- J. Rose, S. Bricker, S. Deonaraine, J. Ferreira, T. Getchis, J. Grant, J. Kim, J. Krumholz, G. Kraemer, K. Stephenson, G. Wikfors, C. Yarish 2015. *Nutrient Bioextraction*. Encyclopedia of Sustainability Science and Technology. A. R. Meyers. New York, NY, Springer New York: 1-33.
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- Krumholz, J.S. *Special Editor in* Latimer, J.S.; M.A. Tedesco; R.L. Swanson; C. Yarish; P.E. Stacey; C. Garza (Eds.).2013. Long Island Sound: Prospects for an Urban Sea. Springer 899 pp.
- Krumholz, J.S. *8 articles in* Howarth, R.W. (ed.) 2013. *Encyclopedia of Biomes and Ecosystems*. Salem Press 1440pp. ISBN: 978-1-4298-3813-9
- Krumholz, J. and T. Barber. 2011. Reef Balls. Pages 234-237 in D. Hopley, editor. *Encyclopedia of Modern Coral Reefs*. Springer, New York.
- Barber, T., T. Maher, and J. Krumholz. 2007. *A Step-by-step guide for Grassroots Efforts to Reef Restoration*. Athens, GA. A Reef Ball Foundation Publication. 403pp.

Selected Conference Presentations

- Larubina*, S., J. Krumholz, J. Vaudrey, and C. Chadwick. Mapping Invasives in a Coastal Forest. NEERS April 18-20, 2024, Freeport, ME.
- Krumholz, J., E. Donovan, T. Brown, and J. Vaudrey. 2017. Estuarine Report Cards as an Outreach Tool: Broad Net or Strategy Full of Holes? CERF Nov. 5-9, Providence, RI.
- Krumholz, J., D. Hudson, D. Pochtar, G. Dossot, N. Dickenson, E. Baker, and T. Moll. 2017. Behavioral and Physiological Impact of Vessel Noise and Simulated Sonar on Commercially Viable Invertebrates. CERF Nov. 5-9, Providence, RI.
- Oczkowski, O., C. Schmidt, A. Hanson, D. Cobb, J. Krumholz, and R. McKinney. 2017. How the Distribution of Nitrogen has changed in Narragansett Bay, RI after Nutrient Reductions. CERF Nov. 5-9, Providence, RI.
- Melrose, D. M. McManus, and J. Krumholz. 2017. The influence of Nutrients on Summer Phytoplankton Community Composition in Narragansett Bay. CERF Nov. 5-9, Providence, RI.
- Krumholz, J., Z. Singer-Leavitt, T. Moll, C. Tompsett, G. Mitchell, and T. Vars. 2017. Understanding the impact of environmental variability on haulout usage by the harbor seal (*Phoca vitulina concolor*) in a New England estuary. SMM Oct. 22-27, Halifax, NS.
- T. Moll, J. Krumholz, Z. Singer-Leavitt, C. Tompsett, G. Mitchell, and T. Vars. 2017. Photo-identification of harbor seals and analysis of haulout usage using ExtractCompare. SMM Oct. 22-27, Halifax, NS.
- Pochtar, D., D.M. Hudson, E. Baker, T. Moll and J. Krumholz. 2016. The Effects of Boat Noise on Resource Competition in the Blue Crab (*Callinectes sapidus*). NEERS Nov 4-6, Block Island, RI
- Latimer, J.S, J. Krumholz and M. Tedesco. 2015. Environmental and Management Goal Setting for the Long Island Sound Comprehensive Conservation and Management Plan. CERF Nov. 8-12, Portland OR.
- Krumholz, J., R. Burg, M. Parker, J. Pagach, C. Fitting, J. Barrett, J. Rose, S. Deonaraine, M. Tedesco. 2013. Language barriers: the science of transforming monitoring data into environmental management indicators. CERF. Nov. 4-8. San Diego CA.
- Krumholz, J., C.A. Oviatt and L.M. Smith, 2011. Patterns in Nutrient Standing Stocks and Mass Balance in Narragansett Bay, RI, with Onset of Loading Reductions. CERF. Nov. 6-10. Daytona FL.
- Barber, T., B. Chisholm, C. Jadot, K. Kirbo, J. Krumholz, and D. Lennon. 2010. Artificial Reef Optimization using Google Earth as a Collaborative Platform for Mitigation, Monitoring, and More. 8th Florida Artificial Reef Summit. Jan. 21-23. Cocoa Beach FL. www.flseagrant.org
- Barber, T, J. Krumholz, J. Walch, C. Jadot, L. Harris, and T. Maher. 2008. A step-by-step guide for grassroots efforts to reef rehabilitation. 11th ICRS, Tampa FL, June 6-8 2008.
- Krumholz, J., T. Barber, C. Jadot, and H. Williams. 2008. Development of a Restoration Technique for Red Mangroves in High Energy Environments. ASLO, Mar. 2-7, Orlando FL.

- Hanks, K., T. Barber, C. Jadot and J. Krumholz. 2007. Oyster Restoration to Restore Hard Bottom Habitat, Improve Water Quality and Reduce Shoreline Erosion. ERF, Providence, RI Nov. 4-8, 2007.
- Krumholz, J., T. Barber and C. Jadot. 2007. Designing a “Reef- Safe” Slow Release Fertilizer for Mangrove Restoration Projects. ERF, Providence, RI Nov. 4-8, 2007.

Example Projects

Science Advisor- Save the Sound- 2015-Present

Serve as science advisor for report card and Unified Water Study efforts in Long Island Sound, including conducting training, writing outreach and educational materials, data review and synthesis.

United States Navy Harbor Seal Migration Patterns Study- 2015-2019

Secured research funding and led research program to understand impact of changing environment and anthropogenic usage patterns on seal habitat usage on the US East Coast. Worked with multi-institutional and multidisciplinary team to implement photo-capture-recapture study, tag and track seals in VA, MA, and RI, and develop and test a hurdle model for environmental variability. Awarded NMFWA project of the year, 2020

Contract Team Lead- Dredging Environmental Impact Assessment- 2019-2020

Served as the lead contractor on team tasked with preparing environmental compliance documentation for U.S. Navy dredging activities, including EA, ESA, EFH, and CZMA consultations. Received US Fleet Forces exemplary project award.

Principal Investigator-United States Fleet Forces Data Gap Study- April 2016-December 2017

Secured research funding to study the impact of high amplitude low and mid-frequency acoustic signals on the behavior and physiology of commercially important invertebrates. Designed study and carried out lab and field research and data analysis. Supervised one analyst and one undergraduate intern on the project.

Project Lead Contact, Long Island Sound Economic Evaluation, December 2012-April 2015

Executed RFP for contractor support to conduct an economic evaluation of Long Island Sound. Worked with selected contractor and a team of representatives from partner organizations to define scope of work and project milestones, and serve as technical liaison, providing information, guidance and support to the contractor.

Waters and Watersheds Theme Lead, Long Island Sound CCMP revision, July 2012-Sept 2015

Worked with a team of state, federal, and private sector partners to complete a revision of the 1994 Long Island Sound Comprehensive Conservation and Management Plan. Serve as the lead for creation of theme specific objectives, short term implementation actions and ecosystem level quantitative targets. Incorporated results of internal, partner, and public review processes. Wrote print and online content in support of public outreach and public comment process and developed online "Ecosystem Report Card" project.

