



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**Region 1**

**5 Post Office Square, Suite 100**

**Boston, MA 02109-3912**

March 14, 2022

Ted Diers, Administrator  
Watershed Management Bureau  
Water Division, NH Department of Environmental Services  
PO Box 95 • 29 Hazen Drive  
Concord, NH 03302-0095

Re: 2020-2022 §303(d) List

Dear Mr. Diers,

Thank you for submitting New Hampshire's 2020-2022 §303(d) list of water quality limited segments (WQLSs) on February 18, 2022. In accordance with §303(d) of the Clean Water Act (CWA) and 40 CFR §130.7, the U.S. Environmental Protection Agency (EPA) has conducted a review of the state's list, including supporting documentation. Based on this review, EPA has determined that New Hampshire's list of WQLSs still requiring total maximum daily loads (TMDLs) meets the requirements of §303(d) of the CWA and EPA implementing regulations. Therefore, EPA hereby approves New Hampshire's 2020-2022 final §303(d) list.

The statutory and regulatory requirements, and EPA's review of New Hampshire's compliance with each requirement, are described in detail in the enclosed approval document. As noted in the state's submittal letter and as previously discussed, EPA is encouraged that the New Hampshire Department of Environmental Services (NHDES) is committed to gathering additional data to better inform assessment decisions for the three Great Bay assessment zones that were placed into category 3 for this reporting cycle. The EPA is also committed to working with the NHDES and other stakeholders to explore ways to integrate subtidal macroalgae analyses into future assessment decisions.

Thank you again for your hard work in developing the 2020-2022 §303(d) list. My staff and I look forward to continuing our work with the NHDES to implement the requirements under §303(d) of the CWA. If you have any questions or need additional information, please contact either Jackie LeClair at 617-918-1549 or Al Basile at 617-918-1599.

Sincerely,

Ken Moraff, Director  
Water Division

Enclosure

cc: NHDES: Rene Pelletier, Mark Sanborn, Robert Scott, Matthew Wood

EPA: Al Basile, Phil Colarusso, Mel Côté, Greg Dain, Tom Faber, Jackie LeClair

# **EPA REVIEW OF NEW HAMPSHIRE'S 2020-2022 SECTION 303(d) LIST**

## **I. INTRODUCTION**

EPA has conducted a review of New Hampshire's combined 2020-2022 section 303(d) list, supporting documentation, and other information. Based on this review, EPA has determined that New Hampshire's list of water quality limited segments (WQLSs) still requiring total maximum daily loads (TMDLs) meets the requirements of section 303(d) of the Clean Water Act ("CWA" or "the Act") and EPA implementing regulations. The statutory and regulatory requirements for New Hampshire's 2020-2022 section 303(d) list, and EPA's review of New Hampshire's compliance with each requirement, are described in detail below.

## **II. STATUTORY AND REGULATORY BACKGROUND**

### **Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List**

Section 303(d)(1) of the Act directs states to identify those waters within its jurisdiction for which effluent limitations required by section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of section 303(d).

EPA regulations provide that states do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by state or local authority, and (3) other pollution control requirements required by state, local, or federal authority. See 40 CFR §130.7 (b) (1).

### **Consideration of Existing and Readily Available Water Quality Related Data And Information**

In developing section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state's most recent section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any section 319 nonpoint assessment submitted to EPA. See 40 CFR §130.7(b) (5).

In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA's 2006 Integrated Report Guidance describes categories of water quality related data and information that may be existing and readily available. All EPA integrated reporting guidance under CWA Section 303(d), 305(b), and 314 may be found at <https://www.epa.gov/tmdl/integrated-reporting-guidance-under-cwa-sections-303d-305b-and-314>. While states are required to evaluate all existing and readily available water quality related data and information, states may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality related data and information, EPA regulations at 40 CFR §130.7(b)(6) require states to include as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by EPA.

### **Priority Ranking**

EPA regulations also codify and interpret the requirement in section 303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. The regulations at 40 CFR § 130.7(b)(4) require states to prioritize waters on their section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and EPA's 2006 Integrated Report Guidance and the 2006, 2009, 2011, 2013, 2015 and 2017 memoranda and attachments.

