DRAFT
State of Maine

Department of Environmental Protection

Sandy Stream Pond, Baxter State Park

2024 Integrated Water Quality Monitoring and Assessment Report

Draft – June 18, 2024

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Cover photo: Sandy Stream Pond, Baxter State Park (Ryan Burton, 2017).

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CHAPTER 1 PREFACE

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This document, which may be referenced as the 'Integrated Report', 'Report', or 'IR', is being submitted to fulfill biennial reporting requirements on both federal and state levels. The federal requirement arises from the Clean Water Act (CWA), particularly § 305(b) (state reports on water quality), § 303(d) (list of impaired waters), and § 314 (Clean Lakes Program). The state requirement arises from 38 Maine Revised Statutes (M.R.S.) § 464(3)(A) (report on the quality of the State's waters to the Maine Legislature). The Maine Department of Environmental Protection (The Department or DEP) assembles these reports with input from many sources, and recognizes that the § 305(b) Report and § 303(d) List are important ways of regularly communicating information on the health, current status and trends of the State's waters.

For the 2024 Integrated Report the Department has updated tabular summaries of water quality status (Appendices; Chapters 4 and 8) that appeared in the 2018/2020/2022 Integrated Report. Assessments were primarily based on monitoring data collected in 2021 and 2022 for rivers/streams, wetlands and estuarine/marine waters for all designated uses other than shellfish harvesting, although more recent data was consulted where appropriate. For lakes, assessments were primarily based on data from 2013 through 2022. For estuarine/marine waters, assessments for the shellfish harvesting designated use were based on Maine Department of Marine Resources (DMR) classifications as of December 31, 2022. For coastal designated beaches, assessments were based on monitoring data collected during beach seasons 2018-2022. For more information, see the section 'Coastal, Marine Beach Recreational Water Quality Monitoring' on page 104, below. The assessment methodology used is provided in Chapter 4. All other sections of this report were updated to reflect (primarily) the status as of 12/31/22.

Aside from updates to assessments, Department staff and external contacts also updated narrative content as needed, including programmatic descriptions and summary information.

In the Integrated Report, Maine waterbodies are assigned to one of five categories (or sub-categories) that describe water quality status (see Chapter 2, Executive Summary, and Chapters 4 and 5). Those waters that are currently listed under Category 5 represent "impaired waters" for purposes of the CWA § 303(d) list and require development and submission of a Total Maximum Daily Load (TMDL) report or other adequate restoration plan to the United States Environmental Protection Agency (EPA).

The 2024 Integrated Report provides:

- Delineation of water quality assessment units (AUs), identified by their 10-digit Hydrologic Unit Code (HUC) followed by a waterbody-specific code (Appendices II-IV) for rivers/streams, lakes/ponds and wetlands. Marine/estuarine waterbodies (Appendix V) are identified by their 12-digit HUC, followed by waterbody class and Maine Department of Marine Resources (DMR) Growing Area code and classification status where necessary. Coastal designated beaches (Appendix VI) are identified by 12-digit HUC followed by waterbody class and EPA Beach ID. River/stream, wetland, estuarine/marine and designated beach AUs can be viewed using this ArcGIS Online Project (in development): https://bit.ly/MaineIR2024.

Note that the United States Geological Survey (USGS) has replaced the HUC system with the Watershed Boundary Dataset (WBD) which contains Hydrologic Units (HUs). Because of this conversion, a mismatch now exists between some HUCs used in the IR and current WBD HUs. DEP did not update the HUC part of any AU ID to conform to the new system and is retaining the term 'HUC' to indicate continued usage of the older system.

- Water quality attainment status for river/stream, lake/pond, wetland, marine/estuarine, and coastal designated beach AUs (Appendices II-VI);
- Basis for the water quality standard attainment determinations for river/stream, lake/pond and marine/estuarine AUs, including coastal designated beaches (Chapter 4 and Appendices II, III, V and VI) and for wetland AUs (Chapter 5 and Appendix IV);
- Identification of AUs requiring a TMDL report or other adequate restoration plan, and either a schedule or priority level for those waters (Chapter 8, Tables 8-14 to 8-18, and Appendices II-VI);

The 2024 Integrated Report presents State of Maine water quality assessment summaries for that were generated by ATTAINS (Assessment and Total Maximum Daily Load Tracking and Implementation System). ATTAINS is a database developed and maintained by EPA that states use to track and document water quality assessment results. It replaced the former IR database called ADB (Assessment DataBase).

DATA SOURCES AND ACKNOWLEDGEMENTS

Outside Data Request

For each Integrated Report cycle, the Department distributes an outside data request to a list of known water quality data providers such as governmental and non-governmental organizations, tribes, environmental consultants, Maine cities and towns, and academia. The text for the request that was distributed on March 16, 2023 to approximately 300 contacts at approximately 200 organizations is shown below in italics in order to differentiate it from other text contained in this Report.

Dear water quality data providers,

I am writing to notify you that the Maine Department of Environmental Protection is now receiving data that have been compiled under an approved Quality Assurance Project Plan for inclusion in the 2024 biennial Integrated Water Quality Monitoring and Assessment Report to Congress [the 305(b)/303(d) water quality assessment report or Integrated Report].

The Integrated Report provides an assessment of water quality for rivers and streams, lakes and ponds, wetlands, and marine and estuarine resources in Maine, as well as extensive information on the status of Maine's groundwater resources. Prior Reports can be viewed at: www.maine.gov/dep/water/monitoring/305b/ .

Attached please find a letter that provides background information for this invitation to submit data, and guidelines and required fields for data submission. An optional Sampling Location Form and Data Submittal Form are available on request.

Submissions should be sent to my attention by June 30, 2023. Please do not hesitate to contact me if you have any questions about submissions for the 2024 Integrated Report.

Thank you for your water quality interests and activities.

Susanne

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Integrated Water Quality Reports www.maine.gov/dep/water/monitoring/305b/
Water Quality Standards www.maine.gov/dep/water/wqs/

Sources of River and Stream Assessment Data

The Department generates much of the quantitative and qualitative data used for assessments through the various monitoring programs it conducts, notably the Biological Monitoring Program, Surface Water Ambient Toxics (SWAT) Monitoring Program, the Atlantic Salmon Habitat Monitoring Program, and water quality studies of specific rivers and streams that inform developments of waste load allocations for TMDLs and waste discharge permit limits. Additionally, data are provided by a variety of professional and volunteer monitoring groups. These include other Maine state agencies and resources (Department of Inland Fisheries and Wildlife - DIF&W, Department of Marine Resources – DMR, Atlantic Salmon Commission, Department of Health and Human Services - DHHS), federal agencies (EPA, USGS, National Park Service), other governmental agencies (Saco River Corridor Commission, St. Croix International Waterway Commission), tribes (Penobscot Nation, Houlton Band of Maliseet Indians, Passamaquoddy tribes, Aroostook Band of Micmacs) and a number of volunteer watershed groups and conservation organizations that are working cooperatively with Department staff under the Maine Volunteer River Monitoring Program (VRMP) and follow the EPA approved VRMP Quality Assurance Project Plan (QAPP). Long-term VRMP partners are the Androscoggin River Watershed Council, Friends of Merrymeeting Bay, Mousam and Kennebunk Rivers Alliance, Presumpscot Regional Land Trust, and Rockport Conservation Commission. Other groups have participated in certain years. Data are also provided by other groups or consultants that have DEP-approved QAPPs (for example, Midcoast Conservancy, FB Environmental) or provide approved study plans (for example for hydropower projects).

Sources of Lake Assessment Data

The Department's Lake Assessment Section manages much of the data collected from lakes within the state. A strong partnership with the Lake Stewards of Maine Volunteer Lakes Monitoring Program (LSM VLMP, Inc.) assures the quality and comparability of the data collected through numerous regional entities and local lake associations. Regional entities include Cobbossee Watershed District, Lakes Environmental Association, Allagash Wilderness Waterway, Passamaquoddy Tribe at Indian

Township, Penobscot Indian Nation, Portland Water District, Auburn Water District, Acadia National Park, Rangeley Lakes Heritage Trust. Data has also been acquired from private consultants (such as Lake and Watershed Resource Management Assoc., FB Environmental, Biodiversity Research Institute, Florida Power and Light, as part of regulatory requirements) and water utilities that belong to the Maine Water Utility Association. Additional supporting data is acquired through the DIF&W and through cooperative projects with the University of Maine System, Colby College, Unity College, Soil and Water Conservation Districts and similar entities. Data collected under probability-based studies conducted within EPA Region I and as part of the National Lake Assessment Study being conducted by EPA Headquarters is also considered.

Sources of Wetlands Assessment Data

The Department generates most of its assessment data for wetlands through the Biological Monitoring Program (see Chapter 5 for additional information). Wetland monitoring is coordinated with the State's river and stream monitoring using a 5-year rotating basin schedule. Annual wetland monitoring currently focuses on palustrine, and lacustrine and riverine fringe wetlands, including open water marshes, low gradient streams, and shallow habitat of lakes and ponds. The Biological Monitoring Program also considers DEP monitoring and assessment results for associated water bodies (streams, rivers, lakes) in wetland listing decisions. The SWAT Monitoring Program and water quality studies that inform TMDLs provide additional data for wetland assessments on legacy pollutants, toxic substances, nutrients and water level management. Data for wetland losses and alterations permitted under Maine's Natural Resources Protection Act and related compensatory mitigation are provided through the DEP Wetland Loss Tracking System maintained by the Bureau of Land Resources.

Sources of Estuarine and Marine Assessment Data

The Department has utilized data for marine assessments from its own environmental and toxics monitoring programs, the Marine Environmental Monitoring Program and SWAT program, as well as the Maine Healthy Beaches Program, which relies on sampling by trained volunteers. Data from the following governmental, academic, consulting, and non-profit organizations are also used in assessments: Wells National Estuarine Research Reserve (NERR), Maine DMR, New Hampshire Department of Environmental Services (DES), University of Maine, FB Environmental, the Casco Bay Estuary Partnership, and the Friends of Casco Bay. Additionally, a number of volunteer monitoring groups survey Maine's estuarine and coastal waters, including the Maine Coastal Observing Alliance, Boothbay Region Land Trust, Kennebec Estuary Land Trust, Midcoast Conservancy, Mount Desert Island Biological Laboratory's Community Environmental Health Laboratory, Mousam and Kennebunk Rivers Alliance, Rockport Conservation Commission, and the Spruce Creek Association. The Department currently accepts data from organizations with approved QAPPs whose monitoring programs and analytical labs enable collection and processing of quality data, and from selected organizations with Department-approved sampling plans.

CHAPTER 2 EXECUTIVE SUMMARY, PUBLIC PARTICIPATION AND RESPONSE TO COMMENTS

EXECUTIVE SUMMARY

Surface Waters

Updates to water quality assessments for the 2024 Integrated Report were primarily based on monitoring data collected in calendar years 2021 and 2022 for rivers/streams, wetlands and estuarine/marine waters, and 2013 through 2022 for lakes/ponds; more recent data was consulted where appropriate. For coastal designated beaches, assessments were based on monitoring data collected during beach seasons 2018 through 2022, i.e. once EPA had approved the Beach Action Value. For more information, see the section 'Coastal, Marine Beach Recreational Water Quality Monitoring' on page 104. The report continues to base assessments for all waterbodies on the five main listing categories that were initially established in the 2002 report. These five main assessment categories are as follows:

Category 1: Attaining all designated uses and water quality standards, and no use is threatened.

Category 2: Attains some of the designated uses; no use is threatened; and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

Category 3: Insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

Category 4: Impaired or threatened for one or more designated uses, but does not require development of a TMDL (Total Maximum Daily Load).

Category 5: Waters impaired or threatened for one or more designated uses by a pollutant(s), and a TMDL report is required.

Chapter 4, section Consolidated Assessment and Listing Methodology (CALM) contains more detailed information on the listing categories and sub-categories.

SUMMARY OF CHANGES

The size and percentage results from the 2018/2020/2022 and 2024 Integrated Reports (Table 2-1) are not exactly comparable due to changes in assessment methodology and mapping technology over the years and correction of errors, but they provide an approximation of changes in the total amount of waters in each category. For rivers and streams, the mapping technique that is used includes in listed segments any non-riverine portions of a river or stream, such as where it flows through a lake. This leads to an overestimate of the total river/stream length in any category.

For rivers and streams, there were increases in terms of mileage in Categories 2, 4 and 5, and a decrease in Category 3; there was no change in Category 1. The mileage of waters in Category 2 increased substantially due to new mapping of several AUs using higher resolution mapping technology. Category 3 decreased by 9 miles as two waters were removed. Category 4 increased by 12 miles as five waters were added. Category 5 decreased by 181 miles as one waterbody was removed and twenty were added.

Table 2-1 reveals that the lakes and ponds of Maine were relatively stable (as a percentage of total assessed waters) with respect to their listing categories over the period from 2022 to 2024. Four lakes (2,292 acres) have been delisted to Category 2.

Cochnewagon Pond (410 acres) was removed from Category 5-A, and East Pond (1,823 acres), Lilly (Lily) Pond (29 acres) and Toothaker Pond (30 acres) were removed from Category 4-A.

For wetlands, there were increased acres listed in Categories 2, 3 and 4, an overall decrease in acres in Category 5 and no changes in Category 1. The increases were due to new waters being added; two segments in Category 2 totaling 412.6 acres, four segments in Category 3 totaling 398.67 acres and one segment in Category 4-A totaling 126 acres. One segment totaling 30.4 acres was added to Category 5. The remaining increase in Category 2 acreage is the result of previously undelineated assessment units being defined and their default size (0.1 acres) replaced with accurate sizes. One of the Category 2 waters was listed as a Category 3 in previous assessments, three of the Category 3 waters were listed as a Category 2 in previous assessments, the 4-A water was listed in Category 5 in previous assessments and the Category 5 water is newly listed.

For estuarine and marine waters, the creation of new Assessment Units in the 2018/2020/2022 report (summarized on pages 96-97) resulted in the separation of shellfish harvesting designated use segments from non-shellfish harvesting designated use ('all other') segments in Categories 2-5. For this 2024 report, a quantitative comparison of AU changes in square miles for these categories since the 2018/2020/2022 cycle is shown in Table 2-1. For the shellfish harvesting designated use segments, there were five minor area changes made due to prior mapping errors or omissions, and one segment name change for Categories 2, 3 and 5-B-1 waters that affected seven assessment units. Category 5-A was added in the 2024 cycle following erroneous omission in the 2018/2020/2022 cycle. No changes were made to shellfish harvesting designated use segments in Categories 4 and 5-D. For non-shellfish harvesting designated use segments, Category 2 decreased slightly due to splitting of an assessment unit that moved a small area to Category 3. Category 3 increased due to this new assessment unit and another unit erroneously assigned in prior cycles to a river segment, and Category 4 and 5 areas were unchanged.

For coastal designated beaches, there were increased miles listed in Categories 3 and 5, decreased miles in Category 2, and no changes in Categories 1 and 4. Three additional coastal designated beaches were included in the 2024 assessment compared to 2022 and were all assigned to Category 2. The increase in Categories 3 and 5 and decrease for Category 2 can largely be explained by the move of two AUs from Category 2 to Category 3 and one AU from Category 3 to Category 5. Additionally, one AU moved from Category 3 to Category 2.

Table 2-1 Summary of Changes to Surface Water Assessment Categories – 2018/2020/2022 to 2024

Note: '2022' is used as a shorthand for the 2018/2020/2022 cycle. For Rivers and Streams, Lakes and Wetlands, the Total Miles/Acres Assessed do not include waters listed under Category 4-A for atmospheric deposition of mercury. For Rivers and Streams, Total Miles Assessed differs from the total miles of non-estuarine rivers and streams per NHD, see Table 3-1 (~45,000 miles) because the mapping of many AUs is still based on older, lower resolution GIS information, leading to a substantial underestimate of miles assessed.

Rivers and Streams						
35,218 = Total Miles Assessed in 2022						
40,791 = Total Miles Assessed in 2024						
	2022 Miles in Category [1]	**% of Total 2022 Assessed Miles**	**2024 Miles in Category [2]**	**% of Total 2024 Assessed Miles**	**% Change '22 - '24**	**Change in Miles '22 - '24**
Category 1	5,277	15.0	5,277	12.9	-2.1	0
Category 2	28,171	80.0	33,559	82.3	2.3	5,388
Category 3	350	1.0	341	0.8	-0.2	-9
Category 4	483	1.4	495	1.2	-0.2	12
Category 5	938	2.7	1,119	2.7	0.0	181
Lakes						
986,952 = Total Acres Assessed in 2022						
987,019 = Total Acres Assessed in 2024 (includes 2 previously unassessed lakes)						
	2022 Acres in Category	**% of Total 2022 Assessed Acres**	**2024 Acres in Category**	**% of Total 2024 Assessed Acres**	**% Change '22 – '24**	**Change in Acres '22 - '24**
Category 1	295,418	29.9	295,418	29.9	0	0
Category 2	605,812	61.4	607,617	61.6	0.2	1,805
Category 3	0	0	0	0	0	0
Category 4	75,940	7.7	67,685	6.9	-0.8	-8,255
Category 5	9,782	1.0	16,299	1.6	0.6	6,517
Wetlands						
14,194.5 = Total Acres Assessed in 2022						
28,416 = Total Acres Assessed in 2024						
	2022 Acres in Category	**% of Total 2022 Assessed Acres**	**2024 Acres in Category**	**% of Total 2024 Assessed Acres**	**% Change '22 – '24**	**Change in Acres '22 - '24**
Category 1	15	0.1	15	0.05	-0.05	0
Category 2	6,344.77	44.7	20,460	72.0	27.3	14,115.23
Category 3	6,933.97	48.8	6,978	24.6	-24.2	44.03
Category 4	388	2.7	536	1.9	-0.8	148.00
Category 5	512.76	3.6	427	1.5	-2.1	-85.76
Estuarine and Marine Waters – Shellfish Harvesting Designated Use						
2,883 [3] = Total Square Miles Assessed in 2022						
2,884 [3] = Total Square Miles Assessed in 2024						
	2022 Square Miles in Category	**% of Total 2022 Assessed Square Miles**	**2024 Square Miles in Category**	**% of Total 2024 Assessed Square Miles**	**% Change '22 - '24**	**Change in Square Miles '22 - '24**
Category 1	0	0	0	0	0	0
Category 2	2,490	86.4	2,491	86.4	0	1
Category 3	356	12.3	356	12.3	0	0
Category 4	0	0	0	0	0	0
Category 5	37	1.3	37	1.3	0	0

Estuarine and Marine Waters – All Other Designated Uses						
2,889 [4] = Total Square Miles Assessed in 2022						
2,889 [4] = Total Square Miles Assessed in 2024						
	2022 Square Miles in Category	**% of Total 2022 Assessed Square Miles**	**2024 Square Miles in Category**	**% of Total 2024 Assessed Square Miles**	**% Change '22 - '24**	**Change in Square Miles '22 - '24**
Category 1	0	0	0	0	0	0
Category 2	2,876	99.5	2,875	99.5	99.5	-1
Category 3	0	0	1.0	<0.01	<0.01	1
Category 4 [5]	5	0.2	5	0.2	0.2	0
Category 5 [6]	8	0.3	8	0.3	0.3	0
Estuarine and Marine Waters – Coastal Designated Beaches						
39.02 = Total Miles Assessed in 2022						
39.24 = Total Miles Assessed in 2024						
	2022 Miles in Category	**% of Total 2022 Assessed Miles**	**2024 Miles in Category**	**% of Total 2024 Assessed Miles**	**% Change '22 - '24**	**Change in Miles '22 - '24**
Category 1	0	0	0	0	0	0
Category 2	36.99	95	36.41	93	2	0.58
Category 3	1.21	3	1.53	4	-1	-0.32
Category 4	0	0	0	0	0	0
Category 5	0.82	2	1.30	3	-1	-0.48

[1] Single-category reporting miles as generated by 2018/2020/2022 cycle ATTAINS.
[2] Single-category reporting miles as generated by 2024 cycle ATTAINS.
[3] This value represents the area regulated by the Maine Department of Marine Resources for shellfish harvesting.
[4] This value includes a more accurate area of state jurisdictional estuarine and marine waters generated during the creation of new assessment units for the 2022 cycle.
[5] Variable additional miles due to Combined Sewer Overflow waters.
[6] All estuarine and marine waters capable of naturally supporting lobster propagation are affected by a shellfish (lobster tomalley) consumption advisory due to the presence of PCBs and dioxins. A statewide marine consumption advisory for several saltwater finfish and shellfish species is also in effect based on elevated mercury, PCB and dioxins. Category 5 square mileage does not include marine waters under these statewide consumption advisories.

All freshwaters in Maine are listed for an impaired Fish Consumption Use caused by mercury from sources beyond the region; river and stream miles and lake acres affected by this statewide listing are not recorded in Table 2-1. These waters were listed in Category 5-C in the 2006 Integrated Report. On December 20, 2007, EPA approved a Regional Mercury TMDL, which allowed these waters to be moved to Category 4-A in the 2008 cycle. The New England States and New York developed the Regional Mercury TMDL to address mercury impairments caused by sources outside the Region. The State of Maine has already taken aggressive action to reduce sources of mercury within the State's jurisdiction. Further action will be required from sources outside the State's boundaries to provide the desired reduction of mercury in Maine's waters. Category 5-D, Legacy Pollutants, includes many mainstem river segments that are listed for non-attainment of the Fish Consumption Use due to PCBs, Dioxin and DDT in fish tissue.

GROUNDWATER

Groundwater Programs are described in Chapter 6. Responsibility for groundwater resource assessment and protection is shared amongst the DEP, the Department of Health and Human Services' (DHHS) Division of Environmental Health, the Maine Geological Survey (MGS) in the Department of Agriculture, Conservation, and Forestry

(DACF), and the U. S. Geological Survey (USGS). Other agencies, such as the Department of Transportation (DOT) and DACF - Agricultural Compliance Program may investigate groundwater contamination problems in certain areas and undertake management practices designed to reduce the risk of harm to groundwater quality.

Ambient monitoring refers to long-term monitoring conducted to obtain trend information on groundwater quality or quantity. MGS and USGS carry out these types of monitoring projects under several cooperative agreements. MGS and USGS maintain a statewide network of groundwater observation wells to track changes in water quality and quantity.

Major impediments to effective groundwater protection in Maine include a lack of data to quantify the impact of some nonpoint pollution sources, and general public unfamiliarity with key groundwater concepts and issues. Public misconception about groundwater is probably the major factor contributing to degradation of this resource. The development of a comprehensive and accessible database for water data (Environmental and Geographic Analysis Database, EGAD) has increased the accessibility of the wide variety of data collected on water quality by various state agencies. Continuing use of this database will improve operations at the agencies responsible for groundwater protection and assessment and allow access to data on which to base educational efforts to increase the public's awareness of groundwater issues. Relative to groundwater protection, the principal uses of this database are to (1) help design clean-up strategies in areas of known contamination; (2) plan future development that provides for better protection of public health and safety; (3) assist in prioritizing protection of sensitive groundwater and surface water bodies, wetlands, and other resources; (4) enhance understanding of the spatial relationships between water resources and population as they relate to potential or known pollution sources; and (5) assess the flow and transport interrelationships between ground- and surface water, in order to evaluate groundwater impacts on surface water bodies and on groundwater-dependent habitat.

PUBLIC PARTICIPATION

Process to Solicit Public Comments

The following subsections detail the actions taken by the Department to promote the public's knowledge of the existence and availability of the draft version of the 2024 Integrated Water Quality Monitoring and Assessment Report [Integrated Report or Report, formerly known as the 305(b) Report] and to solicit comments from the public on the contents and conclusions of the draft report. The official period of time that the draft Report was available for public comment was from June 18, 2024 to 5:00 pm on July 22, 2024.

In addition to the public comment process outlined below, the draft Report was reviewed internally by Department staff and by EPA staff.

REPORT POSTING ON THE DEPARTMENT'S WEBSITE

On June 18, 2024, the Department opened public comment period for the draft 2024 Integrated Report with a posting on the Department's Opportunity for Comment webpage: www.maine.gov/dep/comment/. The text that accompanied the posting follows and is italicized in order to differentiate it from other text contained in this Report.

Opportunity for Comment

Draft 2024 Integrated Water Quality Monitoring and Assessment Report

The Maine Department of Environmental Protection has prepared the draft "2024 Integrated Water Quality Monitoring and Assessment Report" for submission to the U.S. Environmental Protection Agency (EPA) as required by §§ 303(d), 305(b) and 314 of the Clean Water Act, and in fulfillment of the reporting requirements of 38 M.R.S. § 464(3)(A) of the State of Maine's Water Classification Program. This report is available for public comment until 5:00 PM, July 22, 2024. For more information and access to the documentation (2 files), please visit www.maine.gov/dep/water/monitoring/305b/. Reviewers of the Report document should pay particular attention to the Consolidated Assessment and Listing Methodology (CALM) required by the EPA for surface water assessments in this report. The CALM is described in Chapter 4 of the document. For the first time, assessments for waters that present barriers to fish passage are included in a new Category 4-C-FPB (Fish Passage Barrier); the relevant CALM is included under the header 'Support of Indigenous Species'. Specific waterbody attainment and impairment assignments can be found in the Appendices.

Comments become part of the public record and are published in the final version of the Report. All comments should be sent to:
By email: IRcomments.DEP@maine.gov
By fax: 207-287-7826

Meagan Sims
Maine Department of Environmental Protection
Bureau of Water Quality
State House Station 17
Augusta, ME 04333-0017
www.maine.gov/dep/comment/

The Department offers subscription services for a variety of DEP publications and announcement. The public comment notice for the draft 2024 Integrated Report was e-mailed to subscribers to public comment opportunities and to rulemaking changes. Hard copies of the draft report were made available to the public on request.

MAILING TO INTERESTED PARTIES

During the week June 17, 2024, approximately 959 interested parties (e.g. towns, non-governmental organizations, tribes, State agencies, permittees) were notified of the comment period for the draft Report via direct e-mail. The notification was also posted to two listserves with approximately 806 subscribers and three GovDelivery subscription lists. The text of that notice follows and is italicized in order to differentiate it from other text contained in this Report.

Maine's DRAFT 2024 Integrated Water Quality Monitoring and Assessment Report

Available for Public Comment until July 22, 2024

The Maine Department of Environmental Protection has prepared the draft "2024 Integrated Water Quality Monitoring and Assessment Report" for submission to the U.S. Environmental Protection Agency (EPA) as required by §§ 303(d), 305(b) and 314 of the Clean Water Act, and in fulfillment of the reporting requirements of 38 M.R.S. § 464(3)(A) of the State of Maine's Water Classification Program.

This report is available for public comment until 5:00 PM on July 22, 2024. For more information and access to the documentation (2 files), please visit www.maine.gov/dep/water/monitoring/305b/ . Reviewers of the Report document should pay particular attention to the Consolidated Assessment and Listing Methodology (CALM) required by the EPA for surface water assessments in this report. The CALM is described in Chapter 4 of the document. For the first time, assessments for waters that present barriers to fish passage are included in a new Category 4-C-FPB (Fish Passage Barrier); the relevant CALM is included under the header 'Support of Indigenous Species'. Specific surface waterbody attainment and impairment assignments can be found in the Appendices (a separate file). The appendices are broken into five waterbody types: rivers/streams, lakes/ponds, wetlands, estuarine and marine waters, and coastal designated beaches. Categories 1-3 are for waters that are not impaired, categories 4 and 5 are for waters or water segments that are impaired for one or more uses.

We encourage you to review the document and provide comment on the report. Comments become part of the public record and are published in the final version of the Report. All comments should be sent to:
By email: IRcomments.DEP@maine.gov
By fax: 207-287-7826

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

LEGAL NOTICE

During the week of June 17, 2024, the Department published a legal notice in four daily and four weekly newspapers around the state. Those newspapers were as follows: Bangor Daily News, Kennebec Journal, Lewiston Sun Journal, Portland Press Herald (daily), and The Star-Herald, Aroostook Republican, Houlton Pioneer Times and The St. John Valley Times (weekly). The text of the legal notice follows and is italicized in order to differentiate it from other text contained in this Report.

Legal Notice

Maine Department of Environmental Protection

Notice of Public Comment Opportunity for the Draft "2024 Integrated Water Quality Monitoring and Assessment Report"

The Department of Environmental Protection has prepared the draft "2024 Integrated Water Quality Monitoring and Assessment Report" for submission to the U.S. Environmental Protection Agency (EPA) as required by §§ 303(d), 305(b) and 314 of the Clean Water Act, and in fulfillment of the reporting requirements of 38 M.R.S. § 464(3)(A) of the State of Maine's Water Classification Program. This report is available for public comment until 5:00 PM, July 22, 2024. For more information and access to the documentation (2 files), please visit www.maine.gov/dep/water/monitoring/305b/. Reviewers of the Report document should pay particular attention to the Consolidated Assessment and Listing Methodology (CALM) required by the EPA for surface water assessments in this report. The CALM is described in Chapter 4 of the document. For the first time, assessments for waters that present barriers to fish passage are included in a new Category 4-C-FPB (Fish Passage Barrier); the relevant CALM is included under the header 'Support of Indigenous Species'. Specific waterbody attainment and impairment assignments can be found in the Appendices.

Comments become part of the public record and are published in the final version of the Report. All comments should be sent to:
By email: IRcomments.DEP@maine.gov
By fax: 207-287-7826

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

Summary of Public Comments and Responses

In the Draft Report, this section is left blank. It will be populated in the Final Report with the public comments received and the departmental responses provided.

CHAPTER 3 BACKGROUND

STATE ATLAS

Contact: Becky Schaffner, DEP, BWQ, DEA

Tel: (207) 441-2773 email: Becky.Schaffner@maine.gov

The State of Maine has a total surface area of over 32,000 square miles and is the largest state in New England. Maine's terrestrial lands occupy almost 27,000 square miles, and wetlands and surface waters occupy nearly 5,580 square miles. Tidal rivers and estuarine and marine waters represent an additional 2,900 square miles. With a 2020 US Census population of 1.36 million citizens, representing a 2.6% increase since the 2010 US Census, Maine is the 42nd most populous state and also the least densely populated state east of the Mississippi. Due to geographical characteristics regional population densities vary considerably from the state's average population density. Population densities in the northern and most Down East organized sections of the state average less than 30 citizens per square mile, while many southern and central portions of Maine host over 20,000 citizens per square mile. The majority of Maine's population is concentrated in the southern and central coastal portions of the State, and along both sides of Interstate 95 south of Bangor. Approximately 61% of Maine residents live in rural areas and the remaining 39% in urban and urbanized areas.

There are more than 32,000 lakes, ponds and reservoirs in Maine covering over 1,000,000 acres, an area that is larger than the State of Rhode Island. There are over 7,000 perennial streams and rivers in Maine, ranging in length from less than two miles to nearly 200 miles, with a total length of ~45,000 miles. Land use in Maine is shown in Table 3-1 below.

Since 2009 Maine has been developing hydrography and GIS-related water programs utilizing the National Hydrography Dataset (NHD). NHD has significantly increased the accuracy of efforts to measure and categorize Maine's coastline, rivers, streams, lakes and ponds. Additionally, access to modern and updated high-resolution aerial photography has improved Maine's ability to determine land use and both human-caused and naturally occurring changes to our state's terrestrial conditions.

Table 3-1 The 2024 Integrated Report State of Maine Atlas

Land use. Sources: Total State Area - State Boundary dataset; land uses – C-CAP (Coastal Change Analysis Program) 2016 at 30 m resolution.

Description	Square Miles
Total State Area	32,423
Total Forested & Scrubland	24,234
Total Non-Forested Terrestrial (crops, pasture, other)	1,695
Total Developed and Paved Ways	913
Total wetlands	5,580
Total open water (non-marine/estuarine)	1,627

Rivers and Streams, and Boundary Waters. Source USGS National Hydrography Dataset (NHD) 2019; scale: 1:24,000 or better.

Description	Miles
Total Miles of Rivers and Streams (non-estuarine portion)	45,146
Miles of perennial rivers/streams	31,746
Miles of intermittent streams	13,400
Miles of ditches/canals	17
Total Miles of Rivers and Streams by Water Class	45,146
Miles of Class AA waters (7.5%)	3,375
Miles of Class A waters (46.8%)	21,139
Miles of Class B waters (44.6%)	20,127
Miles of Class C waters (1.1%)	505
Total Miles of Coastline (including tidal rivers & shorelines of islands)	2,756
Total Miles of Border Coast, Lakes and Rivers Shared with CN and NH [1]	339
Maine – Canadian Border (coastal water miles out to the "3-mile" limit)	39
Maine – Canadian Border (lake miles)	33
Maine – Canadian Border (river miles)	206
Maine – Canadian Border (total water miles) [1]	279
Maine – Canadian Border (total land and water miles)	*609*
Maine – New Hampshire Border (coastal water miles out to the "3-mile" limit)	17
Maine – New Hampshire Border (lake miles)	18
Maine – New Hampshire Border (river miles)	25
Maine – New Hampshire Border (total water miles) [1]	60
Maine – New Hampshire Border (total land and water miles)	*189*

[1] Derived from State boundary dataset (Source: MEGIS).

Lakes, Ponds & Reservoirs. Source: USGS National Hydrography Dataset (NHD); scale: 1:24,000 or better.

Description	Acres	Square Miles	Number
Total lake, pond & reservoir features in Maine DEP's GIS data layer	1,025,949	1,603	32,257
Lakes, ponds & reservoirs assigned a MIDAS number in DEP's GIS	988,508	1,544	6,186
Lakes, ponds & reservoirs assigned a MIDAS number tracked in ATTAINS[1]	987,019	1,542	5,782
Significant publicly owned lakes, ponds & reservoirs (subset of line above)[2]	958,977	1,477	2,313

[1] Only a subset of lakes, ponds and reservoirs with a MIDAS number in GIS are tracked in ATTAINS. MIDAS is a unique identification number assigned to Maine lakes and ponds monitored and managed by Maine state agencies.

[2] Significant Lakes are defined under CWA § 314 as publicly owned, have bathymetric/morphometric surveys, vulnerability modeling was performed, or some trophic data has been gathered.

Nearshore Waters and Tidal Rivers. Source: USGS National Hydrography Dataset (NHD) 2019; scale: 1:24,000 or better and Maine Statutory Water Classification layers, 2023.

Description	Acres	Square Miles
Navigable Harbors	90,124	140
No Discharge Areas (NDAs)	179,030	280
Total Area of Estuaries/Harbors/Bays	1,848,832	2,889
Total Area of Estuaries/Harbors/Bays by Water Class	1,848,832	2,889
Area of Class SA waters (10%)	181,331	283
Area of Class SB waters (89%)	1,649,696	2,578
Area of Class SC waters (1%)	17,805	28

Wetlands. Source: U.S Fish and Wildlife Service National Wetland Inventory (NWI) dataset – updated; scale: 1:24,000 or better.

Description	Acres	Square Miles
Estuarine intertidal (NWI E2)	3,709	128
Marine intertidal (NWI M2)	3,146	108
Freshwater wetlands (NWI Palustrine)	90,486	3,114

WATER QUALITY STANDARDS PROGRAM

Contact: Meagan Sims, DEP, BWQ, DEA

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Related Websites: www.maine.gov/dep/water/monitoring/classification/ and www.maine.gov/dep/water/wqs/

The quality of Maine's water is described in terms of physical, chemical and biological characteristics defined under the state's water classification program. As established in Maine statute (38 M.R.S. §§ 464-470), the classification program consists of designated uses (e.g. drinking water supply, recreation in and on the water, habitat for fish and other aquatic life), criteria [e.g. bacteria, dissolved oxygen (DO) and biological criteria] and anti-degradation provisions which together specify levels of water quality necessary to maintain the designated uses. All State waters have a classification assignment (rivers and streams: Class AA, A, B, C; lakes: Class GPA; marine and estuarine waters: Class SA, SB, SC). Wetlands are classified the same as associated surface waters, i.e. wetlands that are part of great ponds or natural lakes and ponds less than 10 acres in size are GPA waters; all freshwater wetlands not classified as GPA waters are Class AA, A, B or C under §§ 467 and 468 according to the watershed in which they occur. Coastal wetlands are classified SA, SB or SC according to the provisions of § 469 (Classification of Estuarine and Marine Waters). Groundwater is classified GW-A according to provisions of 38 M.R.S. § 470.

Maine law (38 M.R.S. § 464.3.B.) requires that once every three years, the Department review the classification system and related standards and make recommendations to the Board of Environmental Protection for any needed changes in the water quality classifications assigned to specific waterbodies. This process, which is also required under the Clean Water Act [§303(c)(1); 40 C.F.R. Part 131.20], is known as a Triennial Review (TR). During the period covered by this Report, the Department conducted a TR that began in 2020 and extended through 2022. During the TR, a number of

changes were made to water quality criteria and several waterbodies were reclassified to a higher class. More information is available at www.maine.gov/dep/water/wqs/triennial-review_2020-2022.html and all changes are summarized in the following document: www.maine.gov/dep/water/wqs/2021 Triennial Review Recommendations.pdf.

303(D) VISION

Contact: Tracy Krueger, DEP, BWQ, DEA

Tel: (207) 215-6851 email: Tracy.Krueger@maine.gov

Related Website: www.maine.gov/dep/water/monitoring/tmdl/index.html

Related Website (EPA): www.epa.gov/tmdl/Vision

The CWA § 303(d) Program provides a mechanism to integrate and implement water quality efforts for the restoration and protection of the nation's aquatic resources. This program systematically assesses waters and prioritizes restoration objectives that reduce pollutants through Total Maximum Daily Load (TMDL) assessments, prescriptive permits, and implementing other protection and restoration approaches to achieve water quality goals. In 2013, EPA announced a new program framework to identify and prioritize water bodies for restoration and protection, entitled *A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*. The original Vision was addressed in stages from 2016 to 2022.

EPA announced a second Vision for the 303(d) Program, the *2022 - 2032 Vision for the Clean Water Act Section 303(d) Program* (2022 Vision or 303(d) Program Vision). The 2022 Vision articulates a renewal of the initial 2013 long-term Vision and associated Goals, and introduces new Focus Areas for the CWA Section 303(d) program. While the 303(d) Program Vision is envisioned to cover the decade from 2022 through 2032, the first several years consisted of a "Bridge" period prior to the development of this Prioritization Framework. The Prioritization Framework formally covers the time period beginning in federal fiscal year (FFY) 2025 and continuing through FFY32. During this period, Maine DEP will identify plan priorities in individual two-year increments to report to EPA.

The 303(d) Program Vision instructs states to write a Prioritization Framework document to articulate how the state plans to carry out 303(d) program activities in the coming decade. This Prioritization Framework is a planning document for the Maine Department of Environmental Protection (DEP) to articulate a long-term strategy and associated goals for the CWA Section 303(d) program for the State of Maine. It does not present or address all of the strategies that the State will employ to improve and protect its waters.

The Prioritization Framework is divided into two sections that cover two key purposes: (Part 1) To describe long-term priorities and a rationale for selecting those priorities, and (Part 2) To outline a general strategy for implementing the Goals of the 303(d) Program Vision. This document outlines a framework to organize program activities; it does not constitute regulation, policy, or new mandates.

Part 1: Long-term planning efforts in this document are organized into three categories: (A) Restoration of Impaired Waters without a Total Maximum Daily Load (TMDL) in place (on the 303(d) List), (B) Restoration of Impaired Waters with a TMDL in Place, and (C) Protection of Unimpaired Waters. The primary effort will be to address the restoration of impaired waters, firstly waters without a TMDL in place and then those

with a TMDL in place but in need of additional plans to achieve restoration. Protection plans for unimpaired waters will also be considered in long-term planning efforts, as it is easier to protect waters before they degrade than to restore them afterward.

Part 2: The 303(d) Program Vision includes a list of Goals and Focus Areas to be addressed in the Prioritization Framework. EPA describes the Goals as outlining aspirations and highlighting opportunities to implement Maine DEP's CWA Section 303(d) program activities. These Goals consist of Planning and Prioritization, Restoration, Protection, Data and Analysis, and Partnerships. EPA describes the Focus Areas as cross-cutting themes of national, regional, and local importance consistent with EPA priorities, to consider in CWA Section 303(d) program implementation. These Focus Areas consist of Environmental Justice, Climate Change, Tribal Water Quality and Program Development, and Program Capacity Building. DEP's document provides a list of the ongoing actions already being taken by the State that fall under each Goal or Focus Area, as well as actions we aspire to take in the future.

ENVIRONMENTAL JUSTICE

Contact: Bill Sheehan, DEP, OC (Office of the Commissioner)

Tel: (207) 760-3136 email: bill.j.sheehan@maine.gov

Contact: Wendy Garland, DEP, BWQ, DEA

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Related Website (EPA): www.epa.gov/environmentaljustice

Environmental justice (EJ; from the US EPA Environmental Justice website: www.epa.gov/environmentaljustice) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:

- The same degree of protection from environmental and health hazards, and
- Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

The Department is also guided by the Maine Constitution which provides for the fair treatment of all Maine citizens. In combination, these federal and State principles compel the Department to provide fair and equitable treatment to all Maine citizens in the implementation of federal and state environmental laws, rules, programs, and policies, and in the management of the agency.

In the Justice40 program, the Federal Government has made it a goal that 40 percent of the overall benefits of certain Federal investments across many diverse areas flow to disadvantaged communities. These areas include the remediation and reduction of legacy pollution, and the development of critical clean water infrastructure. Justice40 requires federal agencies to identify the benefits of covered programs, determine how covered programs distribute benefits, and calculate and report on reaching the 40% goal. Programs included in the Justice40 goals include the American Rescue Plan (ARP), the Bipartisan Infrastructure Law (BIL) and the Infrastructure Reinvestment Act (IRA).

Some specific examples of how the Department works cooperatively with EPA to apply these principles in the implementation of federal programs are:

- Discharge permitting programs are supporting public water and wastewater systems and the most vulnerable communities with updating aging water treatment infrastructure, and reducing stormwater runoff and ocean dumping off the coast.
- The Salmon Habitat Monitoring Program conducts water quality monitoring in designated critical habitat for endangered Atlantic salmon, which often overlaps with economically disadvantaged portions of the state. In 2021-2022 work was conducted in interior Washington County as part of a seven-year study and in Northern Penobscot County as part of a three-year study in partnership with the Penobscot Indian Nation.
- The Maine Healthy Beaches (MHB) program has initiated efforts to integrate Environmental Justice considerations into routine and enhanced monitoring priorities for beaches identified through EPA's Justice 40 Initiative as those potentially serving disadvantaged communities in Maine. For MHB participating beaches identified as those potentially serving disadvantaged communities, MHB encourages communities to increase the monitoring frequency to at least 1x per week to provide more timely water quality information. MHB staff will continue to evaluate opportunities to provide monitoring support for beaches identified as serving disadvantaged communities but not currently being monitored through the MHB program.
- Maine's Non-Point Source (NPS) Program is committed to equitable funding throughout the state. Between FFY2020 and FFY2023, CWA 319 and 604b funds were awarded to 39 projects, 20 of which benefited disadvantaged communities. Total project funds awarded during this time period was $3,122,652, with $1,630,665 (52%) benefitting DACs. Additionally, the program hired a contractor to develop mapping tools to better identify disadvantaged communities in proximity to priority waters, has included disadvantaged communities in the 319 Grant scoring review, and is making efforts to collect data in waterbodies in disadvantaged communities.
- The Biological Monitoring Program addresses environmental justice by distributing its sampling effort geographically around the state, through dividing the state into 5 basins and rotating sampling in those basins over a 5-year period. Communities in the regions encompassed by these basins (Southern Maine, Androscoggin, Kennebec, Penobscot & Downeast, St. John & Aroostook) span the range of socioeconomic status in Maine. Additionally, the Biomonitoring Program has been awarded funds through the 104b3 Wetland Program Development Grant program to expand sampling efforts to underrepresented areas of the state, including open water wetlands in disadvantaged communities as identified by the EPA CEJST (Climate and Economic Justice Screening Tool).
- The Aquatic Toxicology Unit collected fish from lakes and rivers in EJ regions of Maine to measure the concentrations of PFAS and determine if the fish are safe to eat.
- Starting in 2023, the Marine Unit has instituted a rotating regional approach as used by Biomonitoring, which entails water quality monitoring and marine vegetation mapping along the entirety of the coast. Each year, 1/5 of the coastline is surveyed, with equal distribution of resources across estuaries and marine waters that allows data collection in areas previously not monitored and assessed by the Marine Program.
- Maine's Lake Assessment Program evaluates and monitors lakes across the entire state, in collaboration with Lake Stewards of Maine, and including economically disadvantaged rural areas.

- The Aquatic Invasive Species Program conducted strategic planning work, including consideration of EJ. The program identified the need to expand program reach in areas of the state with little infrastructure to initiate and maintain aquatic invasive species prevention, detection and management programs.

Environmental Justice is an emerging topic and the Department is dedicated to exploring ways in which EJ principles can be applied in the realm of clean water programs.

HIGHLIGHTS FOR POINT SOURCE POLLUTION CONTROL PROGRAMS

Contact: Gregg Wood, DEP, BWQ, Division of Water Quality Management (DWQM)

Tel: (207) 287-7693 email: gregg.wood@maine.gov

Related Website: www.maine.gov/dep/water/wd/index.html

Maine uses multiple approaches to ensure that point source discharges of wastewater receive adequate treatment prior to their release to waters of the State including: licensing, compliance inspections coupled with technical assistance in operations and maintenance, and enforcement where necessary. A number of financial assistance programs support new facility construction, elimination of discharges, and upgrades or additions to existing facilities. Highlights for 2021-2022 for these programs are summarized below or referenced by links to other documents.

Technical Assistance / Pollution Prevention Program

Contact: Gregg Wood, DEP, BWQ, DWQM

Tel: (207) 287-7693 email: gregg.wood@maine.gov

Related Website: www.maine.gov/dep/water/wwtreatment/

Department staff participate in both industrial- and municipal-based technical assistance and pollution prevention projects.

HIGHLIGHTS FOR 2021-2022

Technical assistance was provided to the operators of over 115 POTWs (Publicly Owned Treatment Works) and industrial direct dischargers by the staff of the Compliance & Technical Assistance Section of the DWQM. Technical assistance focused on improving compliance with Maine Pollutant Discharge Elimination System (MEPDES) permit requirements and maximizing the effectiveness of treatment. In addition to direct assistance at facilities, staff from the Compliance & Technical Assistance Section provided training over 45 formal classroom events for various organizations at locations across the state. Staff from the section continued to oversee the electronic Discharge Monitoring Report (DMR) system, which helps assure that effluent compliance data are reported in an accurate and timely manner to the Department and EPA.

Construction of Wastewater Treatment Facilities

Contact: Brandy Piers, DEP, BWQ, DWQM

Tel: (207) 287-6093 email: Brandy.M.Piers@maine.gov

Related Website: www.maine.gov/dep/water/grants/srfparag.html

CLEAN WATER STATE REVOLVING FUND AND MAINE CONSTRUCTION GRANTS PROGRAMS

Funds from the Clean Water State Revolving Fund (CWSRF) program are used to provide low-interest loans (2% below market rates) to municipalities and districts to upgrade wastewater treatment infrastructure and to fund private nonpoint source (NPS) low interest loan programs for the repair/replacement of residential septic systems, implementation of agricultural best management practices, and the purchase of environmentally friendly silviculture equipment. The program depends on a yearly Federal Capitalization Grant which must be matched with 20% state funds. The Maine Construction Grants Program helps fund wastewater projects in communities that otherwise could not afford to do their project.

Between January 1, 2021 and December 31, 2022, the Construction Grants Program and the CWSRF provided loans for 40 wastewater projects, some with assistance from the U. S. Department of Agriculture (USDA) Rural Development program and the U.S. Department of Housing and Urban Development Community Development Block Grant program. These projects included: wastewater treatment facilities upgrades, sewer system improvements, and abatement of combined sewer overflows. In addition, the CWSRF program provided assistance for 18 NPS projects for the removal and/or replacement of underground oil storage tanks, the purchase of silviculture equipment, and green infrastructure. A total of $126,731,937M in State grants, and NPS projects.

Maine Combined Sewer Overflow Program

Contact: Michael Riley, DEP, BWQ, DWQM

Tel: (207) 287-7766 email: Michael.S.Riley@maine.gov

Related Website: www.maine.gov/dep/water/cso/index.html

Thirty one Maine communities are served by combined sewer systems, which convey a combination of sanitary and storm water flows to wastewater treatment facilities. During dry weather, all of the sewage in a combined system is conveyed to the treatment plant. However, during rainstorms or snow-melt periods, storm water mixes with the sanitary sewage, causing flows that may exceed the capacity of the sewer system. This results in combined sewer overflows (CSOs), which vary extensively in pollutant types, concentrations and loads, as well as in volume of overflow and severity of impact to the receiving water bodies. Maine has established an aggressive program, coordinated with EPA's CSO program, to assist communities in evaluating the design, condition, activity, and effects of combined sewer systems and overflows with the goal of eliminating CSO discharge over time.

HIGHLIGHTS FOR – 2021-2022

There were no changes in the number of Maine CSO communities/permittees since the last integrated report. A number of CSO communities are entering the 5 year post

construction monitoring phase to determine whether they can safely exit the CSO program. Table 3-2 below lists changes in selected CSO parameters.

Table 3-2 NCSO Program Summary Statistics

Parameter	End of Report Year 2021	End of Report Year 2022	Increase/ (Decrease)
Number of CSO Communities*	31	31	(0) or (0%)
Number of CSO Outfalls**	123	115	(8) or (6.5%)
Number of CSO Discharge Points (Regulators)	149	125	(24) or (16.1%)
Total of Annual Discharge Events for Communities	278	295	(+17) or (+6.1%)
Total Annual Volume of CSOs (Billion Gallons)	0.35	0.31	(0.04) or (13%)
Weighted Yearly Precipitation (Inches)	44.19	45.24	(+1.05) or (+2.4%)
Million Gallons Discharged per Inch of Yearly Precipitation (MG/Inch)	7.8	6.7	(1.1) or (14.1%)

* 34 CSO Permits in 31 Communities
** Some outfalls have multiple regulators. CSO regulators are where the wastewater exits the sewer system and enters the CSO outfall line.

Small Community Facilities Program

Contact: Brandy Piers, DEP, BWQ, DWQM

Tel: (207) 287-6093 email: Brandy.M.Piers@maine.gov

Related Website: www.maine.gov/dep/water/grants/scgpara2.html

Since its inception in 1982, the Small Community Grant Program (SCGP) has disbursed approximately $32M dollars and is estimated to have eliminated discharges totaling over 2.5 million gallons of untreated wastewater per day.

While state bond issues usually fund this grant program, in the past it has also received some funding directly from state appropriations. These funds have been used to assist municipalities with the construction of individual or cluster-type wastewater treatment systems designed to eliminate heavily polluted discharges from either malfunctioning systems or non-existing systems ("straight pipes"). This amount of funding has allowed the construction of new wastewater treatment facilities in over 300 communities throughout the state. The total estimated value of the facilities built with SCGP funds is approximately 31.7 million dollars.

HIGHLIGHTS FOR 2021-2022

Between 2021 and 2022, the SCGP disbursed grants totaling approximately $1.6M dollars.

Licensing of Wastewater Discharges

Contact: Laura Crossley, DEP, BWQ, DWQM

Tel: (207) 615-6711, email: laura.crossley@maine.gov

Related Website: www.maine.gov/dep/water/wd/index.html

The DWQM is responsible for the licensing and re-licensing of all surface wastewater discharges, whether industrial, commercial, municipal, or residential. In Maine, the

vast majority of wastewater discharge sources have previously been licensed. Therefore, the licensing program is focused largely upon renewal of existing licenses, rather than development of new licenses (Table 3-3).

Table 3-3 Permitting/licensing by the DWQM

Year	2021	2022	2023
Permit Renewals	18 (7 POTWs[1] + 11 non-POTWs)	38 (12 POTWs + 23 non-POTWs)	45 (23 POTWs + 22 non-POTWs)
>2,000 gpd[2] OBD renewals as MEPDES permits	2	5	6
New permits	3	3	5
Minor Revisions/Modifications	20	7	2
<2,000 gpd OBDs	86	100	95
Total permitting actions	**129**	**153**	**153**

[1] Publicly Owned Treatment Works
[2] Gallons per day

Overboard Discharge Grant Program

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Related Website: www.maine.gov/dep/water/wd/OBD/index.html

As of December 31, 2022 Maine had 738 licensed overboard discharges (OBDs). OBDs are discharges of wastewater from individual homeowners or businesses to surface waters (typically marine waters) where existing lots are unsuitable for subsurface disposal and no municipal system is available. OBDs contribute to closures of shellfish growing and harvesting areas.

In 1989 an OBD Removal Grant Program was established. The priorities of the grant program are to eliminate discharges that either cause the closure of shell fishing areas or that create a public nuisance. Since the beginning of the program, approximately eleven million dollars have been spent to remove 1,990 systems. The total acreage opened to shellfish harvesting since the start of the OBD Grant Program is over 18,000 acres. According to DMR, opening and fully utilizing this much shellfish harvesting area has the potential to generate an annual harvest with a retail value of over 4.4 million dollars.

HIGHLIGHTS FOR 2021 - 2022

A total of 43 OBD systems were *reported* removed between 1/1/21 – 12/31/22.

Compliance Evaluation

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Related Website: www.maine.gov/dep/water/wd/municipal_industrial/index.html

The Department uses a three-part program to evaluate the compliance of wastewater treatment facilities. The compliance evaluation program involves on-site inspections of

wastewater treatment facilities, occasional selective sampling of effluent quality, and monthly evaluation of the licensees' self-monitoring reports. Discharge licenses also require immediate reporting of any major malfunctions, bypasses or exceedances of license limits to DEP inspectors.

HIGHLIGHTS FOR 2021-2022

During this two-year period, inspectors from the Compliance & Technical Assistance Section conducted 620 inspections at facilities located throughout the state. These inspections were conducted to verify that the treatment plants were operating in accordance with all requirements of their MEPDES permits. Inspectors evaluate such aspects as laboratory analyses, data quality control, process control, operations and maintenance, collection systems operations and maintenance, and overall plant maintenance. These inspections provide oversight and evaluation of the licensees' compliance with the license, and routinely uncover areas where training, assistance, or equipment upgrades could resolve an issue. DEP compliance inspectors provide assistance as appropriate and can also direct a licensee to other forms of technical assistance available from other DEP staff, other wastewater-related agencies, or private consulting firms. All of these efforts in concert, combined with the efforts of the treatment plant management and operations staff, serve to preserve and protect the quality of Maine's waterways.

Enforcement of Water Quality Laws

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Related Website: www.maine.gov/dep/enforcement/

The general philosophy of the DEP's BWQ is to gain compliance and resolve problems at the least formal level that is appropriate, and to maximize the spirit of cooperation between DEP and the regulated community. By encouraging voluntary compliance with Maine's water pollution control laws, the overall effectiveness of the enforcement program is maximized and unnecessary litigation is avoided. Formal enforcement actions are fact-dependent, but generally become necessary only when violations of environmental laws are severe enough to warrant action regardless of the remediation effort, or when the violator is not responsive in preventing violations or refuses to cooperate with DEP.

HIGHLIGHTS FOR 2020 - 2023

A total of 12 formal water discharge enforcement cases were settled in 2020 through 2023. The penalties collected act as a deterrent to future violations of water quality laws and neutralize any economic benefit that may have been gained by the violator. The enforcement actions also specified a variety of corrective actions that will improve water quality, such as upgrades to wastewater treatment facilities, elimination of discharges, and Supplemental Environmental Projects.

THE MAINE NPS WATER POLLUTION CONTROL PROGRAM

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Related Website: www.maine.gov/dep/land/watershed/nps/index.html

Maine's Nonpoint Source (NPS) Water Pollution Management Program (38 M.R.S. § 410-I) helps restore and protect water resources from NPS pollution. The basic objective of the NPS program is to promote the use of state agency-defined "best management practice guidelines" (BMPs) to prevent water pollution. DEP uses a combination of statewide programs and targeted watershed projects to make progress towards restoring and protecting water quality.

DEP administers the program in coordination with EPA and other federal, state, and local governmental agencies, and non-governmental organizations. Five Maine agencies share responsibility for implementing NPS programs: DEP, DACF (for DACF Maine Forest Service 2020-2021 'Maine Forestry BMP Use and Effectiveness Reports' please see www.maine.gov/dacf/mfs/policy_management/water_resources/bmps.html), DOT, DHHS Division of Environmental Health, and DMR. State agencies conduct programs that promote voluntary use of BMPs and implement State laws or rules which require that projects meet performance standards to protect water quality. Refer to the Maine NPS Management Program Plan (2020-2024) Chapter VII. Statewide NPS Control Strategies by NPS Category for information about each agency's NPS-related regulations, programs and management strategies.

HIGHLIGHTS FOR 2021-2022

Two waterbodies were highlighted as EPA's Nonpoint Source Program Success Stories (www.epa.gov/nps/success-stories-about-restoring-water-bodies-impaired-nonpoint-source-pollution).

Annabessacook Lake, Winthrop - For decades, Annabessacook Lake was viewed as one of the most polluted lakes in Maine. A combination of point and nonpoint source (NPS) pollution turned the lake green as early as 1939. All municipal and industrial point sources were removed by 1976, and water quality gradually improved. However, NPS pollution from agriculture, roads and shoreline development still contributed to high in-lake phosphorus concentrations and annual summer algae blooms. Since 1977, funding from local, state and federal partners, including Clean Water Act (CWA) section 319 grants, supported widespread installation of phosphorus-reducing best management practices (BMPs) in the watershed (e.g., manure storage facilities, alum treatment, street sweeping, gravel road and shoreline stabilization). Water quality monitoring shows that Annabessacook Lake's water clarity has now significantly improved, and nuisance algal blooms are much less frequent (only two times in the last eight years).

Sebasticook Lake, Newport - Beginning in the 1950s, point source and nonpoint source (NPS) pollution in the Sebasticook Lake watershed contributed to excess nutrients, which resulted in algae blooms, oxygen depletion and decreased water clarity. Water quality improved after most of the municipal and industrial point sources were removed in the 1980s; however, the lake still experienced prolonged annual algae blooms driven by phosphorus sources (i.e., internal phosphorus loading from lake sediments, agriculture and developed areas). From 1981 to 2014, state, federal and local partners provided funding, including Clean Water Act (CWA) section 319 grants, to install best management practices (BMPs) throughout the watershed. Late summer

drawdowns of the lake also flushed phosphorus downstream. Water quality monitoring shows significant improvements in the lake's water clarity, phosphorus levels, extent and duration of algae blooms, and phosphorus loading from lake sediments.

More information on NPS watershed projects and DEP's NPS program can be found in the NPS Management Program Annual Reports at: www.maine.gov/dep/water/grants/319-documents/reports/. For more information on Maine NPS programs, refer to the Maine Nonpoint Source Management Program Plan (2020-2024): www.maine.gov/dep/land/watershed/nps-program-plan.html.