Field Team Leader, EPA National Coastal Assessment, May 2005-August 2006

Responsible for training and field oversight of a team of undergraduate interns for collection and preliminary analysis of EPA's National Coastal Assessment samples. Sampled approximately 20 stations per summer for water quality, water column nutrients, chlorophyll, sediment grain size and toxicity, and benthic/fish community analysis. Worked with another graduate student to ensure that all QA/QC requirements were met, all samples were processed appropriately, and all training and safety protocols were upheld.

References

Jason Seth Krumholz

Wakefield, RI 02879 jkrumholz@gmail.com

Mobile: (401) 787-0944 Office: (401) 874-6011

Professional References

Dr. Candace A. Oviatt Director, Marine Ecosystem Research Lab

Phone: (401) 874-6661

E-mail: coviatt@gso.uri.edu

Mr. Mark Tedesco Director, EPA Long Island Sound Study

Phone: (203) 977-1541

E-mail: Tedesco.mark@epa.gov

Dr. Bart DeStasio Professor of Biology, Lawrence University

Phone: (920) 832-6739

E-mail: destasib@lawrence.edu

Mr. Todd Barber President, Reef Ball Foundation

Phone: (941) 720-6541

E-mail: reefball@reefball.com

Personal References/Collaborator References

Dr. Christopher Calabretta Marine Scientist, SAIC Newport, RI.

Phone: (401) 835-5710

E-mail: christopher.j.calabretta@saic.com

Dr. Robinson W. Fulweiler Asst. Professor of Earth Science. BU, Boston, MA

Phone: (617) 353-5466

E-mail: rwf@bu.edu

Sims, Meagan

From: jpmh63@gmail.com
Sent: Monday, June 30, 2025 4:02 PM
To: DEP, TRComments
Subject: FW: Chandler Bay Reclassification Letter of Support
Attachments: SKM_C250i25063015290.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Support Letter attached.....

From: jpmh63@gmail.com <jpmh63@gmail.com>
Sent: Monday, June 30, 2025 3:42 PM
To: meagan.sims@maine.gov
Subject: Chandler Bay Reclassification Letter of Support

Please find Letter of Support attached.

Thank you,

John Higgins

THE KESTREL FOUNDATION OF MAINE

c/o Clearstead Trust, LLC

1 Union Street, Suite 302

Portland, ME 04101

(207) 775-7200

June 30, 2025

To: Meagan Sims, Water Quality Standards Coordinator
Maine Department of Environmental Protection
SHS 17
Augusta, ME 04333
(207) 530-2518
meagan.sims@maine.gov

From: John P.M. Higgins, President
The Kestrel Foundation of Maine
(207) 775-7200
jpmh63@gmail.com

E-Filed

Subject: Letter in Support of Water Re-Classification Proposal

Proposed Upgrade: SB to SA Chandler Bay, Washington County, Maine

Dear Coordinator Sims:

On behalf of the Kestrel Foundation of Maine, I am writing to express our strong support for the proposal to reclassify Chandler Bay from Class SB to Class SA waters. We urge the Department to adopt this change during the current Triennial Review process.

Our Philosophy and Mission:

Among its charitable purposes, the Kestrel Foundation of Maine is dedicated to the protection and preservation of Maine's natural environment. Our mission is rooted in charitable, educational, and scientific purposes, with a focus on safeguarding ecologically significant natural resources for current and future generations. We believe that the highest standards of stewardship and restorative management of our State's waters are essential for sustaining ecosystem services, community well-being, and the health of Maine's people and wildlife.

Importance of Chandler Bay Reclassification:

Chandler Bay is a vital ecological asset for Eastern Maine, supporting diverse marine life, local fisheries, and recreational opportunities. Upgrading its classification to SA—the highest water quality standard for marine and estuarine waters—would provide the strongest legal protection against pollution and degradation. This reclassification will:

- Preserve critical habitat for endangered and commercially important species.
- Safeguard water quality for shell fishing, recreation, and tourism.
- Support the resilience of local communities and economies that depend on a healthy marine environment.

Alignment with Conservation Initiatives:

We wish to highlight and endorse the original petition by Eastern Maine Conservation Initiative (EMCI), which provided a compelling case for Chandler Bay’s eligibility for SA classification based on water quality data, ecological value, and community support. Their petition reflects the type of science-based, community-driven advocacy that aligns with Kestrel’s philosophy and the best practices for positive environmental impact.

Why This Upgrade Matters:

Reclassifying Chandler Bay to SA status is not only a recognition of its existing high water quality, but also a proactive step to ensure its long-term protection. It will help prevent future degradation, promote sustainable use, and set a standard for stewardship across Maine’s coastal waters. As the Department considers proposals during this Triennial Review, we urge you to prioritize actions that deliver lasting benefits for Maine’s environment and communities.

Thank you for your attention to this important matter and for your ongoing commitment to Maine’s water quality.

Sincerely yours,

The Kestrel Foundation of Maine


By: John P.M. Higgins, President

- *The Kestrel Foundation of Maine is a Maine-based nonprofit and includes in its mission focus on environmental protection and conservation in the State.*
- *Our philosophy emphasizes science-based stewardship, community well-being, and sustainable management of natural resources.*
- *We support the Eastern Maine Conservation Initiative petition and urge the adoption of the Chandler Bay SA reclassification during the Triennial Review.*

Sims, Meagan

From: Ferg Lea <flea.arwc@gmail.com>
Sent: Monday, June 30, 2025 4:08 PM
To: DEP, TRComments
Cc: Garland, Wendy; Mohlar, Robert C; Jeff Stern
Subject: WQS change proposal Triennial Review Comments
Attachments: Triennial Review proposal for submittal (1).docx

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello,

Please find attached comments for consideration during the Department's Triennial Review. These are a result of participation in the recent virtual public meeting, review of the Department's proposals and their comments on other proposals, a further consideration of existing data, and a review of several documents relating to cold water fish habitat. It also includes several comments that may be better addressed in a longer term discussion about the Classification criteria and the Deep Hole in Gulf Island Pond on the Androscoggin River.

Thank you for your work and your consideration.

Ferg Lea

Fergus P. Lea, Jr. P.E., Chair
Androscoggin River Watershed Council



www.androscogginwatershed.org

207-240-3143

[Type here]

Water Quality Standards Coordinator
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333
TRComments.DEP@maine.gov

Subject: WQS change proposal, Triennial Review Submittal (2)

From: Androscoggin River Watershed Council

Date: June 30, 2025

Contact: Fergus P. Lea, PE, Chair

Contact information: Phone: 207-240-3143

Email: flea.arwc@gmail.com

Overview

The Androscoggin River Watershed Council submits comments and recommendations for the Triennial Review based on the Department's responses to our initial proposals, the discussion at the virtual public meeting, and a further review of data and literature. ARWC also submits several comments for future consideration by the Department and realizes that changes as part of this Triennial Review process may not be possible. Comments pertain to the Classification System, classification of the Androscoggin River, and the area commonly referred to as the Deep Hole in Gulf Island Pond. We want to make it clear that our previous recommendation to upgrade all Class C segments of the Androscoggin River were based on adoption of our recommendation to split Class B waters into two classes.

Classification System

In our initial proposal we noted that there is significant similarity between Class A and Class B standards. However, there is considerable difference between the C Classification and the B Classification for rivers and streams.