### **III. ANALYSIS OF NEW HAMPSHIRE'S SUBMISSION**

The final combined 2020-2022 303(d) list was submitted to EPA on February 18, 2022. The NHDES submittal letter included a link to the state's [website](#) which contains the 303(d) list and other supporting information. Documents provided on this website include:

1. The NHDES submittal letter to EPA (February 18, 2022)
2. 2020-2022 Consolidated Assessment and Listing Methodology (CALM)

3. 2020-2022 303(d) list content introduction
  - a. Appendix A – 2020-2022 303(d) list
  - b. Waters removed from the 2018 303(d) list
  - c. Waters added to the 2020-2022 303(d) list
  - d. Appendix B – New Hampshire’s long-term 303(d) vision
  - e. Response to comments on the draft 303(d) list and CALM
4. Other related materials
  - a. Technical support document for the Great Bay Estuary Aquatic Life Integrity Designated Use Assessments, 2020-2022 305(b) Report/303(d) List
  - b. GIS layers for the 2020-2022 assessment
  - c. Impairments removed since the 2018 305(b)
  - d. Impairments added to the 2020-2022 305(b)
  - e. Surface water quality assessment viewer and watershed report cards
  - f. 2020-2022 status of each assessment unit
  - g. Oct 27, 2020, Data Day presentation
  - h. EPA memo and milestone template to facilitate timely submission of the 2022 section 303(d) and 305(b) integrated report (January 25, 2021).
  - i. NHDES letter to EPA requesting consideration on the submittal of a combined 2020-2022 Integrated Report
  - j. EPA’s acceptance of NHDES’ request for submittal of a combined 2020-2022 Integrated Report (April 29, 2021)

New Hampshire’s section 303(d) list contains waterbody segments for which available data and/or other information indicates that a waterbody segment is not meeting water quality standards because it is impaired or threatened by one or more pollutants for one or more designated uses, and for which a Total Maximum Daily Load (TMDL) is therefore required to be established. EPA’s regulations at 40 CFR §130.7 require EPA to review and approve, or disapprove, a state’s section 303(d) list.

### **Public Participation**

On October 16, 2020, the New Hampshire Department of Environmental Services (NHDES) released for public comment and review a draft version of its 2020-2022 section 303(d) list and its Consolidated Assessment and Listing Methodology (CALM). Downloadable copies of the draft 303(d) list and CALM were made available on the NHDES website for review. In addition to posting the notice of comment opportunity at multiple locations on the NHDES website, direct notification by email was sent to nearly 2,000 stakeholders including but not limited to:

- Federal agencies
- State agencies in New Hampshire and abutting states
- Municipal officials
- DPW Directors of the MS4 Communities
- County Conservation Districts
- Regional Planning Commissions
- Nonprofit interest groups

Volunteer monitoring groups  
New England Interstate Water Pollution Control Commission  
University of New Hampshire

Public comments were accepted through the close of business on November 23, 2020. Comments were received from the following individuals and/or groups:

- 1) Amy Prouty Gill, City of Nashua, Division of Public Works
- 2) Russell Dean, Town of Exeter and Steve Fournier, Town of New Market
- 3) Gene Porter, Lower Merrimack River Local Advisory Committee
- 4) Blaine M. Cox, City of Rochester
- 5) Daniel Hammond, Stacy Villanueva, and Clifton Bell, Brown and Caldwell
- 6) Heidi Trimarco, Conservation Law Foundation (CLF)
- 7) Joshua M. Wyatt, City of Dover
- 8) Daniel Hudson, City of Nashua
- 9) Suzanne M. Woodland, City of Portsmouth

The EPA has examined the public comments that NHDES received on its combined 2020-2022 303(d) list, and the responses the agency provided.

The NHDES responded to comments about changes to waterbody segment boundaries with maps and boundary delineations. The agency discussed the history and practical realities of the prioritization of the Great Bay estuary segments for TMDL development. The NHDES answered questions about the impairment status of segments of the Merrimack and Nashua rivers for pollutants such as chloride, creosote, low dissolved oxygen and pH with data and explanations of its procedures and methods. The agency addressed questions about procedures and timelines for impairment removal, timing of the 303(d) list, the role of TMDLs, and about the use of criteria and potential future revisions.