STORMWATER PROGRAMS

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Multisector General Permit

Related Website: www.maine.gov/dep/land/stormwater/index.html

Maine's Multi-Sector General Permit regulates the direct discharge of stormwater associated with industrial activity to waters of the State other than groundwater.

DEP issued its latest multi-sector general permit for industrial stormwater discharges in December 2016, with an effective date of March 7, 2017. Maine's industrial stormwater general permit largely mirrors the previous EPA general permit with respect to requirements to develop and implement a Stormwater Pollution Prevention Plan at the site of regulated activities. As of July 1, 2021, 496 facilities have filed NOIs notifying the Department of their Intent to Comply with the multisector general permit and another 600 have filed No Exposure Certifications (NECs), certifying that they have No Exposure of pollutants to stormwater.

For more information, including a copy of the Multi-Sector Industrial Stormwater General Permit, see the related web site provided above.

Stormwater Standards for Post-Construction Discharges

Related Website: www.maine.gov/dep/water/wd/long_creek/index.html

Long Creek watershed. On October 28, 2009, EPA issued a final residual designation determination for the Long Creek watershed in the municipalities of South Portland, Portland, Westbrook, and Scarborough. The designation requires that stormwater discharges from impervious areas equal to or greater than one acre in the Long Creek watershed be authorized by a permit under the federal CWA because those discharges contribute to a violation of water quality standards in Long Creek. The Department issued a general permit for stormwater discharges in the Long Creek watershed on November 6, 2009. The permit was reissued in 2015, expired in April 2020, and is Administratively continued until it is reissued. To obtain coverage under the general permit, a discharger must participate in the implementation of the Long Creek Watershed Management Plan (approved by DEP and EPA in 2009). Participation entails signing a contract with the Long Creek Watershed Management District. The contract requires an annual payment to the district based on the amount of impervious area that is contributing a discharge of stormwater to Long Creek. The payments are

being utilized to carry out restoration activities described in the watershed management plan. Landowner participation in the general permit exceeds 95%. A technical committee has been organized by the district to monitor progress on the implementation of the plan, including monitoring of water quality in Long Creek.

Stormwater Standards for Municipal Separate Storm Sewer Systems (MS4s)

Related Website: www.maine.gov/dep/water/wd/ms4/index.html

DEP reissued its MS4 general permit on October 15, 2020 with an effective date of July 1, 2022 for 30 municipalities; DEP reissued the State and Federal facilities MS4 GP December 8, 2021 with an effective date of October 1, 2022 and covers 7 state and federal facilities, excluding the Dorothea Dix Psychiatric Center which received a waiver from the MS4 permit on May 31, 2022; DEP reissued the transportation MS4 GP on or about August 18, 2021 with an effective date of July 1, 2022 for the Maine DOT, and the Maine Turnpike Authority within the Urbanized Area as determined by the combined 2000 and 2010 U.S. Census Bureau (Table 3-4). The reissuance of the three MS4 GPs has new requirements for Urban Impaired Stream Watersheds.

Table 3-4 Maine's Regulated MS4s

MS4 Municipalities by Geographic Cluster
Kittery; Eliot; South Berwick; Berwick; York
Biddeford; Saco; Old Orchard Beach; Scarborough; Cape Elizabeth; South Portland; Portland; Westbrook; Gorham; Windham; Falmouth; Cumberland; Yarmouth; Freeport
Auburn; Lewiston; Lisbon Falls; Sabattus
Hampden; Brewer; Bangor; Veazie; Orono; Old Town; Milford
Non-traditional or "Nested" MS4s
Transportation: Maine DOT; Maine Turnpike Authority
State or Federal Entities: Portsmouth Naval Ship Yard (Kittery); Southern Maine Community College (S. Portland); University of Southern Maine (Gorham Campus); Eastern Maine Community College (Bangor); Bangor Air National Guard (Bangor); University College of Bangor (Bangor); University of Maine (Orono)
Facilities waived from the MS4 Permit
Dorothea Dix Psychiatric Center (Bangor)

Land Use and Growth Management

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Related Websites: Site Law: www.maine.gov/dep/land/sitelaw/index.html

NRPA: www.maine.gov/dep/land/nrpa/index.html

Shoreland Zoning Act: www.maine.gov/dep/land/slz/index.html

It has long been recognized that land use practices have direct impacts on water quality. The State of Maine has several programs in place to regulate land use activities

that have potentially adverse environmental effects. The Site Location of Development Law (Site Law) requires developers of large projects to obtain permits from DEP before beginning construction. Under the Natural Resources Protection Act (NRPA), a permit from DEP is required for any activity in, on, over, or adjacent to a protected natural resource, including rivers, streams, brooks, great ponds, coastal wetlands, freshwater wetlands, significant wildlife habitat, sand dunes and fragile mountain areas. Those provisions of NRPA that affect timber harvesting and related activities are administered and enforced by the Maine Forest Service (MFS). MFS Chapter 21 rules, Statewide Standards for Timber Harvesting and Related Activities in Shoreland areas, as well as Ch. 27 Rules, Standards for Timber Harvesting and Timber Harvesting Related Activities Within Unorganized and Deorganized Areas of the State, are a result of this delegation from DEP to MFS. The Mandatory Shoreland Zoning Act requires towns to control building sites, land uses, and placement of structures within their shoreland areas in order to protect water quality, habitat and fishing industries, and to conserve shore cover, public access, natural beauty and open space. Also important to environmental protection is the Growth Management Act, which was enacted in 1988. The foundations of this Act are based on comprehensive planning and greater cooperation between state and local governments.

EDUCATION AND OUTREACH

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Related Website: www.maine.gov/dep

DEP understands that engaging and empowering the public in natural resources stewardship through effective education and outreach efforts will only further our own mission of environmental protection. The Department has a responsibility to create and maintain public understanding and support for departmental objectives, programs, regulatory requirements and best practices. To accomplish this, the Department works to help to foster and encourage greater stewardship through education and outreach initiatives strategically directed at a variety of audiences.

Target Audiences

Youth and Teachers- DEP sponsors and organizes Water Festivals for up to 700 students and their teachers in the southern part of the state each year and in northern Maine every other year. The events provide a day of fun and interactive learning about clean water, wetland ecosystems and the importance of stewarding Maine's most rapidly renewable resource and are connected to more comprehensive classroom learning units. Department staff also educate Maine students on environmental issues through other forums as requested and as available, including Envirothon, Bug Mania and Earth Science Day (the latter two with about 2,000 students each); and judging various state science fairs.

The DEP has created a series of environmental education curricula for Maine students in middle and high school to highlight environmental stewardship and career opportunities in the environmental regulatory field in Maine. These curricula can be accessed at: www.maine.gov/dep/schools/lessons/index.html .

General Public- The DEP divides the public into categories based on the message of the campaign: homeowners for yard care practices, businesses for pollution prevention practices, etc. For example, the MS4 communities are conducting pilot projects to encourage targeted Best Management Practices (e.g. yard care, roof runoff infiltration) in targeted neighborhoods with evaluation as part of their permits.

Contractors, Municipal Officials, and Other Targeted Groups- Through the NPS Training Center within the Department's Office of Communications & Education, DEP reaches out to contractors, landscapers, foresters, and code enforcement officers to provide technical assistance, certification, and new training. Maine law requires that as of January 1, 2013 contractors doing excavation in the Shoreland Zone must be certified in erosion control. There are over 2,600 certified contractors as of December 2020.

DEP staff also train wastewater treatment plant operators, planning boards, realtors, code enforcement personnel and other audiences.

Assessment

Thanks to increased use of press releases, our website, social media, and other existing and emerging communication tools, DEP is reaching more Mainers each year. The effectiveness of the Department's education and outreach efforts continues to improve as better tools are developed to monitor impressions and measure effectiveness.

THE ENVIRONMENTAL IMPACT AND ECONOMIC & SOCIAL COSTS/BENEFITS OF EFFECTIVE WATER QUALITY PROGRAMS

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Assessment of the many costs and benefits associated with water quality changes is a difficult task. While it is usually possible to determine that an improvement in water quality has occurred and to qualitatively describe those benefits, often there is no easy way to directly quantify this information in terms of the monetary value of benefits to human health or the environment.

The economic tools that would be useful in estimating the costs and benefits of improvement in water quality have not yet been fully developed. As future environmental problems grow in complexity and cost, and as public budgets tighten, demonstrating the benefits of water-quality-related programs will be necessary to maintain support for continued investment in the improvement of water resources. Continued development of sophisticated economic tools for measuring the benefits of environmental projects and methods is essential.

The following sections contain brief summaries of selected water quality programs.

Nonpoint Source Management

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Related Website: www.maine.gov/dep/water/grants/319.html

Table 3-5 summarizes costs for NPS pollution programs supported by EPA's annual grant to DEP under § 319(h) of the CWA and non-federal matching funds for federal fiscal years (FFY) 2021-2022.

Table 3-5 § 319(h) Clean Water Act Grant Awards to Maine

Grant Year (FFY)	Federal 319 Award	Non-Federal Match	Grant Projects Funded*	Estimated Pollutant Load Reductions		
				Sediment (tons/yr)	Phosphorus (pounds/yr)	Nitrogen (pounds/yr)
2021	$1,984,939	$2,014,785	10	256	217	162
2022	$1,983,939	$2,166,126	11	481	409	767
Totals	**$3,968,878**	**$4,180,911**	**22**	**737**	**626**	**929**

*Includes grant projects funded with CWA Section 604(b) funds to develop watershed-based plans.

Pollution Prevention Initiatives

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Related Website: www.maine.gov/dep/assistance/index.html

The pollution prevention initiatives developed and promoted by the Office of Innovation and Assistance are based on the practical notion that it is far more protective of the environment and cost effective to eliminate or reduce pollution at its source than to clean up pollution that has already been released into an ecosystem. Office staff work with businesses and DEP technical staff to provide compliance tools for minimizing pollution from sources such as stormwater and wastewater discharges, encourage more sustainable practices for handling waste, and to improve BMPs.

Office staff continue outreach and technical assistance to the regulated community incorporating beneficial reuse, source reduction and sustainability concepts. Staff take a proactive approach to collaborate with sector trade associations, state agencies, municipalities, EPA, and stakeholder organizations to provide technical assistance and training.

Staff methods include developing tools and outreach materials, conducting trainings/meetings, site visits, individual phone calls and emails, and presenting at conferences.

CHAPTER 4 SURFACE WATER MONITORING & ASSESSMENTS

MONITORING PROGRAM

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Related Website: www.maine.gov/dep/water/monitoring/comprehensive-monitoring&assessment-strategy12-11-18.pdf

In 2018, Department staff from the Division of Environmental Assessment (DEA) in the Bureau of Water Quality (BWQ) compiled a 'Comprehensive Surface Water Ambient Water Quality Monitoring and Assessment Strategy, 2015-2025' ('Strategy', linked above). This document provides a framework describing existing monitoring and assessment efforts by staff and other monitoring partners, as well as elements of a monitoring program needed to meet objectives set forth by the Department. The Strategy describes specific monitoring goals and objectives, and the types of monitoring designs and methods used to achieve these goals. For further details, please consult the full document.

CONSOLIDATED ASSESSMENT AND LISTING METHODOLOGY (CALM)

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Listing Methodology for the 2024 305(b)/303(d) Integrated Report List

Determination of water quality attainment is based on a waterbody meeting applicable standards including the criteria established for its assigned classification (38 M.R.S. §§ 465, 465-A, 465-B). Waters are listed in Appendices II-VI by AU ID in one of five categories of attainment (see category descriptions below). For the 2024 report, water quality attainment decisions were primarily based on monitoring data collected in calendar years 2021 and 2022 for rivers/streams and wetlands; 2013 through 2022 for lakes/ponds, 2021 and 2022 for estuarine/marine waters, and 2018 through 2022 for coastal designated beaches; more recent data was consulted where appropriate; see Chapter 1 for background.

All freshwaters in Maine are subject to a statewide fish consumption advisory due to "impairment caused by atmospheric deposition of mercury". On December 20, 2007, EPA approved a Regional Mercury TMDL (http://neiwpcc.org/wp-content/uploads/2020/08/FINAL-Northeast-Regional-Mercury-TMDL.pdf) that moved all Maine freshwaters into Category 4-A ("TMDL is completed"). Other category listings are established independently from the statewide mercury advisory listing, thus all freshwaters are listed in Category 4-A for mercury and in at least one other category. All marine waters are listed by narrative in Category 5-D "Legacy Pollutants" as well as in one other category[1]. Each listing in Appendices II-VI provides the AU ID (rivers and streams, wetlands, estuarine and marine waters, and coastal designated beaches) or

[1] All estuarine and marine waters in Maine have an advisory for the consumption of shellfish (lobster tomalley) due to the presence of PCBs and dioxins presumed to be from atmospheric deposition or historical sources. The advisory is based on probability data that shellfish (lobster tomalley) inhabiting estuarine or marine waters may exceed the advisory action level for these substances. The Integrated Report does not consider this statewide advisory in establishing other category listing.

HUC plus MIDAS number (Lakes), Name, Location (rivers and streams, wetlands, estuarine and marine waters only), Size, Class (excluding Lakes, which are all Class GPA), and depending on assessment determination, information on impairment, notes on previous listings, or other information. Note that the USGS has replaced the HUC system with the Watershed Boundary Dataset (WBD) system. Because of this conversion, a mismatch now exists between some HUCs used in the IR and current WBDs (former HUCs). DEP did not update the HUC part of any AU ID to conform to the new WBD system and is retaining the term 'HUC' to indicate continued usage of the older system.

LISTING CATEGORIES (1-5)

Category 1: Attaining all designated uses and water quality standards, and no use is threatened.

Highest level of attainment - waters in the AU attain all applicable standards. Assessment is based on combined evaluation of the following information.

1. Current data (collected within five years, ten years for lakes) indicates attainment, with no trend toward expected non-attainment within the listing period.

2. Old data (greater than five years, ten years for lakes) indicates attainment and no change in any associated conditions.

3. Water quality models predict attainment under current loading, with no projected change in loading that would predict non-attainment.

4. Qualitative data or information from professional sources indicating attainment of standards and showing no identifiable sources (e.g. detectable points of entry of either licensed or unlicensed wastes) of pollution, low impact land use (e.g. intact riparian buffers, >90% forested watershed, little impervious surface), watershed within state or federal reserve land, park, wilderness area or similar conservation protection, essentially unaltered habitat, and absence of other potential stressors.

5. Determination that the direct drainage area has a human population of <0.1 (0 for lakes) per square mile according to U.S. Census data obtained in 2024 and watershed conditions as described in item 4, above. For lakes, determinations are based on census data at the town level and proportionally considers all towns in the direct drainage of larger lakes. Populations for the remaining lakes (generally less than ten acres) are determined for the town listed as the point-of-record for the water according to the DIF&W Lake Index database.

Category 2: Attains some of the designated uses; no use is threatened; and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

Assessment is based on combined evaluation of the following information.

1. Current data (collected within five years, ten years for lakes) for some standards indicating attainment, with no trend toward expected non-attainment within the listing period, or an inadequate density of data to evaluate a trend.

2. Old data (greater than five years, ten years for lakes) for some standards indicating attainment, and no change in associated conditions.

3. Water quality models that predict attainment for some standards under current loading, with no projected change in loading that would predict non-attainment.

4. Probabilistic-based monitoring for lakes indicates a high expectation of use attainment for certain classes of waters based on random monitoring of that class of waters.

5. Insufficient data for some standards, but qualitative data/information from professional sources indicate a low likelihood of impairment from any potential sources (e.g., high dilution, intermittent/seasonal effects, low intensity land use).

Category 3: Insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

Assessment is based on combined evaluation of the following information.

1. Insufficient or conflicting data that does not confirm either attainment or non-attainment of designated uses.

2. Qualitative data or information from professional sources showing the potential presence of stressors that may cause impairment of one or more uses; however, no quantitative water quality information confirms the presence of impairment-causing stressors.

Category 4: Impaired or threatened for one or more designated uses, but does not require development of a TMDL.

A waterbody is listed in Category 4 when impairment is due to pollution caused by either a pollutant or a non-pollutant. In the presence of a pollutant, a waterbody is placed in Category 4 if a TMDL has already been completed (Category 4-A) or other enforceable controls are in place (Category 4-B). In the presence of a non-pollutant, a waterbody is placed in Category 4-C (either 4-C or 4-C-FPB) by default per EPA Guidance. An impaired waterbody listed in Category 4 will also be listed in Category 5 if both a pollutant and a non-pollutant are involved that would independently cause an impaired or threatened condition. Waters are listed in one of the following Category 4 sub-categories when:

1. Current or old data for a standard indicates either impaired use or a trend toward expected non-attainment within the listing period, but where enforceable management changes are expected to correct the condition;

2. Water quality models that predicted impaired use for some standard under current loading also predict attainment when required controls are in place; or,

3. Quantitative or qualitative data/information from professional sources indicates that an impaired use is not caused by a pollutant(s) (e.g. habitat modification).

4-A: TMDL is completed. A TMDL is complete but insufficient new data exists to determine that attainment has been achieved.

Note: As of the 2008 cycle, Category 4-A includes all freshwaters in Maine that were listed in previous cycles in a narrative Category 5-C “Impairment caused by atmospheric deposition of mercury” based on the Statewide fish consumption advisory due to mercury. On December 20, 2007, EPA approved a Regional Mercury TMDL for the Northeast.

4-B: Other pollution control requirements are reasonably expected to result in attainment of standards in the near future. Waterbodies where enforceable controls have a reasonable expectation of attaining standards, but where no new data are available to determine whether attainment has been achieved. (Enforceable controls may include new wastewater discharge licenses issued

without preparation of a TMDL, contracts for nonpoint source implementation projects, regulatory orders or contracts for hazardous waste remediation projects, and other regulatory orders).

4-C: Impairment not caused by a pollutant. Waters impaired by habitat modification (e.g. a dam, physical covering of habitat) that is a result of human activity. This category excludes impairments due to fish passage barriers, which are in Category 4-C-FPB.

4-C-FPB: Impairment not caused by a pollutant - Fish Passage Barrier. Waters impaired by man-made dams with no or inadequate fish passage mechanisms for one or more species included in the CALM.

Note 1: Natural conditions that do not attain water quality standards and criteria are allowed by 38 M.R.S. § 464(4)(C). Waters that show impairment due to natural phenomena are listed in Categories 1 through 3.

Category 5: Waters impaired or threatened for one or more designated uses by a pollutant(s) and a TMDL is required.

This category alone constitutes the 303(d) list of impaired waters required under the federal CWA. It contains waters impaired due to pollution caused by a pollutant. Impairments must be addressed as described below. Waters are listed in one of the Category 5 sub-categories when:

1. Current data (collected within five years, or 10 years for lakes) for a standard indicates either impaired use or a trend toward expected impairment within the listing period, and quantitative or qualitative data/information from professional sources indicates that the cause of impaired use is from a pollutant(s);

2. Water quality models predict impaired use for a standard under current loading, and quantitative or qualitative data/information from professional sources indicates that the cause of impaired use is from a pollutant(s); or,

3. Waters that were previously listed on the State's 303(d) list of impaired waters, based on current or old data that indicated the involvement of a pollutant(s), and where there has been no change in management or conditions that would indicate attainment of use.

5-A: Impairment caused by pollutants (other than those listed in 5-B through 5-D). A Total Maximum Daily Load is required and will be conducted by the State of Maine. TMDL schedules or priorities are assigned based on the specifics of a particular water (considering size, public use, proximity to population centers, EJ considerations, and level of public interest for water quality improvement), the nature of the impairment and the source(s) of the problem, available information to complete the TMDL, and availability of staff and contractual resources to acquire information and complete the TMDL study. Projected schedules or priorities for TMDL completion are included in Chapter 8 (Tables 8-14 to 8-18) and in the Appendices.

5-B: Impairment caused solely by bacteria contamination. A TMDL is required. Certain waters impaired only by bacteria contamination may be high priority resources, such as shellfish areas or coastal designated beaches, but a low priority for TMDL development if other actions are already in progress that will correct the problem in advance of TMDL development (e.g. better compliance). A projected schedule of TMDL completion is included where applicable. Waterbodies impaired only by CSOs, where current CSO Master Plans (Long-Term Control Plan) are in

place, will be monitored to demonstrate that water quality standards are attained and that provisions are in place for both funding and compliance timetables.

5-C: Impairment caused by atmospheric deposition of mercury. A regional TMDL is required. Due to EPA approval of a regional TMDL for the control of mercury, all of Maine's Category 5-C waters were administratively moved to Category 4-A in the 2008 cycle.

5-D: Impairment caused by a "legacy" pollutant. This category includes:

1. Waters impaired only by PCBs, dioxins, DDT, or other substances already banned from production or use, including waters impaired by contaminated sediments where there is no additional extrinsic load occurring. This is a low priority for TMDL development since there is no controllable load.

2. Coastal waters that have a consumption advisory for the tomalley (hepatopancreas organ) of lobsters due to the presence of persistent bioaccumulating toxins found in that organ. This is a low priority for TMDL development since there is no identifiable and controllable load.

5-R: Impairment caused by pollutants. A new Category 5-Alt (short for '5-Alternative') was created in the 2018/2020/2022 cycle for waters that are impaired or threatened for one or more designated uses by a pollutant(s) and an Alternative Restoration Plan had been completed. Category 5-Alt had been created as part of EPA's 2013 program framework to identify and prioritize water bodies for restoration and protection, entitled A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program (the Vision). For the 2024 IR reporting cycle, EPA renamed the "Alternative Restoration Plan/Approach" to "Advance Restoration Plan" (ARP, www.epa.gov/tmdl/advance-restoration-plans) with a corresponding change in the Category designation from 5-Alt to 5-R. Maine DEP has made the same changes in the 2024 Report. Waters in Category 5-R remain on the 303(d) list until water quality standards are attained or a TMDL is completed.

DELISTING FROM AN IMPAIRED TO AN UNIMPAIRED CATEGORY

Because there are various listing options available in the integrated list, some waterbodies may be removed from the previous "impaired waters" list, i.e. 303(d) list (Category 5), under certain circumstances. The State must provide new information, to EPA's satisfaction, as a basis for not listing specific waters that had been previously included on a 303(d) list. Removing waters from the "impaired waters"/303(d) list does not necessarily imply that a waterbody is no longer impaired. Waters that are delisted to any Category 4 are impaired until water quality standards attainment can be demonstrated. Acceptable reasons for not listing previously listed waters as provided in 40 C.F.R. 130.7(b) may include situations where:

- The assessment and interpretation of more recent, more accurate or paleolimnological data demonstrates that the applicable water quality standard(s) is being met (list in Category 1, 2).
- The results of more refined water quality modeling, or updated data analysis methods, demonstrate that the applicable water quality standard(s) is being met (list in Category 1 or 2).
- It can be demonstrated that errors or insufficiencies in the original data and information led to the water being incorrectly listed (list in Category 1, 2 or 3).

- It can be documented that there are changes in the criteria that originally caused the water to be impaired and therefore originally led to the listing; for example, new criteria were adopted (list in Category 1 or 2).
- The State has demonstrated pursuant to 40 C.F.R. 130.7(b)(1)(ii) that there are effluent limitations required by State or local authority which are more stringent than technology-based effluent limitations, required by the CWA, and that these more stringent effluent limitations will result in the attainment of water quality standards for the pollutant causing the impairment within a reasonable time (list in Category 4-B).
- The State has demonstrated pursuant to 40 C.F.R. 130.7(b)(1)(iii) that there are other pollution control requirements required by State, local, or federal authority that will result in attainment of water quality standards for a specific pollutant(s) within a reasonable time (list in Category 4-B).
- The State included on a previous § 303(d) list some Water Quality Limited Segments beyond those that are required by EPA regulations, e.g. waters where there is no pollutant associated with the impairment (list in Category 4-C).
- A TMDL has been approved or established by EPA since the last 303(d) list (list in Category 4-A).

Waterbody segments that were not on a previous 303(d) list but instead were listed in Category 4-C (or 4-C-FPB starting in the 2024 cycle) due to a non-pollutant impairment (e.g. Flow Regime Modification or Fish Passage Barrier) can be delisted once the non-pollutant has been successfully remedied (e.g. flow restored, barrier removed, or adequate fish passage installed). Delistings from Category 4-C or 4-C-FPB are evaluated by Department staff based on available information.

Chapter 8, Tables 8-6 to 8-9 show waters that have been delisted from Maine's 2024 303(d) list. For waters that were delisted for reasons other than TMDL approval, delisting information is presented in Chapter 8 in the section New Delistings.

Assessment Criteria

Tables 4-1 through 4-3 provide the designated use categories and the criteria (with references) used to assess a water's attainment of the use. Uses and criteria in effect as of 1/1/2023 were applied to assessments based primarily on monitoring data collected in calendar years 2021 and 2022 (or 2013 through 2022 for lakes). Due to the 1-3 year timeframe criteria updates typically require in Maine, and the current status of update efforts, no changes in water quality standards are anticipated by the submittal timeframe of this report (estimated August 2024).

Criteria listed in Tables 4-1 through 4-3 consist predominantly of those that are included in Maine statutes. However, for certain uses, federally promulgated criteria exist as noted in the tables. The federal criteria are the result of the 2015 disapproval of a number of Maine water quality standards (WQS) and subsequent promulgation (in 2016, effective date of 1/18/2017) of WQS for Maine by the U.S. Environmental Protection Agency (EPA). In December 2020, EPA withdrew certain federally promulgated human health criteria (HHC) for toxic pollutants after Maine had submitted revised HHC that protect designated uses in all the waters covered by the federal human health criteria. More information is available on this web page: www.epa.gov/wqs-tech/water-quality-standards-regulations-maine. Federal criteria for Maine are included in 40 C.F.R. § 131.43. Some of these criteria are applicable

statewide, but most are only applicable to waters in Indian lands (i.e. waters in the reservations and trust lands of the four Indian tribes in Maine).

A determination of non-attainment is only made when there is documented, quality assured evidence (e.g., monitoring data) indicating that one or more criteria are not attained (see Assessment Methodology, below, for details). Such data are also weighed against evidence that there are plausible natural factors that may cause or contribute to the non-attainment of criteria [38 M.R.S. § 464(4)(C)]. Per 40 C.F.R. § 131.43(e)(1), the natural conditions provision in § 464(4)(C) does not apply to water quality criteria intended to protect human health, i.e. bacteria; this restriction is only applicable to waters in Indian lands. Details regarding attainment determinations are provided below in section 'Assessment Methodology'.

A special case is made for wetlands assessments with respect to documented evidence of impairment. For Category 3-5 wetlands that are located in a river/stream or lake/pond (e.g. a wetland that occurs in a slow-flowing section of a stream), any impairments, for example to the fish consumption use, that are listed for the related river/stream or lake/pond AU are also assigned to the wetland AU even if no wetland-specific data for such an impairment exist. For Category 3-5 wetlands that are not located in a river/stream or lake/pond, DEP biologists will decide on a case-by-case basis whether impairments listed for adjacent waters should apply to associated wetlands.

Table 4-1 Maine Designated Uses and Attainment Criteria for Rivers and Streams[1]

Designated Use	Criteria for Attainment
Drinking water supply after disinfection / treatment	• Ambient Water Quality Criteria for toxics (DEP Rule Chapters 530 and 584) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)] • Maine CDC's Maximum Exposure Guidelines (MEGs)
Aquatic life use support[2]	• Biomonitoring - lotic benthic macroinvertebrates: numeric biocriteria (DEP Rule Chapter 579) • Biomonitoring - lotic algae: narrative aquatic life use criteria (38 M.R.S. § 465) and expert judgment evaluation of structure and function of the resident biological community • Biomonitoring (wetland habitats) - wetland macroinvertebrates: narrative aquatic life use criteria (38 M.R.S. § 465) and expert judgment evaluation of structure and function of the resident biological community • Habitat characteristics [38 M.R.S. § 465(1-4)] • Dissolved oxygen [38 M.R.S. § § 464(13), 465(1-4)] • Ambient Water Quality Criteria for toxics (DEP Rule Chapters 530 and 584) • Support of indigenous species • Wetted habitat (DEP Rule Chapter 581) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)] • Hydropower Class A or B impoundments aquatic life and habitat characteristics [38 M.R.S. § 464(10)]
Fishing/Fish Consumption	• Support of indigenous fish species • Absence of a waterbody-specific fish consumption advisory (instituted by Maine CDC) that goes beyond the statewide fish consumption advisory for mercury. • Sustenance fishing provisions (38 M.R.S. §§ 466.10-A, 466-A, 467, 468, and 420)

Designated Use	Criteria for Attainment
	• General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Recreation in and on the water[2] (Primary and Secondary Contact Recreation)	• *E. coli* bacteria [38 M.R.S. § 465 and 40 C.F.R. § 131.43(a); geometric mean, Statistical Threshold Value] • Water color (38 M.R.S. § 414-C) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Navigation, hydropower, agriculture, industrial supply	• General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]

[1] Including fringing wetlands.
[2] DEP is developing draft nutrient criteria for fresh surface waters (Draft Chapter 583) that relate to existing designated uses for aquatic life and recreation. For more information, see www.maine.gov/dep/water/nutrient-criteria/.

Table 4-2 Maine Designated Uses and Attainment Criteria for Lakes and Ponds[1]

Designated Use	Criteria for Attainment
Drinking water supply after disinfection	• Ambient Water Quality Criteria for toxics (DEP Rule Chapters 530 and 584) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Aquatic life use support	• Trophic State Trend (38 M.R.S. § 465-A, DEP Chapter 581) • Ambient Water Quality Criteria for toxics (DEP Chapters 530 and 584) • Aquatic life and habitat characteristics [38 M.R.S. § 465-A(1)] • Biomonitoring (wetland habitats) - wetland macroinvertebrates: narrative aquatic life use criteria (38 M.R.S. § 465-A) and expert judgment evaluation of structure and function of the resident biological community • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)] • Hydropower Class GPA impoundments aquatic life and habitat characteristics [38 M.R.S. § 464(9-A)]
Fishing/Fish Consumption	• Support of indigenous fish species • No waterbody-specific fish consumption advisory (instituted by Maine CDC) that goes beyond the statewide fish consumption advisory for mercury. • Sustenance fishing provisions (38 M.R.S. §§ 465-A.D, 466.10-A, 466-A, and 420) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Recreation in and on the water (Primary and Secondary Contact Recreation)	• *E. coli* bacteria (38 M.R.S. § 465-A, geometric mean, Statistical Threshold Value; EPA 2012 Recreational Water Quality Criteria, Beach Action Value) • Nuisance Algal Bloom Definition (38 M.R.S. § 465-A, DEP Rule Chapter 581) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Navigation, hydropower, agriculture, industrial supply	• General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A) and 40 C.F.R. § 131.43(c)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]

[1] Including fringing wetlands.

Table 4-3 Maine Designated Uses and Attainment Criteria for Estuarine and Marine Waters

Designated Use	Criteria for Attainment
Marine life use support, including shellfish propagation [1]	• Ambient Water Quality Criteria for toxics (DEP Chapters 530 and 584) • Dissolved oxygen (38 M.R.S. § 465-B) • Narrative biological standards and habitat characteristics (38 M.R.S. § 465-B) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Shellfish harvesting [1]	• National Shellfish Sanitation Program (as assessed by DMR) [38 M.R.S. § 465-B and 40 C.F.R. § 131.43(a)] • No shellfish consumption advisory (instituted by Maine CDC) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Aquaculture	• General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Fishing/Fish consumption	• Support of indigenous fish species • No fish consumption advisory (instituted by Maine CDC) • Sustenance fishing provisions (38 M.R.S. §§ 466.10-A, 466-A, 469, and 420) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Recreation in and on the water (Primary and Secondary Contact Recreation)	• *Enterococcus* bacteria (38 M.R.S. § 465-B and 40 C.F.R. § 131.43(a), geometric mean, Statistical Threshold Value; Maine Healthy Beaches Program Beach Action Value) • General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]
Navigation, hydropower, industrial supply	• General provisions: color, taste, turbidity, radioactive substances [38 M.R.S. § 464(4)(A)]; pH [38 M.R.S. § 464(4)(A)]; floating/settleable solids [38 M.R.S. § 464(4)(B)]

[1] Applies to estuarine/marine waters with high enough salinity to naturally support shellfish propagation and harvesting

Assessment Methodology

GENERAL PRINCIPLES

Maine DEP uses a wide variety of data to arrive at water quality standards (WQS) attainment decisions. Data are collected by DEP staff or DEP-trained or Certified volunteers and are obtained from outside parties as indicated in Chapter 1. Assessments are based on evaluation of quality-assured physical, biological or chemical datasets that have been collected to assess specific uses or water quality criteria. In addition to specific guidelines described below, for each dataset factors such as data quality and quantity, age, time of data collection and sampling method, are considered. Furthermore, in-stream characteristics (including aquatic macrophyte information, stream morphology, stream gradient), duration, frequency and magnitude of criteria excursion, habitat, site characteristics (e.g. land use, water velocity, canopy cover), predominant weather patterns and site-specific environmental factors are also

considered. The narrative criterion 'Support of Indigenous Species' is assessed using the specific factors listed below in that section (pages 46-50). To arrive at an assessment determination, DEP staff consider all variables to interpret the data and evaluate results against relevant narrative or numeric criteria. A final assessment determination may be guided by professional judgment by expert staff (biologist, environmental specialist, or engineer) which may override assessments based on rote comparisons of datapoints to criterion values.

When data for only one variable, such as dissolved oxygen (DO) or pH, are available for a waterbody, the data are compared to existing criteria and an assessment determination is made with due consideration of the factors listed above.

Some uses are assessed via several different criteria and types of data. For example, for aquatic life use (ALU) attainment determinations, DEP staff conducts monitoring of biological communities (macroinvertebrates, algae, eelgrass, fish) and ALU indicators such as dissolved oxygen (DO), temperature, pH, chlorophyll-a (CHL-a), transparency, and habitat suitability, as well as toxics and nutrients, including 'nutrient/eutrophication biological indicators'. When results from different indicators are available and conflict, Maine DEP may use a 'weight of evidence' approach informed by best professional judgment or create a Category 3 (insufficient data or information) listing. For ALU attainment determinations, recent monitoring results from biological communities obtained using DEP methods may be given greater weight than other data because biological communities integrate the cumulative effects of both natural and anthropogenic stressors and can thus provide more comprehensive information on known and unknown stressors. Conversely, discrete chemical and physical data, especially if few in number, provide short-term information that may or may not be representative of predominant conditions in a waterbody. However, if chemical or physical data clearly indicate an impairment (i.e., a criteria violation) when biological data suggest criteria attainment, a waterbody will be listed as impaired per independent application of criteria.

Generally, data from unique events such as a short-duration license violation, or a drought or flood are not used in assessment determinations. Spills or accidents are evaluated for their effects on waterbodies on a case-by-case basis and may lead to impairment listings. A single excursion of a criterion does not usually lead to an impairment listing unless there is corroborating evidence of reasonable potential for impairment of a use.

Regarding the timing of data collection, monitoring activities for integrated reporting purposes focus on index periods provided in Maine Statute or periods that are either equivalent to 'worst case scenarios' (e.g. critical conditions during summer low flow/high temperature/long photoperiod periods in rivers and stream) or dictated by practical considerations (e.g. optimal water levels in wetlands that may dry down later in the season). Information on these periods is provided below.

The following principles for each criteria type are used in making WQS attainment assessments in concert with the general principles outlined above.

BIOLOGICAL CRITERIA

River, stream, and wetland benthic macroinvertebrate and algal samples are collected in accordance with the Biological Monitoring Program Quality Assurance Project Plan. Methods stipulate assessment periods of July 1 to September 30 for stream macroinvertebrates, June 15 to July 31 for stream algae, and June and July for wetland macroinvertebrates and algae.

Stream macroinvertebrate assessments are based on a statistical model that predicts attainment of tiered aquatic life uses (Classes AA/A, Class B, and Class C). The stream macroinvertebrate model is described in Maine *Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams, 06-096 C.M.R. ch. 579* (effective date May 27, 2003). For streams and rivers, aquatic life criteria are attained when a probability equal to or greater than 0.60 for the assigned statutory class is achieved. Final determination of attainment may in some cases be made by professional judgment, applied in accordance with the procedures described in *06-096 C.M.R. ch.* 579 and elsewhere in Department statutes and rules.

The Biological Monitoring Program completed an algal bioassessment model that is predominantly applicable to wadeable streams and rivers with rocky substrates. In the absence of rocky substrate, algal samples may also be collected from submerged logs or other course woody debris. The Program also completed algal and macroinvertebrate bioassessment models for freshwater emergent and aquatic bed wetlands, including wetlands associated with rivers, streams, lakes and ponds. These stream and wetland algal models and wetland macroinvertebrate model have not yet been added to Chapter 579. For the current Integrated Report, Department biologists used expert judgment informed by the models to assess attainment of narrative aquatic life criteria (38 M.R.S. § 465). *06-096 C.M.R. ch. 579* will be amended to include the stream algal model, wetland algal model, and wetland macroinvertebrate model, following a standard public review process. In general, two non-attainment samples are required for a waterbody to be listed in Category 5. This allows the Program to verify results that may be due to unusual circumstances, such as atypical habitat, particularly wet or dry years, or where samplers may have been disturbed, in addition to normal interannual variability. However, if a sample indicates clear impairment (e.g. extremely low or high abundance of organisms) and other evidence also point towards impairment (e.g. high in-stream nutrient concentrations, clear riparian disturbance, known contaminants, etc.) a Category 5 listing may be based on a single sample.

Ambient water quality criteria, whole effluent toxicity (WET) testing, and other biological sampling are also used to determine if other components of the biological community, such as fish, meet the aquatic life uses.

LAKE TROPHIC STATE

Trophic state is the ability of a body of water to produce algae and other aquatic plants. The trophic state of a body of water is a function of its nutrient content and may be estimated using the Maine Trophic State Index (TSI). An algal bloom is defined as planktonic growth of algae (including cyanobacteria, a.k.a. 'blue-green algae') which causes Secchi disk transparencies to be less than 2 meters (in uncolored lakes). A Class GPA water shall be considered to have a stable or decreasing trophic state unless it exhibits (1) a perceivable and sustained increase in its trophic state as characterized by its Trophic State Index or other appropriate indices, or (2) the onset of algal blooms (*Regulations Relating to Water Quality Evaluations, 06-096 C.M.R. ch. 581,* effective date January 29, 1989[2]).

"Class GPA waters must be described by their trophic state based on measures of the chlorophyll "a" content, Secchi disk transparency, total phosphorus content and other appropriate criteria. Class GPA waters must have a stable or decreasing (improving)

[2] Rule Chapter 581, section 6.A. contains an erroneous formula for 'Lakes with water color <30 SPU'. The second version of the formula presented should be as follows: Secchi TSI = 70 Log (105 / mean Secchi[2]) + 0.7. The formula will be corrected in the next update of Chapter 581

trophic state, subject only to natural fluctuations, and must be free of culturally induced algal blooms that impair their use and enjoyment…." (38 M.R.S. § 465-A.B.). Trophic state assessment assignments based on these measures (chlorophyll-a, Secchi disk transparency, total phosphorus) and color are provided in Table 4-4. Lakes annually supporting severe blooms are a subset of lakes in the eutrophic trophic category.

Table 4-4 Lake Trophic State Parameters and Guidelines

Numerical Guidelines for Evaluation of Trophic State in Maine Lakes			
(Note: Dystrophy is not often evaluated as a trophic category separately from categories below.)			
	Trophic State		
Parameter[1]	**Oligotrophic**	**Mesotrophic[2]**	**Eutrophic**
Secchi Disk Transparency	> 8 meters	4-8 meters	< 4 meters
Chlorophyll-a	< 1.5 ppb	1.5 – 7 ppb	> 7 ppb
Total Phosphorus[3]	< 4.5 ppb	4.5 – 20 ppb	>20 ppb
TSI[3, 4]	0-25	25-60	>60 and/or repeated algal blooms

[1] Based on long-term means.
[2] No chronic nuisance algal blooms.
[3] If color is >30 Standard Platinum Units or not known, chlorophyll-a concentration, dissolved oxygen, and best professional judgment are used to assign trophic category.
[4] TSI = Trophic State Indices are calculated when adequate data exists. Chlorophyll TSIs can be calculated regardless of color; Secchi Disk Transparency TSIs and Total Phosphorus TSIs are calculated only when color is at or below 30 SPU.

For reporting purposes under CWA § 314 (Clean Lakes Program), when lakes lack information for these parameters, a trophic determination made by DIF&W is used (DIF&W determinations are more subjective and generally apply to the lake ecosystem including adjacent wetlands and fishery productivity). Trophic determination is tracked by source in DEP files.

The 'Lakes / Ponds' section of Chapter 4 in the 2006 Maine Integrated Report (pages 78-79) includes a section titled 'Attainment Evaluation Criteria' under the 'Attainment of Classification' header, which describes how attainment of various designated uses is assessed in lakes. Subsequent Integrated reports referenced this 2006 Report text at the start of each 'Lakes / Ponds' section. Likewise, the evaluation methodology has been applied as described in subsequent reporting cycles. For consistency with other assessment descriptions provided in the Assessment Methodology section of this CALM (Chapter 4), the text from the 2006 Report for the uses 'Aquatic Life Support' and 'Recreation In / On' (primary and secondary contact recreation) has been directly incorporated into this 2024 Integrated Report[3] CALM. This text has been replicated in the following two paragraphs, with minor wording changes to accommodate a different presentation style. No substantive changes were made. The last paragraph in this section provides additional detail regarding trend analysis and interpretation of results. Direct incorporation of the 2006 text below also serves to make the Assessment Methodology section more comprehensive.

Trophic state is used to assess the designated use 'Aquatic Life Support'. Lakes exhibiting stable or decreasing (improving) trends in trophic state, natural water-level fluctuations, and consistency in dominant species composition are assessed to be in attainment. Lakes that experience a deteriorating trend, extreme artificial water level fluctuations, severe turbidity, or shift in dominant species composition are assessed to

[3] The 2006 report also provided 'Attainment Evaluation Criteria' for the designated uses 'Fish Consumption' and 'Drinking Water Supply (After Disinfection / Treatment)' in lakes. This text was not replicated in the 2024 report, but instead corresponding information is shown in Table 4-2 (page 41) for those uses. The same approach is used for rivers and streams (Table 4-1) and Estuarine and Marine Waters (Table 4-3). This approach is consistent with the long-standing inclusion of this information in those tables.

be in non-attainment. Such lakes may exhibit a deteriorating trend in trophic state as indicated by statistically valid analysis of transparency data, or, a combination of data examination (dissolved oxygen, chlorophyll-a, and total phosphorus in addition to transparency) and best professional judgment. Lakes may exhibit extreme water level fluctuations due to water level management regimes associated with hydropower generation and may also have high turbidity. Lakes may experience a shift in algal composition to cyanobacteria (a.k.a. 'blue-green algae') species typical of lakes that experience regular, nuisance algal blooms in Maine.

The occurrence of cyanobacteria blooms is used to assess the designated use 'Recreation In / On the Water' (primary and secondary contact recreation). Lakes that do not exhibit regular (defined as blooms in 5 or fewer of the past 10 years) nuisance algal blooms during the summer (high use) period are assessed to be in attainment. Lakes in which swimming is chronically (more than 5 of the past ten years) impaired during part of the recreational season due to culturally induced nuisance algal blooms are assessed to be in non-attainment.

Because Maine statute (Title 38 §465-A-1-B) states that "Class GPA waters must have a stable or decreasing" (improving) "trophic state", trophic trends are currently analyzed using the non-parametric Mann-Kendall trend test (R, A Language and Environment for Statistical Computing; note for assessments prior to 2016, Systat was used). This test generates a Tau statistic that describes the strength of a trend, which ranges from -1 to +1, and a probability value (p-val) that allows the user to assess the significance of the trend. For each lake, trend analyses are conducted on the three trophic parameters: Secchi transparency, total phosphorus, and chlorophyll-a. Trend analyses are conducted on two datasets for each lake: the most recent 10 years of data (providing that 8 or more years of data are available), and the entire dataset. The number of years of data included in each analysis is tracked with the results to aid in interpretation. The sign on the Tau value indicates if the parameter is decreasing (negative sign) or increasing (positive sign). Improving Secchi transparencies will have a positive sign for the Tau statistic because increased depth indicates improved transparencies. Improving total phosphorus and chlorophyll-a Tau values will have a negative sign because decreasing concentrations are indicators of improving water quality. The table to the right summarizes our interpretation of the Tau statistic absolute values. Probability values of 0.05 or less considered significant. Nevertheless, Best Professional Judgement must be used when interpreting these statistical results as it is possible to get a strong significant trend on a small dataset that is not indicative of any meaningful trend (e.g., 8 years of data with one end of that span including drought years). Trend analysis is performed on the entire lakes dataset, including all the individual lakes included in Cat 1 and Cat 2 assessment units. Lakes are broken out of those units or returned to those units as necessary.

Tau Statistic Interpretation	
>= |0.5|	Strong Trend
|0.4 - 0.5|	Moderate Trend
|0.2 - 0.4|	Slight Trend
< |0.2 |	Stable Trend

SUPPORT OF INDIGENOUS SPECIES

Maine statutes (38 M.R.S. § 466.8) define "Indigenous" as species "supported in a reach of water or known to have been supported according to historical records compiled by State and Federal agencies or published scientific literature". Relevant narrative criteria are provided in Tables 4-5a and 4-5b.

Table 4-5a Narrative Criteria for Support of Indigenous Species in Fresh Water Classes GPA, A and B within Hydropower Projects

In essence, the statutes listed below state that in Class GPA, A and B waters that are impounded by a hydropower project the habitat characteristics and aquatic life criteria in the existing impoundment are deemed to be met if they meet Class C criteria, i.e. they are of "sufficient quality to support all species of fish indigenous to those waters and maintain the structure and function of the resident biological community." (38 M.R.S. § 465.4.C).

Class	Habitat and Aquatic Life
GPA - 38 M.R.S. § 464.9-A. Existing hydropower impoundments managed as great ponds	*Please refer to statutes for complete text.* A.-C. For the purposes of water quality certification under the Federal Water Pollution Control Act, Public Law 92-500, Section 401, as amended, and licensing of modifications under section 636, A. …the hydropower project located on the water body referenced in section 467, subsection 7, paragraph C, subparagraph (1), division (b-1), is deemed to have met the habitat characteristics and aquatic life criteria in the existing impoundment if: … (4) The existing impounded waters are able to support all species of fish indigenous to those waters and the structure and function of the resident biological community in the impounded waters is maintained. B. … Ragged Lake, located in the Penobscot River, West Branch drainage, is deemed to have met the habitat characteristics and aquatic life criteria in the existing impoundment if that habitat and aquatic life satisfy the aquatic life criteria contained in section 465, subsection 4, paragraph C. C. … Seboomook Lake, located in the Penobscot River, West Branch drainage, is deemed to have met the habitat characteristics and aquatic life criteria in the existing impoundment if that habitat and aquatic life satisfy the aquatic life criteria contained in section 465, subsection 4, paragraph C. D. Other than those described in paragraphs A, B and C, all hydropower projects with impoundments in existence on June 30, 1992 that remain classified under section 465-A after June 30, 1992 and that do not attain the habitat and aquatic life criteria of that section must, at a minimum, satisfy the aquatic life criteria contained in section 465, subsection 4, paragraph C.
A and B - 38 M.R.S. § 464.10. Existing hydropower impoundments managed under riverine classifications	*Please refer to statutes for complete text.* 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 …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. … 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.

Table 4-5b Narrative Criteria for Support of Indigenous Species by Water Quality Class

Criteria are applicable in all classes outside of hydropower projects, and within hydropower projects as explained in Table 4-5a. Statutory references are: Class AA, A, B and C – 38 M.R.S. § 465; Class GPA - 38 M.R.S. § 465-A; Class SA, SB and SC – 38 M.R.S. § 465-B.

Class	Habitat	Aquatic Life
AA	… habitat for fish and other aquatic life. The habitat must be characterized as free-flowing and natural[1].	The aquatic life … must be as naturally occurs[2], …
A	… habitat for fish and other aquatic life. The habitat must be characterized as natural[1].	The aquatic life … must be as naturally occurs[2], …
B	… habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.	… support all aquatic species indigenous to those waters without detrimental changes in the resident biological community[3].
C	… habitat for fish and other aquatic life.	…support all species of fish indigenous to those waters and to maintain the structure and function of the resident biological community.
GPA	… habitat for fish and other aquatic life. The habitat must be characterized as natural[1].	
SA	… habitat for fish and other estuarine and marine life. The habitat must be characterized as free-flowing and natural[1].	The estuarine and marine life… must be as naturally occurs[2], …
SB	… habitat for fish and other estuarine and marine life. The habitat must be characterized as unimpaired.	…support all estuarine and marine species indigenous to those waters without detrimental changes in the resident biological community[3].
SC	Habitat for fish and other estuarine and marine life.	…support all species of fish indigenous to those waters and to maintain the structure and function of the resident biological community.

[1] 38 M.R.S. Section 466.9. **Natural**. "Natural" means living in, or as if in, a state of nature not measurably affected by human activity.

[2] 38 M.R.S. Section 466.2. **As naturally occurs**. "As naturally occurs" means conditions with essentially the same physical, chemical and biological characteristics as found in situations with similar habitats free of measurable effects of human activity.

[3] 38 M.R.S. Section 466.12. **Without detrimental changes in the resident biological community**. "Without detrimental changes in the resident biological community" means no significant loss of species or excessive dominance by any species or group of species attributable to human activity.

Assessments are based on the known absence of a species previously documented as indigenous to a waterbody in historical records collected by state or federal agencies or through published scientific literature; or based on non-attainment of water quality criteria, the absence of critical habitat necessary to support indigenous species, or the presence of conditions known to prevent the support of indigenous species.

For the 2024 cycle, DEP created a new Category 4-C-FPB (4-C - Impairment not Caused by a Pollutant; FPB - Fish Passage Barrier) specifically for listings resulting from the assessment of the support of previously documented indigenous species in waters with confirmed non-natural barriers (man-made dams) to fish passage. Placement of these impairments in Category 4-C-FPB instead of Category 5/303(d) list follows EPA Guidance regarding non-pollutant impairments.

For these assessments, Department staff developed an initial methodology that in this cycle focused on documented barriers (man-made dams) to fish passage for diadromous[4] species including American eel, river herring (blueback herring and alewife), American shad, and Atlantic salmon. Size (height) of dam and current use (hydropower or other) were not considered as assessment factors. Documentation was collated from existing databases, reports and communication from State agencies (Departments of Marine Resources - DMR and Inland Fisheries and Wildlife - DIF&W), Federal agencies, and other experts, and FERC (Federal Energy Regulatory Commission) documents. This methodology, developed through the exercise of the Department's professional experience, expertise, and judgment, and in consultation with staff from DMR and IF&W, is not a rule. Rather, it is an assessment tool the Department applies on a case-by-case basis, informed by best professional judgment (BPJ) and considering site-specific circumstances. Future refinements of the methodology are likely as State agencies and stakeholders increase their understanding of the many complexities of fish passage impairments and gain more experience with these listings. Final listing determinations are based on BPJ by Department staff considering factors that include, but are not limited to, the degree of impairment; concrete, verifiable plans for impending dam removal or fish passage installation; the need to prevent invasive species from entering an upstream waterbody; potential impacts on other designated uses; and other relevant information available to the Department. For the 2024 Integrated Report, dams that serve the primary purpose of maintaining lake levels were excluded from consideration as further investigations are needed.

Assessment methodology:

- Passage considerations:
  - A dam[5] lacks an upstream and/or downstream passage mechanism[6] thus excluding one or more indigenous, diadromous fish species from reaching known spawning or rearing grounds upstream.
  - A dam is known to have inadequate passage for one indigenous, diadromous fish species thus preventing support of a sustaining population upstream.
- Extent of Category 4-C-FPB impairment:
  - From the lowest dam on an estuary or river that represents a passage barrier as identified using the 'Passage considerations' given above to the next upstream dam on that waterbody, regardless of its fish passage status. If no upstream dam exists, the extent on that waterbody ends at any natural barrier or where the upstream habitat is unsuitable for the non-supported species.
  - Dams on tributaries to an estuary or river above a passage barrier as identified using the 'Passage considerations' given above are not assessed.
- Dams assessed:

[4] Fish that move between freshwater and saltwater.
[5] Size (height) of dam and current use (hydropower or other) are not considered but note lake-level dam exclusion in 2024 Report.
[6] 'The adequacy of trucking of fish to upstream habitat is evaluated on a case-by-case basis.

- Those for which sufficient detail is available on the presence or absence of fish passage mechanisms to evaluate their adequacy for indigenous, diadromous fish species.
- Those for which sufficient information exists in historical records or the scientific literature to confirm the presence of indigenous, diadromous fish in upstream waters.
- As feasible given resource (staff time) limitations at DEP and other agencies or entities with relevant information, and requirements regarding timely Integrated Report submission to EPA.
- Non-inclusion on the Category 4-C-FPB list does **not** indicate that a dam provides adequate passage; the dam may merely have been excluded from assessment due to a lack of information or resource limitations, or it may be located further upstream in the watershed, i.e. beyond the upper limit of the impaired segment as described under 'Extent of Category 4-C-FPB impairment'.

It must be noted that the overall extent of the impacts of non-natural barriers on indigenous, diadromous fish populations have not been comprehensively documented. Maine has more than 1,000[7] man-made dams on waters throughout the state, ranging from small, derelict dams on small streams to large hydropower dams on major rivers. While some dams have well-functioning fish passage mechanisms, the majority likely does not, thereby impeding access of diadromous species to their native spawning and rearing habitats. While no comprehensive assessment of the affected number of estuary, river and stream miles, and lake acreages, is available, it is known that impacts to indigenous fish populations are significant. The new Category 4-C-FPB was in part created to provide a broad acknowledgement of this situation beyond concrete listings (see note in Appendix II: Rivers and Streams, Category 4-C-FPB).

DISSOLVED OXYGEN

Dissolved oxygen (DO) criteria are provided in Table 4-6. Criteria are expressed as instantaneous values unless otherwise specified.

Table 4-6 Dissolved Oxygen Criteria for Fresh, Estuarine and Marine Waters

Statutory references are: Class AA, A, B and C – 38 M.R.S. § 465; Class GPA - 38 M.R.S. § 465-A; Class SA, SB and SC – 38 M.R.S. § 465-B.

Class	Criteria*	Class	Criteria
AA	As naturally occurs	GPA	--
A	7 ppm or 75% saturation From 10/1 to 5/14, 7-day mean concentration not less than 9.5 ppm and 1-day minimum concentration not less than 8.0 ppm in identified fish spawning areas	SA	As naturally occurs
B	7 ppm or 75% saturation From 10/1 to 5/14, 7-day mean concentration not less than 9.5 ppm and 1-day minimum concentration not less than 8.0 ppm in identified fish spawning areas	SB	Not less than 85% of saturation

[7] Maine Preservation, Maine's Historic Dams, Statewide (10/30/2018).

Class	Criteria*	Class	Criteria
C	5 ppm or 60% saturation In identified salmonid spawning areas must maintain existing WQ if sufficient for spawning, egg incubation, survival of early life stages For protection of growth of indigenous fish, 30-day average of 6.5 ppm at 22° or 24°C or ambient water temperature	SC	Not less than 70% of saturation

* 'ppm' = 'mg/L'

DO levels are assessed in rivers and streams, lakes and ponds, and estuarine and marine waters. Instantaneous measurements are collected in all waterbody types, while continuous data are collected in rivers and streams, and estuarine and marine waters only. Details of the different assessment guidelines used are provided below. These guidelines were newly developed in 2020 and 2021 and were based on a literature and partial data review, and best professional judgment by expert staff. A number of refinements were made for the 2024 Integrated Report. Assessment decisions also consider evidence that there are plausible natural factors that may cause or contribute to low DO levels in certain waterbodies. Per 38 M.R.S. § 464(4)(C)[8], those waterbodies shall not be considered to be failing to attain their classification because of those natural conditions, and will not be assessed as impaired.

In lakes and ponds, where no DO criteria exist, DO data is only used as supporting data for WQS attainment decisions; more information is provided below.

Assessment Guidelines for DO Measurements in Rivers and Streams, and Estuarine and Marine Waters

Note: the following guidelines are used for Integrated Report assessments only and thus do not apply in the context of DO attainment decisions for discharge licensing purposes.

In rivers and streams, DO assessments occur predominantly between June 15 and September 15 with a focus on summer periods with critical conditions of low flow, high temperature and long photoperiod. Assessments during the period of 10/1 to 5/14 (applicable only to certain fish spawning areas, see criteria table above) are limited in extent because the cold water temperatures during that time are expected to ensure criteria attainment. In estuarine and marine waters, assessments occur predominantly between May 1 and October 31 with a primary focus on summer periods with critical conditions of minimal tide range, higher water temperature and long photoperiod.

Maine DEP uses two different approaches to analyze DO levels based on quality-assured data: a) continuous data from a continuous monitoring device such as a sonde; and b) repeated, discrete measurements collected either at the time of anticipated low DO concentrations, or for the determination of diurnal swings at the times of anticipated low and high concentrations[9].

[8] "C. 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."

[9] Contact DEP staff for advice on these times. Data collected at times that typically do not provide low or high DO concentrations will be evaluated for usability on a case-by-case basis.

Continuous data

The use of continuous datasets is preferred over discrete measurements as continuous datasets allow a comprehensive analysis of WQS attainment across a range of conditions; this is particularly true in estuarine systems which experience a very dynamic range of conditions. Maine DEP staff collect continuous data according to DEP's 'Continuous Monitoring Water Quality Standard Operating Procedures' (SOP), which includes extensive Quality Assurance/Quality Control (QA/QC) measures. Only data that have been graded Excellent or Good are used in assessments. Measurement intervals typically range from 10 to 60 minutes depending on factors such as duration of deployment, waterbody type, specific intent of deployment, and instrument type. Longer-term (≥10 days) deployments that focus on critical conditions are preferred over short-term (<10 days) deployments to obtain a more comprehensive picture of conditions. Short-term datasets, unless they encompass a sufficient period of critical conditions or indicate a potential impairment, are generally only used as supporting information.

Continuous datasets are typically fairly large and provide critical insights regarding the underlying drivers of water quality gradients. In addition to using graphs and basic statistics (e.g. daily minima or maxima), Maine DEP staff screen these datasets for further analysis using the guidelines described below. If a dataset is found to exceed any one of the guidelines, staff will investigate the severity of exceedance and surrounding factors to determine whether a clear impairment exists (Category 5), or whether insufficient information is available and additional data need to be collected (Category 3). Other data, in particular those from biological communities, and the factors listed in the first paragraph in General Principles, above, may aid in making a WQS attainment determination. A final listing determination is based on best professional judgment by expert staff.