We noted that although still classified as C, the aesthetic quality of the Androscoggin River when it first met the C Classification several decades ago and the aesthetic quality today are worlds apart. With the exception of the stratified area in the Deep Hole, Dissolved Oxygen is above 7.0 mg/l the vast majority of the time, very rarely dropping below 6.0 and seldom dropping below 6.3 mg/l. The appearance of the water, notably color, foam and odor have improved substantially. A review of biological monitoring data conducted over the past 5 years or so indicates that the river meets the B and in a few cases Class A biological criteria. An exception to this is the stretch below Lewiston Falls that will be addressed below. For some reason there is a lack of biological data as well as a dearth of DO data on the Class C section between Livermore Falls and Gulf Island Dam. Nutrient data is lacking.

A review of EPA's Ambient Water Quality Criteria for Dissolved Oxygen as cited by DEP and the IFW fact sheet "Biology and Management" of Brook Trout offer insight to the restrictiveness of the Class B Dissolved Oxygen criteria. While DEP cites the EPA's document to establish the 7 mg/l DO, the document is open to considerable interpretation. The studies cited within that document focus on long term impacts of low DO and DO concentrations at high temperatures. The document provides solid recommendations for breeding and early stage rearing DO, but definitely does not indicate that brook

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trout, one of the more sensitive cold water species, cannot grow and thrive when DO concentrations dip below 7 for short periods of time. The IFW fact sheet expressly states, "As long as water temperatures do not exceed 68° F for extended periods and oxygen levels remain at 5 ppm or greater, brook trout can usually survive and grow." Therefore, we would propose that the 7mg/l daily average proposed by the Department is actually more stringent than needed to support the cold water fishery that appears to be the original reason for the 7 mg/l designation. We propose that Class B waters should still maintain an average of 7 mg/l, but that excursions down to 6 mg/l should be permitted for periods of up to 10 days.

We provide some additional discussion for further consideration by the Department. It appears that the AA, A and C classifications are working reasonably well with any adjustments already proposed by DEP, but for Class B waters there continues to be a conundrum. In parts of the Androscoggin, the biological quality (based on the DEP macroinvertebrate modeling) meets B or higher, but the DO still falls below even the proposed standard of a 7 mg/l for a daily average. For the lower portion of the river, from Lewiston Falls downriver, the opposite is true: the river meets the Department's proposed standard for DO, but has two of five biological monitoring sites that do not meet the Class B criteria. In the lower part of the river, we do not believe the water quality is changing from section to section, but rather the ability of the substrate in certain areas is not suitable to support the diversity of macroinvertebrates required by the modeling. Additional consideration may be warranted for the biological monitoring station located in the Lewiston Auburn downtown section of the river.

Changing Class B as proposed above may address this, but a more holistic approach to Class B may be warranted. ARWC submits that the Department should strongly consider the totality of the criteria rather than using independent criteria whereby if water quality does not meet all three criteria, DO, biologic, or nutrient criteria, it cannot be a Class B water. There would still be a lower DO limit, but the duration of any levels below 7 mg/l would be tempered by the biological criteria.

We propose that Class B be changed to include more variation in DO than the Department's proposed criterion. We propose that excursions below 7 mg/l down to 6 mg/l be allowed for up to 10 days. Outside the Triennial Review process, we encourage the Department to consider a Class B that addresses the totality of the criteria.

Classification of the Androscoggin River

ARWC proposes that the river from Ellis River to Center Bridge be reclassified as the ARWC proposed B classification. Gulf Island Pond would remain as Class C until issues with the Deep Hole are addressed. It is our belief, from a review of continuous monitoring at the Deep Hole and knowledge of the morphology, that the Deep Hole in Gulf Island Pond cannot sustain significant DO regardless of the water quality entering it. Under low flow and average summer temperature conditions, the water in the Deep Hole is essentially similar to a stratified lake. Further discussion and possibly analysis is needed on the depth at which the surface water classification is separated from the low DO levels of the Deep Hole.

ARWC further proposes that the portion of the river from the Gulf Island Dam to the Worumbo Dam be upgraded to B provided that either our proposal for Class B or the Department's proposal for Class B be enacted. As previously noted, we do not believe the water quality below Gulf Island Dam varies between the dam and the Worumbo Dam, but rather the existing conditions of the river substrate and morphology make it improbable that the macroinvertebrate model criteria can be met.

[Type here]

We submit that the upgrade(s) should be granted even though nutrient data is lacking. There are undoubtedly a number of surface waters classified as B where nutrient data is not available.

We encourage the Department to inform the Board of Environmental Protection and the Legislature that the proposed change in the B Classification will allow sections of the Androscoggin River and other surface waters to be upgraded to B, and we further encourage the Department to identify the river sections with a recommendation for the upgrade.

Comments for Consideration

Climate change and the warming of our waters is certainly the most recent anthropogenic impact on our waters. Rainfall acidification is another impact that has occurred over the past four to five decades. A combination of these changes and more distant past changes, even not including the construction of the hydroelectric dams, has created impacts that, while difficult to measure, are, most probably, impacting dissolved oxygen levels and aquatic communities in all sections of the river.

The water quality classification system should consider how warming waters will impact water quality and whether the rigorous standards in the current criteria will be able to be met. We now have some waters where water quality is high, but the high temperatures prevent 7 mg/l and 75% saturation.

A holistic consideration of the classification criteria will provide for climate change and the previous anthropogenic changes that have occurred to our rivers and streams.

Concerning modeling primarily to determine discharge licenses as related to classification, we know that modeling is not an exact science. The natural system is relatively chaotic. Funding and time constraints do not provide for real time data necessary to model such a system with a high degree of accuracy. Modeling should be tempered with real time knowledge to determine how water quality classification and discharges interact. At this point in time, our belief is that the river classification can be upgraded to the proposed Class B without significantly impacting dischargers on the river. This is true for the upgrade of the lower river using the proposed DEP criteria for Class B, or for portions of the upper river using the ARWC proposed Class B criteria.

Sims, Meagan

From: Luke Frankel <lfrankel@nrcm.org>
Sent: Monday, June 30, 2025 4:54 PM
To: DEP, TRComments
Subject: Opportunity for Comment - Triennial Review of Water Quality Standards
Attachments: NRCM - Maine DEP 2025 Triennial Comments.pdf

EXTERNAL: This email originated from outside of the State of Maine Mail System. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon,

Please see attached for NRCM's written comments regarding Maine DEP's proposed updates to Water Quality Classifications and Water Quality Standards as part of the Triennial Review. Don't hesitate to reach out if you have any questions, and thanks in advance for your consideration.

Best,
Luke

Luke Frankel (he/him)
Woods, Waters, & Wildlife Director,
Staff Scientist



3 Wade Street, Augusta, ME 04330
Cell: (484) 639-2138 | Office: (207) 430-0116
nrcm.org

[*NRCM is committed to a more inclusive Maine*](#)

Meagan Sims
Water Quality Standards Coordinator
Maine Department of Environmental Protection
State House Station 17
Augusta, ME 04333-0017

June 30, 2025

RE: Triennial Review of Water Quality Standards – Opportunity for Comment

Dear Ms. Sims,

Thank you for the opportunity to provide public comment on the Maine Department of Environmental Protection's (DEP) proposals for changes to the State's Water Quality Standards (WQS) and Water Quality Classifications (WQC). These proposals were created as part of the Triennial Review of Maine's WQS, which Maine DEP initiated on March 18, 2024, through a request for proposals sent to stakeholders and other interested parties. These stakeholder proposals were considered by DEP through internal review, and DEP released their recommended changes based on that review for public input on May 28, 2025.