Respondents posed a number of comments about the CALM, including its content and the authority for its development and use, to which the NHDES provided sufficient responses, including clarification of portions of the CALM, explanations of changes that have been made to the CALM, especially involving the development, adoption, and use of a multi-indicator evaluation for total nitrogen (preponderance of evidence approach) in place of numeric criteria. As background, the CALM provides a framework for states and other jurisdictions to document how they collect and use water quality data and information for environmental decision making. The primary purposes of these data analyses are to determine the extent that all waters are attaining water quality standards, to identify waters that are impaired and need to be added to the 303(d) list, and to identify waters that can be removed from the 303(d) list because they are attaining standards.

The NHDES responded to comments about levels and use of the indicator's chloride, chlorophyll-a, dissolved oxygen, dissolved oxygen saturation, specific conductance, total

nitrogen, and use of paired data or the lack of it, including in the CALM. The NHDES included discussions about the data it used and presented some of the data it used as part of its responses.

The NHDES provided responses to comments about the listing and impairment, or non-impairment, of assessment zones in the Great Bay estuary including the Bellamy River, Cocheco River, Oyster River, Sagamore Creek, Little Bay, Upper Piscataqua River, Portsmouth Harbor, and Little Harbor/Back Channel. In several responses, the NHDES explained its use of the Technical Support Document for the Great Bay Estuary, including clarification of portions of the document. The NHDES presented data and graphs to support many of its responses, and it provided explanations about the physical, chemical, and biological interactions at work in subject waterbodies and the use of eelgrass as an indicator.

In places, the NHDES responded to comments that referenced respondents' comments from previous list cycles by referencing its own responses to those comments where its responses and views, and/or the situation, have not changed. The EPA concludes that the NHDES has done an adequate job involving the public and responding to public comments.

#### **Identification of Waters and Consideration of Existing and Readily Available Water Quality Related Data and Information**

EPA has reviewed the state's submission and has concluded that the state developed its section 303(d) list in compliance with section 303(d) of the Act and 40 CFR § 130.7. EPA's review is based on its analysis of whether the state reasonably considered existing and readily available water quality related data and information and reasonably identified waters required to be listed.

New Hampshire's assessments for the 2020-2022 reporting period are supported by more than 1 million grab samples and several million datalogger results. These data records were collected from more than 2,000 stream sites, 2,500 lake sites, and 640 marine sites and include over 180 water quality and ecological parameters. Most of the data are available from the NHDES data warehouse or by contacting NHDES.

On September 12, 2019, a request for data/information for both the 2020-2022 305(b) and 303(d) reports was sent to a wide variety of groups and was placed on the NHDES website for the general public. The request included guidance and a form to facilitate electronic or mailed submissions. The data request went out to the following groups including but not limited to the Appalachian Mountain Club, Audubon Society, Connecticut River Joint Commissions, Conservation Law Foundation, County Conservation Districts, DPW Directors of the MS4 Communities, Manchester Conservation Commission, Merrimack River Watershed Council, National Park Service, Natural Resources Conservation Service, New Hampshire Lakes Association, New

Hampshire Rivers Council, North Country Council, Piscataqua Region Estuaries Partnership, Regional Planning Commissions, Society for the Protection of National Forests, Souhegan River Watershed Association, The Great Bay Municipal Coalition, The Nature Conservancy, University of New Hampshire, Upper Merrimack River Local Advisory Committee, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Fish and Wildlife Service, and the U.S. Forest Service.