Screening guidelines allow for the evaluation of both chronic and acute conditions. For rivers and streams, only data in mg/L are screened and this approach is expected to be adequate to allow detection of possible non-attainment of WQS expressed in % saturation. Estuarine and marine DO criteria are expressed in % saturation, due to the inherent influence that salinity has on DO saturation capacity; therefore screening guidelines focus on % saturation data (except for the analysis of diurnal fluctuations). Note that for parts of the guidelines (as described below), only measurements that exceed a DO criterion by an amount roughly equal to or greater than the instrument/measurement error as defined in the applicable QAPP or SOP are considered exceedances. Screening guidelines are as follows:

Rivers and streams:

- An exceedance <u>event</u> occurs when criteria are exceeded by the instrument/measurement error (e.g. 0.2 mg/L) in ≥3 consecutive measurements.
- A <u>duration</u> exceedance occurs when applicable criteria are exceeded by the instrument/measurement error (e.g. 0.2 mg/L) in ≥3 consecutive measurements in ≥2 hours.
- A <u>frequency</u> exceedance occurs
  - When >10% of measurements in the summer period of a deployment record exceed applicable criteria (e.g. for 2,000 data points, >200 points are <7.0 mg/L in a Class B river);
  - Or when a criteria exceedance event (as defined above) occurs on ≥4 consecutive days;

  - Or when a criteria exceedance event occurs for >2 consecutive days ≥2 times in any rolling 10-day period.
- A magnitude exceedance occurs
  - When DO is <6.3 (Classes A or B) or <4.5 mg/L (Class C; i.e. >10% below the applicable criterion of 7 mg/L in Classes A or B, or 5 mg/L in Class C) in >5% of measurements in the summer period of a deployment record;
  - Or when a criteria exceedance event (as defined above) of <6.3 (Classes A or B) or <4.5 mg/L (Class C; i.e. >10% below the applicable criterion of 7 mg/L in Classes A or B, or 5 mg/L in Class C) occurs in a 24-hour period for >2 days in any rolling 10-day period.
- A diurnal swing exceedance occurs when a maximum swing per day of ≥2 mg/L occurs
  - On >10% of days of the summer period of a deployment record (e.g. for a 60-day deployment, >6 days have swings of ≥2 mg/L).
  - Or on ≥4 consecutive days;
  - Or on >2 consecutive days ≥2 times in any rolling 10-day period.

Estuarine and marine waters:

- An exceedance event occurs when criteria are exceeded by the instrument/measurement error (e.g. 2%) in ≥3 consecutive measurements.
- A duration exceedance occurs when applicable criteria are exceeded by the instrument/measurement error (e.g. 2%) in consecutive measurements for ≥2 hours.
- A frequency exceedance occurs
  - When >10% of measurements in the summer period of a deployment record exceed applicable criteria (e.g. for 2,000 data points, >200 points are <85% saturation in a Class SB estuary or marine waterbody);
  - Or when a criteria exceedance event (as defined above) occurs on ≥4 consecutive days;
  - Or when a criteria exceedance event occurs for >2 consecutive days ≥2 times in any rolling 10-day period.
- A magnitude exceedance occurs
  - When DO is <76.5% saturation (Class SB) or <63% saturation (Class SC; i.e. >10% below the applicable criterion of 85% saturation in Class SB, or 70% saturation in Class SC) in >5% of measurements in the summer period of a deployment record;
  - Or when a criteria exceedance event (as defined above) of <76.5% saturation (Class SB) or <63% saturation (Class SC; i.e. >10% below the applicable criterion of 85% saturation in Class SB, or 70% saturation in Class SC) occurs in a 24-hour period for >2 days in any rolling 10-day period.
- A diurnal swing exceedance occurs when a maximum swing per day of ≥2.5 mg/L occurs
  - On >10% of days of the summer period of a deployment record (e.g. for a 60-day deployment, >6 days have swings of ≥2.5 mg/L).
  - Or on ≥4 consecutive days;
  - Or on >2 consecutive days ≥2 times in any rolling 10-day period.

Discrete measurements

Generally, assessments should be based on ≥4 discrete, quality-assured measurements per year collected during the periods indicated above under 'Assessment Guidelines for DO Measurements in Rivers and Streams, and Estuarine and Marine Waters'. For marine waters, where DO measurements are taken by vertical profile, '≥4 discrete … measurements' consist of ≥4 profiles and the minimum % saturation measured in a profile is assessed against these guidelines. Only measurements that exceed the relevant DO criterion by an amount equal to or greater than the instrument/measurement error as defined in the applicable QAPP or SOP are considered exceedances. In addition, if there is evidence of plausible natural factors causing or contributing to low DO levels, this will not constitute non-attainment of a DO criterion [per 38 M.R.S. § 464(4)(C)[10]] and will not lead to an impairment decision.

A single exceedance (as defined above) of the criterion per year does not usually trigger an impairment decision unless there is corroborating evidence of reasonable potential for impairment of a use. Factors to be taken into account when considering corroborating evidence are listed above (first paragraph in General Principles); natural factors as explained in the preceding paragraph are also considered. Generally, if the relevant DO criterion is exceeded in 2 samples per year in 2 of the most recent 5 assessment years, a Category 3 listing is created. Generally, if the relevant DO criterion is exceeded in ≥2 samples in >2 of the most recent 5 assessment years, a Category 5 listing is created. A final listing determination is based on best professional judgement by expert staff, taking into account factors as explained above.

DO (and pH) Measurements in Lakes and Ponds

In these waterbodies, assessments occur during the growing season about a month after ice-out to about a month before ice-on. In all but a few Maine lakes, DO is measured periodically using a DO meter to collect profile data from the top to bottom of the lake at the deep spot when other lake data are being collected. pH is generally determined in the lab on epilimnetic samples obtained during the August baseline period; occasionally a pH profile is obtained when a multimeter or sonde equipped with a pH probe is available.

In lakes, DO concentrations exhibit more of an annual pattern. Hypolimnetic DO concentrations are of particular interest when lakes are most stressed during late summer. Eutrophic waters can develop anoxia that can lead to internal recycling of phosphorus from iron-dominated sediments, which can further fuel algal growth. One complication in the assessment of lake DO data is that the hypolimnetic water in some lakes will develop DO depletion naturally due to the shape of lake bottom. Lakes having a basin morphometry that is more funnel-shaped versus bowl shaped are expected to naturally develop depletion in the late summer because detritus is focused into the deeper regions, creating more biological oxygen demand. The department has developed a model to determine which lakes tend to naturally develop depletion but are not yet able to confidently apply the model for assessment purposes. Present attainment decisions are based on other assessment data with DO data used as supporting information. Often when deteriorating trophic trends are observed in lakes of adequate depth to develop a hypolimnion, examination of historic profiles reveals

[10] "C. 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."

that the onset of depletion has occurred earlier in the year over time, persists for a longer duration, and may be of greater magnitude. It is interesting to see the daily fluctuations related to whole pond/lake metabolism when continuous DO data is collected from every meter, but the expense and amount of maintenance required for such devices limits their use to private organizations or research institutions in Maine.

Like DO data, pH data is also used as supporting information when making attainment decisions based on other assessment data.

AMBIENT WATER QUALITY CRITERIA FOR TOXICS

Assessment is based on measured exceedance of Statewide Water Quality Criteria as established by Chapter 584: *Surface Water Quality Criteria for Toxic Pollutants* (effective February 16, 2020) (or Site-specific criteria where they may exist), or reasonable potential to exceed the criteria following EPA's Principle of Independent Applicability and Technical Support Document for Water Quality-Based Toxics Control (https://www3.epa.gov/npdes/pubs/owm0264.pdf). Single excursions of the criterion or excursions within the range of sampling or instrument error (as established in a QAPP) may not be used in every case unless there is corroborating evidence of reasonable potential for impairment of a use. Factors to be taken into account when considering corroborating evidence include but are not limited to: in-stream characteristics; land use; extent of excursion; analysis method; hardness; pH, temperature; dissolved organic carbon; and others listed above in the first paragraph under 'General Principles' (pages 42-43), as applicable. Assessment may also be based on the use of water quality models (e.g. dilution models) based on present or expected loadings.

NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS

Narrative listing criteria for this cause of Aquatic Life Use (ALU) impairment consist of documentation of abnormal biological findings that indicate nutrient enrichment in rivers and streams as well as estuarine and marine waters. Excess nutrients impair ALU through alteration of habitat, creation of diurnal DO sags caused by excessive plant and algae growth, abundant epiphytic growth resulting in decreased light availability to submerged vegetation, and alteration of benthic macroinvertebrate or algal assemblage structure.

BACTERIA

There are two different sets of bacteria criteria in place in Maine, depending on water quality class and location of a waterbody, see Table 4-7. In that table, where EPA bacteria criteria are shown, they are applicable to waters in Indian lands (i.e. waters on reservation and trust lands) while Maine criteria are applicable to all other waters in Maine. Where only Maine criteria exist, they are applicable statewide.

Table 4-7 Bacteria Criteria for Fresh, Estuarine and Marine Waters

Statutory references are: Class AA, A, B and C – 38 M.R.S. § 465; Class GPA - 38 M.R.S. § 465-A; Class SA, SB and SC – 38 M.R.S. § 465-B. EPA criteria - 40 C.F.R. § 131.43. STV - Statistical Threshold Value.

Class	ME Bacteria Numeric Criteria	EPA Bacteria Numeric Criteria
Class AA	As naturally occurs but *E. coli* may not exceed geometric mean of 64 CFU or MPN /100 ml over 90-day interval or	None

Class	ME Bacteria Numeric Criteria	EPA Bacteria Numeric Criteria
	236 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval.	
Class A	As naturally occurs but *E. coli* may not exceed geometric mean of 64 CFU or MPN /100 ml over 90-day interval or 236 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval.	None
Class B	*E. coli* may not exceed geometric mean of 64 CFU or MPN /100 ml over 90-day interval or 236 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval from 4/15 to 10/31.	*E. coli* may not exceed a geometric mean of 100 CFU or MPN /100 ml in any 30-day interval or 320 CFU or MPN /100 ml in more than 10% of the time (STV) in any 30-day interval.
Class C	*E. coli* may not exceed geometric mean of 100 CFU or MPN /100 ml over 90-day interval or 236 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval from 4/15 to 10/31.	*E. coli* may not exceed a geometric mean of 100 CFU or MPN /100 ml in any 30-day interval or 320 CFU or MPN /100 ml in more than 10% of the time (STV) in any 30-day interval.
Class GPA	*E. coli* may not exceed geometric mean of 29 CFU or MPN /100 ml over 90-day interval or 194 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval.	None
Class SA	As naturally occurs but *Enterococcus* may not exceed geometric mean of 8 CFU or MPN /100 ml in any 90-day interval or 54 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval.	*Enterococcus* – none For shellfish harvesting, not to exceed the numbers of total coliform bacteria or other specified indicator organisms recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration, as set forth in the Guide for the Control of Molluscan Shellfish, 2015 Revision.
Class SB	*Enterococcus* may not exceed geometric mean of 8 CFU or MPN /100 ml in any 90-day interval or 54 CFU or MPN /100 ml in more than 10% of samples (STV) in any 90-day interval from 4/15 to 10/31. Not to exceed criteria of National Shellfish Sanitation Program for shellfish harvesting.	*Enterococcus* may not exceed geometric mean of 30 CFU or MPN /100 ml in any 30-day interval, or 110 CFU or MPN /100 ml in more than 10% of the time (STV) in any 30-day interval.
Class SC	*Enterococcus* may not exceed geometric mean of 14 CFU or MPN /100 ml in any 90-day interval or 94 CFU or MPN /100 ml in more than 10%	*Enterococcus* may not exceed geometric mean of 30 CFU or MPN /100 ml in any 30-day interval, or 110 CFU or MPN /100 ml in more than 10%

Class	ME Bacteria Numeric Criteria	EPA Bacteria Numeric Criteria
	of samples (STV) in any 90-day interval from 4/15 to 10/31. Not to exceed criteria of National Shellfish Sanitation Program for restricted shellfish harvesting.	of the time (STV) in any 30-day interval.

In addition to the bacteria criteria listed above, Maine also uses the EPA-approved Beach Action Value (BAV) for *Enterococcus* bacteria as implemented by the Maine Healthy Beaches program (MHB; for more information on the program see pages 121-124) for assessments of certain marine and estuarine waters, and the recommended *E. coli* BAV from EPA's 2012 Recreational Water Quality Criteria (RWQC) (www.epa.gov/sites/production/files/2015-10/documents/rwqc2012.pdf) for assessments of fresh waters. Details are provided below.

Assessment of bacteria criteria attainment occurs for two designated uses: recreation in the water (i.e. Primary Contact Recreation), and shellfish propagation and harvesting, as described below. This assessment methodology was newly developed in 2021 and was based on data reviews and best professional judgment by expert staff; future refinements are possible.

Recreation in and on the Water

This use (i.e. Primary and Secondary Contact Recreation) is applicable to all waters. The assessment of bacteria criteria attainment depends on whether a section of a waterbody is a designated beach or not. A 'designated beach' is defined as an area where a local entity has voluntarily established or participates in a quality-assured monitoring program for indicator bacteria (enterococci or *E. coli*) to determine whether the water quality is safe for swimming or and other recreation. On coastal, marine beaches, the MHB program coordinates monitoring with local entities, therefore beaches that participate in the MHB Program are designated beaches. To date, no such monitoring program exists for freshwater beaches on lakes or rivers, and consequently, except for isolated instances on rivers, DEP has virtually no data that would allow for the assessment of criteria attainment. Assessment details are provided below.

Designated beaches - coastal

The MHB Program is the primary source of water quality data for *Enterococcus* bacteria at designated coastal, marine beaches in the State of Maine. For background on the Program, see 'Coastal, Marine Beach Recreational Water Quality Monitoring', page 104 and 'Maine Healthy Beaches Program', pages 121-124. MHB uses an EPA-approved safety threshold or Beach Action Value (BAV) of 104 Most Probable Number (MPN[11]) of *Enterococcus* bacteria per 100 mL to assess beach recreational water quality. Exceedance of the BAV triggers a recommended beach water quality notification, or 'contamination advisory'. Because participation in the MHB program is voluntary, MHB can only recommend that program partners post contamination advisories, but has no legal authority to force action. Contamination advisories are recommended for individual Beach Management Areas (BMAs, as defined under the MHB program) that may have one or more monitoring sites. If a BMA has more than

[11] MPN is equivalent to CFU.

one site, a BAV exceedance at any one site will trigger a notification recommendation for the entire BMA. Integrated Report assessments are based on the percentage of a monitoring season (generally Memorial Day to Labor Day) that a BMA is under notification. The percentage is calculated as follows:

- A notification day is any day during the monitoring season when a sample result at a BMA is ≥104 MPN/100ml (BAV) and any subsequent days until results from a sample (either resample or another routine sample) are below the BAV.
- The total number of days a BMA is under notification is divided by the length of the monitoring season and multiplied by 100 to determine the % of season days under contamination notification.

Assessment categories are assigned as follows:

- If a BMA is under notification for >10% of monitoring season days for 1 or 2 years (except if it is the last two consecutive years of the IR reporting period), it will be listed as Category 3.
- If a BMA is under notification for >10% of monitoring season days for ≥3 years (or the last two consecutive years), it will be listed as Category 5.

Final listing decisions regarding placement in either Category 3 or 5 are made by DEP MHB staff using best professional judgement based on consideration of: the seasonal geomean; the magnitude of the individual exceedances; weather patterns and frequency and volume of precipitation; number of sites monitored per beach; monitoring frequency; and knowledge of beach specific occurrences. BMAs that do not require inclusion in Categories 3 or 5 based on the assessment guidelines provided above are listed in Category 2. No BMAs are included in Categories 1 or 4.

Designated beaches - freshwater

Because Maine has no quality-assured monitoring program for indicator bacteria (*E. coli*) on designated freshwater beaches to determine whether the water quality is safe for swimming or and other recreation, virtually no data are available that would allow for the assessment of criteria attainment. Presently the responsibility for assessing bacteria and enacting swimming closures, falls to municipalities and private beach owners. Where freshwater data are available, assessments are based on EPA's 2012 recommended freshwater BAV of 190 CFU or MPN of *E. coli* bacteria per 100 mL. The assessment methodology for designated freshwater beaches is the same as described under 'Designated beaches – coastal', above, except that a different BAV is used, and each beach has its own monitoring season. Due to a lack of a coordinated monitoring program, designated freshwater BMAs are not clearly defined but rather established by the monitoring authority. Final listing decisions are made using best professional judgement by DEP expert staff.

Non-beach waters

For fresh or marine waters that are not designated beaches, the applicable geometric mean or Statistical Threshold Value (STV) criteria from Maine's or EPA's water quality standards (see table at start of this subsection) are used for attainment decisions, taking into consideration year-round or seasonal criteria applicability as appropriate. Geomeans and STVs are calculated on a rolling basis over 90 (Maine standards) or 30 (EPA standards) days, and generally a minimum of 5 (Maine standards) or 3 (EPA standards) samples per interval is required for attainment decisions. A single exceedance of a criterion per year does not usually trigger an impairment decision unless there is corroborating evidence of reasonable potential for impairment of a use.

Factors to be taken into account when considering corroborating evidence are listed above (first paragraph in General Principles), augmented by any local knowledge of unusual wildlife concentrations. Generally, 2 exceedances of a geomean or STV per year in 2 of the most recent 5 assessment years leads to a Category 3 listing. Generally, two or more exceedances of a geomean or STV in >2 of the most recent 5 assessment years leads to a Category 5 listing. Final listing determinations are based on best professional judgement by expert staff, taking into account factors as explained above.

Shellfish propagation and harvesting

Note: assessments for the statutory designated use of 'propagation and (restricted) harvesting of shellfish[12]' are done separately for propagation versus harvesting. The following text describes assessments for shellfish harvesting, which presumes subsequent consumption. Assessments of the propagation use are currently limited to determining whether pH criteria (which are assumed to be protective of shellfish propagation) are met. Guidelines for pH assessments are provided below under 'General Provisions, Including pH', 'Assessment Guidelines for pH Measurements in Rivers and Streams, and Estuarine and Marine Waters'.

Shellfish harvesting is a designated use for all estuarine and marine waterbody classes. Classes SA and SB state that "waters must be of such quality that they are suitable for…harvesting of shellfish", while Class SC waters must be "suitable for…restricted harvesting of shellfish". Shellfish harvesting 'classification' is determined by the Maine Department of Marine Resources (DMR), as described at www.maine.gov/dmr/fisheries/shellfish/shellfish-growing-area-classification and shown in Table 4- 8. The DMR's Growing Area Program is guided by the National Shellfish Sanitation Program (NSSP). As detailed on pages 215-218 of the 'Guide for the Control of Molluscan Shellfish' (U.S. Food and Drug Administration 2019, www.maine.gov/dmr/sites/maine.gov.dmr/files/docs/ModelOrdinance2019.pdf), methods used for classifying shellfish harvesting areas may include either total coliform or fecal coliform standards. The DMR uses fecal coliforms to most accurately assign classifications based on quantities of bacteria originating from the digestive tracts of warm-blooded animals that are potentially pathogenic and therefore reflect a human health risk.

The DMR has divided the coast of Maine into 45 Growing Areas, and each Growing Area is subdivided into multiple Growing Area Sections. For example, Growing Area WG [East Point (Biddeford) to Prouts Neck (Scarborough)] is comprised of two Prohibited Growing Area Sections, P1 and P2, and four Conditionally Approved Growing Area Sections, CA1-CA4. Growing Area Section assignments are based on results of a sanitary survey and/or water quality monitoring data. A sanitary survey consists of 1) a shoreline survey to identify pollution sources, 2) marine water sampling to test for fecal coliform counts, and 3) an analysis of how environmental conditions (weather, tides, currents) could affect pollutant distribution. As frequently as annually, the DMR reviews and may change classification assignments based on water quality statistics, removal of Overboard Discharges (OBDs), or new information regarding spatial influence of wastewater treatment plants. Changes in classification assignments may, but do not necessarily, result in spatial changes in Growing Area Sections.

[12] Classes SA and SB have the designated use of 'propagation and harvesting of shellfish', Class SC has 'propagation and restricted harvesting of shellfish'.

Table 4-8 Maine DMR NSSP classifications

Classification	Status	Shellfish Harvesting Activity
Approved	Open	Harvesting allowed
Conditionally Approved	Open	Harvesting allowed except during specified conditions (rainfall, STP* bypass or seasonal)
	Closed	Harvesting NOT allowed
Restricted	Open	Depuration and/or Relay harvesting only
Conditionally Restricted	Open	Depuration and/or Relay harvesting allowed except during specified conditions (rainfall, sewage treatment plant bypass or seasonal)
	Closed	Harvesting NOT allowed
Prohibited	Closed	Harvesting NOT allowed, NO water use allowed for processing (administratively imposed precautionary closure, or closed based on data)

The DMR administratively assigns a Prohibited status to Growing Area Sections that are unassessed (i.e. when a recent sanitary survey and/or monitoring data is/are not available), or when a Growing Area Section is unassessed but assumed to be influenced by wastewater discharges, marinas, agricultural operations, or other sources of persistent pollution. As of the 2024 reporting cycle, administrative closures account for all but three Prohibited Growing Area Sections, and Conditional Approval has been applied administratively to 14 Growing Area Sections. Also for this 2024 cycle, Integrated Report assessments for shellfish harvesting closures in Class SA, SB and SC waters are based on classifications as of December 31, 2022.

Assignments of Growing Area Sections to 305(b)/303(d) categories are described here and in Table 4-8. Any area with the classification of "Approved"[13] attains the designated use of Shellfish Harvesting and is placed in Category 2. Growing Area Sections that are closed administratively due to lack of assessment or insufficient data, and therefore no impairment has been documented, are located in Category 3 per EPA guidance (Grubbs and Wayland 2000, US EPA 2002) and item 2 in the long-standing 'Listing Category' description for Category 3 (page 36). All other classifications (Conditionally Approved, Restricted, Conditionally Restricted and Prohibited) that are derived from sufficient data limit shellfish harvesting, and those corresponding Growing Area Sections are assigned to Category 5-B-1 for estuarine and marine waters impaired by bacteria. Once the Maine Statewide Bacteria TMDL is revised to include Category 5-B-1(a) assessment units, these units would be moved to Category 4-A.

Table 4-9 Maine DMR NSSP Growing Area Section classifications and corresponding 305(b)/303(d) category

NSSP Classification	305(b)/303(d) Category
Approved	2
Conditionally Approved (not assessed)*	3
Prohibited (not assessed or insufficient data)*	3
Conditionally Approved	5-B-1 (4-A when TMDL revised)
Restricted	5-B-1 (4-A when TMDL revised)

[13] "Approved" areas are not termed "Growing Area Sections".

NSSP Classification	305(b)/303(d) Category
Conditionally Restricted	5-B-1 (4-A when TMDL revised)
Prohibited (assessed with sufficient data)	5-B-1 (4-A when TMDL revised)

* Conditionally Approved or Prohibited areas assigned administratively are not considered impaired for shellfish harvesting

A Growing Area Section that was assigned to Category 5-B-1 in one reporting cycle because of a "Conditionally Approved", "Restricted", "Conditionally Restricted", or "Prohibited" status with sufficient data and then is reclassified by DMR in a subsequent reporting cycle to either "Approved", or "Conditionally Approved" or "Prohibited" with insufficient data, will be considered for delisting on a case-by-case basis using the guidelines described in section 'Delisting from an Impaired to an Unimpaired Category' on pages 38-39.

In addition to assessments of the shellfish harvesting designated use based on current information obtained from the DMR, 14 historic assessment units affected by combined sewer overflow (CSO) events will be carried forward unchanged in Category 4-A. These AUs were included in the 2009 Statewide Bacteria TMDL and as a result delisted from Category 5-B-1 to Category 4-A in the 2010 cycle. The DMR does not typically monitor areas around CSOs and thus no current data are available for a new assessment. If all CSO outfalls are removed in a municipality, the respective AU will be eliminated, as was done with one AU in the 2012 cycle.

WATER COLOR

Assessment based on repeated measurements of discharge performance data and compliance with 38 M.R.S. § 414-C for pulp and paper discharges only. In lakes and ponds, color due to natural humic organics, often products of vegetative decomposition in neighboring wetlands, may mitigate high phosphorus concentrations and potential algal blooms.

GENERAL PROVISIONS, INCLUDING PH

Use impairment from color, taste, turbidity (38 M.R.S. § 464.4.A.) and floating or settleable solids (38 M.R.S. § 464.4.B.) is subjectively determined. Radioactivity in surface water (38 M.R.S. § 464.4.A.) is not presently monitored.

Two different sets of pH criteria are in place in Maine: per 38 M.R.S. § 464.4.A, criteria are 6.5 to 9.0 for freshwaters, and 7.0 to 8.5 for estuarine and marine waters. Per 40 C.F.R. § 131.43(a), pH criteria are 6.5 to 8.5 for freshwaters in Indian lands, making Maine's freshwater criteria only applicable to waters outside of Indian lands; Maine's criteria for estuarine and marine waters are applicable statewide. pH criteria in 38 M.R.S. § 464.4.A. are only applicable to waters with discharges. The guidelines below are used for Integrated Report assessments only and thus do not apply in the context of pH attainment decisions for discharge licensing purposes.

pH levels are assessed in rivers and streams, lakes and ponds, and marine and estuarine waters. Instantaneous measurements are collected in all waterbody types, while continuous data are collected in rivers and streams, and estuarine and marine waters only. Details of the different assessment guidelines used are provided below. These guidelines were newly developed in 2020 and 2021 and were based on a literature and partial data review, and best professional judgment by expert staff. A

number of refinements were made for the 2024 Integrated Report. In lakes and ponds, continuous pH data are not typically collected; an explanation is provided above under 'Dissolved Oxygen, DO Measurements in Lakes and Ponds'.

Assessment Guidelines for pH Measurements in Rivers and Streams, and Estuarine and Marine Waters

In rivers and streams, pH assessments occur predominantly between June 15 and September 15 with a focus on summer periods with critical conditions of low flow, high temperature and long photoperiod. Assessments may also be based on data collected during periods of potentially low pH driven by significant rain events, typically in spring and fall. In estuarine and marine waters, assessments occur predominantly between May 1 and October 31 with a primary focus on summer periods with critical conditions of minimal tide range, higher water temperature, and long photoperiod.

Maine DEP uses two different approaches to analyze pH levels: a) continuous data from a continuous monitoring device such as a sonde; or b) repeated, discrete measurements collected at the time of anticipated low or high pH concentrations[14].

Continuous Data

The use of continuous datasets is preferred over discrete measurements as continuous datasets allow a comprehensive analysis of WQS attainment across a range of conditions; this is particularly true in estuarine systems which experience a very dynamic range of conditions. Maine DEP staff collect continuous data according to DEP's 'Continuous Monitoring Water Quality SOP' (www.maine.gov/dep/water/monitoring/Continuous_Monitoring_SOP_2023.pdf) which includes extensive QA/QC procedures. Only data that have been graded Excellent or Good are used in assessments. Measurement intervals typically range from 10 to 60 minutes depending on factors such as duration of deployment, waterbody type, specific intent of deployment, and instrument type. Longer-term (≥10 days) deployments are preferred over short-term (<10 days) deployments to obtain a more comprehensive picture of conditions. Short-term datasets, unless they encompass a sufficient period of critical conditions or indicate a potential impairment, are generally only used as supporting information.

Continuous datasets are typically fairly large but provide critical insights regarding the underlying drivers of water quality gradients. In addition to using graphs and basic statistics (e.g. daily minima or maxima), Maine DEP staff screen these datasets for further analysis using the guidelines described below. If a dataset is found to exceed any one of the guidelines, staff will investigate the severity of exceedance and surrounding factors to determine whether a clear impairment exists (Category 5), or whether insufficient information is available and additional data need to be collected (Category 3). Other data, in particular those from biological communities, and the factors listed in the first paragraph in General Principles, above, may aide in making a WQS attainment determination. A final listing determination is based on best professional judgment by expert staff.

Screening guidelines allow for the evaluation of both chronic and acute conditions. Note that for parts of the guidelines (as described below), only measurements that exceed a pH criterion by an amount roughly equal to or greater than the

[14] Contact DEP staff for advice on these times. Data collected at times that typically do not provide low or high pH concentrations will be evaluated for usability on a case-by-case basis.

instrument/measurement error as defined in the applicable QAPP or SOP are considered exceedances. Screening guidelines are as follows:

Rivers and streams as well as estuarine and marine waters:

- An exceedance event occurs when criteria are exceeded by the instrument/measurement error (e.g. 0.2) in ≥3 consecutive measurements.
- A duration exceedance occurs when applicable criteria are exceeded by the instrument/measurement error (e.g. 0.2) in consecutive measurements for ≥2 hours.
- A frequency exceedance occurs
  - When >10% of measurements in the summer period of a deployment record exceed applicable criteria (e.g. for 2,000 data points >200 points are <6.5 or >9.0 in freshwaters, or <7.0 or >8.5 in estuarine or marine waters).
  - Or when a criteria exceedance event (as defined above) occurs for ≥4 consecutive days;
  - Or when a criteria exceedance event occurs for >2 consecutive days ≥2 times in any rolling 10-day period.
- A magnitude exceedance occurs
  - When pH is <6.0[15] or >9.5[16] in freshwaters or <6.6 or >8.9 in estuarine or marine waters in >5% of measurements in the summer period of a deployment record;
  - Or when a criteria exceedance event (as defined above) with pH <6.0 or >9.5[16] in freshwaters or <6.6 or >8.9 in estuarine or marine waters occurs in a 24-hour period for >2 days in any rolling 10-day period.

Discrete measurements

Generally, assessments should be based on ≥4 discrete, quality-assured measurements per year collected during the periods indicated above under 'Assessment Guidelines for pH Measurements in Rivers and Streams, and Estuarine and Marine Waters'. For marine waters, where pH measurements are taken by vertical profile, '≥4 discrete … measurements' consist of ≥4 profiles and the minimum pH value measured in a profile is assessed against these guidelines. Only measurements that exceed the relevant pH criterion by an amount roughly equal to or greater than the instrument/measurement error as defined in the applicable QAPP or SOP are considered exceedances. It is important to note that certain naturally occurring waterbody types (e.g. bogs, aquifer lakes, high elevation lakes) may have naturally low pH due to the presence of naturally occurring organic acids or shallow soils over granitic bedrock that limits buffering capacity.

A single exceedance (as defined above) of the criterion per year does not usually trigger an impairment decision unless there is corroborating evidence of reasonable potential for impairment of a use. Factors to be taken into account when considering corroborating evidence include those listed above (first paragraph in General Principles) as well as bedrock geology and natural conditions. Generally, if the relevant pH criterion is exceeded in 2 samples per year in 2 of the most recent 5 assessment years, a Category 3 listing is created. Generally, if the relevant pH criterion is exceeded

[15] Values of <6.0 are indicated in the literature as being detrimental to fish health ((Baker et al. 1990. Biological Effects of Changes in Surface Water Acid-Base Chemistry. NAPAP Report 13. In: National Acid Precipitation Assessment Program, Acidic Deposition: State of Science and Technology. Volume II, 1990).
[16] A value of >9.5 is indicated in the literature as being the upper end of the tolerance range for brook trout (United State Department of Agriculture (USDA). 1986. Brook Trout. Technical Notes Biology No. 302).

in ≥2 samples in >2 of the most recent 5 assessment years, a Category 5 listing is created. A final listing determination is based on best professional judgement by expert staff, taking into account factors as explained above.

pH Measurements in Lakes and Ponds

Please see 'DO (and pH) Measurements in Lakes and Ponds' under 'Dissolved Oxygen', above.

INTEGRATED REPORT LISTS OF CATEGORIES 1 THROUGH 5

Table 4-10 presents a summary of state waters (rivers/streams, lakes/ponds, wetlands, and estuarine and marine waters, including coastal designated beaches) which are attaining or not attaining standards. Tables 4-10 through 4-24Table 4-24 present three different types of information for those same types of state waters; the three types are: 1) Individual designated use support summary (Tables 4-11 through 4-14); 2) Total sizes of Category 4 and 5 impaired waters by listing cause/stressor type (Tables 4-15 through 4-19; 3) Total sizes of Category 4 and 5 impaired waters by source category (Tables 4-20 through 4-24).

Table 4-10 Summary of State Waters Attaining and Not Attaining Standards

Waterbody Type	Total Assessed for Attaining of WQ Standards – Assessed for Designated Uses	Total Attaining All WQ Standards - Supporting All Designated Uses (Category 1)	Total Attaining At Least One Standard – Supporting at Least One Use but Not All Standards Assessed (Category 2)	Total with Insufficient Data for Assessment – Not Assessed for Any Designated Uses (Category 3)	Total Not Attaining One or More WQ Standards – Not Supporting One or More Uses but Not Needing a TMDL (Category 4)	Total Not Attaining One or More WQ Standards – Not Supporting One or More Uses and TMDL is Needed (Category 5)
River & Stream Miles [1]	40,791	5,277	33,559	341	495 [2]	1,119
Number of Lakes/Ponds	5,782 [3]	2,856	2,895 [3]	0	23	8
Lake/Pond Acres	987,019 [3]	295,418	607,617 [3]	0	67,685	16,299
Freshwater Wetland Stations [4]	146	1	95	24	17	9
Freshwater Wetland Acres [5]	28,416	15	20,460	6,978	536	427
Estuarine & Marine Square Miles (Shellfish Harvesting Designated Use)	2,884 [5]	0	2,491	356	0	37
Estuarine & Marine Square Miles (All Other Designated Uses)	2,889 [6]	0	2,875	1	5	8 [7]
Estuarine/Marine Miles - Coastal Designated Beaches	39.24	0	36.41	1.53	0	1.3
Tidal Wetland Acres	Not assessed					

[1] River and Stream miles are single-category reporting miles as generated by 2024 cycle ATTAINS.
[2] These figures do not include waters listed under Category 4-A for atmospheric deposition of mercury.
[3] Includes 6 Category 2 lakes (22 acres) on coastal islands, which are not assigned to mainland HUCs.

[4] The number of wetland stations provided is the actual number of stations assessed, which may be greater than the number of AUs in a particular category because some AUs include more than one station.
[5] This value represents the area regulated by the Maine Department of Marine Resources for shellfish harvesting.
[6] This value includes a more accurate area of state jurisdictional estuarine and marine waters generated during the creation of new assessment units for the 2022 cycle.
[7] All estuarine and marine waters capable of naturally supporting lobster propagation are affected by a shellfish (lobster tomalley) consumption advisory due to the presence of PCBs and dioxins. A statewide marine consumption advisory for several saltwater finfish and shellfish species is also in effect based on elevated mercury, PCB and dioxin levels. These Category 5 totals do not include marine waters under these statewide consumption advisories.

Table 4-11 Individual Designated Use Support Summary for Maine Rivers and Streams
All sizes are presented in miles and were generated by ATTAINS.

USE	Total Size	Size Assessed	Size Fully Supporting	Threatened	Size Not Supporting	Size with Insufficient Info
Agricultural Supply	40,791	40,791	8,214	0	0	32,577
Drinking Water Supply After Disinfection	24,314	24,314	5,491	0	0	18,823
Drinking Water Supply After Treatment	16,477	16,477	1,529	0	3	14,945
Fish and Other Aquatic Life	40,791	40,791	39,508	0	888	395
Fish Consumption[1]	40,791	40,791	6,210	0	871	33,710
Fishing	40,791	40,791	6,886	0	0	33,905
Hydroelectric Power Generation	33,146	33,146	4,876	0	0	28,271
Industrial Process and Cooling Water Supply	33,146	33,146	4,876	0	0	28,271
Navigation	40,791	40,791	6,887	0	0	33,904
Primary Contact Recreation	40,791	40,791	6,684	0	201	33,906
Secondary Contact Recreation	40,791	40,791	6,681	0	193	33,918

[1] All freshwaters are listed for a fish consumption advisory due to mercury (Category 4-A - EPA approved Regional Mercury TMDL). The Fish Consumption listing is for additional consumption advisories beyond that caused by mercury (these waters also have a mercury advisory).

Table 4-12 Individual Designated Use Support Summary for Maine Lakes

CWA Goals	Designated Use	Size Fully Supporting – Attaining WQ Standards (Acres)	Size Not Supporting – Not Attaining WQ Standards (Acres)	Size Not Attainable – UAA Performed
Protect & Enhance Ecosystems	Aquatic Life Support	903,589[1]	83,430	9,160[2]
Protect & Enhance Public Health	Fish Consumption (Hg)	0	987,019	0
	Fish Consumption (PFAS)	980,092	6,927	0
	Swimming	965,246	21,773	0
	Secondary Contact	987,019	0	0
	Drinking Water Source Water	987,019	0	0
Social & Economic	Agricultural	987,019	0	0
	Fishing	987,019	0	0
	Industrial	987,019	0	0
	Cultural or Ceremonial	987,019	0	0
	State Defined: Hydropower	987,019	0	0
	State Defined: Navigation	987,019	0	0

[1] Includes Fully Supporting (Cat. 1: 295,418 acres) and Insufficient Information but assumed to be Fully Supporting (Cat. 2: 607,617 acres) less UAA acreage (9,160 acres).
[2] Includes acreages of Ragged Lake (Cat. 1: 2,712 acres) and Seboomook Lake (Cat. 2:6,448 acres).

Table 4-13 Individual Designated Use Support Summary for Maine Wetlands

All sizes are presented in acres and were generated by ATTAINS.

USE	Total Size	Size Assessed	Size Fully Supporting	Threatened	Size Not Supporting	Size with Insufficient Info
Agricultural Supply	28,394	28,394	3,490	0	0	24,904
Drinking Water Supply After Disinfection	23,258	23,258	192	0	0	23,066
Drinking Water Supply After Treatment	5,136	5,136	405	0	0	4,732
Fish and Other Aquatic Life	28,394	28,394	20,688	0	689	7,018
Fish Consumption[1]	28,394	28,394	385	0	423	27,587
Fishing	28,394	28,394	597	0	0	27,798
Hydroelectric Power Generation	26,634	26,634	597	0	0	26,038
Industrial Process and Cooling Water Supply	26,634	26,634	597	0	0	26,038
Navigation	28,216	28,216	597	0	0	27,620
Primary Contact Recreation	28,394	28,394	591	0	0	27,804
Secondary Contact Recreation	28,394	28,394	591	0	0	27,804

[1] All freshwaters are listed for a fish consumption advisory due to mercury (Category 4A-EPA approved Regional Mercury TMDL). The fish consumption (other) listing is for additional consumption advisories beyond than that caused by mercury (these waters also have a mercury advisory).

Table 4-14 Individual Designated Use Support Summary for Maine Estuarine and Marine Waters

Size units are square miles unless otherwise noted and were generated by ATTAINS.

USE	Total Size	Size Fully Supporting	Size Threatened	Size Not Supporting	Size with Insufficient Info
Aquaculture	2,889	12.41	0	0	2,876
Fish Consumption[1]	2,889	0	0	0	2,889
Fishing	2,889	12.41	0	0	2,876
Hydropower	2,607	12.41	0	0	2,594
Industrial Supply Water	2,607	12.41	0	0	2,594
Marine Life	2,889	2,876	0	12.41	1
Navigation	2,889	12.41	0	0	5,367
Primary Contact Recreation Coastal Designated Beaches	2,889 39.24 miles	0 36.41 miles	0 0 miles	0 1.30 miles	2,889 1.53 miles
Restricted Shellfish Harvesting	22.63	2.09	0	0.99	19.55
Secondary Contact Recreation	2,889	0	0	0	2,889
Shellfish Harvesting	2,862	2,489	0	36.24	336.8
Shellfish Propagation	2,889	12.41	0	0	2,876

[1] Based on a statewide fish/shellfish consumption advisory.

Table 4-15 Total Sizes of Category 4 and 5 Impaired Maine Rivers and Streams by Listing Cause/Stressor Type

Sizes, except for 'Toxics (mercury)', were generated by ATTAINS. The mileage for 'Toxics (mercury)' is the total miles of rivers and streams per NHD, see Table 3-1.

Cause/Stressor Type	Size Impaired (Miles)
Toxics (mercury)	45,146
Dissolved Oxygen	464
Polychlorinated Biphenyls (PCBs)	421
Dioxin (Including 2,3,7,8-Tcdd)	362
DDT (Dichlorodiphenyltrichloroethane)	348
Benthic Macroinvertebrates Bioassessments	302
Periphyton (Aufwuchs) Indicator Bioassessments	249
Escherichia Coli (E. coli)	193
Nutrient/Eutrophication Biological Indicators	180
PFAS in Fish Tissue	114
Phosphorus, Total	109
Habitat Assessment	79
Fish Passage Barrier	38
pH	32
Biochemical Oxygen Demand (BOD)	21
Flow Regime Modification	20
Ammonia, Un-Ionized	17
Zinc	15
Lead	15
Copper	15
Nitrogen, Total	10
Selenium	10
Silver	10
Arsenic	10
Aluminum	10
Iron	9
Chlorophyll-a	8
Total Suspended Solids (TSS)	8
Sedimentation/Siltation	6
Cadmium	6
Chromium, Total	6
Nickel	6
1,2-Dichloroethane	3
1,1-Dichloroethane	3
Cause Unknown	1

Table 4-16 Total Sizes of Category 4 and 5 Impaired Maine Lakes by Listing Cause/Stressor Type (Total acreage)

Cause/Stressor Type	Size Impaired (acres)
Methylmercury	987,019
Habitat Alterations*	55,689
PFAS in Fish Tissue	6,927
Phosphorus (Total)	28,068
Secchi Disk Transparency	28,068
Turbidity	7,865
*Includes acreage for Aziscohos L previously listed under Habitat Assessment cause	

Table 4-17 Total Sizes of Category 4 and 5 Impaired Maine Lakes by Listing Cause/Stressor Type by Category

Listing Category	Cause/Stressor Type	Size Impaired (acres)	Number Impaired
4A	Methylmercury	987,019	5,782
	Phosphorus (Total)	18,696	17
	Secchi disk transparency	18,696	17
4C	Habitat Alterations*	55,689	7
	Turbidity	7,865	1
5A	PFAS in Fish Tissue	6,927	6
	Phosphorus (Total)	1,133	2
	Secchi disk transparency	1,133	2
5R	Phosphorus (Total)	8,239	1
	Secchi disk transparency	8,239	1
*Includes acreage for Aziscohos Lake previously listed under Habitat Assessment cause			

Table 4-18 Total Sizes of Category 4 and 5 Impaired Maine Wetlands by Listing Cause/Stressor Type

Wetland acreage summaries were generated by ATTAINS.

Cause/Stressor Type	Size Impaired (acres)
Benthic Macroinvertebrates Bioassessments	689
Dioxin (including 2,3,7,8-TCDD)	212
Polychlorinated biphenyls	212
DDT (Dichlorodiphenyltrichloroethane)	170
Flow Regime Modification	22
PFAS In Fish Tissue	40

Table 4-19 Total Sizes of Category 4 and 5 Impaired Maine Estuarine and Marine Waters by Listing Cause/Stressor Type

Sizes except for 'Toxics (PCBs, Dioxins)' were generated by ATTAINS. 'Toxics' is based on a statewide fish/shellfish consumption advisory.

Cause/Stressor Type	Size Impaired (sq. miles unless otherwise noted)
Toxics (PCBs, Dioxins)[1]	2,889
Bacteria (Fecal Coliform)	37
CSO sources	Variable
Dissolved Oxygen	5
Toxicity	3
Cause Unknown	2
Estuarine Bioassessments	2
Nutrient/Eutrophication Biological Indicators	2
Copper	0.89
Bacteria (Enterococcus at coastal designated beaches)	1.30 miles
Tidal Flow Alteration	0.51

Table 4-20 Total Sizes of Category 4 and 5 Impaired Maine Rivers and Streams by Source Category

Sizes, except for 'Atmospheric Deposition – Toxics (mercury)', were generated by ATTAINS. The mileage for Atmospheric Deposition is the total miles of rivers and streams per NHD, see Table 3-1.

Source Category	Size Impaired (miles)
Atmospheric Deposition – Toxics (mercury)	45,146
Non-Point Source	610
Agriculture	555
Industrial Point Source Discharge	424
Source Unknown	391
Municipal Point Source Discharges	183
Unspecified Urban Stormwater	180
Dam or Impoundment	68
Landfills	63
RCRA Hazardous Waste Sites	58
Impervious Surface/Parking Lot Runoff	53
Upstream Source	45
Habitat Modification - Other Than Hydromodification	38
Wet Weather Discharges (Point Source and Combination of Stormwater, SSO or CSO)	36
Erosion And Sedimentation	32
Illegal Dumps or Other Inappropriate Waste Disposal	27
Airports	19
Aquaculture (Permitted)	19
Water Diversions	18
Livestock (Grazing or Feeding Operations)	17
Sewage Discharges in Unsewered Areas	17
Hydrostructure Impacts on Fish Passage	13
Sources Outside State Jurisdiction or Borders	9
NPS Pollution from Military Base Facilities (Other Than Port Facilities)	8
Impacts from Abandoned Mine Lands (Inactive)	2
Impacts from Hydrostructure Flow Regulation/Modification	2
Naturally Occurring Organic Acids	2
Unspecified Land Disturbance	2
Mine Tailings	1
Wet Weather Discharges	1

Table 4-21 Total Sizes of Category 4 and 5 Impaired Maine Lakes by Source Category

Source Category	Size Impaired (acres)	Number of Lakes
Atmospheric Deposition - Toxics	987,019	5,782
Impacts From Hydrostructure Flow Regulation/Modification	48,964	5
Rural (Residential Areas)	14,918	12
Unspecified Unpaved Road or Trail	8,239	1
Residential Districts	8,239	1
Unspecified Urban Stormwater	8,239	1
Natural Sources	7,865	1
Internal Nutrient Recycling	7,615	5
Crop Production (Non-Irrigated)	6,687	4
Discharges From Biosolids (Sludge) Storage, Application or Disposal	6,376	3
Crop Production (Crop Land or Dry Land)	5,117	5
Municipal Point Source Discharges	4,288	1
Unspecified Urban Stormwater	3,296	2
Unspecified Unpaved Road or Trail	3,296	2
Residential Districts	3,296	2

Source Category	Size Impaired (acres)	Number of Lakes
Livestock (Grazing or Feeding Operations)	2,490	3
Industrial Land Treatment	1,820	2
Industrial Point Source Discharge	1,133	1
Legacy/Historical Pollutants	387	1
Municipal (Urbanized High Density Area)	100	1
NPS Pollution from Military Base Facilities (Other Than Port Facilities)	64	1
Natural Sources	46	1
Illegal Dumps Or Other Inappropriate Waste Disposal	25	1

Table 4-22 Total Sizes of Category 4 and 5 Impaired Maine Lakes by Source Category (by Listing Category)

Listing Category	Source Category	Size Impaired (acres)	Number of Lakes
4A	Atmospheric Deposition - Toxics	987,019	5,782
	Rural (Residential Areas)	14,918	12
	Internal Nutrient Recycling	7,615	5
	Crop Production (Non-Irrigated)	6,687	4
	Crop Production (Crop Land or Dry Land)	5,117	5
	Municipal Point Source Discharges	4,288	1
	Unspecified Urban Stormwater	3,296	2
	Residential Districts	3,296	2
	Unspecified Unpaved Road Or Trail	3,296	2
	Livestock (Grazing Or Feeding Operations)	2,490	3
	Industrial Land Treatment	1,820	2
	Natural Sources	46	1
4C	Impacts From Hydrostructure Flow Regulation/Modification	48,964	5
	Natural Sources	7,865	1
	Illegal Dumps or Other Inappropriate Waste Disposal	25	1
5A	Discharges From Biosolids (Sludge) Storage, Application or Disposal	6,376	3
	Industrial Point Source Discharge	1,133	1
	Legacy/Historical Pollutants	387	1
	Municipal (Urbanized High Density Area)	100	1
	NPS Pollution from Military Base Facilities (Other Than Port Facilities)	64	1
5R	Unspecified Urban Stormwater	8,239	1
	Residential Districts	8,239	1
	Unspecified Unpaved Road Or Trail	8,239	1

Table 4-23 Total Sizes of Category 4 and 5 Impaired Maine Wetlands by Source Category

Wetland acreage summaries were generated by ATTAINS.

Source Category	Size Impaired (acres)
Non-Point Source	493
Agriculture	286
Source Unknown	247
Industrial Point Source Discharge	212
Unspecified Urban Stormwater	185

Source Category	Size Impaired (acres)
Impacts from Hydrostructure Flow Regulation/modification	149
Upstream Source	135
Habitat Modification - other than Hydromodification	33
Irrigated Crop Production	22
Impervious Surface/Parking Lot Runoff	9
Illegal Dumps or Other Inappropriate Waste Disposal	6

Table 4-24 Total Sizes of Category 4 and 5 Impaired Maine Estuarine and Marine Waters by Source Category

Sizes generated by ATTAINS. Legacy Pollutants are based on a statewide fish/shellfish consumption advisory.

Source Category	Size Impaired (sq. miles)
Estuarine and Marine Waters	
Legacy Pollutants	2,889
Municipal Point Sources	4
Unknown	4
Combined Sewer Overflows	3
Non-Point Source	3
Urban Stormwater	2
RCRA Hazardous Waste Sites	2
Coastal designated beaches	**Size Impaired (miles)**
Unknown	1.30

RIVERS / STREAMS

Water Classification Program

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Related Website: www.maine.gov/dep/water/monitoring/classification/index.html

Maine's Water Classification Program is codified in 38 M.R.S. §§ 464-470. The Program establishes four water quality classes for rivers and streams: AA, A, B, and C (38 M.R.S. § 465). Each classification assigns designated uses and narrative or numeric water quality criteria, and places specific restrictions on certain activities (Tables 4-1 and 4-25) so that the goal conditions of each class may be achieved or maintained. Definitions of terms used in the classification are provided in 38 M.R.S. § 466.

Class AA waters are managed for their outstanding natural ecological, recreational, social, and scenic qualities. Direct discharge of pollutants is allowed but highly restricted. Dams and other significant human disturbances are prohibited.

Class A waters are managed for high quality with limited human disturbance allowed. Direct discharges are allowed but highly restricted. Physical and chemical characteristics should be similar to natural conditions.

Class B waters are general-purpose waters and are managed to attain good physical, chemical and biological water quality. Well-treated discharges with ample dilution are allowed.

Class C waters are managed to attain at least the swimmable-fishable goals of the Federal CWA, including support of indigenous fish species. Aquatic life standards require maintenance of the structure and function of the biological community.

Table 4-25 Maine Water Quality Criteria for Classification of Fresh Surface Waters (38 M.R.S. § 465)

	Dissolved Oxygen Numeric Criteria	Bacteria* (*E. coli*) Numeric Criteria	Habitat Narrative Criteria	Aquatic Life (Biological) Narrative Criteria
Class AA	As naturally occurs	As naturally occurs but may not exceed geometric mean of 64 CFU or MPN/100 mL over 90-day interval or 236 CFU or MPN /100 mL in more than 10% of samples in any 90-day interval	Free flowing and natural	Direct discharge of pollutants is allowed but highly restricted; *as naturally occurs*.**
Class A	7 ppm or 75% saturation From 10/1 to 5/14, 7-day mean concentration not less than 9.5 ppm and 1-day minimum concentration not less than 8.0 ppm in identified fish spawning areas	As naturally occurs but may not exceed geometric mean of 64 CFU or MPN /100 mL over 90-day interval or 236 CFU or MPN /100 mL in more than 10% of samples in any 90-day interval	Natural	Direct discharges are allowed but highly restricted; *as naturally occurs*.**
Class B	7 ppm or 75% saturation From 10/1 to 5/14, 7-day mean concentration not less than 9.5 ppm and 1-day minimum concentration not less than 8.0 ppm in identified fish spawning areas	May not exceed geometric mean of 64 CFU or MPN /100 mL over 90-day interval or 236 CFU or MPN /100 mL in more than 10% of samples in any 90-day interval from 4/15 to 10/31	Unimpaired	Discharges may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all indigenous aquatic species without detrimental changes to the resident biological community.**
Class C	5 ppm or 60% saturation but must maintain WQ sufficient for spawning in identified fish spawning areas 6.5 ppm (monthly average) at 22° and 24°C	May not exceed geometric mean of 100 CFU or MPN /100 mL over 90-day interval or 236 CFU or MPN /100 mL in more than 10% of samples in any 90-day interval from 4/15 to 10/31	Habitat for fish and other aquatic life	Discharges may cause some changes to aquatic life, but the receiving waters must be of sufficient quality to support all species of indigenous fish and maintain the structure and function of the resident biological community.**

* Table 4-1 includes reference to federal criteria in 40 C.F.R. § 131.43(a).

** Numeric criteria for macroinvertebrate assemblages in *Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams, 06-096 C.M.R. ch. 579.*

The current (March 2024) distribution of waters assigned to these four water quality classes is summarized in Table 4-26.

Table 4-26 Percent Distribution of River/Stream Water Classes

Class	Percent of Major Mainstem River* Miles	Percent of Total River and Stream Miles
AA	32.7%	7.5%
A	23.1%	46.8%
B	29.2%	44.6%
C	15.0%	1.1%

* Major mainstem rivers are rivers that have a watershed of >500 square miles.

Maine law requires that once every three years, the Department review the classification system and related standards and make recommendations to the Board of Environmental Protection (BEP) for any needed changes in the water quality classifications assigned to specific waterbodies. For more information, please see pages 19-20.

Summary of Statewide River and Stream Attainment Status

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The Integrated Report requires the assignment of each AU into one of five categories (see Assessment Methodology, above). A water is determined to be impaired if one or more of the uses assigned by its classification is not attained, as determined by the criteria assigned to that water class. An overall use attainment summary is provided in Tables 4-10 and 4-11. The 2024 use attainment assessment reports on AUs amounting to 40,746 of rivers and streams that are tracked in the ATTAINS database. Information on the status of individual AUs may be found in Listings on Individual Waters, Appendix II, Categories 1-5. A spatial representation of many AUs can be viewed using this ArcGIS Online Project (note that the project is under development): https://bit.ly/MaineIR2024

AUs can be placed in different Categories (3-5) for different (potential) impairments. For example, an AU may be in Category 4-A for a contact recreation impairment due to the 2009 Statewide Bacteria TMDL; simultaneously, it may be in Category 5-D for legacy pollutants. The mileage totals shown in Table 4-27 are for 'single category' reporting, meaning each AU is only counted once, namely in the highest category it is in. For the example above, the AU would only be counted under Category 5.

It should also be noted that ongoing improvements in mapping technology (higher resolution) and correction of errors affect the mileages assigned to each category in a given reporting cycle. Where such factors affected 2024 mileages, this information is provided below.

As with any assessment of this kind, the identification of impaired waters or delisted waters cannot be considered complete but rather is a reflection of the findings at a particular point in time, relative to the level of monitoring effort expended by the agency and other cooperating contributors.

Table 4-27 Summary of Changes to Surface Water Assessment Categories – 2022 to 2024

'2022' and '22' are used as a shorthand for 2018/2020/2022 cycle. This table is a partial duplicate of Table 2-1 in Chapter 2; it appears twice for convenience.

Rivers and Streams						
35,2182 = Total Miles Assessed in 2022						
40,791 = Total Miles Assessed in 2024						
	2022 Miles in Category[1]	**% of Total 2022 Assessed Miles**	**2024 Miles in Category[1]**	**% of Total 2024 Assessed Miles**	**% Change '22 - '24**	**Change in Miles '22 - '24**
Category 1	5,277	15.0	5,277	12.9	-2.1	0
Category 2	28,171	80.0	33,559	82.3	2.3	5,388
Category 3	350	1.0	341	0.8	-0.2	-9
Category 4	483	1.4	495	1.2	-0.2	12
Category 5	938	2.7	1,119	2.7	0.0	181

[1] Single-Category Reporting miles as generated by 2018/2020/2022 and 2024 cycles in ATTAINS.

Category 1: Rivers and streams attaining all designated uses and water quality standards, and no use is threatened.

The 2024 assessment assigned 5,277 miles (13%) of rivers and streams to Category 1 (fully attaining all uses other than statewide mercury advisory as explained in Category 5-C below). The Department has determined through monitoring and evaluation that large areas of the state should be included in this category, where significant protection is afforded by either state or private conservation efforts. Maine is fortunate to have entire sub-watersheds where there is little to no human habitation, few roads and only minimal disturbance (typically well managed forestry operations that are well buffered to protect water quality) or significant conservation ownership.

Category 2: Rivers and streams attaining some of the designated uses; no use is threatened; and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

The 2024 assessment assigned 33,559 miles (82%) of rivers and streams to Category 2 only (fully attaining all uses other than statewide mercury advisory as explained in Category 5-C below); another 50 miles of rivers and streams are in Category 2 and at least one other category. New mapping of a large number of AUs in this category based on higher resolution mapping technology, and resulting adjustments in unit lengths, caused a large increase (5,388 miles) in total mileage in this category compared to 2018/2020/2022.

Category 3: Rivers and streams with insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

The 2024 assessment assigned 341 miles (0.8%) of rivers and streams to Category 3 only (insufficient information to determine attainment); another 24 miles of rivers and streams are in Category 3 and at least one other category (total of 365 miles). Most of these segments have been assigned to Category 3 because of inconclusive or conflicting monitoring data. One segment (6 miles) was moved from Category 3 to Category 2 because it was determined that applicable water quality standards are

attained, and one segment (3 miles) was moved to estuarine Category 3 because it had previously been incorrectly assigned to a freshwater classification.

Category 4: Rivers and streams that are impaired or threatened for one or more designated uses, but do not require development of a TMDL.

Category 4 impaired waters do not require the development of a TMDL. The 2024 assessment assigned 495 miles (1.2%) of rivers and streams to Category 4. Waters in Category 4 are placed into one of three sub-categories:

- 4-A for waters that already have a TMDL that has been approved by EPA
  - Segments totaling 334 miles are listed in this category only; segments totaling 133 miles are listed in this category and at least one other (sub)category.
  - One segment (6.6 miles) was added to Category 4-A due to its inclusion in an addendum to the Maine Statewide % Impervious Cover TMDL, approved by EPA on February 28, 2024.
- 4-B for waters where there is an enforceable mechanism in place to bring the water into attainment (e.g. new or renewed wastewater discharge license; court order, etc.)
  - Segments totaling 113 miles are listed only in this category; segments totaling 321 miles are listed in this category and at least one other (sub)category.
  - No segments were moved into this Category in 2024.
- 4-C for waters where impairment is not caused by a pollutant, and is not due to a fish passage barrier.
  - Segments totaling 14.5 miles are listed only in this category; segments totaling 6.0 miles are listed in this category and at least one other category.
- 4-C-FPB for waters where impairment is not caused by a pollutant, and is due to a fish passage barrier
  - Segments totaling 32.4 miles are listed only in this category; segments totaling 38.4 miles are listed in this category and at least one other category.