The Natural Resources Council of Maine (NRCM) is Maine's leading nonprofit, nonpartisan membership organization dedicated to protecting the environment on behalf of our nearly 20,000 supporters statewide and beyond. In general, NRCM supports DEP's proposed changes to Maine's WQS and WQC and appreciates continued progress in using available data to drive natural resource protection under the Clean Water Act (CWA). To further improve this progress, we provide some additional recommendations below for DEP to consider when finalizing its proposed changes to WQS and WQC.

Water Quality Classifications (WQC)

DEP presented several upgrades to WQC in its recommendations that NRCM fully supports. The proposed upgrade from Class A to Class AA for Abbott Brook and its tributary; Mt. Blue Stream and its tributaries; and the middle branch of the Pleasant River and its tributaries represent important progress toward better protecting natural resources in Maine. The explanations for these upgrades include the attainment of applicable aquatic life criteria and the presence of high-quality habitat for brook trout and/or salmonids, rendering them "outstanding" natural resources.

Sandy River and Tributaries

Using this same reasoning, NRCM also encourages DEP to follow its initial proposal to upgrade the Sandy River and its tributaries from Phillips to Farmington, and Temple Stream and its tributaries from Class B to Class A. As stated by DEP in its "Department Recommendations" memo, the Sandy River and Temple Stream are both classified as "critical habitat for Atlantic Salmon by the NOAA Fisheries and the US Fish and Wildlife Service Under the federal

Endangered Species Act.” Given this importance, DEP should continue to safeguard these waterbodies by awarding them more protective water quality standards.

In addition to their importance to Maine’s fisheries, these waterbodies should also be upgraded based on their attainment of Class A standards for the vast majority of data across some of the most important water quality indicators. Due to their importance in measuring overall ecosystem health and the presence of well-established criteria, dissolved oxygen, bacteria, macroinvertebrates, and algae are often the most common parameters evaluated when determining attainment of WQS in Maine.

For the Sandy River and its tributaries from Phillips to Farmington, the available data overwhelmingly support an upgrade from Class B to Class A. The macroinvertebrate data collected in 2022 at the three sites within the segment meet Class A standards (Table 1), and 93.2% of all dissolved oxygen collected across 14 sites within the segment meet the Class A standard of 7 mg/L (Figure 1). All 14 sites have average dissolved oxygen values above 7 mg/L, and all values collected within the past five years have been above 7 mg/L (Figure 2). There are no algae or bacteria data within this segment of the river.

DEP cites a lack of data and elevated phosphorus concentrations within an unnamed tributary in 2022 as reasons for not upgrading this segment of the Sandy River and its tributaries. Although there are substantial data gaps within this segment, we believe that there is sufficient evidence to support an upgrade at this time. Despite some elevated total phosphorus concentrations, 73.0% of all total phosphorus concentrations across 13 sites are below the Class A threshold of 18 µg/L (Figure 3). This fact, in addition to the attainment of Class A standards for macroinvertebrates and the presence of high dissolved oxygen concentrations, suggests that nutrient over enrichment is not a big concern for this stretch of the Sandy River. When it comes to protecting critical habitat for species like Atlantic salmon, we cannot afford to wait until more data is collected when there is sufficient evidence today to support the implementation of additional safeguards.

Table 1. Macroinvertebrate sampling results for three stations along the Sandy River and its tributaries from Phillips to Farmington.

Station	Year	Statutory Class	Sample Determination
18	2022	B	A
631	2022	B	A
632	2022	B	A

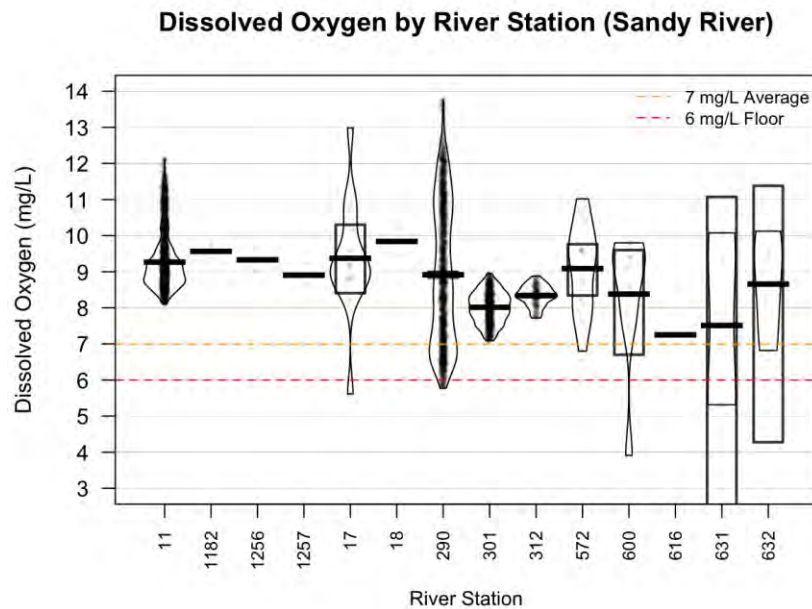


Figure 1. Dissolved oxygen data across 14 sites within the Sandy River and its tributaries from Phillips to Farmington, with the raw data shown as points, the central tendencies shown as horizontal bars, the distributions shown as bean densities, and the Bayesian Highest Density Intervals shown as rectangles.

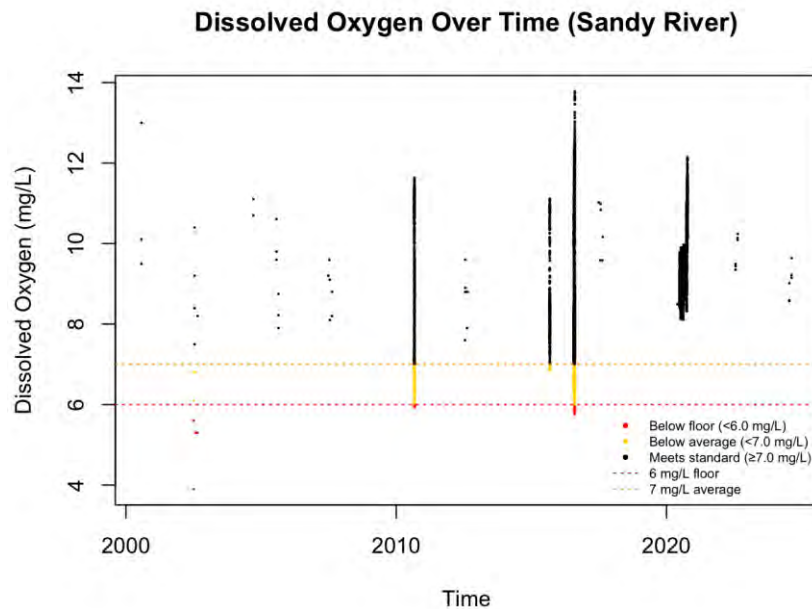


Figure 2. Dissolved oxygen data over time across 14 sites within the Sandy River and its tributaries from Phillips to Farmington.