Other data sources consulted for this assessment included but were not limited to the following: 2018 NH Section 305(b)/303(d) Surface Water Quality Assessment, Baker River Watershed Association, NHDES Acid Rain Lake Monitoring Program, NHDES Ambient Rivers Monitoring Program (ARMP), NHDES Beach Program (freshwater and coastal beaches), NHDES Biomonitoring Program, NHDES Juvenile Camp Inspection Program, NHDES Lake Diagnostic Feasibility Studies, NHDES Lake trophic surveys, NHDES Permits and Compliance Section (NPDES permits), NHDES Section 319 Program (nonpoint source projects), NHDES Section 401 Water Quality Certification Program, NHDES Shellfish Program, NHDES State Clean Lakes program (nuisance aquatic growths including exotic species), NHDES TMDL Program, NHDES/UNH National Coastal Assessment Water Quality Monitoring Program, NHDES Volunteer Lakes Assessment Program (VLAP – includes volunteer data from over 180 lakes), NHDES Volunteer Rivers Assessment Program (VRAP – includes data from approximately 30 volunteer monitoring groups), NHDES Waste Management Division (hazardous waste sites, landfills, etc.), NHDES Watershed Assistance Section (nonpoint source investigations), NHDES Water Supply Engineering Bureau (public water supplies), NHDES Water Quality Complaint files, Great Bay Coast Watch Water Quality Monitoring Program, NH Department of Health and Human Services (fish/shellfish consumption advisories), NH Estuary Project (NHEP) Monitoring, NH Fish and Game National Estuarine Research Reserve (NERR) System Wide Monitoring Program, Piscataqua Region Estuaries Partnership, and the US Navy Interim Offshore Monitoring Program for the Portsmouth Naval Shipyard.

### **Priority Ranking**

As described in its CALM, New Hampshire established a priority ranking for listed waters by first considering whether a water was: (1) viable as a potable water supply, (2) an Outstanding Resource Water as defined in EnvWq 1700, (3) a water designated as “natural” under the Rivers Management and Protection Act (RSA 483), (4) a designated beach, and (5) whether pollutants threaten human health and/or pose a threat to Federally listed threatened or endangered species. Additional information then considered to determine final priority ranking included: (1) public interest, (2) resource availability, (3) administrative and legal factors, and (4) likelihood of TMDL implementation.

EPA finds that the water body prioritization and targeting method used by New Hampshire is reasonable and sufficient for purposes of section 303(d). The state properly accounted for the severity of pollution and the uses to be made of listed



waters, as well as other relevant factors described above.

### **Waterbody Segments/Impairments removed from New Hampshire's section 303(d) list for the 2020-2022 reporting period**

The following section provides a summary of the state's and EPA's rationale supporting decisions not to include certain newly identified waters and/or previously listed waters on the combined 2020-2022 303(d) list. As discussed below, the state has demonstrated, to EPA's satisfaction, good cause for not listing the following waters, as provided in 40 CFR §130.7(b)(6)(iv) and EPA's Guidance for Assessment, Listing and Reporting Requirements.

#### **Dissolved Oxygen Concentration for Aquatic Life Integrity**

Two assessment units were removed for Dissolved Oxygen Concentration for the Aquatic Life Integrity designated use. These include the Androscoggin River (NHRIV400020103-06) and Contoocook River – Boglie Brook Dam to Otter Brook (NHRIV700030104-23). All samples collected in both assessment units during the current assessment period were above the dissolved oxygen criteria. This includes 24-hr datalogger data collected during the critical period.

#### **Dissolved Oxygen Saturation for Aquatic Life Integrity**

Six assessment units were removed for dissolved oxygen saturation for the Aquatic Life Integrity designated use. These include the Androscoggin River (NHRIV400020103-06), Leavitt Bay (NHLAK600020804-01-02), Merrimack River (NHRIV700060802-14-02), Merrimack River (NHRIV700060302-25-02), Middle Pea Porridge Pond (NHLAK600020303-06), and the Pemigewasset River (NHRIV700010801-23).

One of the assessment units, Middle Pea Porridge Pond, was mistakenly listed as impaired in 2006 for dissolved oxygen saturation. The NHDES believes that the meter used to collect the data on June 29, 2001, was faulty or not calibrated correctly. Values collected two months later (Aug 2001) during a lake trophic survey revealed dissolved oxygen saturation >75%. These samples were collected during the critical time period, and later in the growing season when lower levels of dissolved oxygen are more likely to occur. Therefore, EPA concurs with the state's decision not to include this waterbody on the 2020-2022 303(d) list. This assessment unit is being moved to category 3 (insufficient information). Category 3 means there is insufficient data and/or information to make a use support determination at this time.

Data collected during the current assessment period at the remaining five assessment units listed above indicates that dissolved oxygen percent saturation criteria are being attained. This includes data collected during the critical period. Therefore, EPA concurs with the state's decision not to include these assessment units on the 2020-2022 303(d) list.