Category 5: Rivers and streams that are impaired or threatened for one or more designated uses by a pollutant(s) and a TMDL is required.

The 2024 assessment assigned 1,119 miles (2.7%) of rivers and streams to Category 5 (impaired for one or more uses as well as statewide mercury advisory as explained in Category 5-C below). Waters in Category 5 are placed into one of four sub-categories:

- 5-A for waters impaired by pollutants; a priority for TMDL development
  - Segments totaling 266 miles are listed only in this category; segments totaling 198 miles are listed in this category and at least one other (sub)category.
  - One segment (6.6 miles) was moved from Category 5-A to Category 4-A due to its inclusion in an addendum to the Maine Statewide % Impervious Cover TMDL, approved by EPA on February 28, 2024.
  - A total of 16 segments totaling 128 miles were added to this category in 2024 due to new monitoring data showing impairments. Thirteen of these segments were listings for the new impairment cause ‘PFAS in Fish Tissue’. One segment was newly listed for a DO impairment, and three segments for aquatic life use (macroinvertebrates).
- 5-B for waters impaired by bacteria contamination only
  - No segments are in this category in 2024.
- 5-C for waters impaired by atmospheric deposition of mercury (inactive category due to EPA approved Regional Mercury TMDL)

- All freshwaters in Maine have an advisory for the consumption of fish due to the presence of mercury presumed to be from atmospheric deposition. A Regional Mercury TMDL was approved by EPA making these waters Category 4-A.
- This Integrated Report does not consider this statewide advisory in establishing other category listings.
- The advisory is based on probability data that a stream, river, or lake may contain some fish that exceed the advisory action level [Maine uses a lower action level of 0.2 mg/kg (edible portion) than that established by the EPA]. Any freshwater may contain both contaminated and uncontaminated fish depending on size, age, and species occurrence in that water. The advisory applies to all freshwaters because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level.

▪ 5-D for waters impaired by the residuals of "legacy" activities
- No changes were made in this category in 2024.

NUMBER OF SEGMENTS THAT WERE DELISTED

Due to EPA approval of an addendum to the Statewide Percent Impervious Cover TMDL on February 28, 2024, four aquatic life use impairments of one stream segment was moved from Category 5-A to Category 4-A (Table 8-6).

Causes and Sources of Impairment in Categories 4 and 5

Cause and stressor type information for rivers and streams is provided in Table 4-15; sources of impairment are provided in Table 4-20. It is important to understand that miles attributed to causes and sources in these two tables may be listed more than once if a waterbody is subjected to several different types of disturbance.

DEP tracks cause and source information using ATTAINS, which enables increasingly accurate and consistent tracking of this information as the database is populated and updated from cycle to cycle.

CAUSES

Aside from the statewide impairment of freshwaters due to mercury contamination, the greatest number of impaired miles is due to dissolved oxygen depletion (464 miles; see Table 4-15), followed by toxic contamination from the legacy pollutants PCBs, dioxin and DDT. For most mainstem river segments that are affected by pulp and paper mill discharges, dioxins have been listed in Category 4-B since 2004. Measureable differences above and below sources of dioxin are no longer detectable. However, those same segments are listed in Category 5-D for legacy sources of PCB contamination found in fish tissue. These legacy pollutants cannot be addressed with permits or TMDLs; pollutant effects will continue to diminish naturally over time.

The third and fourth largest number of impaired miles (302 and 249) is due to non-attainment of aquatic life criteria as determined by biological monitoring and assessment. Most of these miles were assessed by sampling the benthic macroinvertebrate community, but many miles were also assessed by sampling the algae/periphyton community. Other notable causes include pathogens (*E. coli*; 193 miles) and nutrients (180 miles).

SOURCES

Atmospheric deposition of toxics (mercury) affects all waters of the State and is the largest single source of pollution (see Table 4-20). Non-point sources, agriculture, industrial point source discharges, and unknown sources are of similar importance (610, 555, 424 and 391 miles, respectively), followed by municipal point source discharges and unspecified urban stormwater (183 and 180 miles, respectively).

Mainstems of Major Rivers

Related Website: www.maine.gov/dep/water/monitoring/rivers_and_streams/modelinganddatareports/index.html

The primary cause of impairment on the mainstems of major rivers (those with a watershed of >500 square miles) is non-attainment of the Fish Consumption use, with segments of the Androscoggin, Kennebec, Penobscot, Salmon Falls and Sebasticook Rivers listed in either Category 4-B or Category 5-D. These impairments were identified from fish tissue monitoring studies that found legacy PCB and dioxin contamination in mainstem rivers. Aside from these impairments, most of the mainstem rivers are in good condition and are attaining their classification, generally Class B with a few Class C segments[17] (see Table 4-26). Significant segments of the St. John, Allagash, East and West Branches of the Penobscot, St. Croix, and Kennebec Rivers are Class AA and A.

CSOs continue to occur on segments of major rivers; for more information, see Chapter 3, 'Maine Combined Sewer Overflow Program'. In 2009, the Department completed a statewide bacteria TMDL that establishes a restoration and management plan for all sources of bacteria, including CSOs.

AROOSTOOK RIVER

A 2001/2002 DEP study of the Aroostook River below the confluence of Presque Isle Stream revealed a number of water quality problems related to high nutrient levels, including large diurnal fluctuations of DO, elevated CHL-a concentrations, extensive algal growth and some exceedances of pH criteria. The study indicated that problems were more pronounced below point source discharges than above them; however the study did not measure Non-Point Source (NPS) inputs. Therefore, the water quality model based on the 2001 data showed that most of the nutrients in the river originated from discharges. Nutrient inputs caused excessive algal growth which in turn led to large diurnal DO fluctuations. In 2012, a follow-up study confirmed the large DO swings and documented large diurnal fluctuations in pH with widespread and frequent exceedances of Maine's pH criteria. As in the case with DO, nutrients are also the causal factor for pH fluctuations and resulting criteria violations. In addition to studying the main stem of the Aroostook River, water quality studies on a number of tributaries in this reach have also been performed. Three of these tributaries, (Merritt, Everett, and Kennedy Brooks) are currently listed in Category 4-A as not attaining for Aquatic Life Use (due to 2016 and 2021 approvals of Statewide NPS TMDLs), and another six streams (Birch, Cowett, Amsden, Hacker and Gray Brooks, as well as Unnamed Brook – Presque Isle) are listed in Category 5-A for the same reason. All nutrient loading in

[17] Note that all freshwaters in Maine are subject to a statewide fish consumption advisory due to "Impairment caused by atmospheric deposition of mercury" (see 'Listing Methodology for this 305(b)/303(d) Integrated Report List', above).

these tributary watersheds is NPS-related. Several of these streams (Amsden, Hacker and Gray Brooks, and Unnamed Brook (Presque Isle), a.k.a. McHugh Brook) are included in an EPA-sponsored agricultural modeling effort to assess NPS sources that are contributing to stream impairment in these watersheds. In 2018/2019 a joint study with University of Maine identified a unique chemical control on dissolved phosphorus mobilization in the calcareous sediment materials in the agricultural streams during base flow. This interaction between surfacing groundwater and the atmosphere naturally raises the pH to 8.5 resulting in the release of phosphorus from agriculturally derived sediments.

In the 2014 Integrated Report, the Aroostook River between the confluence with Presque Isle Stream and 3 miles upstream of the (former) Caribou water supply intake (ME0101000413_148R) and the two downstream segments (ME0101000413_148R01 and ME0101000413_148R02) of the river that extend to the Canadian border were moved to Category 5-A for an aquatic life impairment due to pH. The Department is pursuing an adaptive management approach (e.g. reducing discharge permit limits; promoting Best Management Practices) to address the existing problems. Continuous pH data collected in 2017 and 2019 in the Aroostook River in Fort Fairfield (ME0101000413_148R02) showed ongoing excursions of the pH criterion of 8.5 that was in effect at that time, and also excursions of the current (2024) criterion of 9.0.

MEDUXNEKEAG RIVER

Historic data submitted by the Houlton Band of Maliseet Indians Water Resources Program documented high algal growth and large diurnal swings in DO on the Meduxnekeag River mainstem below Houlton. These problems have abated in recent years. The river below the confluence with the South Branch Meduxnekeag River is currently in Category 5-D for legacy pollution with DDT and also in Category 4-A for elevated phosphorus (EPA TMDL approval in 2001). In the 2014 cycle, a new impairment to the aquatic life use was added to the lowermost ~7 miles of the river because algal communities did not meet narrative aquatic life standards. This impairment was delisted to Category 2 in the 2018/2020/2022 Report because a re-analysis of historic data, and new (2017) data show that narrative aquatic life criteria are attained.

The Meduxnekeag River upstream of the South Branch has been listed in Category 3 since the 2010 reporting cycle and data collection activities are ongoing. Extensive wetlands along this section of the river may be contributing to low DO levels. In 2013-14, the Natural Resources Conservation Service (NRCS) provided technical assistance and funding (Environmental Quality Incentives Program funds through the National Water Quality Initiative - NWQI) to several landowners to improve conservation practices on agricultural lands in the Nickerson Lake sub-watersheds to help reduce impairments in the Meduxnekeag River. From 2015-2019, the NRCS provided technical and funding assistance through the NWQI to watershed landowners to improve conservation practices on agricultural lands to help restore the Meduxnekeag River. Watershed restoration activities ongoing including Phase I project (2017-2019), Phase II project (2020-2022), and Phase III (2024-2026).

PENOBSCOT RIVER

A total of seven segments on the mainstem of the Penobscot River from the confluence of the East and West Branches to Reeds Brook (Hampden) and the West Branch Penobscot River between Millinocket Stream and East Branch Penobscot River are

listed as impaired for aquatic life use because of previously documented non-attainment of DO criteria and problems with nutrient/eutrophication biological indicators. In May of 2011, new MEPDES permits incorporating phosphorus discharge limits for all mills on the freshwater portion of the river were issued, putting in place water quality protection based on actual waste load allocations. As a result of this permitting action, the impaired segments were moved to Category 4-B (Pollution Control Requirements Reasonably Expected to Result in Attainment) in the 2012 reporting cycle[18]. As part of the permit conditions, the Department and permittees have been conducting ambient and effluent monitoring along the segments covered by the permit to assess the effectiveness of the new discharge limits. Continuous data collected in 2011 and 2012 indicated that DO criteria were attained. 2013-2019 instantaneous data indicate attainment of DO criteria; collect continuous data to confirm criteria attainment. Additional data collection expected to occur in 2024.

ANDROSCOGGIN RIVER

A 2010 addendum to the 2005 Final Androscoggin River TMDL (Gulf Island Pond and Livermore Falls Impoundment), as well as modifications to the Water Quality Certification of the Gulf Island Deer Rips Hydro project and MEPDES permits for two pulp and paper companies, resulted in revised discharge limits for Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Total Phosphorus (TP) and improved oxygenation of Gulf Island Pond (GIP) in the Androscoggin River. Due to this permitting action, the GIP segment (ME0104000208_424R_01) was moved to Category 4-B in the 2012 reporting cycle. Water quality has improved substantially in GIP and the river downstream of the Gulf Island Dam since 2010, and Class C dissolved oxygen (DO) criteria are met at all times. One exception is the 'deep hole' in Gulf Island Pond, where a relatively small pocket of bottom water becomes hydraulically isolated during periods of lower river flow, creating low DO levels. In the river below GIP, volunteer data collected under DEP's Volunteer River Monitoring Program (VRMP) show that over the past approximately 12 years Class C DO standards were met at all times and Class B standards were met most of the time.

In 2009, the Lower Androscoggin River (Worumbo Dam, Lisbon Falls to Merrymeeting Bay, Brunswick/Topsham) was proposed for upgrade from Class C to Class B. The Board of Environmental Protection declined to recommend the upgrade, as did the Maine Legislature. However, a Resolve was passed by the Legislature directing the Department to accelerate monitoring and modeling on this segment in the interest of reviewing this proposal in the future. A water quality field survey was completed in the summer of 2010. A water quality model was developed in 2011, which predicted that the Class B criterion could not be met under critical water quality conditions.

In 2018, an upgrade for the same segment was again proposed, and again the Board and Maine Legislature declined to recommend it. In 2020, the Maine Legislature considered a bill (legislature.maine.gov/LawMakerWeb/summary.asp?ID=280079141) to upgrade a segment from the Gulf Island Pond Dam to Merrymeeting Bay but ultimately carried the bill over to the subsequent session. In DEP's 2020-2022 Triennial Review (see pages 19-20 and www.maine.gov/dep/water/wqs/triennial-review_2020-2022.html), the same segment was also proposed for upgrade. In early 2022, the Maine Legislature enacted a more limited upgrade, namely from Worumbo Dam, Lisbon Falls to Merrymeeting Bay.

[18] The West Branch Penobscot River and the uppermost mainstem segments were moved to Category 4-B in the 2010 cycle based on a consent agreement issued in 2008.

The segment of the lower Androscoggin River between the Pejepscot Dam and the Brunswick Dam is listed in Category 4-C (impaired by non-pollutant) based on information from DMR that this segment fails to support an indigenous species of fish, the American shad, as required by statute. The dam at Brunswick and the associated fish passage device fail to allow passage of a sufficient number of shad to establish a sustainable population in the river above the dam. This facility is licensed by the Federal Energy Regulatory Commission (FERC) and has a requirement for fish passage as part of a State-adopted restoration plan for this species. The FERC license for the Brunswick Dam is due for renewal in 2029 and it is expected that DMR and other fisheries agencies will require improved fish passage.

PRESUMPSCOT RIVER

On the Presumpscot River, a 1998 TMDL stated that Class B DO criteria were not always attained in the early to mid-1990s at the Little Falls, Mallison Falls, and Saccarappa dam impoundments. It was recommended that additional data should be collected, and if non-attainment continued a TMDL should be implemented for nonpoint sources.

The non-attainment of DO criteria was addressed in the 2007 Water Quality Certification (WQC) for the five dams of the "Presumpscot River Hydro Projects", which required increased spillage from the Dundee Pond and Gambo Falls dams and water quality monitoring to determine whether Class B DO standards were met. Annual monitoring reports for 2008-2011 showed few DO excursions, indicating that non-attainment is associated with low flow discharges from Sebago Lake through the Eel Weir Dam. To address this problem, the WQC and Federal Energy Regulatory Commission (FERC) license for this dam issued in March 2015, and the related Lake Level Management Plan for Sebago Lake (from May 2011) stipulated that minimum flows from the dam must be increased from 270 cfs (cubic feet per second) to 408 cfs from June 1 to September 30 annually to improve spillage from the Dundee Pond and Gambo Falls dams, leading to improved DO conditions in the Presumpscot River. Annual DO monitoring reports submitted by the dam owner show that a flow level of 408 cfs is met except during drought years, due to competing interests to support water level concerns in Sebago Lake. The decision to reduce flows is informed by the ongoing DO monitoring, which has shown continued attainment of Class C DO criteria. Volunteer data collected under DEP's VMRP show that over the past approximately 12 years Class B DO standards were met most of the time.

In 2019, the Saccarappa Dam was removed, allowing migratory fish access to more upstream waters. Dischargers to the Class C segment of the river have decreased their discharges to the river over time, most recently in 2020, leading to continued improvements in water quality. In DEP's 2020-2022 Triennial Review (see pages 19-20 and www.maine.gov/dep/water/wqs/triennial-review_2020-2022.html), the segment from Saccarappa Falls to tidewater was proposed for an upgrade from Class C to Class B. As part of the proposal evaluation process, MDEP collected continuous dissolved oxygen (DO) data in 2020 and 2021 in the segment in question. In 2021, Class B DO criteria (7 mg/L) were met at all times, and in 2021, DO criteria were met almost all the time. However, data collected by the Friends of Caso Bay in 2022 showed multiple results below 7 mg/L. Ultimately, the upgrade proposal was not successful. In 2023, a moratorium (October 15, 2023 to January 1, 2028) was enacted on new discharges

to the river below Saccarappa Falls[19]. In May of 2022, the Maine Center for Disease Control & Prevention issued a fish consumption advisory for the Presumpscot River from Saccarappa Falls in Westbrook to Presumpscot Falls in Falmouth for PFAS contamination (www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/2kfca.htm). This advisory led to the Category 5-A impairment listing of this segment of the river in the 2024 Integrated Report.

Toxics

SURFACE WATER AMBIENT TOXICS (SWAT) MONITORING PROGRAM

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Related Website: www.maine.gov/dep/water/monitoring/toxics/swat/

Maine's SWAT monitoring program was established in 1993 (38 M.R.S. § 420-B) to determine the nature, scope and severity of toxic contamination in the surface waters and fisheries of the State. The authorizing statute states that the program: 1) must comprehensively monitor the lakes, rivers and streams and marine and estuarine waters of the State on an ongoing basis, 2) must incorporate testing for suspected toxic contamination in biological tissue and sediment, 3) may include testing of the water column, 4) must include biomonitoring and the monitoring of the health of individual organisms that may serve as indicators of toxic contamination, and 5) must collect data sufficient to support assessment of the risks to human and ecological health posed by the direct and indirect discharge of toxic contaminants. The Dioxin Monitoring Program was incorporated into the Surface Water Ambient Toxics (SWAT) monitoring program in 2007. In 2015 the annual report was changed to a biennial report due April 30 of the first regular session of the Maine Legislature. Annual reports for 2013 and 2014 and biennial reports for 2015-2016, 2017-2018, 2019-2020, and 2021-2022 may be seen at the related website linked above. Information regarding sampling for PFAS is included in Chapter 7, 'Freshwater Fish Consumption Advisories: PFAS' (page 128) and 'Freshwater PerFluoroAlkyl Substances (PFAS) Monitoring' (page 129).

Aquatic Life Monitoring

BIOLOGICAL MONITORING OF RIVERS AND STREAMS

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Related Website: www.maine.gov/dep/water/monitoring/biomonitoring/index.html

The Biological Monitoring Program assesses the health of rivers, streams, and wetlands by evaluating the composition of the resident biological communities, including macroinvertebrates and algae. In the 1980s, the Maine Legislature passed the Water Classification Law and made an initial assignment of each river and stream reach in the state to one of four established classes (AA, A, B, and C, Table 4-26).

[19] 38 M.R.S. § 467.9.A.(4).: From Saccarappa Falls, also known as Sacarappa Falls, to tidewater - Class C. For the period beginning October 15, 2023 and ending January 1, 2028, there may be no new direct discharges to this segment except for any new direct storm water discharges licensed under section 413, section 420-D or article 6.

Subsequent Water Quality Reclassification initiatives have reassigned waterbodies to more appropriate (usually higher quality) management classifications. Class AA and Class A have the same aquatic life criteria and biological expectations ("as naturally occurs"). Data collected in accordance with Maine's biocriteria protocols are analyzed to predict the likelihood of a waterbody attaining the aquatic life criteria of its assigned class (i.e. AA/A, B, and C). In 2003, DEP adopted numeric biocriteria in *Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams, 06-096 C.M.R. ch. 579.* These rules describe the process and statistical model used to make aquatic life use attainment decisions based on benthic macroinvertebrate communities and are currently applicable to flowing streams and rivers having a hard, eroded substrate. *06-096 C.M.R. ch. 579* will be amended to include a statistical model to predict class attainment based on algal communities, following a standard public review process. In addition, the Biological Monitoring Program developed protocols and statistical models using macroinvertebrates and algae to determine class attainment of slow-flowing streams, rivers and associated wetlands having a soft substrate with shallow aquatic macrophyte beds. These models will also be incorporated into Chapter 579 rules when they are amended. For the 2024 Integrated Report, Department biologists determined attainment of narrative aquatic life criteria already contained in the Water Classification Program (38 M.R.S. § 465) by using expert judgment. Results of these evaluation are included in Appendix II and IV for the stream algal and wetland macroinvertebrate communities, respectively. More detailed information on wetland monitoring and assessment is provided in Chapter 5. Biomonitoring station locations and associated biological and physical data can be found at www.maine.gov/dep/water/monitoring/biomonitoring/data.html .

REPORTS OF FISH KILLS

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The Department documents all pollution-caused fish kills. There were 2, 5, 6, 12, 2, 4, 1, 12, 0, and 2 fish kills for the years 2013 through 2022 respectively. Most were either in lakes where there are no discharges and were post-spawning events, or were of searun alewives in rivers and streams due to low flows and high temperatures. In May 2022, several dozen dead largemouth bass were found in Threemile Pond and Webber Pond in Central Maine. Staff from Maine IF&W determined that they had gill parasites and a fungal infection. In September 2022, several thousand minnows and white suckers were found dead in the Prestile Stream (Easton to Mars Hill) after Christina Reservoir was drained. It was presumed that many of the fish were from Christina Reservoir and subsequently died in Prestile Stream.

PROBABILITY-BASED MONITORING

Biological Monitoring Program

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In the past, biological monitoring staff have participated in planning for national surveys of wadeable streams and large rivers, but no recent involvement has occurred.

SALMON HABITAT MONITORING PROGRAM

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Related Website: www.maine.gov/dep/water/monitoring/rivers_and_streams/salmon/index.html

Maine is home to the only remaining populations of wild Atlantic salmon (*Salmo salar*) in the United States. These constitute the Gulf of Maine Distinct Population Segment (DPS), which has been listed as endangered since 2000. As anadromous fish, salmon face a large suite of threats to survival in both fresh and saltwater environments, including dams, pollution, and (historically) overfishing. Water quality is an essential component of suitable habitat for spawning and rearing. DEP monitors the water quality and biological communities in Maine's Atlantic salmon rivers and streams in close collaboration with state and federal agencies and non-profit groups, with the goal to restore and enhance the populations of this endangered species. Work is guided by Maine's water quality standards (38 M.R.S. § 464 4-A; for further information see Maine's water classifications) and the Collaborative Management Strategy's Atlantic Salmon Recovery Plan. Annual project reports are posted on the program website.

LAKES / PONDS

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Related Website: www.maine.gov/dep/water/lakes/index.html

Data Considered in Current Assessment

Monitoring of Maine lakes continues to rely on a strong volunteer-based program, Lake Stewards of Maine Volunteer Lake Monitoring Program (www.lakestewardsofmaine.org), as well as both targeted and probability-based monitoring performed by state staff. Data received through 2022 was evaluated for this report.

ATTAINMENT OF CLASSIFICATION

The state designated a subset of the total population of lakes as 'Significant Lakes' as requested by EPA under CWA § 314 in the early 1990s. Table 4-28 summarizes numbers and acreages for all lakes having an identification number as well as the subset of Significant Lakes.

Table 4-28 "All" and "Significant" Lake Category Information

Maine Lake Population Summary		
	Number	**Acres**
All Lakes	5,782 (100%)	987,019 (100%)
Significant Lakes	2,313 (40%)	958,977 (97%)

Designated uses actively assessed to determine classification attainment status are: Aquatic Life Support, Fish Consumption, Recreation In/On the Water, and Drinking

Water Supply (after treatment). Table 4-29 summarizes how lake attainment status relates to specific Listing Categories used in the 2024 report.

Table 4-29 Summary of Listing Categories and Sub-categories used in the 2016 Assessment of Maine Lakes

Listing Category	Category Summary
1	Attaining all standards
2	Attaining some standards; assumed to attain others
3	Attaining some standards; insufficient / no data / info to determine if standard(s) are met for use that may be impaired
4-A	TMDL complete (includes Regional Hg Deposition TMDL)
4-B	Expected to meet standards
4-C	Impaired by pollution but not impaired by a pollutant
5-A	TMDL needed
5-R	TMDL alternative has been submitted

Brief summaries of Listing Categories for lakes follow. Lake-specific changes are included in Chapter 8 as well as in Appendix III. One lake was moved (delisted) from Category 5-A to Category 2 (Cochnewagon Pond, 410 acres); three lakes were moved (delisted) from Category 4-A to Category 2 (East Pond, 1,823 acres; Lilly Pond, 29 acres; and Toothaker Pond, 30 acres). Six lakes were moved into Category 5-A due to new PFAS-related fish consumption advisories during this period. Two of these were removed from Category 2: Number One Pond (100 acres) and Estes Lake (387 acres). Two had been in Category 4-A: China Lake (3845 acres) and Unity Pond (2528 acres). The remaining two were recently added to the list of assessed lake waters thus were previously un-categorized: Fairfield PAL Ponds (3 acres; technically one pond with two lobes) and Durepo Lake/Reservoir (64 acres).

Note that all lakes are also listed in Category 4-A because a regional TMDL was approved to address the fish consumption impairment due to atmospheric deposition of mercury which formerly had all lakes listed in Category 5-C.

Category 1: Lake waters attaining all designated uses and water quality standards, and no use is threatened.

For the purposes of this assessment, lakes having no population in their direct watersheds have been listed in 'Category 1, Attaining all standards' with the exception of four lakes which are listed in Category 4-C, in non-attainment of the Aquatic Life Use (habitat) due to non-pollutant (hydrologic modification). The number of lakes listed in Category 1 is 2,856, totaling 295,418 acres. Waters are summarized by the 10-digit HUC within which they are located (Appendix III, Category 1).

Category 2: Lake waters attaining some of the designated use(s), no use is threatened, and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

The Department is highly confident that these waters attain the following designated uses: drinking water (after disinfection), recreation in/on the water, fishing (excluding fish consumption), and as habitat for fish and other aquatic life. Category 2 contains 2,895 lakes or 607,617 lake acres. Waters are summarized by the 10-digit HUC within which they are located (Appendix III, Category 2). Four lakes were moved into this category during this assessment. Cochnewagon Pond (410 acres) was previously in

Category 5-A; East Pond (1,823 acres), Lilly Pond (29 acres), and Toothaker Pond (30 acres), were all previously in Category (4-A). All four lakes will remain on the Lake Assessment Section's watch list.

Category 3: Lake waters with insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

Currently there are no lakes in Category 3. No lakes have moved in or out of this Listing Category since the 2012 reporting cycle.

Category 4: Lake waters that are impaired or threatened for one or more designated uses, but do not require development of a TMDL.

There are currently 23 lakes covering 67,685 acres listed in Category 4. These lakes fall into two sub-categories: waters on which TMDLs have been completed (4-A) and waters with impairments not caused by a pollutant (4-C). Category 4-A contains 17 lakes totaling 18,696 acres. Five lakes have been moved out of this category for this reporting cycle. Lilly Pond (29 acres), Toothaker Pond (30 acres), and East Pond (1,823 acres) were moved (delisted) to Category 2. And two lakes, that already had TMDLs completed for trophic reasons, were moved to Category 5-A due to PFAS-related fish consumption advisories.

It is important to acknowledge that most of the lakes remaining in Category 4-A are impaired due to internal phosphorus loading from the sediments. When this is the case, NPS work in a lake's watershed does not result in any noticeable improvement. Properly applied in-lake aluminum treatments to treat sediments can result in a dramatic improvement to the lake water quality. Unfortunately, alum treatments are expensive, far exceeding annual state budgets for lake activities. In recent years, some §319 funds have been used for 2 alum treatments and another 3 have been funded locally. An in-state, non-lapsing, dedicated fund for lake restoration using alum treatments would allow lake managers to restore additional Category 4-A lakes. Note that for reporting cycles since 2008, Category 4-A also includes all freshwaters in Maine that were listed in previous cycles in a narrative Category 5-C "Impairment caused by atmospheric deposition of mercury" because of the Statewide fish consumption advisory due to mercury. On December 20, 2007, EPA approved a Regional Mercury TMDL which allowed the lakes to be moved to Category 4-A.

Six lakes (48,989 acres) are listed in Category 4-C, lake water impairment not caused by a pollutant. Five of these lakes (48,964 acres) are in non-attainment of aquatic life (habitat) standards due to hydromodification (drawdown). One lake (Otter Pond, 25 acres) was newly included in this Category for the 2022 cycle because of non-attainment of aquatic life (habitat) standards due to historic deposits of sawdust up to 10' thick covering most of its bottom. Sawdust deposits occurred when a sawmill was in operation adjacent to the pond more than a half-century ago. The sawdust has altered, and thus impairs, habitat that would otherwise likely be used by brook trout. The impairment is due to pollution [i.e. 'man-made or man-induced alteration of the '… physical … integrity of water', CWA Section 502(19)] but not a pollutant, which qualifies it to be listed under 4-C.

Category 5: Lake waters that are impaired or threatened for one or more designated uses by a pollutant(s), TMDL development is required.

There are currently 8 lakes (16,299 acres) listed in Category 5. Five sub-categories have been designated under Category 5; however, lakes have been listed in only two.

Category 5-A includes 7 lakes (8,060 acres), lakes impaired by pollutants and require a TMDL to be conducted by the State of Maine. During this cycle, one lake (Cochnewagon Pond, 410 acres) was removed (delisted) to Category 2, and 6 lakes were added due to PFAS-related fish consumption advisories (See Table 7-3). Two were previously in Category 2: Number One Pond (100 acres) and Estes Lake (387 acres); two had been in Category 4-A: China Lake (3845 acres) and Unity Pond (2528 acres); and the remaining two were recently added to the list of assessed lake waters thus were previously un-categorized: Fairfield PAL Ponds (3 acres; technically one pond with two lobes) and Durepo Lake/Reservoir (64 acres).

Lakes impaired by pollutant that have had a Watershed-based Management Plan prepared that qualifies as an Advance Restoration Plan as approved by EPA, listed in the previous cycle as Category 5-Alt are now in Category 5-R. Table 4-30 summarizes individual use support for the lakes in Category 5-A.

Table 4-30 Individual Use Support Summary for Lake (acres) in Category 5-A (TMDL Needed)

Designated Use	Non-Attainment	Attainment
Drinking Water Supply (after disinfection/treatment)	0	1,133
Aquatic Life Use Support	1,133	0
Fishing* (due to PFAS-related fish consumption advisories)	6,9270	1,133
Recreation In / On the Water	1,133	0
Navigation, Hydropower, Agriculture & Industrial Supply	0	1,133
*Other than fish consumption covered in Cat. 4-A		

Causes (or Stressors) and Sources resulting in non-attainment are summarized for all impaired waters in Table 4- 16 and Table 4- 21, respectively. Table 4- 17 and Table 4- 22 provide Causes/Sources organized by listing category. For more information on Lake TMDL projects, visit: www.maine.gov/dep/water/monitoring/tmdl.

2024 Assessment Notes.

Auburn Lake (2,260 acres; Category 2) in Auburn, the water supply for the municipalities of Lewiston and Auburn, suffered its first algal bloom in 2012. Severe weather events in 2011 and in early 2012, resulted in huge pulses of nutrients in stormwater runoff from the watershed. One gully on the west side of the lake, was large enough for a tractor trailer to fit in it. A flush of nutrients and iron from upstream wetlands also entered the lake. In September of 2012, the oxygen depletion in hypolimnetic waters resulted in an unusual fish kill. Approximately 200 lake trout (togue) washed up on the shore; fishery biologists estimate that the count was probably closer to 500, as many fish settle to the bottom of lakes during such events. The Auburn Water District sought a permit from DEP to chemically treat the lake should turbidity levels approach the limits of their filtration waver in the future. In 2018, the lake was treated with copper sulfate to knock down algal populations; in 2019 the lake was treated with a low dose of alum to immobilize phosphorus, decrease trophic state, and reduce the risk of high turbidity levels. Water quality improved for a few years, but in 2023 reduced transparencies but not to bloom conditions, prompted the district to obtain a renewal of their permit to conduct an in-lake aluminum treatment. They are also surveying their watershed again to identify nutrient sources and are considering other treatment options.

China Lake (3,845 acres; Category 4A - TMDL completed in 2001) in China, has also had a recent watershed survey completed in addition to intensive water quality

monitoring. Results revealed that internal recycling of phosphorus provides a significant contribution to the nutrient load that supports algal blooms in this lake. The northeastern section of the lake would benefit from an in-lake aluminum treatment, but the prohibitive cost has delayed progress. China Lake serves as the water supply for Kennebec Water District, which supplies drinking water for the municipalities of Waterville, Winslow and Vassalboro.

Clary Lake's (666 acres, in Jefferson; Category 2) water quality had declined following damage to the dam in 2011 by tropical storm Irene. Moving Clary Lake out of Category 2 was not pursued in 2016 because the local lake association was trying to hold the dam owner responsible for the repair. This was unsuccessful so they ended up purchasing the dam and implementing repairs on their own. Although the pond refilled and water quality returned to pre-dam damage conditions, the lake did support blooms for at least two years during the drought.

Cross Lake (2,515 acres; Category 4A - TMDL completed in 2006) in T17 R05 WELS has had a recent watershed survey completed and intensive water quality monitoring over the last few years. These efforts revealed that little if any internal recycling of phosphorus is occurring and most of phosphorus input is from watershed activities including agriculture, forestry, and shoreline development. The department's Watershed Management Unit is working closely with entities to mitigate these inputs, with a particular focus on agricultural sources.

Long Pond (275 acres; Category 2) in Parsonsfield experienced an early fall algal bloom in 2007, from which no data was collected but was visually confirmed by DEP staff. The lake bloomed in 2017 and 2018, and the blooms persisted for a few months. Monitoring data confirmed that internal recycling of phosphorus from the sediments was a dominant source. A watershed survey was conducted, eroding sites prioritized, local funding secured and in 2022 a successful in-lake aluminum treatment was conducted. Water quality has greatly improved so the lake will remain in Category 2.

Togus Pond (660 acres; Category 4A - TMDL completed in 2005) in Augusta recently experienced a few seasons of severe blooms which motivated the lake association to look more closely at sources of phosphorus. A recent watershed survey and intensive water quality monitoring revealed that internal recycling of phosphorus provides a significant contribution to the nutrient load that supports algal blooms in this lake. The association raised funds to conduct an in-lake aluminum treatment, the first phase of which is happening now (April 2024); a second phase is planned if funds allow in 2025.

VARIOUS TABLES AND ADDITIONAL UPDATES REGARDING MAINE LAKES

CWA § 314 requires a summary of trophic classification for Maine's 'Significant' lakes. This summary is compiled using the numerical criteria in Table 4-4. Table 4-31 summarizes the trophic distribution of Maine Lakes.

Table 4-31 Trophic Status of Maine Lakes

Trophic Category	Significant Lakes		All Lakes	
	Number	Acres	Number	Acres
Dystrophic	2	34	2	34
Eutrophic	593	150,955	670	151,477
Mesotrophic	1,024	664,852	1,127	667,087
Oligotrophic	125	111,500	129	111,547
Total Assessed	**1,744**	**927,341**	**1,928**	**930,145**
Unknown	**569**	**31,636**	**3,852**	**56,807**

Table 4-32 summarizes techniques used to rehabilitate lakes.

Table 4-32 Lake Rehabilitation Technique Summary (§ 319 Projects)

Rehabilitation Technique
In-Lake Treatments Alum treatment Late summer drawdown Increasing flushing rate
Watershed Treatments BMPs associated with Public & Private Road Management BMPs associated with Shoreline Erosion Control / Bank Stabilization
Other Lake Protection/Restoration Techniques Public Information/Education Program/Activities

CWA § 314 also requires reporting Acid Effects on lakes. Maine is fortunate to be located a considerable distance from many of the sources of atmospheric deposition that can result in acidification of surface waters. Some smaller headwater and seepage lakes having naturally low pH are likely slightly more acidic due to such atmospheric inputs but not to levels that have conclusively altered the biota or caused Maine to consider mitigation activities. The Clean Air Act Amendments of 1990 decreased air concentrations of nitrogen, sulfur and metals (e.g., lead, cadmium, mercury) due to mandates imposed on coal-fired power plants and other industries. Recovery from acidic deposition is apparent in lakes in Vermont, New Hampshire, and Maine. Reduced sulfur deposition has supported return of acid sensitive algal species in Jordan and Seal Cove Ponds on Maine's Mount Desert Island (Acadia National Park). An important change in aquatic chemistry coincident with decreased acidic deposition is increased concentrations of dissolved organic carbon (DOC) in recovering surface waters across the northern hemisphere. This result has led to a shift in the source of acidity from inorganic sources (acid deposition) to natural (DOC) sources. Although deposition is less acidic now, there have been some legacy effects observed particularly in the 'Down East' region of Maine manifested as depleted calcium in the watersheds and thus in the receiving waters, particularly in streams. This long-term effect is exacerbated by the removal of calcium-rich vegetation during forestry operations. Calcium is an element necessary for many forms of aquatic and terrestrial life.

PROBABILITY-BASED MONITORING

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Participation in EPA National or Regional Probability-based Projects. In addition to the REMAP (Regional Environmental Monitoring and Assessment Program) project of the early 1990s, the DEP Lake Assessment Section participated in an EPA Region 1 probability-based lake monitoring effort in 2006 and the National Lake Assessment (NLA) efforts in 2007, 2012, 2017 and 2022. The results of the NLA surveys have helped put the overall condition of Maine lakes in perspective nationally and have added to the State's dataset. NLA results have reinforced the conclusion that Maine's lightly developed watersheds continue to support lakes in full attainment of most designated uses.

State Cyanotoxin Survey. Using a probability-based approach and a targeted time-series approach, samples were collected for microcystin (MC) analysis from 2014 to 2020; screening conducted in 2008/2009 revealed that MC was the only detected toxin in samples from blooming lakes. Lakes having a history of algal blooms were targeted with the expectation of gaining worst-case-scenario insights; a summary of these results is included in the latter part of this section. The probability component included 126 lakes visited from 2014 to 2019. Approximately 22 lakes were randomly selected each year using a stratified random approach. Lakes greater than 150 acres in surface area, located in the more populated areas (approximately 3/5ths of the state) were identified for the probability selection; nearly half of this population was visited. This sampling followed the monitoring protocol established by the Cyanobacteria Monitoring Collaborative spearheaded by EPA Region I. Modifications included running samples having the highest phycocyanin fluorometric results for MC using ELISA, and the collection of scum grab samples if algal scums were present. Targeted monitoring of blooming lakes continues.

EPA's 10-day Drinking Water MC health advisory value for 'infants and non-school age children' is 0.3 ppb, and, for 'school-age children and adults' is 1.6 ppb. Their recreational advisory value is 8.0 ppb. Open-water results from the probably-based monitoring suggest that approximately 11% of Maine ***lakes*** having surface areas greater than 150 acres and located in populated regions of the state, had detectable MC in open water when visited; 6.8% exceeded one or more of the EPA advisory values (5% had concentrations between 0.3 – 1.6 ppb, 1.3% had concentrations between 1.6 – 8.0 ppb, and 0.5% exceeded 8.0 ppb). Algal scums were present and were sampled in six of the 126 lakes (4.8%). Of the six, only three had detectable concentrations of microcystin, with one falling between 0.3 – 1.6 ppb and two exceeding 8.0 ppb (9.3 ppb and 491 ppb). It is important to note that higher concentrations derived using ELISA tests may not be as accurate as concentrations closer to the range specified for the kits as the dilution process introduces error into the analysis; nevertheless, one can infer that the actual value is in the same order of magnitude.

On an individual ***sample*** basis, concentrations of MC exceeded EPA's 10-day Drinking Water health advisory value for 'infants and non-school age children' in an average of 6.9% of the open water samples and in three of the six scum samples (2.4% of the lakes sampled). The open water station exceeding these guidelines most often was the downwind near-shore sample. MC concentrations exceeded EPA's 10-day Drinking Water health advisory value for 'school-age children and adults' in an average of 1.8% of the open water samples and in two of the six scum samples (1.6% of the lakes sampled). This is potentially of concern to shorefront property owners that draw their drinking water from the lake, especially those with young children. EPA recreational advisory values were exceeded in an average of 0.5% of the open-water samples and 1.6% of the scum samples.

Time series data were obtained from a total of 487 samples collected from 145 visits to 12 lakes. The sampling regime was identical to that used in the probability study. Lakes known to be chronic severe bloomers were visited frequently to establish 'worst-case-scenario' conditions for the state. Lakes that have bloomed for decades, but not as severely, and lakes that have only recently begun to support blooms were visited less frequently (fewer years). MC concentrations in open water tended to peak at the end of August and in early September. Concentrations in scum samples tended to peak in mid to late September. By November, many samples yielded concentrations below the reporting level.

Chronic severe bloomers often had concentrations exceeding the drinking water advisory value, and in the case of Sabattus Pond, occasionally exceeding the recreational advisory value. Microcystin concentrations in algal scums often greatly exceeded the recreational advisory value by up to 3-4 orders of magnitude. *Lakes that have bloomed for decades, but not severely* often had MC concentrations that exceeded EPA's drinking water advisory value for infants and small children; algal scums occasionally encountered only exceeded the recreation advisory value slightly. *Lakes that have only recently begun to support occasional blooms*, rarely exceeded EPA advisory values, with the exception of two scum samples which exceeded drinking water advisory values.

State Littoral Study. In 2021, a probability-based approach was implemented to select lakes on which modified PHAB assessments are conducted. The assessments closely follow those included in EPA's NLA program. This study continued in 2022, but to a lesser degree due to participation in NLA, and 2023. It is expected to continue for another 3-4 years, with a different lake type focused on each year. Preliminary data is being analyzed currently.

OTHER CONSIDERATIONS: ECONOMICS AND TRENDS

A recent Maine study, "Valuing the Economic Benefits of Maine's Great Ponds in the 21st Century," led by a team from the University of Maine at Orono, Maine Lakes and the Maine Department of Environmental Protection, updated the economic value of Maine's Lakes. Financial results from a mid-1990s study that focused on the same topic, were updated and expanded upon. The value and expenditures associated with children's summer camps, lake-based recreation, water consumption, and property were assessed. The study revealed that an estimated the net value of the state's lakes and ponds to be $14.2 billion/year and another $5 billion/year generated by sales, indirect and direct expenditures.

Water quality greatly influences economic benefits locally. The study identified population increase, development, invasive species, and climate change as risks to lakes with warmer water temperatures, longer growing seasons and more stormwater runoff creating conditions favorable for algae, invasive species, and harmful bacteria. Just a moderate decrease in water quality is predicted to lower total recreation use value by $33 million/year. An increase in water clarity by one foot can increase property values by 1.1%. It is thought that decreases result in a proportionally greater reduction in property value as was determined in the 1990s study, but that percentage is yet to be determined.

Overall, water quality trends in Maine Lakes appear to remain stable, with a small number improving and a few deteriorating. However, this could be taken as a false sense of security. Lakes take a long time to respond to changes in their watersheds due to development and other land-uses. Many of the lakes with legacy phosphorus in their sediments now being internally recycled back into the water column, are responding to agricultural runoff from farming practices that did not include soil conservation a century ago. Climate change is altering conditions historically present in weather patterns and seasonal phonologies. Longer growing seasons, due to shorter ice-duration and reduced thickness, and warmer water temperatures promote cyanobacteria growth. Cyanobacteria can produce cyanotoxins. In 2008 & 2009, the only toxin identified in samples from Maine's chronic bloomers was microcystin. Now we are seeing anatoxin and BMAA. At this point in time, lake protection and intentionally building resilience into our watershed management approaches is

imperative for Maine's continuing enjoyment of these lake gems on the landscape, as well as reaping associated economic benefits.

SURFACE WATER AMBIENT TOXICS (SWAT) MONITORING PROGRAM

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For background information on the SWAT monitoring program see the SWAT section under River/Streams on page 81. For the period 2022-2023, SWAT monitoring for lakes has focused on PFAS compounds in multiple species of fish, and cyanotoxins produced by harmful algal blooms (HABs). Please refer to the Maine DEP website for individual reports. See Probability Based Monitoring section immediately above for microcystin studies.

INVASIVE AQUATIC PLANTS

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Related Website: www.maine.gov/dep/water/invasives/

The Maine Legislature passed a dedicated funding mechanism starting in 2002 that established the Department's formal program to prevent the spread of and control aquatic invasive plants. Fees on Maine-registered motorized watercraft and on out-of-state motorized boats and seaplanes fund state efforts to prevent, detect and manage invasive aquatic species. Seveny percent of this dedicated revenue comes to the Department, thirty percent to the Maine Department of Inland Fisheries and Wildlife (MDIFW) to support their work on aquatic invasive animals. The Department also receives annual funding from the USFWS to support implementation of Maine's Action Plan for Managing Invasive Aquatic Species.

The Department's primary initiatives are spread prevention through voluntary boat inspections, early detection of infestations by trained volunteer surveyors, rapid response to incipient infestations, and management of established infestations. While invasive aquatic plants remain the focus of these efforts, the Department is increasingly expanding spread prevention messages to address all invasive aquatic species. The Department is working closely with MDIFW and state stakeholders to improve and expand outreach to enhance the state's spread prevention efforts for aquatic plants, fish, mollusks, and pathogens.

Please visit the program's website www.maine.gov/dep/water/invasives/ for more information on the Department's program to manage invasive aquatic species and see the department's ArcGIS Project for a current map of the of invasive aquatic plant infestations: https://arcg.is/09a4KL.

ESTUARINE AND MARINE WATERS

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Maine has three classes for the management of estuarine and marine waters: SA, SB, and SC. Classification assignments are based on the minimum level of quality intended for each waterbody. **SA waters** are outstanding natural resources that receive minimal human impact, and are managed for the highest water quality of the three classes. No direct discharges of pollutants, including those from finfish aquaculture, are allowed in SA waters. **SB waters** are general purpose waters that are managed to attain good quality water. Well-treated discharges of pollutants with ample dilution are allowed. **SC waters** are managed for the lowest water quality, but must be fishable and swimmable and maintain the structure and function of the biological community. Well-treated discharges of pollutants are allowed in SC waters. Each class is managed for designated uses and each has DO, bacteria and aquatic life standards (Table 4-33).

Table 4-33 Maine's Estuarine and Marine Waters Classification Standards

Class	Designated Uses	Dissolved Oxygen	Bacteria[1]	Aquatic Life
SA	Recreation in and on the water (Primary and Secondary Contact Recreation) Fishing Aquaculture (excludes finfish) Propagation and harvesting of shellfish Navigation Habitat for fish and estuarine and marine life	As naturally occurs	As naturally occurs but *Enterococcus* may not exceed geometric mean of 8 CFU or MPN/100 mL in any 90-day interval or 54 CFU or MPN /100 mL in more than 10% of samples in any 90-day interval	As naturally occurs
SB	Recreation in and on the water (Primary and Secondary Contact Recreation) Fishing Aquaculture Propagation and harvesting of shellfish Industrial process and cooling water supply Hydroelectric power generation Navigation Habitat for fish and estuarine and marine life	Not less than 85% of saturation	*Enterococcus* may not exceed geometric mean of 8 CFU or MPN /100 mL in any 90-day interval or 54 CFU or MPN /100 mL in more than 10% of samples (STV) in any 90-day interval from 4/15 to 10/31. Not to exceed criteria of National Shellfish Sanitation Program for shellfish harvesting	Support all indigenous estuarine and marine species Discharge not to cause closure of shellfish beds
SC	Recreation in and on the water (Primary and Secondary Contact Recreation) Fishing Aquaculture Propagation and restricted harvesting of shellfish Industrial process and cooling water supply Hydroelectric power generation Navigation Habitat for fish and estuarine and marine life	Not less than 70% of saturation	*Enterococcus* may not exceed geometric mean of 14 CFU or MPN /100 mL in any 90-day interval or 94 CFU or MPN /100 mL in more than 10% of samples (STV) in any 90-day interval from 4/15 to 10/31. Not to exceed criteria of National Shellfish Sanitation Program for restricted shellfish harvesting.	Maintain structure and function of the resident biological community Support all indigenous fish species

[1] Table 4-3 includes reference to federal bacteria criteria.

Maine law requires that once every three years, the Department review the classification system and related standards and make recommendations to the BEP for any needed changes in the water quality classifications assigned to specific waterbodies. For more information please see pages 19-20. No changes were made to marine classifications during the current assessment period. The present distribution of waters assigned to three marine water quality classes is summarized in Table 4-34.

Table 4-34 Area and Percentage of Estuarine and Marine Waters in Each Classification

Class	Square Miles	Percentage
SA	283	10
SB	2,578	89
SC	28	1
Total	**2,889**	**100**

This chapter provides an assessment of the degree to which water quality supports the designated uses defined by the State of Maine statutes for the protection of aquatic life. Designated uses in this chapter and in Chapter 7 (Public Health-Related Assessments) are divided into two broad use categories: protection of human health and protection of aquatic life. The protection of these uses will result in the protection of other uses (e.g. navigation, industrial process and cooling supply). Applicable monitoring results and attainment assessments are summarized within each of these two categories in this chapter as well as in Chapter 7.

Summary of Statewide Status

This Integrated Report requires the assignment of each assessment unit (AU) into one of five categories (see Chapter 4). Specific segments of waterbodies are determined to be impaired if they do not attain, or are suspected not to attain, one or more of the uses assigned by their classification based on the standards for that classification or other criteria. As with any assessment of this kind, the identification of impaired waters cannot be considered complete but rather is a reflection of the findings (to date) relative to the level of effort expended by the agency and its partners and other cooperating contributors.

Prior to the 2022 cycle, estuarine and marine waters category assignments were expressed per “DEP Waterbody ID”, a segmentation method that was associated with a general description of geographic extent but without an accurate delineation by GIS layer. For those categories comprised of waters assessed for the shellfish harvesting use, the “DEP Waterbody ID” was accompanied by a “DMR Pollution Area” that coincided with the shellfish harvesting area classified by the Maine Department of Marine Resources (DMR) based on National Shellfish Sanitation Program (NSSP) guidance. For this 2024 report, estuarine and marine AUs developed for the 2022 cycle are being carried forward to continue alignment with Maine’s freshwater segments and to allow accurate georeferencing. There are two sets of AUs that are comprised of HUC12 units followed by waterbody class, a unique identifier, and then “E” to signify estuarine/marine segments.

1) AUs for the **shellfish harvesting designated use** are configured in two ways:
   a) For those waters actively managed by the DMR for shellfish harvesting, AUs include a unique identifier that is specific to the Growing Area assignment and classification (e.g. “_WK_PE”, where “WK” identifies the Growing Area and “P” the Prohibited classification). Classification types include “P” for Prohibited, “R” for Restricted, “CR” for Conditionally Restricted, “CA” for Conditionally

Approved, or "A" for Approved. Where the DMR has created multiple Growing Area Sections within a single Growing Area (e.g. P1, P2, P5), the Growing Area Sections have been grouped into a single AU that exists within a HUC12 area and waterbody class. Assessment comments provided in Appendix V list the Growing Area Sections that are included within each AU. Based on the above description, an example of an AU for shellfish harvesting designated use is "ME010600010402_SC_WI_PE".

b) For those waters impaired by Combined Sewer Overflow (CSO) points due to fecal contamination, AUs similarly include a HUC12 unit followed by waterbody class that is then immediately followed by a unique numeric identifier and then the "E" for estuarine/marine segments (ex. "ME010600010402_SC1_E".)

2) AUs for **non-shellfish harvesting (all other) designated uses** are structured as follows:
   a) For impaired waters, following the HUC12 unit and waterbody class, a unique identifier is assigned sequentially from north/west to south/east followed by an 'E' to indicate estuarine/marine waters (ex. "_01E" or "_01B" for the northern/westernmost AU). An example of an AU impaired for non-shellfish harvesting use (all other) in estuarine/marine waters is "ME010600010402_SC_01E".
   b) For estuarine/marine waters meeting at least one designated use other than shellfish harvesting:
      i) the AU is identical to the impaired waters convention but is lacking the unique numerical identifier (ex. "ME010600010402_SC_E").
      ii) when an AU is split from its original AU for placement in another Category, the new ID includes a unique identifier following the 'E" for estuarine/marine waters (ex. "ME010600010402_SC_E_01").

The use of two sets of estuarine and marine AUs allows adaptability for the more dynamic classification revisions conducted by the DMR on an annual basis (for the shellfish harvesting designated use) while allowing greater stability for areas with less frequent changes (all other designated uses). The two sets of AUs are presented separately within Integrated Report Appendix V: Estuarine and Marine Waters, and two GIS layers enable separate and overlaid viewing for the two sets of AUs, as well as facilitate visualization of spatial alterations to a single segment of an AU from one reporting cycle to another.

Assessment unit IDs for the designated use of recreation in the water (i.e. Primary Contact Recreation) at coastal designated beaches participating in the Maine Healthy Beaches Program consist of the 12-digit HUC followed by the EPA Beach ID assigned to each Beach Management Area followed by 'B' to indicate a beach (ex. "ME010600031001_SB_286041B" for Fort Foster - Pier Beach (Kittery)).

An overall use attainment summary for estuarine and marine waters, including coastal designated beaches, for 2024 is provided below and in Table 4-10.

Category 1: Estuarine and marine waters attaining all designated uses and water quality standards, and no use is threatened.

No changes were made to Category 1 as part of this 2024 assessment. No waters are assigned to this Category.

Category 2: Estuarine and marine waters attaining some of the designated uses; no use is threatened; and insufficient data or no data and information is

available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

For the 2024 assessment for the shellfish harvesting designated use segments, there were five minor area changes made due to prior mapping errors or omissions, and one segment name was changed due to a previously used offensive place name. For non-shellfish harvesting designated use segments, one segment was moved into the estuarine and marine Category 2 from the same category in rivers and streams in response to an incorrectly located assessment unit. Finally, Category 2 decreased slightly due to splitting of an assessment unit, which moved a small area to Category 3. Fifty-nine coastal designated beaches were included in this category as part of this 2024 assessment.

Category 3: Estuarine and marine waters with insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

For the shellfish harvesting designated use segments, one assessment unit was added (0.03 square miles) due to a prior mapping omission. The same offensive place name corrected in a Category 2 segment was also corrected in Category 3, which affected five assessment units. For the non-shellfish harvesting designated use segments, a segment for the Union River that was previously assigned to the rivers and streams Category 3 but actually exists in tidal waters, was moved to the estuarine and marine Category 3 and given assessment unit ME010500021302_SB_E_01. Finally, the tidal portion of Spruce Creek north of Route 103 was split from the larger assessment unit in Category 2, ME010600031001_SB_E_01, based on possible non-attainment suggested by continuous dissolved oxygen data. Spruce Creek has been previously documented as hosting extensive green macroalgae blooms on its intertidal and shallow subtidal shoreline. Additional data collection is needed, especially in the mid- and lower estuary and tidal tributaries, to assess nutrient condition in combination with continuous dissolved oxygen percent saturation. Five coastal designated beaches were included in this category as part of this 2024 assessment.

Category 4: Estuarine and marine waters that are impaired or threatened for one or more designated uses, but do not require development of a TMDL.

The 2024 assessment included Category 4-A updates to the Salmon Falls/Piscataqua River Estuary dissolved oxygen impairment based on discrete and continuous monitoring data, and to the 14 CSO-impaired segments to account for documentation of separation projects or post-construction monitoring where under way, reductions in quantity of discharge points, and estimated time to elimination of all discharge points. For non-shellfish harvesting designated use segments in Category 4-B, updated comments document that discrete and continuous data collection occurred in the St. George and Medomak River estuary segments during 2023, and that data analysis is on-going for these efforts. In Goosefare Brook, data collected during 2021 and 2022 show dissolved oxygen levels below the Class SB criterion of 85%, though more data are needed to address frequency and duration of dissolved oxygen sags. In the Ogunquit River estuary, 2022 discrete data suggest attainment of the dissolved oxygen criterion. Continuous data collection is planned for the Ogunquit River impaired segment during 2024 to enable assessment of higher resolution diel trends during mid-summer elevated temperatures. No data collection occurred within the Category 4-C New Meadows River Estuary tidally constricted area during the current assessment cycle. No coastal designated beaches are included in any Category 4.

Category 5: Estuarine and marine waters that are impaired or threatened for one or more designated uses by a pollutant(s) and a TMDL is required.

Category 5-A was added to the shellfish harvesting designated use portion of the list for the 2024 cycle following erroneous omission in the prior cycle. For Category 5-B-1 listings for shellfish harvesting, there was one minor area change made due to a prior mapping error, and one assessment unit's segment name was changed due to the same previously used offensive place name as in Categories 2 and 3. The 2024 assessment updated the Category 5-A listings for non-shellfish harvesting designated uses to account for new discrete and continuous data from the Mousam River estuary that documented continued dissolved oxygen non-attainment and supported the addition of a new cause of "Nutrient/Eutrophication Biological Indicators" based on elevated total nitrogen and chlorophyll *a* data along the estuarine gradient. For the Piscataqua River and Portsmouth Harbor segments in Category 5-A, mapping extents from 2021 and 2022 show stable eelgrass acreage that remains considerably lower than in prior years. No relevant environmental data are available from these segments during the current assessment cycle. No data were collected in the Royal River, Fore River or Saco River estuaries during the assessment cycle that allow an update on existing impairments. Category 5-D is unchanged for this 2024 assessment.

One coastal designated beach was newly listed in Category 5-B as part of this 2024 assessment cycle and includes Willard Beach in South Portland. For more information for Category 5-B designated beaches listings, see 'Causes and Sources of Impairment in Categories 4 and 5, Bacteria', page 97.

Causes and Sources of Impairment in Categories 4 and 5

Cause and stressor type information is provided in Table 4-19, while information on sources of impairment is provided in Table 4-24. Causes include impairments due to elevated toxics concentrations, elevated bacterial counts (fecal contamination with *Enterococcus* or fecal coliforms as the indicator organism or group of organisms, respectively), low dissolved oxygen, elevated nutrients and/or biological indicators of eutrophication, or tidal flow alteration. These causes are presented below in greater detail.

TOXICS

After bacteria, the general category of toxics is by far the next most widespread cause of impairment in marine waters in the State. The toxics sub-categories of Polychlorinated Biphenyls (PCBs), dioxins and/or mercury impaired 2,890 square miles (1,849,696 acres) of marine waters due to the statewide marine consumption advisories for lobster tomalley and certain saltwater finfish. Industrial point sources have historically been the largest contributing source category for dioxin. Some industrial loads that are treated through municipal point sources are additional sources although pretreatment is required in most cases. These industrial sources account for most of the shellfish and finfish consumption listed waters where dioxins remain the primary contaminant. Due to changes in bleaching at the state's bleached kraft pulp and paper mills, as of 2005 the mills were found to be no longer discharging measurable amounts of dioxin. As a result, concentrations in fish are declining, although elevated levels remain in fish in some estuarine portions of rivers due to historical discharges.

The gradual removal of CSOs over the past several years has improved environmental quality in some of Maine's harbors. However, many locations, for example Kittery, Portland, Boothbay Harbor, Rockland and Searsport, have lingering toxic pollution problems resulting from past activities. These activities include papermaking, shipbuilding, energy production (e.g. gasworks), tanning, and metal working. Toxics derived from these industries include dioxin, pesticides such as DDT, metals, and PCBs. Landfills were also often located on the coast (e.g. Eastern Promenade in Portland) and continue to be sources of toxic pollutants. More recent elevations in toxic pollution, especially from Polycyclic Aromatic Hydrocarbons (PAHs) and metals (e.g. lead, copper, zinc), are related to increases in urban development and boat-related activities. Direct untreated discharges through CSOs still deliver toxic pollutants and bacteria to Maine's coastal waters during and after storms. Some toxic pollutants (e.g. PAHs, mercury) are deposited from the air.