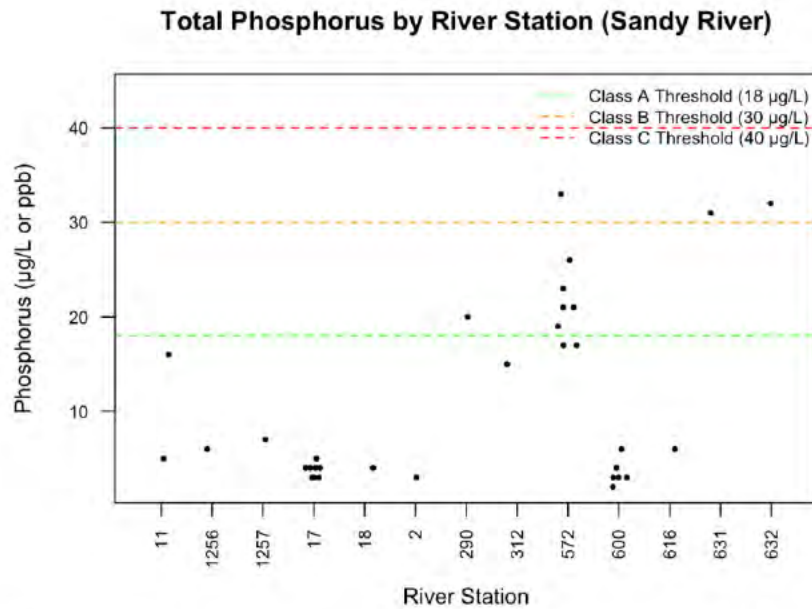


Figure 3. Total phosphorus data across 13 sites within the Sandy River and its tributaries from Phillips to Farmington.

Temple Stream and Tributaries

For Temple Stream and its tributaries, the available data also support an upgrade from Class B to Class A. Data from DEP’s Biological Monitoring Program collected from 2017-2023 show that the Class A macroinvertebrate standard is attained at two sites, and the Class A algae standard is attained at one site (Table 2). Only one location (Station 1183) did not attain Class A standards for algae, primarily due to a lack of intolerant algae species present. This site is in the most developed part of the watershed and is therefore expected to have the lowest water quality, even though macroinvertebrate data at the site still attain Class A standards. Dissolved oxygen data across 16 sites within the segment meet the Class A standard of 7 mg/L 90.8% of the time, suggesting water quality throughout the stream is high (Figure 4). There are no bacteria data within this segment of the river.

DEP cites a lack of capacity to perform a thorough review as the primary reason for not upgrading this segment. As with the Sandy River, we believe that there is sufficient evidence to support an upgrade at this time, and that this upgrade is critically important for protecting endangered Atlantic salmon. There is sufficient data to justify this upgrade, including 31 total phosphorus samples, of which 90.3% meet the Class A threshold of 18 µg/L (Figure 5).

Table 2. Biomonitoring results for three stations along Temple Stream from 2017-2023.

Station	Year	Statutory Class	Sample Determination	Sample Type
1110	2017	B	A	Algae
1183	2020	B	A	Macroinvertebrate
1183	2020	B	C	Algae
1242	2023	B	A	Macroinvertebrate

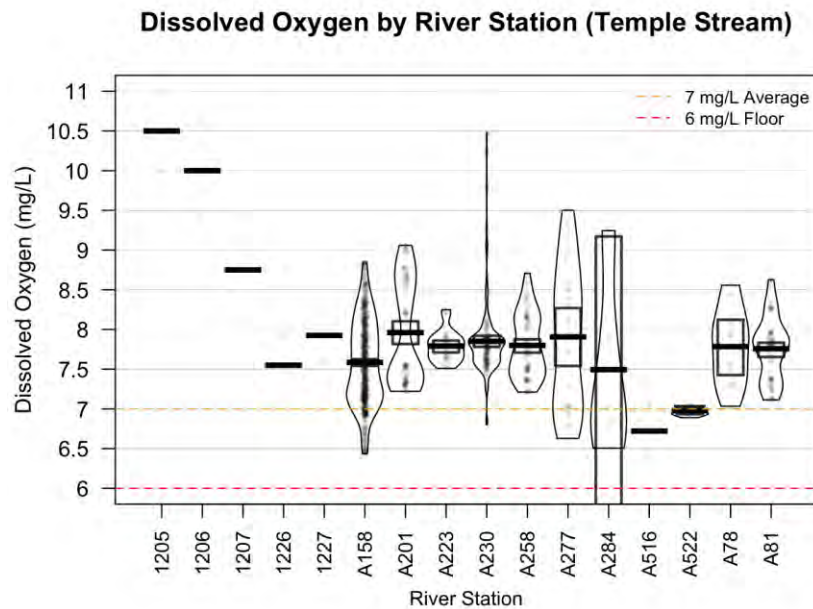


Figure 4. Dissolved oxygen data across 16 sites within Temple Stream and its tributaries, with the raw data shown as points, the central tendencies shown as horizontal bars, the distributions shown as bean densities, and the Bayesian Highest Density Intervals shown as rectangles.

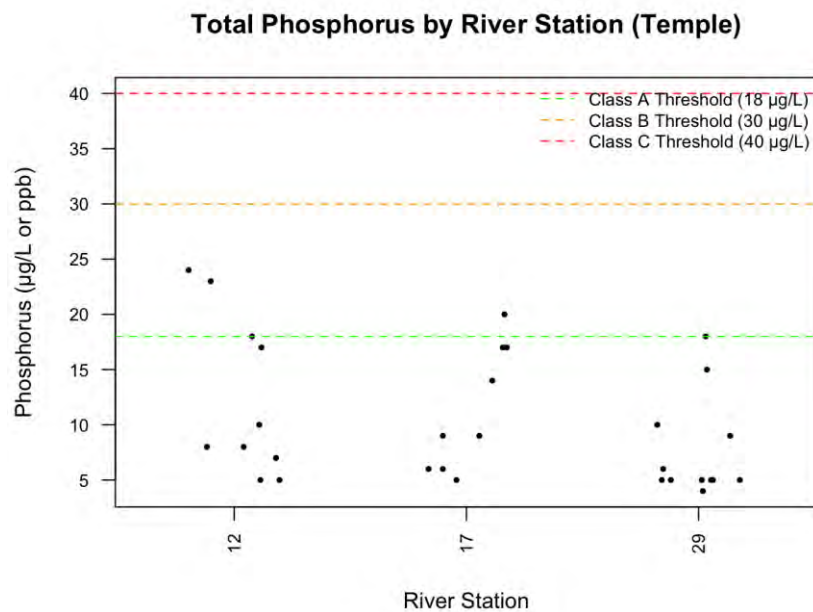


Figure 5. Total phosphorus data across three sites within Temple Stream and its tributaries.

Androscoggin River from Gulf Island Pond Dam to Worumbo Dam

In addition to the proposed upgrades submitted by DEP in the Kennebec River watershed, NRCM also supports the proposed upgrade of the lower Androscoggin River (Gulf Island Pond Dam to Worumbo Dam) from Class C to Class B. This segment of the Androscoggin River has seen dramatic improvements in water quality through the years as both point and non-point pollution sources have been addressed, and recent water quality data show that Class B standards are met in the majority of instances.