## **Chlorophyll-a and Total Phosphorus for Aquatic Life Integrity**

Four assessment units were removed from the 303(d) list for chlorophyll-a and total phosphorus for the Aquatic Life Integrity designated use. These include Angle Pond (NHLAK700061403-01-01), Clough Pond (NHLAK700060202-03-01), Mascoma Lake (NHLAK801060105-04-01), and Webster Stream – Locke Lake (NHIMP700060402-02). Total phosphorus and chlorophyll-a thresholds identified in the state's CALM are used to interpret narrative water quality criteria for nutrients per Env-Wq 1703.14. The narrative criteria requires that surface waters contain no phosphorus in such concentrations that would impair any existing or designated use.

For Locke Lake, a TMDL was approved on September 29, 2020. For the remaining three assessment units, data collected during the current assessment period supports removing both chlorophyll-a and phosphorus from the 2020-2022 303(d) list. Clough Pond is fully supporting both chlorophyll-a and phosphorus thresholds based upon trophic class. Clough Pond is therefore being moved to category 2 (fully supporting). Angle Pond and Mascoma Lake are fully supporting chlorophyll-a thresholds but are not fully supporting phosphorus thresholds. When chlorophyll-a meets the threshold but phosphorus does not, the state's stressor/response decision matrix for nutrients places the waterbody into category 3 (insufficient information). As such, both Angle Pond and Mascoma Lake are being moved to category 3. EPA concurs with this approach.

## **Cyanobacteria for Primary Contact Recreation**

Four assessment units were removed from the 2020-2022 303(d) list for Cyanobacteria for the Primary Contact Recreation designated use. These include Lake Winnepesaukee (NHLAK700020110-02-19), Rochester Reservoir (NHLAK600030602-03), Webster Stream – Locke Lake (NHIMP700060402-02), and White Lake – State Park Beach (NHLAK600020605-02-02). The narrative criteria applying to cyanobacteria (Env-Wq 1703.03) requires that surface waters be free of substances which: float as foam, debris, or scum; produce odor, color, taste, or turbidity making the water unsuitable for the designated use; result in nuisance species; or interfere with recreational activities. The state considers the narrative criteria fully supported if there is no conclusive evidence that cyanobacteria blooms in the most recent 10-year period have occurred in amounts and for durations that significantly interfere with the Primary Contact Recreation designated use.

For Lake Winnepesaukee, there has been one cyanobacteria advisory issued since 2011. This advisory occurred in 2018 in Winter Harbor, Wolfeboro, NH. Cell counts were slightly over the 70,000 cells/mL threshold used for designated beaches, ranging from 73,000-80,000. Due to the overall size of the lake (44,315 acres) compared to the localized area in which the bloom occurred, NHDES does not consider this to be a significant interference with the primary contact recreation use of the lake. As stated in the New Hampshire CALM, "it is not the intent of this indicator to assess a surface water as impaired for an infrequent or minor cyanobacteria occurrence. Rather, this indicator is intended to address more significant and/or chronic public health risks." The town of Wolfeboro is also following the EPA's Cyanobacteria Monitoring Collaborative,

watching the lake carefully for blooms and continues to participate in the University of New Hampshire (UNH) Lakes Lay Monitoring Program. Lake Winnepesaukee is an oligotrophic lake with relatively low nutrient concentrations overall. Therefore, Lake Winnepesaukee has been removed from the 2020-2022 303d list.

For Webster Stream – Locke Lake, a TMDL was approved by EPA in 2020. The purpose of the TMDL is to address impairments of the Aquatic Life Integrity designated use due to total phosphorus and chlorophyll-a, and for the Primary Contact Recreation designated use due to cyanobacteria hepatotoxic microcystins.

Rochester Reservoir was listed as impaired for the primary contact recreation designated use due to cyanobacteria hepatotoxic microcystins in 2008. There have been no blooms reported for Rochester Reservoir since 2006. The operators of this public water system are participating in the NHDES grant program for monitoring cyanobacteria, and no blooms have been reported as a result of these efforts. Therefore, Rochester Reservoir has been removed from the 2020-2022 303(d) list.