Even more recently, human health concerns due to the environmental presence of Per- and Polyfluoroalkyl Substances (PFAS) have been raised. PFAS have been widely used in household products, industrial settings, and firefighting foams due to their ability to repel oil, grease, water and heat. PFAS break down very slowly and are therefore persistent in the environment. Health agencies are working to understand more about the human health effects of low level, long-term exposure. The Department is engaged in monitoring surface and ground waters to detect concentrations of PFAS in water, sediment and tissue. In January 2020, the Maine PFAS Task Force produced "Managing PFAS in Maine, Final Report from the Maine PFAS Task Force".

BACTERIA

The intent of the Maine Statewide Bacteria Total Maximum Daily Load (TMDL) was to "support action to reduce public health risk from waterborne disease-causing organisms." Non-pathogenic bacteria, including enterococci in the marine environment, are used as indicator organisms for fecal pathogens in water. Waterborne pathogens (bacteria, viruses, etc.) enter surface waters from a variety of sources, including human sewage and the feces of warm-blooded wildlife. These pathogens can pose a risk to human health due to gastrointestinal illness through different exposure routes, including contact with and ingestion of recreational waters, ingestion of drinking water, and consumption of filter-feeding shellfish (clams, mussels, etc.). Additionally, the TMDL was intended to identify waterbody segments that were not meeting attainment of the designated uses of swimming and shellfishing based on associated water quality criteria.

Implementation of the approved 2009 Statewide Bacteria TMDL is intended to result in improved management of bacterial sources of impairment that cause shellfish closures. For the 2024 reporting cycle, the total area closed to shellfish harvesting based on sufficient data is 37 square miles. Considerable area (356 square miles) is present in Category 3 for this cycle to account for harvesting closures made administratively, or without sufficient data. While DMR utilizes fecal coliform bacteria to determine appropriate shellfish harvesting closures (see also Chapter 7), bacterial monitoring using enterococci as indicator organisms is conducted by the Department in selected urban streams, and the Maine Healthy Beaches program on coastal designated beaches and occasionally in tidal waters that influence bacterial loads to recreational areas. All monitoring programs aid in the identification of fecal contamination from point and nonpoint sources, for example through local knowledge, Department permits, and applied techniques such as Microbial Source Tracking.

For the current cycle, one coastal designated beach was added in Category 5-B, i.e. Willard Beach in South Portland. While most of Maine's designated beaches experience very few or no bacteria exceedances for the majority of the monitoring season, there are instances when elevated bacteria levels may jeopardize public health, particularly at the four beaches listed as impaired (see Table 8-18 for full list of impaired beaches). MHB's historical data demonstrates a relationship between antecedent precipitation and observed bacteria exceedances at these impaired beaches. This suggests that nonpoint source pollution likely contributed to these impaired listings, as each of the four listed beaches is located in close proximity to river mouths or stormwater discharges. As a result, bacteria are transported from upland areas during all weather conditions, but especially when it rains. This contributes to increased fecal indicator bacteria (FIB) loading at these beaches, resulting in exceedances of Maine's enterococci bacteria safety threshold and subsequent public health advisory recommendations.

Many Maine towns with a history of elevated fecal bacteria at beaches have undertaken efforts in the surrounding watersheds to identify possible sources of fecal bacteria to support the prioritization of local investigative and remediation efforts. Specifically, the City of South Portland, the Town of Kennebunkport and the towns of Kennebunkport and Ogunquit have demonstrated a clear commitment to improving beach water quality by investigating, identifying, and removing sources of human wastewater discharges (i.e. those from private septic systems and municipal sewer), assessing wastewater and stormwater infrastructure, and expanding local public education and outreach initiatives in addition to conducting enhanced water quality monitoring studies. Such information can help in addressing the problems that resulted in a Category 5-B listing based on the existing listing methodology (pages 57-58).

DISSOLVED OXYGEN

Seven waterbody segments are listed as impaired (one in Category 4-A, four in Category 4-B, and two in Category 5-A) due to lack of attainment of dissolved oxygen (DO) criteria. The reasons for non-attainment are varied and include loadings from point and nonpoint sources in waterbody segments with insufficient flow, and factors such as benthic respiration (sediment oxygen demand). No listing changes were made to any of the segments described below in this report.

1) The estuarine portion of the lower Salmon Falls/upper Piscataqua River has a completed TMDL; however, implementation in ME and NH is incomplete. Contractor FB Environmental collected sonde profiles and completed grab sampling during low river flow in July-September 2013-2022 at three estuarine sites. Data demonstrated regular, early morning DO non-attainment (<85% saturation) more pronounced with greater water column depth. Moderate to high chlorophyll *a* and elevated total nitrogen concentrations reveal considerable biological productivity and continued eutrophic conditions.
2) For the first time since the 2012 reporting cycle, from May to October 2023 the estuarine portions of the St. George and Medomak Rivers were monitored by the Department for DO and related parameters using discrete and continuous methods under an approved Quality Assurance Project Plan (QAPP). As of the writing of this report, data analysis is under way. A full assessment will be available for the next reporting cycle, and will be further informed by data collection occurring during 2024 by the Maine Coastal Observing Alliance and member organizations under an approved QAPP.

3) Considerable water quality sampling efforts have occurred in the Ogunquit River and Goosefare Brook areas as part of watershed-based plan implementation; however, monitoring goals only minimally overlapped with the Category 4-B listed areas. During 2022, the impaired Ogunquit River segment was monitored discretely at one location, and two other sites that bracket the listed segment were sampled in 2021 and 2022. The 2022 DO data suggest attainment with the 85% criterion. To improve the data resolution and to enable assessment of the frequency and duration components of the data, the Department is planning continuous monitoring during the highest summer temperatures of 2024. In Goosefare Brook, one site overlapped with the impaired area and did not provide sufficient data to assess DO attainment. Continuous data collected coincidently with relevant discrete parameters within the impaired segment will enable a comprehensive assessment of current DO condition.
4) The draft Royal River Waste Load Allocation Study, dated March 2006, recommended delisting the estuary for DO due to potential natural causes. For this reason, the Royal River listing was removed from the TMDL Vision during the 2022 cycle. No updates were provided to the listing comments during the current assessment cycle as the sparse data collected were insufficient to address the listing status.
5) The draft Mousam River Waste Load Allocation Study, dated February 2005, indicated that the majority of oxygen loss is due to benthic respiration and circulation factors and that the Kennebunk treatment facility has only a very marginal effect. Due to these suspected natural causes of non-attainment, the Mousam River listing was removed from the TMDL Vision during the current cycle. Discrete and continuous monitoring conducted by the Department in 2013, 2015, 2017, 2021 and 2022 continue to document DO non-attainment with long duration and frequent low DO events and large diel swings, especially in the mid-estuary. See also discussion of “nutrient/eutrophication biological indicators” for the Mousam River estuary below.

NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS

Along the Maine coast there are instances of elevated nutrient conditions and in some cases, corresponding biological responses. From Bar Harbor to Eastport, the principal nutrient sources are naturally occurring organic loads from rivers and streams, atmospheric deposition, and flood tide contributions from the Gulf of Maine. More developed areas of the Maine coastline along Penobscot Bay, Casco Bay and the southern rivers and streams experience eutrophication from freshwater inflows carrying treated and occasionally untreated wastewater, stormwater runoff, and groundwater in areas with sandy soils. While nitrogen is consistently conveyed through water, atmospheric deposition can be a dominant nitrogen source in more rural areas of Maine.

Typical biological indicators of nutrient enrichment effects within Maine’s marine waters include primary producers like phytoplankton, macroalgae, and eelgrass (*Zostera marina*) and its algal epiphytes. Phytoplankton blooms are more often observed in tidal waters with ample nutrient supply and light availability, less turbulent water leading to reduced vertical mixing, and sparse or absent eelgrass. While spring, summer and fall blooms of nuisance phytoplankton (e.g. diatoms and dinoflagellates) have been shown to coincide with increased availability of inorganic water column nutrients, a 2010 report prepared for the Casco Bay Estuary Partnership concluded that based on 2006-2008

data, bloom intensity of the toxic red tide organism, *Alexandrium spp.*, in Casco Bay did not correlate with anthropogenic, land-derived nutrient loading. Within the prior two assessment periods of this report, the DMR noted increasing bloom frequency of a more southern species of harmful phytoplankton, *Karenia mikimotoi*, as well as diatom species within the genus *Pseudo-nitzschia*. During the current assessment period, DMR, the University of Maine, Maine Coastal Observing Alliance and Department staff have documented high algal standing stock, and research and monitoring institutions including the University of New Hampshire and the Northeastern Regional Association of Coastal Ocean Observing Systems tracked a large dinoflagellate bloom of *Tripos spp.* (formerly *Ceratium spp.*) in the Gulf of Maine with correlative influence on Midcoast estuaries' water quality. Whether growth enrichment of individuals of these species occurs from land-derived nutrients along the Maine coast is unclear.

Similar to phytoplankton, proliferation of opportunistic macroalgae generally occurs when favorable temperature, irradiance and nutrient availability coincide. Anthropogenic nitrogen has been shown to fuel growth of nuisance macroalgae on the benthic surface, particularly of the genus *Ulva*. While nuisance macroalgal growth typically occurs on protected shorelines with shallow slopes such as mudflats, excessive growth can also be observed along more exposed shorelines. Opportunistic macroalgal growth is a natural occurrence that can be enhanced by anthropogenic nutrients, and widespread and dense blooms covering intertidal and shallow subtidal shorelines can smother organisms living in the sediment and result in production of toxic concentrations of hydrogen sulfide by bacteria.

The success of seagrass is strongly influenced by light availability, which can be limited by accumulations of epibionts (diatoms, macroalgae, tunicates, bryozoans, hydroids, e.g.) or elevated water column turbidity and/or dissolved organic matter. Confounding interpretations of eutrophication effects, seagrass epibiont abundance can be controlled seasonally by grazing pressure from invertebrates such as snails and small crustaceans. Use of eelgrass as an indicator of eutrophication has occurred most notably in the Great Bay estuary in New Hampshire as well as embayments surrounding Cape Cod, Massachusetts where wastewater and nonpoint source nitrogen contributions have been implicated in eelgrass losses. Broad geographic mapping surveys along the Maine coast were completed by DMR in the 1990s and 2000s, and knowledge of eelgrass distribution from 2013 to 2022 is available based on Department survey for the Southern Maine region from the New Hampshire border in Eliot through eastern Casco Bay in Phippsburg. As of 2023, Maine's legislatively-created Marine Vegetation Mapping Program, is mapping salt marsh and seagrass distribution on a rotating shoreline segment basis such that each reach of shoreline is surveyed once every five years. Coincident water quality monitoring by the Department in selected waterbodies of each of the five shoreline segments will enable attribution of eutrophication impacts to seagrass changes in future assessment cycles.

As of this 2024 report, two waterbody segments are listed as impaired based on a cause of nutrient/eutrophication biological indicators.

1) The State of New Hampshire listed the Piscataqua River Estuary (Lower Piscataqua River, NH Assessment Units NHEST600031001-02-01 and NHEST600031001-02-02) and Upper Portsmouth Harbor, NH Assessment Unit NHEST600031001-11, on its 2010 303(d) list for Aquatic Life impairment due to >20% loss of eelgrass. For the 2012 reporting cycle, the Department determined that eelgrass within the Piscataqua River AUs ME010600031001_SB_01E and ME010600031001_SC_01E had declined from 299.1 acres to 6.8 acres (98% loss)

from 1996 to 2010, and that sufficient data existed to assign a Category 5 listing for a Marine Life Use Support impairment with cause of "nutrient/eutrophication biological indicators". The Department also added the adjacent Portsmouth Harbor segment, ME010600031001_SB_02E to the 2012 impaired list based on a 49% decrease between 1996 and 2010. A cause 'unknown' designation was assigned to ME010600031001_SB_02E (then Waterbody ID 812-3) until further data collection and analyses could be completed to investigate potential reasons for decline.

The impairment listings and causes for these segments have been carried over in subsequent reports due to continued declines in eelgrass areal extent and insufficient data to change causes for these declines. For the current reporting cycle, the Department assessed eelgrass distribution generated by its own survey (https://maine.hub.arcgis.com/datasets/4cae3da79ed74b5ca78b8eeeac967d68/explore) and Piscataqua Region Estuaries Partnership (PREP) (Routhier *et al.* 2023) during aerial and groundtruthing surveys in 2021 and 2022, respectively. Since last assessed for the 2022 cycle in 2019, eelgrass area within the Piscataqua River segment has remained essentially the same, with 14.53 acres in 2019 and 13.43 acres in 2022. Eelgrass area within the Portsmouth Harbor segment has been similar since 2012, with extents of 123 acres in 2019 and 122 acres in 2022. Since 2012, a point source nitrogen load decline approximating 70% may be improving water quality that could enable natural reestablishment of eelgrass in downstream areas. Within the Great Bay proper the Piscataqua Region Estuaries Partnership, Great Bay National Estuarine Research Reserve, and University of New Hampshire have been documenting an increase in shoot counts but smaller plants overall during the assessment period. High seasonal rainfall and increasing water temperatures are confounding factors that challenge attribution of nitrogen load declines to improved eelgrass condition.

2) As a result of discrete and continuous monitoring conducted by the Department during 2013, 2015, 2017, 2021 and 2022 that confirmed DO non-attainment and additionally documented high total nitrogen, ammonia, total suspended solids, and chlorophyll *a* concentrations which decreased from the Kennebunk discharge point through the mouth of the estuary, a cause of "nutrient/eutrophication biological indicators" has been added to the existing Mousam River Category 5-A listing. Laboratory-extracted and -analyzed chlorophyll *a* show elevated surface concentrations that are reflected in sonde chlorophyll data collected on a higher resolution scale, and diel variability in DO suggests biologically-driven supersaturation peaks during mid-day and troughs below the 85% criterion during high respiration periods at night.

TIDAL FLOW ALTERATION

Tidal flow restrictions are often inevitabilities of historic transportation projects designed to permit automobile traffic over marine waters via constructed causeways. Due to these restrictions, natural tidal flow is diminished when flood tides are not permitted to regularly fill upper portions of estuaries, resulting in longer flushing times and increased water column stratification, generally as a detriment to water chemistry and the resident biological community. The presence of the tidal restrictions provides suitable conditions for surface water phytoplankton proliferation and enables benthic respiration to deprive bottom water of oxygen. For the 2024 report, one waterbody segment is listed as impaired based on the cause of tidal flow alteration.

The New Meadows River, including the "Lake" upstream of Howard Point is listed in Category 4-C due to tidal restrictions created by the installation of causeways in 1937 and the 1960s. While previously listed in this category as impaired for Marine Life Use Support based on low dissolved oxygen (DO) conditions, the presence of three tidal restrictions, most notably at the seaward extent of the "Lake" at the Bath Rd./State Rd. crossing, was documented in the 2014 report as the underlying cause for impairment. This restricted flow has resulted in persistently elevated nutrient concentrations, moderate chlorophyll concentrations and low water column transparencies (although based on limited sample size), observations of surface water organic matter, and low DO concentrations.

Data used to support continued inclusion of this segment in Category 4-C were collected by the Friends of Casco Bay from 2015-2017 at the head of the "Lake" and from 2015-2022 at the New Meadows Marina just seaward of the Bath Rd./State Rd. tidal restriction. The site at the head of the "Lake" demonstrated consistent DO non-attainment during morning sampling events, with non-attaining values averaging 65% saturation. Afternoon DO monitoring continued to show large diel differences as compared to morning values, and observations of turbid water, organic surface films, and green macroalgae along the shoreline were common. In 2021 and 2022, the New Meadows Marina surface site presented a smaller magnitude of DO extremes than historic "lake" data, slightly elevated total nitrogen values for a marine system, low to moderate chlorophyll, and low turbidity. The minimum DO values were 81% in 2021 and 72% in 2022. Future data collected from the "lake" could inform current water column condition and suggest degree of influence on surface water measured at the New Meadows Marine site just below the outflow.

Surface Water Ambient Toxics (SWAT) Monitoring Program

Contact: Jim Stahlnecker, DEP, BWQ, DEA

Tel: (207) 215-6954 email: James.Stahlnecker@maine.gov

Related Website: www.maine.gov/dep/water/monitoring/toxics/swat/

For background information on the SWAT monitoring program see the SWAT section under River/Streams on page 81). For the period 2013-2020, SWAT monitoring for the marine module has focused on dioxins, mercury and other heavy metals, PCBs, PAHs, and PFAS in American lobster, blue mussels and softshell clams at suspected contaminated sites and other sites of interest to DEP and the Maine Department of Marine Resources. In 2021-2022, American lobster muscle tissue, American oyster, softshell clam, "harbor" pollock, striped bass, Atlantic silverside, and banded killifish were analyzed for PFAS. Please refer to the website for individual reports on this subject.

Coastal and Ocean Acidification

Coastal and ocean acidification observed as consequences of local, land-based alterations to estuarine water quality and rising atmospheric CO_2 is a topic of mounting concern worldwide. For the 2008, 2010 and 2012 Integrated Reports, the Center for Biological Diversity (CBD) in San Francisco, CA requested that coastal states list their coastal waters as threatened or impaired, in Category 5, due to information that has been gathered indicating marine ecosystems may already be experiencing declines in

ocean pH. As one of the conditions of a settlement agreement with the CBD, the EPA issued a memorandum on November 15, 2010, describing how states could move forward, where ocean acidification (OA) information exists, in order to address OA during the 2012 listing cycle using the current 303(d) Integrated Reporting framework. This memorandum also acknowledged that in the case of OA, information is largely absent or limited at this point in time to support the listing of waters for OA in many states. The following EPA webpage includes a copy of the signed memorandum, "Integrated Reporting and Listing Decisions Related to Ocean Acidification": www.epa.gov/tmdl/epa-issues-november-15-2010-memorandum-integrated-reporting-and-listing-decisions-related-ocean .

In the 2014 and 2016 reporting cycles, the Department acknowledged that OA and its effects on pH and marine life have been documented in other areas of the world's estuarine and coastal waters and may be of concern in Maine's marine waters. While the Department had not established a monitoring program specifically targeted at identifying OA and its effects on water quality criteria and designated uses, Department staff had been in contact with environmental organizations and universities whose researchers were conducting focused studies on pH and effects on shellfisheries within Maine jurisdictional waters.

For this 2024 report, Department staff continue to track monitoring efforts within Maine's estuarine and marine waters, which include continuous and discrete monitoring of OA parameters at several offshore buoy and inshore fixed locations. During the 2022 assessment period, 1) the Casco Bay Estuary Partnership sponsored a monitoring station in South Portland maintained by the University of New Hampshire that allowed visualization of variability of pH and pCO_2 at multiple scales of assessment, 2) the Wells National Estuarine Research Reserve (NERR) and Maine Department of Marine Resources (DMR) each added OA parameter monitoring at one long term monitoring site each, and 3) the Friends of Casco Bay maintained one continuous monitoring site and calculated omega aragonite values based on pH and pCO_2 data. In 2021 and 2022, the Friends of Casco Bay added two more continuous monitoring sites, one in the Class SC area in Portland and one in the eastern Bay at Cundys Harbor. In 2024, Department staff will add total alkalinity and pH grab sampling to routine water quality monitoring to allow calculation of omega aragonite to assess coastal acidification within surface waters of the state.

Each of these monitoring efforts improve the ability to detect the magnitude and frequency of pH and pCO_2 concentrations and assess the duration of potentially stressful events for marine life. Simultaneously, academic institutions and environmental organizations within and beyond Maine's borders are studying impacts of coastal and ocean acidification on indicator organisms relevant to Maine's shellfish propagation and aquatic life designated uses. As more data become available in subsequent reporting cycles, the degree to which attainment can be addressed will improve. As of this 2022 report, the Department is not listing any estuarine/marine waters as impaired due to a cause of coastal or ocean acidification due to insufficient information that would indicate exceedance of water quality criteria or lack of attainment of designated uses.

Coastal, Marine Beach Recreational Water Quality Monitoring

Contacts: Meagan Sims, Maine Healthy Beaches (MHB) Program Coordinator, DEP, BWQ, DEA

Tel: (207) 530-2518 email: meagan.sims@maine.gov

Sarah Gensel, MHB Program Specialist, DEP, BWQ, DEA

Tel: (207) 535-7123 email: sarah.gensel@maine.gov

Related Website: mainehealthybeaches.org

Assessment results based on bacteria monitoring at designated marine beaches are included in this Integrated Report based on a requirement in the 2014 National Beach Guidance and Required Performance Criteria for Grants, which states that beach water quality monitoring data must be used for listing of impaired waters once a state has adopted EPA's 2012 Recreational Water Quality Criteria (RWQC).

The Maine Healthy Beaches (MHB) Program is the primary source of coastal, marine beach water quality data in the State of Maine. The MHB Program and its partners implement monitoring, assessment, and notification of water quality conditions at participating beaches. The Program monitors for levels of *Enterococcus* bacteria under an EPA-approved QAPP. More information on the Program is available at the MHB website linked above and on pages 121-124.

The MHB program uses a safety threshold or Beach Action Value (BAV) of 104 Most Probable Number (MPN[20]) of *Enterococcus* bacteria per 100 mL that was approved by the EPA in 2016. The BAV is used to trigger recommended beach water quality notifications ('contamination advisories'). For designated coastal beach assessments, exceedance of this BAV is used to determine impairment status. Details of the assessment and listing methodology are provided above under 'Assessment Methodology, Bacteria' (pages 55-58) and impaired beach listings are included above under 'Causes and Sources of Impairment in Categories 4 and 5', 'Bacteria' (page 97).

[20] MPN is equivalent to CFU.

CHAPTER 5 WETLANDS

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Related Websites: www.maine.gov/dep/water/wetlands/ and www.maine.gov/dep/water/monitoring/biomonitoring/index.html

BACKGROUND

Federal Regulation

EPA Contact: Beth Alafat, EPA Region I, Office of Ecosystem Protection

Tel: (617) 918-1399 email: Alafat.Beth@epa.gov

Related Website: (EPA) water.epa.gov/type/wetlands/

ACE Contact: Peter Olmstead New England Region, Regulatory Division

Work - (978) 412-7947 email: Peter.D.Olmstead@usace.army.mil

Related Website: (ACE):

www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx

Lead Agencies: EPA Region I and the U.S. Army Corps of Engineers (ACE) – Maine Project Office

The Clean Water Act provides for wetland protection and regulation through a number of federal programs, most of which are administered by EPA. The § 404 regulatory program is jointly administered by EPA and the U.S. Army Corps of Engineers. Key elements of the federal wetland protection framework are described in more detail in the Chapter 5 of Maine's 2006 Water Quality Assessment Report (www.maine.gov/dep/water/monitoring/305b/2006/2006_Final_305b_Report.pdf).

Wetlands Regulatory Program in Maine's Organized Towns

Contact: Dawn Hallowell, DEP, Bureau of Land Resources (BLR)

Tel: (207) 557-2624 email: dawn.hallowell@maine.gov

Related Website: (NRPA) www.maine.gov/dep/land/nrpa/

Maine DEP regulates wetland alterations in the organized townships under the Natural Resources Protection Act 38 M.R.S. §§ 480-A et seq. (NRPA) and Wetlands and Waterbodies Protection Rules, *06-096 C.M.R. ch. 310* (effective date November 11, 2018). Additional information on the DEP wetlands regulatory program is available at the above web site.

Wetlands Regulatory Program in Unorganized Territories

Contact: Maine Land Use Planning Commission (LUPC), Department of Agriculture, Conservation and Forestry (DACF)

Website: www.maine.gov/dacf/lupc/

Staff directory: www.maine.gov/dacf/lupc/about/staff/index.shtml

The Maine Land Use Planning Commission (LUPC) uses a land use planning approach to regulate wetlands in unorganized portions of the State, in accordance with the provisions of Title 12, §§681-689 (Use Regulation) and Chapter 10 rules (Land Use Districts and Standards). Details about the LUPC statute and rules may be found at www.maine.gov/dacf/lupc/laws_rules/index.shtml.

DEVELOPMENT OF WETLAND WATER QUALITY STANDARDS

Contact: Beth Connors, DEP, BWQ, DEA

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Related websites: EPA (Wetland Water Quality) www.epa.gov/wetlands/wetland-water-quality-standards and EPA (General Water Quality Standards) www.epa.gov/wqs-tech

Maine Water Classification Program: www.maine.gov/dep/water/monitoring/classification/index.html

Maine's Water Classification Program

Wetlands are included in the definition of "Waters of the State" set forth in the Protection and Improvement of Waters Act, 38 M.R.S. § 361-A, and are further defined as either "fresh surface waters" or "estuarine and marine waters". As waters of the State, wetlands are subject to all pertinent provisions of the Maine Water Classification Program statute (38 M.R.S. §§ 464 et seq.) including designated uses, narrative biological criteria and the State's anti-degradation policy. Wetlands that are part of great ponds or natural lakes and ponds less than 10 acres in size are considered GPA waters. All freshwater wetlands not classified as GPA waters are classified under §§ 467 and 468 (Classification of Major River Basins and Classification of Minor Drainages) according to the drainage basin in which they occur and the classification of associated water bodies. Where not otherwise specified, wetlands assume the default classifications listed for tributaries, since virtually all wetlands in the State drain to other water bodies via surface and/or groundwater. Coastal wetlands are classified under the provisions of 38 M.R.S. § 469 (Classification of Estuarine and Marine Waters).

Narrative Aquatic Life Use Criteria

The following is a summary of pertinent narrative aquatic life criteria:

Class GPA waters, including wetlands associated with great ponds and natural ponds and lakes less than 10 acres in size:

Habitat for fish and aquatic life must be characterized as natural. Must have stable or decreasing trophic state, subject to natural fluctuations, and be free of culturally induced algal blooms which impair use and enjoyment.

Fresh surface waters not classified GPA, including wetlands associated with rivers and streams:

Class AA: Habitat for fish and aquatic life must be characterized as free-flowing and natural. Aquatic life shall be as naturally occurs.

Class A: Habitat for fish and aquatic life must be characterized as natural. Aquatic life shall be as naturally occurs.

Class B: Habitat for fish and aquatic life must be characterized as unimpaired. Must support all indigenous aquatic species without detrimental changes in the resident biological community.

Class C: Some changes to aquatic life allowed. Must support all indigenous fish species. Structure and function of the resident biological community must be maintained.

Wetland Numeric Biocriteria Development

The Biological Monitoring Program assesses the condition of rivers, streams and wetlands by sampling aquatic macroinvertebrates and algae. Once samples are processed and identified, DEP biologists use statistical models to help determine if wetlands meet their legislatively-assigned water quality class based on narrative tiered aquatic life criteria. The models enable the Biological Monitoring Program to provide data users with standardized assessments of wetland condition and will be the basis for wetland-specific numeric biocriteria once implemented through rule-making, which will begin in 2024. Monitoring and assessment results are used to inform a variety of resource management activities and regulatory programs.

INTEGRITY OF WETLAND RESOURCES

Contact: Beth Connors, DEP, BWQ, DEA

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Related Website: www.maine.gov/dep/water/monitoring/biomonitoring/index.html

Wetland Biological Monitoring and Assessment

Current monitoring focuses on shallow wetlands having emergent, floating and/or submerged plant communities. Annual wetland monitoring is coordinated with river and stream monitoring statewide using a 5-year rotating basin approach. In addition to macroinvertebrates and algae, biologists monitor chemical and physical water quality characteristics and document common plants, habitat characteristics, land use, and potential environmental stressors in the watershed. The Biomonitoring Program continues to test standardized protocols to assess wetland plant communities.

Wetland Monitoring and Assessment Activities for 2021 - 2022

2021: Biological monitoring and assessment was focused in the Penobscot River and downeast rivers watersheds and included 15 emergent/aquatic bed wetland sites. Six of these sites are part of wetland compensatory mitigation projects. Aquatic macrophyte assessments were conducted at 6 of the 15 wetland sites, and at an additional 2 sites.

DEP biologists also participated in EPA's 2021 National Wetland Condition Assessment (NWCA) and coordinated a multi-agency team including Maine DEP, Maine Natural Areas Program, Natural Resources Conservation Service and Maine Conservation Corps staff. The team completed intensive sampling at 6 NWCA sites

across Maine using EPA's protocols. Additional information about the NWCA can be found at: www.epa.gov/national-aquatic-resource-surveys/nwca.

2022: Biological monitoring and assessment was focused in the Kennebec River watersheds and included 25 emergent/aquatic bed wetland sites. Aquatic macrophyte assessments were conducted at 15 of the 25 wetland sites sampled.

Summary of Wetland Aquatic Life Use Attainment

Aquatic life use attainment decisions for wetlands included in the 2024 Integrated Report are based on expert judgment of DEP biologists using the statutory narrative aquatic life use criteria as guidance, and informed by the statistical models described above (see the BIOLOGICAL MONITORING OF RIVERS AND STREAMS section in Chapter 4). DEP biologists examined macroinvertebrate data for each wetland site sampled to evaluate structure and function of the resident biological community and assigned an attained water quality class by consensus. For Category 3-5 wetlands that are located in a river/stream or lake/pond (e.g. a wetland that occurs in a slow-flowing section of a stream), any impairments, for example to the fish consumption use, that are listed for the related river/stream or lake/pond assessment unit (AU) are also assigned to the wetland AU. For Category 3-5 wetlands that are not located in a river/stream or lake/pond, DEP biologists will decide on a case-by-case basis whether any other impairments should be carried over or not.

EPA requires that each AU is placed into one of five categories (see Chapter 4, Assessment Methodology). A summary of wetland attainment status follows, and also appears in Table 4-10. Information on the status of individual wetland AUs may be found in Appendix IV: Wetlands.

Category 1: Wetlands attaining all designated uses and water quality standards, and no use is threatened.

No changes were made to Category 1 as part of this 2024 assessment. There remains 1 AU (15 acres) in Category 1.

Category 2: Wetlands attaining some of the designated use(s), no use is threatened, and insufficient data or no data and information is available to determine if the remaining uses are attained or threatened (with presumption that all uses are attained).

DEP determined with high confidence that these waters attain their assigned aquatic life use based on aquatic macroinvertebrate community composition. In addition, a review of other available data including physical/chemical attributes, field-based stressor information and spatial data do not indicate potential causes of impairment.

Category 2 contains 83 wetland AUs. One AU (totaling 97.6 acres) was newly added to Category 2 in the 2024 assessment, and 1 AU (totaling 315.0 acres) was moved from Category 3. Total acreage for all AUs total 20,672.5 acres. One of these 83 AUs (totaling 212 acres) is also in Category 5-D for legacy PCB and dioxin sources, bringing the acreage of Category 2-only AUs to 20,460.5.

Category 3: Wetlands with insufficient data and information to determine if designated uses are attained (with presumption that one or more uses may be impaired).

Wetlands assigned to this category have conflicting or insufficient available data to determine attainment status with relative certainty. For the sites listed, there is significant evidence of human stressors, with the presumed likelihood they are causing impairment of one or more uses.

There are 24 wetland AUs listed in Category 3. Three AUs (totaling 368.27 acres) were moved to Category 3 from Category 2. One AUs (totaling 30.4 acres) was newly added to Category 3 in the 2024 assessment and was also newly added to Category 5-A due to PFAS contamination in fish tissue causing fish consumption advisory. One AU (10 acres) previously listed in Category 3 was also newly added to Category 5-A due to PFAS contamination in fish tissue causing fish consumption advisory. The total acreage of Category 3 – only AUs is 6977.64.

Category 4: Wetlands that are impaired or threatened for one or more designated uses, but do not require development of a TMDL.

There are 13 wetland AUs in Category 4, totaling 536.18 acres

Eleven AUs in Category 4-A (Impaired use, TMDL complete). One AU (126 acres) was moved from 5-A to 4-A for inclusion in an addendum to the Maine Statewide Nonpoint Source TMDL, approved by EPA on September 23, 2021. Two category 4-A AUs (137.11 acres) are also in Category 5-D, making the total acreage of Category 4-A-only AUs 508.18 acres.

No changes to 4-B or 4-C were made as part of the 2024 assessment. One AU (6 acres) is in Category 4-B and one AU (22 acres) is in 4-C.

Category 5: Wetlands that are impaired or threatened for one or more designated uses by a pollutant(s), TMDL development is required.

There are 7 AUs in Category 5, totaling 427.16 acres.

Four AUs in Category 5-A (Impaired by a Pollutant, TMDL Required), totaling 68.05 acres. Two AUs (40.4 acres) were newly added to Category 5-A as part of the 2024 assessment due to PFAS contamination in fish tissue causing fish consumption advisory.

No changes to 5-B, 5-C or 5-D were made as part of the 2024 assessment. No AUs are in 5-B or 5-C. Three AUs (349.11 acres) are in Category 5-D (Impaired by Legacy Pollutants), one of which (212 acres) is also in Category 2.

EXTENT OF WETLAND RESOURCES

Wetland Loss Tracking in Maine's Organized Towns

Contact: Dawn Hallowell, DEP, BLR

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Maine DEP tracks permitted wetland impacts in the organized townships through an application tracking system. When applications for wetland alterations are logged in, the amount of fill or area to be altered is entered by wetland type and geographical location. This system enables DEP to monitor and report on annual wetland losses.

Permitted wetland impacts for 2021 and 2022 are summarized in Tables 5-1 and 5-2 below.

Table 5-1 Permitted Wetland Impacts in the Organized Townships for 2021

Source: Maine DEP Wetland Loss Tracking System. Report period from 1/1/2021 to 12/31/2021. For each category of wetland type the first row is the amount altered and the second row is amount filled, in acres.

	FULL NRPA	TIER 1	TIER 2	Total
EMERGENT	10.875	0.185	0.014	11.060
	0.038	0.641		0.693
FORESTED	56.966	2.980	4.509	64.455
	16.485	12.140	1.662	30.286
GREAT POND	0.021	0.004	0.000	0.021
	0.342		0.000	0.346
INTERTIDAL-MUDFLAT	0.679	0.000	0.000	0.679
	0.213	0.000	0.000	0.213
INTERTIDAL-OTHER	3.874	0.000	0.000	3.874
	0.457	0.000	0.000	0.457
INTERTIDAL-VEGETATED	0.003	0.000	0.000	0.003
	0.007	0.000	0.000	0.007
OPEN WATER	4.988	0.006	0.000	4.988
	8.142		0.000	8.148
OTHER/MIXED	9.997	0.762	0.982	11.741
	58.305	2.963	0.309	61.578
RIVERINE	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000
SCRUB-SHRUB	0.583	0.242	1.773	2.015
		1.020	1.005	2.608
SUBTIDAL-AQUATIC BED	0.015	0.000	0.000	0.015
		0.000	0.000	
SUBTIDAL-OTHER	0.020	0.000	0.000	0.020
	0.000	0.000	0.000	0.000
UPLAND	0.000	0.000	1.400	1.400
	0.000	0.000		
WET MEADOW	5.503	0.000	0.000	5.503
		0.000	0.000	
Total: Altered	111.552	4.369	9.705	125.625
Filled	84.883	18.418	2.994	106.295

Table 5-2 Permitted Wetland Impacts in the Organized Townships for 2022

Source: Maine DEP Wetland Loss Tracking System. Report period from 1/23/2022 to 12/31/2022. For each category of wetland type the first row is the amount altered and the second row is amount filled, in acres.

	FULL NRPA	TIER 1	TIER 2	Total
EMERGENT	3.793	0.160	0.000	0.160
		0.228	0.000	4.020
FORESTED	43.051	1.753	3.147	47.951
	11.153	10.175	5.372	26.700

	FULL NRPA	TIER 1	TIER 2	Total
GREAT POND		0.000 0.000	0.000 0.000	
INTERTIDAL-MUDFLAT	0.001	0.000 0.000	0.000 0.000	0.001
INTERTIDAL-OTHER	0.052 0.116	0.001	0.000 0.000	0.052 0.117
INTERTIDAL-VEGETATED	0.006	0.000 0.000	0.000 0.000	0.006
OPEN WATER	6.187 1.039	0.013 0.002	0.000 0.000	6.200 1.041
OTHER/MIXED	19.576 9.091	2.391 3.133	6.714 3.039	28.681 15.263
RIVERINE	0.000	0.000 0.000	0.000 0.000	0.000
SCRUB-SHRUB	2.984 0.005	0.198 0.896	0.783 0.815	3.966 1.717
SUBTIDAL-AQUATIC BED				
SUBTIDAL-OTHER	0.122 0.232	0.000 0.000	0.000 0.000	0.122 0.232
UPLAND	0.099	0.083	0.008	0.189
WET MEADOW	0.004	0.000 0.000	0.000 0.000	0.004
Total: Altered Filled	79.281 26.186	4.734 15.718	11.730 9.236	95.744 51.139

CHAPTER 6 GROUNDWATER MONITORING & ASSESSMENTS

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Related Website: www.maine.gov/dep/water/groundwater/index.html

OVERVIEW

Public interest in groundwater is primarily focused on its use as a drinking water supply (groundwater provides 60% of all human demand and 75% of livestock demand statewide) and on its use as a source of process water for industry. Important sources of groundwater contamination in Maine include disposal activities such as septic systems and landfills, leaking storage facilities, agriculture, spilled hazardous materials, winter salt applications, or previously unregulated activities.

Monitoring groundwater at a particular site is typically done to gather data on water quality impacts of particular activities. Most of the groundwater data collected in Maine is the result of permit conditions, enforcement agreements or impact assessments. The Environmental and Geographic Analysis Database (EGAD) at DEP contains many of these data, which are potentially useful for research and are accessible to the public. This database enhances the ability of DEP to communicate and report groundwater and other data to EPA and other state or federal agencies, and to share information with the general public.

Maine's groundwater may be threatened by contamination, particularly in the unforested areas that comprise approximately 11% of the State. Important sources of groundwater contamination in Maine include disposal activities such as landfills and septic systems, leaking storage facilities, agriculture, and sites contaminated by hazardous materials spills, winter salt applications, or by previously unregulated activities.

Groundwater is withdrawn from three basic types of aquifers in Maine: unconsolidated glaciofluvial deposits (stratified drift or sand and gravel aquifers), till, and fractured bedrock. The stratified drift deposits are the most favorable for development of large-volume water supply wells, but these deposits are limited in size and distribution, comprising less than ~10% of the state. Discontinuous bedrock aquifers underlie the entire state and are used for domestic, commercial, industrial, and agricultural purposes, and to supply small public facilities such as schools, restaurants, and summer camps. Wells in till do not generally yield large quantities of water and are most often used for individual domestic water supplies.

Generally, the groundwater supply in Maine is adequate. The total withdrawal of groundwater by all water users is less than one percent of the annual groundwater recharge each year. The remaining annual groundwater recharge is lost through evapotranspiration or discharges to ponds, lakes, rivers, streams, and the Atlantic Ocean. Seasonal variations in water tables can lead to local groundwater shortages. The Maine Drought Task Force (convened by the Maine Emergency Management Agency) publishes information on Maine groundwater and surface water levels at the following websites:

www.maine.gov/mema/hazards/drought-task-force
www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/drought.shtml and www.state.me.us/rfac/. The USGS also maintains information on groundwater and

surface water levels in Maine, available at the following website: www.usgs.gov/centers/new-england-water.

Background

The protection of Maine groundwater is an issue of concern at all levels of government. Serious groundwater pollution problems have occurred throughout the State and have raised awareness of the need for protecting groundwater supplies. A few municipalities and regional planning agencies have conducted groundwater quality assessment studies, but programs for comprehensive assessment of the quality of groundwater resources are needed. Maine's groundwater protection programs emphasize three areas of effort:

1. Interagency coordination of groundwater programs;
2. Assessment of groundwater protection problems, including enhancement of the Environmental and Geographic Analysis Database (EGAD); and
3. Statutory changes to enable building upon implemented state groundwater protection programs to increase groundwater protection and risk reduction.

Assessment of Groundwater Quality

In Maine, groundwater is classified by its suitability for drinking water purposes. Under the Maine Water Classification Program, groundwater is classified as suitable for use in public water supplies (GW-A) or suitable only for other uses (GW-B); no areas are currently classified as GW-B. Water classified as GW-A may be unpotable when the concentrations of chemical compounds detected exceed either the Maximum Contaminant Levels (MCL) or the Maximum Exposure Guidelines (MEG) as defined in the Rules Relating to Drinking Water administered by the Maine Department of Health and Human Services (DHHS), but may be used for water supplies with treatment. The classification statute requires that GW-A waters are “free of radioactive matter or any matter that imparts color, taste, turbidity, taste or odor which would impair usage of these waters other than that occurring from natural phenomena.” With certain exceptions specified in statute, discharges to groundwater are regulated so that the discharges do not result in failure to meet this classification.

Aquifer Risk Assessment

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The state is actively assessing ways to use existing groundwater data and spatial data to evaluate relative risk to existing and potential water supplies. The cumulative impact of residential, commercial, and industrial development on 300 of the significant sand and gravel aquifers mapped by the Maine Geological Survey (MGS) is being evaluated through the Aquifer Quantitative Use Assessment (AQUA) Index. This GIS-based tool assesses both nonpoint source risks due to population and travel corridors as well as the presence and relative risk of pollutant sources identified in EGAD site date, including petroleum tanks (underground or aboveground storage tanks, USTs or ASTs, respectively), former tank locations (i.e. possible legacy contamination), large wastewater disposal systems, hazardous waste generators, landfills, and waste

application sites. The tools weights and combines values based on these factors to yield the dimensionless AQUA index from 0.0 to 1.0 or 0% to 100%; an AQUA index of 1.0 or 100% indicates little or no anthropogenic risk to groundwater quality. In general, larger overall acreage in combination with remoteness or other limits on development results in a higher AQUA index. This tool may be used to assess the relative risk to present or future municipal, private, or commercial drinking water sources and to identify those aquifers most at risk from existing or future commercial, industrial, or residential development.

Overall, 77 high yield aquifers (26%) are non-impacted (4,881 acres or 16% of total acres), 145 (48%) are less than 50% impacted (8,540 acres or 29% of total acres), and 78 (26%) are more than 50% impacted (13,325 acres or 55% of total acres (29,746). Of the non-impacted high yield sand and gravel aquifers, 18% have public water supply wells. Of the aquifers with AQUA values between 1.0 and 0.5, 28% have public water supply wells, while, of those with AQUA values less than 0.5, 38% have public water supply wells.

Additional work on risk assessment includes analysis of the effect of road salt on residential well water quality in seventy-seven areas spatially distributed throughout Maine; this analysis is based on a large data set compiled by the Maine Department of Transportation, from which over 3000 well locations have been verified by Maine DEP to date. Major results of this work were presented at the 2019 meeting of the Geological Society of America, Northeastern Section, and a complete report is in preparation. This work confirms the dependence of chloride concentration on slope and distance from road indicated by previous Department studies, and demonstrates that there is a significant relationship between slope angle and preferred orientation of sub-vertical bedrock fractures and the potential for chloride contamination. Other significant factors include overburden type and thickness and hydrologic soil group. Work is underway to determine whether a functional relationship can be demonstrated between these vectors and the chloride data distribution, and also to evaluate mechanisms for storage of chloride in soils and shallow aquifers, an effect which has also been observed downgradient of stormwater infiltration systems. The Maine DOT data set includes a wide range of anthropogenic and natural contaminants, and additional work by Maine DEP, also presented at the 2019 meeting, demonstrates that risk assessment tools for bedrock aquifers, also developed by the Department, show clear differences between these contaminant sources and demonstrate that overburden type and thickness are the primary factors controlling risk of anthropogenic contamination in Maine.

Aquifer Characterization Activities

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Related Websites:

Aquifer Fact Sheet www.maine.gov/dacf/mgs/frontend/homeowners.htm

Aquifer Mapping: www.maine.gov/dacf/mgs/pubs/digital/aquifers.htm

Aquifer data and publications: www.maine.gov/dacf/mgs/pubs/index.shtml

Maine Geological Survey (MGS) is at the "average characteristics" stage in characterizing the physical and chemical attributes of the State's stratified drift

aquifers. While site-specific data do exist for some aquifers (primarily in the vicinity of groundwater resource evaluation projects and contamination sites), complete physical pictures of most aquifer systems do not exist. Hard data on the exact chemical processes controlling groundwater chemical evolution that occur along a flow path in sand and gravel aquifers are also lacking. MGS has some ambient water quality data but has not yet fully characterized any particular aquifer system. MGS, in cooperation with the USGS, has conducted two detailed basin-level sand and gravel aquifer investigations aimed at long-term water availability. These groundwater modeling studies were conducted examining the basins contributing water to the Freeport Water District wells (pubs.usgs.gov/sir/2011/5227/pdf/sir2011-5227_text_508.pdf) and the Kennebunk, Kennebunkport and Wells Water District (KKWWD) wells (pubs.usgs.gov/sir/2014/5235/pdf/sir2014-5235.pdf). These basin areas were selected based on the size relative to the total population served and were thought to be potentially at risk. Other areas in Maine would benefit from similar investigations, but currently, funds are lacking for the extensive field hydrologic assessments and detailed groundwater modeling necessary to undertake this work. MGS has begun preliminary examinations of physical groundwater data from selected wells at DEP monitoring sites in both sand and gravel aquifers and in bedrock aquifers. This effort is to supplement data in the statewide groundwater monitoring system conducted by the USGS as part of its annual groundwater monitoring program.

Presently, it is believed that the greatest contaminant threat to groundwater is from the PFAS family of compounds (https://www.maine.gov/dep/spills/topics/pfas/). These compounds are extremely persistent, very difficult to remediate, and will likely remain a primary contaminant of concern in both sand and gravel aquifers and fractured bedrock aquifers for many years. Further, the salinization of groundwater, associated with road salt application, septic discharges, and saltwater intrusion is a topic of growing concern prompting initial investigations of salt impacts on groundwater by the MGS.

Significant Groundwater Wells

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Related Website: www.maine.gov/dep/land/nrpa/significant_groundwater_wells/

Although Maine has abundant groundwater when recharge and use are averaged over the state, certain large wells, and the density of smaller wells in certain areas, may have adverse effects on nearby protected resources and wells. Installation and operation of large groundwater extraction wells, with certain exceptions, is now regulated under the Natural Resources Protection Act (NRPA). Applicants must demonstrate that the extraction of groundwater will not have an unreasonable adverse impact on waters of the State, groundwater-related natural resources, and existing uses, including, but not limited to, public or private wells. Applicants must submit adequate background data, including stream flows and wetted perimeter and wetland water levels, pump test data and analysis, and a site-specific plan for monitoring groundwater elevation, precipitation, and other relevant hydrogeologic criteria. The Department must consider both the direct effects of the proposed withdrawal and its effects in combination with existing water withdrawals, and must establish in each approval site-specific and season-specific performance criteria for flows and water levels. Applicants must conduct monitoring to demonstrate compliance with these

criteria, and implement remedial actions, such as reduction in pumping and stream supplementation, when required, Ongoing review of these operation and monitoring data by the Department and others indicate that the criteria developed by the Department and specified in the approvals are adequately protecting surface water and groundwater resources to date.

Overview of Groundwater Contamination Sources

Most groundwater contamination in Maine originates from nonpoint source pollution rather than point source pollution. This section highlights primarily nonpoint contamination sources that appear to be responsible for much of the groundwater contamination in the State, and the programs in place to study, regulate, and remediate these contamination sources.

EMERGING CONTAMINANTS, PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

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Related Website: www.maine.gov/dep/spills/topics/pfas/index.html

The DEP's Bureau of Remediation and Waste Management (BRWM) is tasked with remediating contaminated sites, responding to oil spills and hazardous material incidents, and administering Maine's petroleum, hazardous material, solid waste, and materials management programs. As part of this charge, BRWM staff also investigate the presence of emerging contaminants including per- and polyfluoroalkyl substances (PFAS) in the environment.

Highlights

On March 6, 2019, Governor Janet Mills signed an Executive Order establishing a Task Force to identify the prevalence of PFAS in Maine and submit a report of its findings. The Final Report, Managing PFAS in Maine, Final Report from the Maine PFAS Task Force, dated January 2020, provides several recommendations including:

- Protecting drinking water and food,
- Identifying and investigating PFAS in the environment,
- Reducing uses of PFAS,
- Managing waste PFAS,
- Improving public education about PFAS,
- Promoting federal action on PFAS, and
- Providing funding to reduce PFAS exposure to Maine citizens.

As a result of these recommendations the 130th Legislature enacted several new laws related to PFAS impacting programs within BRWM. This includes setting an interim drinking water standard for certain public water systems at 20 ppt for the sum of the following six PFAS (PFOA, PFOS, PFNA, PFHxS, PFHpA, and PFDA), at Resolve 2021, ch. 82. It also requires the DEP to establish and implement a statewide soil and groundwater investigation under Public Law 2021, Chapter 478 at licensed land application sites for sludge or septage. Pursuant to this investigation, PFAS testing is

ongoing for applicable soil and private groundwater wells. Monitoring data is collected and uploaded into the DEP's Environmental and Geographic Analysis Database (EGAD); and an interactive map, which is updated bimonthly has been developed to identify locations sampled and provide corresponding results.

In the event that a private groundwater well sample exceeds Maine's interim drinking water standard, and the source of PFAS is likely a result of land application of sludge or septage, the DEP will pay for the installation, monitoring and maintenance of a filter system to ensure safe drinking water. This will continue as long as funding is available. In the event that soil or groundwater is sampled at an active agricultural operation, the DEP collaborates with the Department of Agriculture, Conservation and Forestry (DACF) to assist farmers with managing impacts from PFAS.

BRWM also continues to investigate PFAS at locations other than where the licensed land application of sludge and septage occurred. These locations include remediation-type sites where releases of Aqueous Fire Fighting Foam (AFFF), or other known sources of PFAS have occurred. Typically, these locations include airports, federal remediation sites, fire training sites, industrial/manufacturing sites, and closed landfill sites. Similar to the investigation at sludge and septage land application sites, BRWM coordinates with partners to ensure that at locations where private groundwater wells exceed Maine's interim drinking water standard, the installation, monitoring and maintenance of filter systems takes place.

OVERVIEW OF STATE GROUNDWATER PROTECTION PROGRAMS

Table 6-1 provides a list of State groundwater protection programs, their implementation status, responsible State agency, and a link to the primary webpage of each program. Abbreviations used are: DACF, Department of Agriculture, Conservation and Forestry; DEP, Department of Environmental Protection; DHHS, Department of Health and Human Services; DOT, Department of Transportation; MEMA, Maine Emergency Management Agency; MGS, Maine Geological Survey (within DACF).

Table 6-1 Table of State Groundwater Protection Programs

Programs or Activities	Implementation Status	Responsible State Agency	Hyperlink to Webpage
Active SARA Title III Program	Continuing efforts	MEMA	www.maine.gov/mema/maine-prepares/plans-trainings-exercises/serc/about/members-duties-funding
Ambient groundwater monitoring system	Under Development	MGS	www.maine.gov/dacf/mgs/about/index.shtml
Aquifer vulnerability assessment	Continuing efforts	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws.shtml
Aquifer mapping	Continuing efforts	MGS	www.maine.gov/dacf/mgs/explore/water/index.shtml
Aquifer characterization	Continuing efforts	MGS	www.maine.gov/dacf/mgs/explore/water/index.shtml
Comprehensive data management system	Continuing efforts	DEP	www.maine.gov/dep/maps-data/egad/index.html
Agriculture PFAS Webpage	Continuing efforts	DACF	www.maine.gov/dacf/ag/pfas/index.shtml
Fish Advisories for PFAS	Continuing efforts	DHHS and IF&W	www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/index.htm

Programs or Activities	Implementation Status	Responsible State Agency	Hyperlink to Webpage
Game Advisories for PFAS	Continuing efforts	DIF&W	www.maine.gov/ifw/hunting-trapping/hunting/laws-rules/pfas-related-consumption-advisory.html
Groundwater discharge permits	Continuing efforts	DEP	www.maine.gov/dep/water/wd/subsurface/index.html
Groundwater Best Management Practices	Continuing efforts	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/sitemap/wrt.shtml
Groundwater legislation	Continuing efforts	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/sitemap/cet.shtml
Groundwater classification	Fully established	DEP	www.maine.gov/dep/water/laws/index.html
Groundwater quality standards	Continuing efforts	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/cet/documents/DrinkingWaterRules.pdf
Interagency coordination for groundwater protection initiatives	Continuing efforts	DEP, DHHS, MGS, DOT, DACF	www.maine.gov/dacf/mgs/explore/water/index.shtml
Nonpoint source controls	Continuing efforts	DEP	www.maine.gov/dep/land/watershed/nps/index.html
Pesticide State Management Plan	Plan completed	DACF	apps.web.maine.gov/dacf/php/pesticides/public/water_quality.shtml
Pollution Prevention Program	Fully established	DEP	www.maine.gov/dep/assistance/whatisp2.html
Resource Conservation and Recovery Act (RCRA) Primacy	Fully established	DEP	www.maine.gov/dep/waste/hazardouswaste/index.html
State Superfund, Brownfield, and other Hazardous Substance Sites	Fully established	DEP	www.maine.gov/dep/spills/federalfacilities/index.html www.maine.gov/dep/spills/programs/index.html
State septic system and subsurface wastewater disposal regulations	Fully established	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/plumb/index.htm www.maine.gov/dhhs/mecdc/environmental-health/plumb/policies/policy03.htm
Underground storage tank installation requirements and UST Permit Program	Fully established	DEP	www.maine.gov/dep/waste/ust/index.html
Underground storage tank Remediation Fund	Fully established	DEP	www.maine.gov/dep/spills/groundwater/index.html
Underground Injection Control Program	Fully established	DEP	www.maine.gov/dep/water/wd/uic/index.html
Vulnerability assessment for drinking water/wellhead protection	Continuing efforts	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws.shtml
Wellhead Protection Program (EPA-approved)	Fully established	DHHS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/financialResources.shtml
Well installation regulations	Fully established	DHHS, MGS	www.maine.gov/dhhs/mecdc/environmental-health/dwp/consumers.shtml

Programs or Activities	Implementation Status	Responsible State Agency	Hyperlink to Webpage
Landfills- Solid Waste Management	Fully established	DEP	www.maine.gov/dep/waste/solidwaste/index.html
Aboveground Storage Tank Regulations	Fully established	DEP	www.maine.gov/dep/waste/aboveground tanks/index.html
Oil or Hazardous Materials Spill Response	Fully established	DEP	www.maine.gov/dep/rwm/hoss/
Road Salt and Sand-Salt Piles- storage, siting, spreading	Fully established	DOT, DEP	www.maine.gov/dep/water/wd/sandsalt/index.html www.maine.gov/mdot/csd/sandsalt/saltstorage.htm www.maine.gov/mdot/csd/mlrc/technical/winterplowsand/

OTHER PROGRAMS

Stormwater Infiltration

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Use of infiltration as a stormwater management technique is common in many regions, but is practical in Maine only in the limited areas underlain by glacial sand and gravel deposits. These aquifers contain large volumes of easily extracted water, but are highly vulnerable to contamination. Groundwater monitoring at large commercial and industrial sites shows that the volume of pollutants discharged to these infiltration systems generally exceeds the treatment capacity of the soil and aquifer. Chloride is the most common pollutant, but data also indicate that changes in chemical conditions in the infiltration systems, principally related to low oxygen concentrations in basin waters and volumes of the aquifer affected by infiltration, can release accumulated metals and other pollutants to the underlying aquifer over time. Chloride concentrations in groundwater downgradient of large infiltration basins have frequently been shown to exceed aquatic life criteria; together with the very low DO concentrations observed in some plumes downgradient of infiltration areas, these data indicate that infiltration of water from large connected impervious areas may not be ideal to support baseflow conditions. These data are consistent with findings in other states and in the European Union and have been cited by EPA in a recent summary of stormwater recharge methods. Ongoing work on stormwater management rules is intended to encourage infiltration, where geologically feasible, from low-pollutant sources, while discouraging concentrated discharges to groundwater from large areas of connected impervious surface. Groundwater monitoring will continue at currently monitored sites.

Metallic Mining

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Related Website: www.maine.gov/dep/land/mining/index.html

In 2011, the Maine Legislature enacted a law directing the DEP to Major substantive rulemaking to modernize the State's regulatory process for metallic mineral mining. On December 28, 2017, Chapter 200 was repealed and replaced by the current Chapter 200.

In 2023, the Maine Legislature enacted a law allowing a person to apply to the Department for exclusion from the requirements of Ch. 200 for the physical extraction, crushing, grinding, sorting, or storage of metallic minerals if the project will not have the potential to create acid rock drainage or alkali rock drainage, violate water quality standards (other than sedimentation and turbidity), or expose radioactive or other materials that could endanger human health or the environment. The law does not allow chemical processing of metallic minerals to be excluded from the requirements of Ch. 200 and it requires an applicant to apply to the Department for the exclusion. If approved, the project must be regulated under another existing law: either by the performance standards for quarrying, performance standards for borrow pits, Site Location of Development Law, or by the Land Use Planning Commission's statutes. The law also directed the DEP to Major substantive rulemaking in order to implement the changes, which the DEP is undertaking during the Second Regular Session of the 131st Legislature (winter 2024).

The new rules update Maine's mining regulations to provide Department oversight of exploration, and a comprehensive application and permitting process for advanced exploration, and mining. Permit applications for metallic mineral mining will be processed in accordance with the Maine Metallic Mineral Mining Act and Chapter 200 rules. In the event of conflicting statutory and rule requirements, the statute will control. Currently there are two metallic mineral exploration activity locations in the state. No applications for advanced exploration or mining permits have been received or approved as of January 2024.

Gravel Pits and Quarries

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Related Website: www.maine.gov/dep/land/mining/index.html

The Performance Standards were created as a streamlined approach to regulating mineral excavations in the organized towns of the state. Qualifying excavations are registered with DEP through a simple notification process, called "Notice of Intent to Comply" (NOITC). To date, DEP has licensed 915 mining sites through the notification process. Once a NOITC has been filed, the licensee is responsible for operating the pit in compliance with the Performance Standards. The registration system also includes a variance process, which is a more formal permitting process that requires the submission of an application to the Department. It provides an opportunity to vary from the specific statutory performance standards contained in 38 M.R.S. § 490-D (Performance Standards for Excavations) and 38 M.R.S. § 490-Z (Performance Standards for Quarries). This legislation states that variances may only be granted where explicitly allowed. Some of the variance allowed include excavation below the water table, excavating closer than 100 feet to a public road, operating an externally drained pit, and operating an area greater than 10 acres for the working pit. Each type of variance application requires a different set of submissions to the Department. For example, excavation below the water table requires a hydrogeological study that includes one year of baseline monitoring for groundwater level and quality. In addition, ongoing monitoring of groundwater is required as a permit condition of operation to excavate sand and gravel or rock from below the water table. The Department has issued approximately 206 variances, with 93 issued for excavation below the water table.