Of the available DEP Biological Monitoring Program data collected within this segment since 2000, three out of six sites meet the Class B macroinvertebrate standard (Table 3). The other three sites meet the Class C standard, with two of them located within 300 feet of one another and sampled during the same period (Stations 1226 and 1227). If only one of these two adjacent sites is considered, then a majority of stations within the segment attain Class B macroinvertebrate standards.

For dissolved oxygen within this segment of the Androscoggin River, 90.8% of the data across 17 sites are at or above 7 mg/L, which is the current criterion for Class B waterbodies, and 100% of the data are above 6 mg/L, which is the floor presented in DEP's proposed change to Class B WQS (Figure 6). Of the 10 sites that have at least 3 dissolved oxygen measurements, 9 have averages above 7 mg/L with the other site averaging 6.98 mg/L (Figure 7). This suggests that water quality across this segment of the river meets Class B criteria under current pollutant loading conditions. This is supported by total phosphorus concentrations where 90.0% of samples across eight sites within the segment are below the Class B threshold of 30 µg/L (Figure 8).

In summary, we support the proposed upgrade of the lower Androscoggin River from Class C to Class B because the vast majority of current water quality data attains Class B standards and is projected to continue doing so under proposed changes to WQS. DEP's opposition to this upgrade is based on worst-case scenario modeling under low flow conditions where the results indicate that Class B standards would not be met. Even if it is DEP's practice to focus on critical flow conditions due to statutory provisions, WQC are designed to be goal-based, allowing for the possibility of an upgrade even if modeling shows non-attainment. Based on existing water quality data, the goal of 100% attainment of Class B standards in this segment of the river under real-life conditions is entirely feasible.

Table 3. Macroinvertebrate sampling results for six stations along the lower Androscoggin River from Gulf Island Pond Dam to Worumbo Dam.

Station	Year	Statutory Class	Sample Determination
1204	2021	C	B
1205	2021	C	B
1206	2021	C	B
1207	2021	C	C
1226	2022	C	C
1227	2022	C	C

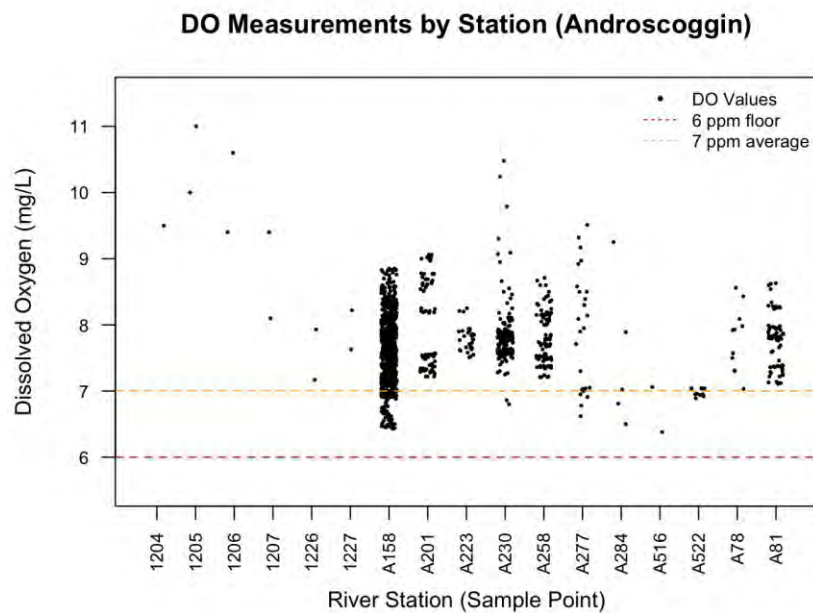


Figure 6. Dissolved oxygen data across all 17 sites with data within the lower Androscoggin River from Gulf Island Pond Dam to Worumbo Dam.

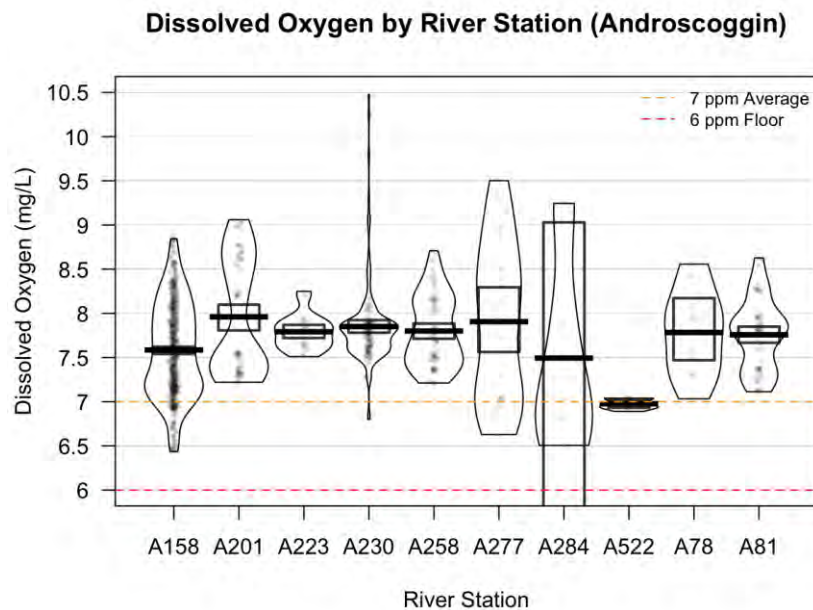


Figure 7. Dissolved oxygen data across the 10 sites with more than three measurements within the lower Androscoggin River from Gulf Island Pond Dam to Worumbo Dam, with the raw data shown as points, the central tendencies shown as horizontal bars, the distributions shown as bean densities, and the Bayesian Highest Density Intervals shown as rectangles.

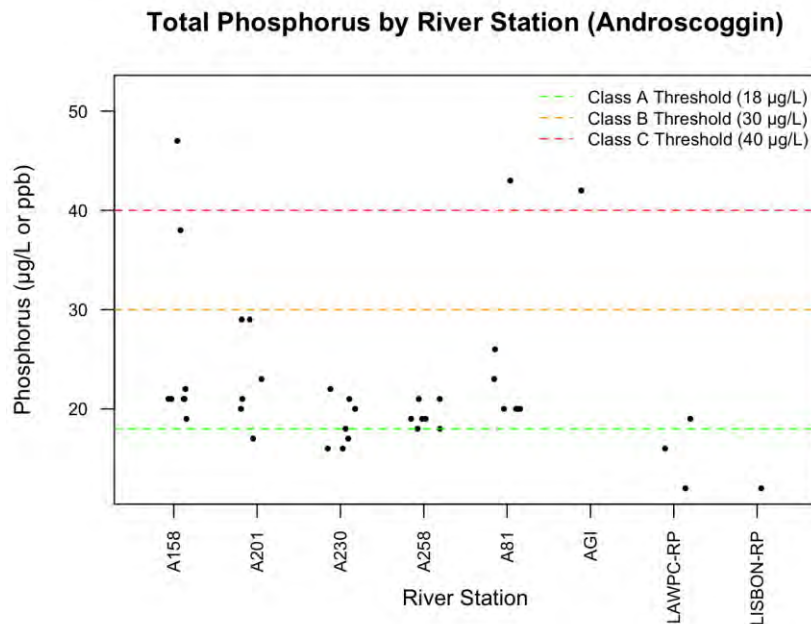


Figure 8. Total phosphorus data across eight sites within the lower Androscoggin River from Gulf Island Pond Dam to Worumbo Dam.