For White Lake – State Park Beach, there have been no blooms reported to NHDES since 2010. In 2019, the NHDES Beach Program sampled during a routine beach inspection to see if any cyanobacteria were present in the waterbody. There was only one colony of *Aphanizomenon* (cyanobacteria taxon) present in the sample, far below the 70,000 cells/mL threshold used for designated beaches. This assessment unit is being removed from the 2020-2022 303(d) list because no blooms have been reported since 2010.

### **pH for Aquatic Life Integrity**

Eleven assessment units were removed from the 2020/2022 303(d) list for pH for the Aquatic Life Integrity designated use. These include the Ammonoosuc River (NHRIV801030506-10), Ammonoosuc River Dam Pond (NHIMP801030506-02), Beech River – Unnamed Brook (NHRIV600020701-02), Big Island Cove Brook – To Goose Pond (NHRIV801060103-08), Blackwater River (NHIMP700030402-04), Fernalds Brook - To Pawtuckaway Pond (NHRIV600030704-12), Messer Pond – North Inlet (NHRIV700030303-01), Otternick Pond (NHLAK700061206-02), Russel Pond Brook – To Blaisdell Lake (NHRIV700030302-10), Turree Pond (NHLAK700060301-01), and White Pond Outlet - To Squam Lake through Pipers Cove (NHRIV700010501-14).

Data collected in the current assessment period indicates that all eleven assessment units previously impaired for pH for the Aquatic Life Integrity designated use are meeting water quality criteria. Data met minimum sample size requirements and included samples collected under similar environmental conditions when compared to the listing data.

### **Macroinvertebrates for Aquatic Life Integrity**

One assessment unit, Amey Brook (NHRIV700030502-10), was removed from the 2020-2022 303(d) list for benthic macroinvertebrate bioassessments for the Aquatic Life Integrity designated use. The state's benthic macroinvertebrate index is used to interpret

narrative water quality criteria per Env-Wq 1703.19. The narrative criteria requires that surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region. New data collected in 2018 indicates that this assessment unit is meeting the macroinvertebrate B-IBI for aquatic life integrity. A poor B-IBI score in 1998 was the result of a discharge from a crushed stone/concrete operation. Corrective measures were implemented in 1999 and 2000.

### **Total Nitrogen for Aquatic Life Integrity**

Beginning with the 2014 303(d) list, the NHDES has proposed removing total nitrogen impairments from several assessment zones in the Great Bay estuary due, in part, to changes in the state's assessment methodology. These assessment zones include the Bellamy River, Cocheco River, Great Bay, Little Bay, Upper Piscataqua River, Little Harbor/Back Channel, and Portsmouth Harbor. EPA deferred taking action on these assessment zones during both the 2014 and 2016 reporting cycles, with the exception of the Cocheco River where EPA only deferred taking action during the 2014 reporting cycle. As part of the 2018 reporting cycle, NHDES withdrew from consideration all of the aforementioned assessment zones with the exception of the Cocheco River. For the combined 2020-2022 reporting cycle, NHDES has listed three of these assessment zones including the Bellamy River, Cocheco River, and Great Bay as impaired for total nitrogen. The NHDES has removed the remaining four assessment zones, including Little Bay, Upper Piscataqua River, Little Harbor/Back Channel, and Portsmouth Harbor, from the 303(d) list for total nitrogen.

### **Great Bay Estuary Assessment Zone(s) placed into Category 3 (insufficient information) for Total Nitrogen**

**Little Bay** (NHEST600030904-06-10, NHEST600030904-06-11, NHEST600030904-06-14, NHEST600030904-06-15, NHEST600030904-06-18, NHEST600030904-06-19, NHEST600030904-06-20)

**Upper Piscataqua River** (NHEST600031001-01-01, NHEST600031001-01-02, NHEST600031001-01-03)

**Little Harbor/Back Channel** (NHEST600031001-05, NHEST600031001-08, NHEST600031002-02)

New Hampshire's final 303(d) list for the combined 2020-2022 cycle excludes Little Bay, Upper Piscataqua River, and Little Harbor/Back Channel for total nitrogen. The state has placed these three assessment zones into Category 3. Category 3 means there is insufficient data and/or information to make a use support determination at this time. The state interpreted its narrative water quality standard for nutrients using a preponderance of the evidence approach in relation to total nitrogen as a stressor and various response variables that relate to total nitrogen concentrations.