CHAPTER 7 PUBLIC HEALTH-RELATED ASSESSMENTS

MAINE HEALTHY BEACHES PROGRAM

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Related Websites: (Maine-specific) mainehealthybeaches.org

(Federal) www.epa.gov/beaches

The Maine Healthy Beaches (MHB) program monitors designated coastal, marine beaches to notify the public of recreational water quality conditions. From 2010-2018, the program was managed jointly by the Maine Department of Environmental Protection (DEP) and the University of Maine Cooperative Extension (UMaine Extension). Since January 1, 2019, MHB has been managed solely by the DEP.

EPA initiated the Beaches Environmental Assessment, Closure and Health (BEACH) Act of 2000 in response to the growing concern about public health risks posed by polluted coastal swimming beaches. MHB is a voluntary program and includes these components: water quality assessment and public notification of beach status, education and outreach, and working with communities and program partners to identify and remediate pollution sources through applied research and special studies.

All towns/parks participating in the MHB program conduct routine monitoring of *Enterococcus* bacteria to assess beach water quality typically from Memorial Day to Labor Day. When exceedances of safety criteria occur, all efforts are made to resample at those sites. In Maine, the monitoring of public access beaches and notification of beach status is the responsibility of the municipality and participation in the MHB program is voluntary. Private beach owners are responsible for their own monitoring programs unless they choose to work with the local municipality and MHB. The beaches participating in the MHB program during assessment period for this current cycle (2018-2022) are listed in Table 7-1. Note that the list of beaches may vary from year to year.

The assessment of designated beaches includes measurement of critical factors that affect the health of the beach environment to determine the likely sources impacting surf-zone water quality.

According to the 2014 National Beach Guidance and Required Performance Criteria for Grants, states receiving grants for coastal beach monitoring and public notification were required to select a new beach action value (BAV; single sample safety threshold for contamination advisories) or provide justification for an alternative. As part of the process, MHB convened a Technical Advisory Committee and conducted extensive data analysis of 10 years of data (2006-2015). As a result, Maine submitted a justification (approved by US EPA) to retain 104 MPN/100 mL as the State's BAV for enterococci in marine waters.

Table 7-1 Beaches Participating in MHB Program for any year between 2018 and 2022

Managing Organization	Beach Names
Acadia National Park	Sand Beach
Bar Harbor	Hadley Point, Hulls Cove, Town Beach
Biddeford	Fortunes Rocks Beach, Gil Bouche Park/Biddeford Pool, Hills Beach, Middle Beach (Biddeford)
Bristol	Pemaquid Beach
Camden	Laite Beach
Crescent Beach State Park	Crescent Beach, Kettle Cove Beach
Cumberland	Broad Cove Reserve
Falmouth	Town Landing Beach - North, Town Landing Beach - South
Ferry Beach State Park	Ferry Beach (Saco)
Harpswell	Mackerel Cove, Mitchell Field Beach, Stovers Point Preserve
Higgins Beach Association	Higgins Beach
Kennebunk	Goochs Beach, Mother's Beach
Kennebunkport	Colony Beach, Goose Rocks Beach - Batson River, Goose Rocks Beach - Little River, Goose Rocks Beach - Main Beach [21]
Kittery	Crescent Beach (Kittery), Fort Foster - Scuba Beach, Fort Foster - Horn Point, Fort Foster - Pier Beach, Sea Point Beach, Sea Point Beach
Lincolnville	Lincolnville Beach
Ogunquit	Footbridge (Ogunquit), Little Beach, Main (Ogunquit), Moody (Ogunquit), Riverside (Ogunquit)
Old Orchard Beach	OOB - Central, OOB - North End, OOB - Ocean Park
Popham Beach State Park	Popham - Center Beach, Popham - East Beach, Popham - West Beach/Morse River
Portland	East End Beach
Reid State Park	Half Mile Beach, Lagoon Beach, Mile Beach
Rockland	Sandy Beach
Rockport	Goodies Beach, Walker Park Beach
Saco	Bay View, Kinney Shores
Scarborough	Ferry Beach (Scarborough), Pine Point
Scarborough Beach State Park	Scarborough Beach
South Portland	Willard Beach
Wells	Casino Square, Crescent Beach (Wells), Drakes Isl. Beach, Wells Beach, Wells Harbor
Wells National Estuarine Research Reserve	Laudholm Beach
York	Cape Neddick Beach, Long Sands Beach - North, Long Sands Beach - South, Short Sands Beach, York Harbor Beach

[21] Goose Rocks Beach was split into three beach management areas (Goose Rocks Beach - Batson River, Goose Rocks Beach - Little River, Goose Rocks Beach - Main Beach prior to the 2021 monitoring season.

Swimming Beach Advisories and Closures

Under Clean Water Act (CWA) guidelines, the designated use of swimming beaches is "recreation in and on the water" (i.e. Primary Contact Recreation). Maine has a Beach Action Value (BAV) for enterococci that is used as a single sample safety threshold (104 MPN/100 mL) for contamination advisories at designated coastal marine beaches. For beaches participating in the MHB program, the local municipality may issue beach actions including advisories (Contamination or Precautionary Rainfall) and closures. These actions are then posted as notifications to warn of potential health risks. Beach actions are based on a risk analysis performed by the beach manager with assistance from MHB staff. Contamination advisories represent those issued in response to elevated bacteria results, i.e. exceedances of the BAV of 104 enterococci MPN/100 mL, while precautionary rainfall advisories are issued pre-emptively based on local precipitation levels. Closures are rarely issued, and generally only based on the knowledge of a direct source, such as a sewage spill. These advisories/closures are recommendations to the public to avoid water contact activities at the beach until further analyses reveal safe conditions and/or conditions at the monitoring site change.

Table 7-2 shows the percent of a monitoring season a beach is under a recommended contamination advisory as a result of exceeding Maine's BAV. More information regarding the assessment methodology for coastal, designated beaches is explained in 'Assessment Methodology, Bacteria' (pages 55-58) with background information provided under 'Coastal, Marine Beach Recreational Water Quality Monitoring' (page 104).

Table 7-2 Percent of monitoring season a beach is under a recommended contamination advisory.

Recommended contamination advisories are issued when Enterococci results are ≥ Maine's Enterococci BAV (104 MPN/100mL). '-' indicates no monitoring took place.

Beach Name	% Days Under Recommended Contamination Advisory				
	2018	2019	2020	2021	2022
BAY VIEW	0	0	0	0	0
BROAD COVE RESERVE	14.3	0	7.6	0	0
CAPE NEDDICK BEACH	3.3	4.3	9.7	3.2	3.6
CASINO SQUARE	0	0	0	0	0
COLONY BEACH	17.3	3.2	0	1.2	4.1
CRESCENT BEACH	0	0	0	0	0
CRESCENT BEACH (KITTERY)	0	2.1	1.0	0	0
CRESCENT BEACH (WELLS)	0	0	0	1.2	0
DRAKES ISL BEACH	0	1.1	0	1.2	0
EAST END BEACH	9.4	11.3	7.6	6.9	0
FERRY BEACH (SACO)	0	0	0	0	0
FERRY BEACH (SCARBOROUGH)	21.4	1.2	-	3.5	6.0
FOOTBRIDGE (OGUNQUIT)	0	0	0	0	0
FORT FOSTER - HORN POINT	0	0	0	1.2	0
FORT FOSTER - PIER BEACH	0	0	0	0	0
FORT FOSTER - SCUBA BEACH	0	0	0	0	0
FORTUNES ROCKS BEACH	0	0	0	0	0
GIL BOUCHE PARK-BIDDEFORD POOL	0	0	0	0	0
GOOCHS BEACH	9.4	9.3	3.9	18.9	11.8
GOODIES BEACH	0	1.2	1.1	0	1.1

Beach Name	% Days Under Recommended Contamination Advisory				
	2018	2019	2020	2021	2022
GOOSE ROCKS BEACH - BATSON RIVER	21.6	7.2	16.6	18.1	14.6
GOOSE ROCKS BEACH - LITTLE RIVER	16.3	17.8	18.7	21.1	10.6
GOOSE ROCKS BEACH - MAIN BEACH	2.0	7.1	9.7	10	9.4
HADLEY POINT	0	0	0	0	0
HALF MILE BEACH	0	0	0	0	0
HIGGINS BEACH	0	2.3	2.0	4.1	2.0
HILLS BEACH	0	0	1.0	0	0
HULLS COVE	0	1.0	0	0	0
KETTLE COVE BEACH	0	0	2.0	0	0
KINNEY SHORES	0	0	1.1	0	2.2
LAGOON BEACH	0	0	0	-	0
LAITE BEACH	0	0	8.9	5.9	4.7
LAUDHOLM BEACH	4.1	2.2	6.7	2.2	0
LINCOLNVILLE BEACH	17.6	7.1	5.0	6.9	1.1
LITTLE BEACH	4.3	2.2	10.4	12.1	9.5
LONG SANDS BEACH - NORTH	3.3	2.0	8.6	1.1	6.0
LONG SANDS BEACH - SOUTH	1.2	2.0	0	0	0
MACKEREL COVE	21.4	0	14.4	6.9	7.2
MAIN (OGUNQUIT)	0	0	4.7	3.0	0
MIDDLE BEACH (BIDDEFORD)	0	0	0	0	0
MILE BEACH	0	0	0	0	0
MITCHELL FIELD BEACH	0	2.0	1.1	0	1.2
MOODY (OGUNQUIT)	0	0	1.9	0	0
MOTHERS BEACH	3.4	0	1.1	3.0	4.6
OOB - CENTRAL	1.4	0	1.1	10.3	9.0
OOB - NORTH END	0	0	0	0	0
OOB - OCEAN PARK	2.4	0	0	9.3	7.4
PEMAQUID BEACH	0	0	0	6.9	1.1
PINE POINT	0	0	-	1.2	1.3
POPHAM - CENTER BEACH	0	0	0	0	0
POPHAM - EAST BEACH	0	0	0	0	0
POPHAM - WEST BEACH-MORSE RIVER	0	0	0	0	0
RIVERSIDE (OGUNQUIT)	11.5	11.6	12.5	13.1	8.3
SAND BEACH	0.0	0.0	0.0	1.1	0.0
SANDY BEACH	1.2	2.3	0.0	0.0	1.1
SCARBOROUGH BEACH	0	0	0	0	0
SEA POINT BEACH	0	0	0	0	2.2
SEAL HARBOR	0	0	0	6.9	0
SHORT SANDS BEACH	0	4.0	0	2.0	2.4
STOVER'S POINT PRESERVE	0	0	0	0	0
TOWN BEACH	1.0	0	0	6.2	1.0
TOWN LANDING BEACH - NORTH	-	-	-	0	0
TOWN LANDING BEACH - SOUTH	-	-	-	1.1	0
WALKER PARK BEACH	-	-	-	0	-
WELLS BEACH	0	0	0	0	0
WELLS HARBOR	2.0	2.1	0	4.3	0
WILLARD BEACH	19.4	0	16.2	18.7	8.5
YORK HARBOR BEACH	2.1	1.2	0	4.3	0

Beach Name	% Days Under Recommended Contamination Advisory				
	2018	2019	2020	2021	2022
Number of Beaches with ≥ 10% Days Under Recommended Contamination Advisory	**9**	**3**	**6**	**8**	**3**

SHELLFISH GROWING AREA CLASSIFICATION PROGRAM

Shellfish Harvesting Area Closures

Contact: Bryant Lewis, Growing Area Program Supervisor - West, or David Miller, Growing Area Program Supervisor – East, DMR, Bureau of Public Health (BPH)

Tel: (207) 215-4107 email: Bryant.J.Lewis@maine.gov

Tel: (207) 664-2394 email: David.W.Miller@maine.gov

Related Website: www.maine.gov/dmr/fisheries/shellfish/shellfish-growing-area-classification

The DMR assesses information within shellfish growing areas to ensure that harvested molluscan shellfish are safe for consumption. A goal of the CWA is to have these areas meet their designated use of shellfish harvesting. Shellfish areas are closed by the DMR if the area is found to have elevated levels of fecal coliform bacteria or if the area is determined to be threatened by potential sewage pollution problems due to proximity of wastewater outfalls or intense storm runoff events. Classified areas are monitored regularly by collection of water samples throughout the year, and less frequently, by shoreline sanitary surveys to identify actual and potential pollution sources that may impact water quality. Monitoring and shoreline surveys ensure that growing areas are properly classified.

For closure information, call the DMR's hotline at 1-800-232-4733, 207-624-7727 or visit https://www.maine.gov/dmr/fisheries/shellfish/closures.

Marine Biotoxin Closures

Contact: Bryant Lewis, Growing Area Program Supervisor - West, or David Miller, Growing Area Program Supervisor – East, DMR, BPH

Tel: (207) 215-4107 email: Bryant.J.Lewis@maine.gov

Tel: (207) 664-2394 email: David.W.Miller@maine.gov

Related Website: www.maine.gov/dmr/fisheries/shellfish/bureau-of-public-health-programs/marine-biotoxin-monitoring

Toxins produced by some microscopic marine algae can be transferred to humans by the ingestion of shellfish that have filtered the organisms into their systems. The toxins can affect humans by paralyzing the central nervous system, causing headaches, dizziness, nausea, digestive upset, cardiac arrhythmias or, in high doses, may result in death. The DMR's Biotoxin Monitoring Program assesses levels of marine biotoxins, including those that cause Paralytic ("red tide"), Amnesic, and Diarrhetic Shellfish Poisonings. Shellfish samples are collected statewide, predominantly from March through October, and evaluated at the Bigelow Laboratory for Ocean Sciences. When toxins are found in concentrations approaching quarantine levels, closures of shellfish harvesting areas are implemented. Maine has historically exhibited high levels of the Paralytic Shellfish Poisoning-causing biotoxin during the warmer periods of the year,

while the species that cause Amnesic Shellfish Poisoning may bloom more often during winter months. While the occurrence of red tide and other biotoxin events can be related to water quality conditions, a direct cause and effect relationship between these events and anthropogenically-caused pollution has not been established. Closures, therefore, are not reported as violations of water quality standards.

For closure information, call the DMR's hotline at 1-800-232-4733, 207-624-7727 or visit www.maine.gov/dmr/fisheries/shellfish/closures.

Ocean Fish and Shellfish Consumption Monitoring, Assessment and Advisories

Monitoring contact: Jim Stahlnecker, DEP, BWQ, DEA

Tel: (207) 215-6954 email: James.Stahlnecker@maine.gov

Advisory contact Andrew Smith, DHHS, MCDC, Division of Environmental and Community Health, Environmental and Occupational Health Program

Tel: (207) 287-5189 email: Andy.E.Smith@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/eohp/

DEP monitors diadromous fish, ocean fish and shellfish in its Surface Waters Ambient Toxics (SWAT) monitoring program for contaminants that may present a risk for human consumption. The results are forwarded to the Maine CDC, which is responsible for assessing any health threats from the consumption of anadromous and freshwater fish, and shellfish caught by noncommercial anglers in state waters. (22 M.R.S. §1696-I). The Maine CDC does this in the form of Fish Consumption Advisories (www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/saltwater.htm). Waters fail to attain their "CWA-designated use for Fishing" whenever government agencies issue fish and/or shellfish consumption advisories. These advisories are designed to let citizens know that there may be an increased risk to their health if they choose to consume certain species of fish or shellfish. Since 1992, human health consumption advisories have been in place to warn the public against the consumption of lobster tomalley. An advisory was issued for striped bass and bluefish in 1996 and revised in June 2009. The entire Maine coast (in waters naturally capable of supporting lobster propagation and harvesting) is not in attainment of its designated use for fishing due to these consumption advisories. Further details are provided below.

Specific Ocean Fish Consumption Advisories

Striped Bass and Bluefish: Pregnant and nursing women, women who may get pregnant, nursing mothers and children under 8 years of age should not eat any striped bass or bluefish. All other individuals should eat no more than 4 meals per year.

The striped bass and bluefish consumption advisory was first issued in 1996 due to the presence of elevated PCBs in these two species. The consumption advice was updated in 2009 following an interstate workgroup evaluation of PCBs levels in recreationally caught striped bass and bluefish (www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/documents/9-08final.pdf).

Lobster Tomalley Consumption Advisories

Lobster Tomalley: No consumption. While there are no known safety considerations when it comes to eating lobster meat, consumers are advised to refrain from eating the tomalley. The tomalley is the soft, green substance found in the body cavity of the lobster that functions as the liver and pancreas. Test results have shown that the tomalley can accumulate contaminants found in the environment, including chemical contaminants, such as dioxins and biotoxins that are responsible for acute shellfish poisoning cases. Toxic contamination found in lobster tomalley is presumed to originate in Maine waters, which has resulted in their listing in Category 5-D for non-attainment due to legacy pollutants. The U.S. Food and Drug Administration (FDA) has similar lobster tomalley advisories, as do some other parts of New England such as Massachusetts and New Hampshire. Lobster meat remains safe to eat.

Safe Eating Guidelines and the Maine Family Fish Guide

In addition to issuing fish consumption advisories for recreational anglers, the Maine CDC maintains safe eating guidelines for both commercially available saltwater fish and shellfish and freshwater fish consumption. This guidance is generally consistent with FDA and EPA guidelines on commercial fish consumption. The Maine Family Fish Guide produced by the Maine CDC summarizes the safe eating guidelines for both saltwater and freshwater. The guide is available on the Maine CDC website and is sent out to OB-GYN offices in the state. www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/documents/meffguide.pdf

Freshwater Fish Consumption Monitoring, Assessments and Advisories

Monitoring contact: Tom Danielson, DEP, BWQ, DEA

Tel: (207) 441-7430 email: Thomas.J.Danielson@maine.gov

Related Website: www.maine.gov/dep/water/monitoring/toxics/

Advisory contact: Andrew Smith, DHHS, Maine CDC, Division of Environmental and Community Health, Environmental and Occupational Health Program

Tel: (207) 287-5189 email: Andy.E.Smith@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/eohp/

In addition to ocean fish and shellfish, DEP also monitors freshwater fish in its SWAT monitoring program for contaminants that may present a risk for human consumption. The results are shared with the Maine CDC for the purpose of Fish Consumption Advisories (www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/2kfca.htm). See the preceding section for more information. There is a statewide Fish Consumption Advisory for all freshwaters due to mercury, and additional chemical-specific advisories for specific waters in the state.

Statewide Freshwater Fish Consumption Advisory: Mercury

Based on monitoring of mercury concentrations in freshwater fish from lakes and rivers in Maine, the Maine CDC issued a statewide advisory for all Maine lakes and ponds in 1994, expanded it to include all freshwaters in 1997, and revised in 2000.

Pregnant and nursing women, women who may get pregnant, and children under age 8 DO NOT EAT any freshwater fish from Maine's inland waters. Except, for brook trout and landlocked salmon, 1 meal per month is safe.

All other adults and children older than 8 CAN EAT 2 freshwater fish meals per month. For brook trout and landlocked salmon, the limit is 1 meal per week.

Freshwater Fish Consumption Advisories: PFAS

Consumption advisories for PFAS (per- and polyfluoroalkyl substances) were created by the Maine CDC between October 2021 and April 2023 (Table 7-3) based on data collected by DEP and other agencies between 2013 and 2022. Maine DEP collected fish and water samples across the state in 2021 and 2022 to determine the extent and severity of PFAS contamination in lakes, streams, and rivers. Maine IF&W also studied PFAS, primarily in remote lakes, in 2022. For more information, see section 'Emerging Contaminants, Per- and Polyfluoroalkyl Substances (PFAS)' in Chapter 6 (pages 116-117 above).

Table 7-3 Safe Eating Guidelines: PFAS

Area[22]	**Waterbody**	**Guidelines**
Albion	Fifteenmile Stream from the Yorktown Brook inlet at the Hussey Road to Route 137/202 in Albion	No more than 2 meals per month of brook trout.
China	All of China Lake	No more than 1 meal per month of any fish species.
Fairfield	Fish Brook, including any tributaries, from the headwaters to the confluence with Messalonskee Stream	Do not eat any fish from these waters.
Fairfield	Police Athletic League (PAL) Ponds	Do not eat any fish from these waters.
Fairfield	Kennebec River from the Carrabassett Stream inlet just north of Route 23 to the Lockwood Dam in Waterville	No more than 9 meals per year of smallmouth bass.
Limestone	All of Durepo Pond and Limestone Stream from Durepo to the Canadian border	No more than 4 meals per year of brook trout and do not eat smallmouth bass from these waters.
Sanford/Alfred	The Mousam River from below the Number One Pond Dam to Outlet Dam on Estes Lake, including all of Estes Lake	No more than 3 meals per year of any fish species.
Sanford	All of Number One Pond	No more than 1 meal per month of largemouth bass.

[22] 'Area' is used as a general location indication. Some waterbodies may extend into adjacent towns and those sections are included in the guidelines.

Area[22]	Waterbody	Guidelines
Thorndike/Unity	Halfmoon Stream from the Shikles Road in Thorndike to the Berry Road in Unity	No more than 2 meals per month of brook trout.
Unity	Unity Pond	No more than 6 meals per year of black crappie and no more than 12 meals per year for all other fish species.
Waterville/Oakland	Messalonskee Stream from the Rice Rips Dam in Oakland to the Automatic Dam in Waterville	No more than 3 fish meals per year of any fish species.
Westbrook/Falmouth	The Presumpscot River from Saccarappa Falls in Westbrook to Presumpscot Falls in Falmouth	No more than 4 fish meals per year of any fish species.

Freshwater Fish Consumption Advisories: PCBs, Dioxins, and DDT

These freshwater fish consumption advisories are due to elevated levels of dioxin/furans/coplanar PCBs, total PCBs, and total DDTs (DDD + DDE + DDT) (www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/2kfca.htm, Table 7-4). These advisories were last updated in 2009. The Maine CDC is currently reviewing the most recent dioxin, PCB and DDT fish tissue contaminant data from DEP to assess the need to collect more data and/or revise or update the fish consumption advisories listed below.

Table 7-4 Safe Eating Guidelines: PCBs, Dioxins, and DDT

Area	Guidelines
Androscoggin River Gilead to Merrymeeting Bay:	No more than 6-12 meals a year of any fish species.
Dennys River Meddybemps Lake to Dead Stream:	No more than 1-2 meals per month of any fish species.
Green Pond, Chapman Pit, & Greenlaw Brook	Do not eat any fish from these waters.
Little Madawaska River & tributaries (Madwaska Dam to Grimes Mill Road):	Do not eat any fish from these waters.
Kennebec River Augusta to the Chops:	Do not eat any fish from these waters.
Shawmut Dam in Fairfield to Augusta:	No more than 5 meals per year of trout and no more than 1-2 bass meals per month.
Madison to Fairfield:	No more than 1-2 meals a month of any fish species.
Meduxnekeag River:	No more than 2 meals a month of any fish species.
North Branch Presque Isle River*	No more than 2 meals a month of any fish species.
Penobscot River below Lincoln:	No more than 1-2 meals a month of any fish species.
Prestile Stream:	No more than 1 meal a month of any fish species
Red Brook in Scarborough:	No more than 6 meals a year of any fish species.
Salmon Falls River below Berwick:	No more than 6-12 meals a year of any fish species.
Sebasticook River (East Branch, West Branch & Main Stem) (Corinna/Hartland to Winslow):	No more than 2 meals a month of any fish species.

* Correct name is North Branch Presque Isle Stream

Freshwater PerFluoroAlkyl Substances (PFAS) Monitoring

Although there are thousands of kinds of PFAS, the primary PFAS of concern in freshwater fish is perfluorooctane sulfonate (PFOS). In 2022, Maine CDC lowered the fish tissue action level (FTAL) for PFOS from 34.1 ng/g to 3.5 ng/g. In 2021, DEP collected fish from 17 lakes and river segments near suspected sources of PFAS in central and southern Maine. PFOS concentrations in fish exceeded Maine's FTAL for PFAS in 11 of the sites. In 2022, DEP collected fish from 33 lakes and river segments across the state. PFOS concentrations in fish exceeded Maine's FTAL for PFAS in 19 of the 33 sites. Sampling results are summarized in the 2021-2022 report of the Surface Water Ambient Toxics (SWAT) monitoring program, which is available from the SWAT website (www.maine.gov/dep/water/monitoring/toxics/swat/). Sampling results are also available on the PFAS Investigation Map, which is accessed from DEP's PFAS website (www.maine.gov/dep/spills/topics/pfas/index.html). Maine CDC issued waterbody-specific fish consumption advisories for PFAS for some sites (see Table 7-3 above) and is considering advisories in other locations.

Dioxin Monitoring

The most recent (2009) evaluation by the MCDC of dioxins and furans in fish from Maine rivers is available here: www.maine.gov/dhhs/mecdc/environmental-health/eohp/fish/documents/finaldraft-eval-of-pcdd.pdf. Sampling results from 2011-2014 showed that dioxin levels in fish from Maine rivers continued to decline, approaching background levels at some locations but still exceeding that level at others. In 2013, concentrations exceeded the MCDC's Fish Tissue Action Level (FTAL) at all four stations monitored on the Androscoggin River from Gilead to Lisbon, but were below the FTAL in the Penobscot River at Milford and the Kennebec River in Augusta. In 2014, when the last sampling for dioxin occurred, concentrations in filet and roe of American shad from Waterville on the Kennebec River were at the FTAL. Dioxin monitoring is conducted at the request of the MCDC to inform the fish consumption advisories. Maine CDC expects to review current data and future needs by 2022.

GROUNDWATER AND PUBLIC HEALTH CONCERNS

Public Health and Environmental Concerns

Contaminants found in groundwater can have numerous adverse human health and environmental impacts. Public health concerns arise because some contaminants have been individually linked to toxic effects ranging from allergic reactions and respiratory impairment to liver and kidney damage, and damage to the central nervous system. Additional public health concerns also arise because information is not available about potential health impacts of many contaminants found in groundwater.

Due to uncertainties regarding the relationship between exposure to contaminants and impacts on human health, public health efforts are based on identifying the probabilities of impacts (i.e. risk assessment). Conducting risk assessments for combinations of contaminants that are commonly found in groundwater is difficult because there are no generally accepted protocols for testing for such effects. The primary route of exposure to contaminants is through ingestion of drinking water, although exposure is also

possible through contact with skin and inhalation of vapors from groundwater sources (bathing, food preparation, industrial processes, etc.)

Because groundwater generally provides base flow to streams and rivers, environmental impacts include toxic effects on benthic invertebrates, fish, wildlife and aquatic vegetation. This also presents a public health concern if the surface waterbody is a source of food or recreation. In some areas of the State there are probably links between low-level, long-term groundwater quality degradation and the water quality of streams and brooks during low-flow conditions.

Drinking Water Programs and Groundwater Contaminant Assessments

WELLHEAD PROTECTION PROGRAM

Contact: Susan Breau, DHHS, CDC, Division of Environmental and Community Health (DEH), Drinking Water Program (DWP)

Tel: (207) 592-6981 Email: Susan.Breau@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/dwp/

The Maine CDC Drinking Water Program (DWP), located in DHHS, administers the Wellhead Protection Program (WHPP). The WHPP continues to be a voluntary program for Maine's public water suppliers, with all reduced or waived monitoring tied to approved protection programs. To be eligible for reduced or waived monitoring, a system must have an approved local Wellhead Protection Plan and the owner or operator must complete a waiver application.

SOURCE WATER ASSESSMENT AND PROTECTION PROGRAM

Contact: Susan Breau, DHHS, CDC, DEH, DWP

Tel: (207) 592-6981 Email: Susan.Breau@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/swp.shtml

Water supply protection is the first line of defense in protecting public health and has long been recognized as the cornerstone of providing safe drinking water. The most effective source protection method is to keep the area contributing water to the supply open and undeveloped. The DWP's past assessments of source protection for public water supplies identified rapid residential and commercial development in source protection areas as the most significant threat to water quality and quantity.

Public Water Systems (PWSs) have a limited suite of tools for source protection: they can purchase land, inspect existing activities, and ask local government to enact (and enforce) protective ordinances. The DWP continues to collaborate with systems to assess the risk to drinking water sources, and to encourage PWSs to establish source water protection programs.

FINISHED WATERS

Contact: Robin Frost, DHHS, CDC, DEH, DWP

Tel: (207) 287-8411 Email: Robin.Frost@maine.gov

Related Websites:

www.maine.gov/dhhs/mecdc/environmental-health/dwp/index.shtml and

www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/swp.shtml

The DWP is the frontline enforcement agent in Maine for the rules and regulations set forth in the Federal Safe Drinking Water Act (SDWA). The requirements of the SDWA apply to the approximately 1,900 public drinking water systems in Maine. There are approximately 70 water systems that use surface water as their primary source, and these all have water treatment systems and watershed protection programs. Of the approximately 1,800 groundwater systems, approximately 1,000 have some form of treatment on-line (and this number is likely to continue to rise), while the remaining systems have no treatment and serve raw water. Water quality testing is the primary means for assessing public water system compliance, while also verifying the health and safety of the water that is reaching consumers.

PRIVATE WELLS

Contact Alex Pugh, DHHS, CDC, DEH, DWP

Tel: (207) 592.2086 Email: alex.l.pugh@maine.gov

Related Websites: www.maine.gov/dhhs/mecdc/environmental-health/dwp/consumers/waterWellFacts.shtml and

www.maine.gov/dhhs/mecdc/environmental-health/eohp/wells/

Maine has one of the highest per capita uses of domestic household wells for drinking water in the U.S. Based on data from Maine Tracking Network's 2021 data, approximately 52% of Maine homes rely on a private well for their drinking water.

PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Contact: Courtany Hanley, DHHS, CDC, DEH, DWP

Tel: (207) 592.2168 Email: courtany.hanley@maine.gov

Related Website:www.maine.gov/dhhs/mecdc/environmental-health/dwp/pws/pfas.shtml

The DWP has partnered with the Maine Department of Environmental Protection (DEP) and others to perform three rounds of PFAS testing statewide in select high priority areas in Maine. In March of 2019, Governor Janet Mills issued an executive order to create a PFAS Task Force, which completed its Final Report in January of 2020. The report included recommendations regarding statewide PFAS testing for some public water systems, determination of a Maximum Contaminant Level (MCL) for some PFAS compounds in public drinking water, private well testing and continued testing for PFAS statewide in the environment. With the signing of LD 129 on June 21, 2021, all community public water systems and non-transient, non-community schools and childcare facilities in Maine are required to sample finished drinking water for PFAS by December 31, 2022. An interim standard of 20 ppt for six PFAS (alone or in combination) is in effect. See DWP PFAS website above for more information.

RADON

Contact: Jonathan Dyer, DHHS, CDC, DEH, Radiation Control Program – Radon Program

Tel: (207) 287-5743 Email: Jonathan.Dyer@maine.gov or radon.dhhs@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/rad/radon/hp-radon.htm

The presence of naturally occurring radioactive radon gas in groundwater from granite bedrock aquifers and overlying soils has long been recognized as a problem in Maine. A large number of Maine wells have radon concentrations that, through normal household water use, release radon into the air resulting in concentrations that may cause an increased incidence of lung cancer.

The average water radon level in Maine is approximately 11,000 picocuries/Liter (pCi/L). The Maine State Toxicologist set a maximum exposure guideline (MEG) of 4,000 pCi/L for radon in water effective January 1, 2007. The DWP uses this MEG when evaluating new community public water systems**.** For new non-transient, non-community public water systems the MEG is 40,000 pCi/L. Community and non-transient, non-community public water systems in Maine must install treatment above these levels. For private wells with radon concentrations between 4,000 and 10,000 pCi/L, the Toxicologist recommends investigation of the total radon risk (water and air). For private wells with radon concentrations of 10,000 pCi/L or higher in water, reducing the radon in water is recommended regardless of the radon in air concentration.

ARSENIC

Contact: Ryan P. Gordon, Hydrogeologist, DAFC, MGS

Tel: (207) 287-7178 email: ryan.p.gordon@maine.gov

Related Website: www.maine.gov/dhhs/mecdc/environmental-health/eohp/wells/index.htm

Several types of cancer, including skin and bladder cancer, along with other health problems have been linked to the presence of arsenic in drinking water. The current Maximum Contaminant Level (MCL) for arsenic is 10 ppb (parts per billion) in drinking water. A 2010 study by the USGS, in cooperation with the MCDC, reviewed nearly 14,000 well water analyses statewide, and determined that more than 25% of the wells sampled in 44 towns had arsenic concentrations in excess of 10 ppb. However, because these wells were self-selected by the homeowners for analysis, it is likely that the data are biased toward higher arsenic concentrations. It is likely that 10-15% of wells statewide have arsenic concentrations in excess of the MCL. Additional work by the MGS, Columbia University, and the USGS on potential sources of arsenic in well water in central Maine strongly suggests that the local metamorphic bedrock is a significant source. However, potential anthropogenic sources cannot be ruled out in some areas.

CHAPTER 8 SUMMARY OF IMPAIRED WATERS

OVERVIEW

Chapter 8 contains four sets of tables and each table is presented for each waterbody type assessed (rivers/streams, lakes/ponds, wetlands, estuarine/marine waters, coastal designated beaches). The four sets are: 1) New Listings (Tables 8-1 through 8-5); 2) New Delistings (Tables 8-6 through 8-9); 3) Status of Delisted Category 5 Waters (Tables 8-10 through 8-13); and 4) TMDL Current Project Update (Tables 8-14 through 8-18). For each item listed below, also see the related record in Appendices II-V as additional information may be presented there.

NEW LISTINGS

Table 8-1 New Rivers/Streams Listings

This table provides a list of new impairments (Category 5 listings) and four new AUs that were added in the non-pollutant/non-303(d) Category 4-C-FPB (Fish Passage Barrier); the term 'listings' is therefore used in a general sense here. See the 'Comments' column for more information. A '0' in column 'Category, 2022' indicates that the AU was not listed in that cycle for that cause. '2022' is used as a shorthand for the 2018/2020/2022 cycle. Abbreviations used in column 'Category, Other 2024' in this table are as follows: A/P, (Algae) Periphyton (Aufwuchs) Indicator Bioassessments; BOD, Biochemical Oxygen Demand; Dio, Dioxin (including 2,3,7,8-TCDD); DO, Dissolved Oxygen; Ec, *Escherichia coli*; MI, Benthic Macroinvertebrates Bioassessments; PCBs, Polychlorinated Biphenyls; PFAS, PerFluoroAlkyl Substances; Tox, Toxics; TP, Total Phosphorus.

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0101000413_146R_01	Limestone Str (Limestone)	Durepo Pond to Long Road bridge (Limestone)	PFAS in Fish Tissue	0	5-A	none	1/12/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0101000413_146R_02	Limestone Str (Limestone, Ft. Fairfield)	Long Road bridge (Limestone) to the Canadian border	PFAS in Fish Tissue	0	5-A	none	1/12/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0102000402_219R02	Piscataquis R	Main stem, from Guildford-Sangerville SD WWTF outfall to	Dissolved Oxygen	0	5-A	none	9/5/23: New Category 5-A listing in 2024 cycle for Aquatic Life Use: continuous DO data showed episodic Class B criteria excursions in 2018.

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
		Dover-Foxcroft POTW outfalls					
ME0102000512_228R02	Marsh Stream (Brooks to Frankfort)	Brooks (Foss Mill) Dam to Marsh River Dam; tributary to Marsh River	Fish Passage Barrier	0	4-C-FPB	none	4/12/24: New Category 4-C-FPB listing in 2024 cycle for Aquatic Life Use: Marsh River Dam presents a barrier to fish passage.
ME0103000305_323R01	Messalonskee Str	Main stem, Rice Rips Dam (Oakland) to Automatic Dam (Waterville)	PFAS in Fish Tissue	0	5-A	none	3/18/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000306_339R_01_01	Kennebec R,	Carrabassett Stream inlet to Shawmut Dam	PFAS in Fish Tissue	0	5-A	4-B (Dio), 5-D (PCBs)	2/9/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000306_339R_02	Kennebec R,	Shawmut Dam to ~2,000 ft above Mill Island, Fairfield	PFAS in Fish Tissue	0	5-A	4-B (Dio), 5-D (PCBs)	2/9/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000306_339R_02_01	Kennebec R,	~2,000 ft above Mill Island, Fairfield to Lockwood Dam (Waterville-Winslow)	PFAS in Fish Tissue	0	5-A	4-B (Dio), 5-D (PCBs)	2/9/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000309_326R02	Halfmoon Stream (Knox, Thorndike)	From Montville-Knox townline to Shikles Road in Thorndike	Benthic Macroinvertebrates Bioassessments	0	5-A	4-A (A/P), 5-A (MI)	3/19/24: New Category 5-A listing in 2024 cycle for Aquatic Life Use - macroinvertebrates did not meet Class A in several sampling events. Candidate for future addendum to NPS TMDL.
ME0103000309_326R02_01	Halfmoon Stream (Thorndike)	From Shikles Road to Rt 220 bridge	Benthic Macroinvertebrates Bioassessments	0	5-A	4-A (A/P), 5-A (PFAS)	3/19/24: New Category 5-A listing in 2024 cycle for Aquatic Life Use - macroinvertebrates did not meet Class A in several sampling events. Candidate for future addendum to NPS TMDL.
ME0103000309_326R02_01	Halfmoon Stream (Thorndike)	From Shikles Road to Rt 220 bridge	PFAS in Fish Tissue	0	5-A	4-A (A/P), 5-A (MI)	3/19/24: New Category 5-A impairment in 2024 cycle due to PFAS

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
							contamination in fish tissue causing fish consumption advisory.
ME0103000309_326R03	Halfmoon Stream (Thorndike, Unity)	From Rt 220 bridge in Thorndike to confluence with Sandy Stream	PFAS in Fish Tissue	0	5-A	4-A (A/P)	3/19/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000309_327R_01	Fifteen Mile Str (Albion)	Yorktown Brook/Hussey Rd to Route 137/202	PFAS in Fish Tissue	0	5-A	none	1/23/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000310_322R01	Fish Brook (Fairfield)	Tributary to Messalonskee Stream below Messalonskee Lake dam	PFAS in Fish Tissue	0	5-A	4-A (MI, DO)	1/5/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000310_322R02	Unnamed Tributaries to Fish Brook (Fairfield)	Tributaries excluding Tobey Brook	PFAS in Fish Tissue	0	5-A	none	1/5/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000311_334R05_01	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between American Tissue Dam and Gardiner Paperboard Dam	Fish Passage Barrier	0	4-C-FPB	4-A (TP); 5-A (A/P, MI)	4/12/24: New Category 4-C-FPB listing in 2024 cycle for Aquatic Life Use: Gardiner Paperboard Dam presents a barrier to fish passage.
ME0103000312_333R01_03	Stone Brook (Augusta)	Tributary to Bond Brook	Benthic Macroinvertebrates Bioassessments	0	5-A	none	4/10/24: New Category 5-A listing in 2024 cycle for Aquatic Life Use - macroinvertebrates did not meet Class B in 2017 and 2022.
ME0105000220_522R01_03	Megunticook River	Knox Mill Dam to Montgomery Dam, Camden	Fish Passage Barrier	0	4-C-FPB	4-A (Ec)	4/12/24: New Category 4-C-FPB listing in 2024 cycle for Aquatic Life Use: Montgomery Dam presents a barrier to fish passage.
ME0106000102_603R_02	Royal River	Elm Street Dam to Bridge Street Dam (Yarmouth)	Fish Passage Barrier	0	4-C-FPB	none	4/12/24: New Category 4-C-FPB listing in 2024 cycle for Aquatic Life Use: Bridge Street Dam presents a barrier to fish passage.

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0106000103_609R_01	Presumpscot R,	Main stem, below Saccarappa Falls	PFAS in Fish Tissue	0	5-A	none	3/12/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0106000302_628R01_03	Mousam R,	Main stem, Number One Pond Dam in Sanford to Estes Lake	PFAS in Fish Tissue	0	5-A	4-A (Tox), 4-B (Tox, BOD, TP)	2/22/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.

Table 8-2 New Lakes/Ponds Listings

This table provides a list of new impairments (Category 5 listings). A 'na' in column 'Category, 2022' indicates that the AU was not listed in that year for that cause. '2022' is used as a shorthand for the 2018/2020/2022 cycle. TP, Total Phosphorus.

Assessment Unit ID	Lake Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0101000413_9768L	DUREPO L	Limestone, Aroostook	PFAS in Fish Tissue	na	5-A	none	4/27/24: Previously unassessed lake; new Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000309_5448L	CHINA L	China, Kennebec	PFAS in Fish Tissue	4-A	5-A	4-A (TP& Secchi)	4/27/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000309_5172L	UNITY P	Unity, Waldo	PFAS in Fish Tissue	4-A	5-A	4-A (TP& Secchi)	4/27/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0103000306_8079L	FAIRFIELD PAL PDS	Fairfield, Kennebec	PFAS in Fish Tissue	na	5-A	none	4/27/24: Previously unassessed lake. New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.
ME0106000302_7L	ESTES L	Sanford, York	PFAS in Fish Tissue	2	5-A	2	4/27/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.

Assessment Unit ID	Lake Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0106000302_3848L	NUMBER ONE P	Sanford, York	PFAS in Fish Tissue	2	5-A	2	4/27/24: New Category 5-A impairment in 2024 cycle due to PFAS contamination in fish tissue causing fish consumption advisory.

Table 8-3 New Wetlands Listings

This table provides a list of new impairments (Category 5 listings) as well as new AUs that were added in other, non-impaired categories; the term 'listings' is therefore used in a general sense here. A '0' in column 'Category, 2022' indicates that the AU was not listed in that year for that cause. '2022' is used as a shorthand for the 2018/2020/2022 cycle.

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0102000513_227R04_W288	Hothole Brook wetlands	Orland, wetland station W-288	Benthic Macroinvertebrates Bioassessments	0	2	None	New listing for Aquatic Life Use based on 2016 and 2021 biological monitoring data.
ME0102000513_5540_W235	Silver Lake wetland	Wetland on eastern side of lake, wetland site W-235	Benthic Macroinvertebrates Bioassessments	2	3	None	New listing for Aquatic Life Use based on 2011 and 2021 biological monitoring data.
ME0103000305_316R02_W065	Bog Stream Wetland (Mercer Bog)	Mercer Bog Wildlife Management Area, Mercer. Wetland stations W-065 and W-308.	Benthic Macroinvertebrates Bioassessments	3	2	None	New listing for Aquatic Life Use based on 2002, 2007, 2017 and 2022 biological monitoring data.
ME0103000310_322R01_W243	Fish Brook (Fairfield) wetlands	wetland station W-243	PFAS in Fish Tissue, Benthic Macroinvertebrates Bioassessments	0	5-A	3	New listing due to PFAS contamination in fish tissue causing fish consumption advisory (issued in May 2022). New listing for Aquatic Life Use based on 2012 and 2017 biological monitoring data.
ME0103000311_334R_W158	Cobbosseecontee Stream wetlands	Litchfield, wetland station W-158	Benthic Macroinvertebrates Bioassessments	2	3	None	New listing for Aquatic Life Use based on 2007 and 2022 biological monitoring data.

Assessment Unit ID	Segment Name	Location	Cause	Category			Comments
				2022	2024	Other 2024	
ME0104000210_418R02_W101	No Name Brook (Lewiston) wetland	Wetlands along No Name Brook in Lewiston, includes biomonitoring station W-101 and W-102	Benthic Macroinvertebrates Bioassessments	5	4-A	None	Delisted to Category 4-A - covered under approved Statewide NPS TMDL addendum.
ME0105000301_4918_W163	Trues Pond	Montville, wetland station W-163	Benthic Macroinvertebrates Bioassessments	2	3	None	New listing for Aquatic Life Use based on 2007 and 2022 biological monitoring data.
ME0106000302_3848_W053	Number One Pond wetlands (Sanford)	Wetland station W-053	PFAS in Fish Tissue, Benthic Macroinvertebrates Bioassessments	3	5-A	3	New listing due to PFAS contamination in fish tissue causing fish consumption advisory (issued in May 2022)

Table 8-4 New Estuarine/Marine Waters Listings

This table provides a list of new impairments (Category 5 listings) as well as new AUs that were added in other, non-impaired categories; the term 'listings' is therefore used in a general sense here. A '0' in column 'Category, 2022' indicates that the AU was not listed in that year for that cause. '2022' is used as a shorthand for the 2018/2020/2022 cycle. Note that the Union River AUs were moved from the rivers and streams sections due to a previous erroneous placement. Also, AUs for the Union River and Spruce Creek were not assigned causes as estuarine and marine segments for non-shellfish harvesting uses do not have specified causes in Categories 2 and 3.

Assessment Unit ID	Segment Name	Location	Cause	Category		Comments
				2022	2024	
ME010500021302_SB_E	Union River (Ellsworth)	River north of Ellsworth Harbor Park and Marina (Ellsworth)	n/a	2	2	3/7/2024: Moved due to erroneously assigned freshwater AU ME0105000213_519R'.
ME010500021302_SB_E_01	Union River (Ellsworth)	River south of Ellsworth Harbor Park and Marina (Ellsworth)	n/a	3	3	3/7/2024: Moved due to erroneously assigned freshwater AU and split from ME010500021302_SB_E.
ME010500021908_SB_WZ_AE	North Haven (Vinalhaven), Matinicus Island (Approved)	Mill River and Pond, Dyers Pond, Fish Hook (Vinalhaven)	Fecal Coliform	0	2	2/27/2024: Segment erroneously omitted in 2018/2020/2022 IR cycle.
ME010500021908_SB_WZ_PE	North Haven (Vinalhaven),	Mill Pond (Vinalhaven)	Fecal Coliform	0	3	2/27/2024: Segment erroneously omitted in 2018/2020/2022 IR cycle.

	Matinicus Island (Prohibited)					
ME010600030205_SB_01E	Mousam River	Mousam River (Kennebunk)	Dissolved Oxygen, Nutrient/ Eutrophication Biological Indicators	5-A	5-A	3/1/2024: New 'Nutrient/Eutrophication Biological Indicators' cause for 2024 cycle based on 2022 data documenting high total nitrogen and chlorophyll along estuarine gradient.
ME010600031001_SB_E_01	Spruce Creek (Kittery)	Tidal portion of Spruce Creek north of Rt. 103 bridge (Kittery)	n/a	2	3	3/26/2024: AU split from ME010600031001_SB_E (Cat. 2) due to possible dissolved oxygen non-attainment in portion of larger assessment unit.

Table 8-5 New Coastal Designated Beaches Listings

This table provides a list of new impairments (Category 5 listings) as well as new AUs that were added in other, non-impaired categories; the term 'listings' is therefore used in a general sense here. A '0' in column 'Category, 2022' indicates that the AU was not listed in that year for that cause. '2022' is used as shorthand for the 2018/2020/2022 cycle.

Assessment Unit ID	AU Name	Cause	Category			Comments
			2022	2024	Other 2024	
ME010500021909_SB_629500B	Walker Park Beach (Rockport)	Enterococci	0	2	None	4/8/24: New Category 2 listing in 2024 cycle for Recreation in the water Use based on 2021 Enterococci bacteria monitoring data.
ME010600010605_SB_ 978175B	Town Landing North (Falmouth)	Enterococci	0	2	None	4/8/24: New Category 2 listing in 2024 cycle for Recreation in the water Use based on 2021 and 2022 Enterococci bacteria monitoring data.
ME010600010605_SB_150104B	Town Landing South (Falmouth)	Enterococci	0	2	None	4/8/24: New Category 2 listing in 2024 cycle for Recreation in the water Use based on 2021 and 2022 Enterococci bacteria monitoring data.
ME010600010605_SB_875929B	Willard Beach (South Portland)	Enterococci	3	5-B	None	4/8/24: New Category 5-B listing in 2024 cycle for Recreation in the water Use based on 2018-2022 Enterococci bacteria monitoring data.

NEW DELISTINGS

Tables 8-6 through 8-9 present specific Causes of impairment that have been removed from the list of Impaired Waters [the"303(d) List"] for the specified waterbody segments. Refer to the "Delisting" section in Chapter 4 for an explanation of the delisting process. Segments may appear multiple times if multiple causes have been delisted. For each waterbody, the category change in the 2018/2020/2022 ('2022' for short) 2024 cycle for the noted Cause or Impaired Use is presented as well as information on whether the waterbody is also listed in other categories. For AUs that were delisted for reasons other than TMDL approval, delisting information is presented below.

Delisting of Aquatic Life Use and Primary Contact Recreation Use Impairments in Category 5-A or Category 4-A to Category 2

TOOTHAKER POND, PHILLIPS

Toothaker Pond, (AU ID ME 0103000305 _2336L; Lake ID/Midas # 2336), has a surface area of 30 acres and is located in the municipality of Phillips (Franklin County), Maine. Water quality issues at Toothaker began in the early 1900s with construction of the Berlin Mill sawmill that resulted in shoreline deforestation, severe erosion, and the pond becoming filled with slash and logs. The mill also diverted nearby Meadow Brook into the pond, then went out of business around 1910. In 1929, a fish hatchery was built in the headwaters of Meadow Brook. Hatchery effluent, rich in nutrients and solids, ended up in the pond and in the early 1960s, algal blooms began to occur. Returning the brook to its original channel as a mitigation attempt, reduced flushing rate, promoted internal recycling of phosphorus and resulted in annual algal blooms. In 2002, Toothaker Pond was listed in Category 5-A, due to persistent nuisance algal blooms which caused its Designated Uses of ***Primary Contact Recreation*** and ***Fish and Other Aquatic Life*** to be unsupported. The pond was moved to Category 4-A in 2006 upon EPA's acceptance of the TMDL report.

Maine's GPA water quality standards (38 MRS Section 465-A.) require that lakes have water quality suitable for designated uses including '*recreation in…the water*' (Primary Contact Recreation) and '*habitat for fish and other aquatic life*' (Fish and Other Aquatic Life). Additionally, trophic state trends in GPA waters (as characterized by chlorophyll-a content, Secchi disk transparency, total phosphorus content and other appropriate criteria) must be stable or decreasing (improving), subject only to natural fluctuations. Class GPA waters must also be free of culturally induced algal blooms that impair their use and enjoyment (Chapter 581 (6.B) of Maine DEP Rules, *Regulations Relating to Water Quality Evaluations*, defines a 'nuisance bloom' as transparency less than 2 meters due to algal populations). In Maine, lakes are assessed as not meeting their Primary Contact Recreation Designated Use if assessment data indicate that they have bloomed in more than 5 of the past ten years (***DEP's** long-standing approach has been to consider lakes as supporting the Primary Contact Recreation designated use when lakes have not bloomed more than 5 of the past*

ten years). Among other assessment criteria, lakes may be listed as not attaining the Fish and Other Aquatic Life designated use if there is a "shift in dominant species composition" (*DEP's long-standing approach acknowledges that if a lake supports persistent nuisance algal blooms, shifts in species composition of both phytoplankton and zooplankton at the base of the food chain have occurred*).

In 2007 & 2009 installation of a sandbag cofferdam allowed one-foot drawdowns to flush out nutrient-rich water. In 2011, a temporary partial diversion of Meadow Brook into Toothaker Pond using a 2" pipe was installed to help the flushing process, and in 2012 a new concrete dam equipped with removable flashboards was installed. Late summer drawdowns, in non-drought years, continue to promote water quality improvement. Toothaker has not fallen to nuisance bloom levels since 2010. Chlorophyll-a and total phosphorus concentrations have been reduced. Total phosphorus TSI calculations indicate that the lake is mesotrophic. Secchi transparency TSI calculations have been reduced from peaking well over 100, to hovering at the mesotrophic/eutrophic border of 60, corresponding to transparency readings of around 4 meters. Toothaker Pond no longer supports nuisance algal blooms and the pond is now meeting Class GPA standards.

EAST POND, SMITHFIELD AND OAKLAND

East Pond (Lake ID/Midas # 5349; AU ID ME0103000310_5349L) has a surface area of 1,823-acres and is located in the municipalities of Smithfield and Oakland (Somerset and Kennebec Counties, respectively). Persistent nuisance algal blooms resulted in East Pond being first listed as being in non-attainment of Class GPA water quality standards in Maine's 1994 305(b) Report because it was not supporting its Designated Uses of ***Primary Contact Recreation*** and ***Fish and Other Aquatic Life,*** and listed in Category 4A in Maine's 2002 Integrated Report (IR) because its TMDL had been approved by EPA in 2001.

Maine's GPA water quality standards (38 MRS Section 465-A.) require that lakes have water quality suitable for designated uses including '*recreation in…the water*' (Primary Contact Recreation) and '*habitat for fish and other aquatic life*' (Fish and Other Aquatic Life). Additionally, trophic state trends in GPA waters (as characterized by chlorophyll-a content, Secchi disk transparency, total phosphorus content and other appropriate criteria) must be stable or decreasing (improving), subject only to natural fluctuations. Class GPA waters must also be free of culturally induced algal blooms that impair their use and enjoyment (Chapter 581 (6.B) of Maine DEP Rules, *Regulations Relating to Water Quality Evaluations*, defines a 'nuisance bloom' as transparency less than 2 meters due to algal populations). In Maine, lakes are assessed as not meeting their Primary Contact Recreation Designated Use if assessment data indicate that they have bloomed in more than 5 of the past ten years (*DEP's long-standing approach has been to consider lakes as supporting the Primary Contact Recreation designated use when lakes have not bloomed more than 5 of the past ten years*). Among other assessment criteria, lakes may be listed as not attaining the Fish and Other Aquatic Life designated use if there is a "shift in dominant species composition" (*DEP's long-standing approach acknowledges that if a lake supports persistent*

nuisance algal blooms, shifts in species composition of both phytoplankton and zooplankton at the base of the food chain have occurred).

For the 2024 reporting cycle, DEP proposes to delist the Total Phosphorus and Secchi Disk Transparency Causes of the Primary Contact Recreation Use impairment and the Fish and Other Aquatic Life Use impairment from Category 4-A to Category 2, as indicated by trophic data collected over the last two decades. After decades of remediating non-point sources in the watershed and an attempt to improve water quality using Biomanipulation, it was determined that internal recycling of phosphorus from the sediments continued to predominate phosphorus loads to the lake. In 2018, an in-lake aluminum treatment ('alum') to bind excess sediment phosphorus occurred. The treatment was a success. Secchi disk transparencies have not fallen to nuisance bloom levels since before 2018; chlorophyll-a results have been consistently low and total phosphorus concentrations have been reduced. East Pond is no longer a eutrophic lake and is now considered mesotrophic and is now meeting Class GPA standards.

COCHNEWAGON POND, MONMOUTH

Cochnewagon Pond (Lake ID/Midas # 3814; AU ID ME0103000311_3814L) has a surface area of 410 acres and is in the municipality of Monmouth (Kennebec County), Maine. Cochnewagon Pond was moved from Category 2 to Category 3 in the 2006 cycle, then to Category 5-A in the 2012 IR, due to persistent nuisance algal blooms which caused its Designated Uses of ***Primary Contact Recreation*** and ***Fish and Other Aquatic Life*** to be unsupported.

Maine's GPA water quality standards (38 MRS Section 465-A.) require that lakes have water quality suitable for designated uses including '*recreation in…the water*' (Primary Contact Recreation) and '*habitat for fish and other aquatic life*' (Fish and Other Aquatic Life). Additionally, trophic state trends in GPA waters (as characterized by chlorophyll-a content, Secchi disk transparency, total phosphorus content and other appropriate criteria) must be stable or decreasing (improving), subject only to natural fluctuations. Class GPA waters must also be free of culturally induced algal blooms that impair their use and enjoyment (Chapter 581 (6.B) of Maine DEP Rules, *Regulations Relating to Water Quality Evaluations*, defines a 'nuisance bloom' as transparency less than 2 meters due to algal populations). In Maine, lakes are assessed as not meeting their Primary Contact Recreation Designated Use if assessment data indicate that they have bloomed in more than 5 of the past ten years (*DEP's long-standing approach has been to consider lakes as supporting the Primary Contact Recreation designated use when lakes have not bloomed more than 5 of the past ten years*). Among other assessment criteria, lakes may be listed as not attaining the Fish and Other Aquatic Life designated use if there is a "shift in dominant species composition" (*DEP's long-standing approach acknowledges that if a lake supports persistent nuisance algal blooms, shifts in species composition of both phytoplankton and zooplankton at the base of the food chain have occurred*).

For the 2024 reporting cycle, DEP proposes to delist the Total Phosphorus and Secchi Disk Transparency Causes of the Primary Contact Recreation Use impairment and the Fish and Other Aquatic Life Use impairment from Category 5-A to Category 2, as indicated by trophic data collected over the last two decades. Since 2009, non-point sources identified during watershed surveys have been addressed and in 2019 an in-lake aluminum treatment was implemented to bind excess sediment phosphorus. The treatment was a success. Secchi disk transparencies have not fallen to nuisance bloom levels since before 2019; chlorophyll-a and total phosphorus concentrations have been reduced. Cochnewagon Pond is no longer a eutrophic lake and is now considered mesotrophic and is now meeting Class GPA standards.

LILLY POND, ROCKLAND

Lilly Pond, also known as Lily Pond (AU ID ME0105000220_83L), has a surface area of 29 acres and is located primarily in the municipality of Rockport (Knox County), Maine, with its northernmost tip in Camden, Maine. Persistent nuisance algal blooms resulted in Lilly Pond being listed in Category 5-A in 2002 as it was not supporting its Designated Uses of ***Primary Contact Recreation*** and ***Fish and Other Aquatic Life***. The pond was moved to Category 4-A in 2006 upon EPA's acceptance of its Total Maximum Daily Load report, which supported continued reductions of phosphorus from 1) the Jacob's Quarry site (which had become a landfill), and 2) agricultural runoff from Aldermere Farm.

Maine's GPA water quality standards (38 MRS Section 465-A.) require that lakes have water quality suitable for designated uses including '*recreation in…the water*' (Primary Contact Recreation) and '*habitat for fish and other aquatic life*' (Fish and Other Aquatic Life). Additionally, trophic state trends in GPA waters (as characterized by chlorophyll-a content, Secchi disk transparency, total phosphorus content and other appropriate criteria) must be stable or decreasing (improving), subject only to natural fluctuations. Class GPA waters must also be free of culturally induced algal blooms that impair their use and enjoyment (Chapter 581 (6.B) of Maine DEP Rules, *Regulations Relating to Water Quality Evaluations*, defines a 'nuisance bloom' as transparency less than 2 meters due to algal populations). In Maine, lakes are assessed as not meeting their Primary Contact Recreation Designated Use if assessment data indicate that they have bloomed in more than 5 of the past ten years (*DEP's long-standing approach has been to consider lakes as supporting the Primary Contact Recreation designated use when lakes have not bloomed more than 5 of the past ten years*). Among other assessment criteria, lakes may be listed as not attaining the Fish and Other Aquatic Life designated use if there is a "shift in dominant species composition" (*DEP's long-standing approach acknowledges that if a lake supports persistent nuisance algal blooms, shifts in species composition of both phytoplankton and zooplankton at the base of the food chain have occurred*).