Water Quality Standards (WQS)

In reviewing the proposed changes to WQS submitted by the Environmental Protection Agency (EPA) and stakeholders, we agree with many of the major themes brought forward. These include a need to add clarity in how current standards are applied and interpreted, a need to create standards to address current water quality concerns, and a need to begin developing additional standards to address emerging issues. We support the two proposals ultimately carried forward by DEP but would like to provide a few comments for the Department to consider.

Dissolved Oxygen

We agree with Friends of Casco Bay (FOCB) and the Conservation Law Foundation (CLF) that the current dissolved oxygen standards need to be updated to clarify how the law is interpreted and better align the standards with modern field practices (e.g., continuous monitoring). We support the language revisions recommended by DEP to affirm its established practice of requiring that both concentration and percent saturation are to be met for Class A, Class B, and Class C waters. However, NRCM has three recommendations to improve the Department's final proposal.

First, in addition to the proposed change to a daily average of 7 ppm and 75% saturation with a minimum concentration of 6 ppm for Class B waters, NRCM advocates for similar updates to Class A and Class C dissolved oxygen standards for consistency. The interpretation and application of dissolved oxygen standards for these two classes remain unclear, and the inclusion of similar methodological language (i.e., daily average and minimum concentration)

would bring clarity and also better align the standards with modern field practices (e.g., continuous monitoring).

Second, while we appreciate DEP's implementation of a daily average in its proposed update to Class B standards, NRCM recommends that DEP consider the more biologically accurate hourly window approach recommended by FOCB and CLF. Under this approach, dissolved oxygen concentrations need to remain greater than or equal to 7 ppm for at least 20 hours during any 24-hour period. This approach better aligns with DEP's practice of evaluating WQS under worst-case scenarios (e.g., lowest daily dissolved oxygen concentrations during critical flow conditions), is consistent with methods used by EPA and other states (Table 4), and better captures exceedances of WQS in systems impacted by eutrophication where large swings in dissolved oxygen exist due to high photosynthesis during the day and respiration at night.

To compare the two methods, we examined continuous dissolved oxygen data collected by DEP in Chenery Brook in 2019 as part of the [2022 Falmouth Study Streams Stressor Report](#). Chenery Brook is a Class B waterbody that exhibits large diurnal swings in dissolved oxygen and is therefore a good candidate for this case study. In the full time series of data, it is apparent that the majority of observations are above the Class B threshold of 7 ppm, however, there are some values that are below 7 ppm due to diurnal variability (Figure 9). When the DEP-proposed standard of a 7-ppm daily average and 6-ppm floor are applied, there are a total of three days where the daily average falls below 7 ppm or a single daily value falls below 6 ppm (Figure 10). When the 20-hour standard proposed by FOCB and CLF is applied, there are a total of 14 days containing dissolved oxygen exceedances (not including the flagged days in the beginning and end of the time series that lack data; Figure 11). Taken altogether, we believe that the 20-hour standard displayed in Figure 11 better captures the periods under which aquatic life would be stressed due to low dissolved oxygen levels and is therefore better suited for the criteria.

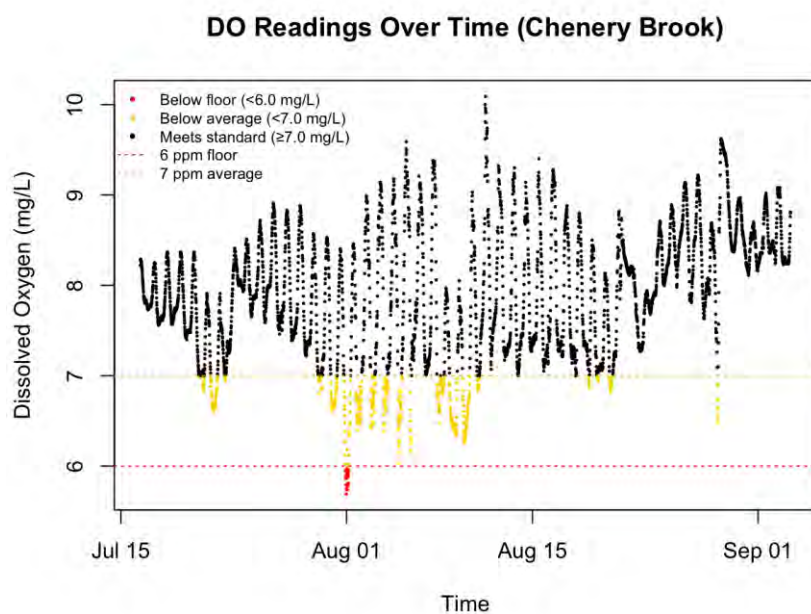


Figure 9. Time series of continuous dissolved oxygen measurements in Chenery Brook in 2019.

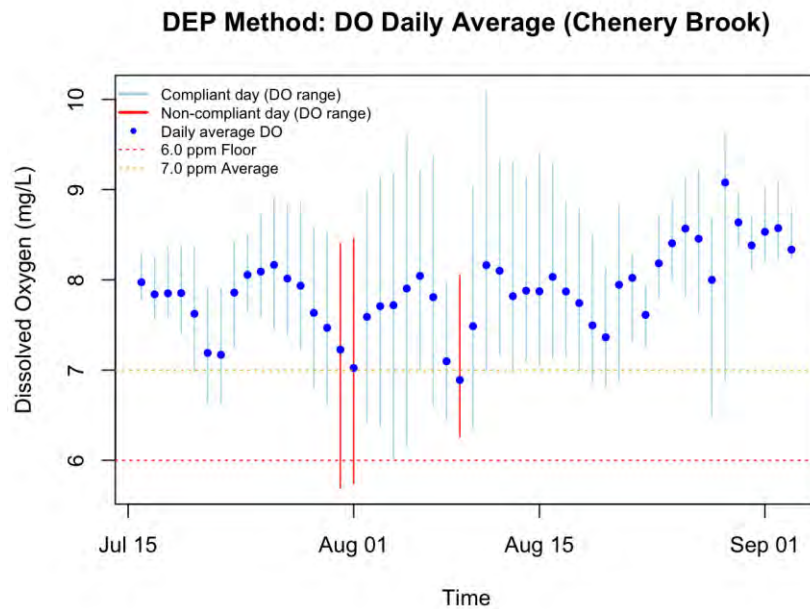


Figure 10. Days exceeding the proposed 7 ppm daily average 6 ppm minimum dissolved oxygen standard recommended by DEP.