The state has reasonably determined that the response variable data (chlorophyll-a, dissolved oxygen concentration, dissolved oxygen % saturation, eelgrass extent, and

water clarity) contained in the state's administrative record for Little Bay and the Upper Piscataqua River, in relation to the stressor total nitrogen, does not present a preponderance of evidence that the narrative water quality standard for nutrients is in non-attainment. Confounding variables such as total suspended solids, and the fact that there is no data on subtidal macroalgae in the state's administrative record, make determining whether these assessment zones should be placed on the state's 303(d) list even more challenging. For Little Harbor/Back Channel, there simply is not enough available data in the state's administrative record to make a determination that the state's narrative water quality standard for nutrients is not attained.

EPA finds reasonable the state's decision to exclude these three assessment zones from the list and notes their placement in Category 3 for total nitrogen during this reporting cycle. Collection of additional data and information in all three assessment zones is essential for upcoming assessment cycles.

As further background, EPA acknowledges: (1) a change in assessment methodology since the last time EPA made a determination on these assessment zones; (2) a commitment from the state to collect additional data and begin a collaborative effort with EPA and other stakeholders to develop and implement a methodology to more appropriately assess when uses are impaired because of abundance of subtidal macroalgae (a critical indicator of nutrient enrichment); and (3) more recent and significant implementation activities occurring in the Great Bay estuary that are improving water quality conditions. Regarding the latter, and most notably, EPA issued the Great Bay general permit for total nitrogen which covers 13 wastewater treatment facilities located in New Hampshire that discharge wastewater into surface waters of the Great Bay estuary. The general permit was signed by EPA on November 24, 2020. The permit became effective on Feb 1, 2021. In addition to effluent limits, the permit requires year-round reporting and monitoring of the discharges.

The permit also includes an adaptive management framework. Implementation of adaptive management includes collaboration between EPA, the State of New Hampshire, and public, private, and commercial stakeholders. Permittees, at their discretion, can be involved in this collaboration. So far, 10 of the 12 municipalities subject to the permit have submitted plans to participate in this adaptive management approach. These plans include ambient monitoring, pollution tracking for nonpoint sources and stormwater, planning for overall source reductions of total nitrogen over the course of the permit, periodic review of scientific findings, and proposed timelines for TMDL development. EPA strongly believes that addressing nonpoint sources and stormwater through the adaptive management framework is critical for the future health of the estuary, whether waters are listed on the 303(d) list as impaired or not.

## **Great Bay Estuary Assessment Zone(s) placed into Category 2 (fully supporting) for Total Nitrogen**

**Portsmouth Harbor (NHEST600031001-11)**

New Hampshire's final 303(d) list for the combined 2020-2022 reporting cycle excludes this assessment zone for total nitrogen. For the 2014-2018 assessment period, water column median total nitrogen of 228 ug/L was only slightly elevated compared to offshore North Atlantic waters. Both chlorophyll-a and dissolved oxygen were within acceptable ranges and are not indicative of cultural eutrophication. The chlorophyll-a 90<sup>th</sup> percentile was 5.8 ug/L, which is well below the state's 10 ug/L threshold needed to prevent low dissolved oxygen and preserve light for eelgrass. All dissolved oxygen samples were greater than 5 mg/L and all dissolved oxygen 24-hr averages were >75% saturation.

This assessment zone is still considered impaired for eelgrass and water clarity (i.e., light attenuation coefficient). Data collected during the current assessment period, reveals that eelgrass cover is beginning to show an increasing trend. This assessment zone is located at the mouth of the Great Bay estuary and receives significant tidal flushing. For these reasons, EPA finds reasonable the state's decision to exclude this assessment zone from the 303(d) list and notes its placement in category 2, fully supporting for total nitrogen. EPA also expects that recent reductions in nitrogen from wastewater treatment plants and other implementation activities occurring in the Great Bay estuary, as described above, will further improve conditions in this assessment zone.