For the 2024 reporting cycle, DEP proposes to delist the Total Phosphorus and Secchi Disk Transparency Causes of the Primary Contact Recreation Use impairment and the Fish and Other Aquatic Life Use impairments from Category 4-A to Category 2, as indicated by trophic data collected over the last two decades. There have been no recorded transparencies below 2 meters and thus

no nuisance algal blooms, from 1998 through 2022. In addition, trophic indicators (total phosphorus and chlorophyll-a) support the improvement in water quality. Lilly Pond is no longer considered a eutrophic lake; data indicate that it is maintaining mesotrophic status. Restoration efforts include 1) pumping contaminated groundwater at Jacob's Quarry site to the local sewer system to the Camden Wastewater Plant for treatment, 2) diverting contaminated runoff away from the pond, and 3) installing agricultural BMPs at Aldermere Farm. These actions have successfully reduced phosphorus in the pond, which is now meeting Class GPA standards; these actions will continue for the foreseeable future.

Listing of New Impairment Causes for Impaired Waters with Approved TMDLs (Category 4-A)

NO NAME BROOK WETLAND (LEWISTON)

No Name Brook (Lewiston) (ME0104000210_418R02) a 10.02-mile Class B stream impaired for aquatic life use based on dissolved oxygen assessments. The brook was delisted from Category 5-A to 4-A in the 2018/2020/2022 reporting cycle due to a TMDL approved in 2021 for Total Phosphorus, Total Nitrogen and Sediment (TMDL # R1_ME_2021_02, approval date 9/23/21). The TMDL was designed to address water quality stressors associated with non-point source (NPS) runoff (nutrients and sediment) primarily from agricultural fields and also from development.

In the 2024 listing cycle, DEP proposes to add a second aquatic life use impairment cause, Benthic Macroinvertebrates (BMI) Bioassessments, to the TMDL due to an impairment in the wetland macroinvertebrate community in the *No Name Brook (Lewiston) wetland* assessment unit (AU; ID ME0104000210_418R02_W101). [Maine's Class B water quality standards require that *"… waters must be of sufficient quality to support all aquatic species indigenous to those/the receiving water without detrimental changes in the resident biological community."* 38 M.R.S., Chapter 3, §465(3)(B) and (C).] This addition will delist the *No Name Brook (Lewiston) wetland* AU to Category 4-A. This AU is a 126-acre assessment area comprised of Palustrine scrub shrub and emergent wetland habitats that are contiguous and directly adjacent to the *No Name Brook* assessment unit covered by the TMDL. The wetland impairment, which was first listed in Category 5-A in the 2018/2020/2022 cycle, is based on BMI samples collected in 2003, 2013 and 2018 (biomonitoring stations W-101 and W-102) which showed that the community did not meet applicable Class B aquatic life criteria.

The primary stressor causing the BMI impairment in the No Name Brook wetland complex are nutrients (Total Phosphorus and Total Nitrogen) as well as sediment, most likely attributable to runoff from developed land (5% with 4% impervious cover for W-101 and 9% with 6% impervious cover for W-102, based on 2016 data). The TMDL notes that depositional environments such as wetlands receive sediment and nutrient inputs from the watershed. Modeling done for the TMDL indicated that wetlands in the No Name Brook watershed receive 300 kg/year of sediment, 355 kg/year of Total Nitrogen and 16.8 kg/year of Total Phosphorus, confirming the significant magnitude of these stressors that can affect the BMI community. The TMDL lists the implementation of a 2018 Watershed Based Plan, education/outreach actions (targeting landowners and citizens), further data analysis, implementation of

best management practices (BMPs), and development or strengthening of local ordinances in its Next Steps recommendations to curb the identified NPS pollution. It is anticipated that the existing TMDL will address the identified BMI impairment.

Table 8-6 Rivers/Streams Delisted to Another Category

Abbreviations used in column 'Category, Other 2024' in this table are as follows: A/P, (Algae) Periphyton (Aufwuchs) Indicator Bioassessments; DO, Dissolved Oxygen; Habitat Assessment, HA; MI, Benthic Macroinvertebrates Bioassessments (Streams). A '0' in column 'Category, 2022' indicates that the AU was not listed in that cycle for that cause. '2022' is used as a shorthand for the 2018/2020/2022 cycle.

Assessment Unit ID	Segment Name	Location	Cause	Category			Reason for Removal	Delisting Comment
				2022	2024	Other 2024		
ME0102000513_226R03	Penjajawoc Stream (Bangor) Meadow Bk (Bangor)	Tributaries to Penobscot River	Benthic Macroinvertebrates Bioassessments	5-A	4-A	4-A (HA, DO, A/P)	TMDL approved or established by EPA (4-A)	2/28/24: Aquatic life use impairment moved to Category 4-A due to approval of Statewide % Impervious Cover TMDL addendum.
			Habitat Assessment	5-A	4-A	4-A (MI, DO, A/P)		
			Dissolved Oxygen	5-A	4-A	4-A (MI, HA, A/P)		
			Periphyton (Aufwuchs) Indicator Bioassessments	5-A	4-A	4-A (MI, HA, DO)		

Table 8-7 Lakes/Ponds Delisted to Another Category

'2022' is used as shorthand for the 2018/2020/2022 cycle. These four lakes will be on the state's internal watch list.

Assessment Unit ID	Lake Name	Location (Town, County)	Causes	Category			Reason for Removal	Delisting Comment
				2022	2024	Other 2024		
ME0105000220_83L	Lilly P	Rockport, Knox	Secchi Transp.	4-A	2	None	Supporting Aquatic Life and Swimming Uses	4/27/24: Agric. BMPs installed; landfill runoff diverted.
			Total Phosphorus					
ME0103000310_5349L	East P		Secchi Transp.	4-A	2	None		

Assessment Unit ID	Lake Name	Location (Town, County)	Causes	Category			Reason for Removal	Delisting Comment
				2022	2024	Other 2024		
		Smithfield, Somerset	Total Phosphorus				Supporting Aquatic Life and Swimming Uses	4/27/24: Successful in-lake aluminum treatment in 2018; 10-year watershed management plan in place.
ME0103000311_3814L	Cochnewagon P	Monmouth, Kennebec	Secchi Transp. Total Phosphorus	5-A	2	None	Supporting Aquatic Life and Swimming Uses	4/27/24: Successful in-lake aluminum treatment in 2018; 10-year watershed management plan in place.
ME0103000305_2336L	Toothaker P	Phillips, Franklin	Secchi Transp. Total Phosphorus	4-A	2	None	Supporting Aquatic Life and Swimming Uses	4/27/24: Successful drawdown results.

Table 8-8 Wetlands Delisted to Another Category
'2022' is used as a shorthand for the 2018/2020/2022 cycle.

Assessment Unit ID	Segment Name	Location	Cause	Category			Reason for Removal	Delisting Comment
				2022	2024	Other 2024		
ME0104000210_418R02_W101	No Name Brook (Lewiston) wetland	Wetlands along No Name Brook in Lewiston, includes biomonitoring station W-101 and W-102	Benthic Macroinvertebrates Bioassessments	5-A	4-A	None	TMDL approved or established by EPA (4-A)	January 2024: aquatic life use impairment now category 4-A due to approval of Statewide NPS TMDL addendum (9/23/2021). December 2021: assessment unit moved from 3 to 5 in 18/20/22 cycle. Biological monitoring done in 2003, 2013 and 2018 shows impairment of ALU. Consider for inclusion in the NPS TMDL Addendum approved for No Name Brook in September 2021.

Table 8-9 Estuarine/Marine Waters Delisted to Another Category

No waterbodies were delisted in the 2024 cycle.

Assessment Unit ID	Segment Name	Location	Cause	Category		Reason for Removal	Delisting Comment
				2022	2024		
							See comment above.

STATUS OF DELISTED CATEGORY 5 WATERS

Table 8-10 Status of Delisted Category 5 Rivers/Streams

This table presents the listing history (2002–2024) of Category 5 AUs that were delisted over time. Bold font indicates AU/Cause combinations that changed category during the 2024 cycle. '2022' is used as a shorthand for the 2018/2020/2022 cycle.

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
'04-'08	'10 '24				ME0101000105_103 R01	Shields Branch of Big Black R	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10 '24				ME0101000121_117 R	St. John River at Madawaska	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02 '04	'06 - '24				ME0101000303_124 R01	Dickey Brook	Nutrient/Eutrophi-cation Biological Indicators	TMDL approved by EPA (4A) 9/28/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06
'02 '04	'06 - '24				ME0101000303_124 R01	Dickey Brook	Dissolved Oxygen		
	'16-'24				ME0101000303_124 R01	Dickey Brook	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved by EPA (4A) 9/15/2006	5/23/2012: New 5-A listing for Aquatic Life Use due to algae (periphyton) non-attainment (2003 and 2009, biomonitoring station 688); covered under existing TMDL, causes delisted to Category 4-A
'02 '04	'06 - '24				ME0101000303_124 R02	Daigle Brook	Nutrient/Eutrophi-cation Biological Indicators	TMDL approved by EPA (4A) 9/28/2006	Submitted with Daigle Pond/Cross Pond TMDL in September 2006. EPA approved TMDL 9/28/06

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 '04	'06 - '24				ME0101000303_124 R02	Daigle Brook	Dissolved Oxygen		
'02		'04		'06- '24	ME0101000412_140 R01	No. Br. Presque Isle Stream between Mapleton and Presque Isle	BOD, Biochemical oxygen demand	State Determines water quality standard is being met (Category 2) 8/31/2006	Removal of Mapleton POTW complete. 2004 biomonitoring-showed attainment of Class A biocriteria and attains DO criteria at Station 11, 0.2 km downstream of Mapleton POTW
'02		'04		'06- '24	ME0101000412_140 R01	No. Br. Presque Isle Stream between Mapleton and Presque Isle	Dissolved oxygen		
'04 -'08	'10 '24				ME0101000412_140 R02	Dudley Brook (Chapman)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A)	EPA approved TMDL 4/26/2010 (for Total Phosphorus, Total Nitrogen and sediments)
'02 - '14	'16 - '24				ME0101000412_143 R01	Everett Brook (Ft. Fairfield)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'12 - '14	'16 - '24		'06 - '10		ME0101000412_143 R02	Merritt Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'12 - '14	'16 - '24				ME0101000412_143 R02	Merritt Brook	Periphyton (Aufwuchs) Indicator Bioassessments		
'02			'06 -'24		ME0101000413_142 R01	Caribou Stream	Benthic Macroinvertebrates Bioassessments	Flaws in original listing (Category 3) 10/2006	Administrative error, conflicting data Biocriteria non-attainment is inconsistent; segment was 5-A for non-attainment of biocriteria in 1994 only. Subsequent samples showed attainment; requires re-sampling
'12 - '16	'22 - '24				ME0101000412_140 R05	Kennedy Brook (Presque Isle)	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021
'22	'22 - '24				ME0101000412_140 R05	Kennedy Brook (Presque Isle)	Dissolved Oxygen		

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
		’02-‘24			ME0101000413_145 R01	Little Madawaska River, from (Little) Madawaska Dam to Grimes Mill Road, including tributaries (except Greenlaw Brook)	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Hazardous waste remediation project is complete (Superfund)--expected to attain standards by 2020. Needs re-sampling to confirm
		’02-‘24			ME0101000413_145 R02	Greenlaw Brook, incl. tributaries, Green Pond and Chapman Pit	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 2002	9/6/2012: Corrected name, was Greenlaw Stream. Haz waste remediation project (Superfund)--expected to attain standards by 2020
’04-‘08				’10-'24	ME0101000413_146 R01	Webster Brook	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	Monitoring for Statewide bacteria TMDL indicates this water attains bacteria standards
’12-‘14	’16-‘24				ME0101000413_146 R02	Coloney Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’12-‘14	’22-‘24				ME0101000413_146 R02	Coloney Brook	Periphyton (Aufwuchs) Indicator Bioassessments		
’04-‘08	’10-'24				ME0101000501_149 R01	Prestile Stream above dam in Mars Hill	Benthic Macroinvertebrates Bioassessments	EPA approval of TMDL 5/10/2010	EPA approval of TMDL (5/10/10), delisted to Category 4-A (macroinvertebrates, nutrients and DO).
’04-‘08	’10-'24				ME0101000501_149 R01	Prestile Stream above dam in Mars Hill	Nutrient/Eutrophi-cation Biological Indicators		
’04-‘08	’10-'24				ME0101000501_149 R01	Prestile Stream above dam in Mars Hill	Dissolved Oxygen		

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
’14 - ‘16				’22-‘24	ME0101000504_152R01_03	Meduxnekeag River, from biomonitoring station S-364 to border	Periphyton (Aufwuchs) Indicator Bioassessments	Applicable WQS attained; based on new data	12/3/21: Cause delisted to Category 2 because applicable water quality standards are attained. Re-analysis of historic data indicates that algae met Class B narrative aquatic life criteria in 2004 and 2011; a 2017 sample also met Class B criteria.
‘22	’22 - ‘24				ME0101000504_152R02	Craig Brook	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021
		’10-'24		’02-‘08	ME0102000109_205R01	West Branch Penobscot R main stem, below confluence with Millinocket Str	Dissolved Oxygen	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments. Expected to attain in 2016.
'02-‘08	’10 - '24				ME0102000110_205R03	Millinocket Stream (Millinocket), from confluence with Ledge Cut Brook to confluence with West Branch Penobscot River	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04-‘08	’10 - '24				ME0102000402_219R_02	Piscataquis River at Dover Foxcroft	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04-‘08	’10 - '24				ME0102000403_215R_02	Sebec River at Milo	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
‘02 - '06				‘08-'24	ME0102000403_215R01	Sebec River at Milo above confluence with Piscataquis R	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained due to restoration activities	Previously listed in 5-A for biocriteria non-attainment based on 1985 data. This segment has been delisted: Resampling in 2006, at Biomonitoring Station 827, below the Milo Dam, shows attainment of Class A biocriteria.

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
'04				'06-'24	ME0102000502_220R_01	Mattanawcook Stream (Lincoln)	Escherichia coli	State determines water quality standard is being met (Category 2)	CSO has been removed. Data from multiple sampling events collected by the Penobscot Indian Nation during summer 2004 for Mattanawcook Stream confirm attainment of numeric criteria for dissolved oxygen and bacteria. Segment is also Category 3 listed for sediment contamination; possible fish consumption impairment. Needs sampling to confirm
'04				'06-'24	ME0102000502_220R_01	Mattanawcook Stream (Lincoln)	Dissolved Oxygen		
'02 '04				'06-'24	ME0102000502_230R	Penobscot R-(Mattawamkeag to Cambolasse)	Benthic Macroinvertebrates Bioassessments	Flaws in original listing of this cause (Category 2)	Administrative error, no data to support impaired biocriteria assessment. Erroneously listed for benthic macroinvertebrates prior to 2002 cycle.
'02 - '10		'12-'24			ME0102000502_230R	Penobscot R-(Mattawamkeag to Cambolasse)	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	
'02 - '10		'12-'24			ME0102000502_230R	Penobscot R-(Mattawamkeag to Cambolasse)	Dissolved Oxygen		
'02 '04				'06-'24	ME0102000502_231R	Penobscot R, main stem, from Cambolasse Str to Piscataquis R	Benthic Macroinvertebrates Bioassessments	Flaws in original listing of this cause (Category 2) 12/6/2006	Administrative error, no data to support impaired biocriteria assessment. Erroneously listed for benthic macroinvertebrates prior to 2002 cycle; has attained applicable biocriteria in 1992, 1993, 1994 and 1995.
'02 '04		'06-'24			ME0102000502_231R	Penobscot R, main stem, from Cambolasse Str to Piscataquis R	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 8/1/2006	Dioxin controls in place and monitoring confirms improvement. Dioxin data from 2003 and 2005 showed no difference in fish above and below Lincoln.

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 - '10		'12- '24			ME0102000502_231R	Penobscot R, main stem, from Cambolasse Str to Piscataquis R	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments. Expected to attain in 2016.
'02 - '10		'12- '24			ME0102000502_231R	Penobscot R, main stem, from Cambolasse Str to Piscataquis R	Dissolved Oxygen		
'04		'06- '24		'02	ME0102000503_221R01	Cold Stream (Enfield) downstream of hatchery	Benthic Macroinvertebrates Bioassessments	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	2/20/24: Hatchery permit is in the process of being renewed.
'02- '08	'10 - '24				ME0102000506_222R01	Costigan Str (Costigan)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04		'06- '24			ME0102000506_232R	Penobscot R, main stem, from Piscataquis R to Orson Is	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 8/1/2006	Dioxin controls in place.
'10		'12- '24			ME0102000506_232R	Penobscot R, main stem, from Piscataquis R to Orson Is	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments. Expected to attain in 2016.
'10		'12- '24			ME0102000506_232R	Penobscot R, main stem, from Piscataquis R to Orson Is	Dissolved Oxygen		
'02- '08	'10 '24				ME0102000509_226R01	Otter Stream, Milford	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02- '08	'10			'12- '24	ME0102000509_226R02	Boynton Brook	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Delisted to Category 2 due to newer monitoring data showing attainment of bacteria standards.

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
'04-'06		'08-'24			ME0102000509_233R_01	Penobscot R, main stem, from Orson Is to former Veazie Dam, incl. the Stillwater River	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 2006	Dioxin controls in place.
'10		'12-'24			ME0102000509_233R_01	Penobscot R, main stem, from Orson Is to former Veazie Dam, incl. the Stillwater River	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments. Expected to attain in 2016.
'10		'12-'24			ME0102000509_233R_01	Penobscot R, main stem, from Orson Is to former Veazie Dam, incl. the Stillwater River	Dissolved Oxygen		
'02-'08	'10-'24				ME0102000509_233R_02	Penobscot River at Orono	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0102000509_233R_03	Penobscot River at Old Town-Milford	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'14	'22-'24				ME0102000510_224R01	Burnham Brook (Garland)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'02-'08	'10-'24				ME0102000510_224R02	Kenduskeag Stream	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	
'02-'16	'22-'24				ME0102000510_224R03	French Stream (Exeter)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'10-'16	'22-'24				ME0102000510_224R03	French Stream (Exeter)	Periphyton (Aufwuchs) Indicator Bioassessments		

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 -'06	'08-'24				ME0102000510_224R04	Birch Stream (Bangor)	Benthic Macroinvertebrates Bioassessments	TMDL approved by EPA (4A) 9/12/07	EPA approved TMDL 9/12/2007
	'12-'24				ME0102000510_224R04	Birch Stream (Bangor)	Periphyton (Aufwuchs) Indicator Bioassessments		Aquatic Life Use impairment due to algae (periphyton) non-attainment covered under existing TMDL, causes delisted to Category 4A
'22	'22 - '24				ME0102000510_224R05	Capehart (Pushaw) Brook (Bangor)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	11/9/2021: Aquatic life use impairment covered under Statewide % Impervious Cover TMDL (approved 9/27/12), moved to Category 4-A.
'02 -'10	'12-'24				ME0102000510_224R05	Capehart (Pushaw) Brook (Bangor)	Habitat Assessment		Approval of Statewide % Impervious Cover TMDL.
'02 -'10	'12-'24				ME0102000510_224R06	Arctic Brook (near Valley Ave, Bangor)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'06 -'10	'12-'24				ME0102000510_224R06	Arctic Brook (near Valley Ave, Bangor)	Habitat Assessment		
'12 - '14	'16 - '24				ME0102000510_224R07	Crooked Brook, Corinth	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'06 -'10	'12-'24				ME0102000511_225R01_02	Shaw Brook (Bangor, Hampden)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02 -'10	'12-'24				ME0102000511_225R01_02	Shaw Brook (Bangor, Hampden)	Habitat Assessment		
	'12-'24				ME0102000511_225R01_02	Shaw Brook (Bangor, Hampden)	Periphyton (Aufwuchs) Indicator Bioassessments		

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'04 -'10	'12-'24				ME0102000511_225R02	Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'06 -'10	'12-'24				ME0102000511_225R02	Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')	Dissolved Oxygen		
		'10-'24		'02 -'08	ME0102000512_229R	Penobscot R, main stem, above Mattawamkeag R.	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	11/25/21: 2013-2019 instantaneous data indicate attainment of DO criteria; collect continuous data to confirm criteria attainment. 2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments.
		'10-'24		'02 -'08	ME0102000512_229R	Penobscot R, main stem, above Mattawamkeag R.	Dissolved Oxygen		
'02 - '22	**'24**				**ME0102000513_226R03**	**Penjajawoc Stream (Bangor) Meadow Bk (Bangor)**	**Benthic Macroinvertebrates Bioassessments**	**TMDL approved or established by EPA (4A)**	**EPA approved addendum to Statewide % Impervious Cover TMDL (2/28/24).**
'04 - '22	**'24**				**ME0102000513_226R03**	**Penjajawoc Stream (Bangor) Meadow Bk (Bangor)**	**Dissolved Oxygen**		
'04 - '22	**'24**				**ME0102000513_226R03**	**Penjajawoc Stream (Bangor) Meadow Bk (Bangor)**	**Habitat Assessment**		
'22	**'24**				**ME0102000513_226R03**	**Penjajawoc Stream (Bangor) Meadow Bk (Bangor)**	**Periphyton (Aufwuchs) Indicator Bioassessments**		
'02-'08	'10 - '24				ME0102000513_234R	Penobscot River, at Bangor-Brewer incl. Kenduskeag Stream	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
		'02-'24			ME0102000513_234 R02	Penobscot, main stem, former Veazie Dam to Reeds Bk	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B)	Dioxin controls in place.
'10		'12-'24			ME0102000513_234 R02	Penobscot, main stem, former Veazie Dam to Reeds Bk	Nutrient/Eutrophi-cation Biological Indicators	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) May 2011	11/25/21: 2013-2019 instantaneous data indicate attainment of DO criteria. 2011 permits providing nutrient limits are expected to correct existing aquatic life use impairments.
'10		'12-'24			ME0102000513_234 R02	Penobscot, main stem, former Veazie Dam to Reeds Bk	Dissolved Oxygen		
'02 '04		'06-'24			ME0103000304_313 R01	Mill Stream (Embden)	Benthic Macroinvertebrates Bioassessments	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	2/20/24: Hatchery permit is in the process of being renewed.
'04		'06-'24		'02	ME0103000305_315 R_02	Unnamed Stream trib to Sandy R (Avon-Dunham Hatchery)	Benthic Macroinvertebrates Bioassessments	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	9/14/23: Macroinvertebrates met Class A in 2022 both at and below (~0.2 miles) former hatchery. Hatchery is closed.
'04 - '16				'22-'24	ME0103000305_319 R_02	Sandy R,	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained, due to restoration activities	Macroinvertebrates attained Class B in 2007, 2012 and 2017, delisted to Category 2.
'12-'16		'22-'24			ME0103000305_319 R_02	Sandy R,	Dissolved Oxygen	Other pollution control requirements (4b) 1/18/17	2017 MEPDES permit established seasonal (6/1 – 9/30) monthly average water quality -based TP limit beginning 6/1/2021; expected to address DO impairment by 2022.
'02-'08	'10 - '24				ME0103000306_320 R02	Currier Brook	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
'02-'08	'10-'24				ME0103000306_320R03	Whitten Brook (Skowhegan)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'06-'10	'12-'24				ME0103000306_320R03	Whitten Brook (Skowhegan)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04-'10	'12-'24				ME0103000306_320R03	Whitten Brook (Skowhegan)	Habitat Assessment		
'02-'08	'10-'24				ME0103000306_338R_02	Kennebec River at Skowhegan, CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0103000306_339R_03	Kennebec River, near Fairfield	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	
		'02-'12		'16-'24	ME0103000308_325R01	East Branch Sebasticook River Corundel Pd to Sebasticook L (Corinna)	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained; due to restoration activities	9/15/2014: Long-term monitoring data show criteria attainment for chlorinated benzenes and attainment of Class C aquatic life standards.
		'02-'12		'16-'24	ME0103000308_325R01	East Branch Sebasticook River, Corundel Pd to Sebasticook L (Corinna)	Benzene		
'02-'14	'16-'24				ME0103000308_325R02	Brackett Brook (Palmyra)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'02-'14	'16-'24				ME0103000308_325R03	Mulligan Stream (St. Albans)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'14-'16	'22-'24				ME0103000309_326R02	Halfmoon Stream (Knox, Thorndike)	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'14-'16	'22-'24				ME0103000309_326R02_01	Halfmoon Stream (Thorndike)	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
’14 - ‘16	’22 - ‘24				ME0103000309_326 R03	Halfmoon Stream (Thorndike, Unity)	Periphyton (Aufwuchs) Indicator Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
’02 - ‘14	’16 - ‘24				ME0103000309_327 R01	Mill Stream (Albion)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'06- ‘08	’10 - '24				ME0103000309_332 R	Sebasticook River	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
‘04 -'10				'12- ‘24	ME0103000309_332 R	Sebasticook River	Nutrient/Eutrophi-cation Biological Indicators	Applicable WQS attained; due to restoration activities	10/2/12: Nutrient/Eutrophication Biological Indicators cause of Aquatic Life Use impairment delisted to Category 2 due to new data showing removal of cause of impairment.
		(4C) ’02- ’08		'12- ‘24	ME0103000309_332 R01	Sebasticook River (Halifax impoundment)	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained due to restoration activities	Biomonitoring following removal of Halifax Dam confirms attainment of biocriteria
‘02 '04	‘06 -'24				ME0103000310_322 R01	Fish Brook (Fairfield)	Benthic Macroinvertebrates Bioassessments	EPA approval of TMDL (Category 4A)	EPA approved TMDL 8/30/2005
‘02 '04	‘06 -'24				ME0103000310_322 R01	Fish Brook (Fairfield)	Dissolved Oxygen		
’02 - ‘14	’16 - ‘24				ME0103000311_334 R03	Jock Stream (Wales)	Nutrient/Eutrophicati on Biological Indicators	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’02 - ‘14	’16 - ‘24				ME0103000311_334 R03	Jock Stream (Wales)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
	’06 - ‘24				ME0103000311_334 R05	Cobbosseecontee Stream (Gardiner), between outlet of Pleasant Pond and American Tissue Dam	Phosphorus (Total)	TMDL approved or established by EPA (4A)	EPA approval of Pleasant Pond TMDL (which included this AU) 5/20/2004

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	’06 - ‘24				ME0103000311_334R05_01	Cobbosseecontee Stream (Gardiner), between American Tissue Dam and Gardiner Paperboard Dam	Phosphorus (Total)	TMDL approved or established by EPA (4A)	EPA approval of Pleasant Pond TMDL (which included this AU) 5/20/2004
	’06 - ‘24				ME0103000311_334R05_02	Cobbosseecontee Stream (Gardiner), between Gardiner Paperboard Dam and Kennebec R	Phosphorus (Total)	TMDL approved or established by EPA (4A)	EPA approval of Pleasant Pond TMDL (which included this AU) 5/20/2004
'02-‘08	’10 - '24				ME0103000312_333R02	Whitney Brook (Augusta)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'10	'12-‘24				ME0103000312_333R02	Whitney Brook (Augusta)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
‘10	'12-‘24				ME0103000312_333R02	Whitney Brook (Augusta)	Periphyton (Aufwuchs) Indicator Bioassessments		
‘02 -'10	'12-‘24				ME0103000312_333R03	Kennedy Brook (Augusta)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
	'12-‘24				ME0103000312_333R03	Kennedy Brook (Augusta)	Periphyton (Aufwuchs) Indicator Bioassessments		
‘06 -'10	'12-‘24				ME0103000312_333R04	Unnamed tributary to Bond Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
‘04 -'10	'12-‘24				ME0103000312_333R04	Unnamed tributary to Bond Brook	Habitat Assessment		
	'12-‘24				ME0103000312_333R04	Unnamed tributary to Bond Brook	Periphyton (Aufwuchs) Indicator Bioassessments		
'06-‘08	’10 - '24				ME0103000312_339R_02	Kennebec River at Waterville, CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02-'08	'10-'24				ME0103000312_340R_02	Kennebec River at Augusta, including Riggs Brook- CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0103000312_340R_03	Kennebec River at Hallowell- CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0103000312_340R_04	Kennebec River at Gardiner-Randolph	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04	'06			'08-'24	ME0104000206_423R01	Androscoggin R, main stem, Livermore impoundment	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained due to restoration activities	EPA approved TMDL 7/18/2005 (TMDL #11594). Attained Class C biocriteria in 2003, and attained Class B biocriteria in 2004, 2005 and 2006. Benthic invertebrate and TSS causes delisted to 'WQS attainment'. Also 4-B listed for dioxin and 5D listed for legacy PCB contamination
'04	'06			'08-'24	ME0104000206_423R01	Androscoggin R, main stem, Livermore impoundment	Total Suspended Solids		
		'02-'24			ME0104000206_423R01	Androscoggin R, main stem, Livermore impoundment	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Dioxin controls in place. Also 5-D listed for legacy PCB contamination.
		'02-'24			ME0104000207_412R02	House/Lively Brook	Nitrogen (Total)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Waste (manure) removal (Agric NPS) by Consent Order and Site Permit-expected to attain standards; needs additional monitoring to confirm attainment.
'04-'08	'10-'24				ME0104000208_413R01	Jepson Brook (Lewiston)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'16	'22-'24				ME0104000208_413R03	Stetson Brook (Lewiston)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02-'08	'10-'24				ME0104000208_413R03	Stetson Brook (Lewiston)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0104000208_413R04	Logan Brook, Auburn	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04-'10	'12-'24				ME0104000208_413R04	Logan Brook, Auburn	Habitat Assessment (Streams)	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02-'10	'12-'24				ME0104000208_413R04	Logan Brook, Auburn	Dissolved Oxygen		
'02-'08	'10-'24				ME0104000208_413R07	Gully Brook (Auburn)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	
'04			'06-'24	'02	ME0104000208_413R08	Bobbin Mill Brook (Lake Auburn Outlet, Auburn)	Benthic Macroinvertebrates Bioassessments	Flaws in original listing (Category 3) 3/9/05	6/7/12: Conflicting biomonitoring results (at station S-357): macroinvertebrates attained only Class C in 1998 (likely due to natural conditions) but met Class B in 2003 and 2008; algae (periphyton) showed non-attainment in 2008. Resampling needed to confirm whether impairment exists.
		'02-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Dioxin (including 2,3,7,8-TCDD)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 3/15/2004	Dioxin controls in place
	'08-'10	'12-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Algae blooms (Chlorophyll-a)	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) December 2012	10/21/21: Continuous DO monitoring during critical season since 2008 shows attainment of DO criteria with exception of relatively small pockets of bottom water that become hydraulically isolated during periods of lower river flow. No significant
	'06-'10	'12-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	BOD, Biochemical oxygen demand		

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	'06 - '10	'12-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Dissolved Oxygen		diurnal DO swings suggestive of excessive phosphorus loadings. 11/18/15: DO problems persist in deep portions of impoundment. Recent data analysis showed that discharge levels and/or concentrations in the impoundment for BOD, TSS, TP and Chlorophyll a have decreased significantly since 2004. 2012 permits are expected to correct existing aquatic life use impairments.
	'06 - '10	'12-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Phosphorus (Total)		
	'06 - '10	'12-'24			ME0104000208_424R_01	Androscoggin R, main stem, upstream of the Gulf Island Dam	Total suspended solids		
'02-'08	'10 - '24				ME0104000209_417R_02	Little Androscoggin River at Mechanic Falls	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04 - '14	'16 - '24				ME0104000210_413R02	Penley Brook (Auburn)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'04-'10				'16-'24	ME0104000210_418R01	Sabattus River between Sabattus and Androscoggin R	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained; original basis for listing was incorrect	Aquatic life use impairment was delisted to Category 2 due to classification attainment at 3 biomonitoring stations (S-359, S-629, S-630) on 2-3 occasions.
'02-'16	'22 - '24				ME0104000210_418R02	No Name Brook (Lewiston)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02-'08	'10 - '24				ME0104000210_418R02	No Name Brook (Lewiston)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'10	'12-'24				ME0104000210_419R01	Unnamed Brook (Biomon Sta. 347-Lisbon Falls at Rt 196)	Habitat Assessment	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'06-'08	'10-'24				ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'06-'10	'12-'24				ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02-'10	'12-'24				ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Habitat Assessment		
'06-'10	'12-'24				ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Dissolved Oxygen		
	'12-'24				ME0104000210_419R02	Hart Brook (Lewiston) A.K.A Dill Brook and including Goff Bk	Periphyton (Aufwuchs) Indicator Bioassessments		
'10	'12-'24				ME0104000210_420R01	Unnamed tributary (Brunswick 2) to Androscoggin R	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04-'10	'12-'24				ME0104000210_420R01	Unnamed tributary (Brunswick 2) to Androscoggin R	Habitat Assessment		
'10	'12-'24				ME0104000210_420R02	Unnamed tributary (Brunswick 3) to Androscoggin R	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04-'10	'12-'24				ME0104000210_420R02	Unnamed tributary (Brunswick 3) to Androscoggin R	Habitat Assessment		
'10	'12-'24				ME0104000210_420R03	Unnamed tributary (Brunswick 4) to Androscoggin R	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'04 -'10	'12-'24				ME0104000210_420R03	Unnamed tributary (Brunswick 4) to Androscoggin R	Habitat Assessment		
	'12-'24				ME0104000210_420R04	Unnamed tributary (Topsham 2) to Androscoggin R	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04 -'10	'12-'24				ME0104000210_420R04	Unnamed tributary (Topsham 2) to Androscoggin R	Habitat Assessment		
'10	'12-'24				ME0104000210_420R05	Unnamed tributary (Topsham 4) to Androscoggin	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'06-'08	'10 - '24				ME0104000210_425R_02	Androscoggin River, Lewiston-Auburn	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'08 -'10	'10 - '24				ME0105000108_505R_02	St. Croix R., Calais CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
		'02-'24			ME0105000201_507R01	Dennys River, Meddybemps L. to Dead Str	Polychlorinated biphenyls	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 9/5/2006	10/8/21: PCB contaminated soils were excavated and removed by 1999 and replaced with clean fill. Localized groundwater monitoring and in-situ bioremediation treatment of volatile organic compounds exceeding groundwater cleanup criteria will continue. Haz waste remediation project (Superfund)--expected to attain standards by 2010.
'08 -'10	'12-'24				ME0105000213_514R_01	Card Brook (Ellsworth)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04 -'10	'12-'24				ME0105000213_514R_01	Card Brook (Ellsworth)	Dissolved Oxygen		
'02 '04	'06 - '24				ME0105000217_520R01	Carleton Stream (Blue Hill)	Benthic Macroinvertebrates Bioassessments	EPA approval of TMDL (Category 4A) 10/7/2004	EPA approved TMDL 10/7/2004

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 '04	'06 - '24				ME0105000217_520 R01	Carleton Stream (Blue Hill)	Iron		
'02 - '14	'16 - '24				ME0105000218_521 R01	Warren Brook (Belfast)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'02- '08	'10 - '24				ME0105000220_522 R01_01	Megunticook River (Camden), from Megunticook Lake to Knox Mill Dam	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02- '08	'10 - '24				ME0105000220_522 R01_03	Megunticook River (Camden), from Knox Mill Dam to Montgomery Dam	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02- '08	'10			'12- '24	ME0105000220_522 R02_01	Rock Brook (formerly 'Unnamed Brook') (Camden)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	5/24/2012: Delisted to Category 2 due to newer monitoring data showing attainment of bacteria standards. 7/28/2010: Stream name updated from 'Unnamed Brook' Camden to Rock Brook.
'04 - '08				'10- '24	ME0105000220_522 R03	Unnamed Brook (Rockport)	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	Monitoring for Statewide bacteria TMDL indicates this water attains bacteria standards
'02- '08	'10 - '24				ME0105000220_522 R04	Unnamed Brook (Rockland)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	11/7/12: City of Rockland performed remedial sewer work in 2012 to address bacteria contamination; more work is likely needed in the future to successfully address the entire watershed.
'02- '08	'10 - '24				ME0105000305_528 R01	Sheepscot River at Alna	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
’10 -'12	’14 - ‘24				ME0105000305_528 R02	West Branch Sheepscot River, Below Halls Corner, Rt 17/32	Escherichia coli	TMDL approved by EPA (4A) 9/22/2014	EPA approval of TMDL
’04 - ‘08				’10- '24	ME0105000305_528 R02	West Branch Sheepscot River, Below Halls Corner, Rt 17/32	Dissolved Oxygen	Applicable WQS attained; due to restoration activities	TMDL analysis of additional monitoring data demonstrates that segment attains dissolved oxygen standards.
			‘10	’12- '24	ME0105000305_528 R02	West Branch Sheepscot River, Below Halls Corner, Rt 17/32	Benthic Macroinvertebrates Bioassessments		Erroneous Category 3 listing – no data available
’12 - ‘24			‘10		ME0105000305_528 R02	West Branch Sheepscot River	Periphyton (Aufwuchs) Indicator Bioassessments	Insufficient information to determine if WQS attained	Category 3 due to inconsistent attainment of narrative aquatic life standards for algae. This segment is one of DEP's priority waters under the 2022 Vision.
'02- ‘08	’10 - ‘24				ME0105000305_528 R03	Dyer River below Rt 215	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
’02 - ‘14	’16 - ’24				ME0105000305_528 R03	Dyer River below Rt 215	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’02 - ‘14	’16 - ’24				ME0105000305_528 R04	Trout Brook (Alna)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’02 - ‘14	’16 - ’24				ME0105000305_528 R05	Meadow Bk (China)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’02 - ‘14	’16 - ’24				ME0105000305_528 R06	Carlton Bk (Whitefield)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
’02 - ‘14	’16 - ’24				ME0105000305_528 R07	Choate Bk (Windsor)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
’04 - ‘14	’16 - ’24				ME0105000305_528 R08_01	Chamberlain Bk (Whitefield)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
‘02 '04		‘06- '24			ME0105000305_528 R08_02	Sheepscot River below Sheepscot L, Palermo and Somerville	Dissolved Oxygen	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	2/26/24: Hatchery permit is in the process of being renewed.
‘02 '04		‘06- '24			ME0106000101_605 R01	Mile Brook (Casco)	Benthic Macroinvertebrates Bioassessments	Other point source or nonpoint source controls are expected to meet water quality standards (Category 4B) 6/20/2006	2/20/24: Hatchery permit is in the process of being renewed.
’02 - ‘14	’16 - ‘24				ME0106000102_603 R02	Chandler River including East Branch	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
‘02 '04				‘06- '24	ME0106000102_603 R05	Royal River, Collyer Bk to approx. 0.7 river miles above Mill Rd crossing (No. Yarmouth)	Drinking water-trichloroethylene	State determines water quality standard is being met (Category 2) 8/31/2006	Per CERCLA hazardous waste site manager: June 2006 surface water monitoring determined that the trichloroethylene standards and all other water quality criteria are being met in the Royal River at sites down-gradient of the contaminated site.
'02- ‘16	’22 - ‘24				ME0106000103_607 R01	Black Brook (Windham)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02- ‘16	’22 - ‘24				ME0106000103_607 R03	Colley Wright Brook (Windham)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02- ‘08	’10 - '24				ME0106000103_607 R03	Colley Wright Brook (Windham)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
’04 - ‘08				’10-'24	ME0106000103_607R04	Piscataqua River (Falmouth)	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	Monitoring for Statewide bacteria TMDL indicates this water attains bacteria standards
'02-‘08	’10 - '24				ME0106000103_607R04	Piscataqua River (Falmouth)	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	
'02-‘08	’10 - '24				ME0106000103_607R06	Hobbs Brook (Cumberland)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
’02 - ‘14	’16 - ‘24				ME0106000103_607R06	Hobbs Brook (Cumberland)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
'02-‘16	’22 - ‘24				ME0106000103_607R07	Inkhorn Brook (Westbrook)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02-‘08	’10 - '24				ME0106000103_607R07	Inkhorn Brook (Westbrook)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-‘16	’22 - ‘24				ME0106000103_607R08	Mosher Brook (Gorham)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02-‘08	’10 - '24				ME0106000103_607R08	Mosher Brook (Gorham)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-‘16	’22 - ‘24				ME0106000103_607R09	Otter Brook (Windham)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'02-‘08	’10 - '24				ME0106000103_607R09	Otter Brook (Windham)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
’02 - ‘14	’16 - ‘24				ME0106000103_607R10	Thayer Brook	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02-'08	'10-'24				ME0106000103_607R11	Nason Brook (Gorham)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'06-'16	'22-'24				ME0106000103_607R12	Pleasant River (Windham)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
'06-'08	'10-'24				ME0106000103_607R12	Pleasant River (Windham)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
	'02 '04			'06-'24	ME0106000103_609R_01	Presumpscot R, main stem, below Saccarappa Falls	BOD, Biochemical oxygen demand	State determines water quality standard is being met (Category 2) 8/31/2006	Sources removed, pulping operation closed and Smelt Hill Dam has been breached. Bioassessment (2005) shows attainment of Class C dissolved oxygen and biocriteria (Class B biocriteria just above Smelt Hill dam site).
	'02 '04			'06-'24	ME0106000103_609R_01	Presumpscot R, main stem, below Saccarappa Falls	Total Suspended Solids (TSS)		
'02-'08	'10-'24				ME0106000103_609R_02	Presumpscot River at Westbrook	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04-'10	'12-'24				ME0106000104_611R02	Phillips Brook (Scarborough)	Habitat Assessment	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
	'12-'24				ME0106000104_611R02	Phillips Brook (Scarborough)	Dissolved Oxygen		
'06-'10	'12-'24				ME0106000105_607R11_01	Nasons Brook (Portland), trib to Fore River	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
	'12-'24				ME0106000105_607R11_01	Nasons Brook (Portland), trib to Fore River	Dissolved Oxygen		
	'12-'24				ME0106000105_607R11_01	Nasons Brook (Portland), trib to Fore River	Periphyton (Aufwuchs) Indicator Bioassessments		
'06-'10	'12-'24				ME0106000105_607R11_02	Nasons Brook (Westbrook), trib to Fore River	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	'12-'24				ME0106000105_607R11_02	Nasons Brook (Westbrook), trib to Fore River	Dissolved Oxygen		
	'12-'24				ME0106000105_607R11_02	Nasons Brook (Westbrook), trib to Fore River	Periphyton (Aufwuchs) Indicator Bioassessments		
'06-'10	'12-'24				ME0106000105_609R01	Dole Brook (formerly known as 'Unnamed Stream-Portland 3')	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'06-'10	'12-'24				ME0106000105_610R01	Capisic Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02-'10	'12-'24				ME0106000105_610R01	Capisic Brook	Habitat Assessment		
	'12-'24				ME0106000105_610R01	Capisic Brook	Periphyton (Aufwuchs) Indicator Bioassessments		
'02-'08		'10-'24			ME0106000105_610R03	Long Creek (South Portland)	Benthic Macroinvertebrates Bioassessments	Other enforceable controls are in place 6/9, 2010. Expected to attain: 2020	4/1/21: Watershed restoration process ongoing with third five-year permit cycle to start in 2021. Includes all tributaries. Long Creek was moved to Category 4-B due to Stormwater General Permit, MEPDES MEG190000 (November 6, 2009).
'02-'08		'10-'24			ME0106000105_610R03	Long Creek (South Portland)	Habitat Assessment		
'02-'08		'10-'24			ME0106000105_610R03_01	Blanchette Brook (Westbrook)	Benthic Macroinvertebrates Bioassessments	Other enforceable controls are in place 6/9, 2010. Expected to attain: 2020	4/1/21: Watershed restoration process ongoing with third five-year permit cycle to start in 2021. Previously included in Long Creek (South Portland), split out in 2022 cycle because of different Class. Long Creek was moved to Category 4-B due to Stormwater General Permit, MEPDES MEG190000 (November 6, 2009).
'02-'08		'10-'24			ME0106000105_610R03_01	Blanchette Brook (Westbrook)	Habitat Assessment		

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'02 - '06	'08 - '24				ME0106000105_610 R05	Trout Brook (So. Portland)	Benthic Macroinvertebrates Bioassessments	EPA approval of TMDL (Category 4A) 10/25/2007	EPA approved TMDL 10/25/2007 (under bundled urban stream project)
'06 -'10	'12- '24				ME0106000105_610 R06	Kimball Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02 -'10	'12- '24				ME0106000105_610 R06	Kimball Brook	Habitat Assessment		
'02 -'10	'12- '24				ME0106000105_610 R07	Red Brook (Scarborough, S Portland)	Habitat Assessment	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'22	'22 - '24				ME0106000105_610 R07	Red Brook (Scarborough, S Portland)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	11/9/21: Aquatic life use impairment covered under Statewide % Impervious Cover TMDL (approved 9/27/12), moved to Category 4-A.
'02 - '06	'08 - '24				ME0106000105_610 R09	Barberry Cr	Benthic Macroinvertebrates Bioassessments	EPA approval of TMDL (Category 4A) 6/21/2007	EPA approved TMDL 6/21/2007 (under bundled urban stream project.)
'02 - '06	'08 - '24				ME0106000105_610 R09	Barberry Cr	Habitat Assessment		
'02- '08	'10 - '24				ME0106000106_602 R01	Frost Gully Brook	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	
'04 -'10	'12- '24				ME0106000106_602 R01	Frost Gully Brook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04 -'10	'12- '24				ME0106000106_602 R01	Frost Gully Brook	Habitat Assessment		
	'12- '24				ME0106000106_602 R02	Mare Brook (Brunswick) and selected tributaries	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02 -'10	'12- '24				ME0106000106_602 R02	Mare Brook (Brunswick) and selected tributaries	Habitat Assessment		

Category by Report Year									
5	**4-A**	**4-B**	**3**	**2**	**Assessment Unit ID**	**Water Name**	**Cause**	**Delisting Reason / Date**	**Comments**
'10	'12-'24				ME0106000106_602R03	Concord Gully (Freeport)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'04-'10	'12-'24				ME0106000106_602R03	Concord Gully (Freeport)	Habitat Assessment		
'10	'12-'24				ME0106000106_602R03	Concord Gully (Freeport)	Dissolved Oxygen		
	'12-'24				ME0106000106_602R03	Concord Gully (Freeport)	Periphyton (Aufwuchs) Indicator Bioassessments		
'04			'06-'24	'02	ME0106000106_607R12	Norton Brook (Falmouth)	Benthic Macroinvertebrates Bioassessments	Flaws in original listing of this cause (Category 3) 10/2006	Original listing due to administrative error - conflicting data. 12/19/21: Macroinvertebrates did not meet Class B in 2017. Resampling needed to determine whether impairment exists.
'12	'14-'24				ME0106000106_612R01	Goosefare Brook above I-95	Escherichia coli	TMDL approved by EPA (4A) 9/22/2014	EPA approval of TMDL
'12	'14-'24				ME0106000106_612R01_01	Goosefare Brook below I-95	Escherichia coli	TMDL approved by EPA (4A) 9/22/2014	EPA approval of TMDL
	'12-'24				ME0106000106_612R01_01	Goosefare Brook below I-95	Benthic Macroinvertebrates Bioassessments	TMDL approved by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02	'04-'24				ME0106000106_612R01_01	Goosefare Brook	Cd, Cr, Cu, Fe, Pd, Ni, Zn	TMDL approved by EPA (4A) 9/29/2003	EPA approved TMDL 9/29/2003; name changed in 2012 - added 'below I-95'
'02-'08	'10-'24				ME0106000106_612R01_02	Bear Brook, Saco CSO	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-'08	'10-'24				ME0106000106_616R04	Bear Bk	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'04-'08				'10-'24	ME0106000204_618R01	Saco R., Fryeburg	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	Monitoring for Statewide bacteria TMDL indicates this water attains bacteria standards

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
’04 ’06 ‘08				’10-'24	ME0106000209_614R01	Ossipee R	Escherichia coli	Applicable WQS attained; original basis for listing was incorrect	Monitoring for Statewide bacteria TMDL indicates this water attains bacteria standards
'02-‘08	’10-'24				ME0106000211_616R02	Tappan Bk	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-‘08	’10-'24				ME0106000211_616R03	Sawyer Bk	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
‘06-'10	'12-‘24				ME0106000211_616R05	Thacher Bk (Biddeford)	Benthic Macroinvertebrates Bioassessments	TMDL approved by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
'02-‘08	’10-'24				ME0106000211_616R05	Thatcher Bk (Biddeford)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-‘08	’10-'24				ME0106000211_616R06	Swan Pond Brook at South Street (Biddeford)	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'06-‘08	’10-'24				ME0106000211_619R01	Saco River at Biddeford-Saco	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
'02-‘08	’10-'24				ME0106000301_622R01	Kennebunk River	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
’06 ‘08		’10-'24			ME0106000301_622R02	Lord's Brook (Lyman)	BOD, Biochemical oxygen demand	TMDL Alternative	Court-ordered controls in place
’06 ‘08		’10-'24			ME0106000301_622R02	Lord's Brook (Lyman)	Nutrient/Eutrophication Biological Indicators		
’06 ‘08		’10-'22			ME0106000301_622R02	Lord's Brook (Lyman)	Dissolved Oxygen		
‘12	’14-‘22				ME0106000301_622R03	Duck Brook and tributaries	Escherichia coli	TMDL approved by EPA (4A) 9/22/2014	EPA approval of TMDL

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	’04 - ‘24				ME0106000302_628 R01	Mousam R, Main stem, Rt. 224 (Bridge St.) bridge in Sanford to Number One Pond Dam	Arsenic	TMDL approved by EPA (4A) 3/8/2001	EPA approval of TMDL
	’04 - ‘24				ME0106000302_628 R01		Lead		
	’04 - ‘24				ME0106000302_628 R01		Selenium		
	’04 - ‘24				ME0106000302_628 R01		Silver		
	’04 - ‘24				ME0106000302_628 R01		Zinc		
	‘04 -'12	’14- ‘24			ME0106000302_628 R01	Main stem, Rt. 224 (Bridge St.) bridge in Sanford to Number One Pond Dam	Aluminum	TMDL Alternative (4B)	3/5/2015: Ammonia, BOD, Total Phosphorus, Aluminum and Copper moved to Category 4-B because 6/12/2013 permit established limits for these pollutants.
	‘04 -'12	’14- ‘24			ME0106000302_628 R01		Ammonia (Un-ionized)		
	‘04 -'12	’14- ‘24			ME0106000302_628 R01		BOD, Biochemical oxygen demand		
	‘04 -'12	’14- ‘24			ME0106000302_628 R01		Copper		
	‘04 -'12	’14- ‘24			ME0106000302_628 R01		Phosphorus (Total)		
	’04 - ‘24				ME0106000302_628 R01_03	Mousam R, Main stem, Number One Pond Dam in Sanford to Estes Lake	Arsenic	TMDL approved by EPA (4A) 3/8/2001	EPA approval of TMDL
	’04 - ‘24				ME0106000302_628 R01_03		Lead		
	’04 - ‘24				ME0106000302_628 R01_03		Selenium		
	’04 - ‘24				ME0106000302_628 R01_03		Silver		

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	’04 - ‘24				ME0106000302_628 R01_03		Zinc		
		’14- ‘24			ME0106000302_628 R01_03	Mousam R, Main stem, Number One Pond Dam in Sanford to Estes Lake	Aluminum	TMDL Alternative (4B)	3/5/2015: Ammonia, BOD, Total Phosphorus, Aluminum and Copper moved to Category 4-B because 6/12/2013 permit established limits for these pollutants.
		’14- ‘24			ME0106000302_628 R01_03		Ammonia (Un-ionized)		
		’14- ‘24			ME0106000302_628 R01_03		BOD, Biochemical oxygen demand		
		’14- ‘24			ME0106000302_628 R01_03		Copper		
		’14- ‘24			ME0106000302_628 R01_03		Phosphorus (Total)		
'02- ‘08	’10 - '24				ME0106000302_628 R02	Mousam River at Sanford	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	
’04 - ‘16	’22 - ‘24				ME0106000304_625 R01	Adams Brook (Berwick)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A)	EPA approved addendum to Statewide Nonpoint Source Pollution TMDL 9/23/2021.
’02 - ‘14	’16 - ‘24				ME0106000304_625 R03	West Brook (N. Berwick)	Dissolved Oxygen	TMDL approved or established by EPA (4A)	EPA approved Statewide Nonpoint Source Pollution TMDL 8/9/2016
	'12		‘06 -'24		ME0106000304_625 R04	Goodall Brook (Sanford)	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Approval of Statewide % Impervious Cover TMDL.
	'12- ‘24				ME0106000304_625 R04	Goodall Brook (Sanford)	Habitat Assessment		
'02- ‘08	’10 - '24				ME0106000305_630 R01	Salmon Falls R, from Route 9 to tidewater	Escherichia coli	TMDL approved by EPA (4A) 9/28/2009	Approval of Statewide Bacteria TMDL
	‘02 -'24				ME0106000305_630 R01	Salmon Falls R, from Route 9 to tidewater	Ammonia (Un-ionized)	EPA approval of TMDL (Category 4A) 11/1/1999	EPA approved TMDL 11/22/99 for BOD, ammonia and phosphorus; 5-D fish tissue monitoring shows legacy PCBs and Dioxin
	‘02 -'24				ME0106000305_630 R01	Salmon Falls R, from Route 9 to tidewater	Nutrient/Eutrophi-cation Biological Indicators		

Category by Report Year									
5	4-A	4-B	3	2	Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
	'02 -'24				ME0106000305_630 R01	Salmon Falls R, from Route 9 to tidewater	Dissolved Oxygen		

Table 8-11 Status of Listed and Delisted Category 5 Lakes and Ponds

Note that history (2002–2024) is provided for lakes that have been listed in Category 5 at any time since 2002 per request of EPA Region I staff. Bold font indicates lakes added this cycle.

Assessment Unit ID	Lake	Town	Acres	Listing Category by Reporting Cycle										
				02	04	06	08	10	12	14	16	22	24	Comments
ME0101000303_1665L	Daigle P	New Canada	36	5A	5A	4A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Sept. 2006
ME0101000303_1674L	Cross L	T17 R05 Wels	2515	5A	5A	4A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Sept. 2006
ME0101000412_1776L	Echo L	Presque Isle	90	5A	5A	5A	4A	4A	2 *	2 *	2 *	2 *	2 *	24: Improving, occasional bloom; TMDL Feb. 2007
ME0101000412_409L	Arnold Brook L	Presque Isle	395	5A	5A	5A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Feb. 2007
ME0101000413_1802L	Madawaska L	T16 R04 Wels	1526	4A	4A	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	24: Possible deteriorating trend, occasional bloom; TMDL 2000
ME0101000413_1820L	Monson P	Ft Fairfield	160	5A	5A	5A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Nov. 2006
ME0101000413_9779L	Trafton L	Limestone	85	5A	5A	5A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Oct. 2006
ME0101000414_9768L	**Durepo L**	**Limestone**	**64**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**5A**	**24: Listed due to PFAS fish consumption advisory; previously unassessed**
ME0101000501_9525L	Christina Reservoir	Ft Fairfield	400	5A	5A	5A	5A	4A	4A	4A	4A	4A	4A	24: Stable, chronic blooming 'wetland'; TMDL March 2010
ME0102000401_7142L	Otter P	Mayfield Twp	25	1	1	1	1	1	1	1	1	4C	4C	24: Pond bottom covered with sawdust covering aquatic habitat
ME0102000511_2286L	Hermon P	Hermon	461	5A	5A	5A	5A	5A	2 *	2 *	2 *	2 *	2 *	24: Stable; Paleo evidence of historic natural productivity; in equilibrium with adjacent wetlands
ME0102000511_2294L	Hammond P	Hampden	83	5A	5A	5A	5A	5A	2 *	2 *	2 *	2 *	2 *	24: Stable; Paleo evidence of historic natural productivity; in equilibrium with adjacent wetlands and upstream lake

Assessment Unit ID	Lake	Town	Acres	Listing Category by Reporting Cycle										
				02	04	06	08	10	12	14	16	22	24	Comments
ME0102000513_4336L	Alamoosook L	Orland	1133	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	5A	5A	24: Deteriorating trophic trend due to hatchery discharge; hatchery prioritizing nutrient reduction in discharge
ME0103000305_2336L	Toothaker P	Phillips	30	5A	5A	4A	4A	4A	4A	4A	4A	4A	2 *	24: Delisted; no longer supports repeated nuisance blooms
ME0103000308_2264L	Sebasticook L	Newport	4288	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Slow Improv.; TMDL 2001; in-lake aluminimum treatment being considered
ME0103000309_5172L	**Unity P**	**Unity**	**2528**	**5A**	**5A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**24: Stable; TMDL for Aq. Life Support and Primary Contact Sept 2004; Re-Listed due to PFAS fish consumption advisory**
ME0103000309_5176L	**Lovejoy P**	**Albion**	**324**	**5A**	**5A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**4A**	**24: Stable chronic severe bloomer; TMDL 2004**
ME0103000309_5448L	China L	China	3845	4A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL for Aq.Life Support and Primary Contact 2001; Re-Listed due to PFAS fish consumption advisory
ME0103000310_5272L	Long P	Belgrade	2714	3	3	5A	5A	4A	4A	4A	4A	4A	4A	24: Possible Improvement Trophic & DO; Gloeotrichia blooms; trophic param. Indicated shift addressed in TMDL April 2008
ME0103000310_5274L	Great P	Belgrade	8239	3	3	3	3	5A	5A	5A	5A	5R	5R	24: Deterior. Trophic & DO; Gloeotrichia blooms; alternative plan March 2021
ME0103000310_5349L	East P	Smithfield	1823	4A	4A	4A	4A	4A	4A	4A	4A	4A	2 *	24: Improved due to alum treatment in 2018; TMDL 2001
ME0103000311_3814L	Cochnewagon P	Monmouth	410	2 *	2 *	3	3	3	5A	5A	5A	5A	2 *	24: Original Alum treatment no longer effective; retreated in 2019; improved
ME0103000311_3832L	Wilson P	Wayne	582	3	2 *	5A	4A	4A	4A	4A	4A	4A	4A	24: Slightly declining trophic trend – all trophic param.; TMDL Aug. 2007
ME0103000311_5236L	Cobbosseecontee L	Winthrop	5543	4A	4A	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	24: slow yet persistent improvement
ME0103000311_5254L	Pleasant (Mud) P	Gardiner	746	5A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Slightly declining trophic trend, blooms persist; TMDL complete 2004
ME0103000311_8065L	Little Cobbosseecontee	Winthrop	75	5A	5A	4A	4A	4A	2 *	2 *	2 *	2 *	2 *	24: Improving; rarely blooms; TMDL 2005
ME0103000311_98L	Narrows P (Upper)	Winthrop	279	5A	5A	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	24: Originally listed in 1998, TMDL 2005. Data indicate stable trend
ME0103000311_9961L	Annabessacook L	Monmouth	1420	5A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Improving but blooms persist; TMDL 2004
ME0103000312_5408L	Webber P	Vassalboro	1201	5A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Declining trend; chronic blooms; TMDL 2003
ME0103000312_5416L	Threemile P	China	1162	5A	4A	4A	4A	4A	4A	4A	4A	4A	4A	24: Declining trend; chronic blooms; TMDL 2003

Assessment Unit ID	Lake	Town	Acres	Listing Category by Reporting Cycle										
				02	04	06	08	10	12	14	16	22	24	Comments
ME0103000312_5424L	Threecornered P	Augusta	182	5A	4A	3	3	2 *	2 *	2 *	2 *	2 *	2 *	24: Stable, no recent blooms; TMDL 2003
ME0103000312_9931L	Togus P	Augusta	660	5A	5A	4A	4A	4A	4A	4A	4A	4A	4A	24: Stable; TMDL Sept 2005; In-lake aluminum treatment April 2024 (1 of 2)
ME0103000315_8079L	**Fairfield Pal Ponds**	**Fairfield**	**3**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**5A**	**24: Listed due to PFAS fish consumption advisory; previously unassessed**
ME0104000210_3796L	Sabattus P	Greene	1962	5A	5A	4A	4A	4A	4A	4A	4A	4A	4A	24: Stable chronic severe bloomer; TMDL August 2004
ME0105000220_83L	Lilly P	Rockport	29	5A	5A	4A	4A	4A	4A	4A	4A	4A	2 *	24: Delisted; no longer supports nuisance blooms; stable; TMDL Dec. 2005
ME0105000303_5702L	Duckpuddle P	Nobleboro	293	5A	5A	3	3	2 *	2 *	2 *	2 *	2 *	2 *	24: Slight deterioation; TMDL Sept 2005, occasional bloom
ME0105000307_9943L	Sewall P	Arrowsic	46	3	5A	4A	4A	4A	4A	4A	4A	4A	4A	24:Improving; no recent blooms; TMDL March 2006
ME0106000101_3454L	Highland L	Bridgton	1401	5A	5A	2*	2*	2*	2 *	2 *	2 *	2 *	2 *	24: TMDL Aug 2004; data indicates persistent slightly improving trend
ME0106000101_5780L	Long L	Bridgton	4867	5A	5A	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	24: TMDL May 2005; Data indicate stable trend.
ME0106000103_3734L	Highland (Duck) L	Falmouth	634	5A	4A	4A	4A	2 *	2 *	2 *	2 *	2 *	2 *	24: TMDL 2003; recent fluctuations in transparency with stable averages
ME0106000302_3838L	Mousam L	Acton	900	5A	4A	2*	2*	2 *	2 *	2 *	2 *	2 *	2 *	24: Data indicate stable trend.
ME0106000302_3848L	**Number One P**	**Sanford**	**100**	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**5A**	**24: Listed due to PFAS fish consumption advisory**
ME0106000302_7L	**Estes L**	**Sanford**	**387**	**3**	**3**	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**2 ***	**5A**	**24: Listed due to PFAS fish consumption advisory**
ME0106000304_119L	Ell (L) P	Wells	32	3	2	2 *	2 *	2 *	2 *	2 *	2 *	2 *	2 *	24: Delisted; sporadic data indicates no longer supporting nuisance blooms

[1] Non-TMDL listing changes are summarized in Appendix III, Category Listing Change Summary.