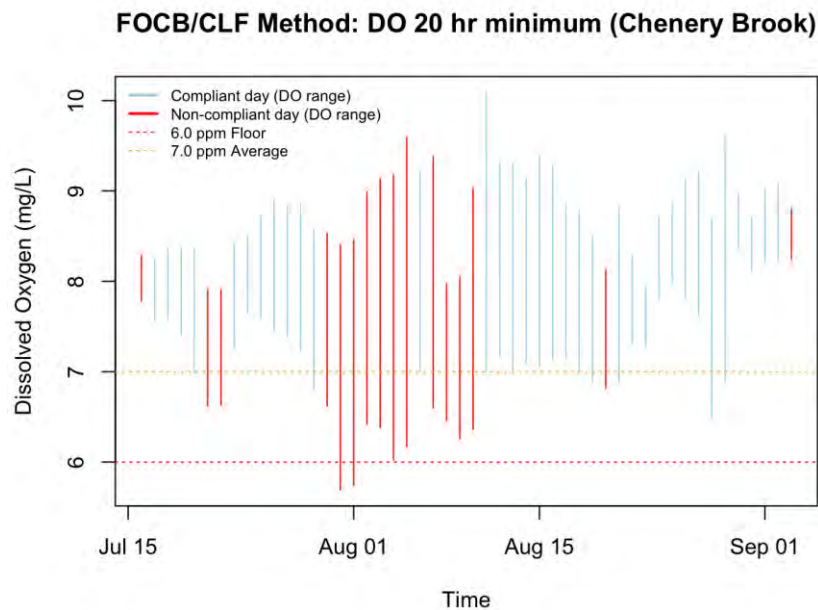


Figure 11. Days exceeding the proposed 7 ppm 20-hour window dissolved oxygen standard recommended by FOCB and CLF.

Table 4. Dissolved oxygen WQS across other New England states.

State	Dissolved Oxygen Criteria Type	Dissolved Oxygen Floor
CT	Instantaneous (AA, A, B) ^{†,‡} Instantaneous/chronic (SA, SB)	5 ppm (AA, A, B) 3 ppm (SA, SB)
MA	Instantaneous (A, B, SA, SB) 16-hour window/instantaneous (C, SC)	6/5 ppm [cold/warm water fishery] (A, B) 3 ppm (C) 6 ppm (SA) 5 ppm (SB) 4 ppm (SC)
NH	Daily average/instantaneous (A, B)	6 ppm (A) 5 ppm (B)
RI	Daily average/instantaneous (AA, A, B, C)	5 ppm (AA, A, B, C)
VT	Instantaneous (A, B) [†]	7/5 ppm [cold/warm water fishery] (A,B)

Third, we want to reaffirm the inclusion of a 6-ppm dissolved oxygen floor as recommended by DEP and FOCB. NRCM strongly supports this provision and recommends that it be included regardless of the method chosen to evaluate attainment of the 7-ppm threshold. Many other New England states implement a floor to ensure protection from large dissolved oxygen swings associated with eutrophication (Table 4). The FOCB proposal states that a 6-ppm floor “would still be protective and high enough to account for impairments caused by anything other than natural causes.” To provide some context for this value, we can examine dissolved oxygen thresholds of common adult fish in Maine (Table 5). As outlined in the table, salmon thrive in water with dissolved oxygen conditions greater than 6.5 ppm but begin to experience harmful effects at 4 ppm and can suffer fatalities at 3 ppm. The 6-ppm floor is important because it disqualifies harmful dissolved oxygen levels for adult fish and protects the next generation of aquatic life as well. Studies show that when dissolved oxygen drops below 6 ppm, trout and salmon eggs perish and the reproduction of other sensitive freshwater fish is stunted.¹ Thus, NRCM deems a 6-ppm floor for both Class A and Class B waters as critical.

Table 5. Important dissolved oxygen thresholds for common adult fish in Maine.¹

Fish Type	Required DO	Harmful DO	Fatal DO	Exposure until fatal
Coldwater (Trout, Salmon)	6.5 ppm	<4 ppm	<3 ppm	Couple Days
Warmwater (Bluegill, Largemouth Bass, etc.)	5.0 ppm	<3 ppm	<2 ppm	Short period of time

¹ Fondriest Environmental, Inc. “Dissolved Oxygen.” Fundamentals of Environmental Measurements. 19 Nov. 2013. Web. <https://www.fondriest.com/environmental-measurements/parameters/water-quality/dissolved-oxygen/>

Odor

A common theme across all proposals to update WQS is clarity. For example, DEP is proposing to upgrade dissolved oxygen standards by removing “whichever is higher” for Class A, Class B, and Class C waters to provide clarity that both concentration and percent saturation are evaluated. Under similar reasoning, we support CLF’s proposal to add “odor” to statutory language. DEP’s reasoning for not including this update is that odor is already considered as one of the “other properties” referenced in statute. Although odor is often an important water quality variable measured during permit compliance monitoring, it is not clear where it fits within existing statute because “other properties” is vague. There are no issues with adding “odor” for clarity, similar to removing “whichever is higher” for dissolved oxygen, as it reflects a common DEP practice for assessing water quality. For these reasons, NRCM encourages the Department to improve clarity in the statute and incorporate CLF’s proposal.

Rulemaking

Overall, NRCM supports DEP’s anticipated rulemaking proposals, and we look forward to providing comments once rulemaking for each commences. Of the deferred rulemaking proposals, we would like to highlight three that we view as high priority and would encourage DEP to prioritize if resources allow to address emerging water quality threats:

1. Regulations Relating to Toxic Pollutants: Amend Surface Water Quality Criteria for Toxic Pollutants Relating to the Protection of Aquatic Life (pgs. 53-54)
2. Development of New Water Quality Standards: Development or Adoption of Recreational Criteria for the Cyanotoxins Microcystin and Cylindrospermopsin (pgs. 60)
3. Mixing Zones: Update Mixing Zone Law (pgs. 56-57)

pH

NRCM appreciates DEP’s consideration and acceptance of the proposal to add pH criteria to Class SB and Class SC marine waters and to Class A, Class B, Class C, and Class GPA fresh waters. This is yet another step forward in protecting water quality and aquatic life in Maine. NRCM understands the addition of pH criteria to Class AA and SA waters can be a significant undertaking especially when there are disparities in the amount of data between classes. As DEP looks to implement the proposal to these two highest classes of marine and fresh waters, it would be helpful if DEP informed stakeholders of how much pH data it currently has for pH in Class AA and Class SA waters and how much additional data it expects would be needed to update WQS so that interested parties can help fill the data gap. Similarly, it would be helpful if DEP informed stakeholders of current data gaps for dissolved oxygen in Class A and Class AA waters so that interested parties can assist in helping collect the data needed to update dissolved oxygen WQS.

Nitrogen

NRCM appreciates DEP’s consideration of adding narrative nitrogen criteria to WQS and the continued effort toward developing numeric nitrogen criteria for marine waters. Nitrogen pollution remains one of the greatest threats to coastal waters here in Maine and around the world. Driven largely by excess nitrogen loading from land, we are hearing more frequent

reports of macroalgae blooms from coastal communities across Maine in recent years and are concerned about the risk that these and other harmful algal blooms pose to our marine resources and economies. For this reason, we recommend that DEP make establishing official nitrogen criteria a high priority for future updates to WQS.

While we see pros and cons to both numeric and narrative nitrogen criteria and recognize that this topic is extremely complex, we ultimately encourage DEP to develop criteria that consider the diverse water quality conditions found along Maine's coastline. Similar to the recently adopted freshwater nutrient criteria, the best approach will likely involve a combination of numeric criteria, narrative criteria, and response indicators that can be applied in a flexible manner to account for differences in water quality among Maine's coastal waters.

Thank you for the opportunity to provide input on this review; we appreciate DEP's consideration of these comments. Please feel free to contact me if you have any questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Frankel', with a stylized, cursive script.

Luke Frankel

Woods, Waters, & Wildlife Director and Staff Scientist