#### **Waterbody Segments/Impairments Removed from Category 4 for the 2020-2022 reporting period**

Pursuant to EPA's Integrated Report Guidance related to assessment and listing of waters pursuant to sections 305(b) and 303(d) of the CWA, states list their waters in one or more of five categories, depending on the status of each waterbody's attainment of water quality standards. Category 5 corresponds to the section 303(d) list. Category 4 is comprised of waters that are not meeting water quality standards, but for which a TMDL need not be established due to one of three reasons. Category 4A contains waters for which a TMDL has already been established and approved by EPA. Category 4B includes waters, for which a "functionally equivalent" control action has been developed and is being implemented, i.e., an impairment caused by a pollutant is being addressed through other pollution control requirements. Category 4C contains waters that are not attaining water quality standards due to pollution that is not associated with a pollutant. Although waters in Category 4 are not on the section 303(d) list, EPA reviews a state's Category 4 list to ensure that the waters are categorized appropriately and do not, in fact, belong on the section 303(d) list.

Twenty assessment units are being removed from Category 4 for this reporting cycle. The following is a summary of these changes.

#### **Bacteria for Primary Contact Recreation (i.e., swimming)**

Three assessment units were removed for bacteria for the primary contact recreation designated use. These include the Exeter River (NHRIV600030805-02), Jenness Pond

(NHLAK700060502-06), and the Pemigewasset River (NHRIV700010804-14). All three assessment units were shown to be attaining water quality standards.

### **Bacteria for Secondary Contact Recreation (i.e., boating)**

Four assessment units were removed for bacteria for the secondary contact recreation designated use. These include the Ashuelot River (NHRIV802010403-19), Atlantic Ocean – New Castle Beach (NHOCN000000000-02-02), Flints Brook (NHRIV700040402-03), and Pleasant Pond Brook – to Tom Pond (NHRIV700030304-31). All four assessment units were shown to be attaining water quality standards.

### **Dissolved Oxygen Concentration for Aquatic Life Integrity**

A single assessment unit, Salmon Falls River (NHRIV600030406-03), was removed for dissolved oxygen concentration for the aquatic life integrity designated use. This assessment unit was shown to be attaining water quality standards.

### **Wastewater Treatment Facilities (WWTFs) No longer in Significant Non-Compliance for Aquatic Life Integrity**

The NHDES places waters into category 4B when a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in attainment of water quality standards in the near future.

One form of category 4B is triggered when a wastewater treatment facility is in “significant non-compliance” of its NPDES permit, for one or more of its permitted water quality based effluent limits. Waters are removed from category 4B and placed into category 3 when the permittees are back in compliance.

Twelve assessment units associated with WWTFs that were in significant non-compliance, for one or more pollutants, were removed from category 4B for the Aquatic Life Integrity designated use. All twelve of the permittees are now back in compliance with their permit limits. These assessment units include the Ammonoosuc River (NHRIV801030403-03), Bloods Brook – Unnamed Brook (NHRIV801060301-05), Contoocook River – Peterborough WWTF to Boglie Brook (NHRIV700030104-18), Johns River – Chase Brook (NHRIV801030102-08), Lamprey River (NHRIV600030703-18), Lamprey River North (NHEST600030709-01-01), Souhegan River – Tucker Brook (NHRIV700060902-05), Souhegan River (NHRIV700060906-16), South Branch Ashuelot River (NHRIV802010303-18), Sugar River (NHRIV801060405-29), Tide Mill Creek (NHEST600031004-03-03), and the Warner River (NHRIV700030304-16).

### **Waters impaired by nonpoint sources of pollution**

The state properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with section 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA's long-standing interpretation is that section 303(d) applies to waters impacted by point and/or nonpoint sources. In 'Pronsolino v. Marcus,' the District Court for Northern District of California held that section 303(d) of the Clean Water Act authorizes EPA to identify and establish total maximum daily loads for waters impaired by nonpoint sources. Pronsolino v. Marcus, 91 F. Supp. 2d 1337, 1347 (N.D.Ca. 2000). This decision was affirmed by the 9th Circuit court of appeals in Pronsolino v. Nastri, 291 F.3d 1123 (9th Cir. 2002). See also *EPA's Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*, EPA Office of Water, July 29, 2005.