* Lakes currently listed in Category 2 do not appear individually in Appendix III but rather are included in the overall lake summary for the HUC.

Table 8-12 Status of Delisted Category 5 Wetlands Table

Wetlands were listed for the first time in the 2010 cycle. As a result, this table only contains the listing history of wetlands that were delisted in the 2010 through 2024 cycles. Bold font indicates AU/Cause combinations that changed category during the 2024 cycle. For more detailed comments, consult Appendix IV.

Category by Report Year					Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
5	4-A	4-B	3	2					
	’16 - ‘24				ME0101000303_1665L_W208	Daigle Pond west wetlands	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/28/2006	Delisted to Category 4A - impairment covered under approved Daigle Pond TMDL, 9/28/2006. Segment also listed as 4-C for Other flow regime alterations.
	’14- ‘24		‘12		ME0101000501_149R_W200	Tributary wetlands to Prestile Stream above dam in Mars Hill	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 5/10/2010	Delisted to Category 4A - impairment covered under approved Prestile Stream TMDLs, 5/10/2010. Segment also listed as 5-D for legacy DDT sources.
‘12	’14- ‘24				ME0101000501_149R01_W203	Prestile Stream wetlands above dam in Mars Hill	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 5/10/2010	Delisted to Category 4A - impairment covered under approved Prestile Stream TMDLs, 5/10/2010. Segment also listed as 5-D for legacy DDT sources.
	’14- ‘24		‘12		ME0101000501_9525_W115	Christina Reservoir wetlands	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 5/10/2010	Delisted to Category 4A - impairment covered under approved Prestile Stream TMDLs, 5/10/2010.
		‘12		’14- ‘24	ME0103000308_325R01_W080	East Branch Sebasticook River Wetland	Benthic Macroinvertebrates Bioassessments	Applicable WQS attained; due to restoration activities	9/15/2014: Long-term monitoring data show criteria attainment for chlorinated benzenes and attainment of Class C aquatic life standards.
		‘12		’14- ‘24	ME0103000308_325R01_W080	East Branch Sebasticook River Wetland	Benzene		
	’16 - ‘24				ME0104000210_3796_W099	Sabattus Pond wetlands	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 8/12/2004.	Delisted to Category 4-A - covered under approved Sabattus Lake TMDL, 8/12/2004.
‘22	**‘24**		**’12 - ‘20**		**ME0104000210_418R02_W101**	**No Name Brook (Lewiston) wetland**	**Benthic Macroinvertebrates Bioassessments**	**TMDL approved or established by EPA (4A) 9/23/2021**	**Delisted to Category 4-A - covered under approved Statewide NPS TMDL addendum.**
‘10	’12- ‘24				ME0106000105_607R11_01_W127	Nasons Brook Wetland Complex, Portland	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Delisted to Category 4-A - covered under approved Statewide % Impervious Cover TMDL.

Category by Report Year					Assessment Unit ID	Water Name	Cause	Delisting Reason / Date	Comments
5	4-A	4-B	3	2					
‘10	’12-‘24				ME0106000105_607R11_02_W172	Nasons Brook Wetland Complex, Westbrook	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Delisted to Category 4-A - covered under approved Statewide % Impervious Cover TMDL.
	’12-‘24		‘10		ME0106000105_609R01_W026	Dole Brook wetlands	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Delisted to Category 4-A - covered under approved Statewide % Impervious Cover TMDL.
‘10	’12-‘24				ME0106000105_610R01_W023	Capisic Pond wetland	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Delisted to Category 4-A - covered under approved Statewide % Impervious Cover TMDL.
‘10	’12-‘24				ME0106000211_616R05_W043	Thacher Brook (Biddeford) wetland	Benthic Macroinvertebrates Bioassessments	TMDL approved or established by EPA (4A) 9/27/12	Delisted to Category 4-A - covered under approved Statewide % Impervious Cover TMDL.
		’10 - ‘24			ME0106000301_622R02_W176	Lord's Brook Pond wetland	Benthic Macroinvertebrates Bioassessments	TMDL Alternative	Court-ordered controls in place 2/09

Table 8-13 Status of Delisted Category 5 Marine/Estuarine Waters

A history table similar to Table 8-10 through Table 8- for other waterbody types has not been previously compiled for estuarine and marine waters. For this 2024 cycle, Table 8-13 as it was first included in the 2018/2020/2022 cycle has been retained to present segments specifically for the Shellfish Harvesting Designated Use that were delisted from Category 5-B-1 (a-c) in the 2016 cycle to Category 3 in the 2018/2020/2022 cycle based on administrative closures (insufficient data) made by the Maine Department of Marine Resources (DMR). In the interest of avoiding duplication, a column for “Category by Report Year: ‘2022-2024’ and ‘3’ ” was not included in this table. No other delistings have occurred since the 2016 cycle.

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010200051007_SC_WX_PE	Squaw Point (Stockton Springs) to Dice Head (Castine) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010200051008_SB_WX_PE	Squaw Point (Stockton Springs) to Dice Head (Castine) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010200051009_SB_WX_PE	Squaw Point (Stockton Springs) to Dice Head (Castine) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010200051009_SC_WX_PE	Squaw Point (Stockton Springs) to Dice Head (Castine) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500010809_SC_EU_PE	St. Croix River; Eastport to Calais (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500010810_SB_EU_PE	St. Croix River; Eastport to Calais (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020604_SB_ER_PE	Point of Maine (Machiasport) to Cape Wash (Cutler) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020703_SB_ER_CAE	Point of Maine (Machiasport) to Cape Wash (Cutler) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010500020703_SB_ER_PE	Point of Maine (Machiasport) to Cape Wash (Cutler) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P4
ME010500020801_SB_EP_PE	Henry Point (Jonesport) to Sea Wall Point (Roque Bluffs) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020802_SB_EN_PE	Cape Split (South Addison) to Henry Point (Jonesport), incl. Beals (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020805_SB_EN_PE	Cape Split (South Addison) to Henry Point (Jonesport), incl. Beals (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P4
ME010500020904_SB_EM_PE	Pleasant River (Addison), Cape Split (Columbia Falls and Harrington) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020906_SB_EL_PE	Petit Manan Point to Ripley Neck (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500020908_SB_EM_PE	Pleasant River (Addison), Cape Split (Columbia Falls and Harrington) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500021005_SB_EL_PE	Petit Manan Point to Ripley Neck (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010500021008_SB_EL_PE	Petit Manan Point to Ripley Neck (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010500021105_SB_EJ_PE	Schoodic Point (Winter Harbor) to Dyer Point (Steuben) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500021108_SB_EK_PE	Dyer Bay, Dyer Harbor and Pinkham Bay (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500021111_SB_EI_PE	Great Head (Bar Harbor) to Schoodic Point (Winter Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P13
ME010500021111_SB_EJ_PE	Schoodic Point (Winter Harbor) to Dyer Point (Steuben) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3-P6
ME010500021304_SB_EG_CAE	Eastern Blue Bay, Newbury Neck to Wonderland (Southwest Harbor) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010500021304_SB_EG_PE	Eastern Blue Bay, Newbury Neck to Wonderland (Southwest Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500021403_SB_EI_PE	Great Head (Bar Harbor) to Schoodic Point (Winter Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500021410_SB_EI_CRE	Great Head (Bar Harbor) to Schoodic Point (Winter Harbor) (Conditionally Restricted)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CR1
ME010500021410_SB_EI_PE	Great Head (Bar Harbor) to Schoodic Point (Winter Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3-P12
ME010500021509_SA_EG_PE	Eastern Blue Bay, Newbury Neck to Wonderland (Southwest Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P4
ME010500021509_SA_EH_PE	Seawall to Otter Cove, Cranberry Islands (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500021509_SB_EF_CAE	Western Blue Hill Bay, Naskeag Point to Newbury Neck (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA1, CA2
ME010500021509_SB_EF_PE	Western Blue Hill Bay, Naskeag Point to Newbury Neck (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P3
ME010500021509_SB_EG_PE	Eastern Blue Bay, Newbury Neck to Wonderland (Southwest Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3-P5

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010500021509_SB_EH_PE	Seawall to Otter Cove, Cranberry Islands (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P9
ME010500021601_SA_EA_PE	Dice Head (Castine) to Cape Rosier (Brooksville) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P4
ME010500021602_SA_EA_PE	Dice Head (Castine) to Cape Rosier (Brooksville) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500021602_SB_EA_PE	Dice Head (Castine) to Cape Rosier (Brooksville) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P3
ME010500021702_SB_EC_PE	Little Deer Isle, incl. Stonington (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010500021703_SB_EB_PE	Cape Rosier (Brooksville) to Naskeag Point (Brooklin) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500021703_SB_EC_PE	Little Deer Isle, incl. Stonington (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P4, P5
ME010500021703_SB_EE_PE	Swans Island and Frenchboro (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P3
ME010500021803_SB_WW_PE	Owls Head Light (Owls Head) to Cape Jellison (Stockton Springs) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010500021906_SB_WV_PE	Marshall Point (Port Clyde) to Owls Head Light (Owls Head) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P4
ME010500021907_SB_EA_PE	Dice Head (Castine) to Cape Rosier (Brooksville) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P5
ME010500021908_SB_EC_PE	Little Deer Isle, incl. Stonington (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500021909_SB_EA_CAE	Dice Head (Castine) to Cape Rosier (Brooksville) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA1, CA2
ME010500021909_SB_WV_PE	Marshall Point (Port Clyde) to Owls Head Light (Owls Head) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P5-P18
ME010500021909_SB_WW_CAE	Owls Head Light (Owls Head) to Cape Jellison (Stockton Springs) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA1, CA2

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010500021909_SB_WW_PE	Owls Head Light (Owls Head) to Cape Jellison (Stockton Springs) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P6
ME010500021909_SB_WX_PE	Squaw Point (Stockton Springs) to Dice Head (Castine) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500021909_SB_WY_PE	Islesboro (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P5
ME010500021909_SB_WZ_PE	North Haven (Vinalhaven), Matinicus Island (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P15
ME010500021909_SC_WW_PE	Owls Head Light (Owls Head) to Cape Jellison (Stockton Springs) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2, P6
ME010500030107_SB_WU_CAE	Pleasant Point (Cushing) to Marshall Point (Port Clyde) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010500030107_SB_WU_CRE	Pleasant Point (Cushing) to Marshall Point (Port Clyde) (Conditionally Restricted)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CR1
ME010500030107_SB_WU_PE	Pleasant Point (Cushing) to Marshall Point (Port Clyde) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P6
ME010500030202_SB_WT_PE	Martin Point (Friendship) to Pleasant Point (Cushing) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030203_SB_WS_PE	Pemaquid Point (Bristol) to Martin Point (Friendship) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030206_SB_WS_PE	Pemaquid Point (Bristol) to Martin Point (Friendship) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P6
ME010500030206_SB_WT_PE	Martin Point (Friendship) to Pleasant Point (Cushing) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P8
ME010500030206_SB_WU_PE	Pleasant Point (Cushing) to Marshall Point (Port Clyde) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P7-P11
ME010500030301_SB_WR_CAE	Shipley Point (South Bristol) to Pemaquid Point (Bristol) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA3, CA4
ME010500030301_SB_WR_PE	Shipley Point (South Bristol) to Pemaquid Point (Bristol) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010500030303_SB_WR_PE	Shipley Point (South Bristol) to Pemaquid Point (Bristol) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010500030304_SB_WQ_PE	Ocean Point (Boothbay) to Shipley Point (South Bristol) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P5
ME010500030307_SA_WP_PE	Cape Newagen (Southport) to Ocean Point (Boothbay) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030307_SB_WP_PE	Cape Newagen (Southport) to Ocean Point (Boothbay) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030307_SB_WQ_PE	Ocean Point (Boothbay) to Shipley Point (South Bristol) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P6
ME010500030307_SB_WR_PE	Shipley Point (South Bristol) to Pemaquid Point (Bristol) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P4-P6
ME010500030404_SB_WN_PE	Indian Point (Georgetown) to Cape Newagen (Southport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030405_SB_WN_PE	Indian Point (Georgetown) to Cape Newagen (Southport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500030502_SB_WN_PE	Indian Point (Georgetown) to Cape Newagen (Southport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P4
ME010500030503_SB_WN_PE	Indian Point (Georgetown) to Cape Newagen (Southport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3, P5-P20
ME010500030504_SB_WN_PE	Indian Point (Georgetown) to Cape Newagen (Southport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P21
ME010500030602_SB_WM_PE	Small Point (Phippsburg) to Indian Point (Georgetown) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010500030603_SB_WM_PE	Small Point (Phippsburg) to Indian Point (Georgetown) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P3
ME010500030606_SB_WM_PE	Small Point (Phippsburg) to Indian Point (Georgetown) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P4
ME010500040502_SB_ET_PE	Cobscook Bay (Lubec through Perry) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010500040606_SA_ET_PE	Cobscook Bay (Lubec through Perry) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010500040606_SB_ET_PE	Cobscook Bay (Lubec through Perry) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010500040702_SB_EU_PE	St. Croix River; Eastport to Calais (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P4
ME010500040702_SC_EU_PE	St. Croix River; Eastport to Calais (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P4
ME010500040904_SA_ES_PE	Cape Wash (Cutler) to Mowry Point (Lubec) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P3
ME010600010205_SB_WI_CAE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010600010205_SB_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010600010206_SB_WI_CRE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Conditionally Restricted)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CR1
ME010600010206_SB_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010600010402_SC_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P10
ME010600010501_SA_WH_PE	Prouts Neck (Scarborough) to McKenney Point (Cape Elizabeth) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600010502_SC_WG_PE	East Point (Biddeford) to Prouts Neck (Scarborough) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600010505_SA_WG_PE	East Point (Biddeford) to Prouts Neck (Scarborough) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600010507_SB_WG_PE	East Point (Biddeford) to Prouts Neck (Scarborough) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010600010507_SB_WH_PE	Prouts Neck (Scarborough) to McKenney Point (Cape Elizabeth) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600010601_SB_WL_PE	East Cundy Point (Cundys Harbor) to Small Point (Phippsburg) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P6
ME010600010602_SB_WJ_PE	Stockbridge Point (Freeport) to Potts Point (Harpswell) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P5
ME010600010603_SB_WJ_CAE	Stockbridge Point (Freeport) to Potts Point (Harpswell) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA1-CA5
ME010600010603_SB_WJ_PE	Stockbridge Point (Freeport) to Potts Point (Harpswell) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2-P4, P6
ME010600010605_SA_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P10
ME010600010605_SB_WI_CAE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections CA2-CA5
ME010600010605_SB_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P4-P13
ME010600010605_SB_WJ_PE	Stockbridge Point (Freeport) to Potts Point (Harpswell) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P7-P11
ME010600010605_SB_WK_PE	Potts Point (Harpswell) to East Cundy Point (Cundys Harbor) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1-P9
ME010600010605_SB_WL_PE	East Cundy Point (Cundys Harbor) to Small Point (Phippsburg) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P7-P10
ME010600010605_SC_WI_PE	McKenney Point (Cape Elizabeth) to Stockbridge Point (Freeport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P10
ME010600021105_SC_WG_PE	East Point (Biddeford) to Prouts Neck (Scarborough) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600021106_SB_WG_CAE	East Point (Biddeford) to Prouts Neck (Scarborough) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010600030207_SB_WD_PE	Bald Head Cliff (York) to Cape Arundel (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010600030301_SB_WE_PE	Cape Arundel to Little River (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010600030303_SB_WE_PE	Cape Arundel to Little River (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3, P4
ME010600030303_SB_WF_PE	Little River to East Point (Biddeford) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P1, P2
ME010600031001_SB_WA_PE	Piscataqua River (South Berwick) to Sisters Point (Kittery) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031001_SC_WA_PE	Piscataqua River (South Berwick) to Sisters Point (Kittery) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031101_SA_WD_PE	Bald Head Cliff (York) to Cape Arundel (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031102_SB_WD_PE	Bald Head Cliff (York) to Cape Arundel (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P3, P4
ME010600031103_SB_WB_CAE	Sisters Point (Kittery) to East Point (York) (Conditionally Approved)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section CA1
ME010600031103_SB_WB_PE	Sisters Point (Kittery) to East Point (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031104_SA_WB_PE	Sisters Point (Kittery) to East Point (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P3
ME010600031106_SA_WA_PE	Piscataqua River (South Berwick) to Sisters Point (Kittery) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600031106_SA_WB_PE	Sisters Point (Kittery) to East Point (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600031106_SA_WC_PE	East Point (York) to Bald Head Cliff (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031106_SB_WA_PE	Piscataqua River (South Berwick) to Sisters Point (Kittery) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2
ME010600031106_SB_WB_PE	Sisters Point (Kittery) to East Point (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P2

Assessment Unit ID	Segment Name	Cause	Delisting Reason	Comments
ME010600031106_SB_WC_PE	East Point (York) to Bald Head Cliff (York) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Section P1
ME010600031106_SB_WD_PE	Bald Head Cliff (York) to Cape Arundel (Kennebunkport) (Prohibited)	Fecal Coliform	Insufficient data to determine attainment status; correcting original basis for listing	Contains Growing Area Sections P2, P5

TMDL Development Status

Table 8-14 Rivers/Streams TMDL Current Project Update

New listings are shown in bold.

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0101000105_103R01	Shields Branch of Big Black R	Mainstem	Dissolved Oxygen	4/12/24: Needs more assessment.	L
ME0101000303_123R01	North Fork McLean Brook	St Agatha, tributary to Fish River via Long Lake	Benthic Macroinvertebrates Bioassessments	4/12/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000303_123R01	North Fork McLean Brook	St Agatha, tributary to Fish River via Long Lake	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0101000412_140R01	No. Br. Presque Isle Stream between Mapleton and Presque Isle	From Mapleton Sewer District outfall to confluence with Presque Isle Stream	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000412_140R03_02	N Br Presque Isle Stream	Tributary to Presque Isle Stream	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000412_140R04	Unnamed Stream (P.I. airport) - 'Hanson Brook, BioSta 743'	Tributary to Presque Isle Stream, draining the airport	Benthic Macroinvertebrates Bioassessments	11/26/21: Resampling needed to determine current conditions	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0101000412_140R04	Unnamed Stream (P.I. airport) - 'Hanson Brook, BioSta 743'	Tributary to Presque Isle Stream, draining the airport	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0101000412_141R01	Birch Brook (Presque Isle)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000412_143R04	Cowett Brook (Presque Isle)	Tributary to Aroostook River	Benthic Macroinvertebrates Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000412_143R04	Cowett Brook (Presque Isle)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments		
ME0101000412_143R05	Unnamed Brook (Presque Isle)	Tributary to Aroostook River (at Parkhurst)	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000413_144R01	Amsden Brook (Ft. Fairfield)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000413_144R01	Amsden Brook (Ft. Fairfield)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments		
ME0101000413_144R02	Hacker Brook (Ft. Fairfield)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000413_144R03	Gray Brook (Ft. Fairfield)	Tributary to Aroostook River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000413_146R_01	**Limestone Str (Limestone)**	**Durepo Pond to Long Road bridge (Limestone)**	**PFAS in Fish Tissue**	**1/12/24: Federal government collected additional PFAS samples in 2023. Results are pending.**	**L**
ME0101000413_146R_02	**Limestone Str (Limestone, Ft. Fairfield)**	**Long Road bridge (Limestone) to the Canadian border**	**PFAS in Fish Tissue**	**1/12/24: DEP collected additional PFAS samples in 2023. Maine CDC will likely extend the fish consumption advisory further downstream to where Limestone Stream returns to Canada a second time.**	**L**

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0101000413_148R	Aroostook River	Main stem between confluence with Presque Isle Stream and 3 miles upstream of Caribou water supply intake	pH	9/2/2015: Feasibility of reducing nutrient loadings via permit requirements and Best Management Practices is being assessed.	L
ME0101000413_148R01	Aroostook River (Caribou)	Main stem between 3 miles upstream of Caribou water supply intake and 100 yards downstream of intake	pH	9/2/2015: Feasibility of reducing nutrient loadings via permit requirements and Best Management Practices is being assessed.	L
ME0101000413_148R02	Aroostook River	Main stem between 100 yards downstream of Caribou water supply intake and international boundary	pH	9/2/2015: Feasibility of reducing nutrient loadings via permit requirements and Best Management Practices is being assessed.	L
ME0101000501_149R	Minor tributaries to Prestile Stream above dam in Mars Hill		DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000501_149R01	Prestile Stream above dam in Mars Hill	Including Christina Reservoir	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000501_150R	Tributaries to Prestile Str entering below dam in Mars Hill		DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000501_150R01	Prestile Stream below dam in Mars Hill	From Mars Hill dam (Rt 1A) to international border	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000501_150R02	Rocky Brook	Mars Hill, tributary to Prestile Stream	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000504_152R01_01	Meduxnekeag River	From confluence with S Branch to biomonitoring station S-364	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0101000504_152R01_03	Meduxnekeag River	From biomonitoring station S-364 to border	DDT	10/13/21: This legacy pollutant cannot be addressed with a TMDL or	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
				permit. Pollutant effects will continue to diminish naturally over time.	
ME0101000504_152R03	Oliver Brook	Including tributaries; tributaries to Meduxnekeag River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0101000504_152R04	Smith Brook and tributaries (Houlton)	Tributaries to Meduxnekeag River (waters in Maine)	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Candidate for inclusion in future NPS TMDL addendum.	L
ME0102000402_219R01	Piscataquis R	Main stem, Dover-Foxcroft POTW outfalls to about 4 miles upstream of confluence with Sebec River	Dissolved Oxygen	9/8/23: Discharge permit renewed on 3/3/23.	L
ME0102000402_219R02	**Piscataquis R**	**Main stem, from Guildford-Sangerville SD WWTF outfall to Dover-Foxcroft POTW outfalls**	**Dissolved Oxygen**	**9/8/23: New listing, not started.**	**L**
ME0102000404_216R01_01	W. Br. Pleasant R (KIW Twp)	Below Silver Lake	Iron	11/26/21: A 2020 Screening Investigation indicated that high iron concentrations are due to the presence of acid rock drainage impacts (from historic mining activities) affecting Blood Brook and this segment of the West Branch Pleasant River downstream.	L
ME0102000404_216R01_02	Blood Bk (KIW Twp)	Tributary to West Branch Pleasant River	Iron	11/26/21: A 2020 Screening Investigation indicated that high iron concentrations are due to the presence of acid rock drainage impacts from historic mining activities.	L
ME0102000502_231R	Penobscot R	Main stem, from Cambolasse Str to Piscataquis R	Polychlorinated biphenyls	11/25/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0102000506_222R01	Costigan Brook (Milford)	Tributary to Penobscot River	Dissolved Oxygen	4/15/24: Low priority for TMDL development.	L
ME0102000506_232R	Penobscot R	Main stem, from Piscataquis R to Orson Is	Polychlorinated biphenyls	11/25/21: This legacy pollutant cannot be addressed with a TMDL or	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
				permit. Pollutant effects will continue to diminish naturally over time.	
ME0102000509_233R_01	Penobscot R	Main stem, from Orson Is to Veazie Dam, incl. the Stillwater River	Polychlorinated biphenyls	11/25/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0102000511_225R02	Sucker Brook (Hampden) (formerly 'Unnamed St.-Hampden')	Tributary to Penobscot R. entering from the west, in Hampden	Periphyton (Aufwuchs) Indicator Bioassessments	10/11/23: Algae (periphyton) impairment due to urban influence addressed in % Impervious Cover TMDL (approved 9/27/2012). Impairment due to agricultural influences will be addressed separately.	L
ME0102000513_234R02	Penobscot	Main stem, Veazie Dam to Reeds Bk	Polychlorinated biphenyls	11/25/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000305_322R01	Perkins Stream (Waterville)	Tributary to Messalonskee Stream	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0103000305_322R01	Perkins Stream (Waterville)	Tributary to Messalonskee Stream	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000305_323R01	**Messalonskee Str**	**Main stem, Rice Rips Dam (Oakland) to Automatic Dam (Waterville)**	**PFAS in Fish Tissue**	**3/18/24: DEP collected additional PFAS samples in 2023, which had similar results compared to previous samples.**	**L**
ME0103000306_314R02	Cold Brook (Skowhegan)	Tributary to Wesserunsett Stream	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined,	L
ME0103000306_320R04	Mill Stream (Norridgewock)	Tributary to Kennebec River	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0103000306_338R_01	Kennebec R,	Main stem between Mill Str., Norridgewock, and Weston Dam	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000306_338R_04	Kennebec R,	Main stem, from Carrabassett R to Fairfield-Skowhegan boundary (excluding Mill Str., Norridgewock, to Weston Dam)	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000306_339R_01	Kennebec R,	Fairfield-Skowhegan boundary to Carrabassett Stream inlet	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000306_339R_01_01	**Kennebec R,**	**Carrabassett Stream inlet to Shawmut Dam**	**PFAS in Fish Tissue**	**2/9/24: Black crappie samples were collected in 2023 and had higher concentrations of PFOS than previous bass samples. Maine CDC may adjust the advisory. Also, bass samples were collected upstream of this stream segment in 2023. The bass in Hinkley Impoundment, upstream of Carrabassett Stream, had lower concentrations of PFOS than the downstream bass, confirming that upstream boundary of this assessment unit is appropriate.**	**L**
ME0103000306_339R_01_01	Kennebec R,	Carrabassett Stream inlet to Shawmut Dam	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	**L**
ME0103000306_339R_02	**Kennebec R,**	**Shawmut Dam to ~2,000 ft above Mill Island, Fairfield**	**PFAS in Fish Tissue**	**2/9/24: No additional work.**	**L**
ME0103000306_339R_02	Kennebec R,	Shawmut Dam to ~2,000 ft above Mill Island, Fairfield	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000306_339R_02_01	**Kennebec R,**	**~2,000 ft above Mill Island, Fairfield to Lockwood Dam (Waterville-Winslow)**	**PFAS in Fish Tissue**	**2/9/24: Bass were collected downstream of Lockwood Dam in 2023 and had high concentrations of PFOS. Maine CDC is considering extending the fish**	**L**

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
				consumption advisory further downstream based on these results.	
ME0103000306_339R_02_01	Kennebec R,	~2,000 ft above Mill Island, Fairfield to Lockwood Dam (Waterville-Winslow)	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000307_330R	W Branch of Sebasticook R	Main stem, below Rt. 23 bridge in Hartland	Dioxin (including 2,3,7,8-TCDD)	Low priority	L
ME0103000307_330R	W Branch of Sebasticook R	Main stem, below Rt. 23 bridge in Hartland	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000308_325R01	East Branch Sebasticook River Corundel L to Sebasticook L	Corinna Superfund site	Dioxin (including 2,3,7,8-TCDD)	10/13/21: These legacy pollutants cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000308_325R01	East Branch Sebasticook River Corundel L to Sebasticook L	Corinna Superfund site	Polychlorinated biphenyls		
ME0103000308_331R	E Branch of Sebasticook R	Main stem, below Sebasticook Lake	Dissolved Oxygen	10/6/23: Remediation approaches are being investigated, including for upstream lake source of nutrients.	L
ME0103000308_331R	E Branch of Sebasticook R	Main stem, below Sebasticook Lake	Phosphorus (Total)		L
ME0103000308_331R	E Branch of Sebasticook R	Main stem, below Sebasticook Lake	Dioxin (including 2,3,7,8-TCDD)	10/13/21: These legacy pollutants cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000308_331R	E Branch of Sebasticook R	Main stem, below Sebasticook Lake	Polychlorinated biphenyls		
ME0103000308_331R01	Martin Stream (Dixmont)	Tributary to East Branch Sebasticook	Ammonia (Un-ionized)	4/10/24: Low priority for TMDL development.	L
ME0103000308_331R01	Martin Stream (Dixmont)	Tributary to East Branch Sebasticook	Benthic Macroinvertebrates Bioassessments		L
ME0103000308_331R01	Martin Stream (Dixmont)	Tributary to East Branch Sebasticook	Periphyton (Aufwuchs) Indicator Bioassessments		L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000308_331R02	Martin Stream (Dixmont)	Trib to East Br. Sebasticook R, below Mitchell Rd	Benthic Macroinvertebrates Bioassessments	4/10/24: Low priority for TMDL development.	L
ME0103000308_331R02	Martin Stream (Dixmont)	Trib to East Br. Sebasticook R, below Mitchell Rd	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000308_332R	Sebasticook R	Main stem, from E and W Branches to Burnham bridge, including Burnham impoundment	Dioxin (including 2,3,7,8-TCDD)	Low priority	L
ME0103000308_332R	Sebasticook R	Main stem, from E and W Branches to Burnham bridge, including Burnham impoundment	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000309_326R02	**Halfmoon Stream (Knox, Thorndike)**	**From Montville-Knox townline to Shikles Road in Thorndike**	**Benthic Macroinvertebrates Bioassessments**	**3/19/24: New listing, candidate for future addendum to NPS TMDL.**	**L**
ME0103000309_326R02_01	**Halfmoon Stream (Thorndike)**	**From Shikles Road to Rt 220 bridge**	**Benthic Macroinvertebrates Bioassessments**	**3/19/24: New listing, candidate for future addendum to NPS TMDL.**	**L**
ME0103000309_326R02_01	**Halfmoon Stream (Thorndike)**	**From Shikles Road to Rt 220 bridge**	**PFAS in Fish Tissue**	**3/19/24: Collected trout and bass samples in 2023 and confirmed high concentrations of PFOS in fish.**	**L**
ME0103000309_326R03	**Halfmoon Stream (Thorndike, Unity)**	**From Rt 220 bridge in Thorndike to confluence with Sandy Stream**	**PFAS in Fish Tissue**	**3/19/24: Collected bass samples further downstream in Sandy Stream in 2023. Maine CDC will likely extend the fish consumption advisory from this assessment unit to Unity Pond based on the results.**	**L**
ME0103000309_327R_01	**Fifteen Mile Str (Albion)**	**Yorktown Brook/Hussey Rd to Route 137/202**	**PFAS in Fish Tissue**	**1/23/24: No additional work.**	**L**
ME0103000309_328R01	China Lake Outlet Stream (Vassalboro, Winslow)	Tributary to Sebasticook River (in Winslow)	Periphyton (Aufwuchs) Indicator Bioassessments	4/10/24: Algae did not meet Class in 2022 but met in 2012 and 2017; resample to determine condition.	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000309_332R	Sebasticook River	Main stem, from Burnham bridge to Kennebec R (excluding site of former Halifax Impd)	Dioxin (including 2,3,7,8-TCDD)	Legacy upstream sources (W. Br. Sebasticook) 5-D	L
ME0103000309_332R	Sebasticook River	Main stem, from Burnham bridge to Kennebec R (excluding site of former Halifax Impd)	Dissolved Oxygen	4/10/24: New DO data needed to determine impairment status.	L
ME0103000309_332R	Sebasticook River	Main stem, from Burnham bridge to Kennebec R (excluding site of former Halifax Impd)	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000309_332R01	Sebasticook River (site of former Halifax impoundment)	Tributary to Kennebec River	Dioxin (including 2,3,7,8-TCDD)	Low priority	L
ME0103000309_332R01	Sebasticook River (site of former Halifax impoundment)	Tributary to Kennebec River	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000310_322R01	**Fish Brook (Fairfield)**	**Tributary to Messalonskee Stream below Messalonskee Lake dam**	**PFAS in Fish Tissue**	**1/5/24: No additional work.**	**L**
ME0103000310_322R02	**Unnamed Tributaries to Fish Brook (Fairfield)**	**Tributaries excluding Tobey Brook**	**PFAS in Fish Tissue**	**1/5/24: No additional work.**	**L**
ME0103000311_334R04	Mill Stream (Winthrop)	Between Maranacook and Annabessacook Lakes	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0103000311_334R04	Mill Stream (Winthrop)	Between Maranacook and Annabessacook Lakes	Cause Unknown		L
ME0103000311_334R05	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between outlet of Pleasant Pond and American Tissue Dam	Benthic Macroinvertebrates Bioassessments	3/25/24: Pleasant Pond trophic state indicators remain high.	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000311_334R05	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between outlet of Pleasant Pond and American Tissue Dam	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000311_334R05_01	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between American Tissue Dam and Gardiner Paperboard Dam	Benthic Macroinvertebrates Bioassessments	3/25/24: Pleasant Pond trophic state indicators remain high.	L
ME0103000311_334R05_01	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between American Tissue Dam and Gardiner Paperboard Dam	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000311_334R05_02	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between Gardiner Paperboard Dam and Kennebec R	Benthic Macroinvertebrates Bioassessments	3/25/24: Pleasant Pond trophic state indicators remain high.	L
ME0103000311_334R05_02	Cobbosseecontee Stream (Gardiner)	Tributary to Kennebec R, between Gardiner Paperboard Dam and Kennebec R	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000312_333R01_02	Bond Brook mainstem	Tributary to Kennebec River	Periphyton (Aufwuchs) Indicator Bioassessments	4/15/24: Best approach for addressing this impairment is to be determined.	L
ME0103000312_333R01_03	**Stone Brook (Augusta)**	**Tributary to Bond Brook**	**Benthic Macroinvertebrates Bioassessments**	**4/10/24: New listing, not started.**	**L**
ME0103000312_335R03	Meadow Brook (Farmingdale)	Tributary to Kennebec River	Benthic Macroinvertebrates Bioassessments	11/21/2014: No new data, probably due to habitat and flow, low priority for TMDL.	L
ME0103000312_339R_01	Kennebec R,	Main stem, from Sebasticook R to Augusta (Calumet Bridge)	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000312_340R_01	Kennebec R,	Main stem, from Augusta (Calumet Bridge) to Merrymeeting Bay (Chops)	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000312_427R	Merrymeeting Bay	including tidal portions of tributaries from the Androscoggin R to The Chops	Polychlorinated biphenyls	11/12/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0103000324_333R_01	Riggs Brook (Augusta)	Including all tributaries, Augusta and Chelsea	Benthic Macroinvertebrates Bioassessments	3/7/24: Best approach for addressing this impairment is to be determined.	L
ME0103000324_333R_01	Riggs Brook (Augusta)	Including all tributaries, Augusta and Chelsea	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0103000324_333R_01	Riggs Brook (Augusta)	Including all tributaries, Augusta and Chelsea	Phosphorus (Total)		L
ME0103000324_333R_02	Spring Brook (Augusta)	From Gov Hill fish hatchery to Mt Vernon Rd, Augusta	Benthic Macroinvertebrates Bioassessments	2/20/24: Hatchery permit is in the process of being renewed.	L
ME0103000324_333R_02	Spring Brook (Augusta)	From Gov Hill fish hatchery to Mt Vernon Rd, Augusta	Phosphorus (Total)		L
ME0104000201_421R	Androscoggin R	Main stem, from Maine-NH border to Wild R	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000202_421R	Androscoggin R	Main stem, from Wild R to Rumford Point	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000204_421R	Androscoggin R	Main stem, from Rumford Pt to Virginia Bridge	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000204_422R	Androscoggin R	Main stem, from Virginia Bridge to Webb R	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000205_410R01_02	Whitney Brook (Canton)	From Lake Anasagunticook Dam to Androscoggin River	Benthic Macroinvertebrates Bioassessments	12/28/21: Needs resampling to determine current conditions.	L
ME0104000205_422R	Androscoggin R	Main stem, Webb R to Riley dam	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
				permit. Pollutant effects will continue to diminish naturally over time.	
ME0104000206_423R	Androscoggin R	Main stem, from Riley Dam to Nezinscot R	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000206_423R01	Androscoggin R	Main stem, Livermore impoundment	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000208_413R01	Jepson Brook (Lewiston)	Tributary to Androscoggin River	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0104000208_413R01	Jepson Brook (Lewiston)	Tributary to Androscoggin River	Habitat Assessment (Streams)		L
ME0104000208_413R01	Jepson Brook (Lewiston)	Tributary to Androscoggin River	Dissolved Oxygen		L
ME0104000208_413R07	Gully Brook (Auburn)	Tributary to Androscoggin River	Dissolved Oxygen	3/14/24: Investigation and monitoring underway.	L
ME0104000208_413R07	Gully Brook (Auburn)	Tributary to Androscoggin River	Benthic Macroinvertebrates Bioassessments		L
ME0104000208_413R07	Gully Brook (Auburn)	Tributary to Androscoggin River	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0104000208_424R	Androscoggin R,	Main stem, from confluence of Nezinscot R to confluence with Little Androscoggin R, except Gulf Island Pond	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000208_424R_01	Androscoggin R, GIP	Main stem, upstream of the Gulf Island Dam	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000210_418R01	Sabattus River between Sabattus P and Androscoggin R	From Sabattus Pond to limits of Lisbon urban area	Nutrient/Eutrophica-tion Biological Indicators	10/21/21: Continuous data collected in 2016 showed brief, marginal non-attainment of DO criteria but	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0104000210_418R01	Sabattus River between Sabattus P and Androscoggin R	From Sabattus Pond to limits of Lisbon urban area	Dissolved Oxygen	significant diurnal DO swings suggest nutrient enrichment. Sabattus Pond eutrophic and source of SOD in river; lake TMDL complete 2004; slow recovery is expected.	L
ME0104000210_418R03	Sabattus River between Sabattus P and Androscoggin R	From limits of Lisbon urban area to Androscoggin R	Benthic Macroinvertebrates Bioassessments	11/4/2014: Effects from legacy pollutants, habitat and development as well as nutrients/DO on macroinvertebrates.	L
ME0104000210_418R03	Sabattus River between Sabattus P and Androscoggin R	From limits of Lisbon urban area to Androscoggin R	Nutrient/Eutrophica-tion Biological Indicators	11/4/2014: Sabattus Pond eutrophic and source of SOD in river; lake TMDL complete 2004; slow recovery is expected.	L
ME0104000210_418R03	Sabattus River between Sabattus P and Androscoggin R	From limits of Lisbon urban area to Androscoggin R	Dissolved Oxygen		L
ME0104000210_419R03	Unnamed Stream (Lewiston Municipal Landfill)	Biomon Sta 857 affected by Lewiston Municipal Landfill near Plourde Pky	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0104000210_419R03	Unnamed Stream (Lewiston Municipal Landfill)	Biomon Sta 857 affected by Lewiston Municipal Landfill near Plourde Pky	Periphyton (Aufwuchs) Indicator Bioassessments		L
ME0104000210_425R_01	Androscoggin R,	Main stem, from L Androscoggin R to Pejepscot Dam	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000210_425R_01_01	Androscoggin R,	Main stem, from Pejepscot Dam to Brunswick Dam	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0104000210_426R	Androscoggin R	Main stem, from Brunswick Dam to Brunswick-Bath boundary	Polychlorinated biphenyls	10/13/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0105000209_512R_02	McCoy Brook (Deblois)	Tributary to Narraguagus River	Benthic Macroinvertebrates Bioassessments	4/15/24: Resampling attempted in 2016, but could not access. Need to resolve access issue to enable resampling and determine attainment status.	L
ME0105000209_512R_02	McCoy Brook (Deblois)	Tributary to Narraguagus River	pH		L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0105000209_512R_03	Great Falls Branch, Schoodic Stream (Deblois)	Tributary to Narraguagus River	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0105000305_528R02	West Branch Sheepscot River	Below Halls Corner, Rt 17/32	Periphyton (Aufwuchs) Indicator Bioassessments	4/6/24: This segment is one of DEP's priority waters under the 2022 Vision.	H
ME0105000305_528R05	Meadow Bk (China)	Tributary to West Branch Sheepscot River	Escherichia coli	4/15/24: Candidate for inclusion in future Statewide Bacteria TMDL addendum.	M
ME0105000305_528R07	Choate Bk (Windsor)	Tributary to West Branch Sheepscot River	Escherichia coli	4/15/24: Candidate for inclusion in future Statewide Bacteria TMDL addendum.	M
ME0105000305_528R08_01	Chamberlain Bk (Whitefield)	Tributary to Sheepscot River	Escherichia coli	4/15/24: Candidate for inclusion in future Statewide Bacteria TMDL addendum.	M
ME0106000102_603R06	Cole Brook (Gray)	Tributary to Collyer Brook and Royal River	Benthic Macroinvertebrates Bioassessments	4/6/24: Cole Brook is one of DEP's priority waters under the 2022 Vision.	H
ME0106000103_607R01	Black Brook (Windham)	Tributary to Presumpscot River	Escherichia coli	12/28/21: Will be included in next update to statewide bacteria TMDL.	M
ME0106000103_609R_01	**Presumpscot R,**	**Main stem, below Saccarappa Falls**	**PFAS in Fish Tissue**	**3/12/24: Collected bass in 2023 and confirmed high concentrations of PFOS.**	**L**
ME0106000105_610R02	Clark Brook (Westbrook)	Tributary to Stroudwater River	Dissolved Oxygen	12/28/21: Needs assessment.	L
ME0106000105_610R04	Stroudwater River (Portland, Westbrook)	Tributary to Fore River and Casco Bay	Dissolved Oxygen	12/28/21: Needs more assessment.	L
ME0106000105_610R07	Red Brook (Scarborough, S Portland)	Tributary to Long Creek	Polychlorinated biphenyls	10/31/21: This legacy pollutant cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0106000105_610R08	Fall Bk (Portland)	Tributary to Back Cove and Casco Bay	Habitat Assessment	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0106000106_602R03	Concord Gully (Freeport)	Tributary to Harraseeket River	Escherichia coli	12/28/21: Will be included in next update to statewide bacteria TMDL.	M

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0106000106_616R04	Bear Bk	Saco, tributary to Goosefare Brook	Benthic Macroinvertebrates Bioassessments	6/1/23: Await outcome of 319 projects and reassess attainment status.	L
ME0106000106_616R04	Bear Bk	Saco, tributary to Goosefare Brook	Habitat Assessment		L
ME0106000210_615R01	Little Ossipee R	Segment from Lake Arrowhead (Ledgemere) Dam to Saco River	Benthic Macroinvertebrates Bioassessments	12/28/21: Macroinvertebrates met in last 2 sampling events; low priority.	L
ME0106000210_615R01	Little Ossipee R	Segment from Lake Arrowhead (Ledgemere) Dam to Saco River	Dissolved Oxygen	12/28/21: New data needed.	L
ME0106000210_615R02	Brown Brook (Limerick)	Sokokis Lake to Lake Arrowhead	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0106000210_615R02	Brown Brook (Limerick)	Sokokis Lake to Lake Arrowhead	Habitat Assessment (Streams)		L
ME0106000211_616R	Wales Pond Brook (Hollis)	Tributary to Saco River	Benthic Macroinvertebrates Bioassessments	10/11/23: Permit renewed January 2022, expiration date June 2027.	L
ME0106000302_628R01_03	**Mousam R,**	**Main stem, Number One Pond Dam in Sanford to Estes Lake**	**PFAS in Fish Tissue**	**2/22/24: No additional work.**	**L**
ME0106000303_624R01	Stevens Brook (Wells, Ogunquit)	Only portion flowing in westerly-to-easterly direction, to start of wetland section	Benthic Macroinvertebrates Bioassessments	3/25/24: Best approach for addressing this impairment is to be determined.	L
ME0106000304_625R03	West Brook (N. Berwick)	From 0.1 miles above Bragdon Rd to confluence with Great Works River	1,1-Dichloroethane	5/29/2012: Remediation of original contaminant source has occurred; attenuation of contaminant concentration expected over time; monitoring continues.	L
ME0106000304_625R03	West Brook (N. Berwick)	From 0.1 miles above Bragdon Rd to confluence with Great Works River	1,2-Dichloroethane		L
ME0106000305_630R01	Salmon Falls R	Main stem, from Route 9 to tidewater	Dioxin (including 2,3,7,8-TCDD)	10/13/21: These legacy pollutants cannot be addressed with a TMDL or permit. Pollutant effects will continue to diminish naturally over time.	L
ME0106000305_630R01	Salmon Falls R	Main stem, from Route 9 to tidewater	Polychlorinated biphenyls		L

Table 8-15 Lakes/Ponds TMDL Current Project Update

Assessment Unit ID (ME HUC_MIDAS 'L')	Lake	Cause	Project Status	TMDL Priority
ME0101000413_9768L	DUREPO L	PFAS in Fish Tissue		L
ME0102000513_4336L	ALAMOOSOOK L	Total phosphorus; Secchi disk transparency	Negotiations to remove Federal fish hatchery discharge underway	H
ME0103000306_8079L	FAIRFIELD PAL PDS	PFAS in Fish Tissue		L
ME0103000310_5274L	GREAT P	Total phosphorus; Secchi disk transparency	Watershed-based Management Plan accepted by EPA in September 2021 as an Alternative Restoration Plan	L
ME0103000309_5448L	CHINA L	PFAS in Fish Tissue		L
ME0103000309_5172L	UNITY P	PFAS in Fish Tissue		L
ME0106000302_7L	ESTES L	PFAS in Fish Tissue		L
ME0106000302_3848L	NUMBER ONE P	PFAS in Fish Tissue		L

Table 8-16 Wetland TMDL Current Project Update

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0101000501_149R_W200	Tributary wetlands to Prestile Stream above dam in Mars Hill	Includes site W-200	DDT	Thise legacy pollutant cannot be addressed with a TMDL or permit. Effects of this pollutant will continue to diminish naturally over time.	L
ME0101000501_149R01_W203	Prestile Stream wetlands above dam in Mars Hill	Including sites W-203 and W-204	DDT	This legacy pollutant cannot be addressed with a TMDL or permit. Effects of this pollutant will continue to diminish naturally over time.	L
ME0103000308_325R01_W080	East Branch Sebasticook River Wetland	Between Corundel Pond and Sebasticook Lake, wetland site W-080	Dioxin (including 2,3,7,8-TCDD)	These legacy pollutants cannot be addressed with a TMDL or permit.	L

Assessment Unit ID	Segment Name	Location	Cause	Project Status	TMDL Priority
ME0103000308_325R01_W080	East Branch Sebasticook River Wetland	Between Corundel Pond and Sebasticook Lake, wetland site W-080	Polychlorinated biphenyls	Pollutant effects will continue to diminish naturally over time.	L
ME0101000501_150R01_W198	Robinson Dam Pond wetlands	Blaine, Wetland station W-198	Benthic Macroinvertebrates Bioassessments	Not started	L
ME0104000210_418R01_W188	Sabattus River Wetland, between Sabattus P and Rt 126	Wetland site W-188, between Sabattus Pond and Rt 126 in Sabattus	Benthic Macroinvertebrates Bioassessments	Biological monitoring done in 2013 and 2008 shows attainment of ALU. Resample to confirm. Corresponding river segment (ME0104000210_418R01) shows attainment and moved to category 2 in 2012 cycle.	L
ME0106000302_628R01_02_W054	Unnamed tributary wetland to Mousam River, Sanford	Wetland Station W-054	Benthic Macroinvertebrates Bioassessments	Not started	L

Table 8-17 Estuarine/Marine Current TMDL Project Update

Assessment Unit ID	Segment Description	Cause	Project Status	TMDL Priority
ME010600010206_SB_01E	Royal River Estuary	Dissolved Oxygen	Removed from TMDL Vision due to natural conditions contributing to non-attainment. Delisting may be sought in future cycle.	L
ME010600010402_SC_01E	Fore R. Estuary	Marine life, Toxics	Further data collection required	L
ME010600021105_SC_01E	Saco R. Estuary	Toxicity, Copper	Further data collection required	L
ME010600030205_SB_01E	Mousam River	Dissolved Oxygen, Nutrient/ Eutrophication Biological Indicators	Data collection occurred in 2022, allowing update of impairment causes. Nitrogen load reductions to be pursued through MEPDES process.	L
ME010600031001_SB_01E	Piscataqua R. Estuary (Eliot, Kittery)	Nutrient/ Eutrophication Biological Indicators	TMDL dictated by NH licensing and ME nitrogen criteria development processes. Nitrogen load reductions to be pursued through MEPDES process.	L
ME010600031001_SC_01E	Piscataqua R. Estuary (Eliot, Kittery)	Nutrient/ Eutrophication Biological Indicators	TMDL dictated by NH licensing and ME nitrogen criteria development processes. Nitrogen load reductions to be pursued through MEPDES process.	L

Assessment Unit ID	Segment Description	Cause	Project Status	TMDL Priority
ME010600031001_SB_02E	Portsmouth Harbor (south and west of Gerrish Island)	Unknown	TMDL contingent on identification of impairment cause(s)	L

As indicated in Notes prior to Category 5-B-1 tables, a major revision to the 2009 Statewide Bacteria TMDL is anticipated based on the updating and relocation of marine/estuarine water segments in this report that pertain to shellfish harvesting closure areas. As soon as permissable, the revision will encompass all current closure areas pertaining to the most recent report and DMR closure information. The priority level for the bacteria TMDL update is Medium.

Table 8-18 Coastal Designated Beaches TMDL Current Project Update

Assessment Unit ID	AU Name	Cause	Project Status	TMDL Priority
ME010600010605_SB_875929B	Willard Beach (South Portland)	Enterococci	4/8/24: New listing, not started.	M
ME010600030303_SB_345424B	Goose Rocks - Batson River (Kennebunkport)	Enterococci	12/10/21: New listing, not started.	M
ME010600030303_SB_793244B	Goose Rocks - Little River (Kennebunkport)	Enterococci	12/10/21: New listing, not started.	M
ME010600031102_SB_794778B	Riverside (Ogunquit)	Enterococci	12/10/21: New listing, not started.	M

CHAPTER 9 ACCESSING AND MANAGING DATA USED IN MAKING DECISIONS ON STATUS OF WATERS

MAINE DEP QUALITY MANAGEMENT SYSTEM

Contact: Julie Churchill, DEP, Quality Assurance Manager (QAM), Office of the Commissioner

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Related Website: www.maine.gov/dep/about/planning.html

Data used in making decisions on the status of Maine waters are collected, analyzed, and evaluated according to the standards contained in the Department's Quality Management Plan (QMP, current version May 2021). The QMP applies to all program areas and activities in the DEP to ensure that data quality is maintained. In 2017, the QMP received a five-year approval from EPA Region 1.

Two tools are used to document Quality Assurance and Quality Control (QA/QC) activities, Standard Operating Procedures (SOPs) and Quality Assurance Project/Program Plans (QAPPs). These tools may be supplemented by annual Sampling and Analysis Plans (SAPs).

SOPs, which are included in most QAPPs applicable to environmental data gathering and analysis, contain a set of written instructions that document routine or repetitive activities. The use of an SOP ensures conformance with quality system requirements and thus high data quality. SOPs are included in all QAPPs used for environmental data gathering and analysis. To maintain their integrity, SOPs are reviewed each year by DEP program staff.

A QAPP is a broader document that outlines the procedures used to conduct a monitoring project to ensure that the data collected meets project requirements. It is an invaluable planning and operating tool that outlines the project's methods of data collection, storage and analysis. QAPPs also receive an annual quality review by DEP program staff, and are renewed at 5-year intervals.

SAPs, if required under a QAPP, present sampling and analysis details for a given monitoring year and list deviations from the relevant QAPP or SOPs, if any.

The QA/QC requirements in the QMP also apply to projects carried out by entities other than the DEP. To ensure data QA/QC for water quality sampling and monitoring activities carried out by non-DEP organizations, the Department monitors data quality through the review and approval of QAPPs submitted by these organizations.

ENVIRONMENTAL AND GEOGRAPHIC ANALYSIS DATABASE (EGAD)

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Related Websites: www.maine.gov/dep/maps-data/egad/index.html and

www.maine.gov/dep/gis/datamaps/index.html (for access to DEP data via Google Earth or ArcGIS Online projects on the internet)

The DEP Environmental and Geographic Analysis Database (EGAD) stores site and water quality information in a relational database using Oracle technology, and spatial locations using Environmental Systems Research Institute (ESRI) Spatial Database Engine (SDE) software. The database includes data from groundwater and surface

water samples as well as sediment and biological samples and other pertinent information. To date (March 2024), data from the following DEP programs involved in monitoring activities has been incorporated: Biological Monitoring, SWAT (Surface Water Ambient Toxics; freshwater and marine), Rivers-Stream TMDL, Rivers-Engineering, Salmon Habitat, Marine, Volunteer River Monitoring Program (VRMP), Watershed Management, Maine Healthy Beaches, Aquaculture, and Environmental Geology; data from the Lakes Assessment section has been partly incorporated. There are a total of 15.92 million samples from a total of 26,023 sampling sites in the database, each of which has one to many results records; ~8 million of these samples are used in water quality assessments in general. For each year covered by this report (2021-2022), an average of 91 groundwater sites and 95 surface water sites were added to the database.

Data collected by DEP staff or submitted by contractors or laboratories are loaded to EGAD using a standard EDD (Electronic Data Deliverable) which offers automated quality control. The EGAD system allows complete integration of all data via spatial relationships. Database functionalities exist to assess trends in water quality information, satisfy requests for data, assist in answering inquiries, provide automated analysis, and enable customized reporting and map-making. The database allows rapid access to information, which is critical for emergency response to hazardous materials spills. DEP staff can also geo-locate, browse and access all EGAD data together with related site and monitoring information on the internet via several Google Earth or ArcGIS Online projects. The ability to access a large variety of data quickly, easily and in a number of different formats allows staff to identify resources that require protection, such as lakes or streams, or municipal or private wells, and to target monitoring efforts.

Water quality assessment results have historically been stored in Maine's version of the EPA Assessment Database (ADB). Since the 2018/2020/2022 cycle, assessments results have been stored in the EPA Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS, www.epa.gov/waterdata/attains). DEP aims to have all raw water quality data in support of the Integrated Report stored in EGAD.

Since 2008, Maine water quality data stored in EGAD have been exported to national EPA databases (WQX, PRAWN) via the Central Data Exchange (CDX) system; to date (March 2024), data from the SWAT (freshwater and marine), Rivers-Stream TMDL, Rivers-Engineering, Biological Monitoring and Maine Healthy Beaches programs have been transferred to WQX/PRAWN. Since 2015, continuous temperature data stored in EGAD have been exported to the Spatial Hydro-Ecological Decision System (SHEDS, https://ecosheds.org/) database.

Water Quality Monitoring and Reporting Utilizing GIS and the National Hydrography Dataset

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The BWQ is highly active in designing, creating, and maintaining hydrologic and terrestrial spatial data for use in water quality decision-making programs for the State of Maine. Since 2011, the Bureau's objective has been to establish and maintain the National Hydrography Dataset (NHD) as Maine's primary surface water dataset. The

BWQ has a staff person who serves as a state NHD data steward. NHD stewards are responsible for identifying needed corrections to the NHD layers and working with USGS to incorporate these changes into the national dataset.

As of 2024, the National Hydrography Dataset will be superseded by the 3D Hydrography Program (3DHP). This new product will incorporate some features of the NHD but will provide a more accurate depiction of surface waters because it is derived from high-resolution Lidar elevation data. A final version of the NHD will be produced by USGS in late 2023 or early 2024. It is expected that BWQ will continue to use this final version of the NHD while transitioning over to use of the new 3DHP. BWQ will also use new tools such as the USGS's HydroAdd web-based tool which allows users to address water data and features to specific locations on the NHD/3DHP flow network. Using HydroAdd will allow easier maintenance of geospatial water quality datasets and better agreement with the NHD/3DHP as it changes over time.

The DEP and BWQ are responsible for disseminating spatial components of water quality information and analysis activities. To meet this requirement, spatial data sets developed using the NHD representing Maine's water quality standards and current status are hosted on the ArcGIS Online platform and can be accessed through the Maine DEP GIS and Data webpage (www.maine.gov/dep/gis/datamaps/index.html). These include web applications showing Maine's current draft Integrated Report waters, and Water Quality Classifications.

These programs will ensure easy access and retrieval of water quality information for DEP users as well as State and national users of Maine's GIS water quality information.

LISTINGS OF INDIVIDUAL WATERS

See Appendices II through VI (separate document) for listing information on specific waters. Appendices include assessments for rivers/streams, lakes, wetlands, estuarine/marine waters, and coastal, designated beaches.